CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3608D19 (CONTINUED)

```
        MICRO:  (4)  KERATITIS
                         LOCATED AT THE SCLERAL JUNCTION
                (4)  CORNEAL ULCER
SEMINAL VESICLE
    GROSS:           SIZE INCREASE
                         2-3X NORMAL; MAY BE INVOLVED IN MASS
     MICRO↑  P       #M ADENOCARCINOMA
                         METASTATIC FROM THE PROSTATE
                         MUCH OF THE MASS IS NECROTIC
    MICRO:   4       SEMINAL VESICULITIS
             4       EDEMA
PROSTATE
    GROSS:           MASS
                         40MM IN DIAMETER, FIRM AND CREAM
     MICRO↑  P       #M ADENOCARCINOMA
LUNGS
    MICRO:   4       CONGESTION
           ((2))     PNEUMONITIS, INTERSTITIAL
           ((3))     INTRAALVEOLAR CELLULAR DEBRIS
           ((3))     PULMONARY EDEMA
           ((2))     #M ADENOCARCINOMA
                         SEVERAL SMALL FOCI, METASTATIC FROM THE
                         PROSTATE
KIDNEYS
    GROSS:           HYDRONEPHROSIS
                         BILATERAL, SEVERE
     MICRO↑((3))     HYDRONEPHROSIS
KIDNEYS
    GROSS:           SIZE INCREASE
                         4X NORMAL
                         BILATERAL
    MICRO: ((1))     TUBULAR PROTEINOSIS
           ((3))     TUBULAR ATROPHY
           ((2))     FIBROSIS, INTERSTITIAL
           ((1))     MINERALIZATION
URETER
    GROSS:           DILATATION/DISTENTION
                         BILATERAL, 2X NORMAL
     MICRO↑  4       DILATION
URINARY BLADDER
    GROSS:           CONTENTS ABNORMAL
                         FILLED WITH RED FLUID
    MICRO:   4       DILATION
                         THE BLADDER IS DISTENDED AND FILLED
                         WITH CELLULAR DEBRIS
URETHRA
    MICRO:  (5)      EPITHELIAL HYPERPLASIA
                         THE URETHRA IS OBSTRUCTED BY THE
                         PROSTATIC MASS
CAUSE OF DEATH
    MICRO:   P       PROSTATIC ADENOCARCINOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SALIVARY GL      ESOPHAGUS        STOMACH
    LIVER            PANCREAS         DUODENUM
    COLON            RECTUM           SKIN
    BONE, STERNUM    SKELETAL MUSCLE  BRAIN
    SPINAL CORD      NERVE, SCIATIC   TESTES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 360BD19 (CONTINUED)

EPIDIDYMIDES TRACHEA
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
JEJUNUM ILEUM CECUM

ANIMAL 3464D20 27-APR-88 STUDY DAY 36
TYPE OF DEATH: FOUND DEAD

TOTAL BODY
GROSS: EMACIATION
STOMACH
GROSS: CONTENTS ABNORMAL
CONTAINS DARK BROWN MATERIAL
ILEUM
GROSS: POSTMORTEM CHANGE
MODERATE
CECUM
GROSS: CONTENTS ABNORMAL
CONTAINS A MODERATE AMOUNT OF BROWN FLUID
SKIN
GROSS: STAINED
URINE, UROGENITAL AREA
SKIN
GROSS: CRUST
RED, LEFT PERIOCULAR AREA
SPLEEN
GROSS: SIZE DECREASE
1/2 OF NORMAL
MICRO↑ 4 LYMPHOID DEPLETION
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
LYMPH ND, PANC
MICRO: 3 HEMOSIDEROSIS
THYMIC REGION
MICRO: (3) HEMORRHAGE
4 INVOLUTIONAL ATROPHY
((2)) FIBROSIS
BONE MARROW
MICRO: ((4)) HEMORRHAGE
((3)) HYPOPLASIA
BRAIN
MICRO: ((4)) VACUOLIZATION
CEREBELLUM WHITE MATTER
ALSO IN BRAINSTEM
SPINAL CORD
MICRO: ((4)) VACUOLIZATION
WHITE MATTER, ALL LEVELS
CAUSE OF DEATH
MICRO: P NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	LIVER
PANCREAS	COLON	RECTUM
PITUITARY	THYROID GL	PARATHYROID GL
ADRENAL GL	SKIN	LYMPH ND, S-MAN
BONE, STERNUM	BONE, FEMUR	SKELETAL MUSCLE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3464D20 (CONTINUED)

```
                                    NERVE, SCIATIC   EYE              TESTES
                                    EPIDIDYMIDES     SEMINAL VESICLE  PROSTATE
                                    TRACHEA          LUNGS            KIDNEYS
                                    URINARY BLADDER
                                THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
                                    DUODENUM         JEJUNUM          ILEUM
                                    CECUM
```

ANIMAL 3575D21 11-FEB-90 STUDY DAY 691

TYPE OF DEATH: SACRIFICED MORIBUND

```
                                TOTAL BODY
                                    GROSS:       EMACIATION
                                TOTAL BODY
                                    GROSS:       UNKEMPT
                                HEART
                                    MICRO: ((2)) MINERALIZATION
                                                     INVOLVES MANY CORONARY VESSELS
                                           ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
                                AORTA
                                    MICRO: ((2)) MINERALIZATION
                                SALIVARY GL
                                    MICRO:  (4)  ATROPHY
                                             3   SIALOADENITIS
                                                     LESIONS INVOLVE THE SEROUS GLANDS
                                STOMACH
                                    GROSS:       THICKER THAN NORMAL
                                                     ENTIRE STOMACH
                                     MICRO↑  4   MINERALIZATION
                                    MICRO:  (4)  ULCER
                                                     NONGLANDULAR AREA
                                             3   GASTRITIS
                                LIVER
                                    MICRO: ((4)) FATTY CHANGE
                                PITUITARY
                                    GROSS:       SIZE INCREASE
                                                     7X5X5MM
                                     MICRO↑  P   #B ADENOMA
                                                     VERY LARGE
                                PITUITARY
                                    GROSS:       COLOR CHANGE, DIFFUSE
                                                     DARK RED
                                THYROID GL
                                    MICRO:   P   THYROGLOSAL DUCT CYST
                                           ((2)) CALCIFIC CONCRETIONS, COLLOID
                                            (3)  FOLLICULAR CYST
                                ADRENAL GL
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     MULTIPLE BROWN FOCI, BILATERAL
                                     MICRO↑((3)) CORTICAL CELL VACUOLIZATION
                                SKIN
                                    GROSS:       STAINED
                                                     URINE, UROGENITAL AREA
                                SKIN
                                    GROSS:       ALOPECIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3575D21 (CONTINUED)

```
                                        UROGENITAL AREA
MAMMARY GL
    MICRO: ((2)) GALACTOCELE
PAWS/FEET
    GROSS:       ULCERATED
                     20X15X3MM, HIND FEET, BILATERAL
     MICRO+  5   ULCERATION
    MICRO:   4   OSSEUS METAPLASIA
             4   FIBROSIS
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
             3   LYMPHOID HYPERPLASIA
LYMPH ND, MED
    MICRO:   4   SINUS ERYTHROCYTOSIS
             1   HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO ENLARGED PITUITARY
     MICRO+ (3)  COMPRESSION
    MICRO:   4   ENCEPHALITIS, GRANULOMATOUS
                     INVOLVES ENTIRE PONS AND BRAIN STEM
SPINAL CORD
    MICRO: ((3)) VACUOLIZATION
            (4)  MYELITIS
                     INVOLVES ALL GREY MATTER AND DORSAL
                     WHITE MATTER OF
                     CERVICAL SEGMENT
EYE
    GROSS:       CRUST
                     RED, PERIOCULAR AREA, BILATERAL
     MICRO+ (3)  CONJUNCTIVITIS
                     EYELID LESION
    MICRO:  (2)  CORNEAL ULCER
             3   KERATITIS
                     BILATERAL
             3   HYPOPYON
                     BILATERAL
TESTES
    GROSS:       SIZE DECREASE
                     SLIGHT, BILATERAL
SEMINAL VESICLE
    GROSS:       SIZE DECREASE
                     SLIGHT, BILATERAL
PROSTATE
    MICRO:  (1)  LYMPHOID INFILTRATES
LUNGS
    MICRO:  (1)  ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((2)) MINERALIZATION
CAUSE OF DEATH
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3575D21 (CONTINUED)

```
MICRO:   P   PITUITARY ADENOMA
         P   GRANULOMATOUS ENCEPHALITIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
ESOPHAGUS         PANCREAS          DUODENUM
JEJUNUM           ILEUM             CECUM
COLON             RECTUM            PARATHYROID GL
SKIN              SPLEEN            BONE, STERNUM
BONE, FEMUR       BONE MARROW       SKELETAL MUSCLE
NERVE, SCIATIC    TESTES            EPIDIDYMIDES
SEMINAL VESICLE   TRACHEA           URINARY BLADDER
```

ANIMAL 3476D22 22-NOV-89 STUDY DAY 610

TYPE OF DEATH: SACRIFICED MORIBUND

```
HEART
    MICRO: ((2)) MYOCARDIAL DEGENERATION/FIBROSIS
SALIVARY GL
    MICRO:  (1)  MINERALIZATION
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     RED FOCAL AREAS, ALL LOBES
    MICRO: ((3)) FATTY CHANGE
           ((2)) CHOLANGIOFIBROSIS
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
           ((2)) HEPATOCELLULAR ATROPHY
PITUITARY
    GROSS:       MASS
                     12X7X6 MM, DARK RED
     MICRO↑  P   #B ADENOMA
                     VERY LARGE AND HEMORRHAGIC
THYROID GL
    MICRO: ((1)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    MICRO:  (P)  #B ADENOMA
                     THE MASS IS HEMORRHAGIC AND PARTLY
                     NECROTIC
SKIN
    GROSS:       STAINED
                     YELLOW, UROGENITAL REGION
NARES/NOSE
    GROSS:       CRUST
                     RED, PERINASAL REGION
MAMMARY GL
    MICRO: ((1)) GALACTOCELE
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MED
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
            (3)  FIBROSIS
           ((2)) SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3476D22 (CONTINUED)

```
BONE, STERNUM
    MICRO:   3   CORTICAL HYPOPLASIA
BONE, FEMUR
    MICRO: ((4)) MYELOFIBROSIS
                     EPIPHYSEAL AREAS OF TIBIA AND FEMUR.
BONE MARROW
    MICRO:   3   HYPOPLASIA
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY MASS
     MICRO+ (4)  COMPRESSION
                     DUE TO PITUITARY TUMOR
    MICRO:   3   HYDROCEPHALUS
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     RED, PERIOCULAR TISSUE, BILATERAL
     MICRO+ (1)  CONJUNCTIVITIS
    MICRO: ((4)) CATARACT
                     UNILATERAL
           ((3)) MINERALIZATION
                     LENS
SEMINAL VESICLE
    GROSS:       SIZE DECREASE
                     1/2 OF NORMAL, BILATERAL
NASAL CAVITY
    MICRO: ((3)) SUBMUCOSAL MINERALIZATION
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MOTTLED DARK AND LIGHT RED, ALL LOBES
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
            (1)  PNEUMONITIS, INTERSTITIAL
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
           ((3)) TUBULAR BASOPHILIA
             2   PYELITIS
                     RIGHT
CAUSE OF DEATH
    MICRO:   P   PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            ESOPHAGUS        STOMACH
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    NARES/NOSE       SPLEEN           SKELETAL MUSCLE
    NERVE, SCIATIC   TESTES           EPIDIDYMIDES
    SEMINAL VESICLE  PROSTATE         TRACHEA
    URINARY BLADDER
```

ANIMAL 3387D23 21-FEB-90 STUDY DAY 701

TYPE OF DEATH: FOUND DEAD

```
HEART
    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3387D23 (CONTINUED)

```
                    GROSS:        MASS
                                      30X30X15MM, TAN AND BROWN, RIGHT MEDIAN
                                      LOBE
                     MICRO↑  P    #B HEPATOCELLULAR ADENOMA
                                      THE LARGE CYST IS ASSOCIATED WITH THE
                                      MASS
LIVER
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      ALL LOBES MOTTLED TAN AND BROWN
                     MICRO↑((3)) FATTY CHANGE
                    MICRO:  (4)  CYSTS
                           ((3)) CHOLANGIOFIBROSIS
                           ((2)) BILIARY HYPERPLASIA
PANCREAS
                    MICRO: ((2)) FAT INFILTRATION
JEJUNUM
                    GROSS:        POSTMORTEM CHANGE
ILEUM
                    GROSS:        POSTMORTEM CHANGE
PITUITARY
                    GROSS:        NODULE
                                      2X2X2MM, TAN
                     MICRO↑  P    #B ADENOMA
THYROID GL
                    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
PARATHYROID GL
                    MICRO:   3   HYPERPLASIA
ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MULTIPLE TAN FOCI, BILATERAL
                     MICRO↑((4)) CORTICAL CELL VACUOLIZATION
                    MICRO: ((P)) THROMBOSIS
                                      THREE CORTICAL VESSELS
SKIN
                    GROSS:        ABSCESS
                                      5X5X3MM, THICK GREEN MATERIAL FILLED;
                                      LEFT
                                      SIDE OF LOWER JAW
                     MICRO↑ (4)  ABSCESS
PAWS/FEET
                    GROSS:        ULCERATED
                                      4X3MM, RED; LEFT HIND FOOT
                     MICRO↑  4   ULCERATION
                    MICRO:  (P)  EPIDERMAL INCLUSION CYST
                            (3)  HYPERKERATOSIS
                            (3)  OSSEUS METAPLASIA
                             4   FIBROSIS
THYMIC REGION
                    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
                    MICRO: ((3)) MYOFIBER ATROPHY
TESTES
                    GROSS:        SIZE DECREASE
                                      1/4 OF NORMAL, BILATERAL
                     MICRO↑((4)) SEMINIFEROUS TUBULE ATROPHY
                    MICRO: ((2)) ARTERITIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3387D23 (CONTINUED)

```
                    (2)  MINERALIZATION
SEMINAL VESICLE
    MICRO: ((4)) SEMINAL VESICULITIS
PROSTATE
    MICRO: ((4)) PROSTATITIS
                 3   EDEMA
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
                 (2)  ADENITIS, SUBMUCOSAL GLANDS
LUNGS
    MICRO:   4   CONGESTION
             (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO:   4   TUBULAR PROTEINOSIS
            ((2)) NEPHRITIS, INTERSTITIAL
            ((4)) FIBROSIS, INTERSTITIAL
            ((3)) CYST(S)
URINARY BLADDER
    MICRO:   3   CYSTITIS
CAUSE OF DEATH
    MICRO:   P   PROSTATITIS/SEPTICEMIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    STOMACH          DUODENUM         JEJUNUM
    ILEUM            COLON            SPLEEN
    LYMPH ND, S-MAN  LYMPH ND, MES    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    EPIDIDYMIDES
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    CECUM            RECTUM
```

ANIMAL 3356D24 3-JAN-90 STUDY DAY 652

TYPE OF DEATH: FOUND DEAD

```
ADIPOSE TISSUE
    GROSS:       NODULE
                     MULTIPLE 2X2XXMM TAN NODULES; NEAR
                     EPIDIDYMIS, BILATERAL
     MICRO+   P   #M MESOTHELIOMA
STOMACH
    MICRO: ((2)) GLAND ECTASIA
PITUITARY
    MICRO:   P   #B ADENOMA
THYROID GL
    GROSS:       SIZE INCREASE
                     LEFT, 2X NORMAL
     MICRO+((3)) FOLLICULAR CYST
THYROID GL
    GROSS:       SIZE DECREASE
                     RIGHT, 3/4 OF NORMAL
THYROID GL
    GROSS:       COLOR CHANGE, DIFFUSE
                     RIGHT, WHITE
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
            (3)  C CELL HYPERPLASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3356D24 (CONTINUED)

```
PARATHYROID GL
    MICRO:    3   HYPERPLASIA
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE TAN FOCI, BILATERAL
     MICRO+((2)) CORTICAL CELL HYPERTROPHY
MAMMARY GL
    MICRO: ((2)) HYPERSECRETION
LYMPH ND, S-MAN
    MICRO: ((3)) PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:    4   INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:    2   CORTICAL HYPOPLASIA
SKELETAL MUSCLE
    GROSS:        ATROPHY
                      HIND LEGS, BILATERAL
     MICRO+   4   MYOFIBER ATROPHY
TESTES
    MICRO: ((4)) ARTERITIS
           ((2)) SEMINIFEROUS TUBULE ATROPHY
EPIDIDYMIDES
    MICRO:    P   #M MESOTHELIOMA
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      ALL LOBES DARK RED
     MICRO+   4   CONGESTION
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    GROSS:        HYDRONEPHROSIS
                      MILD, BILATERAL
     MICRO+((3)) HYDRONEPHROSIS
KIDNEYS
    GROSS:        CYST
                      MULTIPLE 2X2X2MM CLEAR FLUID FILLED,
                      MEDULLA; BILATERAL
     MICRO+   4   TUBULAR PROTEINOSIS
KIDNEYS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MOTTLED TAN AND BROWN, BILATERAL
     MICRO+((3)) FIBROSIS, INTERSTITIAL
    MICRO:    4   TUBULAR ATROPHY
           ((3)) NEPHRITIS, INTERSTITIAL
           ((3)) GLOMERULOSCLEROSIS
            (2)  MINERALIZATION
                      RIGHT PELVIC AREA
CAUSE OF DEATH
    MICRO:    P   CHRONIC RENAL DISEASE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART           AORTA           SALIVARY GL
    ESOPHAGUS       LIVER           PANCREAS
    DUODENUM        JEJUNUM         ILEUM
    CECUM           COLON           RECTUM
    SKIN            SPLEEN          BONE, FEMUR
    BONE MARROW     BRAIN           SPINAL CORD
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3356D24 (CONTINUED)

NERVE, SCIATIC	EYE	SEMINAL VESICLE
PROSTATE	TRACHEA	URINARY BLADDER

ANIMAL 3348D25 22-DEC-89 STUDY DAY 640
TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:        EMACIATION
VASCULATURE
    GROSS:        CONGESTED
                      RENAL ARTERIES, BILATERAL
     MICRO↑  4    CONGESTION
SALIVARY GL
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL
STOMACH
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      BLACK FOCAL AREAS, GLANDULAR PORTION
     MICRO↑ (4)   ULCER
                      GLANDULAR STOMACH
    MICRO:   3    EDEMA
                      SUBMUCOSAL
LIVER
    MICRO: ((2)) CHOLANGIOFIBROSIS
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
DUODENUM
    GROSS:        GASEOUS
                      JEJUNUM, ILEUM, CECUM AND COLON ALSO
CECUM
    GROSS:        CONTENTS ABNORMAL
                      YELLOW-GREEN FLUID MATERIAL FILLED
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
PITUITARY
    GROSS:        NODULE
                      1X1 MM
     MICRO↑  P    #8 ADENOMA
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    MICRO: ((2)) CORTICAL CELL VACUOLIZATION
            (3)  MEDULLARY CELL HYPERPLASIA
SKIN
    GROSS:        ALOPECIA
                      UROGENITAL REGION
SKIN
    GROSS:        MASS
                      4X7X3 MM, RIGHT SIDE, CERVICAL REGION,
                      CRUSTED
     MICRO↑ (P)   #B PAPILLOMA
PAWS/FEET
    GROSS:        ULCERATED
                      15X13X2 MM-LEFT / 9X7X1 MM-RIGHT, HIND
                      FEET
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See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3348D25 (CONTINUED)

```
                    MICRO+ (5)  ULCERATION
                   MICRO:  (2)  OSSEUS METAPLASIA
                            4   FIBROSIS
                           (4)  ABSCESS
SPLEEN
    GROSS:                      SIZE DECREASE
                                    1/2 OF NORMAL
LYMPH ND, S-MAN
    MICRO:   2                  PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2))                HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:                      SIZE INCREASE
                                    SUBLUMBAR, 2X NORMAL, LEFT
                    MICRO+  2   LYMPHOID HYPERPLASIA
THYMIC REGION
    MICRO:   4                  INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4                  HYPERPLASIA
BRAIN
    GROSS:                      HEMORRHAGE
                                    POSTERIOR MENINGEAL FOSSA
                    MICRO+ (2)  HEMORRHAGE
                                    MENINGEAL
TESTES
    GROSS:                      SIZE DECREASE
                                    1/2 OF NORMAL, BILATERAL
                    MICRO+((4)) SEMINIFEROUS TUBULE ATROPHY
TESTES
    GROSS:                      CONSISTENCY CHANGE
                                    SOFT, BILATERAL
SEMINAL VESICLE
    GROSS:                      SIZE DECREASE
                                    1/2 OF NORMAL, BILATERAL
                    MICRO+  3   ATROPHY
TRACHEA
    MICRO: ((2))                SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:                      COLOR CHANGE, DIFFUSE
                                    BRIGHT RED, ALL LOBES
                    MICRO+  4   CONGESTION
                   MICRO:  (1)  HEMORRHAGE
KIDNEYS
    MICRO: ((2))                TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:   P                  PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART               AORTA               SALIVARY GL
    ESOPHAGUS           PANCREAS            DUODENUM
    COLON               RECTUM              PARATHYROID GL
    SPLEEN              BONE, STERNUM       BONE, FEMUR
    SKELETAL MUSCLE     SPINAL CORD         NERVE, SCIATIC
    EYE                 EPIDIDYMIDES        PROSTATE
    URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    JEJUNUM             ILEUM               CECUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3455D26 1-FEB-90 STUDY DAY 681
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
                      MARKED
HEART
    GROSS:        NODULE
                      RIGHT ATRIUM, 2X2X2MM, WHITE
     MICRO↑((3)) MYXOMATOUS DEGENERATION OF VALVES
    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
           ((3)) MINERALIZATION
SALIVARY GL
    GROSS:        SIZE INCREASE
                      3X NORMAL
ORAL/PHARYNGEAL
    GROSS:        SWOLLEN
                      LOWER JAW
ORAL/PHARYNGEAL
    GROSS:        MASS
                      LOWER JAW AND EXTENDING INTO THE UPPER
                      JAW
                      20X15X10MM, YELLOW MATERIAL AT CENTER
     MICRO↑   P   #M UNDIFFERENTIATED SARCOMA
                      ORIGINATING IN THE SUBCUTIS
                      ASSOCIATED WITH EXTENSIVE ABSCESS
                      FORMATION AND NECROSIS
                      AS WELL AS NEW BONE FORMATION
STOMACH
    MICRO: ((2)) MINERALIZATION
           ((2)) GLAND ECTASIA
            (1)  LYMPHOID INFILTRATES
CECUM
    MICRO:  (3)  ULCERATION
                      SUPERFICIAL
            (4)  TYPHLITIS
ANUS
    GROSS:        DISCHARGE
                      GREEN JELLY-LIKE SUBSTANCE
THYROID GL
    MICRO:   P   THYROGLOSAL DUCT CYST
ADRENAL GL
    GROSS:        SIZE INCREASE
                      (1) 1.5X NORMAL
     MICRO↑   P   #B PHEOCHROMOCYTOMA
    MICRO: ((3)) CORTICAL CELL VACUOLIZATION
SUBCUTIS
    GROSS:        MASS
                      20X15X5MM, MID-ABDOMEN, SOFT
     MICRO↑   P   #M UNDIFFERENTIATED SARCOMA
                      LESION MAY HAVE BEEN A LYMPH NODE
    MICRO:  (5)  ABSCESS
SPLEEN
    MICRO:   3   HEMOSIDEROSIS
LYMPH ND, S-MAN
    GROSS:        SIZE INCREASE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3455D26 (CONTINUED)

```
                                        2-3X NORMAL
     MICRO+((P)) #M UNDIFFERENTIATED SARCOMA
                                        METASTATIC
LYMPH ND, S-MAN
    GROSS:       COLOR CHANGE, DIFFUSE
                                        RED
     MICRO+ (4)  ABSCESS
                                        ASSOCIATED WITH THE NECROTIC TUMOR
    MICRO:   4   LYMPHOID HYPERPLASIA
LYMPH ND, MES
    MICRO: ((2)) HEMOSIDEROSIS
             3   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:       CRUST
                                        RED, BILATERAL
TESTES
    GROSS:       SIZE DECREASE
                                        LEFT, 1/2 NORMAL
     MICRO+  2   SEMINIFEROUS TUBULE ATROPHY
                                        UNILATERAL
    MICRO:  (3)  @PN INTERSTITIAL CELL HYPERPLASIA
EPIDIDYMIDES
    MICRO: ((4)) VACUOLATED EPITHELIUM
                                        UNILATERAL
SEMINAL VESICLE
    GROSS:       SIZE DECREASE
                                        1/2 OF NORMAL, BILATERAL
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                        DARK RED MOTTLED, ALL LOBES
     MICRO+  3   CONGESTION
    MICRO: ((3)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:       GRANULAR
                                        BILATERAL
     MICRO+  5   TUBULAR PROTEINOSIS
    MICRO: ((3)) MINERALIZATION
           ((4)) CYST(S)
           ((2)) NEPHRITIS, INTERSTITIAL
             4   FIBROSIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   CHRONIC RENAL DISEASE
             P   UNDIFFERENTIATED SARCOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    LIVER            PANCREAS         DUODENUM
    JEJUNUM          ILEUM            COLON
    RECTUM           ANUS             PITUITARY
    PARATHYROID GL   SKIN             BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    BRAIN            NERVE, SCIATIC   EYE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3455D26 (CONTINUED)

SEMINAL VESICLE TRACHEA URINARY BLADDER

ANIMAL 3590D27 31-MAY-89 STUDY DAY 435
TYPE OF DEATH: FOUND DEAD

STOMACH
GROSS: ULCERATED
NON-GLANDULAR PORTION, 1X1 MM TO 3X3 MM
MICRO↑ (2) ULCER
STOMACH
GROSS: THICKER THAN NORMAL
1 CM AREA, ASSOCIATED WITH ULCERS
MICRO↑ 5 EDEMA
ALL LESIONS INVOLVE THE NONGLANDULAR STOMACH
STOMACH
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
ECCHYMOSIS, SAME AREA AS THICKENING
MICRO↑((4)) HEMORRHAGE
MICRO: (4) GASTRITIS
3 MUCOSAL HYPERPLASIA
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MOTTLED, DARK RED AND TAN, ALL LOBES
MICRO↑((3)) FATTY CHANGE
MICRO: (1) BILIARY HYPERPLASIA
JEJUNUM
GROSS: POSTMORTEM CHANGE
ILEUM
GROSS: POSTMORTEM CHANGE
CECUM
GROSS: POSTMORTEM CHANGE
PITUITARY
GROSS: MASS
8X7X5 MM
MICRO↑ P #M CARCINOMA
THYROID GL
MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
SKIN
GROSS: STAINED
YELLOW, UROGENITAL REGION
EARS
GROSS: COLOR CHANGE, DIFFUSE
RED, BILATERAL
EARS
GROSS: THICKER THAN NORMAL
BILATERAL
MICRO↑ (3) AURICULAR CHONDROPATHY
LYMPH ND, MES
MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
BRAIN
MICRO: 3 HYDROCEPHALUS
4 COMPRESSION

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3590D27 (CONTINUED)

```
                                        BOTH LESIONS DUE TO PITUITARY TUMOR
EPIDIDYMIDES
    MICRO:  (1)  LYMPHOID INFILTRATES
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, ALL LOBES
     MICRO+  4   CONGESTION
    MICRO:  (3)  HEMORRHAGE
KIDNEYS
    MICRO: ((2)) PYELITIS
                     RIGHT IS MORE SEVERE
            (3)  MINERALIZATION
                     LEFT RENAL PELVIS EPITHELIUM
          ((2)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   PITUITARY CARCINOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    ADRENAL GL       SKIN             SPLEEN
    LYMPH ND, S-MAN  BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  SPINAL CORD
    NERVE, SCIATIC   EYE              TESTES
    SEMINAL VESICLE  TRACHEA
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    URINARY BLADDER
```

ANIMAL 3390D28 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	15.683	2.337
KIDNEYS	4.276	0.637
HEART	2.251	0.335
SPLEEN	1.881	0.280
BRAIN	2.314	0.345
ADRENAL GL	0.101	0.015
TESTES	2.872	0.428
TERMINAL BODY WT.	671.0	

```
ADIPOSE TISSUE
    GROSS:       NODULE
                     NECROTIC FAT, TESTICULAR FAT, RIGHT,
                     5X5X3MM,
                     LEFT 10X5X3MM
     MICRO+ (2)  STEATITIS
ADIPOSE TISSUE
    GROSS:       CYST
                     RIGHT SIDE, TESTICULAR FAT, 10X10X5MM,
                     CLEAR
    MICRO:  (4)  HEMORRHAGE
            (3)  FIBROSIS
HEART
    MICRO:  (2)  MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    GROSS:       CONTENTS ABNORMAL
                     RED-BROWN MATERIAL
LIVER
    GROSS:       COLOR CHANGE, DIFFUSE
                     PALE, ALL LOBES
    MICRO: ((1)) BILIARY HYPERPLASIA
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3390D28 (CONTINUED)

```
                    ((1)) CHOLANGITIS
PANCREAS
    MICRO:    P   #B ISLET CELL ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      2X2MM DARK RED FOCUS
THYROID GL
    MICRO:   (3)  FOLLICULAR CYST
ADRENAL GL
    MICRO:   (P)  #B ADENOMA
            ((3)) CORTICAL CELL VACUOLIZATION
            ((2)) CORTICAL CELL HYPERTROPHY
PAWS/FEET
    GROSS:        SWOLLEN
                      HIND FEET, BILATERAL
     MICRO+   5   FIBROSIS
PAWS/FEET
    GROSS:        ULCERATED
                      25X20MM, LEFT,10X10MM, RIGHT
     MICRO+   5   ULCERATION
    MICRO:   (5)  OSSEUS METAPLASIA
SPLEEN
    GROSS:        SIZE INCREASE
                      2-3X NORMAL
     MICRO+   3   EXTRAMEDULLARY HEMATOPOIESIS
SPLEEN
    GROSS:        DIMPLED/PITTED
                      ENTIRE SURFACE
LYMPH ND, PANC
    MICRO: ((3)) MINERALIZATION
LYMPH ND, OTHER
    MICRO:    4   LYMPHATIC ECTASIA, CYSTIC
                      THIS CORRELATES WITH THE CYST REPORTED
                      FOR ADIPOSE TISSUE
              4   PLASMACYTOSIS
              4   LYMPHOID HYPERPLASIA
THYMIC REGION
    MICRO:    4   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:    4   HYPERPLASIA
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
TESTES
    GROSS:        CONSISTENCY CHANGE
                      SOFT, BILATERAL
PROSTATE
    MICRO:   (2)  PROSTATITIS
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR PROTEINOSIS
           ((2)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    STOMACH          DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PITUITARY        PARATHYROID GL
    SKIN             LYMPH ND, S-MAN  LYMPH ND, MES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3390D28 (CONTINUED)

BONE, STERNUM	BONE, FEMUR	SKELETAL MUSCLE
BRAIN	NERVE, SCIATIC	EYE
TESTES	EPIDIDYMIDES	SEMINAL VESICLE
TRACHEA	LUNGS	URINARY BLADDER

ANIMAL 3597D29 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	17.841	3.280
KIDNEYS	6.153	1.131
HEART	1.707	0.314
SPLEEN	1.214	0.223
BRAIN	1.951	0.359
ADRENAL GL	0.080	0.015
TESTES	3.198	0.588
TERMINAL BODY WT.	544.0	

HEART
MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
((1)) MINERALIZATION
STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: (1) CHOLANGITIS
PANCREAS
GROSS: NODULE
2X2X2MM
PITUITARY
GROSS: NODULE
2X2X1MM, TAN
MICRO↑ (3) FOCI OF CELL ALTERATION
ADRENAL GL
MICRO: ((3)) CORTICAL CELL VACUOLIZATION
LYMPH ND, S-MAN
GROSS: SIZE INCREASE
2X'S
MICRO↑ 4 PLASMACYTOSIS
MICRO: 3 LYMPHOID HYPERPLASIA
LYMPH ND, MED
MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, PANC
MICRO: 3 SINUS ERYTHROCYTOSIS
THIS TISSUE WAS MISTAKEN FOR A PANCREATIC NODULE GROSSLY
((3)) HEMOSIDEROSIS
3 LYMPHATIC ECTASIA
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
BONE, FEMUR
MICRO: ((3)) MYELOFIBROSIS
EPIPHYSEAL REGION
TESTES
MICRO: ((3)) ARTERITIS
((2)) SEMINIFEROUS TUBULE ATROPHY
((2)) MINERALIZATION
PROSTATE
MICRO: ((2)) EPITHELIAL HYPERPLASIA
LUNGS
MICRO: (3) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
GROSS: DIMPLED/PITTED
BOTH
MICRO↑ 4 TUBULAR PROTEINOSIS
KIDNEYS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3597D29 (CONTINUED)

```
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      BOTH, MOTTLED GREEN AND TAN
                     MICRO↑  3    FIBROSIS, INTERSTITIAL
                KIDNEYS
                    GROSS:        CYST
                                      LEFT, FEW 1MM
                     MICRO↑((3)) CYST(S)
                    MICRO: ((3)) NEPHRITIS, INTERSTITIAL
                           ((4)) TUBULAR ATROPHY
                           ((4)) TUBULAR BASOPHILIA
                           ((3)) GLOMERULOSCLEROSIS
                           ((3)) TRANSITIONAL CELL HYPERPLASIA
                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    AORTA             SALIVARY GL       ESOPHAGUS
                    PANCREAS          DUODENUM          JEJUNUM
                    ILEUM             CECUM             COLON
                    RECTUM            THYROID GL        PARATHYROID GL
                    SKIN              SPLEEN            LYMPH ND, MES
                    BONE, STERNUM     BONE MARROW       SKELETAL MUSCLE
                    BRAIN             SPINAL CORD       NERVE, SCIATIC
                    EYE               EPIDIDYMIDES      SEMINAL VESICLE
                    TRACHEA           URINARY BLADDER
```

ANIMAL 3640D30 12-DEC-89 STUDY DAY 630

TYPE OF DEATH: SACRIFICED MORIBUND

```
                TOTAL BODY
                    GROSS:        EMACIATION
                STOMACH
                    MICRO:   4    EDEMA
                                      DIFFUSE
                             (2)  ULCER
                                      NONGLANDULAR PORTION
                LIVER
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      3X3MM CREAM FOCAL AREA RIGHT MEDIAN
                                      LOBE NEAR HILUS
                     MICRO↑  P    #B HEPATOCELLULAR ADENOMA
                LIVER
                    GROSS:        ANOMALY
                                      4X5X 2MM RIGHT MEDIAN LOBE NEAR HILUS
                                      WITH FOCAL AREA
                     MICRO↑  P    ANOMALOUS LOBULATION
                PITUITARY
                    GROSS:        MASS
                                      DARK RED BILOBE, 12X8X4MM
                     MICRO↑  P    #B ADENOMA
                                      VERY LARGE
                THYROID GL
                    MICRO: ((4)) C CELL HYPERPLASIA
                ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      BILATERAL PUNCTATE CREAM FOCAL AREAS
                     MICRO↑((1)) CORTICAL CELL HYPERTROPHY
                NARES/NOSE
                    GROSS:        CRUST
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3640D30 (CONTINUED)

```
                                        RED, PERINASAL REGION
MAMMARY GL
    MICRO: ((4)) GALACTOCELE
PAWS/FEET
    GROSS:       ULCERATED
                     RIGHT HIND PAW, DARK TAN 15X15MM
     MICRO+  4   ULCERATION
    MICRO: ((3)) HYPERKERATOSIS
           ((3)) EPIDERMAL HYPERPLASIA
            (3)  OSSEUS METAPLASIA
             4   FIBROSIS
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     ABOVE PITUITARY MASS
     MICRO+  4   COMPRESSION
    MICRO:   2   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     BILATERAL, RED, PERIOCULAR
TESTES
    GROSS:       SIZE DECREASE
                     1/2 OF NORMAL, BILATERAL
     MICRO+  3   SEMINIFEROUS TUBULE ATROPHY
                     BILATERAL
EPIDIDYMIDES
    MICRO:   3   FIBROSIS
SEMINAL VESICLE
    GROSS:       SIZE DECREASE
                     1/2 OF NORMAL, BILATERAL
     MICRO+  3   ATROPHY
PROSTATE
    MICRO:  (4)  PROSTATITIS
           ((3)) FIBROSIS
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
           ((3)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P   PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             NARES/NOSE       SPLEEN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SKELETAL MUSCLE  SPINAL CORD      NERVE, SCIATIC
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3640D30 (CONTINUED)

EYE NASAL CAVITY TRACHEA
URINARY BLADDER

ANIMAL 3384D31 27-MAR-90 STUDY DAY 735
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	15.614	2.401
KIDNEYS	4.311	0.663
HEART	1.771	0.272
SPLEEN	1.010	0.155
BRAIN	2.061	0.317
ADRENAL GL	0.947	0.146
TESTES	3.340	0.514
TERMINAL BODY WT.	650.4	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: MASS
16X10X10MM, RIGHT MEDIAN LOBE
MICRO+ P #B HEPATOCELLULAR ADENOMA
LARGE MASS
MICRO: ((2)) BILIARY HYPERPLASIA
(2) CHOLANGIOFIBROSIS
((1)) MONONUCLEAR CELL INFILTRATE(S)
((1)) CHOLANGITIS
PANCREAS
MICRO: ((3)) PANCREATITIS
((2)) FAT INFILTRATION
CECUM
MICRO: P NEMATODIASIS
PITUITARY
MICRO: ((4)) CYST(S)
THYROID GL
MICRO: (P) THYROGLOSAL DUCT CYST
((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
GROSS: SIZE INCREASE
12X10X10MM, LEFT
MICRO+ P #B PHEOCHROMOCYTOMA
VERY LARGE
HAS DESTROYED MOST OF THE GLAND
PAWS/FEET
GROSS: ULCERATED
RIGHT FOOT
MICRO+ 5 ULCERATION
MICRO: 4 FIBROSIS
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MED
MICRO: ((2)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
LYMPH ND, REN
GROSS: SIZE INCREASE
2X'S
LYMPH ND, OTHER
GROSS: SIZE INCREASE
LUMBAR, 2X'S
MICRO+ 4 PLASMACYTOSIS
MICRO: 4 LYMPHOID HYPERPLASIA
(2) LYMPHATIC ECTASIA, CYSTIC
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3384D31 (CONTINUED)

```
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
SEMINAL VESICLE
    MICRO:  (4)  GRANULOMA
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((2)) TUBULAR BASOPHILIA
           ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
    ILEUM            COLON            RECTUM
    PARATHYROID GL   SKIN             SPLEEN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SKELETAL MUSCLE  BRAIN            NERVE, SCIATIC
    EYE              TESTES           EPIDIDYMIDES
    PROSTATE         URINARY BLADDER
```

ANIMAL 3328D32 13-OCT-89 STUDY DAY 570

TYPE OF DEATH: FOUND DEAD

```
LIVER
    GROSS:       POSTMORTEM CHANGE
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
DUODENUM
    GROSS:       POSTMORTEM CHANGE
DUODENUM
    GROSS:       GASEOUS
CECUM
    GROSS:       DILATATION/DISTENTION
                     4X NORMAL
COLON
    GROSS:       MASS
                     15X20X5MM, SOFT YELLOW MIDDLE
ADRENAL GL
    MICRO: ((1)) CORTICAL CELL VACUOLIZATION
            (3)  CORTICAL CELL HYPERTROPHY
            (3)  MEDULLARY CELL HYPERPLASIA
PAWS/FEET
    GROSS:       ULCERATED
                     RIGHT FOOT, 20X25X2MM
     MICRO+  5   ULCERATION
    MICRO: ((3)) OSSEUS METAPLASIA
             4   FIBROSIS
LYMPH ND, MED
    MICRO:   4   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO:   4   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
EYE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3328D32 (CONTINUED)

```
    GROSS:        CRUST
                      RIGHT PERIOCULAR AREA
    MICRO:    3   MINERALIZATION
                      CORNEA, UNILATERAL
TESTES
    MICRO:   (3)  MINERALIZATION
                      ARTERIAL MINERALIZATION
                      ONLY ONE TESTES IS PRESENT
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
     MICRO+   5   CONGESTION
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      DARK RED FOCI
     MICRO+((3)) HEMORRHAGE
    MICRO:   (3)  PNEUMONITIS, INTERSTITIAL
                      THE TISSUE IS AUTOLYSED AND DIFFICULT
                      TO EVALUATE
KIDNEYS
    GROSS:        POSTMORTEM CHANGE
    MICRO: ((2)) TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:    P   NOT DETERMINED
                      THE COLON MASS DESCRIBED GROSSLY MAY
                      HAVE BEEN THE CAUSE
                      OF DEATH, BUT THE DIAGNOSIS COULD NOT
                      BE CONFIRMED DUE
                      TO SEVERE AUTOLYSIS OF THE TISSUES.
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         PANCREAS          THYROID GL
    PARATHYROID GL    SKIN              SPLEEN
    BONE, STERNUM     BONE, FEMUR       SKELETAL MUSCLE
    BRAIN             SPINAL CORD       NERVE, SCIATIC
    EPIDIDYMIDES      SEMINAL VESICLE   PROSTATE
    TRACHEA           URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    STOMACH           PITUITARY         LYMPH ND, S-MAN
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    DUODENUM          JEJUNUM           ILEUM
    CECUM             COLON             RECTUM
```

ANIMAL 3639D33 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.221	2.446
KIDNEYS	3.474	0.695
HEART	1.456	0.291
SPLEEN	0.779	0.156
BRAIN	2.195	0.439
ADRENAL GL	0.055	0.011
TESTES	3.578	0.716
TERMINAL BODY WT.	499.7	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PANCREAS
    MICRO:   (1)  LYMPHOID INFILTRATES
COLON
    MICRO:    P   NEMATODIASIS
PITUITARY
    MICRO:   (P)  #B ADENOMA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3639D33 (CONTINUED)

THYROID GL
MICRO: ((3)) FOLLICULAR CYST
ADRENAL GL
MICRO: ((1)) CORTICAL CELL HYPERTROPHY
SKIN
MICRO: ((3)) EPIDERMITIS
EYELIDS
LYMPH ND, S-MAN
MICRO: 5 LYMPHOID HYPERPLASIA
4 PLASMACYTOSIS
LYMPH ND, MES
MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
EYE
GROSS: CRUST
BILATERAL, PERIOCULAR
LACRYMAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL MULTIPLE WHITE FOCI
MICRO+((3)) ATROPHY
MICRO: ((2)) DACRYOADENITIS
LUNGS
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
MICRO: ((2)) NEPHRITIS, INTERSTITIAL
((3)) TUBULAR PROTEINOSIS
((3)) TUBULAR BASOPHILIA
((2)) FIBROSIS, INTERSTITIAL
(2) HEMORRHAGE
RIGHT RENAL PELVIS

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	DUODENUM	JEJUNUM
ILEUM	CECUM	RECTUM
PARATHYROID GL	SPLEEN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	TESTES	EPIDIDYMIDES
SEMINAL VESICLE	PROSTATE	TRACHEA
URINARY BLADDER		

ANIMAL 3485D34 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	19.713	2.707
KIDNEYS	4.865	0.668
HEART	2.370	0.325
SPLEEN	2.707	0.372
BRAIN	2.207	0.303
ADRENAL GL	0.067	0.009
TESTES	3.375	0.463
TERMINAL BODY WT.	728.2	

HEART
GROSS: SIZE INCREASE
SLIGHT
HEART
GROSS: CONSISTENCY CHANGE
SOFT
MICRO: (3) FIBROSIS
STOMACH
MICRO: ((2)) GLAND ECTASIA
LIVER
GROSS: COLOR CHANGE, DIFFUSE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3485D34 (CONTINUED)

```
                                    VERY PALE
    MICRO: ((1)) BILIARY HYPERPLASIA
PITUITARY
    GROSS:       SIZE INCREASE
                     2X'S
     MICRO+((4)) CYST(S)
                     SEVERAL LARGE CYSTS
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     FEW DARK FOCI SEEN
THYROID GL
    MICRO: ((3)) FOLLICULAR CYST
            (P)  #B C CELL ADENOMA
          ((1)) C CELL HYPERPLASIA
ADRENAL GL
    GROSS:       SIZE INCREASE
                     LEFT, SLIGHT
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO+((2)) CORTICAL CELL HYPERTROPHY
PAWS/FEET
    GROSS:       SWOLLEN
                     LEFT FOOT
     MICRO+  5   FIBROSIS
PAWS/FEET
    GROSS:       ULCERATED
                     LEFT FOOT
                     RIGHT FOOT, SLIGHT
     MICRO+  4   ULCERATION
    MICRO: ((4)) OSSEUS METAPLASIA
SPLEEN
    GROSS:       SIZE INCREASE
                     60X15X10MM
     MICRO+  4   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
    MICRO: ((3)) PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     LUMBAR, 2X'S
     MICRO+  4   PLASMACYTOSIS
    MICRO: ((4)) LYMPHATIC ECTASIA, CYSTIC
                     LUMBAR NODES
                     LESIONS DUE TO FOOT ULCERS
              4   LYMPHOID HYPERPLASIA
          ((3)) FIBROSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
SEMINAL VESICLE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3485D34 (CONTINUED)

```
    GROSS:       CONSISTENCY CHANGE
                     BOTH SIDES, JELLY LIKE
PROSTATE
    GROSS:       SIZE INCREASE
                     2X'S
     MICRO↑  5   EDEMA
    MICRO:   4   PROSTATITIS
            ((2)) EPITHELIAL HYPERPLASIA
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR PROTEINOSIS
           ((2)) TUBULAR BASOPHILIA
URINARY BLADDER
    MICRO:   3   EDEMA
                     DUE TO PROSTATITIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    BONE, STERNUM    BONE, FEMUR      SKELETAL MUSCLE
    BRAIN            NERVE, SCIATIC   EYE
    TESTES           EPIDIDYMIDES     SEMINAL VESICLE
    LUNGS
```

ANIMAL 3530D35 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	15.168	2.028
KIDNEYS	4.948	0.662
HEART	1.916	0.256
SPLEEN	1.339	0.179
BRAIN	2.182	0.292
ADRENAL GL	0.090	0.012
TESTES	3.126	0.418
TERMINAL BODY WT.	747.9	

```
LIVER
    MICRO: ((1)) CHOLANGITIS
            (P)  #B HEPATOCELLULAR ADENOMA
                     SMALL NODULE
           ((1)) BILIARY HYPERPLASIA
PANCREAS
    MICRO: ((1)) PIGMENT DEPOSITS
PITUITARY
    GROSS:       NODULE
                     2X2X2MM, TAN
     MICRO↑  P   #B ADENOMA
THYROID GL
    MICRO: ((1)) C CELL HYPERPLASIA
            (4)  FOLLICULAR CYST
ADRENAL GL
    MICRO: ((3)) CORTICAL CELL VACUOLIZATION
           ((2)) CORTICAL CELL HYPERTROPHY
SKIN
    GROSS:       MASS
                     25X25X10MM, FIRM, SPHERICAL, WHITE
     MICRO↑  P   #B FIBROMA
                     VERY LARGE
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3530D35 (CONTINUED)

```
                                    3   LYMPHATIC ECTASIA
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    GROSS:       ATROPHY
                     HIND LEGS
                     BICEPS FEMORIS
     MICRO+((2)) MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR BASOPHILIA
           ((2)) TUBULAR ATROPHY
           ((2)) FIBROSIS, INTERSTITIAL
           ((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      BRAIN            NERVE, SCIATIC
    EYE              TESTES           EPIDIDYMIDES
    SEMINAL VESICLE  TRACHEA          URINARY BLADDER
```

ANIMAL 3314D36 17-JUL-89 STUDY DAY 482
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:       EMACIATION
PITUITARY
    GROSS:       SIZE INCREASE
                     10X6X6MM
     MICRO+  P   #B ADENOMA
                     LARGE
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
SKIN
    GROSS:       ALOPECIA
                     PARTIAL, UROGENITAL AREA
SKIN
    GROSS:       ABSCESS
                     5X4X4MM, THICK GREEN MATERIAL FILLED,
                     PREPUTIAL GLAND
MAMMARY GL
    MICRO:  (4)  GALACTOCELE
            (4)  ABSCESS
                     CORRELATES WITH FINDING LISTED UNDER
                     SKIN GROSSLY
SPLEEN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3314D36 (CONTINUED)

```
    MICRO:   3   HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO ENLARGED PITUITARY
     MICRO↑ (3)  COMPRESSION
    MICRO: ((3)) HYDROCEPHALUS
EYE
    MICRO: ((2)) MINERALIZATION
                     CORNEA, ONE EYE
KIDNEYS
    MICRO: ((4)) TUBULAR PROTEINOSIS
           ((4)) TUBULAR BASOPHILIA
           ((3)) TUBULAR ATROPHY
           ((1)) NEPHRITIS, INTERSTITIAL
           ((2)) FIBROSIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          LIVER
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           THYROID GL       PARATHYROID GL
    ADRENAL GL       SKIN             LYMPH ND, S-MAN
    THYMIC REGION    BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  SPINAL CORD
    NERVE, SCIATIC   TESTES           EPIDIDYMIDES
    SEMINAL VESICLE  PROSTATE         TRACHEA
    LUNGS            URINARY BLADDER
```

ANIMAL 3369D37 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	20.085	2.522
KIDNEYS	5.742	0.721
HEART	1.989	0.250
SPLEEN	2.409	0.302
BRAIN	2.296	0.288
ADRENAL GL	0.114	0.014
TESTES	3.962	0.497
TERMINAL BODY WT.	796.4	

```
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, DIFFUSE
                     PALE, ALL LOBES
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    MICRO:   P   #B ADENOMA
THYROID GL
    GROSS:       SIZE INCREASE
                     2-3X NORMAL, BILATERAL
     MICRO↑ (P)  #B ADENOMA
                     FOLLICULAR ADENOMA AND THE CYSTS ARE IN
                     THE OPPOSITE SIDE
    MICRO:  (5)  FOLLICULAR CYST
            (P)  #B C CELL ADENOMA
                     IN ONE GLAND
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     WHITE FOCI, BILATERAL
     MICRO↑((2)) CORTICAL CELL VACUOLIZATION
SKIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3369D37 (CONTINUED)

```
                                    GROSS:       ABSCESS
                                                     PREPUTIAL GLAND, GREEN MATERIAL
                                MAMMARY GL
                                    MICRO:   2   HYPERPLASIA
                                PAWS/FEET
                                    GROSS:       SWOLLEN
                                                     RIGHT HIND, 2-3X NORMAL
                                     MICRO↑((5)) FIBROSIS
                                PAWS/FEET
                                    GROSS:       ULCERATED
                                                     RIGHT, 30X20MM, LEFT, 10X10MM, HIND PAWS
                                     MICRO↑((5)) ULCERATION
                                    MICRO: ((4)) OSSEUS METAPLASIA
                                            (4)  ABSCESS
                                                     UNILATERAL
                                SPLEEN
                                    GROSS:       SIZE INCREASE
                                                     3-4X NORMAL
                                     MICRO↑  3   EXTRAMEDULLARY HEMATOPOIESIS
                                LYMPH ND, S-MAN
                                    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
                                             2   PLASMACYTOSIS
                                LYMPH ND, MES
                                    MICRO:   3   LYMPHATIC ECTASIA
                                           ((1)) HISTIOCYTIC AGGREGATES
                                LYMPH ND, OTHER
                                    GROSS:       SIZE INCREASE
                                                     POPLITEAL LYMPH NODES, 6X5X4MM,
                                                     BILATERAL
                                     MICRO↑((4)) LYMPHATIC ECTASIA, CYSTIC
                                                     POPLITEAL NODE
                                    MICRO:   4   LYMPHOID HYPERPLASIA
                                             3   PLASMACYTOSIS
                                THYMIC REGION
                                    MICRO:   5   INVOLUTIONAL ATROPHY
                                BONE, STERNUM
                                    MICRO:   3   CORTICAL HYPOPLASIA
                                BONE MARROW
                                    MICRO:   5   HYPERPLASIA
                                PROSTATE
                                    GROSS:       MASS
                                                     65X65X35MM, INVOLVES BLADDER AND SEMINAL
                                                     VESSICLES, CONTAINS RED FLUID
                                     MICRO↑  P   #M UNDIFFERENTIATED SARCOMA
                                                     METASTATIC FROM THE BLADDER
                                LUNGS
                                    MICRO: ((1)) PNEUMONITIS, INTERSTITIAL
                                KIDNEYS
                                    GROSS:       HYDRONEPHROSIS
                                                     LEFT, SEVERE, RIGHT, MODERATE
                                     MICRO↑  3   HYDRONEPHROSIS
                                KIDNEYS
                                    GROSS:       DIMPLED/PITTED
                                                     RIGHT, CORTICAL SURFACE
                                     MICRO↑  3   TUBULAR ATROPHY
                                    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3369D37 (CONTINUED)

((3)) TUBULAR BASOPHILIA
URINARY BLADDER
MICRO: P #M UNDIFFERENTIATED SARCOMA
MAY BE OF SMOOTH MUSCLE ORIGIN
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	PARATHYROID GL
SKIN	BONE, FEMUR	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	TESTES	EPIDIDYMIDES
SEMINAL VESICLE	TRACHEA	

ANIMAL 3296D38 21-OCT-89 STUDY DAY 578
TYPE OF DEATH: FOUND DEAD

SALIVARY GL
GROSS: COLOR CHANGE, DIFFUSE
RED
STOMACH
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
SCATTERED RED FOCAL AREAS
LIVER
GROSS: COLOR CHANGE, DIFFUSE
DARK RED, ALL LOBES
MICRO↑((4)) FATTY CHANGE
PITUITARY
GROSS: MASS
11X7X4 MM
MICRO↑ P #B ADENOMA
THE MASS IS LARGE AND HEMORRHAGIC
THYROID GL
GROSS: COLOR CHANGE, DIFFUSE
RED, BILATERAL
MICRO: (P) THYROGLOSAL DUCT CYST
SKIN
GROSS: STAINED
YELLOW AND RED, UROGENITAL REGION
MAMMARY GL
MICRO: ((3)) GALACTOCELE
PAWS/FEET
GROSS: NODULE
5X5X2 MM, LEFT HIND FOOT
MICRO↑ (P) EPIDERMAL INCLUSION CYST
LYMPH ND, S-MAN
GROSS: COLOR CHANGE, DIFFUSE
RED
MICRO↑ 3 PLASMACYTOSIS
LYMPH ND, MED
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
LYMPH ND, MES
MICRO: ((3)) GRANULOMATOUS LYMPHADENITIS
3 LYMPHOID HYPERPLASIA
THYMIC REGION

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3296D38 (CONTINUED)

```
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY MASS
     MICRO+  3   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     RED, PERIOCULAR TISSUE, BILATERAL
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MOTTLED DARK AND LIGHT RED, ALL LOBES
     MICRO+((3)) HEMORRHAGE
    MICRO:   4   CONGESTION
           ((1)) INTRAALVEOLAR CELLULAR DEBRIS
            (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    PARATHYROID GL   ADRENAL GL       SKIN
    SPLEEN           LYMPH ND, MED    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    SPINAL CORD      NERVE, SCIATIC   EYE
    TESTES           EPIDIDYMIDES     SEMINAL VESICLE
    PROSTATE         URINARY BLADDER
```

ANIMAL 3299D39 7-JAN-90 STUDY DAY 656

TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:       EMACIATION
AORTA
    MICRO: ((3)) MINERALIZATION
STOMACH
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     DARK RED 10X10MM FOCAL AREA GLANDULAR
                     PORTION
     MICRO+((4)) MINERALIZATION
STOMACH
    GROSS:       CONTENTS ABNORMAL
                     NO FOOD SUBSTANCE
LIVER
    GROSS:       POSTMORTEM CHANGE
LIVER
    GROSS:       MASS
                     CAUDATE LOBE, RED, 20X15X8MM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3299D39 (CONTINUED)

```
     MICRO↑  P   #M HEPATOCELLULAR CARCINOMA
THYROID GL
    MICRO:  (4)  FOLLICULAR CYST
PARATHYROID GL
    MICRO:   3   HYPERPLASIA
ADRENAL GL
    GROSS:       COLOR CHANGE, DIFFUSE
                     LEFT, TAN
    MICRO: ((1)) CORTICAL CELL VACUOLIZATION
MAMMARY GL
    MICRO: ((3)) PIGMENT ACCUMULATION
SPLEEN
    GROSS:       SIZE DECREASE
                     1/4 OF NORMAL
     MICRO↑  4   LYMPHOID DEPLETION
LYMPH ND, S-MAN
    MICRO:   2   LYMPHOID HYPERPLASIA
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO: ((3)) MYOFIBER ATROPHY
BRAIN
    GROSS:       POSTMORTEM CHANGE
EYE
    MICRO:  (2)  CATARACT
             4   HYPOPYON
                     BOTH LESIONS UNILATERAL
TESTES
    GROSS:       SIZE DECREASE
                     1/2 OF NORMAL
                     BILATERAL
SEMINAL VESICLE
    GROSS:       SIZE DECREASE
                     BILATERAL, 1/2 OF NORMAL
SEMINAL VESICLE
    GROSS:       POSTMORTEM CHANGE
PROSTATE
    MICRO: ((2)) PROSTATITIS
TRACHEA
    MICRO:  (3)  SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     ALL LOBES DARK RED
     MICRO↑  3   CONGESTION
    MICRO: ((2)) INTRAALVEOLAR CELLULAR DEBRIS
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     MILD RIGHT
     MICRO↑ (2)  HYDRONEPHROSIS
KIDNEYS
    GROSS:       CYST
                     5X6MM RIGHT, NEAR PELVIS,
KIDNEYS
    GROSS:       POSTMORTEM CHANGE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3299D39 (CONTINUED)

```
                                        BILATERAL
    MICRO:   4   FIBROSIS, INTERSTITIAL
           ((4)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
           ((3)) MINERALIZATION
CAUSE OF DEATH
    MICRO:   P   CHRONIC RENAL DISEASE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            SALIVARY GL      ESOPHAGUS
    PANCREAS         RECTUM           PITUITARY
    SKIN             BONE, STERNUM    BONE, FEMUR
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    TESTES           EPIDIDYMIDES
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            LYMPH ND, MES
    SEMINAL VESICLE  URINARY BLADDER
```

ANIMAL 3486D40 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.393	2.164
KIDNEYS	3.498	0.664
HEART	1.535	0.292
SPLEEN	0.970	0.184
BRAIN	2.163	0.411
ADRENAL GL	0.083	0.016
TESTES	3.039	0.577
TERMINAL BODY WT.	526.5	

```
ADIPOSE TISSUE
    GROSS:       CYST
                     SEVERAL, 5-10MM, FILLED WITH JELLY LIKE
                     MATERIAL
                     LUMBAR REGION
ORAL/PHARYNGEAL
    GROSS:       INCISORS, OVERGROWN
                     BOTTOMS, BOTH
LIVER
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     2X2MM DARK RED FOCUS
THYROID GL
    MICRO:   P   THYROGLOSAL DUCT CYST
           ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    MICRO:   P   #8 PHEOCHROMOCYTOMA
           ((2)) CORTICAL CELL HYPERTROPHY
            (2)  VASCULAR ECTASIA
MAMMARY GL
    MICRO: ((2)) PIGMENT ACCUMULATION
PAWS/FEET
    GROSS:       SWOLLEN
                     BOTH
                     FEET
     MICRO↑  4   FIBROSIS
PAWS/FEET
    GROSS:       ULCERATED
                     BOTH
                     FEET
     MICRO↑  5   ULCERATION
    MICRO: ((4)) OSSEUS METAPLASIA
LYMPH ND, S-MAN
    MICRO:   3   LYMPHOID HYPERPLASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3486D40 (CONTINUED)

```
                                  3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     SLIGHT, IN MAMMARY
     MICRO+((5)) PLASMACYTOSIS
                     INGUINAL NODE
    MICRO: ((4)) LYMPHATIC ECTASIA, CYSTIC
                     LUMBAR NODE
                     MISTAKEN GROSSLY FOR ADIPOSE TISSUE
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:   3   CORTICAL HYPOPLASIA
BONE MARROW
    MICRO:   4   HYPERPLASIA
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
TESTES
    GROSS:       CONSISTENCY CHANGE
                     BOTH, SOFT
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    ADIPOSE TISSUE   HEART            AORTA
    SALIVARY GL      ESOPHAGUS        STOMACH
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PITUITARY        PARATHYROID GL
    SKIN             SPLEEN           BONE, FEMUR
    SKELETAL MUSCLE  BRAIN            NERVE, SCIATIC
    EYE              TESTES           EPIDIDYMIDES
    SEMINAL VESICLE  URINARY BLADDER
```

ANIMAL 3570D41 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.636	2.177
KIDNEYS	3.785	0.775
HEART	1.668	0.341
SPLEEN	0.726	0.149
BRAIN	2.252	0.461
ADRENAL GL	0.067	0.014
TESTES	2.587	0.530
TERMINAL BODY WT.	488.5	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    MICRO:   P   #B ADENOMA
             (2) CYST(S)
THYROID GL
    MICRO:   P   THYROGLOSAL DUCT CYST
             (2) FOLLICULAR CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3570D41 (CONTINUED)

```
                                    BILATERAL, WHITE AND TAN FOCI
     MICRO+((2)) CORTICAL CELL HYPERTROPHY
    MICRO:  (3)  CORTICAL CELL VACUOLIZATION
LYMPH ND, S-MAN
    MICRO:   3   LYMPHOID HYPERPLASIA
             3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
EYE
    GROSS:       CRUST
                     PERIOCULAR, BILATERAL
     MICRO+ (3)  CONJUNCTIVITIS
    MICRO:  (3)  KERATITIS
           ((3)) CORNEAL VASCULARIZATION
                     UNILATERAL, ONE AREA OF KERATITIS WITH
                     VESSELS
TESTES
    GROSS:       SIZE DECREASE
                     LEFT, 1/2 OF NORMAL
     MICRO+  5   SEMINIFEROUS TUBULE ATROPHY
TESTES
    GROSS:       CONSISTENCY CHANGE
                     BILATERAL, SOFT
     MICRO+  4   EDEMA
    MICRO:  (P)  #8 INTERSTITIAL CELL ADENOMA
           ((2)) MINERALIZATION
EPIDIDYMIDES
    MICRO: ((1)) VACUOLATED EPITHELIUM
             4   ATROPHY
                     UNILATERAL
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
TRACHEA
    MICRO:  (2)  SUBMUCOSAL GLAND ECTASIA
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((2)) MINERALIZATION
                     RENAL PELVIS EPITHELIUM
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  BRAIN
    SPINAL CORD      NERVE, SCIATIC   SEMINAL VESICLE
    LUNGS            URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 3344D42 21-SEP-89 STUDY DAY 548
TYPE OF DEATH: SACRIFICED MORIBUND

TOTAL BODY

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3344D42 (CONTINUED)

```
    GROSS:        EMACIATION
TOTAL BODY
    GROSS:        UNKEMPT
STOMACH
    GROSS:        THICKER THAN NORMAL
                      ENTIRE STOMACH
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE RED FOCI DISSEMINATED OVER ALL
                      LOBES
     MICRO↑((4)) FATTY CHANGE
                      DIFFUSE PERIPORTAL LESION
PITUITARY
    GROSS:        SIZE INCREASE
                      10X6X5MM
     MICRO↑  P    #B ADENOMA
                      VERY LARGE AND HEMORRHAGIC
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK BROWN
     MICRO↑ (5)   VASCULAR ECTASIA
                      A LARGE DISTENDED ARTERY IS PRESENT IN
                      THE MASS
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
SKIN
    GROSS:        STAINED
                      URINE, UROGENITAL AREA
SKIN
    GROSS:        ALOPECIA
                      PARTIAL, UROGENITAL AREA
MAMMARY GL
    MICRO: ((2)) GALACTOCELE
PAWS/FEET
    GROSS:        ULCERATED
                      6X5X4MM, HIND FEET; BILATERAL
     MICRO↑  4    ULCERATION
    MICRO:   5    FIBROSIS
SPLEEN
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL
LYMPH ND, S-MAN
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, MES
    MICRO:   3    MASTOCYTOSIS
            ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO↑ (4)   COMPRESSION
    MICRO:  (2)   HEMORRHAGE
             2    HYDROCEPHALUS
EYE
    MICRO: ((2)) MINERALIZATION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3344D42 (CONTINUED)

```
                                        EYELID
TESTES
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL, BILATERAL
     MICRO+  4    SEMINIFEROUS TUBULE ATROPHY
    MICRO: ((2)) MINERALIZATION
                      ARTERIAL
EPIDIDYMIDES
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL, BILATERAL
     MICRO+  3    ATROPHY
    MICRO: ((3)) VACUOLATED EPITHELIUM
SEMINAL VESICLE
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL, BILATERAL
     MICRO+  3    ATROPHY
PROSTATE
    GROSS:        SWOLLEN
     MICRO+  3    EDEMA
    MICRO:   5    PROSTATITIS
PENIS
    GROSS:        SWOLLEN
     MICRO+((4)) BALANOPOSTHITIS
                      ULCERATION OF PREPUCE
KIDNEYS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      PALE TAN WITH MULTIPLE RED FOCI
                      DISSEMINATED
                      OVER CORTICAL SURFACE, BILATERAL
     MICRO+((4)) TUBULAR VACUOLIZATION
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
             3   TUBULAR ATROPHY
           ((2)) TUBULAR BASOPHILIA
           ((3)) TRANSITIONAL CELL HYPERPLASIA
             2   PYELITIS
URINARY BLADDER
    MICRO:   4    TRANSITIONAL CELL HYPERPLASIA
             3    CYSTITIS
CAUSE OF DEATH
    MICRO:   P    PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         STOMACH           PANCREAS
    DUODENUM          JEJUNUM           ILEUM
    CECUM             COLON             RECTUM
    PARATHYROID GL    ADRENAL GL        SKIN
    SPLEEN            BONE, STERNUM     BONE, FEMUR
    BONE MARROW       SKELETAL MUSCLE   SPINAL CORD
    NERVE, SCIATIC    TRACHEA           LUNGS
```

ANIMAL 3316D43 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	18.110	5.437

```
TOTAL BODY
    GROSS:        EMACIATION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3316D43 (CONTINUED)

KIDNEYS	5.991	1.799
HEART	1.947	0.585
SPLEEN	0.576	0.173
BRAIN	2.162	0.649
ADRENAL GL	0.065	0.020
TESTES	0.745	0.224
TERMINAL BODY WT.	333.1	

HEART
MICRO: ((2)) FIBROSIS
LIVER
GROSS: COLOR CHANGE, DIFFUSE
DARK GREEN, ALL LOBES
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
YELLOW FOCI, 2X2MM, ALL LOBES
MICRO↑((3)) FATTY CHANGE
MICRO: ((1)) CHOLANGIOFIBROSIS
COLON
GROSS: PARASITE
PIN WORMS
PITUITARY
GROSS: SIZE INCREASE
3X3X3MM
MICRO↑ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED AND TAN
THYROID GL
MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
PARATHYROID GL
GROSS: SIZE INCREASE
LEFT, 2X NORMAL
MICRO↑ 3 HYPERPLASIA
ADRENAL GL
MICRO: (3) MEDULLARY CELL HYPERPLASIA
POSSIBLE EARLY PHAEOCHROMOCYTOMA
((2)) INFARCTION
(4) CORTICAL CELL VACUOLIZATION
SUBCUTIS
GROSS: COLOR CHANGE, DIFFUSE
YELLOW, OVER ENTIRE BODY
MAMMARY GL
MICRO: ((3)) HYPERSECRETION
TAIL
GROSS: NECROTIC
25X10X2MM, TIP
SPLEEN
GROSS: SIZE DECREASE
SLIGHT
MICRO: 3 HEMOSIDEROSIS
LYMPH ND, MED
MICRO: ((2)) HEMOSIDEROSIS
LYMPH ND, MES
MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
MICRO: 4 MYOFIBER ATROPHY
TESTES
GROSS: SIZE DECREASE
BILATERAL, 1\2 OF NORMAL
MICRO↑ 4 SEMINIFEROUS TUBULE ATROPHY
TESTES

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3316D43 (CONTINUED)

```
                    GROSS:        CONSISTENCY CHANGE
                                      SOFT, BILATERAL
EPIDIDYMIDES
                    GROSS:        SIZE DECREASE
                                      BILATERAL
                     MICRO↑  4    ATROPHY
                    MICRO: ((3)) VACUOLATED EPITHELIUM
SEMINAL VESICLE
                    GROSS:        SIZE DECREASE
                                      1/2 OF NORMAL, BILATERAL
PROSTATE
                    GROSS:        SIZE DECREASE
                                      1\2 OF NORMAL
TRACHEA
                    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
                    GROSS:        NODULE
                                      MULTIPLE NODULES, ALL LOBES, 1X1X1MM
                     MICRO↑((2)) PNEUMONITIS, INTERSTITIAL
                    MICRO: ((3)) ALVEOLAR HISTIOCYTOSIS
                                      SMALL FOCI OF INFLAMMATION WERE
                                      MISTAKEN GROSSLY FOR
                                      NODULES
KIDNEYS
                    GROSS:        SIZE INCREASE
                                      BILATERAL
KIDNEYS
                    GROSS:        GRANULAR
                                      BILATERAL
                     MICRO↑  5    TUBULAR PROTEINOSIS
KIDNEYS
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      GREEN, BILATERAL
                     MICRO↑  4    FIBROSIS, INTERSTITIAL
                    MICRO: ((3)) NEPHRITIS, INTERSTITIAL
                              4   TUBULAR ATROPHY
                           ((4)) GLOMERULOSCLEROSIS
                           ((1)) TUBULAR PIGMENTATION
                           ((3)) CYST(S)
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA              SALIVARY GL       ESOPHAGUS
    STOMACH            PANCREAS          DUODENUM
    JEJUNUM            ILEUM             CECUM
    COLON              RECTUM            SKIN
    LYMPH ND, S-MAN    BONE, STERNUM     BONE, FEMUR
    BONE MARROW        BRAIN             SPINAL CORD
    NERVE, SCIATIC     EYE
THE FOLLOWING TISSUES WERE MISSING:
    SEMINAL VESICLE    PROSTATE          URINARY BLADDER
```

ANIMAL 3435D44 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.102	2.095
KIDNEYS	3.690	0.548

```
ADIPOSE TISSUE
    GROSS:        CYST
                      10X10X10MM, LEFT LUMBAR AREA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3435D44 (CONTINUED)

HEART	1.608	0.239
SPLEEN	0.711	0.106
BRAIN	2.130	0.316
ADRENAL GL	0.065	0.010
TESTES	3.413	0.507
TERMINAL BODY WT.	673.0	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
MICRO: ((3)) CYSTIC RATHKE'S CLEFT
THYROID GL
MICRO: ((3)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
MICRO: (1) CORTICAL CELL HYPERPLASIA, NODULAR
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MES
MICRO: ((3)) GRANULOMATOUS LYMPHADENITIS
3 LYMPHOID HYPERPLASIA
LYMPH ND, OTHER
MICRO: (4) LYMPHATIC ECTASIA, CYSTIC
LUMBAR NODE, MISTAKEN FOR FAT CYST GROSSLY
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
PROSTATE
MICRO: (3) PROSTATITIS
((2)) EPITHELIAL HYPERPLASIA
KIDNEYS
GROSS: CYST
LEFT, 4X4X4MM
MICRO+ (4) CYST(S)
MICRO: ((2)) TUBULAR PROTEINOSIS
((3)) TUBULAR BASOPHILIA
((1)) NEPHRITIS, INTERSTITIAL
((2)) FIBROSIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

ADIPOSE TISSUE	HEART	AORTA
SALIVARY GL	ESOPHAGUS	PANCREAS
DUODENUM	JEJUNUM	ILEUM
CECUM	COLON	RECTUM
PARATHYROID GL	SKIN	SPLEEN
BONE, STERNUM	BONE, FEMUR	BONE MARROW
SKELETAL MUSCLE	BRAIN	SPINAL CORD
NERVE, SCIATIC	EYE	TESTES
EPIDIDYMIDES	TRACHEA	LUNGS
URINARY BLADDER		

THE FOLLOWING TISSUES WERE MISSING:
SEMINAL VESICLE

ANIMAL 3442D45 27-MAR-90 STUDY DAY 735
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.880	2.608
KIDNEYS	3.856	0.676
HEART	1.657	0.290
SPLEEN	0.932	0.163
BRAIN	2.201	0.386
ADRENAL GL	0.062	0.011
TESTES	2.843	0.498

LIVER
MICRO: ((2)) CHOLANGIOFIBROSIS
PANCREAS
MICRO: (4) ACINAR ATROPHY
(1) LYMPHOID INFILTRATES
THYROID GL
MICRO: (P) THYROGLOSAL DUCT CYST
ADRENAL GL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3442D45 (CONTINUED)
TERMINAL BODY WT. 570.6

```
    GROSS:        SIZE DECREASE
                      1/2 NORMAL, BILATERAL
MAMMARY GL
    MICRO: ((2)) HYPERSECRETION
PAWS/FEET
    GROSS:        ULCERATED
                      10X15MM,RIGHT
     MICRO+ (4)  ULCERATION
    MICRO:  (4)  OSSEUS METAPLASIA
            (4)  FIBROSIS
LYMPH ND, MED
    MICRO:   4   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   HEMORRHAGE
             3   INVOLUTIONAL ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
LUNGS
    MICRO: ((1)) HEMORRHAGE
           ((1)) INTRAALVEOLAR CELLULAR DEBRIS
           ((1)) ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
            (P)  RENAL CALCULI
                     RIGHT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    ADRENAL GL       SKIN             SPLEEN
    LYMPH ND, S-MAN  BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  BRAIN
    NERVE, SCIATIC   EYE              TESTES
    EPIDIDYMIDES     SEMINAL VESICLE  PROSTATE
    TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PITUITARY
```

ANIMAL 3462D46 21-MAR-90 STUDY DAY 729
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.699	2.535
KIDNEYS	4.183	0.721
HEART	1.859	0.321
SPLEEN	1.423	0.245
BRAIN	2.218	0.383
ADRENAL GL	0.072	0.012
TESTES	3.265	0.563
TERMINAL BODY WT.	579.8	

```
HEART
    MICRO:  (2)  FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:        COLOR CHANGE, DIFFUSE
                      ALL LOBES LIGHTER
    MICRO: ((1)) EXTRAMEDULLARY HEMATOPOIESIS
PITUITARY
    GROSS:        SIZE INCREASE
                      2X3MM
     MICRO+((P)) #B ADENOMA
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3462D46 (CONTINUED)

```
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
ADRENAL GL
    MICRO: ((2)) CORTICAL CELL HYPERTROPHY
            (P)  #B ADENOMA
PAWS/FEET
    GROSS:        ULCERATED
                      8-10MM, BOTH HIND
     MICRO+  5   ULCERATION
    MICRO:   4   FIBROSIS
SPLEEN
    MICRO:   4   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, MED
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
           ((2)) SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO:   3   MASTOCYTOSIS
           ((2)) HISTIOCYTIC AGGREGATES
             1   SINUS ERYTHROCYTOSIS
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      3X, BILATERAL, SUBLUMBAR
     MICRO+  3   PLASMACYTOSIS
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
             4   LYMPHOID HYPERPLASIA
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
LACRYMAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE FOCI, BILATERAL
     MICRO+((2)) ATROPHY
    MICRO: ((2)) LYMPHOID INFILTRATES
TESTES
    MICRO:   2   MINERALIZATION
EPIDIDYMIDES
    MICRO: ((2)) VACUOLATED EPITHELIUM
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      ALL LOBES LIGHT PINK-WHITE
    MICRO: ((1)) HEMORRHAGE
            (2)  GRANULOMA
KIDNEYS
    MICRO: ((2)) TUBULAR BASOPHILIA
           ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           THYROID GL       PARATHYROID GL
    SKIN             LYMPH ND, S-MAN  BONE, STERNUM
    BONE, FEMUR      SKELETAL MUSCLE  BRAIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3462D46 (CONTINUED)

SPINAL CORD NERVE, SCIATIC EYE
SEMINAL VESICLE URINARY BLADDER

ANIMAL 3535D47 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	15.165	2.873
KIDNEYS	5.565	1.054
HEART	2.006	0.380
SPLEEN	1.015	0.192
BRAIN	2.092	0.396
ADRENAL GL	0.104	0.020
TESTES	2.614	0.495
TERMINAL BODY WT.	527.8	

MESENTARY/OM'TUM
GROSS: TORTUOUS
UPPER TRACK
MICRO↑ 4 ARTERITIS
MICRO: ((3)) STEATITIS
HEART
MICRO: ((3)) MYOCARDITIS
((2)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
MICRO: ((1)) GLAND ECTASIA
(P) #B POLYP
A SQUAMOUS EPITHELIAL COVERED GROWTH IS PRESENT ON THE GLAN
GLANDULAR MUCOSA
LIVER
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
((1)) CHOLANGITIS
PANCREAS
MICRO: (P) #B ISLET CELL ADENOMA
SMALL NODULE
(4) ARTERITIS
CECUM
MICRO: P NEMATODIASIS
PITUITARY
GROSS: NODULE
2X2X2MM, TAN
MICRO↑ (P) #B ADENOMA
MICRO: (2) FOCI OF CELL ALTERATION
THYROID GL
MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
GROSS: SIZE INCREASE
BOTH, SLIGHT
MICRO: (2) CORTICAL CELL VACUOLIZATION
((2)) CORTICAL CELL HYPERTROPHY
MAMMARY GL
MICRO: 3 HYPERSECRETION
PAWS/FEET
GROSS: ULCERATED
LEFT
MICRO↑ 4 ULCERATION
MICRO: 4 FIBROSIS
4 OSSEUS METAPLASIA
LYMPH ND, S-MAN
MICRO: ((2)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MED
MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3535D47 (CONTINUED)

```
                    GROSS:        SIZE INCREASE
                                      LUMBAR, 2X'S
                     MICRO↑  3    PLASMACYTOSIS
                                      LUMBAR NODE
                    MICRO:   2    MASTOCYTOSIS
                THYMIC REGION
                    MICRO:   4    INVOLUTIONAL ATROPHY
                BONE MARROW
                    MICRO:   4    HYPERPLASIA
                SKELETAL MUSCLE
                    MICRO:   3    MYOFIBER ATROPHY
                SPINAL CORD
                    MICRO: ((1)) VACUOLIZATION
                EYE
                    GROSS:        OPACITY
                                      RIGHT
                     MICRO↑ (3)   CATARACT
                                      UNILATERAL
                TESTES
                    MICRO: ((4)) ARTERITIS
                LUNGS
                    MICRO: ((1)) MINERALIZATION
                KIDNEYS
                    GROSS:        DIMPLED/PITTED
                                      BOTH
                     MICRO↑  4    TUBULAR PROTEINOSIS
                KIDNEYS
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      BOTH, VERY PALE
                     MICRO↑  3    FIBROSIS, INTERSTITIAL
                    MICRO:   4    TUBULAR ATROPHY
                            ((2)) NEPHRITIS, INTERSTITIAL
                            ((3)) CYST(S)
                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    AORTA            SALIVARY GL      ESOPHAGUS
                    DUODENUM         JEJUNUM          ILEUM
                    COLON            RECTUM           PARATHYROID GL
                    SKIN             SPLEEN           BONE, STERNUM
                    BONE, FEMUR      BRAIN            NERVE, SCIATIC
                    EPIDIDYMIDES     SEMINAL VESICLE  PROSTATE
                    TRACHEA          URINARY BLADDER
```

ANIMAL 3605D48 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	13.368	2.374
KIDNEYS	4.319	0.767
HEART	1.764	0.313
SPLEEN	0.701	0.124
BRAIN	2.327	0.413
ADRENAL GL	0.077	0.014
TESTES	4.329	0.769
TERMINAL BODY WT.	563.2	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
PANCREAS
    MICRO:  (P)  #B ISLET CELL ADENOMA
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    MICRO: ((2)) CORTICAL CELL HYPERTROPHY
            (P)  #B ADENOMA
MAMMARY GL
    MICRO:  (2)  HYPERSECRETION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3605D48 (CONTINUED)

```
                                    3   HYPERPLASIA
LYMPH ND, S-MAN
    MICRO: ((3)) SINUS ERYTHROCYTOSIS
           ((3)) PLASMACYTOSIS
           ((3)) LYMPHOID HYPERPLASIA
LYMPH ND, MES
    MICRO:   4   SINUS ERYTHROCYTOSIS
           ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
EYE
    GROSS:       CRUST
                     PERIOCULAR,LEFT
     MICRO+ (2)  BLEPHARITIS
KIDNEYS
    MICRO: ((3)) TUBULAR PROTEINOSIS
           ((3)) NEPHRITIS, INTERSTITIAL
           ((3)) TUBULAR BASOPHILIA
           ((2)) FIBROSIS, INTERSTITIAL
           ((3)) TUBULAR ATROPHY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         LIVER             DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            PITUITARY
    PARATHYROID GL    SKIN              SPLEEN
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    SKELETAL MUSCLE   BRAIN             SPINAL CORD
    NERVE, SCIATIC    TESTES            EPIDIDYMIDES
    SEMINAL VESICLE   PROSTATE          TRACHEA
    LUNGS             URINARY BLADDER
```

ANIMAL 3571D49 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.700	2.051
KIDNEYS	3.766	0.526
HEART	2.132	0.298
SPLEEN	0.888	0.124
BRAIN	2.159	0.301
ADRENAL GL	0.089	0.012
TESTES	3.155	0.440
TERMINAL BODY WT.	716.6	

```
MESENTARY/OM'TUM
    GROSS:       TORTUOUS
                     NEAR DUODENUM
     MICRO+((4)) ARTERITIS
                     SEE PANCREAS ALSO
SALIVARY GL
    MICRO: ((3)) SIALOADENITIS
           ((3)) ATROPHY
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     DARK RED FOCAL AREAS, ALL LOBES
    MICRO: ((1)) CHOLANGITIS
           ((2)) MONONUCLEAR CELL INFILTRATE(S)
PANCREAS
    MICRO:  (P)  #B ISLET CELL ADENOMA
           ((4)) PANCREATITIS
           ((4)) ACINAR ATROPHY
           ((4)) ARTERITIS
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3571D49 (CONTINUED)

```
    GROSS:        SIZE INCREASE
                      2X NORMAL
     MICRO+  P    #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED AND TAN
     MICRO+ (3)   VASCULAR ECTASIA
    MICRO: ((2)) CYST(S)
THYROID GL
    MICRO: ((5)) THYROGLOSAL DUCT CYST
           ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    MICRO:  (4)  THROMBOSIS
SKIN
    GROSS:        ALOPECIA
                      10X15MM, DORSAL REGION
     MICRO+  3    EPIDERMITIS
                      DIFFUSE LYMPHOCYTIC INFILTRATE, ONE
                      SECTION
PAWS/FEET
    GROSS:        ULCERATED
                      10X10X2MM, LEFT, RIGHT, 2X2X2MM
     MICRO+  4    ULCERATION
    MICRO:   4    FIBROSIS
            (3)   OSSEUS METAPLASIA
LYMPH ND, S-MAN
    MICRO: ((3)) PLASMACYTOSIS
LYMPH ND, MED
    MICRO: ((4)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    GROSS:        SIZE INCREASE
                      2.5X NORMAL
     MICRO+((3)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      LEFT POPLITEAL, 3X NORMAL
                      LEFT SUBLUMBAR, 2X NORMAL
     MICRO+  5    PLASMACYTOSIS
                      POPLITEAL NODE
                      STEATITIS IS PRESENT IN SURROUNDING FAT
    MICRO: ((4)) LYMPHATIC ECTASIA, CYSTIC
                      LUMBAR NODE
             4    LYMPHOID HYPERPLASIA
THYMIC REGION
    GROSS:        MASS
                      20X15X8MM, CYSTIC
     MICRO+  4    GRANULOMATOUS STEATITIS
                      LESION INVOLVES BROWN FAT AROUND A
                      CYSTIC NODE
    MICRO:   5    INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2    MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
TESTES
    GROSS:        CONSISTENCY CHANGE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3571D49 (CONTINUED)

```
                                        SOFT, BILATERAL
SEMINAL VESICLE
    GROSS:        SIZE DECREASE
                        1/2 OF NORMAL, BILATERAL
     MICRO:  3    ATROPHY
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((3)) PNEUMONITIS, INTERSTITIAL
                        LOCALIZED TO PERIBRONCHIAL REGIONS,
                        PROBABLY DUE TO MEDIAS
                        MEDIASTINAL INFLAMMATION
           ((3)) PLEURITIS
                        ASSOCIATED WITH MEDIASTINAL INFLAMMATION
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3)) TUBULAR BASOPHILIA
           ((2)) TUBULAR PROTEINOSIS
           ((3)) FIBROSIS, INTERSTITIAL
           ((2)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            ESOPHAGUS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      BRAIN            NERVE, SCIATIC
    EYE              TESTES           EPIDIDYMIDES
    PROSTATE         URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 3422D50 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	16.502	2.774
KIDNEYS	6.325	1.063
HEART	2.453	0.412
SPLEEN	1.120	0.188
BRAIN	2.241	0.377
ADRENAL GL	0.113	0.019
TESTES	2.710	0.456
TERMINAL BODY WT.	594.9	

```
MESENTARY/OM'TUM
    MICRO: ((2)) ARTERITIS
HEART
    MICRO: ((2)) MYOCARDIAL DEGENERATION/FIBROSIS
LIVER
    MICRO: ((2)) CYSTIC DEGENERATION
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
            (2)  FIBROSIS
PANCREAS
    GROSS:        NODULE
                        SEVERAL, 1-3MM
    MICRO:  (4)   ARTERITIS
                        THE NODULE IS A LYMPH NODE
CECUM
    MICRO:   P    NEMATODIASIS
PITUITARY
    MICRO:  (P)   #B ADENOMA
THYROID GL
    MICRO: ((5)) FOLLICULAR CYST
            (P)  #B C CELL ADENOMA
PARATHYROID GL
    GROSS:        SIZE INCREASE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3422D50 (CONTINUED)

```
                                        LEFT, 2.5X NORMAL
ADRENAL GL
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                        BOTH, MOTTLED TAN AND BROWN
     MICRO+  4      CONGESTION
                        UNILATERAL
ADRENAL GL
    GROSS:          SIZE INCREASE
                        LEFT, SLIGHT
     MICRO+((5))    CORTICAL CELL VACUOLIZATION
                        INVOLVES MOST OF ONE GLAND
PAWS/FEET
    GROSS:          ULCERATED
                        BOTH FEET
    MICRO:   4      HYPERKERATOSIS
                        NO ULCER OBSERVED
            ((4))   EPIDERMAL HYPERPLASIA
            ((3))   FIBROSIS
TAIL
    GROSS:          ULCERATED
                        20X10X10MM, TAN AND BROWN
     MICRO+ (5)     ABSCESS
LYMPH ND, S-MAN
    MICRO:   3      LYMPHOID HYPERPLASIA
             3      PLASMACYTOSIS
            ((2))   HISTIOCYTIC AGGREGATES
LYMPH ND, PANC
    MICRO:   3      SINUS ERYTHROCYTOSIS
             3      SINUS HISTIOCYTOSIS
LYMPH ND, OTHER
    GROSS:          CONSISTENCY CHANGE
                        LUMBAR, JELLY LIKE MATERIAL
     MICRO+((4))    LYMPHATIC ECTASIA, CYSTIC
                        LUMBAR NODE
THYMIC REGION
    MICRO:   3      INVOLUTIONAL ATROPHY
BONE, FEMUR
    MICRO: ((2))    FIBROUS OSTEODYSTROPHY
SKELETAL MUSCLE
    MICRO:  (3)     ARTERITIS
                        MUSCLE ADJACENT TO LARYNX
BRAIN
    MICRO: ((1))    VACUOLIZATION
                        CEREBELLUM
TESTES
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                        BOTH, TAN AND WHITE
     MICRO+((5))    ARTERITIS
    MICRO:   4      SEMINIFEROUS TUBULE ATROPHY
                        BILATERAL
             (3)    MINERALIZATION
COAGULATING GL
    MICRO:   4      DISTENTION
                        MISTAKEN FOR URETHRA
PROSTATE
    GROSS:          COLOR CHANGE, DIFFUSE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3422D50 (CONTINUED)

```
                                        RIGHT SIDE, LIGHT GREEN
     MICRO+  5   PROSTATITIS
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
           ((2)) HEMORRHAGE
KIDNEYS
    GROSS:       DIMPLED/PITTED
                     BOTH, SEVERE
     MICRO+  5   TUBULAR PROTEINOSIS
KIDNEYS
    GROSS:       CYST
                     BOTH, FEW 1MM
KIDNEYS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MOTTLED TAN AND GREEN
     MICRO+  4   FIBROSIS, INTERSTITIAL
    MICRO:   2   HYDRONEPHROSIS
           ((2)) NEPHRITIS, INTERSTITIAL
             4   TUBULAR ATROPHY
           ((4)) GLOMERULOSCLEROSIS
URINARY BLADDER
    MICRO:   3   CYSTITIS
             4   EDEMA
URETHRA
    GROSS:       SIZE INCREASE
                     BULBOURETHRAL, BOTH SIDES, 2X'S
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    STOMACH          DUODENUM         JEJUNUM
    ILEUM            COLON            RECTUM
    PARATHYROID GL   SKIN             SPLEEN
    LYMPH ND, MES    BONE, STERNUM    BONE MARROW
    SPINAL CORD      NERVE, SCIATIC   EYE
    EPIDIDYMIDES     SEMINAL VESICLE  TRACHEA
THE FOLLOWING TISSUES WERE MISSING:
    URETHRA
```

ANIMAL 3330D51 18-JAN-90 STUDY DAY 667

TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:       UNKEMPT
HEART
    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
AORTA
    MICRO:   4   MINERALIZATION
STOMACH
    GROSS:       THICKER THAN NORMAL
     MICRO+  4   MINERALIZATION
    MICRO: ((2)) GLAND ECTASIA
LIVER
    MICRO: ((2)) BILIARY HYPERPLASIA
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     2X2MM DARK RED FOCUS
    MICRO: ((3)) CYST(S)
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3330D51 (CONTINUED)

```
                    (3)  CELL HYPERPLASIA
                             POSSIBLE EARLY ADENOMA?
THYROID GL
    GROSS:          MASS
                             15X10X7MM, TAN AND WHITE; INVOLVES
                             PARATHYROID; RIGHT
     MICRO↑ (P)  #M ADENOCARCINOMA
ADRENAL GL
    GROSS:          COLOR CHANGE, DIFFUSE
                             PALE TAN WITH MULTIPLE BROWN FOCI,
                             BILATERAL
     MICRO↑((4)) VASCULAR ECTASIA
ADRENAL GL
    GROSS:          SIZE INCREASE
                             LEFT, 2X NORMAL
     MICRO↑ (P)  #B PHEOCHROMOCYTOMA
    MICRO: ((2)) CORTICAL CELL VACUOLIZATION
SKIN
    MICRO:  (P)  EPIDERMAL INCLUSION CYST
                             CORRESPONDS TO THE MASS NOTED AS
                             SUBCUTIS
SUBCUTIS
    GROSS:          MASS
                             5X5X4MM, TAN AND RED; DORSAL SURFACE,
                             NEAR TAIL
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    MICRO:  (3)  MINERALIZATION
                             CORNEA, ONE EYE
TESTES
    GROSS:          SIZE DECREASE
                             1/2 OF NORMAL, BILATERAL
     MICRO↑  4   SEMINIFEROUS TUBULE ATROPHY
    MICRO:   3   ARTERITIS
            ((2)) MINERALIZATION
EPIDIDYMIDES
    GROSS:          SIZE DECREASE
                             1/2 OF NORMAL, BILATERAL
    MICRO: ((2)) VACUOLATED EPITHELIUM
LUNGS
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                             ALL LOBES MOTTLED LIGHT AND DARK PINK
     MICRO↑((2)) HEMORRHAGE
KIDNEYS
    GROSS:          HYDRONEPHROSIS
                             MILD, BILATERAL
     MICRO↑  2   HYDRONEPHROSIS
                             BILATERAL
KIDNEYS
    GROSS:          CYST
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3330D51 (CONTINUED)

```
                                        MULTIPLE 2X2X2MM, CLEAR FLUID FILLED,
                                        BILATERAL
     MICRO+((4)) CYST(S)
KIDNEYS
    GROSS:       GRANULAR
                     BILATERAL
     MICRO+  5   TUBULAR PROTEINOSIS
    MICRO:   4   FIBROSIS, INTERSTITIAL
             4   TUBULAR ATROPHY
          ((3)) MINERALIZATION
             1   NEPHRITIS, INTERSTITIAL
          ((4)) GLOMERULOSCLEROSIS
CAUSE OF DEATH
    MICRO:   P   CHRONIC RENAL DISEASE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SALIVARY GL      ESOPHAGUS         PANCREAS
    DUODENUM         JEJUNUM           COLON
    RECTUM           PARATHYROID GL    SUBCUTIS
    SPLEEN           LYMPH ND, S-MAN   BONE, STERNUM
    BONE, FEMUR      BONE MARROW       SKELETAL MUSCLE
    BRAIN            NERVE, SCIATIC    SEMINAL VESICLE
    PROSTATE         TRACHEA           URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    ILEUM            CECUM
```

ANIMAL 3444D52 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	13.770	2.575
KIDNEYS	3.755	0.702
HEART	1.962	0.367
SPLEEN	0.930	0.174
BRAIN	2.095	0.392
ADRENAL GL	0.075	0.014
TESTES	3.452	0.645
TERMINAL BODY WT.	534.8	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     FEW RED FOCI SEEN
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
COLON
    GROSS:       PARASITE
                     PINWORMS
     MICRO+  P   NEMATODIASIS
PITUITARY
    MICRO:   P   #B ADENOMA
THYROID GL
    MICRO:   P   #B C CELL ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO+((2)) CORTICAL CELL HYPERTROPHY
SPLEEN
    GROSS:       SIZE DECREASE
                     SLIGHT
LYMPH ND, S-MAN
    MICRO:   3   SINUS ERYTHROCYTOSIS
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     LUMBAR, SLIGHT
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3444D52 (CONTINUED)

```
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
TESTES
    GROSS:       SIZE DECREASE
                     RIGHT, SLIGHT
     MICRO↑  4   SEMINIFEROUS TUBULE ATROPHY
                     UNILATERAL
TESTES
    GROSS:       SIZE INCREASE
                     LEFT, SLIGHT
     MICRO↑((3)) EDEMA
                     BILATERAL
TESTES
    GROSS:       CONSISTENCY CHANGE
                     RIGHT, SOFT
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((1)) PNEUMONITIS, INTERSTITIAL
KIDNEYS
    MICRO:   2   HEMORRHAGE
                     LEFT RENAL PELVIS
            ((1)) TUBULAR PROTEINOSIS
            ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    RECTUM           PARATHYROID GL   SKIN
    SPLEEN           LYMPH ND, MES    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    EYE              EPIDIDYMIDES     SEMINAL VESICLE
    PROSTATE         URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    LYMPH ND, OTHER
```

ANIMAL 3596D53 27-DEC-89 STUDY DAY 645
TYPE OF DEATH: SACRIFICED MORIBUND

```
STOMACH
    GROSS:       ULCERATED
                     MULTIPLE 2X2MM, NONGLANDULAR
     MICRO↑ (3)  MUCOSAL HYPERPLASIA
                     A PORTION OF THE NONGLANDULAR STOMACH
    MICRO: ((4)) EDEMA
                     NONGLANDULAR SUBMUCOSA
LIVER
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
            (3)  FIBROSIS
                     POSSIBLY THE SITE OF A HEALED INFARCTION
           ((1)) HEPATITIS
PANCREAS
    MICRO:  (2)  ACINAR ATROPHY
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3596D53 (CONTINUED)

```
    GROSS:        SIZE INCREASE
                      15X7X5MM
     MICRO↑  5    #B ADENOMA
                      VERY LARGE AND HEMORRHAGIC
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED AND TAN.
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    MICRO: ((1)) CORTICAL CELL HYPERTROPHY
MAMMARY GL
    MICRO:   4   HYPERPLASIA
SPLEEN
    MICRO:   3   HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MED
    MICRO:  (3)  LYMPHATIC ECTASIA, CYSTIC
           ((2)) HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
           ((2)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE, FEMUR
    MICRO:  (4)  CYST
                      THE CYST IS ACTUALLY LOCATED IN THE
                      TIBIAL EPIPHYSIS
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO PITUITARY SIZE.
     MICRO↑ (4)   COMPRESSION
TESTES
    GROSS:        MASS
                      5X5X3MM, DARK RED; INSIDE ONE TESTIS
     MICRO↑  P    #B INTERSTITIAL CELL ADENOMA
SEMINAL VESICLE
    GROSS:        SIZE INCREASE
                      2X NORMAL, BILATERAL
PROSTATE
    GROSS:        SIZE INCREASE
                      2X NORMAL
     MICRO↑  4    PROSTATITIS
    MICRO:   4    EDEMA
           ((2)) EPITHELIAL HYPERPLASIA
LUNGS
    MICRO: ((2)) HEMORRHAGE
            (2)  INTRAALVEOLAR CELLULAR DEBRIS
KIDNEYS
    MICRO:   4   TUBULAR PROTEINOSIS
           ((3)) TUBULAR ATROPHY
           ((3)) FIBROSIS, INTERSTITIAL
           ((4)) TUBULAR BASOPHILIA
           ((1)) NEPHRITIS, INTERSTITIAL
URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3596D53 (CONTINUED)

MICRO: 3 CYSTITIS
CAUSE OF DEATH
MICRO: P PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	PARATHYROID GL	SKIN
BONE, STERNUM	BONE MARROW	SKELETAL MUSCLE
SPINAL CORD	NERVE, SCIATIC	EYE
EPIDIDYMIDES	SEMINAL VESICLE	TRACHEA

ANIMAL 3397D54 21-MAR-90 STUDY DAY 729
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.292	2.062
KIDNEYS	3.266	0.548
HEART	1.903	0.319
SPLEEN	0.866	0.145
BRAIN	2.196	0.368
ADRENAL GL	0.052	0.009
TESTES	4.342	0.729
TERMINAL BODY WT.	596.0	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
(1) CHOLANGITIS
PANCREAS
MICRO: ((2)) FAT INFILTRATION
PITUITARY
GROSS: SIZE INCREASE
3X NORMAL
MICRO↑ P #B ADENOMA
MICRO: ((3)) CYST(S)
THYROID GL
MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
MICRO: ((1)) CORTICAL CELL HYPERTROPHY
SKIN
GROSS: CRUST
CREAM AND FLAKEY IN CENTER OF BACK 5X5MM
MAMMARY GL
GROSS: CYST
5X5MM, RIGHT INGUINAL REGION
MICRO: 3 HYPERSECRETION
PAWS/FEET
GROSS: ULCERATED
BILATERAL, RED, 10X15MM AND 10X10MM
MICRO↑((5)) ULCERATION
MICRO: (4) OSSEUS METAPLASIA
((5)) FIBROSIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
3 SINUS ERYTHROCYTOSIS
LYMPH ND, OTHER
GROSS: SIZE INCREASE
BILATERAL, SUBLUMBAR, 3X NORMAL
MICRO↑ (4) ABSCESS
LUMBAR NODE
MICRO: (4) FIBROSIS
((4)) PLASMACYTOSIS
((4)) LYMPHOID HYPERPLASIA
((5)) LYMPHATIC ECTASIA, CYSTIC

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3397D54 (CONTINUED)

```
                                        INVOLVES BOTH LUMBAR AND INGUINAL GLANDS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
TESTES
    GROSS:       EDEMA
                     BILATERAL
     MICRO+  4   EDEMA
    MICRO:   5   SEMINIFEROUS TUBULE ATROPHY
            (2)  MINERALIZATION
EPIDIDYMIDES
    MICRO:  (2)  EDEMA
                     UNILATERAL
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((1)) ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO:  (1)  PYELITIS
                     RIGHT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    SPLEEN           LYMPH ND, S-MAN  BONE, STERNUM
    BONE, FEMUR      SKELETAL MUSCLE  BRAIN
    NERVE, SCIATIC   EYE              SEMINAL VESICLE
    PROSTATE         URINARY BLADDER
```

ANIMAL 3577D55 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.433	2.539
KIDNEYS	5.045	0.887
HEART	1.801	0.317
SPLEEN	1.309	0.230
BRAIN	2.161	0.380
ADRENAL GL	0.070	0.012
TESTES	3.830	0.674
TERMINAL BODY WT.	568.5	

```
ADIPOSE TISSUE
    GROSS:       NODULE
                     5X5X5MM, UROGENITAL AREA
     MICRO+ (P)  FAT NECROSIS
MESENTARY/OM'TUM
    GROSS:       TORTUOUS
                     UPPER TRACK
     MICRO+((3)) ARTERITIS
ORAL/PHARYNGEAL
    GROSS:       INCISORS, OVERGROWN
                     BOTTOMS, BOTH
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED LIGHT AND DARK RED
     MICRO+ (3)  TELANGIECTASIS
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PANCREAS
    MICRO:  (2)  ACINAR ATROPHY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3577D55 (CONTINUED)

```
                    ((2)) FAT INFILTRATION
                    ((5)) ARTERITIS
COLON
    GROSS:          DIVERTICULUM
                        3X3X2MM AND 4X3X2MM
PITUITARY
    GROSS:          CYST
                        2X2X2MM, CLEAR FLUID FILLED
     MICRO+ (4)     CYSTIC RATHKE'S CLEFT
PARATHYROID GL
    GROSS:          SIZE INCREASE
                        LEFT, 2X NORMAL
ADRENAL GL
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                        MULTIPLE WHITE FOCI DISSEMINATED OVER
                        SURFACE, BILATERAL
     MICRO+((4))    CORTICAL CELL VACUOLIZATION
    MICRO: ((2))    CORTICAL CELL HYPERTROPHY
SKIN
    MICRO:  (3)     GRANULOMATOUS DERMATITIS
                        EYELID
PAWS/FEET
    GROSS:          ULCERATED
                        LEFT FOOT
     MICRO+ (5)     ULCERATION
    MICRO: ((3))    HEMORRHAGE
            (5)     FIBROSIS
            (2)     OSSEUS METAPLASIA
SPLEEN
    GROSS:          SHAPE/CONTOUR CHANGE
                        POINTED AT ONE END
     MICRO+  P      ANOMALY
LYMPH ND, S-MAN
    GROSS:          SIZE INCREASE
                        SLIGHT
     MICRO+  3      PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   2      SINUS ERYTHROCYTOSIS
             3      PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((3))    MASTOCYTOSIS
            (3)     SINUS ERYTHROCYTOSIS
           ((3))    HEMOSIDEROSIS
           ((2))    HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:          CONSISTENCY CHANGE
                        JELLY LIKE, LUMBAR
LYMPH ND, OTHER
    GROSS:          SIZE INCREASE
                        LUMBAR, 2X'S
     MICRO+((4))    LYMPHATIC ECTASIA, CYSTIC
                        LUMBAR NODES
    MICRO:   3      PLASMACYTOSIS
THYMIC REGION
    MICRO:   4      INVOLUTIONAL ATROPHY
BONE MARROW
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3577D55 (CONTINUED)

```
    MICRO:   3   HYPERPLASIA
EYE
    GROSS:       CRUST
                     LEFT
EPIDIDYMIDES
    MICRO: ((2)) EPIDIDYMITIS
LUNGS
    MICRO:  (2)  PNEUMONITIS, INTERSTITIAL
           ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((3)) NEPHRITIS, INTERSTITIAL
           ((3)) TUBULAR BASOPHILIA
           ((2)) FIBROSIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         DUODENUM          JEJUNUM
    ILEUM             CECUM             COLON
    RECTUM            THYROID GL        PARATHYROID GL
    BONE, STERNUM     BONE, FEMUR       SKELETAL MUSCLE
    BRAIN             SPINAL CORD       NERVE, SCIATIC
    EYE               TESTES            SEMINAL VESICLE
    PROSTATE          TRACHEA           URINARY BLADDER
```

ANIMAL 3413D56 25-JAN-90 STUDY DAY 674

TYPE OF DEATH: SACRIFICED MORIBUND

```
HEART
    MICRO:  (3)  FIBROSIS
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    MICRO: ((3)) FATTY CHANGE
           ((2)) CHOLANGIOFIBROSIS
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
           ((1)) CHOLANGITIS
PANCREAS
    MICRO:  (P)  #B ISLET CELL ADENOMA
PITUITARY
    GROSS:       MASS
                     10X5X5MM, TAN
     MICRO↑  P   #B ADENOMA
                     VERY LARGE
THYROID GL
    MICRO:  (3)  FOLLICULAR CYST
MAMMARY GL
    MICRO: ((4)) GALACTOCELE
LYMPH ND, S-MAN
    GROSS:       SIZE INCREASE
                     2X NORMAL
     MICRO↑  3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BONE MARROW
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3413D56 (CONTINUED)

```
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AREA OVER PITUITARY
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
TESTES
    GROSS:       SIZE DECREASE
                     1/2 NORMAL, BILATERAL
     MICRO+((3)) SEMINIFEROUS TUBULE ATROPHY
                     BILATERAL
TESTES
    GROSS:       CONSISTENCY CHANGE
                     SOFT, BILATERAL
    MICRO: ((3)) ARTERITIS
EPIDIDYMIDES
    MICRO:   3   FIBROSIS
             4   ATROPHY
SEMINAL VESICLE
    MICRO: ((2)) SEMINAL VESICULITIS
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:   4   CONGESTION
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3)) TUBULAR BASOPHILIA
           ((3)) TUBULAR PROTEINOSIS
            (1)  NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    ADRENAL GL       SKIN             SPLEEN
    BONE, STERNUM    BONE, FEMUR      NERVE, SCIATIC
    EYE              PROSTATE         URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 3466D57 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	18.595	2.437
KIDNEYS	4.494	0.589
HEART	2.063	0.270
SPLEEN	1.251	0.164
BRAIN	2.264	0.297
ADRENAL GL	0.094	0.012
TESTES	2.593	0.340

```
LIVER
    GROSS:       COLOR CHANGE, DIFFUSE
                     ALL LOBES MOTTLED LIGHT AND DARK RED
    MICRO: ((1)) BILIARY HYPERPLASIA
           ((2)) CHOLANGIOFIBROSIS
           ((1)) CHOLANGITIS
PANCREAS
    MICRO: ((3)) FAT INFILTRATION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3466D57 (CONTINUED)
TERMINAL BODY WT. 763.1

```
                    (1)  ACINAR ATROPHY
                  ((2)) PIGMENT DEPOSITS
PITUITARY
    GROSS:        NODULE
                      2X2X2MM BROWN NODULE
     MICRO↑ (P)  #B ADENOMA
THYROID GL
    MICRO:  (P)  THYROGLOSAL DUCT CYST
ADRENAL GL
    MICRO: ((2)) CORTICAL CELL VACUOLIZATION
MAMMARY GL
    MICRO:   4   GALACTOCELE
                      LOCATED NEAR THE SALIVARY GLANDS AND
                      MISTAKEN FOR A
                      LYMPH NODE.
PAWS/FEET
    GROSS:        ULCERATED
                      10X10MM
     MICRO↑  5   ULCERATION
    MICRO: ((3)) OSSEUS METAPLASIA
           ((3)) HEMORRHAGE
LYMPH ND, S-MAN
    GROSS:        NODULE
                      MULTIPLE 2X2MM
    MICRO:   2   PLASMACYTOSIS
                      SEE MAMMARY GLAND FOR GROSS CORRELATE
                      OF A NODULE
LYMPH ND, MED
    MICRO:   3   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
TESTES
    GROSS:        SIZE DECREASE
                      (1) 1/2 OF NORMAL
     MICRO↑  4   SEMINIFEROUS TUBULE ATROPHY
    MICRO: ((4)) ARTERITIS
                      BOTH LESIONS UNILATERAL
EPIDIDYMIDES
    GROSS:        NODULE
                      LEFT ONLY, 3X4MM
     MICRO↑ (5)  SPERM GRANULOMA
                      BOTH LESIONS UNILATERAL
    MICRO:   3   EPIDIDYMITIS
PROSTATE
    MICRO:  (4)  PROSTATITIS
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((3)) ALVEOLAR HISTIOCYTOSIS
           ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3)) TUBULAR PROTEINOSIS
           ((2)) NEPHRITIS, INTERSTITIAL
           ((3)) TUBULAR BASOPHILIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3466D57 (CONTINUED)

((2)) FIBROSIS, INTERSTITIAL

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	PARATHYROID GL
SKIN	SPLEEN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	SEMINAL VESICLE	URINARY BLADDER

ANIMAL 3479D58 15-MAY-89 STUDY DAY 419

TYPE OF DEATH: SACRIFICED MORIBUND

HEART
MICRO: ((2)) MYOCARDITIS
STOMACH
MICRO: ((2)) GLAND ECTASIA
PITUITARY
MICRO: (P) #B ADENOMA
THYROID GL
MICRO: ((3)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
MICRO: (1) CORTICAL CELL HYPERTROPHY
SKIN
MICRO: (3) ABSCESS, CLITORAL/PREPUTIAL GLAND
CORRELATES WITH GROSS FINDING OF SUBCUTIS
SUBCUTIS
GROSS: ABSCESS
PREPUTIAL GLAND, RIGHT, 10X9X2 MM, GREEN MATERIAL FILLED
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
BONE, STERNUM
MICRO: 3 CORTICAL HYPOPLASIA
BRAIN
GROSS: HYDROCEPHALUS
MILD, LATERAL VENTRICLES, BILATERAL
MICRO+ 3 HYDROCEPHALUS
MICRO: (P) #M ASTROCYTOMA
A LARGE NEOPLASM OCCUPYING MUCH OF THE MIDBRAIN/THALAMIC
REGION
IS THE CAUSE OF THE HYDROCEPHALUS
PROSTATE
MICRO: ((1)) EPITHELIAL HYPERPLASIA
TRACHEA
MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MOTTLED DARK AND BRIGHT RED, ALL LOBES
MICRO+((2)) HEMORRHAGE
MICRO: 4 CONGESTION
KIDNEYS
GROSS: HYDRONEPHROSIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3479D58 (CONTINUED)

```
                                        MILD, LEFT
     MICRO+  2   HYDRONEPHROSIS
                                        LEFT
    MICRO: ((1)) TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:   P   ASTROCYTOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA             SALIVARY GL       ESOPHAGUS
    LIVER             PANCREAS          DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            PARATHYROID GL
    SUBCUTIS          SPLEEN            LYMPH ND, S-MAN
    THYMIC REGION     BONE, FEMUR       BONE MARROW
    SKELETAL MUSCLE   SPINAL CORD       NERVE, SCIATIC
    EYE               TESTES            EPIDIDYMIDES
    SEMINAL VESICLE   URINARY BLADDER
```

ANIMAL 3501D59 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.687	1.920
KIDNEYS	4.051	0.530
HEART	1.788	0.234
SPLEEN	1.200	0.157
BRAIN	2.262	0.296
ADRENAL GL	0.055	0.007
TESTES	3.415	0.446
TERMINAL BODY WT.	764.9	

```
ADIPOSE TISSUE
    GROSS:        CYST
                      5X4X4MM, SUBLUMBAR AREA
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      2X2MM BROWN FOCUS, LEFT LATERAL LOBE
    MICRO: ((1)) CHOLANGITIS
PANCREAS
    MICRO: ((2)) FAT INFILTRATION
PITUITARY
    GROSS:        NODULE
                      2X2MM, TAN
     MICRO+  P    #B ADENOMA
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    GROSS:        SIZE DECREASE
                      SLIGHT, BILATERAL
    MICRO: ((2)) CORTICAL CELL HYPERTROPHY
            (3)  CORTICAL CELL VACUOLIZATION
PAWS/FEET
    GROSS:        ULCERATED
                      6X5MM, LEFT HIND FOOT
     MICRO+  5   ULCERATION
    MICRO:  (3)  OSSEUS METAPLASIA
TAIL
    GROSS:        NODULE
                      MULTIPLE 2X2X2 TO 3X2X2MM, BROWN,
     MICRO+((3)) FOLLICULITIS
    MICRO:  (3)  DERMATITIS
LYMPH ND, S-MAN
    MICRO:   2   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    MICRO:   5   LYMPHATIC ECTASIA, CYSTIC
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3501D59 (CONTINUED)

```
                                        LUMBAR NODE, MISTAKEN GROSSLY FOR
                                        ADIPOSE TISSUE CYST
                                4   PLASMACYTOSIS
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
            (1)  LYMPHOID INFILTRATES
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((1)) ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO: ((3)) TUBULAR BASOPHILIA
           ((2)) TRANSITIONAL CELL HYPERPLASIA
           ((1)) MINERALIZATION
           ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    ADIPOSE TISSUE   HEART            AORTA
    SALIVARY GL      ESOPHAGUS        STOMACH
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    PARATHYROID GL   SKIN             SPLEEN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SKELETAL MUSCLE  BRAIN            NERVE, SCIATIC
    EYE              TESTES           EPIDIDYMIDES
    SEMINAL VESICLE  URINARY BLADDER
```

ANIMAL 3522D60 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.969	1.968
KIDNEYS	4.936	0.649
HEART	2.318	0.305
SPLEEN	1.329	0.175
BRAIN	2.298	0.302
ADRENAL GL	0.102	0.013
TESTES	3.730	0.490
TERMINAL BODY WT.	760.7	

```
HEART
    MICRO: ((2)) MYOCARDIAL DEGENERATION/FIBROSIS
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     WHITE TAN AREA, RIGHT LATERAL LOBE,
                     2X2MM
                     RED FOCAL AREAS, ALL LOBES
     MICRO↑ (P)  #B HEPATOCELLULAR ADENOMA
    MICRO: ((1)) BILIARY HYPERPLASIA
           ((2)) CHOLANGIOFIBROSIS
           ((1)) CHOLANGITIS
PITUITARY
    GROSS:       MASS
                     3X2X2MM, DARK RED
     MICRO↑((P)) #B ADENOMA
                     TWO NODULES
    MICRO: ((3)) CYST(S)
THYROID GL
    MICRO:  (P)  THYROGLOSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     TAN FOCAL AREAS, BILATERAL
    MICRO: ((1)) CORTICAL CELL VACUOLIZATION
           ((3)) MEDULLARY CELL HYPERPLASIA
PAWS/FEET
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM MALE

ANIMAL 3522D60 (CONTINUED)

```
    GROSS:        ULCERATED
                      30X20X2MM, RIGHT, LEFT, 2X2X2MM
     MICRO+  5    ULCERATION
    MICRO:   4    OSSEUS METAPLASIA
             5    FIBROSIS
SPLEEN
    MICRO:   3    EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
    MICRO:   3    PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   3    SINUS ERYTHROCYTOSIS
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      SUBLUMBAR, RIGHT, 4X NORMAL
                      POPLITEAL, RIGHT, 3X NORMAL
     MICRO+  5    PLASMACYTOSIS
                      POPLITEAL AND SUBLUMBAR NODES
                      DUE TO PAW ULCERATION
    MICRO:   4    LYMPHOID HYPERPLASIA
            (4)   LYMPHATIC ECTASIA, CYSTIC
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   3    HYPERPLASIA
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
TESTES
    GROSS:        CONSISTENCY CHANGE
                      BILATERAL, SOFT
     MICRO+  2    EDEMA
EPIDIDYMIDES
    MICRO: ((2)) VACUOLATED EPITHELIUM
PROSTATE
    MICRO: ((1)) LYMPHOID INFILTRATES
           ((2)) EPITHELIAL HYPERPLASIA
KIDNEYS
    MICRO: ((3)) TRANSITIONAL CELL HYPERPLASIA
           ((3)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR PROTEINOSIS
           ((2)) FIBROSIS, INTERSTITIAL
           ((1)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA             SALIVARY GL       ESOPHAGUS
    STOMACH           PANCREAS          DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            SKIN
    BONE, STERNUM     BONE, FEMUR       SKELETAL MUSCLE
    BRAIN             NERVE, SCIATIC    EYE
    SEMINAL VESICLE   TRACHEA           LUNGS
    URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL    LYMPH ND, MES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3547E01 21-MAR-90 STUDY DAY 729
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	16.701	2.733
KIDNEYS	5.301	0.867
HEART	2.724	0.446
SPLEEN	1.190	0.195
BRAIN	2.380	0.389
ADRENAL GL	0.109	0.018
TESTES	3.459	0.566
TERMINAL BODY WT.	611.1	

```
STOMACH
    GROSS:        ULCERATED
                      MULTIPLE, GLANDULAR PORTION
     MICRO+ (3)   ULCER
                      SUPERFICIAL MUCOSA
    MICRO:  (3)   EDEMA
LIVER
    MICRO:  (2)   CHOLANGIOFIBROSIS
PANCREAS
    MICRO: ((2)) FAT INFILTRATION
           ((3)) ACINAR ATROPHY
PITUITARY
    MICRO:   P    #B ADENOMA
THYROID GL
    MICRO:  (1)   C CELL HYPERPLASIA
ADRENAL GL
    MICRO: ((2)) CORTICAL CELL HYPERTROPHY
PAWS/FEET
    GROSS:        ULCERATED
                      20X15MM
                      RIGHT
     MICRO+  4    ULCERATION
    MICRO:   4    FIBROSIS
LYMPH ND, S-MAN
    MICRO:   2    PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
           ((1)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   5    INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4    HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   4    MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:        OPACITY
                      RIGHT, WHITE
PROSTATE
    MICRO:   2    PROSTATITIS
LUNGS
    MICRO:  (2)   MINERALIZATION, PULMONARY VESSEL(S)
            (1)   PERIVASCULAR INFILTRATE(S)
KIDNEYS
    GROSS:        COLOR CHANGE, DIFFUSE
                      PALE, BILATERAL
     MICRO+((3)) FIBROSIS, INTERSTITIAL
    MICRO:   4    TUBULAR PROTEINOSIS
           ((2)) NEPHRITIS, INTERSTITIAL
           ((3)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3547E01 (CONTINUED)

ILEUM	CECUM	COLON
RECTUM	PARATHYROID GL	SKIN
SPLEEN	BONE, STERNUM	BONE, FEMUR
BRAIN	NERVE, SCIATIC	EYE
TESTES	EPIDIDYMIDES	SEMINAL VESICLE
TRACHEA	URINARY BLADDER	

ANIMAL 3461E02 16-JUL-88 STUDY DAY 116
TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:        EMACIATION
THORACIC CAV
    GROSS:        FLUID
                      CONTAINS RED FLUID
HEART
    MICRO: ((2)) MINERALIZATION
           (3)   EPICARDITIS
                      NECROTIC PROLIFERATIVE LESION ON RIGHT
                      VENTRICLE
AORTA
    MICRO:   4   #M LYMPHOSARCOMA
LIVER
    MICRO: ((2)) #M LYMPHOSARCOMA
PANCREAS
    MICRO:   4   #M LYMPHOSARCOMA
                      THERE IS A LARGE AREA OF NECROSIS AND
                      HEMORRHAGE
                      ASSOCIATED WITH THE NEOPLASM.
JEJUNUM
    GROSS:        POSTMORTEM CHANGE
ILEUM
    GROSS:        POSTMORTEM CHANGE
THYROID GL
    MICRO:  (2)  #M LYMPHOSARCOMA
                      GROWING AROUND THE THYROID
ADRENAL GL
    MICRO:  (4)  #M LYMPHOSARCOMA
                      GROWING AROUND ONE ADRENAL
SUBCUTIS
    MICRO:  (4)  CELLULITIS
                      THE TISSUE SURROUNDING THE
                      SUBMANDIBULAR LYMPH NODES
SPLEEN
    GROSS:        SIZE INCREASE
                      2X NORMAL
     MICRO+  3   #M LYMPHOSARCOMA
LYMPH ND, S-MAN
    GROSS:        COLOR CHANGE, DIFFUSE
                      RED
     MICRO+  4   SINUS HISTIOCYTOSIS
LYMPH ND, S-MAN
    GROSS:        SIZE INCREASE
                      2X NORMAL
     MICRO+  P   #M LYMPHOSARCOMA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3461E02 (CONTINUED)

```
                                        EARLY LESION
    MICRO: ((3)) FIBROSIS
                                        INVOLVES THE CAPSULE OF SEVERAL NODES
                                        THERE IS CELLULITIS OF THE SURROUNDING
                                        TISSUE
LYMPH ND, MES
    MICRO:   P   #M LYMPHOSARCOMA
                                        THE NODE IS FAIRLY AUTOLYSED
THYMIC REGION
    GROSS:       MASS
                                        30X30X30MM, TAN AND RED
     MICRO+  5   #M LYMPHOSARCOMA
                                        MUCH OF THE MASS IS NECROTIC
BONE, STERNUM
    MICRO: ((2)) CORTICAL HYPOPLASIA
            (4)  MYELOFIBROSIS
BONE, FEMUR
    MICRO: ((4)) HYPERTROPHIC PULMONARY OSTEOARTHROPATHY
                                        LESION DUE TO CHEST NEOPLASIA
BONE MARROW
    MICRO:   4   HYPOPLASIA
           ((3)) HEMORRHAGE
            (4)  #M LYMPHOSARCOMA
SKELETAL MUSCLE
    MICRO:   4   MYOFIBER ATROPHY
BRAIN
    MICRO:   2   HYDROCEPHALUS
TESTES
    GROSS:       SIZE DECREASE
                                        1/2 OF NORMAL, BILATERAL
     MICRO+  4   SEMINIFEROUS TUBULE ATROPHY
EPIDIDYMIDES
    GROSS:       SIZE DECREASE
                                        1/2 OF NORMAL, BILATERAL
     MICRO+  3   ATROPHY
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
           ((2)) #M LYMPHOSARCOMA
                                        UNILATERAL
SEMINAL VESICLE
    MICRO:   4   SEMINAL VESICULITIS
PROSTATE
    MICRO:   4   PROSTATITIS
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                                        ALL LOBES DARK RED
     MICRO+  4   CONGESTION
    MICRO: ((3)) #M LYMPHOSARCOMA
                                        PERIVASCULAR AND PLEURAL
            4    ATELECTASIS
CAUSE OF DEATH
    MICRO:   P   LYMPHOSARCOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SALIVARY GL      ESOPHAGUS        STOMACH
    DUODENUM         JEJUNUM          COLON
    RECTUM           PITUITARY        PARATHYROID GL
    SKIN             SPINAL CORD      NERVE, SCIATIC
    EYE              TRACHEA          KIDNEYS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3461E02 (CONTINUED)

```
                                    URINARY BLADDER
                                THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
                                    ILEUM            CECUM
```

ANIMAL 3456E03 25-OCT-89 STUDY DAY 582

TYPE OF DEATH: SACRIFICED MORIBUND

```
                                TOTAL BODY
                                    GROSS:       EMACIATION
                                THORACIC CAV
                                    GROSS:       FLUID
                                                     4-5 CC, RED-TINGED FLUID
                                HEART
                                    GROSS:       SIZE INCREASE
                                                     2X NORMAL
                                HEART
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     TAN FOCAL AREAS
                                     MICRO↑((3)) MINERALIZATION
                                                     ARTERIES AND MUSCLE FIBERS
                                    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
                                AORTA
                                    GROSS:       DILATATION/DISTENTION
                                     MICRO↑  4   MINERALIZATION
                                                     A DIFFUSE LESION AFFECTING ALL THE
                                                     VASCULATURE
                                                     DUE TO RENAL FAILURE
                                                     SAME LESION RECORDED UNDER VASCULATURE
                                VASCULATURE
                                    GROSS:       DILATATION/DISTENTION
                                                     AORTIC ARCH, FEELS ROUGH ON CUT SURFACE
                                     MICRO↑((4)) MINERALIZATION
                                STOMACH
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     OUTER SURFACE OF GLANDULAR PORTION NEAR
                                                     DUODENUM
                                                     WHITE FOCAL AREAS
                                     MICRO↑  5   MINERALIZATION
                                LIVER
                                    GROSS:       CONSISTENCY CHANGE
                                                     SOFT, MUSHY, ALL LOBES
                                LIVER
                                    GROSS:       COLOR CHANGE, DIFFUSE
                                                     PALE, VERY LIGHT TAN, ALL LOBES
                                     MICRO↑  4   FATTY CHANGE
                                PANCREAS
                                    MICRO: ((4)) MINERALIZATION
                                                     ARTERIAL
                                CECUM
                                    MICRO:   P   NEMATODIASIS
                                PITUITARY
                                    MICRO: ((P)) #B ADENOMA
                                THYROID GL
                                    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
                                PARATHYROID GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3456E03 (CONTINUED)

```
                                    MICRO:   4   HYPERPLASIA
                                ADRENAL GL
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     DARK RED AND TAN, BILATERAL
                                     MICRO+  4   CONGESTION
                                ADRENAL GL
                                    GROSS:       SIZE INCREASE
                                                     2X NORMAL, BILATERAL
                                    MICRO: ((3)) THROMBOSIS
                                SKIN
                                    GROSS:       PAPULE
                                                     2X2 MM, ON BACK, BETWEEN SHOULDERS
                                     MICRO+ (P)  #B SEBACEOUS GLAND ADENOMA
                                SPLEEN
                                    MICRO:   3   EXTRAMEDULLARY HEMATOPOIESIS
                                            (2)  MINERALIZATION
                                                     ARTERIAL
                                LYMPH ND, MED
                                    MICRO:   3   SINUS ERYTHROCYTOSIS
                                           ((3)) LYMPHATIC ECTASIA, CYSTIC
                                LYMPH ND, MES
                                    MICRO: ((1)) HISTIOCYTIC AGGREGATES
                                LYMPH ND, PANC
                                    GROSS:       COLOR CHANGE, DIFFUSE
                                                     RED
                                     MICRO+  2   SINUS ERYTHROCYTOSIS
                                THYMIC REGION
                                    MICRO:   4   INVOLUTIONAL ATROPHY
                                BONE, STERNUM
                                    MICRO: ((4)) FIBROUS OSTEODYSTROPHY
                                BONE, FEMUR
                                    MICRO:   4   FIBROUS OSTEODYSTROPHY
                                BONE MARROW
                                    MICRO:   4   HYPERPLASIA
                                EYE
                                    GROSS:       OPACITY
                                                     RIGHT, LINEAR
                                     MICRO+ (1)  MINERALIZATION
                                                     CORNEAL
                                TESTES
                                    GROSS:       SIZE DECREASE
                                                     1/2 OF NORMAL, SOFT, BILATERAL
                                     MICRO+  4   SEMINIFEROUS TUBULE ATROPHY
                                                     BILATERAL
                                    MICRO: ((3)) ARTERITIS
                                EPIDIDYMIDES
                                    MICRO:   4   ATROPHY
                                           ((2)) VACUOLATED EPITHELIUM
                                SEMINAL VESICLE
                                    GROSS:       SIZE DECREASE
                                                     1/2 OF NORMAL, BILATERAL
                                     MICRO+  4   ATROPHY
                                PROSTATE
                                    GROSS:       COLOR CHANGE, DIFFUSE
                                                     YELLOW-TAN
                                     MICRO+((3)) PROSTATITIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3456E03 (CONTINUED)

```
                    MICRO:  (2)  EPITHELIAL HYPERPLASIA
TRACHEA
                    MICRO: ((3)) SUBMUCOSAL MINERALIZATION
LUNGS
                    GROSS:       EMPHYSEMA
                                     MILD, LEFT LOBE
LUNGS
                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                     MOTTLED TAN AND DARK RED, ALL LOBES
                     MICRO+((4)) MINERALIZATION
                                     EXTENSIVE AREAS OF INTERSTITIAL
                                     MINERALIZATION
                    MICRO: ((3)) INTRAALVEOLAR CELLULAR DEBRIS
                             P   #B ADENOMA
                                     THERE ARE CHOLESTEROL GRANULOMAS
                                     ASSOCIATED WITH THE MASS
KIDNEYS
                    GROSS:       CYST
                                     OUTER CORTEX COVERED WITH PUNCTATE
                                     CYSTS, BILATERAL
                     MICRO+  5   TUBULAR PROTEINOSIS
KIDNEYS
                    GROSS:       COLOR CHANGE, DIFFUSE
                                     PALE GREEN, BILATERAL
                     MICRO+  5   FIBROSIS, INTERSTITIAL
                    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
                           ((3)) MINERALIZATION
CAUSE OF DEATH
                    MICRO:   P   CHRONIC RENAL DISEASE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    SALIVARY GL      ESOPHAGUS        DUODENUM
                    JEJUNUM          ILEUM            RECTUM
                    LYMPH ND, S-MAN  SKELETAL MUSCLE  BRAIN
                    SPINAL CORD      NERVE, SCIATIC   URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
                    COLON
```

ANIMAL 3388E04 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	15.036	2.783
KIDNEYS	4.117	0.762
HEART	1.859	0.344
SPLEEN	1.046	0.194
BRAIN	2.143	0.397
ADRENAL GL	0.079	0.015
TESTES	3.315	0.614
TERMINAL BODY WT.	540.3	

```
ADIPOSE TISSUE
                    GROSS:       CYST
                                     15X10X5MM, CLEAR FLUID FILLED, NEAR
                                     LEFT KIDNEY
HEART
                    MICRO:  (2)  FIBROSIS
STOMACH
                    MICRO: ((1)) GLAND ECTASIA
LIVER
                    MICRO:  (1)  MONONUCLEAR CELL INFILTRATE(S)
                           ((1)) CHOLANGITIS
PANCREAS
                    MICRO: ((3)) FAT INFILTRATION
                            (2)  ACINAR ATROPHY
                           ((1)) PIGMENT DEPOSITS
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3388E04 (CONTINUED)

```
    GROSS:        SIZE INCREASE
                      3X NORMAL
     MICRO+  P    #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      TAN AND RED
     MICRO+  4    VASCULAR ECTASIA
SKIN
    GROSS:        ALOPECIA
                      85X30MM, RIGHT INGUINAL AREA TO RECTUM
MAMMARY GL
    GROSS:        GALACTOCELE
                      MULTIPLE 2X2X2 TO 5X4X3MM THROUGHOUT
                      ENTIRE MAMMARY GLAND
     MICRO+((4)) GALACTOCELE
PAWS/FEET
    GROSS:        ULCERATED
                      20X15X5MM, TAN AND RED, RIGHT HIND FOOT
                      5X5X3MM, RED, LEFT HIND FOOT
     MICRO+  5    ULCERATION
    MICRO: ((4)) OSSEUS METAPLASIA
           ((5)) FIBROSIS
LYMPH ND, S-MAN
    MICRO: ((4)) PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
           ((2)) PLASMACYTOSIS
LYMPH ND, OTHER
    MICRO:   3   PLASMACYTOSIS
                      INGUINAL AND LUMBAR NODES
           ((4)) LYMPHATIC ECTASIA, CYSTIC
                      SUBLUMBAR NODE;
                      THIS WAS MISTAKEN FOR AN ADIPOSE TISSUE
                      LESION
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
SEMINAL VESICLE
    GROSS:        SIZE INCREASE
                      LEFT, 2X NORMAL
PROSTATE
    MICRO: ((1)) LYMPHOID INFILTRATES
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3)) TUBULAR PROTEINOSIS
           ((3)) TUBULAR BASOPHILIA
           ((2)) NEPHRITIS, INTERSTITIAL
           ((3)) FIBROSIS, INTERSTITIAL
            (3)  CYST(S)
           ((2)) MINERALIZATION
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    ADIPOSE TISSUE   AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3388E04 (CONTINUED)

ILEUM	CECUM	COLON
RECTUM	THYROID GL	PARATHYROID GL
ADRENAL GL	SKIN	SPLEEN
BONE, STERNUM	BONE, FEMUR	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	TESTES	EPIDIDYMIDES
SEMINAL VESICLE	URINARY BLADDER	

ANIMAL 3505E05 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	13.136	2.061
KIDNEYS	4.344	0.682
HEART	1.637	0.257
SPLEEN	0.780	0.122
BRAIN	2.205	0.346
ADRENAL GL	0.099	0.016
TESTES	3.247	0.509
TERMINAL BODY WT.	637.4	

HEART
MICRO: ((1)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
MICRO: ((2)) GLAND ECTASIA
LIVER
GROSS: COLOR CHANGE, DIFFUSE
LIGHT BROWN
MICRO: ((1)) CHOLANGITIS
PANCREAS
MICRO: (3) ACINAR ATROPHY
(P) #B ISLET CELL ADENOMA
SMALL NODULE
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
6X6MM
MICRO+ P #B ADENOMA
LARGE
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
MICRO+((4)) VASCULAR ECTASIA
ASSOCIATED WITH THE TUMOR
ADRENAL GL
MICRO: (1) CORTICAL CELL VACUOLIZATION
SKIN
GROSS: PAPILLOMA
4X4X3MM, HEAD BETWEEN EYES
MICRO+ P EPIDERMAL INCLUSION CYST
PAWS/FEET
GROSS: ULCERATED
5X5X4MM,LEFT HIND
MICRO+ 4 ULCERATION
MICRO: 4 FIBROSIS
LYMPH ND, S-MAN
MICRO: 3 SINUS ERYTHROCYTOSIS
3 PLASMACYTOSIS
LYMPH ND, MED
MICRO: 2 SINUS ERYTHROCYTOSIS
LYMPH ND, MES
MICRO: 4 LYMPHOID HYPERPLASIA
4 SINUS ERYTHROCYTOSIS
THYMIC REGION

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3505E05 (CONTINUED)

```
    MICRO:   4   INVOLUTIONAL ATROPHY
BRAIN
    MICRO: ((3)) VACUOLIZATION
                     CEREBELLUM
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
EYE
    MICRO:  (3)  HEMORRHAGE, RETROORBITAL
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
           ((1)) LYMPHOID INFILTRATES
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:   3   CONGESTION
           ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR BASOPHILIA
           ((2)) MINERALIZATION
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            RECTUM           THYROID GL
    PARATHYROID GL   SPLEEN           BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    NERVE, SCIATIC   TESTES           EPIDIDYMIDES
    SEMINAL VESICLE  URINARY BLADDER
```

ANIMAL 3309E06 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.927	2.490
KIDNEYS	4.476	0.747
HEART	2.049	0.342
SPLEEN	1.369	0.228
BRAIN	2.176	0.363
ADRENAL GL	0.087	0.015
TESTES	3.832	0.639
TERMINAL BODY WT.	599.4	

```
HEART
    MICRO:  (2)  MYOCARDIAL DEGENERATION/FIBROSIS
LIVER
    GROSS:       NODULE
                     3X2X2MM, TAN; BETWEEN MEDIAN LOBES
     MICRO+((P)) #B HEPATOCELLULAR ADENOMA
                     TWO SMALL NODULES
    MICRO: ((1)) BILIARY HYPERPLASIA
           ((1)) CHOLANGIOFIBROSIS
            (2)  CYSTIC DEGENERATION
PITUITARY
    MICRO:  (P)  #B ADENOMA
THYROID GL
    MICRO:  (P)  THYROGLOSAL DUCT CYST
             P   #B ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO+((4)) CORTICAL CELL HYPERTROPHY
    MICRO:  (P)  #B PHEOCHROMOCYTOMA
           ((3)) CORTICAL CELL VACUOLIZATION
            (2)  HEMORRHAGE
PAWS/FEET
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3309E06 (CONTINUED)

```
                    GROSS:        ULCERATED
                                      15X10X5MM, DARK RED, RIGHT HIND FOOT
                     MICRO+  5    ULCERATION
PAWS/FEET
                    GROSS:        SWOLLEN
                                      RIGHT HIND FOOT
                     MICRO+  5    FIBROSIS
                    MICRO:  (3)   OSSEUS METAPLASIA
LYMPH ND, S-MAN
                    MICRO:   2    PLASMACYTOSIS
LYMPH ND, MES
                    MICRO: ((1)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
                    GROSS:        SIZE INCREASE
                                      10X6X4MM, RIGHT SUBLUMBAR LYMPH NODE
                     MICRO+  5    PLASMACYTOSIS
                                      LUMBAR NODE
                    MICRO:  (3)   SINUS ERYTHROCYTOSIS
                           ((3)) FIBROSIS
THYMIC REGION
                    MICRO:   4    INVOLUTIONAL ATROPHY
BONE MARROW
                    MICRO:   4    HYPERPLASIA
SPINAL CORD
                    MICRO: ((1)) VACUOLIZATION
PROSTATE
                    MICRO:  (3)   PROSTATITIS
LUNGS
                    MICRO: ((1)) HEMORRHAGE
                           ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
                    MICRO: ((1)) TUBULAR PROTEINOSIS
                           ((1)) NEPHRITIS, INTERSTITIAL
                           ((2)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    AORTA             SALIVARY GL       ESOPHAGUS
                    STOMACH           PANCREAS          DUODENUM
                    JEJUNUM           ILEUM             CECUM
                    COLON             RECTUM            PARATHYROID GL
                    SKIN              SPLEEN            BONE, STERNUM
                    BONE, FEMUR       SKELETAL MUSCLE   BRAIN
                    NERVE, SCIATIC    EYE               TESTES
                    EPIDIDYMIDES      SEMINAL VESICLE   TRACHEA
                    URINARY BLADDER
```

ANIMAL 3557E07 21-FEB-90 STUDY DAY 701

TYPE OF DEATH: SACRIFICED MORIBUND

```
HEART
                    MICRO:  (1)   FIBROSIS
LIVER
                    GROSS:        MASS
                                      30X35X10, LEFT LATERAL LOBE
                     MICRO+ (P)   #B HEPATOCELLULAR ADENOMA
                    MICRO: ((2)) MONONUCLEAR CELL INFILTRATE(S)
                            (2)   CYSTIC DEGENERATION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3557E07 (CONTINUED)

```
                    ((2)) BILIARY HYPERPLASIA
                     (4)  CYSTS
PANCREAS
    MICRO:   P   #B ISLET CELL ADENOMA
            ((4)) ARTERITIS
PITUITARY
    MICRO:  (P)  #B ADENOMA
THYROID GL
    GROSS:       SIZE INCREASE
                     RIGHT, 1.5X NORMAL
    MICRO: ((2)) C CELL HYPERPLASIA
ADRENAL GL
    MICRO:  (1)  CORTICAL CELL VACUOLIZATION
SKIN
    GROSS:       PAPULE
                     3X3X3MM, BROWN, TIP OF NOSE
     MICRO+ (2)  EPIDERMAL HYPERPLASIA
SKIN
    GROSS:       ALOPECIA
                     PARTIAL, ENTIRE BODY
MAMMARY GL
    MICRO:   2   HYPERPLASIA
SPLEEN
    GROSS:       SIZE DECREASE
                     SLIGHT
LYMPH ND, S-MAN
    GROSS:       SIZE INCREASE
                     SLIGHT
     MICRO+  3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    GROSS:       ATROPHY
                     HIND LEGS, BILATERAL
     MICRO+  4   MYOFIBER ATROPHY
BRAIN
    MICRO: ((2)) VACUOLIZATION
EYE
    GROSS:       EXOPHTHALMIA
                     BILATERAL
TESTES
    MICRO: ((2)) ARTERITIS
           ((2)) @PN INTERSTITIAL CELL HYPERPLASIA
EPIDIDYMIDES
    MICRO: ((3)) VACUOLATED EPITHELIUM
           ((2)) EPITHELIAL HYPERPLASIA
LUNGS
    MICRO:   3   CONGESTION
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     MINIMAL, RIGHT
KIDNEYS
    GROSS:       DIMPLED/PITTED
                     CORTICAL SURFACE, BILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3557E07 (CONTINUED)

```
                    MICRO+  5   TUBULAR PROTEINOSIS
                   MICRO: ((2)) NEPHRITIS, INTERSTITIAL
                          ((4)) TUBULAR BASOPHILIA
                            3   FIBROSIS, INTERSTITIAL
                          ((2)) TRANSITIONAL CELL HYPERPLASIA
URINARY BLADDER
    MICRO:    2   HEMORRHAGE
                      IN THE BLADDER LUMEN
CAUSE OF DEATH
    MICRO:    P   CHRONIC RENAL DISEASE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA             SALIVARY GL       ESOPHAGUS
    STOMACH           DUODENUM          JEJUNUM
    ILEUM             CECUM             COLON
    RECTUM            PARATHYROID GL    SPLEEN
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    SPINAL CORD       NERVE, SCIATIC    EYE
    SEMINAL VESICLE   PROSTATE          TRACHEA
```

ANIMAL 3516E08 2-DEC-89 STUDY DAY 620

TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:        POSTMORTEM CHANGE
HEART
    MICRO:   (4)  MINERALIZATION
                      AORTA
AORTA
    MICRO:    4   MINERALIZATION
STOMACH
    GROSS:        THICKER THAN NORMAL
                      GLANDULAR PORTION
     MICRO+((4)) MINERALIZATION
LIVER
    MICRO: ((3)) HEPATOCELLULAR NECROSIS
                      POSSIBLE INFARCTIONS, SEVERAL LARGE
                      AREAS
PANCREAS
    MICRO: ((5)) ARTERITIS
           ((4)) THROMBOSIS
                      THIS IS THE LESION REFERRED TO AS A
                      DUODENAL MASS.
            (4)   ACINAR ATROPHY
DUODENUM
    GROSS:        MASS
                      10X5X5MM, RED, AREA FOLLOWING STOMACH
CECUM
    MICRO:    P   NEMATODIASIS
COLON
    MICRO:    P   NEMATODIASIS
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
PARATHYROID GL
    MICRO:    3   HYPERPLASIA
ADRENAL GL
    MICRO:    P   #B PHEOCHROMOCYTOMA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3516E08 (CONTINUED)

```
                    ((3)) CONGESTION
                     (4)  VASCULAR ECTASIA
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:   4   CORTICAL HYPOPLASIA
BONE, FEMUR
    MICRO: ((3)) FIBROUS OSTEODYSTROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
BRAIN
    MICRO:  (4)  HEMORRHAGE
           ((4)) ENCEPHALITIS, GRANULOMATOUS
                     MARKED ONE SIDE, SLIGHT ON OPPOSITE
                     SIDE, CAUDATE NUCLEUS
                     REGION
                     LARGE AMOUNT OF MINERALIZED DEBRIS
                     PRESENT AT WORSE LESION
                     SITE, AS WELL AS HEMORRHAGE
            (3)  MINERALIZATION
           ((4)) MALACIA
                     BILATERALLY SYMMETRICAL LESIONS OF THE
                     MIDBRAIN CORTEX
                     CORPORA AMYLACIA ARE PRESENT AT THE SITE
SPINAL CORD
    MICRO: ((3)) VACUOLIZATION
                     INVOLVES LUMBAR SPINAL NERVES
EYE
    MICRO:  (3)  KERATITIS
                     ALL LESIONS ARE UNILATERAL
            (2)  HYPOPYON
            (2)  CORNEAL ULCER
TESTES
    GROSS:       CONSISTENCY CHANGE
                     SOFT, BILATERAL
     MICRO+((3)) SEMINIFEROUS TUBULE ATROPHY
    MICRO: ((4)) ARTERITIS
            (2)  MINERALIZATION
                     ARTERIAL
EPIDIDYMIDES
    MICRO:   2   EPITHELIAL HYPERPLASIA
           ((3)) VACUOLATED EPITHELIUM
PENIS
    GROSS:       SWOLLEN
                     SLIGHTLY
     MICRO+  4   CONGESTION
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
KIDNEYS
    GROSS:       SIZE INCREASE
                     3-4X NORMAL, BILATERAL
KIDNEYS
    GROSS:       GRANULAR
                     BILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3516E08 (CONTINUED)

```
                    MICRO↑  5   TUBULAR PROTEINOSIS
                   MICRO: ((4)) CYST(S)
                            4   FIBROSIS, INTERSTITIAL
                            4   TUBULAR ATROPHY
                         ((4)) GLOMERULOSCLEROSIS
                         ((2)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:    P   GRANULOMATOUS ENCEPHALITIS
              P   CHRONIC RENAL DISEASE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SALIVARY GL      ESOPHAGUS        DUODENUM
    JEJUNUM          ILEUM            RECTUM
    PITUITARY        SKIN             SPLEEN
    LYMPH ND, S-MAN  SKELETAL MUSCLE  NERVE, SCIATIC
    SEMINAL VESICLE  PROSTATE         LUNGS
    URINARY BLADDER
```

ANIMAL 3480E09 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	15.428	2.112
KIDNEYS	5.424	0.743
HEART	2.626	0.360
SPLEEN	1.302	0.178
BRAIN	2.570	0.352
ADRENAL GL	0.103	0.014
TESTES	3.484	0.477
TERMINAL BODY WT.	730.4	

```
HEART
    MICRO:  (3)  MYXOMATOUS DEGENERATION OF VALVES
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) CHOLANGITIS
           ((1)) BILIARY HYPERPLASIA
            (1)  MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    MICRO:   P   #B ADENOMA
THYROID GL
    MICRO: ((1)) C CELL HYPERPLASIA
ADRENAL GL
    MICRO:  (2)  CORTICAL CELL VACUOLIZATION
           ((1)) CORTICAL CELL HYPERTROPHY
PAWS/FEET
    GROSS:       SWOLLEN
                     2X NORMAL, BILATERAL
     MICRO↑  5   FIBROSIS
PAWS/FEET
    GROSS:       ULCERATED
                     20X20MM, HIND PAWS, BILATERAL
     MICRO↑  5   ULCERATION
    MICRO:   3   OSSEUS METAPLASIA
           ((4)) HYPERKERATOSIS
LYMPH ND, S-MAN
    MICRO:   4   PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   4   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO:   3   MASTOCYTOSIS
           ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     2-3X NORMAL, BILATERAL
     MICRO↑  5   PLASMACYTOSIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3480E09 (CONTINUED)

```
    MICRO:   4   LYMPHOID HYPERPLASIA
                     LUMBAR NODES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:   3   CORTICAL HYPOPLASIA
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO: ((3)) MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
                     ALSO INVOLVES SPINAL NERVES
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
            (1)  PROSTATITIS
TRACHEA
    MICRO: ((1)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
           ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3)) TUBULAR PROTEINOSIS
           ((3)) NEPHRITIS, INTERSTITIAL
           ((4)) TUBULAR BASOPHILIA
           ((3)) FIBROSIS, INTERSTITIAL
           ((3)) CYST(S)
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    PARATHYROID GL   SKIN             SPLEEN
    BONE, FEMUR      BRAIN            NERVE, SCIATIC
    EYE              TESTES           EPIDIDYMIDES
    SEMINAL VESICLE  URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    RECTUM
```

ANIMAL 3626E10 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	24.028	4.371
KIDNEYS	6.426	1.169
HEART	2.010	0.366
SPLEEN	1.029	0.187
BRAIN	2.085	0.379
ADRENAL GL	0.132	0.024
TESTES	2.873	0.523
TERMINAL BODY WT.	549.7	

```
MESENTARY/OM'TUM
    GROSS:       MASS
                     17X15X10MM, HARD, BROWN
HEART
    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MOTTLED LIGHT AND DARK
LIVER
    GROSS:       NODULE
                     LEFT MEDIAN, 8X8X3MM
     MICRO↑ (P)  #B HEPATOCELLULAR ADENOMA
PANCREAS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3626E10 (CONTINUED)

```
                    MICRO:  (P)  #B ISLET CELL ADENOMA
                                     THIS LESION IS THE LESION RECORDED
                                     GROSSLY AS A MESENTERY
                                     MASS
                                     TWO ADENOMAS ARE PRESENT, ONE IS VERY
                                     LARGE
                            (4)  ARTERITIS
COLON
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:       NODULE
                     DARK RED, 2X2X2MM
     MICRO+((P)) #B ADENOMA
PARATHYROID GL
    MICRO:   3   HYPERPLASIA
ADRENAL GL
    MICRO: ((3)) MEDULLARY CELL HYPERPLASIA
            (2)  CORTICAL CELL HYPERTROPHY
            (3)  CORTICAL CELL VACUOLIZATION
TAIL
    GROSS:       NODULE
                     5X5X4MM, 3X3X2MM, TAN AND DARK BROWN,
                     NEAR BASE OF TAIL
     MICRO+ (P)  EPIDERMAL INCLUSION CYSTS
    MICRO:  (4)  DERMATITIS
                     THE CYST IS ULCERATED AND INFLAMMED
LYMPH ND, S-MAN
    MICRO: ((3)) PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
TESTES
    MICRO: ((4)) ARTERITIS
           ((2)) MINERALIZATION
EPIDIDYMIDES
    MICRO: ((2)) VACUOLATED EPITHELIUM
SEMINAL VESICLE
    MICRO:   4   SEMINAL VESICULITIS
                     UNILATERAL
COAGULATING GL
    MICRO:  (3)  ADENITIS
                     UNILATERAL
PROSTATE
    MICRO:   5   PROSTATITIS
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:       DIMPLED/PITTED
                     BILATERAL
     MICRO+  4   TUBULAR PROTEINOSIS
KIDNEYS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3626E10 (CONTINUED)

```
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      PALE, BILATERAL
                     MICRO↑  4    FIBROSIS, INTERSTITIAL
                    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
                             4   TUBULAR ATROPHY
                           ((4)) CYST(S)
                           ((4)) GLOMERULOSCLEROSIS
URINARY BLADDER
    MICRO: ((1)) LYMPHOCYTIC INFILTRATE(S)
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            RECTUM           THYROID GL
    SKIN             SPLEEN           BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    BRAIN            NERVE, SCIATIC   EYE
```

ANIMAL 3289E11 12-FEB-90 STUDY DAY 692

TYPE OF DEATH: FOUND DEAD

```
HEART
    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:        NODULE
                      6X6X2MM, BROWN, LEFT LATERAL LOBE
     MICRO↑ (P)  #B HEPATOCELLULAR ADENOMA
LIVER
    GROSS:        SWOLLEN
                      ALL LOBES
PANCREAS
    MICRO: ((2)) FAT INFILTRATION
JEJUNUM
    GROSS:        POSTMORTEM CHANGE
ILEUM
    GROSS:        POSTMORTEM CHANGE
CECUM
    MICRO:   P    NEMATODIASIS
THYROID GL
    MICRO:  (P)   THYROGLOSAL DUCT CYST
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE TAN FOCI, BILATERAL
     MICRO↑((3)) CORTICAL CELL VACUOLIZATION
PAWS/FEET
    GROSS:        ULCERATED
                      4X3MM, RED; RIGHT HIND FOOT
     MICRO↑ (4)   ULCERATION
    MICRO:   3    HYPERKERATOSIS
           ((4)) EPIDERMAL HYPERPLASIA
            (4)  FIBROSIS
LYMPH ND, S-MAN
    MICRO:   2    PLASMACYTOSIS
LYMPH ND, MES
    GROSS:        POSTMORTEM CHANGE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3289E11 (CONTINUED)

```
    MICRO:   2   MASTOCYTOSIS
           ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED LIGHT AND DARK PINK
     MICRO+  4   CONGESTION
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((2)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P   NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    JEJUNUM          ILEUM            COLON
    PITUITARY        PARATHYROID GL   SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  BRAIN
    NERVE, SCIATIC   EYE              TESTES
    EPIDIDYMIDES     SEMINAL VESICLE  PROSTATE
    URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    DUODENUM         RECTUM
```

ANIMAL 3429E12 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	16.380	2.386
KIDNEYS	4.463	0.650
HEART	1.917	0.279
SPLEEN	1.151	0.168
BRAIN	2.245	0.327
ADRENAL GL	0.093	0.014
TESTES	3.741	0.545
TERMINAL BODY WT.	686.6	

```
HEART
    MICRO:  (2)  MINERALIZATION
                     AORTA
STOMACH
    MICRO: ((2)) GLAND ECTASIA
PITUITARY
    GROSS:       SIZE INCREASE
                     2X NORMAL
     MICRO+ (P)  #B ADENOMA
THYROID GL
    GROSS:       SIZE INCREASE
                     2X NORMAL, BILATERAL
     MICRO+ (4)  FOLLICULAR CYST
    MICRO:   P   #B C CELL ADENOMA
             P   #B ADENOMA
                     THESE TUMORS ARE IN OPPOSITE GLANDS
PARATHYROID GL
    GROSS:       SIZE INCREASE
                     2X NORMAL, BILATERAL
ADRENAL GL
    MICRO:  (2)  HEMORRHAGE
           ((2)) CORTICAL CELL VACUOLIZATION
PAWS/FEET
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3429E12 (CONTINUED)

```
    GROSS:        ULCERATED
                      RIGHT FOOT
     MICRO+ (4)   ULCERATION
    MICRO: ((3)) HYPERKERATOSIS
           ((4)) EPIDERMAL HYPERPLASIA
            (4)  FIBROSIS
LYMPH ND, S-MAN
    MICRO:   3   LYMPHOID HYPERPLASIA
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
KIDNEYS
    GROSS:        DIMPLED/PITTED
                      BOTH, SLIGHT
     MICRO+((2)) TUBULAR PROTEINOSIS
KIDNEYS
    GROSS:        COLOR CHANGE, DIFFUSE
                      BOTH, PALE
     MICRO+((3)) TUBULAR BASOPHILIA
    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
           ((1)) MINERALIZATION
            (3)  CYST(S)
                      LEFT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    LIVER            PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             SPLEEN           BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    EYE              TESTES           EPIDIDYMIDES
    SEMINAL VESICLE  LUNGS            URINARY BLADDER
```

ANIMAL 3471E13 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	16.216	2.194
KIDNEYS	4.446	0.602
HEART	2.657	0.360
SPLEEN	1.205	0.163
BRAIN	2.247	0.304
ADRENAL GL	0.135	0.018
TESTES	3.258	0.441
TERMINAL BODY WT.	739.0	

```
HEART
    MICRO:  (2)  MYOCARDIAL DEGENERATION/FIBROSIS
LIVER
    GROSS:        COLOR CHANGE, DIFFUSE
                      PALE, ALL LOBES
LIVER
    GROSS:        NODULE
                      TWO, 2X2MM TAN NODULES, LEFT LATERAL
                      LOBE
     MICRO+  P   #B HEPATOCELLULAR ADENOMA
    MICRO: ((4)) CYSTS
PITUITARY
    GROSS:        NODULE
                      3X3MM RED
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3471E13 (CONTINUED)

```
     MICRO+  P   #B ADENOMA
    MICRO: ((4)) CYST(S)
            (4)  VASCULAR ECTASIA
THYROID GL
    GROSS:       SIZE INCREASE
                     2X NORMAL, BILATERAL
     MICRO+((3)) LYMPHOCYTIC THYROIDITIS
    MICRO: ((3)) ARTERITIS
ADRENAL GL
    MICRO:  (P)  #B PHEOCHROMOCYTOMA
           ((3)) VASCULAR ECTASIA
           ((1)) CORTICAL CELL HYPERTROPHY
           ((3)) CORTICAL CELL VACUOLIZATION
SKIN
    GROSS:       ALOPECIA
                     LOWER ABDOMEN
SKIN
    GROSS:       ABSCESS
                     PREPUTIAL GLAND, GREEN MATERIAL
MAMMARY GL
    MICRO: ((2)) HYPERSECRETION
            (5)  ABSCESS
                     PROBABLY DUE TO A RUPTURED GLAND
                     CORRELATES WITH LESION FOR SKIN/SUBCUTIS
PAWS/FEET
    GROSS:       SWOLLEN
                     2X NORMAL, BILATERAL
     MICRO+  4   FIBROSIS
PAWS/FEET
    GROSS:       ULCERATED
                     RIGHT, 20X15MM, LEFT, 25X20MM
     MICRO+ (5)  ULCERATION
    MICRO:  (4)  OSSEUS METAPLASIA
SPLEEN
    MICRO:   3   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
    MICRO:   2   PLASMACYTOSIS
             3   LYMPHOID HYPERPLASIA
           ((3)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
            (3)  LYMPHOID HYPERPLASIA
LYMPH ND, REN
    GROSS:       CYST
                     5X NORMAL, YELLOW FLUID
     MICRO+((4)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, OTHER
    GROSS:       CYST
                     SUBLUMBAR, 4X NORMAL, YELLOW FLUID
     MICRO+((4)) LYMPHATIC ECTASIA, CYSTIC
                     SUBLUMBAR NODE
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     CAUDAL, 3X NORMAL
                     POPLITEAL, 15X10X7MM, BILATERAL
     MICRO+  5   LYMPHOID HYPERPLASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3471E13 (CONTINUED)

```
                                        POPLITEAL NODE
    MICRO:   5   PLASMACYTOSIS
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                                        NO THYMUS
BONE MARROW
    MICRO:   4   HYPERPLASIA
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    MICRO:  (3)  MINERALIZATION
                                        SCLERA, UNILATERAL
EPIDIDYMIDES
    MICRO:  (4)  ARTERITIS
PROSTATE
    MICRO:  (3)  EPITHELIAL HYPERPLASIA
LARYNX
    MICRO:  (2)  LARYNGITIS
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
           ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA             SALIVARY GL       ESOPHAGUS
    STOMACH           PANCREAS          DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            SKIN
    BONE, STERNUM     BONE, FEMUR       SKELETAL MUSCLE
    BRAIN             NERVE, SCIATIC    TESTES
    SEMINAL VESICLE   URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 3633E14 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.554	2.214
KIDNEYS	3.506	0.672
HEART	1.694	0.325
SPLEEN	0.520	0.100
BRAIN	2.160	0.414
ADRENAL GL	0.057	0.011
TESTES	3.270	0.627
TERMINAL BODY WT.	521.9	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
PANCREAS
    MICRO: ((2)) FAT INFILTRATION
PITUITARY
    GROSS:       SIZE INCREASE
                     5X4X4MM
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     TAN AND DARK RED
     MICRO+((3)) VASCULAR ECTASIA
THYROID GL
    MICRO:  (P)  THYROGLOSAL DUCT CYST
            (1)  C CELL HYPERPLASIA
SUBCUTIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3633E14 (CONTINUED)

```
                    MICRO:  (P)  #B FIBROMA
MAMMARY GL
                    GROSS:       MASS
                                     60X70X65MM, TAN, MULTILOBULAR, CERVICAL
                                     AREA
SPLEEN
                    GROSS:       SIZE DECREASE
                                     1/4 OF NORMAL
LYMPH ND, S-MAN
                    GROSS:       SIZE INCREASE
                                     2X NORMAL
                     MICRO+  2   PLASMACYTOSIS
                    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, MES
                    MICRO: ((1)) HISTIOCYTIC AGGREGATES
                              3   LYMPHATIC ECTASIA
THYMIC REGION
                    MICRO:   5   INVOLUTIONAL ATROPHY
SPINAL CORD
                    MICRO: ((1)) VACUOLIZATION
PROSTATE
                    MICRO: ((2)) EPITHELIAL HYPERPLASIA
TRACHEA
                    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
                    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
                    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    HEART            AORTA            SALIVARY GL
                    ESOPHAGUS        LIVER            DUODENUM
                    JEJUNUM          ILEUM            CECUM
                    COLON            RECTUM           PARATHYROID GL
                    ADRENAL GL       SKIN             SPLEEN
                    BONE, STERNUM    BONE, FEMUR      BONE MARROW
                    SKELETAL MUSCLE  BRAIN            NERVE, SCIATIC
                    EYE              TESTES           EPIDIDYMIDES
                    SEMINAL VESICLE  URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
                    MAMMARY GL
```

ANIMAL 3542E15 3-MAY-89 STUDY DAY 407

TYPE OF DEATH: SACRIFICED MORIBUND

```
PITUITARY
                    GROSS:       COLOR CHANGE, DIFFUSE
                                     PALE TAN
THYROID GL
                    MICRO:   P   THYROGLOSAL DUCT CYST
                         ((2)) CALCIFIC CONCRETIONS, COLLOID
MAMMARY GL
                    GROSS:       MASS
                                     40X40X30MM, TAN AND RED, LEFT AXILLARY
                                     AREA
                     MICRO+  P   #B FIBROADENOMA
                                     THE MASS IS ULCERATED
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3542E15 (CONTINUED)

```
SPLEEN
    MICRO:   4   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
             2   MASTOCYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
BONE MARROW
    MICRO:   4   HYPERPLASIA
EYE
    GROSS:       CRUST
                     RED, PERIOCULAR AREA, BILATERAL
EPIDIDYMIDES
    MICRO: ((2)) FIBROSIS
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3)) HYDRONEPHROSIS
           ((3)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P   MAMMARY GLAND FIBROADENOMA/SEPTICEMIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          LIVER
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PITUITARY        PARATHYROID GL
    ADRENAL GL       SKIN             BONE, STERNUM
    BONE, FEMUR      SKELETAL MUSCLE  BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    TESTES           SEMINAL VESICLE  PROSTATE
    TRACHEA          URINARY BLADDER
```

ANIMAL 3647E16 27-SEP-89 STUDY DAY 554
TYPE OF DEATH: FOUND DEAD

```
STOMACH
    GROSS:       ULCERATED
                     MULTIPLE 2X2MM, NONGLANDULAR
     MICRO+((4)) MUCOSAL HYPERPLASIA
                     ALL LESIONS INVOLVE THE NONGLANDULAR
                     STOMACH
    MICRO:   2   GASTRITIS
             3   EDEMA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED TAN AND RED
     MICRO+((4)) FATTY CHANGE
    MICRO: ((2)) BILIARY HYPERPLASIA
PANCREAS
    MICRO:  (2)  ACINAR ATROPHY
DUODENUM
    GROSS:       POSTMORTEM CHANGE
JEJUNUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3647E16 (CONTINUED)

```
    GROSS:        POSTMORTEM CHANGE
ILEUM
    GROSS:        POSTMORTEM CHANGE
COLON
    GROSS:        POSTMORTEM CHANGE
PITUITARY
    GROSS:        SIZE INCREASE
                      8X6X6MM
     MICRO+  P    #M CARCINOMA
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      PALE TAN
PARATHYROID GL
    MICRO:   2    HYPERPLASIA
ADRENAL GL
    MICRO: ((2)) CORTICAL CELL VACUOLIZATION
            (3)  CONGESTION
SKIN
    GROSS:        STAINED
                      URINE, UROGENITAL AREA
MAMMARY GL
    MICRO: ((3)) HYPERSECRETION
SPLEEN
    GROSS:        POSTMORTEM CHANGE
LYMPH ND, MES
    GROSS:        POSTMORTEM CHANGE
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO+  3    COMPRESSION
    MICRO: ((P)) #M CARCINOMA
                      METASTATIC FROM THE PITUITARY
SEMINAL VESICLE
    GROSS:        POSTMORTEM CHANGE
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      ALL LOBES MOTTLED LIGHT AND DARK RED
     MICRO+  4    CONGESTION
KIDNEYS
    GROSS:        DIMPLED/PITTED
                      CORTICAL SURFACE, BILATERAL
     MICRO+((3)) TUBULAR PROTEINOSIS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((3)) FIBROSIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P    PITUITARY CARCINOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA            SALIVARY GL
    ESOPHAGUS         COLON            THYROID GL
    SKIN              SPLEEN           LYMPH ND, S-MAN
    BONE, STERNUM     BONE, FEMUR      BONE MARROW
    SKELETAL MUSCLE   SPINAL CORD      NERVE, SCIATIC
    EYE               TESTES           EPIDIDYMIDES
    SEMINAL VESICLE   PROSTATE         TRACHEA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3647E16 (CONTINUED)

URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
DUODENUM JEJUNUM ILEUM
CECUM RECTUM

ANIMAL 3322E17 21-MAR-90 STUDY DAY 729
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	16.078	2.399
KIDNEYS	5.035	0.751
HEART	1.743	0.260
SPLEEN	0.688	0.103
BRAIN	2.379	0.355
ADRENAL GL	0.072	0.011
TESTES	3.657	0.546
TERMINAL BODY WT.	670.2	

```
HEART
    MICRO: ((4)) @PN ENDOCARDIAL MYXOMATOSIS
                    MAINLY AFFECTS LEFT VENTRICLE, SLIGHT
                    IN LEFT ATRIUM
           ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES DARK RED FOCAL AREAS
                     SCATTERED ON SURFACE
     MICRO↑((2)) CYSTIC DEGENERATION
    MICRO:  (1)  MONONUCLEAR CELL INFILTRATE(S)
PANCREAS
    MICRO: ((2)) FAT INFILTRATION
PITUITARY
    GROSS:       NODULE
                     RED 3X3X4MM
     MICRO↑  P   #M CARCINOMA
THYROID GL
    MICRO:  (3)  #B C CELL ADENOMA
           ((1)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO↑((2)) CORTICAL CELL HYPERTROPHY
MAMMARY GL
    MICRO: ((4)) GALACTOCELE
LYMPH ND, S-MAN
    MICRO:   4   PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   2   MASTOCYTOSIS
             3   SINUS ERYTHROCYTOSIS
           ((3)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    MICRO:  (4)  FIBROSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:   3   CORTICAL HYPOPLASIA
BONE, FEMUR
    MICRO:   2   CORTICAL HYPOPLASIA
TESTES
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     RIGHT, 2X2MM FOCAL AREA RED
     MICRO↑ (P)  #M HEMANGIOSARCOMA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3322E17 (CONTINUED)

SMALL EARLY LESION

PROSTATE
MICRO: ((3)) PROSTATITIS
((2)) EPITHELIAL HYPERPLASIA

TRACHEA
MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA

LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
ALL LOBES MOTTLED LIGHT AND DARK RED
MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
((1)) PERIVASCULAR INFILTRATE(S)

KIDNEYS
MICRO: ((3)) TUBULAR BASOPHILIA
((3)) TUBULAR PROTEINOSIS
((3)) FIBROSIS, INTERSTITIAL
((2)) NEPHRITIS, INTERSTITIAL

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
DUODENUM	JEJUNUM	ILEUM
CECUM	COLON	RECTUM
PARATHYROID GL	SKIN	SPLEEN
BONE MARROW	SKELETAL MUSCLE	BRAIN
SPINAL CORD	NERVE, SCIATIC	EYE
EPIDIDYMIDES	SEMINAL VESICLE	URINARY BLADDER

ANIMAL 3364E18 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	15.649	2.401
KIDNEYS	5.784	0.888
HEART	1.990	0.305
SPLEEN	1.088	0.167
BRAIN	2.181	0.335
ADRENAL GL	0.123	0.019
TESTES	2.584	0.397
TERMINAL BODY WT.	651.7	

LIVER
GROSS: NODULE
2X2X2MM, BROWN, LEFT MEDIAN LOBE
MICRO↑ (P) #M CHOLANGIOCARCINOMA
EARLY LESION

LIVER
GROSS: SWOLLEN
ALL LOBES
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
(1) BILIARY HYPERPLASIA

PANCREAS
MICRO: ((3)) FAT INFILTRATION

PITUITARY
GROSS: SIZE INCREASE
2X NORMAL
MICRO↑ P #B ADENOMA

PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
2X2MM DARK RED FOCUS

THYROID GL
MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID

PARATHYROID GL
MICRO: 2 HYPERPLASIA

ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE BROWN FOCAL AREAS, RIGHT
MICRO↑((1)) CORTICAL CELL HYPERTROPHY
ADRENAL GL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3364E18 (CONTINUED)

```
    GROSS:        SIZE INCREASE
                      2X NORMAL, RIGHT
     MICRO+  P    #B PHEOCHROMOCYTOMA
    MICRO:  (2)   CORTICAL CELL VACUOLIZATION
MAMMARY GL
    MICRO: ((3)) HYPERSECRETION
PAWS/FEET
    GROSS:        SWOLLEN
                      HIND FEET, BILATERAL
     MICRO+  4    FIBROSIS
    MICRO: ((3)) OSSEUS METAPLASIA
            (4)   CELLULITIS
LYMPH ND, S-MAN
    GROSS:        SIZE INCREASE
                      2.5X NORMAL
     MICRO+  4    PLASMACYTOSIS
    MICRO:   4    LYMPHOID HYPERPLASIA
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    GROSS:        ATROPHY
                      HIND LEGS, BILATERAL
     MICRO+  4    MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
TESTES
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL, RIGHT
     MICRO+  4    SEMINIFEROUS TUBULE ATROPHY
                      UNILATERAL
TESTES
    GROSS:        CONSISTENCY CHANGE
                      SOFT, RIGHT
    MICRO: ((4)) ARTERITIS
            (3)   MINERALIZATION
EPIDIDYMIDES
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL, RIGHT
     MICRO+  3    ATROPHY
SEMINAL VESICLE
    GROSS:        SIZE DECREASE
                      RIGHT, SLIGHT
     MICRO+ (4)   FIBROSIS
SEMINAL VESICLE
    GROSS:        COLOR CHANGE, DIFFUSE
                      WHITE, RIGHT
PROSTATE
    MICRO: ((2)) PROSTATITIS
           ((2)) EPITHELIAL HYPERPLASIA
LUNGS
    MICRO: ((1)) PNEUMONITIS, INTERSTITIAL
             4    CONGESTION
KIDNEYS
    GROSS:        HYDRONEPHROSIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3364E18 (CONTINUED)

```
                                        MINIMAL, BILATERAL
KIDNEYS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MOTTLED BROWN AND RED, BILATERAL
     MICRO+((3)) FIBROSIS, INTERSTITIAL
KIDNEYS
    GROSS:        DIMPLED/PITTED
                      BILATERAL
     MICRO+((3)) TUBULAR PROTEINOSIS
    MICRO: ((4)) TUBULAR ATROPHY
           ((3)) TUBULAR BASOPHILIA
           ((3)) GLOMERULOSCLEROSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      BRAIN            NERVE, SCIATIC
    EYE              TRACHEA          URINARY BLADDER
```

ANIMAL 3326E19 18-FEB-90 STUDY DAY 698

TYPE OF DEATH: FOUND DEAD

```
LIVER
    GROSS:        SWOLLEN
                      ALL LOBES
    MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
                      THE LIVER IS VERY CONGESTED
PANCREAS
    MICRO:  (3)  ACINAR ATROPHY
PITUITARY
    GROSS:        MASS
                      15X8X5MM, MULTILOBULAR, MOTTLED RED AND
                      CREAM
     MICRO+  P   #B ADENOMA
    MICRO: ((4)) VASCULAR ECTASIA
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      RIGHT, DARK RED 1MM FOCAL AREAS
     MICRO+((4)) VASCULAR ECTASIA
    MICRO:   4   CONGESTION
           ((4)) CORTICAL CELL VACUOLIZATION
MAMMARY GL
    MICRO:  (2)  HYPERSECRETION
PAWS/FEET
    GROSS:        SWOLLEN
                      BILATERAL, 2X NORMAL, AT THE ANKLE
                      AREA, HIND PAWS
     MICRO+  4   FIBROSIS
PAWS/FEET
    GROSS:        ULCERATED
                      BILATERAL, BOTTOM OF HIND PAWS, RIGHT
                      5X8MM, LEFT 30X20MM
     MICRO+  5   ULCERATION
    MICRO:   2   OSSEUS METAPLASIA
LYMPH ND, S-MAN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3326E19 (CONTINUED)

```
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED, BILATERAL
     MICRO+((3)) PLASMACYTOSIS
LYMPH ND, S-MAN
    GROSS:        SIZE INCREASE
                      RIGHT 3X NORMAL
     MICRO+((4)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MED
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
     MICRO+  4   SINUS ERYTHROCYTOSIS
LYMPH ND, MED
    GROSS:        SIZE INCREASE
                      2X NORMAL
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
LYMPH ND, REN
    GROSS:        SIZE INCREASE
                      LEFT 2X NORMAL
     MICRO+  3   PLASMACYTOSIS
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      LEFT AXILLARY AND SUBLUMAR BOTH ARE
                      DARK TAN
                      BILATERAL POPLITEAL, DARK TAN
                      SIZE RANGE 2X NORMAL TO 4X NORMAL
     MICRO+((5)) PLASMACYTOSIS
                      POPLITEAL AND LUMBAR NODES ASR WORST,
                      AXILLARY NODES ARE
                      MILDLY AFFECTED
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
                      POPLITEAL AND LUMBAR NODES
            (3)  FIBROSIS
                      LUMBAR NODES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      ABOVE PITUITARY MASS
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
PROSTATE
    MICRO: ((3)) PROSTATITIS
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      ALL LOBES DARK RED
     MICRO+  4   CONGESTION
    MICRO: ((3)) HEMORRHAGE
           ((2)) HEMOSIDEROSIS
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3326E19 (CONTINUED)

```
                                    4   TUBULAR ATROPHY
CAUSE OF DEATH
    MICRO:   P   PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          DUODENUM
    JEJUNUM          CECUM            COLON
    RECTUM           THYROID GL       SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    SPINAL CORD      NERVE, SCIATIC   EYE
    TESTES           EPIDIDYMIDES     SEMINAL VESICLE
    TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    ILEUM
```

ANIMAL 3609E20 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	19.851	4.410
KIDNEYS	6.768	1.504
HEART	2.066	0.459
SPLEEN	0.653	0.145
BRAIN	2.306	0.512
ADRENAL GL	0.261	0.058
TESTES	1.615	0.359
TERMINAL BODY WT.	450.1	

```
TOTAL BODY
    GROSS:        EMACIATION
STOMACH
    GROSS:        CONTENTS ABNORMAL
                      CONTAINS YELLOW MUCUS
    MICRO:   (3)  MUCOSAL HYPERPLASIA
                      THERE IS ALSO MILD MULTIFOCAL GLAND
                      ECTASIA
LIVER
    MICRO: ((2)) BILIARY HYPERPLASIA
                      THERE IS ALSO MINIMAL MULTIFOCAL FATTY
                      CHANGE IN THE
                      LIVER.
           ((2)) CHOLANGIOFIBROSIS
PANCREAS
    MICRO:    P   #B ISLET CELL ADENOMA
COLON
    MICRO:    P   NEMATODIASIS
PITUITARY
    GROSS:        SIZE INCREASE
                      10X5X4MM
     MICRO+   P   #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      BROWN AND DARK RED
     MICRO+   4   VASCULAR ECTASIA
THYROID GL
    GROSS:        SIZE INCREASE
                      2.5X NORMAL, RIGHT
     MICRO+   P   #B C CELL ADENOMA
    MICRO:    P   THYROGLOSAL DUCT CYST
PARATHYROID GL
    GROSS:        SIZE INCREASE
                      2X NORMAL, RIGHT
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3609E20 (CONTINUED)

```
                                        MULTIPLE BROWN FOCI, BILATERAL
                 MICRO+ (4)  VASCULAR ECTASIA
                                        GLANDS ARE ALSO MARKEDLY CONGESTED
ADRENAL GL
    GROSS:                   SIZE INCREASE
                                        2X NORMAL, BILATERAL
SKIN
    GROSS:                   ALOPECIA
                                        PARTIAL, LEFT INGUINAL AREA
MAMMARY GL
    MICRO: ((4))             GALACTOCELE
PAWS/FEET
    GROSS:                   SWOLLEN
                                        LEFT HIND FOOT
PAWS/FEET
    GROSS:                   ULCERATED
                                        10X6MM, RED, LEFT HIND FOOT; 4X4MM,
                                        RED; RIGHT HIND FOOT
                 MICRO+  5   ULCERATION
                                        THERE IS ALSO SEVERE FIBROSIS AND
                                        MODERATE, MULTIFOCAL
                                        OSSEUS METAPLASIA IN THIS TISSUE.
LYMPH ND, S-MAN
    GROSS:                   SIZE INCREASE
                                        2X NORMAL
                 MICRO+  4   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((3))             HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:                   SIZE INCREASE
                                        6X5X5MM, LEFT SUBLUMBAR LYMPH NODE
                                        15X10X8MM, LEFT POPLITEAL LYMPH NODE
                 MICRO+  5   PLASMACYTOSIS
                                        PLASMACYTOSIS IS SEVERE IN THE
                                        POPLITEAL NODE, MODERATE
                                        IN THE LUMBAR NODE.  CYSTIC LYMPHATIC
                                        ECTASIA IS MARKED
                                        AND MULTIFOCAL IN BOTH NODES.
THYMIC REGION
    MICRO:   4               INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4               HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   3               MYOFIBER ATROPHY
BRAIN
    GROSS:                   DEPRESSION/INDENTATION
                                        DUE TO ENLARGED PITUITARY
                 MICRO+ (4)  COMPRESSION
    MICRO:  (3)              HEMORRHAGE
                                        BRAIN STEM
                                        DUE TO TUMOR OF PITUITARY
                 2           HYDROCEPHALUS
SPINAL CORD
    MICRO: ((1))             VACUOLIZATION
EYE
    GROSS:                   CRUST
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3609E20 (CONTINUED)

```
                                        RED, PERIOCULAR AREA, BILATERAL
TESTES
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL, BILATERAL
     MICRO+  4    SEMINIFEROUS TUBULE ATROPHY
                      UNILATERAL
TESTES
    GROSS:        CONSISTENCY CHANGE
                      SOFT, BILATERAL
    MICRO: ((4)) ARTERITIS
EPIDIDYMIDES
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL, BILATERAL
     MICRO+  4    ATROPHY
    MICRO: ((4)) VACUOLATED EPITHELIUM
             2    EPITHELIAL HYPERPLASIA
           (3)    FIBROSIS
SEMINAL VESICLE
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL, BILATERAL
    MICRO:   4    SEMINAL VESICULITIS
           ((5)) FIBROSIS
PROSTATE
    MICRO:   4    PROSTATITIS
             4    FIBROSIS
LUNGS
    MICRO:   3    CONGESTION
KIDNEYS
    GROSS:        CYST
                      MULTIPLE 2X2MM CLEAR FLUID FILLED,
                      BILATERAL
     MICRO+((3)) CYST(S)
KIDNEYS
    GROSS:        SIZE INCREASE
                      1.5X NORMAL, BILATERAL
KIDNEYS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MOTTLED TAN AND RED, BILATERAL
     MICRO+((3)) FIBROSIS, INTERSTITIAL
    MICRO: ((4)) TUBULAR PROTEINOSIS
             4    TUBULAR BASOPHILIA
             3    PYELITIS
             4    TRANSITIONAL CELL HYPERPLASIA
           ((3)) NEPHRITIS, INTERSTITIAL
URINARY BLADDER
    MICRO:   4    CYSTITIS
           ((4)) #B POLYP
                      THE ENTIRE BLADDER WALL IS COVERED WITH
                      HYPERPLASTIC
                      POLYPOID GROWTHS DUE TO CHRONIC
                      INFLAMMATION.
                      THERE IS MARKED TRANSITIONAL EPITHELIAL
                      HYPERPLASIA
                      ASSOCIATED WITH THIS LESION
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA            SALIVARY GL
    ESOPHAGUS         DUODENUM         JEJUNUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3609E20 (CONTINUED)

ILEUM	CECUM	RECTUM
PARATHYROID GL	SKIN	SPLEEN
BONE, STERNUM	BONE, FEMUR	NERVE, SCIATIC
EYE	TRACHEA	

ANIMAL 3536E21 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.383	2.645
KIDNEYS	4.587	0.844
HEART	1.644	0.302
SPLEEN	0.740	0.136
BRAIN	2.148	0.395
ADRENAL GL	0.068	0.013
TESTES	3.135	0.577
TERMINAL BODY WT.	543.7	

HEART
MICRO: (2) FIBROSIS
LIVER
MICRO: ((1)) CHOLANGITIS
(2) TELANGIECTASIS
PITUITARY
GROSS: MASS
8X8X8MM, DARK RED AND TAN
MICRO+ P #M CARCINOMA
THYROID GL
MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
MICRO: (3) INFARCTION
(3) CORTICAL CELL VACUOLIZATION
LYMPH ND, S-MAN
MICRO: ((3)) PLASMACYTOSIS
LYMPH ND, MED
MICRO: 4 SINUS ERYTHROCYTOSIS
((3)) HEMOSIDEROSIS
LYMPH ND, MES
MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
MICRO: 3 MYOFIBER ATROPHY
BRAIN
GROSS: DEPRESSION/INDENTATION
AROUND PITUITARY
MICRO: 3 HYDROCEPHALUS
SPINAL CORD
MICRO: ((1)) VACUOLIZATION
TESTES
MICRO: (P) #M MESOTHELIOMA
UNILATERAL, CAPSULAR SURFACE
SEMINAL VESICLE
GROSS: SIZE INCREASE
LEFT, SEVERAL X'S
SEMINAL VESICLE
GROSS: SIZE DECREASE
RIGHT, 1\2
LUNGS
MICRO: ((4)) ALVEOLAR HISTIOCYTOSIS
(4) MINERALIZATION, PULMONARY VESSEL(S)
3 CONGESTION
KIDNEYS
GROSS: DIMPLED/PITTED
BOTH, SLIGHT

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3536E21 (CONTINUED)

```
MICRO+((3)) TUBULAR PROTEINOSIS
MICRO: ((2)) TUBULAR BASOPHILIA
       ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
AORTA            SALIVARY GL      ESOPHAGUS
STOMACH          PANCREAS         DUODENUM
JEJUNUM          ILEUM            CECUM
COLON            RECTUM           PARATHYROID GL
SKIN             SPLEEN           BONE, STERNUM
BONE, FEMUR      BONE MARROW      NERVE, SCIATIC
EYE              EPIDIDYMIDES     SEMINAL VESICLE
PROSTATE         TRACHEA          URINARY BLADDER
```

ANIMAL 3555E22 28-NOV-89 STUDY DAY 616

TYPE OF DEATH: FOUND DEAD

```
MESENTARY/OM'TUM
    GROSS:       TORTUOUS
     MICRO+((4)) MINERALIZATION
                     OF LARGE ARTERIES
HEART
    MICRO: ((3)) MINERALIZATION
           ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
AORTA
    MICRO:   4   MINERALIZATION
SALIVARY GL
    MICRO:  (3)  ATROPHY
STOMACH
    GROSS:       CONTENTS ABNORMAL
                     YELLOW WATERY FLUID
STOMACH
    GROSS:       GASEOUS
    MICRO:   4   MINERALIZATION
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     WHITE AND TAN FOCI, ALL LOBES
     MICRO+  4   FATTY CHANGE
PANCREAS
    MICRO: ((4)) MINERALIZATION
                     ARTERIES
DUODENUM
    GROSS:       GASEOUS
JEJUNUM
    GROSS:       GASEOUS
ILEUM
    GROSS:       GASEOUS
PITUITARY
    GROSS:       SIZE INCREASE
                     8X6X3MM
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     PATCHES OF DARK RED AND TAN COLOR
THYROID GL
    MICRO:  (3)  FOLLICULAR CYST
PARATHYROID GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3555E22 (CONTINUED)

```
    GROSS:        SIZE INCREASE
                      2X NORMAL, BILATERAL
     MICRO↑  4    HYPERPLASIA
ADRENAL GL
    GROSS:        SIZE INCREASE
                      RIGHT, 2X NORMAL
     MICRO↑ (P)   #B ADENOMA
    MICRO:  (2)   MINERALIZATION
           ((3)) THROMBOSIS
           ((3)) CORTICAL CELL VACUOLIZATION
SKIN
    GROSS:        CRUST
                      GENITAL REGION,
                      9X8X2MM
     MICRO↑ (5)   ABSCESS
SPLEEN
    GROSS:        SIZE DECREASE
                      1/4 OF NORMAL
    MICRO:   4    HEMOSIDEROSIS
THYMIC REGION
    MICRO:   5    INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO: ((1)) FIBROUS OSTEODYSTROPHY
BONE, FEMUR
    MICRO: ((3)) FIBROUS OSTEODYSTROPHY
SKELETAL MUSCLE
    MICRO:   3    MYOFIBER ATROPHY
EYE
    GROSS:        OPACITY
                      RIGHT, MILD
TESTES
    GROSS:        SIZE DECREASE
                      1/2 NORMAL, BILATERAL
     MICRO↑  4    SEMINIFEROUS TUBULE ATROPHY
                      BILATERAL
TESTES
    GROSS:        CONSISTENCY CHANGE
                      BILATERAL, SOFT AND MUSHY
    MICRO: ((3)) ARTERITIS
EPIDIDYMIDES
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
                3 ATROPHY
SEMINAL VESICLE
    GROSS:        SIZE DECREASE
                      1/2X NORMAL, BILATERAL
     MICRO↑  4    ATROPHY
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((3)) MINERALIZATION
                      AREAS OF THE INTERSTITIUM
             (2)  PNEUMONITIS, INTERSTITIAL
                      ASSOCIATED WITH MINERALIZATION
             (3)  HEMORRHAGE
KIDNEYS
    GROSS:        CYST
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3555E22 (CONTINUED)

```
                                        MULTIPLE COVERING ENTIRE KIDNEY,
                                        BILATERAL
                 MICRO+((4)) CYST(S)
                MICRO:   5   TUBULAR PROTEINOSIS
                         4   FIBROSIS, INTERSTITIAL
                       ((3)) MINERALIZATION
                                        MAINLY ARTERIAL WALLS
                       ((2)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   CHRONIC RENAL DISEASE
             P   PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    ESOPHAGUS        DUODENUM          CECUM
    RECTUM           LYMPH ND, S-MAN   LYMPH ND, MES
    BONE MARROW      BRAIN             SPINAL CORD
    NERVE, SCIATIC   EYE               PROSTATE
    URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    JEJUNUM          ILEUM             COLON
```

ANIMAL 3549E23 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.232	1.918
KIDNEYS	3.638	0.570
HEART	1.692	0.265
SPLEEN	0.639	0.100
BRAIN	2.089	0.328
ADRENAL GL	0.075	0.012
TESTES	1.109	0.174
TERMINAL BODY WT.	637.7	

```
HEART
    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    GROSS:       ULCERATED
                     2X2MM, NONGLANDULAR PORTION
     MICRO+ (2)  ULCER
    MICRO: ((2)) GLAND ECTASIA
             4   EDEMA
                     NONGLANDULAR STOMACH
             3   GASTRITIS
           ((3)) MUCOSAL HYPERPLASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MOTTLED PALE BROWN AND RED, ALL LOBES
     MICRO+((3)) FATTY CHANGE
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    GROSS:       MASS
                     10X5X5MM, MOTTLED DARK RED AND PINK
     MICRO+  P   #B ADENOMA
THYROID GL
    MICRO:   P   THYROGLOSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BILATERAL, 1MM TO 2MM BROWN FOCAL AREAS
     MICRO+ (4)  VASCULAR ECTASIA
SKIN
    GROSS:       ALOPECIA
                     MULTIPLE AREAS ON THE VENTRAL ABDOMINAL
                     SURFACES
MAMMARY GL
    GROSS:       GALACTOCELE
                     10X8MM, LEFT INGUINAL REGION
     MICRO+((3)) GALACTOCELE
PAWS/FEET
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3549E23 (CONTINUED)

```
    GROSS:        ULCERATED
                      HIND PAWS, BILATERAL, 12X10 AND 7X9MM
     MICRO↑  4    ULCERATION
    MICRO:   4    FIBROSIS
           ((3)) HYPERKERATOSIS
           ((3)) EPIDERMAL HYPERPLASIA
LYMPH ND, S-MAN
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, MED
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    MICRO: ((4)) HISTIOCYTIC AGGREGATES
           ((2)) HEMOSIDEROSIS
LYMPH ND, REN
    GROSS:        COLOR CHANGE, DIFFUSE
                      LEFT, RED
     MICRO↑  3    PLASMACYTOSIS
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      SUBLUMBAR, BILATERAL, RIGHT 10X5X5MM
                      LEFT, 5X5X4MM
     MICRO↑((4)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, OTHER
    GROSS:        COLOR CHANGE, DIFFUSE
                      BILATERAL RED, SUBLUMBAR
    MICRO:   3    PLASMACYTOSIS
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:   3    CORTICAL HYPOPLASIA
SKELETAL MUSCLE
    MICRO:   2    MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      ABOVE PITUITARY MASS
     MICRO↑  3    COMPRESSION
SPINAL CORD
    MICRO: ((3)) VACUOLIZATION
                      ONE CROSS SECTION
EYE
    GROSS:        OPACITY
                      LEFT, CIRCLING THE OUTER PART OF EYE
     MICRO↑  4    PROLIFERATIVE UVEITIS
                      UNILATERAL DIFFUSE LESION OF THE IRIS
                      FIBROBLAST PROLIFERATION AND LYMPHOCYTES
LACRYMAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      LEFT 1MM CREAM FOCAL AREAS, MULTIPLE
     MICRO↑((4)) ATROPHY
    MICRO:  (1)   LYMPHOID INFILTRATES
TESTES
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL
                      BILATERAL
     MICRO↑  4    SEMINIFEROUS TUBULE ATROPHY
                      BILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3549E23 (CONTINUED)

```
                                    MICRO: ((2)) MINERALIZATION
                                            (3)  EDEMA
                                                     UNILATERAL
                                           ((2)) ARTERITIS
                                PROSTATE
                                    MICRO: ((2)) EPITHELIAL HYPERPLASIA
                                TRACHEA
                                    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
                                LUNGS
                                    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
                                KIDNEYS
                                    MICRO: ((2)) TUBULAR PROTEINOSIS
                                           ((3)) TUBULAR BASOPHILIA
                                           ((1)) NEPHRITIS, INTERSTITIAL
                                           ((3)) RENAL CALCULI
                                                     BILATERAL
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    AORTA            SALIVARY GL      ESOPHAGUS
                                    PANCREAS         DUODENUM         JEJUNUM
                                    ILEUM            CECUM            COLON
                                    RECTUM           PARATHYROID GL   SKIN
                                    SPLEEN           BONE, FEMUR      BONE MARROW
                                    NERVE, SCIATIC   EPIDIDYMIDES     SEMINAL VESICLE
                                    URINARY BLADDER
```

ANIMAL 3313E24 16-MAY-89 STUDY DAY 420

TYPE OF DEATH: SACRIFICED MORIBUND

```
                                LIVER
                                    MICRO: ((1)) EXTRAMEDULLARY HEMATOPOIESIS
                                CECUM
                                    MICRO: ((2)) GLAND ECTASIA
                                PITUITARY
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     2X1MM DARK RED FOCUS
                                     MICRO+  P   #B ADENOMA
                                THYROID GL
                                    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
                                SKIN
                                    GROSS:       ULCERATED
                                                     15X15MM, SCROTUM
                                SPLEEN
                                    GROSS:       SIZE INCREASE
                                                     2.5X NORMAL
                                     MICRO+  4   EXTRAMEDULLARY HEMATOPOIESIS
                                LYMPH ND, MES
                                    MICRO:   2   PLASMACYTOSIS
                                THYMIC REGION
                                    MICRO:   4   INVOLUTIONAL ATROPHY
                                BONE MARROW
                                    MICRO:   4   HYPERPLASIA
                                SKELETAL MUSCLE
                                    MICRO:  (4)  MYOSITIS
                                                     VENTRAL BODY WALL
                                                     DUE TO EXTENSION OF SEVERE EPIDIDYMITIS
                                TESTES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3313E24 (CONTINUED)

```
                                    GROSS:        ADHESION
                                                      LEFT TESTICLE TO ULCERATED SKIN
                                     MICRO↑ (4)   CAPSULAR FIBROSIS
                                                      SITE OF AN ADHESION; SAME AS TESTES
                                                      WITH EDEMA
                                TESTES
                                    GROSS:        SIZE INCREASE
                                                      2X NORMAL, LEFT
                                     MICRO↑ (4)   EDEMA
                                                      BOTH LESIONS UNILATERAL
                                    MICRO: ((3)) SEMINIFEROUS TUBULE ATROPHY
                                EPIDIDYMIDES
                                    GROSS:        ABSCESS
                                                      10X10X8MM, THICK GREEN MATERIAL FILLED;
                                                      TAIL OF RIGHT
                                                      EPIDIDYMIS
                                     MICRO↑ (5)   SPERM GRANULOMA
                                    MICRO:   5    EPIDIDYMITIS
                                TRACHEA
                                    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
                                CAUSE OF DEATH
                                    MICRO:   P    EPIDIDYMITIS/SEPTICEMIA
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    HEART            AORTA            SALIVARY GL
                                    ESOPHAGUS        STOMACH          PANCREAS
                                    DUODENUM         JEJUNUM          ILEUM
                                    COLON            RECTUM           PARATHYROID GL
                                    ADRENAL GL       SKIN             LYMPH ND, S-MAN
                                    BONE, STERNUM    BONE, FEMUR      BRAIN
                                    SPINAL CORD      NERVE, SCIATIC   EYE
                                    SEMINAL VESICLE  PROSTATE         LUNGS
                                    KIDNEYS          URINARY BLADDER
```

ANIMAL 3595E25 27-DEC-89 STUDY DAY 645

TYPE OF DEATH: FOUND DEAD

```
                                MESENTARY/OM'TUM
                                    GROSS:        TORTUOUS
                                                      ENTIRE MESENTARY/OMENTUM
                                     MICRO↑  4    ARTERITIS
                                    MICRO: ((5)) THROMBOSIS
                                           ((4)) MINERALIZATION
                                HEART
                                    MICRO: ((3)) MINERALIZATION
                                           ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
                                AORTA
                                    GROSS:        CONSISTENCY CHANGE
                                                      FIRM
                                     MICRO↑  5    MINERALIZATION
                                AORTA
                                    GROSS:        DILATATION/DISTENTION
                                                      2X NORMAL
                                STOMACH
                                    MICRO:   4    MINERALIZATION
                                LIVER
                                    MICRO: ((2)) FATTY CHANGE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3595E25 (CONTINUED)

```
                    (1)  CHOLANGIOFIBROSIS
DUODENUM
    GROSS:               POSTMORTEM CHANGE
                             INCLUDING JEJUNUM, ILEUM, CECUM AND
                             COLON
COLON
    MICRO:    P          NEMATODIASIS
PITUITARY
    MICRO:   (2)         CYST(S)
THYROID GL
    GROSS:               SIZE INCREASE
                             2X NORMAL, BILATERAL
    MICRO:   (2)         C CELL HYPERPLASIA
PARATHYROID GL
    GROSS:               SIZE INCREASE
                             2X NORMAL, BILATERAL
     MICRO+   5          HYPERPLASIA
ADRENAL GL
    GROSS:               COLOR CHANGE, FOCAL/MULTIFOCAL
                             TAN AND BROWN, BILATERAL
     MICRO+   4          CONGESTION
SKIN
    GROSS:               MASS
                             (3) 15X10X3, 12X9X3 AND 6X6X3MM, TAN
                             AND BROWN; DORSAL
                             SURFACE; LUMBAR AREA TO LEFT HIND LEG
     MICRO+   P          #B KERATOACANTHOMA
                             SOME PARTS OF THE LESION RESEMBLES A
                             PAPILLOMA AND PART IS
                             INGROWN INTO THE SKIN AND CYSTIC
    MICRO: ((P))         EPIDERMAL INCLUSION CYST
MAMMARY GL
    MICRO: ((3))         PIGMENT ACCUMULATION
                  2      HYPERPLASIA
PAWS/FEET
    MICRO:   (4)         ULCERATION
             (4)         FIBROSIS
SPLEEN
    MICRO:    4          EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, MED
    MICRO: ((3))         SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    GROSS:               POSTMORTEM CHANGE
LYMPH ND, MES
    GROSS:               SIZE INCREASE
                             2X NORMAL
    MICRO: ((4))         SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:    4          INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:    4          CORTICAL HYPOPLASIA
BONE, FEMUR
    MICRO:    5          FIBROUS OSTEODYSTROPHY
BONE MARROW
    MICRO:    4          HYPERPLASIA
EYE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3595E25 (CONTINUED)

```
                    GROSS:        OPACITY
                                      RED AND WHITE, LEFT EYE
                     MICRO+  4    HYPHEMA
                                      UNILATERAL
                TESTES
                    GROSS:        SIZE DECREASE
                                      1/2 OF NORMAL, BILATERAL
                     MICRO+  4    SEMINIFEROUS TUBULE ATROPHY
                                      BILATERAL
                    MICRO: ((2)) MINERALIZATION
                             4   ARTERITIS
                EPIDIDYMIDES
                    MICRO: ((3)) VACUOLATED EPITHELIUM
                            (3)  EPITHELIAL HYPERPLASIA
                SEMINAL VESICLE
                    GROSS:        SIZE DECREASE
                                      1/2 OF NORMAL, BILATERAL
                     MICRO+  4    ATROPHY
                LUNGS
                    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
                KIDNEYS
                    GROSS:        HYDRONEPHROSIS
                                      MINIMAL, BILATERAL
                KIDNEYS
                    GROSS:        SIZE INCREASE
                                      2.5X NORMAL, BILATERAL
                KIDNEYS
                    GROSS:        GRANULAR
                                      BILATERAL
                     MICRO+  5    TUBULAR PROTEINOSIS
                    MICRO:   4    FIBROSIS, INTERSTITIAL
                             4    TUBULAR ATROPHY
                           ((3)) NEPHRITIS, INTERSTITIAL
                           ((3)) CYST(S)
                           ((4)) GLOMERULAR ATROPHY
                CAUSE OF DEATH
                    MICRO:   P    CHRONIC RENAL DISEASE
                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    SALIVARY GL      ESOPHAGUS        PANCREAS
                    DUODENUM         JEJUNUM          RECTUM
                    LYMPH ND, S-MAN  SKELETAL MUSCLE  BRAIN
                    SPINAL CORD      NERVE, SCIATIC   PROSTATE
                    TRACHEA          URINARY BLADDER
                THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
                    ILEUM            CECUM
```

ANIMAL 3363E26 25-FEB-90 STUDY DAY 705
TYPE OF DEATH: FOUND DEAD

```
                HEART
                    GROSS:        SIZE INCREASE
                                      2X NORMAL
                     MICRO+((4)) @PN ENDOCARDIAL MYXOMATOSIS
                                      INVOLVES ENDOCARDIUM OF LEFT AND RIGHT
                                      VENTRICLE,
                                      CORONARY ARTERIES, AND LEFT ATRIUM.
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3363E26 (CONTINUED)

```
                    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
                    MICRO: ((1)) GLAND ECTASIA
LIVER
                    GROSS:       SWOLLEN
                                     ALL LOBES
                    MICRO: ((2)) CYSTIC DEGENERATION
                            (1)  MONONUCLEAR CELL INFILTRATE(S)
                           ((1)) CHOLANGITIS
THYROID GL
                    GROSS:       SIZE INCREASE
                                     LEFT, 0.5X NORMAL
ADRENAL GL
                    GROSS:       COLOR CHANGE, DIFFUSE
                                     PALE TAN, BILATERAL
                     MICRO↑  P   #B PHEOCHROMOCYTOMA
                    MICRO: ((3)) CORTICAL CELL VACUOLIZATION
                             P   #B ADENOMA
                                     SMALL HEMORRHAGIC NODULE
                                     SAME GLAND AS THE PHAEOCHROMOCYTOMA
                            (4)  THROMBOSIS
LYMPH ND, S-MAN
                    GROSS:       COLOR CHANGE, DIFFUSE
                                     RED
                     MICRO↑  2   SINUS ERYTHROCYTOSIS
                    MICRO:   4   LYMPHOID HYPERPLASIA
LYMPH ND, MED
                    GROSS:       COLOR CHANGE, DIFFUSE
                                     RED
                     MICRO↑  4   CONGESTION
                    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
                    GROSS:       SIZE INCREASE
                                     2X NORMAL
                    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
                    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
                    MICRO:   4   MYOFIBER ATROPHY
EYE
                    MICRO:   2   CATARACT
                                     UNILATERAL
TESTES
                    MICRO: ((3)) ARTERITIS
TRACHEA
                    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                     ALL LOBES MOTTLED LIGHT AND DARK RED
                     MICRO↑((2)) HEMORRHAGE
                    MICRO:   4   CONGESTION
                           ((2)) PERIVASCULAR INFILTRATE(S)
                            (2)  PNEUMONITIS, INTERSTITIAL
KIDNEYS
                    GROSS:       HYDRONEPHROSIS
                                     MINIMAL, BILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3363E26 (CONTINUED)

```
                                    MICRO: ((3)) TUBULAR PROTEINOSIS
                                           ((3)) TUBULAR BASOPHILIA
                                           ((3)) NEPHRITIS, INTERSTITIAL
                                           ((2)) FIBROSIS, INTERSTITIAL
                                CAUSE OF DEATH
                                    MICRO:   P   CONGESTIVE HEART FAILURE/ENDOCARDIAL
                                                  MYXOMATOSIS
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    AORTA            SALIVARY GL      ESOPHAGUS
                                    PANCREAS         DUODENUM         JEJUNUM
                                    ILEUM            RECTUM           PITUITARY
                                    THYROID GL       PARATHYROID GL   SKIN
                                    SPLEEN           BONE, STERNUM    BONE, FEMUR
                                    BONE MARROW      BRAIN            SPINAL CORD
                                    NERVE, SCIATIC   EPIDIDYMIDES     SEMINAL VESICLE
                                    PROSTATE         URINARY BLADDER
                                THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
                                    CECUM            COLON
```

ANIMAL 3460E27 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.457	2.174
KIDNEYS	3.801	0.663
HEART	1.697	0.296
SPLEEN	0.722	0.126
BRAIN	2.159	0.377
ADRENAL GL	0.073	0.013
TESTES	3.492	0.609
TERMINAL BODY WT.	573.1	

```
LIVER
    MICRO: ((1)) FATTY CHANGE
            (1)  MONONUCLEAR CELL INFILTRATE(S)
            (3)  FIBROSIS
             2   HEPATOCELLULAR NECROSIS
                     ASSOCIATED WITH A PROLIFERATION OF
                     CELLS RESEMBLING
                     BILIARY EPITHELIUM.
PANCREAS
    GROSS:       NODULE
                     4X4X4MM
     MICRO↑  P   #B ISLET CELL ADENOMA
CECUM
    MICRO:   P   NEMATODIASIS
RECTUM
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:       SIZE INCREASE
                     SLIGHT
     MICRO↑  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     RED FOCAL AREA
THYROID GL
    MICRO:  (1)  C CELL HYPERPLASIA
ADRENAL GL
    MICRO: ((1)) CORTICAL CELL HYPERTROPHY
             P   #B PHEOCHROMOCYTOMA
SUBCUTIS
    GROSS:       MASS
                     12X10X5MM, LUMBAR AREA
     MICRO↑  P   #B LIPOMA
    MICRO:   P   #M FIBROSARCOMA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3460E27 (CONTINUED)

```
                                        THIS LESION WAS LISTED UNDER MAMMARY
                                        GLAND
                                        IT IS SEVERELY INFLAMMED AND HAS MANY
                                        GIANT CELLS
MAMMARY GL
    GROSS:        MASS
                      5X5X5MM, LEFT FLANK AREA
PAWS/FEET
    GROSS:        ULCERATED
                      RIGHT FOOT
     MICRO+  4    ULCERATION
    MICRO:   4    FIBROSIS
LYMPH ND, MED
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
THYMIC REGION
    MICRO:   5    INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   4    MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    MICRO:  (4)   HEMORRHAGE, RETROORBITAL
LUNGS
    MICRO: ((1)) HEMORRHAGE
            (2)  MINERALIZATION, PULMONARY VESSEL(S)
           ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((2)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR PROTEINOSIS
           ((2)) TUBULAR BASOPHILIA
           ((3)) FIBROSIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          DUODENUM
    JEJUNUM          ILEUM            COLON
    PARATHYROID GL   SKIN             SPLEEN
    LYMPH ND, S-MAN  LYMPH ND, MES    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      BRAIN
    NERVE, SCIATIC   TESTES           EPIDIDYMIDES
    SEMINAL VESICLE  PROSTATE         TRACHEA
    URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    MAMMARY GL
```

ANIMAL 3539E28 18-DEC-89 STUDY DAY 636
TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:        UNKEMPT
HEART
    MICRO: ((4)) MINERALIZATION
           ((2)) MYOCARDIAL DEGENERATION/FIBROSIS
SALIVARY GL
    MICRO: ((2)) MINERALIZATION
                     ARTERIES
STOMACH
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3539E28 (CONTINUED)

```
                    MICRO:   4   MINERALIZATION
LIVER
                    GROSS:       POSTMORTEM CHANGE
PANCREAS
                    MICRO:  (3)  ACINAR ATROPHY
JEJUNUM
                    GROSS:       POSTMORTEM CHANGE
ILEUM
                    GROSS:       POSTMORTEM CHANGE
COLON
                    GROSS:       POSTMORTEM CHANGE
PITUITARY
                    GROSS:       SIZE INCREASE
                                     5X5X5MM
                     MICRO↑  P   #B ADENOMA
PITUITARY
                    GROSS:       COLOR CHANGE, DIFFUSE
                                     DARK RED
PARATHYROID GL
                    GROSS:       SIZE INCREASE
                                     2.5X NORMAL, BILATERAL
                     MICRO↑  5   HYPERPLASIA
ADRENAL GL
                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                     BOTH, TAN AND WHITE
                     MICRO↑((2)) CORTICAL CELL VACUOLIZATION
                    MICRO:  (2)  CORTICAL CELL HYPERPLASIA, NODULAR
                            (4)  VASCULAR ECTASIA
LYMPH ND, MES
                    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
                    MICRO:   4   INVOLUTIONAL ATROPHY
BONE, STERNUM
                    MICRO: ((3)) MYELOFIBROSIS
BONE, FEMUR
                    MICRO:  (2)  FIBROUS OSTEODYSTROPHY
TESTES
                    MICRO: ((4)) ARTERITIS
                           ((2)) SEMINIFEROUS TUBULE ATROPHY
EPIDIDYMIDES
                    MICRO:   3   ATROPHY
                                     UNILATERAL
                           ((2)) EPITHELIAL HYPERPLASIA
PROSTATE
                    MICRO:  (2)  PROSTATITIS
LUNGS
                    GROSS:       COLOR CHANGE, DIFFUSE
                                     BRIGHT RED
                     MICRO↑  4   CONGESTION
LUNGS
                    GROSS:       INCOMPLETE COLLAPSE
                    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
                    GROSS:       GRANULAR
                                     BOTH, SEVERE
                     MICRO↑  5   TUBULAR PROTEINOSIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3539E28 (CONTINUED)

```
    MICRO:   5   TUBULAR ATROPHY
           ((3)) MINERALIZATION
             3   FIBROSIS, INTERSTITIAL
           ((3)) GLOMERULOSCLEROSIS
           ((3)) GLOMERULAR ATROPHY
CAUSE OF DEATH
    MICRO:   P   CHRONIC RENAL DISEASE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA             ESOPHAGUS         LIVER
    DUODENUM          JEJUNUM           ILEUM
    COLON             RECTUM            THYROID GL
    SKIN              SPLEEN            BONE MARROW
    SKELETAL MUSCLE   BRAIN             SPINAL CORD
    NERVE, SCIATIC    EYE               SEMINAL VESICLE
    TRACHEA           URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    LYMPH ND, S-MAN
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    CECUM
```

ANIMAL 3452E29 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	20.909	2.489
KIDNEYS	4.474	0.533
HEART	2.268	0.270
SPLEEN	1.383	0.165
BRAIN	2.106	0.251
ADRENAL GL	0.125	0.015
TESTES	4.048	0.482
TERMINAL BODY WT.	839.9	

```
HEART
    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE BROWN FOCAL AREAS, ALL LOBES
     MICRO+((1)) FATTY CHANGE
    MICRO: ((1)) BILIARY HYPERPLASIA
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
            (2)  CHOLANGIOFIBROSIS
             P   #B HEPATOCELLULAR ADENOMA
           ((1)) TELANGIECTASIS
PANCREAS
    MICRO: ((2)) FAT INFILTRATION
            (2)  ACINAR ATROPHY
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE RED FOCI DISSEMINATED OVER
                     SURFACE
     MICRO+((4)) CYST(S)
    MICRO:  (P)  #B ADENOMA
THYROID GL
    GROSS:       SIZE INCREASE
                     0.5X NORMAL, RIGHT
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
PARATHYROID GL
    MICRO:   2   HYPERPLASIA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE BROWN FOCAL AREAS, BILATERAL
     MICRO+ (2)  CORTICAL CELL VACUOLIZATION
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3452E29 (CONTINUED)

```
                    GROSS:        SIZE INCREASE
                                      2X NORMAL, LEFT
                     MICRO↑((P)) #B PHEOCHROMOCYTOMA
                                      BILATERAL
SPLEEN
                    GROSS:        MASS
                                      10X8X5MM
                     MICRO↑  P    #M FIBROUS HISTIOCYTOMA
                                      THE MASS IS DIFFUSELY INFILTRATIVE
                                      WITHIN THE SPLEEN
                                      IT IS HEMORRHAGIC IN AREAS
LYMPH ND, S-MAN
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      RED
                     MICRO↑  2    SINUS ERYTHROCYTOSIS
LYMPH ND, MES
                    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
                    MICRO:   4    INVOLUTIONAL ATROPHY
SPINAL CORD
                    MICRO: ((1)) VACUOLIZATION
EYE
                    MICRO: ((3)) CORNEAL VASCULARIZATION
                                      BILATERAL
                                      CAUSE NOT EVIDENT
LACRYMAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      PALE TAN WITH MULTIPLE BROWN FOCAL
                                      AREAS, BILATERAL
                     MICRO↑((4)) ATROPHY
                    MICRO: ((2)) LYMPHOID INFILTRATES
                           ((3)) DACRYOADENITIS
PROSTATE
                    MICRO: ((3)) PROSTATITIS
                           ((3)) EPITHELIAL HYPERPLASIA
TRACHEA
                    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
                            (1)  ADENITIS, SUBMUCOSAL GLANDS
LUNGS
                    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
                    MICRO: ((3)) TUBULAR BASOPHILIA
                           ((3)) NEPHRITIS, INTERSTITIAL
                           ((3)) TUBULAR PROTEINOSIS
                           ((2)) FIBROSIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    AORTA             SALIVARY GL       ESOPHAGUS
                    DUODENUM          JEJUNUM           ILEUM
                    CECUM             COLON             RECTUM
                    SKIN              BONE, STERNUM     BONE, FEMUR
                    BONE MARROW       SKELETAL MUSCLE   BRAIN
                    NERVE, SCIATIC    TESTES            EPIDIDYMIDES
                    SEMINAL VESICLE   URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3293E30 21-MAR-90 STUDY DAY 729
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	21.941	2.768
KIDNEYS	9.988	1.260
HEART	2.421	0.305
SPLEEN	0.895	0.113
BRAIN	2.340	0.295
ADRENAL GL	0.100	0.013
TESTES	3.341	0.422
TERMINAL BODY WT.	792.6	

```
HEART
    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       SWOLLEN
                     ALL LOBES
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     2X3MM DARK RED FOCAL AREAS SCATTERED ON
                     SURFACE
    MICRO: ((1)) CHOLANGITIS
PANCREAS
    MICRO:  (1)  LYMPHOID INFILTRATES
           ((1)) FAT INFILTRATION
PITUITARY
    GROSS:       NODULE
                     DARK RED, 2X2X2MM
     MICRO+ (P)  #B ADENOMA
                     SMALL NODULE
THYROID GL
    MICRO: ((1)) CALCIFIC CONCRETIONS, COLLOID
            (P)  #B C CELL ADENOMA
ADRENAL GL
    MICRO: ((1)) CORTICAL CELL HYPERTROPHY
           ((4)) INFARCTION
LYMPH ND, S-MAN
    MICRO: ((3)) PLASMACYTOSIS
            (2)  LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MED
    GROSS:       SIZE INCREASE
                     2X NORMAL
     MICRO+  2   LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:   3   CORTICAL HYPOPLASIA
BRAIN
    MICRO: ((2)) VACUOLIZATION
TESTES
    MICRO: ((4)) ARTERITIS
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((1)) ALVEOLAR HISTIOCYTOSIS
           ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     BILATERAL, MILD
     MICRO+((2)) HYDRONEPHROSIS
KIDNEYS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3293E30 (CONTINUED)

```
    GROSS:        SIZE INCREASE
                      BILATERAL, 2X NORMAL
KIDNEYS
    GROSS:        GRANULAR
                      BILATERAL SURFACE WHEN CUT
     MICRO+  4    TUBULAR PROTEINOSIS
    MICRO:   5    TUBULAR ATROPHY
             4    TUBULAR BASOPHILIA
             2    FIBROSIS, INTERSTITIAL
          ((3)) CYST(S)
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA             SALIVARY GL       ESOPHAGUS
    DUODENUM          JEJUNUM           ILEUM
    CECUM             COLON             RECTUM
    PARATHYROID GL    SKIN              SPLEEN
    BONE, FEMUR       BONE MARROW       SKELETAL MUSCLE
    SPINAL CORD       NERVE, SCIATIC    EYE
    EPIDIDYMIDES      SEMINAL VESICLE   PROSTATE
    URINARY BLADDER
```

ANIMAL 3292E31 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.071	2.333
KIDNEYS	4.192	0.695
HEART	1.799	0.298
SPLEEN	1.261	0.209
BRAIN	2.192	0.363
ADRENAL GL	0.056	0.009
TESTES	3.963	0.657
TERMINAL BODY WT.	603.2	

```
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE RED FOCI, ALL LOBES
     MICRO+((3)) CYSTIC DEGENERATION
    MICRO: ((2)) BILIARY HYPERPLASIA
           ((2)) CHOLANGIOFIBROSIS
            (3)  TELANGIECTASIS
PANCREAS
    MICRO: ((1)) LYMPHOID INFILTRATES
           ((3)) FAT INFILTRATION
COLON
    MICRO:   P   NEMATODIASIS
PITUITARY
    MICRO:   P   #B ADENOMA
                     SMALL NODULE
THYROID GL
    MICRO:  (P)  THYROGLOSAL DUCT CYST
ADRENAL GL
    MICRO:  (2)  INFARCTION
            (2)  CORTICAL CELL HYPERTROPHY
PAWS/FEET
    GROSS:       ULCERATED
                     5X5MM, RED, HIND FEET, BILATERAL
     MICRO+ (4)  ULCERATION
    MICRO:  (4)  FIBROSIS
SPLEEN
    MICRO:   3   LYMPHOID HYPERPLASIA
LYMPH ND, MES
    GROSS:       SIZE INCREASE
                     3X NORMAL
     MICRO+  3   LYMPHATIC ECTASIA
                     THE NODE IS DIFFUSELY EDEMATOUS
LYMPH ND, MES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3292E31 (CONTINUED)

```
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      TAN AND RED
     MICRO↑  4    SINUS ERYTHROCYTOSIS
    MICRO: ((3)) FIBROSIS
           ((2)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4    HYPERPLASIA
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
           ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:        NODULE
                      3X2X2MM, YELLOW, RIGHT
     MICRO↑ (P)   #B LIPOMA
    MICRO: ((1)) MINERALIZATION
           ((1)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         STOMACH           DUODENUM
    JEJUNUM           ILEUM             CECUM
    RECTUM            PARATHYROID GL    SKIN
    LYMPH ND, S-MAN   BONE, STERNUM     BONE, FEMUR
    SKELETAL MUSCLE   BRAIN             SPINAL CORD
    NERVE, SCIATIC    EYE               TESTES
    EPIDIDYMIDES      SEMINAL VESICLE   PROSTATE
    TRACHEA           URINARY BLADDER
```

ANIMAL 3362E32 12-JAN-90 STUDY DAY 661
TYPE OF DEATH: SACRIFICED MORIBUND

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:        COLOR CHANGE, DIFFUSE
                      PALE, ALL LOBES
LIVER
    GROSS:        MASS
                      RIGHT CAUDATE, 10X15X3MM, YELLOW BROWN
     MICRO↑  P    #B HEPATOCELLULAR ADENOMA
PANCREAS
    MICRO: ((1)) FAT INFILTRATION
CECUM
    MICRO:   P    NEMATODIASIS
ADRENAL GL
    MICRO:  (P)   #B PHEOCHROMOCYTOMA
                      SMALL NODULE
SKIN
    GROSS:        MASS
                      RIGHT AXILLARY, 30X20X10MM, WHITE,
                      OVOID AND SOFT
     MICRO↑ (P)   #B LIPOMA
PAWS/FEET
    GROSS:        SWOLLEN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3362E32 (CONTINUED)

```
                                        LEFT HIND FOOT, 2X'S
     MICRO+  5   FIBROSIS
PAWS/FEET
    GROSS:       ULCERATED
                     LEFT HIND FOOT 25X15X5MM
     MICRO+  5   ULCERATION
    MICRO: ((4)) OSSEUS METAPLASIA
SPLEEN
    MICRO:   3   LYMPHOID HYPERPLASIA
           ((2)) PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     LEFT POPLITEAL LYMPH NODE, 15X8X4MM
     MICRO+  4   PLASMACYTOSIS
                     POPLITEAL
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
PROSTATE
    MICRO:   2   EPITHELIAL HYPERPLASIA
LUNGS
    MICRO: ((2)) HEMORRHAGE
            (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:       GRANULAR
                     SLIGHT, BILATERAL
     MICRO+((2)) TUBULAR PROTEINOSIS
    MICRO: ((2)) TUBULAR BASOPHILIA
           ((2)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
    ILEUM            COLON            RECTUM
    PITUITARY        THYROID GL       PARATHYROID GL
    LYMPH ND, S-MAN  BONE, STERNUM    BONE, FEMUR
    SKELETAL MUSCLE  BRAIN            SPINAL CORD
    NERVE, SCIATIC   EYE              TESTES
    EPIDIDYMIDES     SEMINAL VESICLE  TRACHEA
    URINARY BLADDER
```

ANIMAL 3465E33 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.372	2.408
KIDNEYS	3.554	0.692
HEART	1.711	0.333
SPLEEN	0.678	0.132
BRAIN	2.196	0.427
ADRENAL GL	0.104	0.020
TESTES	3.508	0.683
TERMINAL BODY WT.	513.9	

```
HEART
    MICRO:  (2)  METAPLASTIC CARTILAGE
                     ROOT OF THE AORTA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE RED FOCAL AREAS, ALL LOBES
    MICRO: ((1)) BILIARY HYPERPLASIA
           ((2)) CHOLANGIOFIBROSIS
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3465E33 (CONTINUED)

```
                    GROSS:        SIZE INCREASE
                                      2.5X NORMAL
                     MICRO+   P   #B ADENOMA
PITUITARY
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      TAN AND DARK RED
THYROID GL
                    GROSS:        SIZE INCREASE
                                      1.5X NORMAL, LEFT
                     MICRO+ (P)   #B C CELL ADENOMA
THYROID GL
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      TAN, LEFT
                    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
                           ((4)) FOLLICULAR CYST
                            (3)  FIBROSIS
                                      AROUND THE MASS
ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MULTIPLE WHITE FOCI DISSEMINATED OVER
                                      SURFACE, BILATERAL
                     MICRO+((4)) CONGESTION
                    MICRO:  (4)  MEDULLARY CELL HYPERPLASIA
                           ((3)) VASCULAR ECTASIA
                            (4)  CORTICAL CELL VACUOLIZATION
SKIN
                    MICRO:  (3)  DERMAL FIBROSIS
                                      ADJACENT TO THE MASS
SUBCUTIS
                    MICRO:   P   #M UNDIFFERENTIATED SARCOMA
                                      MANY GIANT CELLS ARE PRESENT IN THE MASS
                                      MISTAKEN FOR MAMMARY GLAND TISSUE
                                      GROSSLY
MAMMARY GL
                    GROSS:        MASS
                                      40X45X30MM, TAN, FIRM; LEFT AXILLARY
                                      AREA
                    MICRO: ((3)) GALACTOCELE
                                      THE MASS DESCRIBED GROSSLY IS
                                      SUBCUTANEOUS AND NOT DERIVED
                                      FROM MAMMARY GLAND
SPLEEN
                    GROSS:        SIZE DECREASE
                                      1/2 OF NORMAL
LYMPH ND, S-MAN
                    MICRO:  (4)  LYMPHATIC ECTASIA, CYSTIC
                           ((4)) PLASMACYTOSIS
LYMPH ND, MES
                    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
                    MICRO:   4   INVOLUTIONAL ATROPHY
SPINAL CORD
                    MICRO: ((1)) VACUOLIZATION
PROSTATE
                    GROSS:        SWOLLEN
                     MICRO+((4)) PROSTATITIS
PROSTATE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3465E33 (CONTINUED)

```
    GROSS:        CONSISTENCY CHANGE
                      SOFT
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
            (2)  ADENITIS, SUBMUCOSAL GLANDS
LUNGS
    MICRO:  (2)  GRANULOMA
           ((1)) INTRAALVEOLAR CELLULAR DEBRIS
            (3)  HEMORRHAGE
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    STOMACH          PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  BRAIN
    NERVE, SCIATIC   EYE              TESTES
    EPIDIDYMIDES     SEMINAL VESICLE  URINARY BLADDER
```

ANIMAL 3304E34 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.688	3.404
KIDNEYS	3.615	0.838
HEART	1.750	0.406
SPLEEN	0.606	0.140
BRAIN	2.163	0.501
ADRENAL GL	0.101	0.023
TESTES	0.795	0.184
TERMINAL BODY WT.	431.5	

```
TOTAL BODY
    GROSS:        EMACIATION
TOTAL BODY
    GROSS:        UNKEMPT
HEART
    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    GROSS:        THICKER THAN NORMAL
                      ENTIRE STOMACH
     MICRO↑ (4)   FIBROSIS
    MICRO:  (P)   #B POLYP
                      LOCATED IN THE GLANDULAR STOMACH, BUT
                      COVERED BY SQUAMOUS
                      EPITHELIUM.
             4    MUCOSAL HYPERPLASIA
            (3)   GASTRITIS
                      GRANULOMATOUS GASTRITIS IS PRESENT DUE
                      TO A FOREIGN BODY
                      REACTION TO MANY HAIR FRAGMENTS
                      EMBEDDED IN THE NON
                      GLANDULAR STOMACH WALL.
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE TAN FOCAL AREAS, ALL LOBES
     MICRO↑((4)) FATTY CHANGE
    MICRO: ((1)) BILIARY HYPERPLASIA
PANCREAS
    MICRO: ((2)) FAT INFILTRATION
ILEUM
    GROSS:        CONTENTS ABNORMAL
                      CONTAINS YELLOW MUCUS
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3304E34 (CONTINUED)

```
    GROSS:        SIZE INCREASE
                      6X5X5MM
     MICRO↑  P    #M CARCINOMA
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
THYROID GL
    MICRO:  (P)   #B ADENOMA
PARATHYROID GL
    MICRO:   2    HYPERPLASIA
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE BROWN FOCI, BILATERAL
     MICRO↑((4))  CORTICAL CELL VACUOLIZATION
ADRENAL GL
    GROSS:        SIZE INCREASE
                      LEFT, 2X NORMAL
     MICRO↑ (4)   INFARCTION
SKIN
    GROSS:        STAINED
                      URINE, UROGENITAL AREA
SKIN
    GROSS:        ALOPECIA
                      65X75MM, UROGENITAL AREA
MAMMARY GL
    MICRO: ((3))  HYPERSECRETION
SPLEEN
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL
LYMPH ND, S-MAN
    MICRO: ((2))  PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   3    SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((1))  HISTIOCYTIC AGGREGATES
             2    PLASMACYTOSIS
THYMIC REGION
    MICRO:   5    INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3    MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO↑ (4)   COMPRESSION
    MICRO: ((1))  #M CARCINOMA
                      THERE IS SLIGHT LOCAL EXTENSION OF THE
                      PITUITARY TUMOR
                      INTO THE VENTRAL BRAIN
SPINAL CORD
    MICRO: ((1))  VACUOLIZATION
EYE
    MICRO:  (3)   MINERALIZATION
                      SCLERAL
TESTES
    GROSS:        SIZE DECREASE
                      3/4 OF NORMAL, BILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3304E34 (CONTINUED)

```
                    MICRO+  4   SEMINIFEROUS TUBULE ATROPHY
                   MICRO: ((3)) MINERALIZATION
EPIDIDYMIDES
                   GROSS:       SIZE DECREASE
                                    1/2 OF NORMAL, BILATERAL
                    MICRO+  4   ATROPHY
SEMINAL VESICLE
                   GROSS:       SIZE DECREASE
                                    1/2 OF NORMAL, BILATERAL
                    MICRO+  4   ATROPHY
PROSTATE
                   MICRO: ((3)) PROSTATITIS
                          ((3)) FIBROSIS
TRACHEA
                   MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
                   MICRO: ((1)) ALVEOLAR HISTIOCYTOSIS
                          ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
                   GROSS:       HYDRONEPHROSIS
                                    MINIMAL, RIGHT; MARKED, LEFT
                    MICRO+ (3)  HYDRONEPHROSIS
                                    LEFT
KIDNEYS
                   GROSS:       DIMPLED/PITTED
                                    BILATERAL
                    MICRO+((3)) TUBULAR PROTEINOSIS
                   MICRO: ((2)) NEPHRITIS, INTERSTITIAL
                          ((3)) TUBULAR BASOPHILIA
                          ((3)) FIBROSIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                   AORTA            SALIVARY GL      ESOPHAGUS
                   DUODENUM         JEJUNUM          CECUM
                   COLON            RECTUM           SKIN
                   SPLEEN           BONE, STERNUM    BONE, FEMUR
                   BONE MARROW      NERVE, SCIATIC   URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
                   ILEUM
```

ANIMAL 3587E35 11-JAN-90 STUDY DAY 660

TYPE OF DEATH: SACRIFICED MORIBUND

```
HEART
                   MICRO: ((2)) FIBROSIS
STOMACH
                   MICRO:   2   GASTRITIS
                                    ALL LESIONS ARE NONGLANDULAR STOMACH
                            4   EDEMA
                           (4)  MUCOSAL HYPERPLASIA
LIVER
                   GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                    PALE, ALL LOBES
                    MICRO+((4)) FATTY CHANGE
                   MICRO: ((1)) BILIARY HYPERPLASIA
                           (2)  CYSTIC DEGENERATION
PANCREAS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3587E35 (CONTINUED)

```
    MICRO: ((1)) FIBROSIS
            (2)  ACINAR ATROPHY
            (2)  PIGMENT DEPOSITS
           ((2)) FAT INFILTRATION
PITUITARY
    GROSS:       MASS
                     10X10X5MM, DARK RED
     MICRO+  P   #B ADENOMA
    MICRO:   4   HEMORRHAGE
           ((4)) VASCULAR ECTASIA
THYROID GL
    MICRO:  (P)  THYROGLOSAL DUCT CYST
ADRENAL GL
    MICRO: ((1)) CORTICAL CELL VACUOLIZATION
SKIN
    MICRO: ((3)) EPIDERMITIS
                     FACE, EYELIDS?
MAMMARY GL
    MICRO: ((3)) GALACTOCELE
PAWS/FEET
    GROSS:       SWOLLEN
                     LEFT HIND, SLIGHTLY
     MICRO+  5   FIBROSIS
PAWS/FEET
    GROSS:       ULCERATED
                     15X10X5MM, LEFT HIND FOOT
     MICRO+  5   ULCERATION
    MICRO:  (2)  OSSEUS METAPLASIA
LYMPH ND, S-MAN
    MICRO:   4   SINUS ERYTHROCYTOSIS
            (3)  PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     LEFT POPLITEAL LYMPH NODE, 15X10X5MM
     MICRO+  4   PLASMACYTOSIS
                     POPLITEAL NODE
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AREA OVER PITUITARY
    MICRO:   3   HYDROCEPHALUS
           ((1)) VACUOLIZATION
                     CEREBELLUM
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     PERIOCULAR, RED, BILATERAL
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
TRACHEA
    MICRO:  (3)  SUBMUCOSAL GLAND ECTASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3587E35 (CONTINUED)

```
                                  2   TRACHEITIS
LUNGS
    MICRO: ((2)) HEMORRHAGE
            (2)  MINERALIZATION, PULMONARY VESSEL(S)
            (2)  ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((1)) MINERALIZATION
CAUSE OF DEATH
    MICRO:   P   PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  NERVE, SCIATIC
    EYE              TESTES           EPIDIDYMIDES
    SEMINAL VESICLE  URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 3445E36 24-JAN-90 STUDY DAY 673

TYPE OF DEATH: FOUND DEAD

```
STOMACH
    GROSS:       CONTENTS ABNORMAL
                     YELLOW LIQUID SUBSTANCE
    MICRO: ((1)) GLAND ECTASIA
            (P)  #B POLYP
                     A SQUAMOUS EPITHELIAL SURFACED POLYP IS
                     PRESENT ON THE
                     GLANDULAR MUCOSA
LIVER
    GROSS:       COLOR CHANGE, DIFFUSE
                     TAN AND RED
     MICRO+((3)) FATTY CHANGE
    MICRO:  (3)  HEPATOCELLULAR NECROSIS
PITUITARY
    GROSS:       SIZE INCREASE
                     5X5X5MM
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     RED AND TAN
ADRENAL GL
    MICRO:  (1)  CORTICAL CELL VACUOLIZATION
SKIN
    GROSS:       ALOPECIA
                     UROGENITAL AREA, 60X20MM
MAMMARY GL
    MICRO: ((2)) HYPERSECRETION
PAWS/FEET
    GROSS:       ULCERATED
                     10X10X2MM
                     RIGHT FOOT
     MICRO+  5   ULCERATION
PAWS/FEET
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3445E36 (CONTINUED)

```
    GROSS:        SWOLLEN
                      LEFT HIND FOOT
     MICRO↑ (4)   FIBROSIS
    MICRO: ((4)) OSSEUS METAPLASIA
SPLEEN
    GROSS:        SIZE DECREASE
                      1/4 OF NORMAL
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
              2   PLASMACYTOSIS
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      POPLITEAL LYMPH NODES, LEFT, 10X7X4MM;
                      RIGHT, 8X5X4MM
     MICRO↑  5    PLASMACYTOSIS
                      POPLITEAL NODES
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
BONE, FEMUR
    MICRO:  (2)   FIBROUS OSTEODYSTROPHY
SKELETAL MUSCLE
    MICRO:   2    MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      AROUND PITUITARY
     MICRO↑  2    COMPRESSION
    MICRO:   2    HYDROCEPHALUS
EYE
    GROSS:        OPACITY
                      BILATERAL, SEVERE
     MICRO↑  5    KERATITIS
                      CHRONIC FIBROTIC CORNEA, UNILATERAL
EYE
    GROSS:        CRUST
                      BILATERAL, PERIOCULAR
    MICRO:   4    CATARACT
           ((4)) SYNECHIA
                      IRIS ADHERENT TO LENS AND CORNEA,
                      UNILATERAL
TESTES
    GROSS:        CONSISTENCY CHANGE
                      BOTH, SOFT
     MICRO↑((4)) SEMINIFEROUS TUBULE ATROPHY
EPIDIDYMIDES
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL, BILATERAL
     MICRO↑  3    ATROPHY
SEMINAL VESICLE
    GROSS:        SIZE DECREASE
                      BOTH, 1\2
     MICRO↑  3    ATROPHY
SEMINAL VESICLE
    GROSS:        POSTMORTEM CHANGE
PROSTATE
    MICRO: ((4)) PROSTATITIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3445E36 (CONTINUED)

```
                                        CHRONIC
LUNGS
    GROSS:        INCOMPLETE COLLAPSE
                      ALL LOBES
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED, ALL LOBES
     MICRO↑  4    CONGESTION
KIDNEYS
    GROSS:        POSTMORTEM CHANGE
                      BOTH
    MICRO: ((2)) TUBULAR PROTEINOSIS
            (1)  NEPHRITIS, INTERSTITIAL
           ((2)) RENAL CALCULI
                      BILATERAL GRITTY MATERIAL IN PELVIS
           ((2)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P   PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         COLON
    RECTUM           THYROID GL       SKIN
    SPLEEN           LYMPH ND, S-MAN  BONE, STERNUM
    BONE MARROW      SPINAL CORD      NERVE, SCIATIC
    TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    DUODENUM         JEJUNUM          ILEUM
    CECUM
```

ANIMAL 3591E37 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	19.656	2.792
KIDNEYS	6.317	0.897
HEART	1.831	0.260
SPLEEN	1.219	0.173
BRAIN	2.229	0.317
ADRENAL GL	0.097	0.014
TESTES	3.388	0.481
TERMINAL BODY WT.	704.1	

```
HEART
    MICRO: ((2)) MYOCARDIAL DEGENERATION/FIBROSIS
                     TWO VENTRICULAR SURFACE LESIONS
SALIVARY GL
    MICRO:  (2)  ATROPHY
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED LIGHT AND DARK RED
     MICRO↑((1)) FATTY CHANGE
LIVER
    GROSS:       SWOLLEN
                     ALL LOBES
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
           ((1)) CHOLANGITIS
            (1)  CHOLANGIOFIBROSIS
           ((1)) BILIARY HYPERPLASIA
PANCREAS
    MICRO: ((4)) FAT INFILTRATION
           ((1)) LYMPHOID INFILTRATES
           ((2)) FAT NECROSIS
PITUITARY
    GROSS:       NODULE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3591E37 (CONTINUED)

```
                                        2X2X2MM TAN NODULE
     MICRO+  P   #B ADENOMA
ADRENAL GL
    MICRO:  (2)  CORTICAL CELL VACUOLIZATION
LYMPH ND, S-MAN
    MICRO:   2   LYMPHOID HYPERPLASIA
LYMPH ND, MED
    MICRO: ((2)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
           ((3)) MASTOCYTOSIS
             3   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED LIGHT AND DARK PINK
     MICRO+((3)) @PN BRONCHIOALVEOLAR CELL HYPERPLASIA
                     TWO MINIMAL AND ONE MODERATE FOCUS
KIDNEYS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BILATERAL, MOTTLED RED AND BROWN
     MICRO+((3)) TUBULAR PROTEINOSIS
    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
           ((3)) TUBULAR BASOPHILIA
           ((2)) FIBROSIS, INTERSTITIAL
            (2)  MINERALIZATION
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            ESOPHAGUS        STOMACH
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    THYROID GL       PARATHYROID GL   SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    TESTES           EPIDIDYMIDES     SEMINAL VESICLE
    PROSTATE         TRACHEA          URINARY BLADDER
```

ANIMAL 3371E38 10-NOV-89 STUDY DAY 598

TYPE OF DEATH: SAC DUE TO ENLARGED MASS

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       MASS
                     25X20X20MM, TAN AND RED, LEFT LATERAL
                     LOBE
     MICRO+  P   #M HEPATOCELLULAR CARCINOMA
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PANCREAS
    MICRO: ((3)) FAT INFILTRATION
PITUITARY
    GROSS:       SIZE INCREASE
                     3X NORMAL
     MICRO+  P   #B ADENOMA
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3371E38 (CONTINUED)

```
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      TAN AND DARK RED
                     MICRO+((3)) HEMORRHAGE
THYROID GL
                    MICRO:   P   THYROGLOSAL DUCT CYST
                           ((2)) CALCIFIC CONCRETIONS, COLLOID
MAMMARY GL
                    GROSS:        MASS
                                      40X35X15MM, TAN AND DARK RED, NECROTIC,
                                      LEFT INGUINAL AREA
                     MICRO+  P   #M ADENOCARCINOMA
                                      LARGE AGGRESSIVE NEOPLASM
                    MICRO: ((3)) HYPERSECRETION
PAWS/FEET
                    GROSS:        ULCERATED
                                      6X6X3MM, RED, RIGHT HIND FOOT
                                      2X2X2MM, LIGHT RED, LEFT HIND FOOT
                     MICRO+  5   ULCERATION
                    MICRO:  (P)  #M FIBROSARCOMA
                                      ASSOCIATED WITH THE ULCERATED FOOT
                                      LESION ON ONE HIND LEG
                             5   FIBROSIS
SPLEEN
                    GROSS:        SIZE INCREASE
                                      2X NORMAL
                     MICRO+  3   EXTRAMEDULLARY HEMATOPOIESIS
SPLEEN
                    GROSS:        NODULE
                                      6X5X3MM
                     MICRO+ (P)  #M HEMANGIOSARCOMA
LYMPH ND, S-MAN
                    MICRO:   3   LYMPHOID HYPERPLASIA
                             3   PLASMACYTOSIS
                            (3)  SINUS ERYTHROCYTOSIS
LYMPH ND, MES
                    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
                    MICRO:   3   INVOLUTIONAL ATROPHY
BONE MARROW
                    MICRO:   4   HYPERPLASIA
BRAIN
                    MICRO:   2   HYDROCEPHALUS
                             2   COMPRESSION
SPINAL CORD
                    MICRO: ((2)) VACUOLIZATION
PROSTATE
                    MICRO: ((2)) EPITHELIAL HYPERPLASIA
TRACHEA
                    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MULTIPLE WHITE FOCI, ALL LOBES
                     MICRO+ (2)  HEMORRHAGE
                    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
                           ((1)) INTRAALVEOLAR CELLULAR DEBRIS
                            (2)  ALVEOLAR HISTIOCYTOSIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3371E38 (CONTINUED)

```
                                    (2)  PNEUMONITIS, INTERSTITIAL
                                  ((2)) MINERALIZATION, PULMONARY VESSEL(S)
                          KIDNEYS
                              MICRO: ((1)) TUBULAR PROTEINOSIS
                                     ((1)) NEPHRITIS, INTERSTITIAL
                          CAUSE OF DEATH
                              MICRO:   P   MAMMARY GLAND ADENOCARCINOMA
                          THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                              HEART             AORTA             SALIVARY GL
                              ESOPHAGUS         DUODENUM          JEJUNUM
                              ILEUM             CECUM             COLON
                              RECTUM            PARATHYROID GL    ADRENAL GL
                              SKIN              BONE, STERNUM     BONE, FEMUR
                              SKELETAL MUSCLE   NERVE, SCIATIC    EYE
                              TESTES            EPIDIDYMIDES      SEMINAL VESICLE
                              URINARY BLADDER
```

ANIMAL 3286E39 10-FEB-90 STUDY DAY 690

TYPE OF DEATH: FOUND DEAD

```
                          HEART
                              MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
                          LIVER
                              GROSS:       POSTMORTEM CHANGE
                                               ALL LOBES
                          PANCREAS
                              MICRO:  (1)  LYMPHOID INFILTRATES
                          CECUM
                              MICRO:   P   NEMATODIASIS
                          PITUITARY
                              GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                               2X2MM DARK RED FOCUS
                               MICRO+ (P)  #B ADENOMA
                                               SMALL NODULE
                          THYROID GL
                              MICRO:  (P)  #B ADENOMA
                                               SMALL NODULE
                          SUBCUTIS
                              MICRO:   P   #M UNDIFFERENTIATED SARCOMA
                                               ULCERATED MASS, MISTAKEN FOR MAMMARY
                                               TUMOR
                          MAMMARY GL
                              GROSS:       MASS
                                               80X80X50MM, OUTER CORE, FATTY WHITE
                                               MATERIAL
                                               INNER CORE, YELLOW BROWN MATERIAL, LEFT
                                               UPPER VENTRAL REGION
                          PAWS/FEET
                              GROSS:       ULCERATED
                                               RIGHT FOOT, 5X3MM,
                               MICRO+  4   ULCERATION
                              MICRO:   4   FIBROSIS
                                     ((3)) EPIDERMAL HYPERPLASIA
                          SPLEEN
                              GROSS:       POSTMORTEM CHANGE
                              MICRO:   4   EXTRAMEDULLARY HEMATOPOIESIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3286E39 (CONTINUED)

```
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, PANC
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     SUB-LUMBAR, BILATERAL, 2X NORMAL
     MICRO+  5   PLASMACYTOSIS
                     SUBLUMBAR NODE
THYMIC REGION
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     DARK RED FOCI
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    GROSS:       POSTMORTEM CHANGE
EYE
    MICRO:  (3)  CATARACT
TESTES
    GROSS:       CONSISTENCY CHANGE
                     BILATERAL, SOFT
     MICRO+ (3)  EDEMA
    MICRO: ((2)) SEMINIFEROUS TUBULE ATROPHY
            (2)  MINERALIZATION
                     ARTERY WALL
EPIDIDYMIDES
    MICRO: ((2)) VACUOLATED EPITHELIUM
           ((2)) EPITHELIAL HYPERPLASIA
             2   FIBROSIS
SEMINAL VESICLE
    GROSS:       SIZE DECREASE
                     1/2 OF NORMAL, BILATERAL
SEMINAL VESICLE
    GROSS:       POSTMORTEM CHANGE
                     DARK GREEN, BILATERAL
PROSTATE
    MICRO:  (2)  PROSTATITIS
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED AND TAN LOBES, ALL LOBES
    MICRO: ((1)) HEMORRHAGE
            (2)  INTRAALVEOLAR CELLULAR DEBRIS
KIDNEYS
    GROSS:       POSTMORTEM CHANGE
                     BILATERAL
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:   P   UNDIFFERENTIATED SARCOMA
                     ULCERATED SUBCUTANEOUS MASS; SEPTICEMIA
                     SUSPECT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3286E39 (CONTINUED)

```
    STOMACH          LIVER            DUODENUM
    PARATHYROID GL   ADRENAL GL       SKIN
    LYMPH ND, S-MAN  BONE, STERNUM    BONE, FEMUR
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    SEMINAL VESICLE  TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    MAMMARY GL       LYMPH ND, PANC
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    JEJUNUM          ILEUM            COLON
    RECTUM
```

ANIMAL 3532E40 19-DEC-89 STUDY DAY 637

TYPE OF DEATH: FOUND DEAD

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO:  (1)  MONONUCLEAR CELL INFILTRATE(S)
PANCREAS
    MICRO: ((2)) FAT INFILTRATION
PITUITARY
    GROSS:       MASS
                     DARK RED BILOBED, 12X5X4MM
     MICRO+  P   #B ADENOMA
    MICRO: ((4)) VASCULAR ECTASIA
ADRENAL GL
    MICRO:  (3)  INFARCTION
           ((1)) CORTICAL CELL HYPERTROPHY
PAWS/FEET
    GROSS:       ULCERATED
                     RIGHT HIND PAW, RED 7X8X5MM
     MICRO+ (4)  ULCERATION
    MICRO:   5   FIBROSIS
LYMPH ND, S-MAN
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HEMOSIDEROSIS
           ((1)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     RIGHT POPLITEAL LYMPH NODE, 6X5X4MM
     MICRO+  4   PLASMACYTOSIS
                     POPLITEAL NODE
    MICRO: ((2)) MASTOCYTOSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:       HEMORRHAGE
                     MENINGEAL POSTERIOR FOSA DORSAL SURFACE
     MICRO+ (4)  THROMBOSIS
                     MENINGEAL VESSELS
BRAIN
    GROSS:       DEPRESSION/INDENTATION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3532E40 (CONTINUED)

```
                                        ABOVE PITUITARY MASS
     MICRO+  4   COMPRESSION
BRAIN
    GROSS:       HYDROCEPHALUS
                     MILD
     MICRO+  3   HYDROCEPHALUS
TESTES
    GROSS:       SIZE DECREASE
                     LEFT, 1/2 OF NORMAL
     MICRO+  4   SEMINIFEROUS TUBULE ATROPHY
    MICRO:  (4)  EDEMA
                     LESIONS ARE UNILATRAL
            ((2)) MINERALIZATION
SEMINAL VESICLE
    GROSS:       SIZE INCREASE
                     LEFT, 2X NORMAL
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     ALL LOBES DARK RED
     MICRO+  4   CONGESTION
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
    ILEUM            COLON            RECTUM
    THYROID GL       PARATHYROID GL   SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  SPINAL CORD
    NERVE, SCIATIC   EYE              EPIDIDYMIDES
    SEMINAL VESICLE  PROSTATE         URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    CECUM
```

ANIMAL 3321E41 3-MAR-90 STUDY DAY 711

TYPE OF DEATH: FOUND DEAD

```
HEART
    MICRO: ((3)) @PN ENDOCARDIAL MYXOMATOSIS
                     INVOLVES THE LINING OF THE LEFT
                     VENTRICLE
           ((2)) FIBROSIS
LIVER
    MICRO: ((2)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PANCREAS
    MICRO:  (2)  ACINAR ATROPHY
           ((2)) FAT INFILTRATION
PITUITARY
    GROSS:       MASS
                     4X4X3MM, PINK
     MICRO+  P   #8 ADENOMA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3321E41 (CONTINUED)

```
THYROID GL
    MICRO:  (P)  #B C CELL ADENOMA
ADRENAL GL
    MICRO: ((2)) CORTICAL CELL VACUOLIZATION
SUBCUTIS
    GROSS:       NODULE
                     MULTIPLE 1-3MM WHITE, UNDER LEFT SIDE
                     OF SALIVARY
MAMMARY GL
    MICRO: ((4)) GALACTOCELE
                     LISTED AS A GROSS LESION UNDER SUBCUTIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
EYE
    MICRO:  (3)  CATARACT
TESTES
    GROSS:       SIZE DECREASE
                     1/2, BILATERAL
TESTES
    GROSS:       CONSISTENCY CHANGE
                     SOFT, BILATERAL
PROSTATE
    MICRO:  (3)  EPITHELIAL HYPERPLASIA
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, ALL LOBES
     MICRO+  4   CONGESTION
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3)) TUBULAR BASOPHILIA
           ((3)) FIBROSIS, INTERSTITIAL
           ((3)) TUBULAR PROTEINOSIS
           ((3)) GLOMERULOSCLEROSIS
           ((3)) TUBULAR ATROPHY
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    STOMACH          PARATHYROID GL   SKIN
    SUBCUTIS         SPLEEN           LYMPH ND, S-MAN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    TESTES           EPIDIDYMIDES     SEMINAL VESICLE
    TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3447E42 5-JAN-90 STUDY DAY 654
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
HEART
    MICRO: ((2)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      3X3 MM DARK RED FOCI, NON-GLANDULAR
                      PORTION
                      WHITE FOCAL AREAS, GLANDULAR PORTION
     MICRO↑ (4)   ULCER
                      NONGLANDULAR STOMACH
    MICRO: ((1)) GLAND ECTASIA
              4   EDEMA
           ((4)) FIBROSIS
                      ADJACENT TO ULCER
              3   GASTRITIS
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      RED AND YELLOW WITH DARK RED FOCAL
                      AREAS, ALL LOBES
     MICRO↑  5    FATTY CHANGE
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PANCREAS
    MICRO: ((2)) FAT INFILTRATION
PITUITARY
    GROSS:        MASS
                      7X6X6 MM, DARK RED
     MICRO↑  P    #M CARCINOMA
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      RED FOCI, BILATERAL
     MICRO↑ (2)   CORTICAL CELL VACUOLIZATION
SKIN
    GROSS:        STAINED
                      YELLOW, UROGENITAL REGION
TAIL
    GROSS:        ULCERATED
                      NEAR BASE OF TAIL
     MICRO↑ (4)   ULCERATION
SPLEEN
    MICRO:   3    HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO: ((3)) PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      2X NORMAL, BILATERAL, SUBLUMBAR
     MICRO↑  5    PLASMACYTOSIS
                      LUMBAR NODES, LESION EXTENDS THROUGH
                      THE CAPSULE INTO THE F
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3447E42 (CONTINUED)

```
                                        FAT
    MICRO: ((1)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY MASS
     MICRO+  4   COMPRESSION
EYE
    GROSS:       COLOR CHANGE, DIFFUSE
                     RED, PERIOCULAR REGION, BILATERAL
    MICRO:  (2)  CORNEAL VACUOLATION/DEGENERATION
TESTES
    GROSS:       SIZE DECREASE
                     1/2 OF NORMAL, BILATERAL
     MICRO+((3)) SEMINIFEROUS TUBULE DEGENERATION
    MICRO:  (3)  SEMINIFEROUS TUBULE ATROPHY
EPIDIDYMIDES
    MICRO: ((3)) EPITHELIAL HYPERPLASIA
           ((3)) VACUOLATED EPITHELIUM
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     RED, ALL LOBES
     MICRO+  4   CONGESTION
    MICRO: ((1)) ALVEOLAR HISTIOCYTOSIS
           ((2)) HEMORRHAGE
            (2)  MINERALIZATION, PULMONARY VESSEL(S)
            (2)  GRANULOMA
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
           ((3)) TUBULAR BASOPHILIA
            (4)  PYELITIS
                     RIGHT
           ((1)) MINERALIZATION
CAUSE OF DEATH
    MICRO:   P   PITUITARY CARCINOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    DUODENUM         JEJUNUM          CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  SPINAL CORD
    NERVE, SCIATIC   SEMINAL VESICLE  TRACHEA
    URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    ILEUM
```

ANIMAL 3496E43 27-NOV-89 STUDY DAY 615

TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:       UNKEMPT
LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3496E43 (CONTINUED)

```
    GROSS:        SWOLLEN
                      ALL LOBES
LIVER
    GROSS:        NODULE
                      5X4X3MM, RIGHT MEDIAN LOBE
     MICRO↑ (5)   CYSTIC DEGENERATION
PANCREAS
    MICRO:  (2)   ACINAR ATROPHY
PITUITARY
    GROSS:        SIZE INCREASE
                      5X5X5MM
     MICRO↑  P    #M CARCINOMA
    MICRO: ((4)) VASCULAR ECTASIA
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    MICRO:   4    CONGESTION
            (1)   CORTICAL CELL VACUOLIZATION
           ((1)) CORTICAL CELL HYPERTROPHY
PAWS/FEET
    GROSS:        ULCERATED
                      RIGHT FOOT, CRUSTED, 12X5X5MM
     MICRO↑  5    ULCERATION
    MICRO:   5    FIBROSIS
           ((4)) EPIDERMAL HYPERPLASIA
LYMPH ND, MES
    MICRO:   2    SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:   5    CONGESTION
            (2)   PNEUMONITIS, INTERSTITIAL
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((2)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P    PITUITARY CARCINOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         STOMACH           DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            PARATHYROID GL
    SKIN              SPLEEN            BONE, STERNUM
    BONE MARROW       BRAIN             SPINAL CORD
    EYE               TESTES            EPIDIDYMIDES
    SEMINAL VESICLE   URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    LYMPH ND, S-MAN   BONE, FEMUR       SKELETAL MUSCLE
    NERVE, SCIATIC
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3603E44 12-APR-89 STUDY DAY 386
TYPE OF DEATH: FOUND DEAD

TOTAL BODY		
GROSS:		EMACIATION
ESOPHAGUS		
MICRO:	5	ESOPHAGITIS
	4	MUCOSAL HYPERPLASIA
	(4)	ULCERATION ALL LESIONS LOCATED AT THE TRACHEAL BIFURCATION REGION
STOMACH		
GROSS:		CONTENTS ABNORMAL CONTAINS A MARKED AMOUNT OF BLACK FLUID
STOMACH		
GROSS:		MASS 15X15X15MM, TAN AND BLACK, NEAR WHERE DUODENUM CONNECTS
MICRO+	P	#M ADENOCARCINOMA
STOMACH		
GROSS:		THICKER THAN NORMAL SLIGHT
MICRO+	5	FIBROSIS
MICRO:	5	SEROSITIS
LIVER		
GROSS:		COLOR CHANGE, DIFFUSE ALL LOBES PALE
JEJUNUM		
GROSS:		POSTMORTEM CHANGE
ILEUM		
GROSS:		POSTMORTEM CHANGE
ADRENAL GL		
GROSS:		COLOR CHANGE, DIFFUSE PALE TAN, BILATERAL
NARES/NOSE		
GROSS:		CRUST RED, PERINASAL AREA
SPLEEN		
GROSS:		SIZE DECREASE SLIGHT
LYMPH ND, MED		
MICRO:	3	SINUS ERYTHROCYTOSIS
	2	PLASMACYTOSIS
LYMPH ND, MES		
MICRO:	((1))	HISTIOCYTIC AGGREGATES
THYMIC REGION		
MICRO:	5	INVOLUTIONAL ATROPHY
BONE MARROW		
MICRO:	4	HYPERPLASIA
SEMINAL VESICLE		
GROSS:		POSTMORTEM CHANGE BILATERAL
SEMINAL VESICLE		
GROSS:		SIZE DECREASE 1/2 OF NORMAL
MICRO+	4	ATROPHY

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3603E44 (CONTINUED)

PROSTATE
MICRO: ((2)) EPITHELIAL HYPERPLASIA
LUNGS
GROUS: COLOR CHANGE, FOCAL/MULTIFOCAL
ALL LOBES MOTTLED LIGHT AND DARK PINK
MULTIPLE BROWN FOCI, RIGHT LOBES
MICRO↑ (1) HEMORRHAGE
KIDNEYS
GROSS: POSTMORTEM CHANGE
MILD, LEFT
CAUSE OF DEATH
MICRO: P STOMACH ADENOCARCINOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
LIVER	PANCREAS	DUODENUM
JEJUNUM	ILEUM	COLON
RECTUM	PITUITARY	THYROID GL
PARATHYROID GL	ADRENAL GL	SKIN
NARES/NOSE	SPLEEN	LYMPH ND, S-MAN
BONE, STERNUM	BONE, FEMUR	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	TESTES	EPIDIDYMIDES
NASAL CAVITY	TRACHEA	KIDNEYS
URINARY BLADDER		

THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
CECUM

ANIMAL 3307E45 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	13.323	1.781
KIDNEYS	4.503	0.602
HEART	1.920	0.257
SPLEEN	1.168	0.156
BRAIN	2.144	0.287
ADRENAL GL	0.095	0.013
TESTES	3.917	0.524
TERMINAL BODY WT.	748.0	

HEART
MICRO: (1) MINERALIZATION
STOMACH
MICRO: ((2)) GLAND ECTASIA
LIVER
GROSS: COLOR CHANGE, DIFFUSE
VERY PALE
MICRO: (1) MONONUCLEAR CELL INFILTRATE(S)
PANCREAS
MICRO: (2) PIGMENT DEPOSITS
((3)) FAT INFILTRATION
CECUM
MICRO: P NEMATODIASIS
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: MASS
5X5X5MM
MICRO↑ P #M CARCINOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BOTH, WHITE FOCI SEEN
MICRO↑((2)) CORTICAL CELL VACUOLIZATION
MICRO: ((2)) CORTICAL CELL HYPERTROPHY
SKIN
GROSS: ALOPECIA

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3307E45 (CONTINUED)

```
                                        MULTIPLE AREAS
MAMMARY GL
    MICRO:  (3)  HYPERSECRETION
PAWS/FEET
    GROSS:       ULCERATED
                     BOTH FEET
     MICRO↑  5   ULCERATION
    MICRO:   5   FIBROSIS
SPLEEN
    MICRO:   3   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
    MICRO: ((4)) PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   4   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     2X'S, LUMBAR
     MICRO↑  4   PLASMACYTOSIS
LYMPH ND, OTHER
    GROSS:       CONSISTENCY CHANGE
                     LUMBAR, JELLY LIKE MATERIAL
     MICRO↑((4)) FIBROSIS
    MICRO: ((4)) LYMPHATIC ECTASIA, CYSTIC
                     LUMBAR NODE
              3   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE, FEMUR
    MICRO:  (3)  MYELOFIBROSIS
BONE MARROW
    MICRO:   4   HYPERPLASIA
BRAIN
    MICRO:  (3)  COMPRESSION
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    MICRO:  (4)  HEMORRHAGE, RETROORBITAL
LACRYMAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI, BILATERAL
     MICRO↑((4)) ATROPHY
    MICRO: ((2)) LYMPHOID INFILTRATES
SEMINAL VESICLE
    GROSS:       SIZE INCREASE
                     BOTH SIDES, 2X'S
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
           ((2)) MINERALIZATION, PULMONARY VESSEL(S)
           ((1)) HEMORRHAGE
KIDNEYS
    MICRO: ((2)) FIBROSIS, INTERSTITIAL
           ((1)) NEPHRITIS, INTERSTITIAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3307E45 (CONTINUED)

((2)) RENAL CALCULI
((2)) TUBULAR BASOPHILIA
((1)) TUBULAR PROTEINOSIS

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
DUODENUM	JEJUNUM	ILEUM
RECTUM	THYROID GL	PARATHYROID GL
SKIN	BONE, STERNUM	SKELETAL MUSCLE
NERVE, SCIATIC	TESTES	EPIDIDYMIDES
SEMINAL VESICLE	PROSTATE	URINARY BLADDER

ANIMAL 3281E46 6-MAR-90 STUDY DAY 714

TYPE OF DEATH: FOUND DEAD

HEART
MICRO: (3) MYOCARDIAL DEGENERATION/FIBROSIS
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE DARK RED FOCI, LEFT LATERAL LOBE
MICRO+((2)) TELANGIECTASIS
MICRO: (1) MONONUCLEAR CELL INFILTRATE(S)
PANCREAS
MICRO: (2) ACINAR ATROPHY
((2)) FIBROSIS
((1)) FAT INFILTRATION
JEJUNUM
GROSS: POSTMORTEM CHANGE
ILEUM
GROSS: POSTMORTEM CHANGE
PITUITARY
GROSS: SIZE INCREASE
3X NORMAL
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
3X3MM DARK RED FOCUS
MICRO+ (4) VASCULAR ECTASIA
THYROID GL
MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
PARATHYROID GL
MICRO: 3 HYPERPLASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: P #B ADENOMA
SKIN
GROSS: MASS
15X6X6MM, TAN AND DARK RED, DORSAL SURFACE
MICRO+ (P) #B PILOSEBACEOUS ADENOMA
SKIN
GROSS: ALOPECIA
15X10MM, DORSAL SURFACE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3281E46 (CONTINUED)

```
MAMMARY GL
    MICRO: ((2)) HYPERSECRETION
PAWS/FEET
    GROSS:       ULCERATED
                     4X4MM, RED; RIGHT HIND FOOT
     MICRO+  4   ULCERATION
    MICRO:   5   FIBROSIS
SPLEEN
    MICRO:   3   LYMPHOID HYPERPLASIA
LYMPH ND, MED
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
     MICRO+  2   SINUS ERYTHROCYTOSIS
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    GROSS:       POSTMORTEM CHANGE
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:   4   CORTICAL HYPOPLASIA
BONE MARROW
    MICRO:   3   HYPERPLASIA
SKELETAL MUSCLE
    MICRO: ((3)) MYOFIBER ATROPHY
TESTES
    MICRO: ((4)) ARTERITIS
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED LIGHT AND DARK RED
     MICRO+  4   CONGESTION
    MICRO: ((1)) ALVEOLAR HISTIOCYTOSIS
            (3)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     MINIMAL, BILATERAL
    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
                     THE TISSUE IS AUTOLYSED
           ((3)) TUBULAR PROTEINOSIS
           ((3)) TUBULAR BASOPHILIA
           ((3)) TUBULAR ATROPHY
           ((2)) FIBROSIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    STOMACH          DUODENUM         LYMPH ND, S-MAN
    LYMPH ND, MES    BONE, FEMUR      BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    EPIDIDYMIDES     SEMINAL VESICLE  PROSTATE
    TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3317E47 20-MAR-90 STUDY DAY 728
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	16.238	2.845
KIDNEYS	5.400	0.946
HEART	1.705	0.299
SPLEEN	1.023	0.179
BRAIN	2.158	0.378
ADRENAL GL	0.044	0.008
TESTES	3.150	0.552
TERMINAL BODY WT.	570.8	

STOMACH
MICRO: ((2)) GLAND ECTASIA
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
3X3MM RED FOCUS, CAUDATE LOBE
MICRO↑ (2) TELANGIECTASIS
PITUITARY
GROSS: SIZE INCREASE
3X NORMAL
MICRO↑ P #M CARCINOMA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
TAN AND DARK RED
THYROID GL
MICRO: P THYROGLOSAL DUCT CYST
(4) FOLLICULAR CYST
ADRENAL GL
GROSS: SIZE DECREASE
1/4 OF NORMAL, BILATERAL
MICRO: ((1)) CORTICAL CELL HYPERTROPHY
((3)) MEDULLARY CELL HYPERPLASIA
MAMMARY GL
MICRO: 3 GALACTOCELE
LYMPH ND, S-MAN
MICRO: 2 PLASMACYTOSIS
2 SINUS ERYTHROCYTOSIS
LYMPH ND, MED
MICRO: 3 LYMPHATIC ECTASIA, CYSTIC
4 SINUS ERYTHROCYTOSIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
MICRO: ((3)) MYOFIBER ATROPHY
TESTES
GROSS: SIZE DECREASE
SLIGHT, LEFT
MICRO↑ 4 SEMINIFEROUS TUBULE ATROPHY
MAINLY UNILATERAL
TESTES
GROSS: CONSISTENCY CHANGE
SOFT, LEFT
MICRO: ((4)) ARTERITIS
EPIDIDYMIDES
GROSS: SIZE DECREASE
SLIGHT, LEFT
MICRO↑ 3 ATROPHY
UNILATERAL
LUNGS
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
GROSS: NODULE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3317E47 (CONTINUED)

```
                                        2X3X3MM, TAN; LEFT
     MICRO↑ (P)  #B LIPOMA
                                        LEFT
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                                        MINIMAL, LEFT
KIDNEYS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                        MOTTLED TAN AND RED, BILATERAL
     MICRO↑((3)) TUBULAR PROTEINOSIS
    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
           ((3)) TUBULAR BASOPHILIA
           ((3)) CYST(S)
           ((3)) TUBULAR ATROPHY
           ((1)) RENAL CALCULI
                                        RIGHT
            (2)  TRANSITIONAL CELL HYPERPLASIA
                                        RIGHT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART              AORTA             SALIVARY GL
    ESOPHAGUS          PANCREAS          DUODENUM
    JEJUNUM            ILEUM             CECUM
    COLON              RECTUM            PARATHYROID GL
    SKIN               SPLEEN            BONE, STERNUM
    BONE, FEMUR        BONE MARROW       BRAIN
    SPINAL CORD        NERVE, SCIATIC    EYE
    SEMINAL VESICLE    PROSTATE          TRACHEA
    URINARY BLADDER
```

ANIMAL 3511E48 7-MAR-90 STUDY DAY 715

TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:       EMACIATION
TOTAL BODY
    GROSS:       UNKEMPT
AORTA
    MICRO:  (2)  MINERALIZATION
                                        AT THE HEART BASE
SALIVARY GL
    MICRO:  (4)  ATROPHY
                                        ONE GLAND
STOMACH
    MICRO: ((2)) KERATIN CYST
           ((2)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                        MULTIPLE 2X1MM TAN FOCAL AREAS, LEFT
                                        MEDIAN LOBE
     MICRO↑((4)) HEPATOCELLULAR NECROSIS
    MICRO: ((4)) FATTY CHANGE
           ((4)) HEPATITIS
JEJUNUM
    GROSS:       CONTENTS ABNORMAL
                                        CONTAINS THICK BLACK MATERIAL
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3511E48 (CONTINUED)

```
    GROSS:        SIZE INCREASE
                      6X5X5MM
     MICRO+  P    #M CARCINOMA
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
            (2)  C CELL HYPERPLASIA
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      2X2MM TAN FOCAL AREA, LEFT
     MICRO+((4)) CORTICAL CELL VACUOLIZATION
MAMMARY GL
    MICRO:   4   GALACTOCELE
           ((3)) MASTITIS
                      ASSOCIATED WITH GALACTOCELES
SPLEEN
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL
     MICRO+  3   LYMPHOID DEPLETION
    MICRO:   5   CONGESTION
             4   HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:   3   LYMPHOID HYPERPLASIA
             3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO:  (2)  MASTOCYTOSIS
           ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    GROSS:        ATROPHY
                      HIND LEGS, BILATERAL
     MICRO+  4   MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
SPINAL CORD
    MICRO: ((3)) VACUOLIZATION
EYE
    MICRO: ((3)) KERATITIS
           ((3)) CORNEAL ULCER
                      LESIONS ARE BILATERAL
TESTES
    GROSS:        SIZE DECREASE
                      3/4 OF NORMAL, BILATERAL
     MICRO+  4   SEMINIFEROUS TUBULE DEGENERATION
EPIDIDYMIDES
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL, BILATERAL
    MICRO: ((4)) VACUOLATED EPITHELIUM
           ((2)) EPITHELIAL HYPERPLASIA
SEMINAL VESICLE
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL, BILATERAL
     MICRO+  4   ATROPHY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3511E48 (CONTINUED)

```
PROSTATE
    MICRO: ((4)) PROSTATITIS
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
            (2)  ADENITIS, SUBMUCOSAL GLANDS
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO:   4   TUBULAR ATROPHY
            ((3)) TUBULAR PROTEINOSIS
            ((3)) RENAL CALCULI
            ((3)) FIBROSIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   PITUITARY ADENOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             ESOPHAGUS         PANCREAS
    DUODENUM          JEJUNUM           ILEUM
    CECUM             COLON             RECTUM
    PARATHYROID GL    SKIN              BONE, STERNUM
    BONE, FEMUR       BONE MARROW       NERVE, SCIATIC
    URINARY BLADDER
```

ANIMAL 3303E49 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.912	2.145
KIDNEYS	3.669	0.528
HEART	1.956	0.281
SPLEEN	1.423	0.205
BRAIN	2.249	0.323
ADRENAL GL	0.053	0.008
TESTES	2.376	0.342
TERMINAL BODY WT.	695.3	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, DIFFUSE
                     ALL LOBES PALE
    MICRO:  (2)  CYSTIC DEGENERATION
           ((1)) BILIARY HYPERPLASIA
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
            (2)  CHOLANGIOFIBROSIS
PANCREAS
    MICRO:  (P)  #B ISLET CELL ADENOMA
           ((2)) FAT INFILTRATION
PITUITARY
    GROSS:       SIZE INCREASE
                     5X8MM
     MICRO↑  P   #B ADENOMA
    MICRO: ((4)) VASCULAR ECTASIA
           ((3)) CYST(S)
SKIN
    GROSS:       ALOPECIA
                     60X60MM, PERIANAL
MAMMARY GL
    MICRO: ((3)) GALACTOCELE
PAWS/FEET
    GROSS:       ULCERATED
                     20X20MM, RT HIND
     MICRO↑  5   ULCERATION
    MICRO: ((4)) OSSEUS METAPLASIA
             5   FIBROSIS
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3303E49 (CONTINUED)

```
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
TESTES
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     (1) 4X3MM TAN AREA, INSIDE
     MICRO+ (P)  #M HEMANGIOSARCOMA
                     SMALL EARLY NODULE, TOO CELLULAR FOR A
                     BENIGN TUMOR
    MICRO: ((2)) MINERALIZATION
           ((4)) SEMINIFEROUS TUBULE ATROPHY
                     LESIONS ARE UNILATERAL
SEMINAL VESICLE
    MICRO:   4   SEMINAL VESICULITIS
PROSTATE
    MICRO:   4   PROSTATITIS
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
                     BILATERAL
           ((2)) NEPHRITIS, INTERSTITIAL
                     PELVIC REGION
URINARY BLADDER
    GROSS:       CALCULUS
                     FILLED WITH STONES
URINARY BLADDER
    GROSS:       DILATATION/DISTENTION
                     40X20MM
    MICRO:   3   CYSTITIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           THYROID GL       PARATHYROID GL
    ADRENAL GL       SKIN             SPLEEN
    LYMPH ND, S-MAN  LYMPH ND, MES    BONE, STERNUM
    BONE, FEMUR      BRAIN            NERVE, SCIATIC
    EYE              EPIDIDYMIDES     TRACHEA
    LUNGS
```

ANIMAL 3380E50 17-MAY-89 STUDY DAY 421

TYPE OF DEATH: FOUND DEAD

```
HEART
    MICRO: ((3)) MYOCARDITIS
PANCREAS
    MICRO:   3   ARTERITIS
THYROID GL
    MICRO:  (P)  THYROGLOSAL DUCT CYST
ADRENAL GL
    MICRO:  (2)  CORTICAL CELL VACUOLIZATION
MAMMARY GL
    MICRO:   2   HYPERPLASIA
THYMIC REGION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3380E50 (CONTINUED)

```
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     ALL LOBES DARK PINK
     MICRO↑  4   CONGESTION
KIDNEYS
    MICRO: ((3)) NEPHRITIS, INTERSTITIAL
                     PELVIC REGION, BILATERAL
           (2)   TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:   P   NOT DETERMINED
                     THE MYOCARDITIS IS LOCALIZED AND
                     PROBABLY DID NOT CAUSE
                     DEATH
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    STOMACH          LIVER            DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PITUITARY
    PARATHYROID GL   SKIN             SPLEEN
    LYMPH ND, S-MAN  LYMPH ND, MES    BONE, STERNUM
    BONE, FEMUR      SKELETAL MUSCLE  BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    TESTES           EPIDIDYMIDES     SEMINAL VESICLE
    PROSTATE         TRACHEA          URINARY BLADDER
```

ANIMAL 3355E51 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.771	2.416
KIDNEYS	4.543	0.743
HEART	1.750	0.286
SPLEEN	0.832	0.136
BRAIN	2.443	0.400
ADRENAL GL	0.102	0.017
TESTES	3.645	0.596
TERMINAL BODY WT.	611.5	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, DIFFUSE
                     LIGHT BROWN
     MICRO↑((2)) FATTY CHANGE
    MICRO: ((1)) CHOLANGITIS
           (1)   CYSTIC DEGENERATION
PITUITARY
    GROSS:       NODULE
                     2X2X2MM, TAN
     MICRO↑  P   #B ADENOMA
    MICRO: ((2)) HEMOSIDEROSIS
ADRENAL GL
    MICRO: ((4)) CORTICAL CELL VACUOLIZATION
           (4)   LIPIDOSIS
                     LESION RESEMBLES AN ADENOMA, BUT IS
                     COMPOSED OF FAT CELLS
                     AND IS PROBABLY DEGENERATIVE
SUBCUTIS
    GROSS:       MASS
                     30X30X10MM, FIRM, HOMOGENOUS
     MICRO↑  P   #B FIBROMA
MAMMARY GL
    GROSS:       GALACTOCELE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3355E51 (CONTINUED)

```
                                        5X5X7MM, RT. BRACHIAL REGION
     MICRO+((4)) GALACTOCELE
LYMPH ND, S-MAN
    MICRO:   3   LYMPHOID HYPERPLASIA
             3   PLASMACYTOSIS
LYMPH ND, MED
    MICRO:  (4)  LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
             2   MASTOCYTOSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
            (2)  PNEUMONITIS, INTERSTITIAL
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     RIGHT, MINIMAL
     MICRO+  2   HYDRONEPHROSIS
                     ALL LESIONS RIGHT PAPILLA
    MICRO: ((2)) TRANSITIONAL CELL VACUOLATION, PAPILLA
            (2)  TRANSITIONAL CELL HYPERPLASIA
           ((2)) MINERALIZATION
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART              AORTA            SALIVARY GL
    ESOPHAGUS          PANCREAS         DUODENUM
    JEJUNUM            ILEUM            CECUM
    COLON              RECTUM           THYROID GL
    PARATHYROID GL     SKIN             SPLEEN
    BONE, STERNUM      BONE, FEMUR      BONE MARROW
    SKELETAL MUSCLE    BRAIN            SPINAL CORD
    NERVE, SCIATIC     EYE              TESTES
    EPIDIDYMIDES       SEMINAL VESICLE  URINARY BLADDER
```

ANIMAL 3443E52 23-JAN-90 STUDY DAY 672

TYPE OF DEATH: FOUND DEAD

```
HEART
    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
SALIVARY GL
    MICRO:  (3)  ATROPHY
STOMACH
    GROSS:       THICKER THAN NORMAL
                     ENTIRE STOMACH
     MICRO+  3   GASTRITIS
                     THE NONGLANDULAR STOMACH IS INFLAMMED
                     AND THICKENED.
    MICRO: ((1)) GLAND ECTASIA
            (4)  MUCOSAL HYPERPLASIA
LIVER
    MICRO: ((1)) CHOLANGIOFIBROSIS
           ((1)) FATTY CHANGE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3443E52 (CONTINUED)

```
PANCREAS
    MICRO: ((2)) FAT INFILTRATION
DUODENUM
    GROSS:       POSTMORTEM CHANGE
                     INCLUDING JEJUNUM, ILEUM, CECUM
PITUITARY
    MICRO:  (P)  #B ADENOMA
                     SMALL NODULE
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE TAN FOCI,  BILATERAL
MAMMARY GL
    MICRO: ((3)) HYPERSECRETION
PAWS/FEET
    GROSS:       ULCERATED
                     6X6X3MM, DARK RED; RIGHT HIND FOOT
                     2X2X2MM, RED, LEFT HIND FOOT
     MICRO+  4   ULCERATION
    MICRO:   4   FIBROSIS
SPLEEN
    GROSS:       SIZE DECREASE
                     1/4 OF NORMAL
SPLEEN
    GROSS:       POSTMORTEM CHANGE
LYMPH ND, MES
    GROSS:       POSTMORTEM CHANGE
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:   3   CORTICAL HYPOPLASIA
BONE, FEMUR
    MICRO:   2   CORTICAL HYPOPLASIA
SKELETAL MUSCLE
    GROSS:       ATROPHY
                     HIND LEGS, BILATERAL
     MICRO+  5   MYOFIBER ATROPHY
TESTES
    MICRO: ((1)) SEMINIFEROUS TUBULE ATROPHY
PROSTATE
    MICRO: ((2)) EPITHELIAL HYPERPLASIA
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     ALL LOBES DARK PINK
     MICRO+  5   CONGESTION
    MICRO:  (2)  GRANULOMA
KIDNEYS
    MICRO: ((3)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            ESOPHAGUS        DUODENUM
    RECTUM           PARATHYROID GL   ADRENAL GL
    SKIN             SPLEEN           LYMPH ND, S-MAN
    BONE MARROW      BRAIN            SPINAL CORD
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3443E52 (CONTINUED)

```
    NERVE, SCIATIC   EYE              EPIDIDYMIDES
    SEMINAL VESICLE  TRACHEA
THE FOLLOWING TISSUES WERE MISSING:
    LYMPH ND, MES
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    JEJUNUM          ILEUM            CECUM
    COLON            URINARY BLADDER
```

ANIMAL 3334E53 1-MAR-90 STUDY DAY 709

TYPE OF DEATH: FOUND DEAD

```
MESENTARY/OM'TUM
    GROSS:        TORTUOUS
                      VEINS, THROUGHOUT ENTIRE TRACT
     MICRO+((5)) ARTERITIS
                      INVOLVES THE VESSELS TO ALMOST ALL
                      SECTIONS OF INTESTINES
                      AND STOMACH AND PANCREAS
HEART
    MICRO: ((2)) MYOCARDIAL DEGENERATION/FIBROSIS
AORTA
    MICRO: ((2)) MINERALIZATION
STOMACH
    MICRO:  (4)  ARTERITIS
LIVER
    GROSS:        SWOLLEN
                      ALL LOBES
    MICRO:  (1)  CYSTIC DEGENERATION
PANCREAS
    MICRO:   5   ARTERITIS
CECUM
    GROSS:        PARASITE
                      PINWORMS
PITUITARY
    MICRO:  (P)  #B ADENOMA
THYROID GL
    GROSS:        COLOR CHANGE, DIFFUSE
                      RIGHT, GREY-TAN
THYROID GL
    GROSS:        SIZE INCREASE
                      25%, RIGHT
PARATHYROID GL
    MICRO:   4   HYPERPLASIA
ADRENAL GL
    GROSS:        COLOR CHANGE, DIFFUSE
                      GREY, BILATERAL
     MICRO+  4   CONGESTION
ADRENAL GL
    GROSS:        SIZE INCREASE
                      25%, BILATERAL
     MICRO+((3)) MEDULLARY CELL HYPERPLASIA
    MICRO:  (2)  CORTICAL CELL HYPERPLASIA, NODULAR
           ((2)) CORTICAL CELL HYPERTROPHY
           ((2)) THROMBOSIS
HEAD
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3334E53 (CONTINUED)

```
                    MICRO:  (5)  ABSCESS
                                     TOOTH ABSCESS
NARES/NOSE
                    GROSS:       CRUST
                                     PERINASAL, RED
PAWS/FEET
                    GROSS:       ULCERATED
                                     20X15X3MM, RED, LEFT HIND  FOOT
                     MICRO+  5   ULCERATION
                    MICRO: ((4)) OSSEUS METAPLASIA
                            4    FIBROSIS
SPLEEN
                    MICRO:   4   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
                    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
                            4    LYMPHOID HYPERPLASIA
LYMPH ND, MED
                    MICRO: ((1)) SINUS ERYTHROCYTOSIS
                           ((4)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
                    MICRO:   4   LYMPHOID HYPERPLASIA
THYMIC REGION
                    MICRO:   4   INVOLUTIONAL ATROPHY
BONE, STERNUM
                    MICRO:   4   CORTICAL HYPOPLASIA
BONE, FEMUR
                    MICRO: ((3)) FIBROUS OSTEODYSTROPHY
BONE MARROW
                    MICRO:   4   HYPERPLASIA
EYE
                    GROSS:       OPACITY
                                     CORNEAL, RIGHT
EYE
                    GROSS:       CRUST
                                     PERIOCULAR, RED
                                     BILATERAL
TESTES
                    GROSS:       SIZE DECREASE
                                     1/3 NORMAL, BILATERAL
                     MICRO+  5   SEMINIFEROUS TUBULE ATROPHY
                                     BILATERAL
TESTES
                    GROSS:       CONSISTENCY CHANGE
                                     SOFT, BILATERAL
TESTES
                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                     (1) 4X4MM TAN AREA
                     MICRO+  P   #B INTERSTITIAL CELL ADENOMA
                    MICRO: ((4)) ARTERITIS
                           ((3)) MINERALIZATION
EPIDIDYMIDES
                    GROSS:       SIZE DECREASE
                                     1/2 OF NORMAL, BILATERAL
                    MICRO: ((3)) VACUOLATED EPITHELIUM
SEMINAL VESICLE
                    GROSS:       SIZE DECREASE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3334E53 (CONTINUED)

```
                                        1/2 OF NORMAL, BILATERAL
     MICRO+  4   ATROPHY
NASAL CAVITY
    MICRO:   5   HEMORRHAGE
TRACHEA
    MICRO:   4   TRACHEITIS
                     PORTIONS OF THE MUCOSA ARE NECROTIC
KIDNEYS
    GROSS:       SIZE INCREASE
                     2-3X NORMAL,BILATERAL
KIDNEYS
    GROSS:       GRANULAR
                     BILATERAL
     MICRO+  5   TUBULAR PROTEINOSIS
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     MINIMAL, BILATERAL
     MICRO+((2)) HYDRONEPHROSIS
    MICRO:   5   TUBULAR ATROPHY
             4   GLOMERULOSCLEROSIS
             3   FIBROSIS, INTERSTITIAL
          ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   CHRONIC RENAL DISEASE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SALIVARY GL      ESOPHAGUS        DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           THYROID GL
    SKIN             NARES/NOSE       SKELETAL MUSCLE
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    PROSTATE         LUNGS            URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    EYE
```

ANIMAL 3474E54 20-MAR-90 STUDY DAY 728

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	15.567	2.180
KIDNEYS	4.066	0.569
HEART	2.999	0.420
SPLEEN	3.045	0.426
BRAIN	2.289	0.320
ADRENAL GL	0.087	0.012
TESTES	3.167	0.443
TERMINAL BODY WT.	714.2	

```
HEART
    MICRO: ((2)) MYOCARDIAL DEGENERATION/FIBROSIS
SALIVARY GL
    GROSS:       CYST
                     15X10X10MM, BLOOD AND YELLOW LIQUID
                     FILLED, LEFT SIDE
     MICRO+  P   #M ADENOCARCINOMA
                     THE MASS IS WELL DIFFERENTIATED,
                     CYSTIC, FIBROTIC, AND
                     INFLAMMED.
    MICRO: ((4)) SIALOADENITIS
STOMACH
    GROSS:       CONTENTS ABNORMAL
                     BROWNISH BLACK SUBSTANCE
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) BILIARY HYPERPLASIA
           ((1)) CHOLANGITIS
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3474E54 (CONTINUED)

```
                    (1)  CHOLANGIOFIBROSIS
CECUM
    MICRO:   P   NEMATODIASIS
PITUITARY
    MICRO: ((P)) #B ADENOMA
                (2)  CYST(S)
THYROID GL
    MICRO: ((2)) C CELL HYPERPLASIA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     TAN FOCI, BILATERAL
     MICRO+((3)) CORTICAL CELL VACUOLIZATION
    MICRO:  (3)  MEDULLARY CELL HYPERPLASIA
SUBCUTIS
    GROSS:       MASS
                     FATTY MASS, BELOW RIGHT EAR, 25X30X20MM
     MICRO+ (P)  #B FIBROMA
PAWS/FEET
    GROSS:       ULCERATED
                     RIGHT, 30X25X2MM, LEFT, 40X20X2MM
     MICRO+  4   ULCERATION
    MICRO: ((4)) OSSEUS METAPLASIA
             4   FIBROSIS
SPLEEN
    GROSS:       SIZE INCREASE
                     50X15X10MM
     MICRO+  4   EXTRAMEDULLARY HEMATOPOIESIS
SPLEEN
    GROSS:       SHAPE/CONTOUR CHANGE
                     SHAPED INTO AN S SHAPE
     MICRO+((5)) FIBROSIS
                     THERE IS EXTENSIVE EMH INTERMIXED WITH
                     THE CONNECTIVE
                     TISSUE
SPLEEN
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     TAN FOCAL AREAS, TWO 3X3MM
LYMPH ND, S-MAN
    MICRO:   4   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:       CYST
                     LEFT SUBLUMBAR, 3X3X3MM, CLUSTER
     MICRO+((4)) LYMPHATIC ECTASIA, CYSTIC
                     SUMLUMBAR AND POPLITEAL
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     POPLITEAL, LEFT AND RIGHT, 2X NORMAL
     MICRO+  4   PLASMACYTOSIS
                     POPLITEAL
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:   4   CORTICAL HYPOPLASIA
BONE MARROW
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3474E54 (CONTINUED)

```
    MICRO:   4   HYPERPLASIA
BRAIN
    MICRO: ((3)) VACUOLIZATION
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     LIGHT PINK, ALL LOBES
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
            (3)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     BILATERAL, MILD
     MICRO+ (3)  HYDRONEPHROSIS
                     ARIGHT
KIDNEYS
    GROSS:       CONTENTS ABNORMAL
                     RIGHT, BROWN GRANULAR SUBSTANCE
     MICRO+((3)) MINERALIZATION
                     RIGHT
    MICRO: ((2)) TUBULAR BASOPHILIA
           ((3)) TRANSITIONAL CELL HYPERPLASIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            ESOPHAGUS        PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             BONE, FEMUR      SKELETAL MUSCLE
    NERVE, SCIATIC   EYE              TESTES
    EPIDIDYMIDES     SEMINAL VESICLE  PROSTATE
    TRACHEA          URINARY BLADDER
```

ANIMAL 3585E55 31-DEC-89 STUDY DAY 649

TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:       UNKEMPT
HEART
    GROSS:       SIZE INCREASE
                     1.5X NORMAL
    MICRO: ((3)) MINERALIZATION
                     MUSCLE AND ARTERIES
           ((4)) MYOCARDIAL DEGENERATION/FIBROSIS
AORTA
    GROSS:       CONSISTENCY CHANGE
                     FIRM
     MICRO+  5   MINERALIZATION
AORTA
    GROSS:       DILATATION/DISTENTION
                     2X NORMAL
STOMACH
    MICRO:   4   MINERALIZATION
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE RED FOCI, ALL LOBES
     MICRO+  4   FATTY CHANGE
    MICRO: ((2)) HEPATOCELLULAR NECROSIS
DUODENUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3585E55 (CONTINUED)

```
                    GROSS:        POSTMORTEM CHANGE
                                      INCLUDING JEJUNUM, ILEUM, CECUM AND
                                      COLON
PITUITARY
                    GROSS:        SIZE INCREASE
                                      3X NORMAL
                     MICRO↑  P    #B ADENOMA
PITUITARY
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      (2) 2X2 AND 3X3MM DARK RED FOCI
                     MICRO↑((4)) VASCULAR ECTASIA
THYROID GL
                    MICRO:  (P)   THYROGLOSAL DUCT CYST
PARATHYROID GL
                    GROSS:        SIZE INCREASE
                                      2X NORMAL, BILATERAL
                     MICRO↑  4    HYPERPLASIA
ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      TAN AND RED, BILATERAL
                     MICRO↑((4)) HEMORRHAGE
                    MICRO:  (5)   THROMBOSIS
                           ((4)) INFARCTION
                           ((2)) MINERALIZATION
                           ((4)) CORTICAL CELL VACUOLIZATION
NARES/NOSE
                    GROSS:        CRUST
                                      RED, PERINASAL AREA
MAMMARY GL
                    MICRO:   3    HYPERSECRETION
PAWS/FEET
                    GROSS:        ULCERATED
                                      5X5MM, RIGHT HIND FOOT
                     MICRO↑ (4)   ULCERATION
LYMPH ND, MES
                    GROSS:        POSTMORTEM CHANGE
                    MICRO:   2    SINUS ERYTHROCYTOSIS
                           ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
                    MICRO:   4    INVOLUTIONAL ATROPHY
EYE
                    GROSS:        OPACITY
                                      BILATERAL
                     MICRO↑((2)) CORNEAL ULCER
                    MICRO: ((3)) KERATITIS
                                      BILATERAL
TESTES
                    MICRO: ((4)) ARTERITIS
                           ((1)) SEMINIFEROUS TUBULE ATROPHY
EPIDIDYMIDES
                    MICRO: ((3)) VACUOLATED EPITHELIUM
                           ((2)) EPITHELIAL HYPERPLASIA
                            (4)  FIBROSIS
SEMINAL VESICLE
                    GROSS:        SIZE DECREASE
                                      1/2 OF NORMAL, BILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3585E55 (CONTINUED)

```
     MICRO↑  3   ATROPHY
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED LIGHT AND DARK PINK
     MICRO↑((3)) MINERALIZATION
                     INTERSTITIAL MINERALIZATION
    MICRO: ((3)) PULMONARY EDEMA
           ((3)) ALVEOLAR HISTIOCYTOSIS
           ((3)) INTRAALVEOLAR CELLULAR DEBRIS
KIDNEYS
    GROSS:       POSTMORTEM CHANGE
                     BILATERAL
KIDNEYS
    GROSS:       DIMPLED/PITTED
                     BILATERAL
     MICRO↑  5   TUBULAR PROTEINOSIS
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     MININAL, BILATERAL
     MICRO↑ (2)  HYDRONEPHROSIS
    MICRO: ((4)) FIBROSIS, INTERSTITIAL
           ((2)) MINERALIZATION
                     A LARGE MASS OF MINERALIZED DEBRIS IS
                     PRESENT AT THE BASE
                     OF THE RIGHT KIDNEY
           ((1)) NEPHRITIS, INTERSTITIAL
           ((3)) CYST(S)
           ((4)) GLOMERULOSCLEROSIS
           ((4)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P   CHRONIC RENAL DISEASE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SALIVARY GL      ESOPHAGUS        PANCREAS
    DUODENUM         CECUM            COLON
    RECTUM           SKIN             NARES/NOSE
    SPLEEN           LYMPH ND, S-MAN  BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    PROSTATE         NASAL CAVITY     URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    JEJUNUM          ILEUM
```

ANIMAL 3552E56 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	17.532	2.706
KIDNEYS	5.065	0.782
HEART	2.612	0.403
SPLEEN	1.863	0.288
BRAIN	2.299	0.355
ADRENAL GL	0.099	0.015
TESTES	3.205	0.495
TERMINAL BODY WT.	647.8	

```
ADIPOSE TISSUE
    GROSS:       NODULE
                     5X4X3MM, TAN, NEAR STOMACH
     MICRO↑  4   FAT NECROSIS
    MICRO:   3   STEATITIS
THORACIC CAV
    GROSS:       FLUID
                     ABOUT 3-4CC, YELLOW-RED
HEART
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3552E56 (CONTINUED)

```
    MICRO: ((2)) FIBROSIS
            (2)  MYOCARDITIS
                     SURFACE OF LEFT VENTRICLE
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     EDGES OF ALL LOBES, RED FOCI
     MICRO↑((4)) HEPATOCELLULAR NECROSIS
    MICRO: ((1)) BILIARY HYPERPLASIA
COLON
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:       MASS
                     8X5X5MM
     MICRO↑  P   #B ADENOMA
THYROID GL
    GROSS:       SIZE INCREASE
                     2X NORMAL, BILATERAL
     MICRO↑((3)) FOLLICULAR CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     WHITE FOCI, BILATERAL
     MICRO↑((2)) CORTICAL CELL HYPERTROPHY
    MICRO: ((3)) MEDULLARY CELL HYPERPLASIA
MAMMARY GL
    MICRO: ((3)) HYPERSECRETION
PAWS/FEET
    GROSS:       SWOLLEN
                     HIND FEET, BILATERAL, 2X NORMAL
     MICRO↑  5   FIBROSIS
    MICRO: ((4)) OSSEUS METAPLASIA
             4   ULCERATION
SPLEEN
    GROSS:       SIZE INCREASE
                     2-3X NORMAL
     MICRO↑  3   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
    MICRO:   4   LYMPHOID HYPERPLASIA
            ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     3-4X NORMAL, SUBLUMBAR
                     POPLITEAL, RIGHT, 4X NORMAL
     MICRO↑  4   PLASMACYTOSIS
                     LUMBAR AND POPLITEAL NODES
    MICRO: ((4)) LYMPHATIC ECTASIA, CYSTIC
                     LUMBAR NODES
            ((3)) FIBROSIS
            ((4)) MASTOCYTOSIS
                     POPLITEAL NODE
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3552E56 (CONTINUED)

```
                                    MICRO: ((2)) MYOFIBER ATROPHY
                                BRAIN
                                    GROSS:       DEPRESSION/INDENTATION
                                                     SLIGHT,AREA OVER PITUITARY
                                SPINAL CORD
                                    MICRO: ((1)) VACUOLIZATION
                                SEMINAL VESICLE
                                    GROSS:       SIZE INCREASE
                                                     LEFT, 2X NORMAL
                                PROSTATE
                                    MICRO: ((2)) EPITHELIAL HYPERPLASIA
                                LUNGS
                                    GROSS:       INCOMPLETE COLLAPSE
                                                     ALL LOBES
                                     MICRO+ (3)  PNEUMONITIS, INTERSTITIAL
                                                     A PORTION OF ONE LOBE
                                    MICRO: ((2)) HEMOSIDEROSIS
                                           ((2)) MINERALIZATION, PULMONARY VESSEL(S)
                                KIDNEYS
                                    GROSS:       GRANULAR
                                                     MODERATE, BILATERAL
                                     MICRO+((2)) TUBULAR PROTEINOSIS
                                    MICRO: ((4)) TUBULAR BASOPHILIA
                                           ((2)) NEPHRITIS, INTERSTITIAL
                                             3   HYDRONEPHROSIS
                                                     RIGHT
                                           ((2)) FIBROSIS, INTERSTITIAL
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    AORTA              SALIVARY GL      ESOPHAGUS
                                    STOMACH            PANCREAS         DUODENUM
                                    JEJUNUM            ILEUM            CECUM
                                    RECTUM             PARATHYROID GL   SKIN
                                    BONE, STERNUM      BONE, FEMUR      BRAIN
                                    NERVE, SCIATIC     EYE              TESTES
                                    EPIDIDYMIDES       SEMINAL VESICLE  TRACHEA
                                    URINARY BLADDER
```

ANIMAL 3337E57 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	19.126	2.518
KIDNEYS	5.310	0.699
HEART	2.259	0.297
SPLEEN	0.880	0.116
BRAIN	2.109	0.278
ADRENAL GL	0.096	0.013
TESTES	3.407	0.449
TERMINAL BODY WT.	759.6	

```
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     RED FOCI SEEN, ALL LOBES
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
CECUM
    MICRO:  (4)  TYPHLITIS
                     PYOGRANULOMATOUS LESION WITH MANY
                     EOSINOPHILS
                     PROBABLY DUE TO PINWORM MIGRATION
COLON
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:       NODULE
                     3X3X3MM, DARK RED
     MICRO+  P   #B ADENOMA
THYROID GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3337E57 (CONTINUED)

```
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO+((4)) INFARCTION
    MICRO:  (4)  THROMBOSIS
           ((2)) CORTICAL CELL HYPERTROPHY
           ((2)) CORTICAL CELL VACUOLIZATION
PAWS/FEET
    GROSS:       ULCERATED
                     RIGHT FOOT
     MICRO+ (4)  ULCERATION
    MICRO:  (4)  FIBROSIS
LYMPH ND, S-MAN
    MICRO:   2   PLASMACYTOSIS
            (3)  LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
LUNGS
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:       CYST
                     LEFT, 2X2X2MM
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((2)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR BASOPHILIA
           ((2)) FIBROSIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    RECTUM           PARATHYROID GL   SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      BRAIN            SPINAL CORD
    NERVE, SCIATIC   EYE              TESTES
    EPIDIDYMIDES     SEMINAL VESICLE  PROSTATE
    TRACHEA          URINARY BLADDER
```

ANIMAL 3405E58 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	16.572	2.514
KIDNEYS	5.551	0.842
HEART	2.028	0.308
SPLEEN	1.078	0.164
BRAIN	2.343	0.355
ADRENAL GL	0.088	0.013
TESTES	3.717	0.564
TERMINAL BODY WT.	659.2	

```
LIVER
    GROSS:       NODULE
                     2X2X2MM, TAN; CAUDATE LOBE
     MICRO+((4)) FATTY CHANGE
                     ONE LARGE AREA AND TWO SMALL FOCI
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE BROWN FOCI, RIGHT MEDIAN LOBE
                     2X2MM TAN FOCUS, RIGHT MEDIAN LOBE
    MICRO: ((2)) BILIARY HYPERPLASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3405E58 (CONTINUED)

```
                    ((2)) CHOLANGIOFIBROSIS
                     (1)  TELANGIECTASIS
                    ((1)) CHOLANGITIS
PANCREAS
    MICRO: ((2)) FAT INFILTRATION
PITUITARY
    GROSS:       SIZE INCREASE
                     SLIGHT
     MICRO+ (P)  #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE RED FOCI
    MICRO:  (4)  CYST(S)
THYROID GL
    MICRO:  (P)  #B C CELL ADENOMA
                     MISTAKEN FOR PARATHYROID GLAND
            ((2)) CALCIFIC CONCRETIONS, COLLOID
PARATHYROID GL
    GROSS:       SIZE INCREASE
                     2.5X NORMAL, RIGHT
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO:  (2)  INFARCTION
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
LUNGS
    MICRO:  (1)  PNEUMONITIS, INTERSTITIAL
            (1)  PERIVASCULAR INFILTRATE(S)
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) TUBULAR BASOPHILIA
           ((3)) TUBULAR ATROPHY
           ((2)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             SPLEEN           LYMPH ND, S-MAN
    LYMPH ND, MES    BONE, STERNUM    BONE, FEMUR
    BONE MARROW      BRAIN            NERVE, SCIATIC
    EYE              TESTES           EPIDIDYMIDES
    SEMINAL VESICLE  PROSTATE         TRACHEA
    URINARY BLADDER
```

ANIMAL 3404E59 21-MAR-90 STUDY DAY 729
TYPE OF DEATH: SCHEDULED SACRIFICE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3404E59 (CONTINUED)

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	15.955	2.261
KIDNEYS	6.524	0.924
HEART	2.253	0.319
SPLEEN	1.073	0.152
BRAIN	2.189	0.310
ADRENAL GL	0.066	0.009
TESTES	3.619	0.513
TERMINAL BODY WT.	705.7	

```
HEART
    MICRO: ((3)) FIBROSIS
                     SEVERAL MAST CELLS ARE PRESENT
STOMACH
    MICRO: ((1)) GLAND ECTASIA
PANCREAS
    MICRO:  (P)  #8 ISLET CELL ADENOMA
                     SMALL NODULE
PITUITARY
    MICRO:  (P)  #8 ADENOMA
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    MICRO: ((2)) CORTICAL CELL HYPERTROPHY
PAWS/FEET
    GROSS:       ULCERATED
PAWS/FEET
    GROSS:       SWOLLEN
                     LEFT, 2X NORMAL
     MICRO+  4   FIBROSIS
    MICRO: ((4)) OSSEUS METAPLASIA
                4   EPIDERMAL HYPERPLASIA
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
            (2)  SINUS ERYTHROCYTOSIS
LYMPH ND, MED
    GROSS:       COLOR CHANGE, DIFFUSE
                     BILATERAL, DARK RED
     MICRO+  2   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
                3   LYMPHOID HYPERPLASIA
LYMPH ND, REN
    GROSS:       SIZE INCREASE
                     2X NORMAL, BILATERAL
     MICRO+((4)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, REN
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, BILATERAL
     MICRO+((2)) SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
TESTES
    MICRO: ((3)) ARTERITIS
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((3)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     RIGHT MILD
KIDNEYS
    GROSS:       DIMPLED/PITTED
                     BILATERAL
     MICRO+  4   TUBULAR PROTEINOSIS
    MICRO: ((3)) NEPHRITIS, INTERSTITIAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3404E59 (CONTINUED)

((3)) CYST(S)
4 TUBULAR ATROPHY
((3)) FIBROSIS, INTERSTITIAL

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
LIVER	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	PARATHYROID GL	SKIN
SPLEEN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	BRAIN
SPINAL CORD	NERVE, SCIATIC	EYE
EPIDIDYMIDES	SEMINAL VESICLE	PROSTATE
URINARY BLADDER		

ANIMAL 3419E60 27-MAR-90 STUDY DAY 735

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	18.094	2.862
KIDNEYS	8.584	1.358
HEART	2.290	0.362
SPLEEN	2.074	0.328
BRAIN	2.193	0.347
ADRENAL GL	0.110	0.017
TESTES	2.600	0.411
TERMINAL BODY WT.	632.3	

LIVER
MICRO: (2) MONONUCLEAR CELL INFILTRATE(S)
((1)) BILIARY HYPERPLASIA
PITUITARY
GROSS: SIZE INCREASE
2X NORMAL, RED
MICRO↑ (P) #B ADENOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI, BILATERAL
MICRO↑((3)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
GROSS: SIZE INCREASE
2X NORMAL, BILATERAL
MICRO↑ P #B ADENOMA
MICRO: ((3)) CORTICAL CELL VACUOLIZATION
SKIN
GROSS: ULCERATED
5X5X3MM, FACIAL AREA
PAWS/FEET
GROSS: SWOLLEN
LEFT HIND LEG, 2X NORMAL
MICRO↑ 5 FIBROSIS
PAWS/FEET
GROSS: ULCERATED
LEFT HIND FOOT, 20X20MM
MICRO↑ 5 ULCERATION
MICRO: ((4)) OSSEUS METAPLASIA
SPLEEN
GROSS: SIZE INCREASE
3X NORMAL
MICRO↑ 3 LYMPHOID HYPERPLASIA
SPLEEN
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
2MM, YELLOW FOCAL AREA NEAR CENTER
MICRO: ((3)) PLASMACYTOSIS
LYMPH ND, S-MAN
MICRO: 4 PLASMACYTOSIS
3 LYMPHOID HYPERPLASIA
LYMPH ND, REN

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3419E60 (CONTINUED)

```
    GROSS:        CYST
                      YELLOW FLUID, BILATERAL
     MICRO↑((4)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, OTHER
    GROSS:        CYST
                      SUBLUMBAR, BILATERAL, YELLOW FLUID
     MICRO↑((3)) LYMPHATIC ECTASIA, CYSTIC
                      THE SURROUNDING FAT IS ALSO VERY
                      EDEMATOUS
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      LEFT POPLITEAL LYMPH NODE, 10X10X4MM
     MICRO↑  5    PLASMACYTOSIS
                      POPLITEAL, LUMBAR, AND RENAL NODES
    MICRO:   4    MASTOCYTOSIS
                      POPLITEAL NODE
THYMIC REGION
    MICRO:   5    INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO: ((2)) MYELOFIBROSIS
BONE MARROW
    MICRO:   4    HYPERPLASIA
TESTES
    GROSS:        SIZE DECREASE
                      LEFT, SLIGHT
     MICRO↑  4    SEMINIFEROUS TUBULE ATROPHY
TESTES
    GROSS:        CONSISTENCY CHANGE
                      LEFT, SOFT
    MICRO: ((4)) ARTERITIS
           ((3)) MINERALIZATION
EPIDIDYMIDES
    GROSS:        ABSCESS
                      (1) 5X4X4MM
     MICRO↑  5    EPIDIDYMITIS
                      UNILATERAL PYOGRANULOMATOUS
                      INFLAMMATION, CHRONIC
SEMINAL VESICLE
    MICRO:   3    SEMINAL VESICULITIS
             4    EDEMA
PROSTATE
    GROSS:        CYST
                      ENTIRE GLAND, JELLY-LIKE
     MICRO↑  5    EDEMA
    MICRO:   4    PROSTATITIS
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((4)) MINERALIZATION, PULMONARY VESSEL(S)
           ((2)) PERIVASCULAR INFILTRATE(S)
            (2)  PNEUMONITIS, INTERSTITIAL
            (2)  @PN BRONCHIOALVEOLAR CELL HYPERPLASIA
                      ASSOCIATED WITH THE SITE OF
                      INTERSTITIAL PNEUMONITIS,
                      PROBABLY REACTIVE LESION
KIDNEYS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM MALE

ANIMAL 3419E60 (CONTINUED)

```
                    GROSS:        GRANULAR
                                      MARKED, BILATERAL
                     MICRO↑  5    TUBULAR PROTEINOSIS
                    MICRO:   3    FIBROSIS, INTERSTITIAL
                          ((3)) NEPHRITIS, INTERSTITIAL
                            4    TUBULAR ATROPHY
                          ((2)) HYDRONEPHROSIS
                                      BILATERAL
                            4    PYELITIS
                                      LEFT
URINARY BLADDER
    MICRO:   3    EDEMA
             4    CYSTITIS
             4    MUCOSAL HYPERPLASIA
                      A PORTION OF THE WALL IS INFOLDED AND
                      GREATLY THICKENED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    THYROID GL       PARATHYROID GL   SKIN
    LYMPH ND, MES    BONE, FEMUR      SKELETAL MUSCLE
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    EYE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

NECROPSY PROTOCOL

FEMALES

The following tissues were examined at necropsy with no significant lesions observed unless specified on individual animal page:

TOTAL BODY	MESENTARY/OM'TUM	PERITONEUM	PERITONEAL CAV	PLEURA
THORACIC CAV	HEART	PERICARDIAL CAV	AORTA	SALIVARY GL
ORAL/PHARYNGEAL	TONGUE	ESOPHAGUS	STOMACH	LIVER
PANCREAS	DUODENUM	JEJUNUM	ILEUM	CECUM
COLON	RECTUM	ANUS	PITUITARY	THYROID GL
PARATHYROID GL	ADRENAL GL	SKIN	SUBCUTIS	HEAD
EARS	NARES/NOSE	MAMMARY GL	PAWS/FEET	TAIL
SPLEEN	LYMPH ND, S-MAN	LYMPH ND, MED	LYMPH ND, MES	THYMIC REGION
BONE/JOINT	BONE, STERNUM	BONE, FEMUR	BONE, VERTEBRA	SKELETAL MUSCLE
DIAPHRAGM	BRAIN	SPINAL CORD	NERVE, SCIATIC	EYE
LACRYMAL GL	OVARIES	OVIDUCT	UTERUS	CERVIX
VAGINA	VULVA	LARYNX	TRACHEA	LUNGS
KIDNEYS	URETER	URINARY BLADDER		

The following organs were weighed at necropsy:

HEART	LIVER	ADRENAL GL	SPLEEN	BRAIN
OVARIES	KIDNEYS			

The microscopic procedures used in this study are described in the methods section of the text.

Micro diagnosis grade codes:
1=MINIMAL, 2=MILD, 3=MODERATE, 4=MARKED, 5=SEVERE, P=PRESENT

Micro diagnosis distribution codes:
( )=FOCAL, (( ))=MULTIFOCAL, NO PARENTHESES=DIFFUSE

Micro diagnosis prefix codes:
= NEOPLASM, B = BENIGN, M = MALIGNANT, @PN = PRE-NEOPLASTIC

MICRO+ indicates histologic confirmation of preceding gross diagnosis.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3690A01 12-MAY-89 STUDY DAY 416
TYPE OF DEATH: SACRIFICED MORIBUND

TOTAL BODY		
GROSS:		EMACIATION
LIVER		
MICRO:	(1)	MONONUCLEAR CELL INFILTRATE(S)
CECUM		
MICRO:	P	NEMATODIASIS
PITUITARY		
GROSS:		SIZE INCREASE 10X7X7MM
MICRO↑	P	#B ADENOMA VERY LARGE
PITUITARY		
GROSS:		COLOR CHANGE, FOCAL/MULTIFOCAL TAN AND RED
ADRENAL GL		
GROSS:		COLOR CHANGE, FOCAL/MULTIFOCAL MULTIPLE BROWN FOCI, BILATERAL
MICRO↑	((4))	VASCULAR ECTASIA
SKIN		
GROSS:		STAINED URINE, UROGENITAL AREA
EARS		
GROSS:		MASS 6X6MM, TAN; WITHIN THE RIGHT EAR CANAL
MICRO↑	P	#B PAPILLOMA SQUAMOUS EPITHELIAL LINED MASS, PROBABLY OF ZYMBAL'S GLAND ORIGIN
MICRO:	4	OTITIS
	((4))	EPIDERMAL INCLUSION CYST
NARES/NOSE		
GROSS:		CRUST TAN, PERINASAL AREA
MAMMARY GL		
MICRO:	4	HYPERSECRETION
SPLEEN		
MICRO:	3	HEMOSIDEROSIS
LYMPH ND, S-MAN		
MICRO:	3	PLASMACYTOSIS
	3	LYMPHOID HYPERPLASIA
LYMPH ND, MES		
MICRO:	((3))	HISTIOCYTIC AGGREGATES
THYMIC REGION		
MICRO:	3	INVOLUTIONAL ATROPHY
BRAIN		
GROSS:		DEPRESSION/INDENTATION DUE TO PITUITARY ENLARGEMENT
MICRO↑	4	COMPRESSION
MICRO:	3	HYDROCEPHALUS
EYE		
GROSS:		CRUST RED, RIGHT PERIOCULAR AREA
OVARIES		

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3690A01 (CONTINUED)

```
    GROSS:        CYST
                      3X3X3MM, CLEAR FLUID FILLED, LEFT
     MICRO+ (P)   CYST(S)
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART              AORTA              SALIVARY GL
    ESOPHAGUS          STOMACH            PANCREAS
    DUODENUM           JEJUNUM            ILEUM
    COLON              RECTUM             THYROID GL
    PARATHYROID GL     SKIN               NARES/NOSE
    BONE, STERNUM      BONE, FEMUR        BONE MARROW
    SKELETAL MUSCLE    SPINAL CORD        NERVE, SCIATIC
    EYE                UTERUS             CERVIX
    VAGINA             NASAL CAVITY       TRACHEA
    LUNGS              URINARY BLADDER
```

ANIMAL 3909A02 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.845	2.231
KIDNEYS	2.918	0.600
HEART	1.457	0.300
SPLEEN	0.733	0.151
BRAIN	2.046	0.421
ADRENAL GL	0.144	0.030
OVARIES	0.098	0.020
TERMINAL BODY WT.	486.1	

```
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      2X2MM CREAM FOCAL AREA RIGHT CAUDATE
                      LOBE
    MICRO:  (P)   #B HEPATOCELLULAR ADENOMA
PITUITARY
    GROSS:        NODULE
                      5X5X4MM DARK RED LEFT SIDE
     MICRO+  P    #M CARCINOMA
    MICRO:   4    VASCULAR ECTASIA
             3    HEMORRHAGE
PARATHYROID GL
    MICRO:  (P)   #B ADENOMA
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE BROWN FOCI, BILATERAL
     MICRO+((4)) VASCULAR ECTASIA
    MICRO: ((5)) THROMBOSIS
           (4)   INFARCTION
SKIN
    MICRO:   P    EPIDERMAL INCLUSION CYST
                      RECORDED GROSSLY UNDER MAMMARY GLAND
MAMMARY GL
    GROSS:        NODULE
                      10X10X15MM, CYST LIKE FILLED WITH THICK
                      CHEESE LIKE MATERIAL
                      LEFT DORSAL HIND LEG
MAMMARY GL
    GROSS:        GALACTOCELE
                      MULTIPLE 1MM SCATTERED THROUGHOUT
     MICRO+  3    HYPERSECRETION
LYMPH ND, S-MAN
    MICRO:   2    MASTOCYTOSIS
LYMPH ND, MED
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3909A02 (CONTINUED)

```
    MICRO:   3   SINUS ERYTHROCYTOSIS
             3   HEMOSIDEROSIS
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     SMALL, ABOVE PITUITARY NODULE
     MICRO+  3   COMPRESSION
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     ALL LOBES, DARK RED
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
            (4)  PAPILLARY HYPERPLASIA
                     LEFT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    THYROID GL       SPLEEN           LYMPH ND, MES
    THYMIC REGION    BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SPINAL CORD      NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           VAGINA           URINARY BLADDER
```

ANIMAL 3835A03 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.311	2.802
KIDNEYS	2.380	0.912
HEART	1.203	0.461
SPLEEN	0.384	0.147
BRAIN	1.991	0.763
ADRENAL GL	0.095	0.036
OVARIES	0.138	0.053
TERMINAL BODY WT.	260.9	

```
TOTAL BODY
    GROSS:       EMACIATION
                     MODERATE
HEART
    MICRO:  (2)  FIBROSIS
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE DARK RED FOCAL AREAS, ABOUT
                     1MM, MULTIPLE
                     WHITE FOCI, ALL LOBES
    MICRO: ((2)) CHOLANGIOFIBROSIS
           ((1)) BILIARY HYPERPLASIA
PANCREAS
    MICRO:  (P)  #B ISLET CELL ADENOMA
                     MISTAKEN FOR A LYMPH NODE
PITUITARY
    GROSS:       MASS
                     15XBX5MM,RED-BROWN
     MICRO+  P   #M CARCINOMA
THYROID GL
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3835A03 (CONTINUED)

```
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE, WHITE FOCI, BILATERAL
     MICRO+((4)) HEMORRHAGE
ADRENAL GL
    GROSS:        SIZE INCREASE
                      SLIGHT, BILATERAL
     MICRO+ (4)  INFARCTION
    MICRO: ((3)) VASCULAR ECTASIA
           ((2)) CORTICAL CELL HYPERTROPHY
MAMMARY GL
    MICRO: ((3)) GALACTOCELE
           ((3)) MASTITIS
SPLEEN
    MICRO:   3   HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
LYMPH ND, PANC
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
LYMPH ND, PANC
    GROSS:        SIZE INCREASE
                      4X4X4MM
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                      NO THYMUS
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      MARKED, AREA OVER PITUITARY
     MICRO+ (3)  COMPRESSION
    MICRO:  (3)  #M CARCINOMA
                      PITUITARY TUMOR METASTASES IN THE THIRD
                      VENTRICLE
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
UTERUS
    GROSS:        POLYP
                      RIGHT HORN,15X5X5MM
     MICRO+  P   #M ENDOMETRIAL SARCOMA
                      EARLY NEOPLASM
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE TAN FOCAL AREAS, LEFT LOBE AND
                      RIGHT CARDIAC LOBE
     MICRO+((3)) ALVEOLAR HISTIOCYTOSIS
    MICRO: ((2)) INTRAALVEOLAR CELLULAR DEBRIS
KIDNEYS
    MICRO: ((1)) MINERALIZATION
           ((1)) TUBULAR PROTEINOSIS
            (1)  NEPHRITIS, INTERSTITIAL
           ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    DUODENUM         JEJUNUM          ILEUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3835A03 (CONTINUED)

CECUM	COLON	RECTUM
PARATHYROID GL	SKIN	LYMPH ND, S-MAN
LYMPH ND, PANC	BONE, STERNUM	BONE, FEMUR
BONE MARROW	NERVE, SCIATIC	EYE
OVARIES	CERVIX	VAGINA
URINARY BLADDER		

ANIMAL 3975A04 13-NOV-89 STUDY DAY 601
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
TOTAL BODY
    GROSS:        UNKEMPT
HEART
    MICRO: ((2)) FIBROSIS
PERICARDIAL CAV
    GROSS:        FLUID
                      FILLED, CLEAR
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    MICRO: ((2)) FIBROSIS
PITUITARY
    GROSS:        SIZE INCREASE
                      7X7X7MM
     MICRO+  P    #M CARCINOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      TAN AND RED
ADRENAL GL
    GROSS:        SIZE INCREASE
                      RIGHT, 12X10X10MM
                      LEFT, 13X11X10MM
     MICRO+  5    INFARCTION
                      BOTH GLANDS ARE DESTROYED
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      BOTH, RED AND BROWN
     MICRO+  5    HEMORRHAGE
    MICRO:  (5)   THROMBOSIS
MAMMARY GL
    GROSS:        NODULE
                      MANY, OVER ENTIRE BODY, FROM 3-10MM
     MICRO+((4)) MASTITIS
                      ASSOCIATED WITH GALACTOCELES
    MICRO: ((5)) GALACTOCELE
SPLEEN
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL
     MICRO+  4    LYMPHOID DEPLETION
    MICRO:  4     HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:  3     PLASMACYTOSIS
LYMPH ND, MES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3975A04 (CONTINUED)

```
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
           (2)  LYMPHATIC ECTASIA
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    GROSS:       ATROPHY
                     HIND LEGS, BILATERAL
     MICRO+  4   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AROUND PITUITARY
    MICRO:   2   HYDROCEPHALUS
                     TISSUE IS DAMAGED, HARD TO EVALUATE
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     BOTH
    MICRO: ((4)) KERATITIS
           ((3)) CORNEAL ULCER
                     LESIONS ARE BILATERAL, BUT ARE MORE
                     SEVERE IN ONE EYE
            (3)  HYPOPYON
           ((3)) CORNEAL VASCULARIZATION
            (3)  UVEITIS
CERVIX
    GROSS:       CYST
                     8X15X8MM, FILLED WITH GREEN CREAM FLUID
VAGINA
    MICRO:   1   VAGINITIS
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MOTTLED PINK AND RED, ALL LOBES
     MICRO+((3)) HEMORRHAGE
    MICRO:   4   CONGESTION
           ((2)) ALVEOLAR HISTIOCYTOSIS
           ((2)) INTRAALVEOLAR CELLULAR DEBRIS
KIDNEYS
    GROSS:       DIMPLED/PITTED
                     BOTH, SEVERE
     MICRO+  5   TUBULAR PROTEINOSIS
KIDNEYS
    GROSS:       SIZE INCREASE
                     BOTH, 3X'S
    MICRO:   4   TUBULAR ATROPHY
             1   RENAL CALCULI
           ((3)) FIBROSIS, INTERSTITIAL
            (3)  PAPILLARY HYPERPLASIA
CAUSE OF DEATH
    MICRO:   P   CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           THYROID GL       PARATHYROID GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3975A04 (CONTINUED)

SKIN	BONE, STERNUM	BONE, FEMUR
NERVE, SCIATIC	OVARIES	UTERUS
CERVIX	TRACHEA	URINARY BLADDER

ANIMAL 3876A05 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.453	2.828
KIDNEYS	2.361	0.639
HEART	1.358	0.367
SPLEEN	0.591	0.160
BRAIN	1.819	0.492
ADRENAL GL	0.054	0.015
OVARIES	0.097	0.026
TERMINAL BODY WT.	369.6	

MESENTARY/OM'TUM
MICRO: (4) ARTERITIS
STOMACH
MICRO: ((1)) GLAND ECTASIA
PANCREAS
MICRO: (3) ARTERITIS
CECUM
MICRO: P NEMATODIASIS
4 TYPHLITIS
PITUITARY
GROSS: SIZE INCREASE
10X10X7MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK BROWN
MICRO+ 4 HEMORRHAGE
MICRO: ((4)) VASCULAR ECTASIA
((4)) HEMOSIDEROSIS
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: ((4)) VASCULAR ECTASIA
MAMMARY GL
MICRO: ((3)) GALACTOCELE
(4) MASTITIS
DUE TO GALACTOCELE RUPTURE
SPLEEN
GROSS: SIZE DECREASE
SLIGHT
MICRO: 4 HEMOSIDEROSIS
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MES
MICRO: 3 SINUS ERYTHROCYTOSIS
3 PLASMACYTOSIS
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
MICRO: 2 MYOFIBER ATROPHY
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO ENLARGED PITUITARY
MICRO+ (4) COMPRESSION
NERVE, SCIATIC
MICRO: ((2)) VACUOLIZATION

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3876A05 (CONTINUED)

```
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((5)) ARTERITIS
                     INVOLVES MOST ARCUATE ARTERIES
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            DUODENUM
    JEJUNUM          ILEUM            COLON
    RECTUM           THYROID GL       PARATHYROID GL
    SKIN             BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SPINAL CORD      EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           TRACHEA          LUNGS
    URINARY BLADDER
```

ANIMAL 3942A06 1-JUL-89 STUDY DAY 466

TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:        EMACIATION
LIVER
    GROSS:        POSTMORTEM CHANGE
    MICRO:   3    FATTY CHANGE
DUODENUM
    GROSS:        POSTMORTEM CHANGE
JEJUNUM
    GROSS:        POSTMORTEM CHANGE
CECUM
    GROSS:        POSTMORTEM CHANGE
PITUITARY
    GROSS:        MASS
                      3X3X2MM
     MICRO+   P   #B ADENOMA
ADRENAL GL
    MICRO:  (2)   INFARCTION
             4    CONGESTION
MAMMARY GL
    MICRO: ((2)) HYPERSECRETION
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5    INVOLUTIONAL ATROPHY
                      NO THYMUS
EYE
    MICRO: ((3)) CATARACT
                      BILATERAL
VAGINA
    MICRO:   2    VAGINITIS
TRACHEA
    MICRO:   2    HEMORRHAGE
                      BLOOD IN THE LUMEN
LUNGS
    GROSS:        POSTMORTEM CHANGE
    MICRO:   5    CONGESTION
            (2)   MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3942A06 (CONTINUED)

MICRO: ((2)) RENAL CALCULI
RIGHT
(3) PYELITIS
LEFT

CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	PANCREAS
DUODENUM	CECUM	COLON
THYROID GL	SKIN	SPLEEN
LYMPH ND, S-MAN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	BRAIN
SPINAL CORD	NERVE, SCIATIC	OVARIES
UTERUS	CERVIX	URINARY BLADDER

THE FOLLOWING TISSUES WERE MISSING:
RECTUM PARATHYROID GL

THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
JEJUNUM ILEUM

ANIMAL 3720A07 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.777	2.351
KIDNEYS	2.647	0.800
HEART	1.083	0.327
SPLEEN	0.573	0.173
BRAIN	1.860	0.562
ADRENAL GL	0.108	0.033
OVARIES	0.169	0.051
TERMINAL BODY WT.	330.8	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: NODULE
LEFT CAUDATE LOBE, 2X2MM, TAN
MICRO+ (P) #B HEPATOCELLULAR ADENOMA
MICRO: (1) CHOLANGIOFIBROSIS
PITUITARY
GROSS: SIZE INCREASE
10X5X5MM
MICRO+ P #M CARCINOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
THYROID GL
MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL, TAN AND RED FOCI
MICRO+((5)) VASCULAR ECTASIA
MICRO: ((5)) INFARCTION
MAMMARY GL
GROSS: CYST
VENTRAL GENITAL REGION, 5X5X5MM WITH GREEN PUS
MICRO+ (3) GALACTOCELE
MAMMARY GL
GROSS: MASS
20X15X10MM
MICRO+ P #B FIBROADENOMA
MICRO: ((4)) HYPERSECRETION
SPLEEN
MICRO: 3 HEMOSIDEROSIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3720A07 (CONTINUED)

```
LYMPH ND, S-MAN
    MICRO:  (3)  PLASMACYTOSIS
           ((3)) HEMOSIDEROSIS
LYMPH ND, MED
    MICRO:   4   SINUS ERYTHROCYTOSIS
           ((3)) HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
            3   LYMPHATIC ECTASIA
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY SIZE
     MICRO+  4   COMPRESSION
    MICRO:  (2)  #M CARCINOMA
                     EXTENSION OF PITUITARY MASS INTO THE
                     BRAINSTEM
           ((3)) VACUOLIZATION
                     CEREBELLUM
OVARIES
    GROSS:       CYST
                     RIGHT, 3X3X3MM, CLEAR FLUID FILLED
     MICRO+ (4)  CYST(S)
OVARIES
    GROSS:       SIZE DECREASE
                     LEFT, 1/2 OF NORMAL
VAGINA
    MICRO:   3   VAGINITIS
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES, WHITE FOCI
     MICRO+ (3)  ALVEOLAR HISTIOCYTOSIS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO:   2   RENAL CALCULI
            (2)  #B LIPOMA
                     VERY SMALL FAT INFILTRATE LEFT KIDNEY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SPINAL CORD      NERVE, SCIATIC
    EYE              UTERUS           CERVIX
    TRACHEA          URINARY BLADDER
```

ANIMAL 4006A08 17-NOV-89 STUDY DAY 605

TYPE OF DEATH: SACRIFICED MORIBUND

```
STOMACH
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BLACK FOCAL AREAS, GLANDULAR PORTION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4006A08 (CONTINUED)

```
                                    MICRO: ((1)) GLAND ECTASIA
                                LIVER
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     BLACK PUNCTATE FOCI ALL LOBES
                                     MICRO+((2)) HEPATOCELLULAR NECROSIS
                                    MICRO:  (2)  CHOLANGIOFIBROSIS
                                PANCREAS
                                    GROSS:       MASS
                                                     10X7X5MM, DARK RED AND TAN
                                     MICRO+ (P)  #M ISLET CELL CARCINOMA
                                                     THE CENTER IS NECROTIC
                                PITUITARY
                                    GROSS:       MASS
                                                     7X7X5MM DARK RED
                                     MICRO+  P   #M CARCINOMA
                                                     VERY LARGE AND HEMORRHAGIC
                                THYROID GL
                                    MICRO:   P   THYROGLOSSAL DUCT CYST
                                ADRENAL GL
                                    GROSS:       SIZE INCREASE
                                                     2X NORMAL, BILATERAL
                                ADRENAL GL
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     BILATERAL, RED FOCAL AREAS
                                     MICRO+((3)) VASCULAR ECTASIA
                                MAMMARY GL
                                    GROSS:       NODULE
                                                     10X15X2MM TAN , RIGHT SIDE LUMBAR REGION
                                                     55X35X10MM RIGHT CERVICAL REGION
                                                     ,MULTILOBULAR
                                                     FILLED WITH YELLOW MILKY THICK MATERIAL
                                     MICRO+  P   #B FIBROADENOMA
                                    MICRO: ((4)) GALACTOCELE
                                SPLEEN
                                    MICRO:   4   HEMOSIDEROSIS
                                LYMPH ND, S-MAN
                                    MICRO:   4   SINUS ERYTHROCYTOSIS
                                             3   HEMOSIDEROSIS
                                           ((2)) PLASMACYTOSIS
                                LYMPH ND, MES
                                    MICRO: ((3)) HISTIOCYTIC AGGREGATES
                                LYMPH ND, OTHER
                                    GROSS:       SIZE INCREASE
                                                     SUBLUMBAR, 2X NORMAL, BILATERAL
                                THYMIC REGION
                                    MICRO:   4   INVOLUTIONAL ATROPHY
                                SKELETAL MUSCLE
                                    MICRO:   5   MYOFIBER ATROPHY
                                BRAIN
                                    GROSS:       DEPRESSION/INDENTATION
                                                     DUE TO PITUITARY MASS
                                     MICRO+  4   COMPRESSION
                                    MICRO:   3   HYDROCEPHALUS
                                            (P)  #M CARCINOMA
                                                     METASTATIC FROM THE PITUITARY
                                                     LARGE NODULE IN THE MIDBRAIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4006A08 (CONTINUED)

```
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
VAGINA
    GROSS:       CONTENTS ABNORMAL
                     YELLOW MUCOUS MATERIAL
     MICRO+  2   VAGINITIS
TRACHEA
    MICRO:  (3)  SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       NODULE
                     MULTIPLE 1X1X1MM TAN, ALL LOBES
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
                     NO LESIONS CORRESPONDING TO NODULES ARE
                     SEEN
                     THE GROSS LESION MAY HAVE BEEN FOCI OF
                     ATELECTASIS?
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((2)) RENAL CALCULI
           ((2)) MINERALIZATION
           ((2)) TUBULAR ATROPHY
            (1)  NEPHRITIS, INTERSTITIAL
           ((2)) CYST(S)
CAUSE OF DEATH
    MICRO:   P   CARCINOMA, PITUITARY
                     BRAIN COMPRESSION AND METASTASES
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         DUODENUM          JEJUNUM
    ILEUM             CECUM             COLON
    RECTUM            PARATHYROID GL    SKIN
    LYMPH ND, OTHER   BONE, STERNUM     BONE, FEMUR
    BONE MARROW       NERVE, SCIATIC    EYE
    OVARIES           UTERUS            CERVIX
    URINARY BLADDER
```

ANIMAL 3829A09 7-JUL-89 STUDY DAY 472
TYPE OF DEATH: FOUND DEAD

```
LIVER
    GROSS:       POSTMORTEM CHANGE
    MICRO: ((1)) CHOLANGIOFIBROSIS
DUODENUM
    GROSS:       POSTMORTEM CHANGE
JEJUNUM
    GROSS:       POSTMORTEM CHANGE
ILEUM
    GROSS:       POSTMORTEM CHANGE
CECUM
    GROSS:       POSTMORTEM CHANGE
PITUITARY
    GROSS:       SIZE INCREASE
                     2X NORMAL
     MICRO+  P   #B ADENOMA
    MICRO:   4   HEMORRHAGE
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3829A09 (CONTINUED)

```
    MICRO:   5   CONGESTION
MAMMARY GL
    MICRO: ((4)) GALACTOCELE
            (2)  MASTITIS
                     THERE ARE SEVERAL RUPTURED MILK CYSTS
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
BRAIN
    GROSS:       HEMORRHAGE
                     VENTRAL REGION NEAR PITUITARY
     MICRO+ (3)  HEMORRHAGE
                     VENTRAL MIDBRAIN
VULVA
    GROSS:       DISCHARGE
                     WHITE PUS, MILD
LUNGS
    GROSS:       POSTMORTEM CHANGE
    MICRO:   5   CONGESTION
           ((2)) HEMORRHAGE
KIDNEYS
    GROSS:       POSTMORTEM CHANGE
                     BILATERAL
    MICRO: ((2)) TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          COLON
    RECTUM           THYROID GL       SKIN
    SPLEEN           LYMPH ND, MES    THYMIC REGION
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SKELETAL MUSCLE  SPINAL CORD      NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           VAGINA           VULVA
    TRACHEA
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    ILEUM            CECUM            URINARY BLADDER
```

ANIMAL 3998A10 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.359	2.149
KIDNEYS	2.763	0.634
HEART	1.335	0.307
SPLEEN	0.655	0.150
BRAIN	2.159	0.496
ADRENAL GL	0.327	0.075
OVARIES	0.137	0.031
TERMINAL BODY WT.	435.5	

```
ADIPOSE TISSUE
    GROSS:       MASS
                     60X40X30MM, ADHERED TO THE RIB CAGE
     MICRO+ (P)  #B LIPOMA
                     SUBCUTANEOUS FAT OF RIBCAGE AREA
LIVER
    MICRO: ((1)) BILIARY HYPERPLASIA
PITUITARY
    GROSS:       NODULE
                     1X1X1MM, RED
     MICRO+ (P)  =OCI OF CELL ALTERATION
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3998A10 (CONTINUED)

```
    GROSS:        SIZE INCREASE
                      LEFT, 4X4X3MM
     MICRO+  4    THROMBOSIS
ADRENAL GL
    GROSS:        COLOR CHANGE, DIFFUSE
                      RED AND DARK RED, LEFT
     MICRO+ (5)   VASCULAR ECTASIA
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      RIGHT, TAN AND RED
MAMMARY GL
    GROSS:        MASS
                      10X5X2MM, VENTRAL, RIGHT, UNDER ARM
     MICRO+ (P)   #B FIBROADENOMA
LYMPH ND, S-MAN
    MICRO:   2    SINUS ERYTHROCYTOSIS
LYMPH ND, MED
    MICRO:   3    SINUS ERYTHROCYTOSIS
            (4)   LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2    MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
NERVE, SCIATIC
    MICRO: ((1)) VACUOLIZATION
           ((1)) DEMYELINATION
                      A FEW GITTER CELLS ARE PRESENT
UTERUS
    GROSS:        SIZE INCREASE, SEGMENTAL
                      5X3X2MM, LEFT UTERINE HORN
     MICRO+  P    #B STROMAL POLYP
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    THYROID GL       SKIN             SPLEEN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    BRAIN            EYE              OVARIES
    CERVIX           VAGINA           TRACHEA
    LUNGS            URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 4012A11 11-DEC-89 STUDY DAY 629
TYPE OF DEATH: FOUND DEAD

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4012A11 (CONTINUED)

```
LIVER
    MICRO: ((2)) FATTY CHANGE
            (1)  CHOLANGIOFIBROSIS
          ((1)) BILIARY HYPERPLASIA
JEJUNUM
    GROSS:       POSTMORTEM CHANGE
ILEUM
    GROSS:       POSTMORTEM CHANGE
COLON
    GROSS:       POSTMORTEM CHANGE
PITUITARY
    GROSS:       SIZE INCREASE
                     8X8X5MM
     MICRO+  P   #B ADENOMA
                     VERY LARGE, COMPRESSING THE BRAIN
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     RED
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BOTH, MANY WHITE FOCI SEEN
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO: ((4)) VASCULAR ECTASIA
          ((4)) THROMBOSIS
            (3)  INFARCTION
MAMMARY GL
    MICRO:   3   HYPERPLASIA
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AROUND PITUITARY
     MICRO+  4   COMPRESSION
    MICRO:   4   HYDROCEPHALUS
TRACHEA
    MICRO:   2   TRACHEITIS
LUNGS
    MICRO:   5   CONGESTION
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         PANCREAS          DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            THYROID GL
    PARATHYROID GL    SKIN              SPLEEN
    LYMPH ND, S-MAN   BONE, STERNUM     BONE, FEMUR
    BONE MARROW       SPINAL CORD       NERVE, SCIATIC
    EYE               OVARIES           UTERUS
    CERVIX            VAGINA            KIDNEYS
    URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3961A12 5-OCT-88 STUDY DAY 197
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
SKIN
    GROSS:        CRUST
                      RED, PERIOCULAR AREA
SKIN
    GROSS:        STAINED
                      URINE, UROGENITAL AREA
NARES/NOSE
    GROSS:        CRUST
                      RED, PERINASAL AREA
SPLEEN
    MICRO:   4    HEMOSIDEROSIS
LYMPH ND, MES
    MICRO:   3    LYMPHOID HYPERPLASIA
THYMIC REGION
    MICRO:   5    INVOLUTIONAL ATROPHY
                      NO THYMUS
BONE MARROW
    MICRO:   4    HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   2    MYOFIBER ATROPHY
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:        HYDRONEPHROSIS
                      MODERATE, BILATERAL
    MICRO: ((4)) PYELITIS
                      BILATERAL, CHRONIC, INVOLVES SOME
                      PAPILLARY DESTRUCTION
           ((1)) TUBULAR PROTEINOSIS
           ((4)) TRANSITIONAL CELL HYPERPLASIA
URETER
    GROSS:        CALCULUS
                      30X6X6MM, TAN; RIGHT
                      20X10X5MM, TAN; LEFT
     MICRO+   P   CALCULUS
    MICRO:    2   URETERITIS
              5   DILATION
              4   MUCOSAL HYPERPLASIA
                      THICKENED IN FOLDS
URINARY BLADDER
    MICRO:   4    CYSTITIS
CAUSE OF DEATH
    MICRO:   P    ACUTE URINARY OBSTRUCTION/RENAL FAILURE
                      CALCULI IN URETERS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          LIVER
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PITUITARY        THYROID GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3961A12 (CONTINUED)

PARATHYROID GL	ADRENAL GL	SKIN
NARES/NOSE	MAMMARY GL	LYMPH ND, S-MAN
BONE, STERNUM	BONE, FEMUR	BRAIN
SPINAL CORD	NERVE, SCIATIC	EYE
OVARIES	UTERUS	CERVIX
VAGINA	NASAL CAVITY	

ANIMAL 3865A13 3-JAN-90 STUDY DAY 652
TYPE OF DEATH: SACRIFICED MORIBUND

```
LIVER
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
            (1)  CYSTIC DEGENERATION
          ((1)) BILIARY HYPERPLASIA
CECUM
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:       SIZE INCREASE
                     8X5X5MM
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     TAN AND DARK RED
     MICRO+ (4)  VASCULAR ECTASIA
THYROID GL
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE TAN FOCI, BILATERAL
     MICRO+((2)) CORTICAL CELL HYPERTROPHY
SKIN
    GROSS:       STAINED
                     URINE, UROGENITAL AREA
SKIN
    GROSS:       ALOPECIA
                     PARTIAL, UROGENITAL AREA
MAMMARY GL
    MICRO:   3   HYPERSECRETION
LYMPH ND, MES
    MICRO:   3   SINUS ERYTHROCYTOSIS
           ((1)) MASTOCYTOSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO ENLARGED PITUITARY
     MICRO+  3   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     RED, LEFT PERIOCULAR AREA
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3865A13 (CONTINUED)

((2)) HEMORRHAGE
KIDNEYS
MICRO: ((2)) RENAL CALCULI
BILATERAL GRANULAR MATERIAL
((1)) TUBULAR PROTEINOSIS
CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	PANCREAS
DUODENUM	JEJUNUM	ILEUM
COLON	RECTUM	SKIN
SPLEEN	LYMPH ND, S-MAN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SPINAL CORD
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	VAGINA
TRACHEA	URINARY BLADDER	

THE FOLLOWING TISSUES WERE MISSING:
PARATHYROID GL

ANIMAL 3860A14 16-JAN-90 STUDY DAY 665
TYPE OF DEATH: SAC DUE TO ENLARGED MASS
STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: COLOR CHANGE, DIFFUSE
PALE RED
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
2X2MM DARK RED FOCAL AREA ANTERIOR PORTION
MICRO+ P #B ADENOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL, SEVERAL CREAM 1MM FOCAL AREAS
MICRO+ (3) INFARCTION
MICRO: ((4)) VASCULAR ECTASIA
MAMMARY GL
GROSS: GALACTOCELE
1MM SCATTERED THROUGHOUT
MICRO+((3)) GALACTOCELE
MAMMARY GL
GROSS: MASS
LEFT AXILLARY REGION 55X45X10MM MOTTLED CREAM AND RED WITH A RED CRUST ON SKIN SURFACE
MICRO+ P #M ADENOCARCINOMA
SPLEEN
GROSS: SIZE INCREASE
60X15X8MM
MICRO+ 4 EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
THYMIC REGION

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3860A14 (CONTINUED)

```
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:   3   CORTICAL HYPOPLASIA
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
VAGINA
    MICRO:   2   VAGINITIS
TRACHEA
    MICRO:  (2)  SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:   4   CONGESTION
           ((3)) #M ADENOCARCINOMA
                    THERE ARE EMBOLI FROM A MAMMARY GLAND
                    NEOPLASM FILLING
                    TWO PULMONARY ARTERIES
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((1)) MINERALIZATION
CAUSE OF DEATH
    MICRO:   P   ADENOCARCINOMA, MAMMARY GLAND
                    METASTASES TO THE LUNGS
                    SEPTICEMIA SUSPECT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           THYROID GL
    PARATHYROID GL   SKIN             LYMPH ND, MES
    BONE, FEMUR      BRAIN            NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           URINARY BLADDER
```

ANIMAL 3675A15 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.544	2.932
KIDNEYS	1.988	0.505
HEART	1.145	0.291
SPLEEN	0.619	0.157
BRAIN	1.820	0.462
ADRENAL GL	0.081	0.021
OVARIES	0.095	0.024
TERMINAL BODY WT.	393.7	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) FATTY CHANGE
PANCREAS
    MICRO:  (2)  LYMPHOID INFILTRATES
            (3)  ACINAR ATROPHY
THYROID GL
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
ADRENAL GL
    MICRO: ((3)) VASCULAR ECTASIA
MAMMARY GL
    GROSS:       MASS
                    70X65X35MM, TAN, MULTILOBULAR; EXTENDS
                    FROM CHIN TO
                    FRONT LEG
     MICRO↑  P   #B FIBROADENOMA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3675A15 (CONTINUED)

```
    MICRO:   3   HYPERSECRETION
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
            (2)  SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
             4   HEMORRHAGE
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    MICRO: ((2)) HEMORRHAGE
                     CEREBELLUM
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     RED, PERIOCULAR AREA, BILATERAL
UTERUS
    GROSS:       CONTENTS ABNORMAL
                     CONTAINS THICK GREEN MATERIAL
VAGINA
    MICRO:   2   VAGINITIS
                     THERE IS PUS IN THE LUMEN, ALTHOUGH THE
                     WALL IS NOT
                     SIGNIFICANTLY AFFECTED.
                     THE UTERUS APPEARS NORMAL
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:  (2)  BRONCHIOALVEOLAR CELL HYPERPLASIA
KIDNEYS
    MICRO: ((3)) RENAL CALCULI
                     BILATERAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PITUITARY        PARATHYROID GL
    SKIN             SPLEEN           BONE, STERNUM
    BONE, FEMUR      BONE MARROW      NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           URINARY BLADDER
```

ANIMAL 3845A16 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.011	2.360
KIDNEYS	2.315	0.606
HEART	1.371	0.359
SPLEEN	0.525	0.137
BRAIN	1.772	0.464
ADRENAL GL	0.052	0.014
OVARIES	0.069	0.018
TERMINAL BODY WT.	381.8	

```
HEART
    MICRO:  (3)  FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, DIFFUSE
                     WHITE AREA BETWEEN MEDIAN LOBES 3X3MM
    MICRO:   P   #B HEPATOCELLULAR ADENOMA
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3845A16 (CONTINUED)

```
    GROSS:        NODULE
                      (2) 2X2X2MM, TAN
     MICRO+  P    #B ADENOMA
                      VERY SMALL
ADRENAL GL
    MICRO: ((4)) VASCULAR ECTASIA
            (4)  INFARCTION
MAMMARY GL
    MICRO: ((3)) HYPERSECRETION
LYMPH ND, S-MAN
    MICRO:   4   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BONE, STERNUM
    MICRO:   4   CORTICAL HYPOPLASIA
SKELETAL MUSCLE
    MICRO: ((2)) MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
LUNGS
    GROSS:        SHAPE/CONTOUR CHANGE
                      WHITE PATCHY AREAS, ALL LOBES
     MICRO+((2)) ALVEOLAR HISTIOCYTOSIS
    MICRO: ((2)) INTRAALVEOLAR CELLULAR DEBRIS
           ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((1)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           THYROID GL       PARATHYROID GL
    SKIN             SPLEEN           BONE, FEMUR
    BONE MARROW      BRAIN            NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           VAGINA           TRACHEA
    URINARY BLADDER
```

ANIMAL 3883A17 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.542	2.524
KIDNEYS	2.585	0.865
HEART	0.984	0.329
SPLEEN	0.495	0.166
BRAIN	1.729	0.579
ADRENAL GL	0.080	0.027
OVARIES	0.078	0.026
TERMINAL BODY WT.	298.9	

```
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    MICRO: ((1)) CHOLANGIOFIBROSIS
           ((1)) BILIARY HYPERPLASIA
           ((1)) CHOLANGITIS
PITUITARY
    GROSS:        MASS
                      8X8X8MM
     MICRO+  P    #B ADENOMA
                      VERY LARGE
THYROID GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3883A17 (CONTINUED)

```
        MICRO:  (P)  #B C CELL ADENOMA
               ((1)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
        GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                         BOTH, WHITE FOCI SEEN
         MICRO+((2)) CORTICAL CELL HYPERTROPHY
        MICRO: ((3)) VASCULAR ECTASIA
               ((3)) THROMBOSIS
MAMMARY GL
        MICRO: ((3)) HYPERSECRETION
PAWS/FEET
        GROSS:       ULCERATED
                         4X4MM, DARK RED, LEFT HIND FOOT
         MICRO+ (4)  ABSCESS
        MICRO: ((2)) EPIDERMAL HYPERPLASIA
                (3)  FIBROSIS
LYMPH ND, S-MAN
        MICRO:   2   MASTOCYTOSIS
                 2   PLASMACYTOSIS
LYMPH ND, MES
        MICRO: ((2)) MASTOCYTOSIS
               ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
        MICRO:   5   INVOLUTIONAL ATROPHY
                         NO THYMUS
BRAIN
        GROSS:       DEPRESSION/INDENTATION
                         AROUND PITUITARY
         MICRO+  3   COMPRESSION
        MICRO: ((1)) VACUOLIZATION
                         CEREBELLUM
SPINAL CORD
        MICRO: ((1)) VACUOLIZATION
UTERUS
        GROSS:       POLYP
                         BOTH SIDES
         MICRO+ (P)  #B STROMAL POLYP
UTERUS
        GROSS:       SIZE INCREASE, SEGMENTAL
                         SLIGHT, BOTH SIDES
         MICRO+  3   LUMINAL ECTASIA
        MICRO: ((4)) GLANDULAR ECTASIA
LUNGS
        GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                         WHITE FOCI SEEN, ALL LOBES
         MICRO+ (1)  ALVEOLAR HISTIOCYTOSIS
KIDNEYS
        MICRO:  (1)  RENAL CALCULI
                (1)  TUBULAR BASOPHILIA
               ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
        HEART            AORTA            SALIVARY GL
        ESOPHAGUS        PANCREAS         DUODENUM
        JEJUNUM          ILEUM            CECUM
        COLON            RECTUM           PARATHYROID GL
        SKIN             SPLEEN           BONE, STERNUM
        BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3883A17 (CONTINUED)

NERVE, SCIATIC EYE OVARIES
CERVIX VAGINA TRACHEA
URINARY BLADDER

ANIMAL 3911A18 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.675	2.100
KIDNEYS	2.421	0.662
HEART	1.169	0.320
SPLEEN	0.583	0.160
BRAIN	1.970	0.539
ADRENAL GL	0.096	0.026
OVARIES	0.112	0.031
TERMINAL BODY WT.	365.5	

HEART
MICRO: (2) FIBROSIS
LIVER
GROSS: NODULE
4X3X2MM, CREAM, LEFT LATERAL LOBE
MICRO+ (4) BILIARY CYST(S)
PITUITARY
GROSS: NODULE
3X2X2MM, DARK RED, ANTERIOR LEFT SIDE
MICRO+ (5) VASCULAR ECTASIA
ADRENAL GL
GROSS: SIZE INCREASE
2X NORMAL, BILATERAL
MICRO+ (4) INFARCTION
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL, DARK BROWN 2MM FOCAL AREAS, SEVERAL
MICRO+ (3) HEMORRHAGE
MICRO: ((3)) VASCULAR ECTASIA
MAMMARY GL
GROSS: GALACTOCELE
MULTIPLE, PUNCTATE, SCATTERED THROUGHOUT
MICRO+((3)) GALACTOCELE
MICRO: 2 HYPERSECRETION
(3) MASTITIS
DUE TO RUPTURED GALACTOCELE
SPLEEN
MICRO: ((3)) HEMOSIDEROSIS
LYMPH ND, S-MAN
MICRO: (3) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MED
MICRO: 3 SINUS ERYTHROCYTOSIS
((2)) HEMOSIDEROSIS
THYMIC REGION
MICRO: ((2)) EPITHELIAL CYST(S)
3 INVOLUTIONAL ATROPHY
SPINAL CORD
MICRO: ((1)) VACUOLIZATION
EYE
GROSS: CRUST
BILATERAL, RED, PERIOCULAR TISSUE
OVARIES
MICRO: ((3)) CYST(S)
KIDNEYS
MICRO: ((3)) RENAL CALCULI
BILATERAL
((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3911A18 (CONTINUED)

AORTA	SALIVARY GL	ESOPHAGUS
STOMACH	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	THYROID GL
PARATHYROID GL	SKIN	LYMPH ND, MES
BONE, STERNUM	BONE, FEMUR	BONE MARROW
SKELETAL MUSCLE	BRAIN	NERVE, SCIATIC
EYE	UTERUS	CERVIX
VAGINA	TRACHEA	LUNGS
URINARY BLADDER		

ANIMAL 3982A19 27-FEB-90 STUDY DAY 707
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
TOTAL BODY
    GROSS:        UNKEMPT
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO:  (1)  MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    GROSS:        SIZE INCREASE
                      8X5X5MM
     MICRO+  P   #M CARCINOMA
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE TAN AND BROWN FOCI, BILATERAL
     MICRO+((3)) THROMBOSIS
    MICRO: ((4)) VASCULAR ECTASIA
            (4)  INFARCTION
SKIN
    GROSS:        CRUST
                      RED, PERIOCULAR AREA, BILATERAL
     MICRO+ (3)  HYPERKERATOSIS
                      EYELIDS
SKIN
    GROSS:        STAINED
                      URINE, UROGENITAL AREA
MAMMARY GL
    MICRO:   3   HYPERSECRETION
           ((3)) MASTITIS
                      DUE TO RUPTURED GALACTOCELES
SPLEEN
    GROSS:        SIZE DECREASE
                      SLIGHT
    MICRO:   4   HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:   2   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3982A19 (CONTINUED)

```
    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO ENLARGED PITUITARY
     MICRO+ (4)  COMPRESSION
    MICRO: ((4)) #M CARCINOMA
                     LARGE METASTATIC MASS IN THE MIDBRAIN
                     FROM THE PITUITARY
                 2   HYDROCEPHALUS
OVARIES
    MICRO:  (2)  CYST(S)
VAGINA
    MICRO:   2   VAGINITIS
                     PURULENT MATERIAL IN THE LUMEN, VERY
                     LITTLE INFLAMMATION
                     OF THE WALLS
LUNGS
    MICRO: ((2)) ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO:   3   RENAL CALCULI
                     BILATERAL
            ((1)) TUBULAR PROTEINOSIS
            ((2)) PAPILLARY HYPERPLASIA
CAUSE OF DEATH
    MICRO:   P   CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SPINAL CORD      NERVE, SCIATIC   EYE
    UTERUS           CERVIX           TRACHEA
    URINARY BLADDER
```

ANIMAL 3667A20 16-JAN-90 STUDY DAY 665

TYPE OF DEATH: FOUND DEAD

```
SALIVARY GL
    MICRO: ((2)) SIALOADENITIS
                     ONE SEROUS GLAND
                 3   ATROPHY
LIVER
    MICRO: ((1)) CHOLANGITIS
PITUITARY
    GROSS:       SIZE INCREASE
                     6X5X5MM
     MICRO+   P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
     MICRO+((4)) VASCULAR ECTASIA
THYROID GL
    GROSS:       SIZE INCREASE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3667A20 (CONTINUED)

```
                                    2X NORMAL, LEFT
     MICRO+ (P)  #B C CELL ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     TAN AND BROWN, BILATERAL
     MICRO+((4)) VASCULAR ECTASIA
    MICRO: ((4)) THROMBOSIS
           ((2)) CORTICAL CELL HYPERTROPHY
SKIN
    GROSS:       CRUST
                     RED, PERIOCULAR AREA, BILATERAL
    MICRO:  (3)  FOLLICULAR CYST
MAMMARY GL
    GROSS:       MASS
                     30X25X25MM, TAN, LEFT INGUINAL AREA
                     15X15X10MM, TAN; RIGHT INGUINAL AREA
                     10X8X5MM, TAN; RIGHT AXILLARY AREA
                     25X15X10MM, TAN; THORACIC AREA
     MICRO+  P   #M ADENOCARCINOMA
    MICRO:   4   HYPERSECRETION
LYMPH ND, S-MAN
    MICRO:   2   PLASMACYTOSIS
             2   MASTOCYTOSIS
LYMPH ND, MED
    MICRO:   3   SINUS ERYTHROCYTOSIS
             3   HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO ENLARGED PITUITARY
     MICRO+ (4)  COMPRESSION
    MICRO:  (3)  HEMORRHAGE
                     MIDBRAIN AND THIRD VENTRICLE NEAR SITE
                     OF COMPRESSION
             3   HYDROCEPHALUS
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     ALL LOBES DARK PINK
     MICRO+  4   CONGESTION
KIDNEYS
    MICRO:   2   RENAL CALCULI
                     RIGHT
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            ESOPHAGUS
    STOMACH          PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  SPINAL CORD
    NERVE, SCIATIC   EYE              OVARIES
    UTERUS           CERVIX           VAGINA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3667A20 (CONTINUED)

TRACHEA URINARY BLADDER

ANIMAL 3755A21 22-FEB-90 STUDY DAY 702
TYPE OF DEATH: SACRIFICED MORIBUND

```
STOMACH
    GROSS:        CONTENTS ABNORMAL
                      BLACK MATERIAL
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:        COLOR CHANGE, DIFFUSE
                      PALE, ALL LOBES
    MICRO:  (2)  HEPATOCELLULAR NECROSIS
CECUM
    GROSS:        CONTENTS ABNORMAL
                      BLACK MATERIAL
RECTUM
    GROSS:        PROLAPSE
                      20X10X8MM
     MICRO+  P   #M ADENOCARCINOMA
                      THE TUMOR IS PROLAPSED AND ULCERATED
PITUITARY
    GROSS:        MASS
                      5X5X5MM, RED
     MICRO+  P   #B ADENOMA
    MICRO: ((4)) VASCULAR ECTASIA
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE FOCI, BILATERAL
     MICRO+((4)) THROMBOSIS
                      MULTIPLE, LARGE, HAVE DESTROYED MUCH OF
                      THE GLANDS
    MICRO: ((4)) VASCULAR ECTASIA
SUBCUTIS
    GROSS:        MASS
                      LEFT INGUINAL,30X20X10MM
MAMMARY GL
    MICRO:   P   #M ADENOCARCINOMA
                      THIS WAS RECORDED AS A SUBCUTANEOUS
                      LESION
                 3   HYPERSECRETION
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3755A21 (CONTINUED)

OVER PITUITARY
MICRO↑ 4 COMPRESSION
MICRO: 2 HYDROCEPHALUS
SPINAL CORD
MICRO: ((1)) VACUOLIZATION
OVARIES
MICRO: (4) CYST(S)
LUNGS
MICRO: (2) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) TUBULAR PROTEINOSIS
CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	PARATHYROID GL	SKIN
SUBCUTIS	SPLEEN	BONE, STERNUM
BONE, FEMUR	NERVE, SCIATIC	EYE
UTERUS	CERVIX	VAGINA
TRACHEA	URINARY BLADDER	

ANIMAL 3718A22 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.401	2.779
KIDNEYS	3.035	0.897
HEART	1.430	0.423
SPLEEN	0.850	0.251
BRAIN	1.918	0.567
ADRENAL GL	0.803	0.237
OVARIES	0.069	0.020
TERMINAL BODY WT.	338.3	

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
LEFT LATERAL LOBE, 10X5MM DARK RED
FOCAL AREA
PITUITARY
GROSS: MASS
10X5X5MM DARK RED
MICRO↑ P #B ADENOMA
VERY LARGE
MICRO: ((4)) VASCULAR ECTASIA
ADRENAL GL
GROSS: MASS
LEFT, 15X10X5MM, CREAM AND BROWN
MICRO↑((5)) INFARCTION
THE CENTRAL PORTIONS OF BOTH GLANDS ARE NECROTIC
ONE IS ENLARGED AND MINERALIZED AS WELL IN THE NECROTIC
AREA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
RIGHT, CREAM 1MM FOCAL AREAS SCATTERED ON SURFACE
MAMMARY GL
GROSS: MASS
40X30X15MM, CYSTIC, FILLED WITH THICK GREEN MATERIAL
MICRO↑ P #M ADENOCARCINOMA
LARGE WITH A NECROTIC CENTER
MAMMARY GL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3718A22 (CONTINUED)

```
    GROSS:        GALACTOCELE
                      SCATTERED THROUGHOUT, PUNCTATE  TO 2MM
     MICRO+((3)) GALACTOCELE
    MICRO:   4   HYPERSECRETION
PAWS/FEET
    GROSS:        ULCERATED
                      TAN CRUST, BILATERAL, LEFT 10X4, RIGHT
                      5X5MM
     MICRO+  4   ULCERATION
    MICRO:   4   FIBROSIS
LYMPH ND, S-MAN
    GROSS:        SIZE INCREASE
                      2X NORMAL
     MICRO+((3)) PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   4   SINUS ERYTHROCYTOSIS
           ((2)) HEMOSIDEROSIS
LYMPH ND, REN
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
    MICRO:   2   PLASMACYTOSIS
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      2X NORMAL, SUBLUMBAR
     MICRO+((4)) PLASMACYTOSIS
                      LUMBAR AND INGUINAL NODES
    MICRO:  (2)  LYMPHATIC ECTASIA, CYSTIC
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                      NO THYMUS
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      ABOVE PITUITARY MASS
     MICRO+ (4)  COMPRESSION
    MICRO:   2   HYDROCEPHALUS
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
EYE
    GROSS:        CRUST
                      LEFT, RED, PERIOCULAR TISSUE
    MICRO:  (3)  HEMORRHAGE, RETROORBITAL
LUNGS
    GROSS:        CYST
                      (2) 4X3X2MM CLEAR FLUID FILLED CYSTS,
                      LEFT LOBE
     MICRO+ (3)  PLEURAL CYST
                      A LARGE CYST ON THE SURFACE OF ONE
                      LOBE, SLIGHTLY
                      COMPRESSING THE PARENCHYMA
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((3)) TUBULAR BASOPHILIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3718A22 (CONTINUED)

((1)) NEPHRITIS, INTERSTITIAL
2 RENAL CALCULI
((1)) TUBULAR PROTEINOSIS

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	LIVER	THYROID GL
PARATHYROID GL	SKIN	SPLEEN
BONE, STERNUM	BONE, FEMUR	NERVE, SCIATIC
OVARIES	UTERUS	CERVIX
VAGINA	TRACHEA	URINARY BLADDER

THE FOLLOWING TISSUES WERE MISSING:

STOMACH	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	LYMPH ND, MES

ANIMAL 3815A23 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.620	1.970
KIDNEYS	2.064	0.533
HEART	1.071	0.277
SPLEEN	0.505	0.131
BRAIN	1.966	0.508
ADRENAL GL	0.070	0.018
OVARIES	0.110	0.028
TERMINAL BODY WT.	386.9	

STOMACH
GROSS: CONTENTS ABNORMAL
YELLOW MUCOUS MATERIAL
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) FATTY CHANGE
PITUITARY
GROSS: MASS
5X5X5MM, DARK RED
MICRO+ P #B ADENOMA
THYROID GL
MICRO: ((2)) C CELL HYPERPLASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((4)) VASCULAR ECTASIA
MICRO: ((4)) INFARCTION
(2) THROMBOSIS
((2)) FIBROSIS
PROBABLY SITES OF OLD INFARCTIONS
MAMMARY GL
GROSS: MASS
10X10X10MM, LEFT GENITAL AREA
MICRO+ P #B ADENOMA
MICRO: 2 HYPERSECRETION
(4) GALACTOCELE
LYMPH ND, MED
MICRO: 4 SINUS ERYTHROCYTOSIS
3 HEMOSIDEROSIS
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
BRAIN
GROSS: DEPRESSION/INDENTATION
AROUND PITUITARY
MICRO+ (2) COMPRESSION
SPINAL CORD
MICRO: ((1)) VACUOLIZATION

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3815A23 (CONTINUED)

LUNGS
MICRO: (2) HEMORRHAGE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	PARATHYROID GL
SKIN	SPLEEN	LYMPH ND, S-MAN
LYMPH ND, MES	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	VAGINA	TRACHEA
KIDNEYS	URINARY BLADDER	

ANIMAL 3957A24 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.689	2.094
KIDNEYS	2.901	0.568
HEART	1.257	0.246
SPLEEN	0.853	0.167
BRAIN	2.040	0.400
ADRENAL GL	0.105	0.021
OVARIES	0.064	0.013
TERMINAL BODY WT.	510.5	

ORAL/PHARYNGEAL
GROSS: OVERGROWN INCISORS
STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
CECUM
GROSS: CONTENTS ABNORMAL
CONTAINS WATERY FECAL MATERIAL
PITUITARY
GROSS: SIZE INCREASE
6X5X5MM
MICRO↑ P #B ADENOMA
VERY LARGE
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
TAN AND DARK RED
MICRO↑((4)) VASCULAR ECTASIA
THYROID GL
MICRO: (P) #B C CELL ADENOMA
(P) #B FOLLICULAR CELL ADENOMA
(P) THYROGLOSSAL DUCT CYST
ADRENAL GL
MICRO: ((2)) CORTICAL CELL HYPERTROPHY
((4)) VASCULAR ECTASIA
((4)) HEMORRHAGE
MAMMARY GL
GROSS: GALACTOCELE
MULTIPLE 2X2X1 TO 3X3X2MM, THROUGHOUT MAMMARY GLAND
MICRO↑((3)) GALACTOCELE
MICRO: 3 HYPERSECRETION
((3)) HYPERPLASIA
(3) MASTITIS
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
BRAIN

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3957A24 (CONTINUED)

```
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO+  3    COMPRESSION
    MICRO:   2    HYDROCEPHALUS
EYE
    GROSS:        CRUST
                      LEFT PERIOCULAR AREA
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
           ((2)) INTRAALVEOLAR CELLULAR DEBRIS
             3   CONGESTION
KIDNEYS
    MICRO: ((3)) RENAL CALCULI
            (3)  CYST(S)
           ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         PANCREAS          DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            PARATHYROID GL
    SKIN              SPLEEN            THYMIC REGION
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    SKELETAL MUSCLE   SPINAL CORD       NERVE, SCIATIC
    EYE               OVARIES           UTERUS
    CERVIX            VAGINA            TRACHEA
    URINARY BLADDER
```

ANIMAL 3730A25 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	24.457	3.859
KIDNEYS	3.460	0.546
HEART	1.609	0.254
SPLEEN	0.704	0.111
BRAIN	2.099	0.331
ADRENAL GL	0.211	0.033
OVARIES	0.090	0.014
TERMINAL BODY WT.	633.7	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:        SWOLLEN
                      ALL LOBES
LIVER
    GROSS:        CYST
                      3X3X3MM, CLEAR FLUID FILLED, LEFT
                      LATERAL LOBE
     MICRO+ (4)   BILIARY CYST(S)
ILEUM
    GROSS:        CONTENTS ABNORMAL
                      RED THICK FLUID
CECUM
    MICRO:   P    NEMATODIASIS
PITUITARY
    GROSS:        MASS
                      10X5X3MM DARK RED
     MICRO+  P    #M CARCINOMA
    MICRO:   4    VASCULAR ECTASIA
THYROID GL
    MICRO: ((P)) THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:        SIZE INCREASE
                      BILATERAL, 2X NORMAL
     MICRO+((5)) VASCULAR ECTASIA
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3730A25 (CONTINUED)

```
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE BLACK FOCAL AREAS, BILATERAL
    MICRO: ((4)) THROMBOSIS
           ((4)) CORTICAL CELL VACUOLIZATION
           ((1)) CORTICAL CELL HYPERTROPHY
MAMMARY GL
    GROSS:        GALACTOCELE
                      MULTIPLE SCATTERED THROUGHOUT, 1MM TO
                      3MM
     MICRO↑((5)) GALACTOCELE
MAMMARY GL
    GROSS:        MASS
                      LEFT ABDOMINAL REGION, 110X100X50MM
                      MULTILOBULAR, CREAM
     MICRO↑  P    #B FIBROADENOMA
    MICRO: ((3)) HYPERPLASIA
           ((3)) MASTITIS
                      DUE TO RUPTURED GALACTOCELES
LYMPH ND, S-MAN
    MICRO:   4    PLASMACYTOSIS
            (3)   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
             2   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   3    INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4    HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   2    MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      ABOVE PITUITARY MASS
     MICRO↑ (3)   COMPRESSION
    MICRO:  (2)   #M CARCINOMA
                      LOCAL INFILTRATE FROM THE PITUITARY
                      TUMOR
             2    HYDROCEPHALUS
           ((2)) VACUOLIZATION
                      CEREBELLUM
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
CERVIX
    GROSS:        SIZE INCREASE
                      2.5X NORMAL
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
            (2)   RENAL CALCULI
                      LEFT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    NERVE, SCIATIC   EYE              OVARIES
    UTERUS           CERVIX           VAGINA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3730A25 (CONTINUED)

TRACHEA LUNGS URINARY BLADDER

ANIMAL 3947A26 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.437	2.003
KIDNEYS	2.642	0.561
HEART	1.321	0.280
SPLEEN	0.518	0.110
BRAIN	1.887	0.400
ADRENAL GL	0.068	0.014
OVARIES	0.099	0.021
TERMINAL BODY WT.	471.3	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
(4) BASOPHILIC CELL FOCI
PANCREAS
MICRO: (P) #B ISLET CELL ADENOMA
SMALL NODULE
PITUITARY
GROSS: MASS
5X5X4MM, RED AND PINK
MICRO+ P #M CARCINOMA
THYROID GL
MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BOTH, WHITE FOCI SEEN
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: ((5)) VASCULAR ECTASIA
MAMMARY GL
MICRO: ((4)) HYPERSECRETION
((3)) GALACTOCELE
LYMPH ND, S-MAN
MICRO: (3) PLASMACYTOSIS
3 SINUS ERYTHROCYTOSIS
LYMPH ND, MES
MICRO: ((3)) HISTIOCYTIC AGGREGATES
2 MASTOCYTOSIS
THYMIC REGION
MICRO: (3) EPITHELIAL CYST(S)
3 INVOLUTIONAL ATROPHY
BRAIN
GROSS: DEPRESSION/INDENTATION
AROUND PITUITARY
MICRO+ 3 COMPRESSION
CEREBELLUM
MICRO: (1) #M CARCINOMA
LOCAL INFILTRATE FROM PITUITARY TUMOR
((3)) VACUOLIZATION
SPINAL CORD
MICRO: ((2)) VACUOLIZATION
VAGINA
MICRO: 1 VAGINITIS
LUNGS
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
MICRO: ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3947A26 (CONTINUED)

RECTUM	PARATHYROID GL	SKIN
SPLEEN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	TRACHEA	URINARY BLADDER

ANIMAL 3987A27 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.819	2.705
KIDNEYS	2.978	0.821
HEART	1.452	0.400
SPLEEN	0.566	0.156
BRAIN	1.774	0.489
ADRENAL GL	0.088	0.024
OVARIES	0.150	0.041
TERMINAL BODY WT.	362.9	

RECTUM
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
5X4X2MM
MICRO+ P #M CARCINOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED AND TAN
ADRENAL GL
MICRO: ((5)) VASCULAR ECTASIA
((4)) THROMBOSIS
LESIONS ARE UNILATERAL
MAMMARY GL
GROSS: MASS
60X40X30MM, , PUS FILLED CENTER WITH HARD CORE
UNDER LEFT ARM
MICRO+ P #B FIBROADENOMA
MAMMARY GL
GROSS: CYST
GENITAL REGION, 210X10X5MM, BLOOD,AND CLEAR FLUID FILLED
MICRO+((3)) GALACTOCELE
MICRO: 3 HYPERSECRETION
PAWS/FEET
GROSS: ULCERATED
RIGHT, 3X3X2MM
MICRO+ (4) ULCERATION
MICRO: 4 FIBROSIS
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
3 SINUS ERYTHROCYTOSIS
3 HEMOSIDEROSIS
LYMPH ND, MED
MICRO: 3 SINUS ERYTHROCYTOSIS
3 HEMOSIDEROSIS
LYMPH ND, MES
MICRO: 3 SINUS ERYTHROCYTOSIS
((2)) HEMOSIDEROSIS
((1)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
GROSS: SIZE INCREASE
SUB-LUMBAR, 3X NORMAL
LEFT
MICRO+ 4 PLASMACYTOSIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3987A27 (CONTINUED)

```
                                        LUMBAR NODE
    MICRO: ((2)) LYMPHATIC ECTASIA, CYSTIC
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY SIZE
     MICRO+  3   COMPRESSION
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
KIDNEYS
    MICRO:  (1)  RENAL CALCULI
                     RIGHT
            (1)  NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART              AORTA              SALIVARY GL
    ESOPHAGUS          STOMACH            LIVER
    PANCREAS           DUODENUM           JEJUNUM
    ILEUM              CECUM              COLON
    THYROID GL         PARATHYROID GL     SKIN
    SPLEEN             BONE, STERNUM      BONE, FEMUR
    SKELETAL MUSCLE    NERVE, SCIATIC     EYE
    OVARIES            UTERUS             CERVIX
    VAGINA             TRACHEA            LUNGS
    URINARY BLADDER
```

ANIMAL 3981A28 13-AUG-89 STUDY DAY 509

TYPE OF DEATH: SACRIFICED MORIBUND

```
ORAL/PHARYNGEAL
    GROSS:       OVERGROWN INCISORS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((2)) FATTY CHANGE
           ((2)) CHOLANGIOFIBROSIS
PITUITARY
    GROSS:       SIZE INCREASE
                     7X5X5MM
     MICRO+  P   #B ADENOMA
                     VERY LARGE
THYROID GL
    MICRO:  (P)  #B C CELL ADENOMA
ADRENAL GL
    MICRO: ((4)) VASCULAR ECTASIA
NARES/NOSE
    GROSS:       CRUST
                     RED, PERINASAL AREA
MAMMARY GL
    MICRO:  (3)  GALACTOCELE
           ((2)) MINERALIZATION
             2   HYPERSECRETION
LYMPH ND, S-MAN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3981A28 (CONTINUED)

```
    MICRO:   3   PLASMACYTOSIS
             3   LYMPHOID HYPERPLASIA
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO: ((3)) EPITHELIAL CYST(S)
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO ENLARGED PITUITARY
     MICRO+  3   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     RED, PERIOCULAR AREA, BILATERAL
VAGINA
    MICRO: ((1)) VAGINITIS
NASAL CAVITY
    MICRO: ((2)) SUBMUCOSAL MINERALIZATION
LUNGS
    MICRO:   4   CONGESTION
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             NARES/NOSE       SPLEEN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    TRACHEA          URINARY BLADDER
```

ANIMAL 4014A29 14-NOV-89 STUDY DAY 602

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:       UNKEMPT
HEART
    MICRO: ((2)) FIBROSIS
STOMACH
    GROSS:       ULCERATED
                     NON-GLANDULAR PORTION
     MICRO+ (4)  ULCER
                     THE ULCER AND INFLAMMATORY LESIONS ARE
                     IN THE NONGLANDULAR
                     STOMACH
    MICRO: ((2)) GLAND ECTASIA
             4   EDEMA
             4   GASTRITIS
          ((4)) MUCOSAL HYPERPLASIA
LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4014A29 (CONTINUED)

```
    MICRO: ((3)) FATTY CHANGE
PITUITARY
    GROSS:       MASS
                     13X7X4 MM, DARK RED WITH WHITE CENTER
     MICRO+  P   #B ADENOMA
    MICRO:   5   HEMORRHAGE
THYROID GL
    MICRO:   P   THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, BILATERAL
     MICRO+((4)) VASCULAR ECTASIA
SKIN
    GROSS:       STAINED
                     YELLOW, UROGENITAL REGION
    MICRO: ((2)) EPIDERMITIS
                     EYELIDS
NARES/NOSE
    GROSS:       CRUST
                     RED, PERINASAL REGION
MAMMARY GL
    MICRO: ((3)) GALACTOCELE
              3  HYPERSECRETION
PAWS/FEET
    GROSS:       ULCERATED
                     2X2 MM AREA, RIGHT HIND FOOT
     MICRO+ (4)  ABSCESS
    MICRO:  (2)  FIBROSIS
SPLEEN
    MICRO:   3   HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY MASS
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     RED, BILATERAL, PERIOCULAR REGION
EYE
    GROSS:       SWOLLEN
                     BILATERAL, PERIOCULAR TISSUE
VAGINA
    MICRO:   1   VAGINITIS
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     RED, ALL LOBES
     MICRO+  4   CONGESTION
KIDNEYS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4014A29 (CONTINUED)

```
    MICRO: ((1)) TUBULAR BASOPHILIA
           ((1)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA              SALIVARY GL       ESOPHAGUS
    PANCREAS           DUODENUM          JEJUNUM
    ILEUM              CECUM             COLON
    RECTUM             PARATHYROID GL    NARES/NOSE
    BONE, STERNUM      BONE, FEMUR       BONE MARROW
    SPINAL CORD        NERVE, SCIATIC    EYE
    OVARIES            UTERUS            CERVIX
    NASAL CAVITY       TRACHEA           URINARY BLADDER
```

ANIMAL 3737A30 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.994	2.259
KIDNEYS	2.614	0.739
HEART	1.379	0.390
SPLEEN	0.616	0.174
BRAIN	1.772	0.501
ADRENAL GL	0.117	0.033
OVARIES	0.091	0.026
TERMINAL BODY WT.	353.8	

```
ORAL/PHARYNGEAL
    GROSS:       OVERGROWN INCISORS
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     4X4MM TAN FOCUS, RIGHT MEDIAN LOBE
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    GROSS:       SIZE INCREASE
                     5X5X5MM
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     TAN AND BROWN, BILATERAL
     MICRO+((4)) HEMORRHAGE
ADRENAL GL
    GROSS:       SIZE INCREASE
                     2X NORMAL, BILATERAL
     MICRO+((4)) INFARCTION
    MICRO: ((5)) VASCULAR ECTASIA
MAMMARY GL
    MICRO:  (3)  GALACTOCELE
             3   HYPERSECRETION
LYMPH ND, S-MAN
    GROSS:       SIZE INCREASE
                     1.5X NORMAL
     MICRO+  3   PLASMACYTOSIS
LYMPH ND, MED
    MICRO:  (2)  LYMPHATIC ECTASIA, CYSTIC
             3   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO: ((2)) EPITHELIAL CYST(S)
             3   INVOLUTIONAL ATROPHY
BRAIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3737A30 (CONTINUED)

```
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO+ (2)   COMPRESSION
    MICRO:   2    HYDROCEPHALUS
           ((1)) VACUOLIZATION
                      CEREBELLUM
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
LUNGS
    MICRO:  (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) RENAL CALCULI
           ((1)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART              AORTA              SALIVARY GL
    ESOPHAGUS          PANCREAS           DUODENUM
    JEJUNUM            ILEUM              CECUM
    COLON              RECTUM             THYROID GL
    PARATHYROID GL     SKIN               SPLEEN
    BONE, STERNUM      BONE, FEMUR        BONE MARROW
    SKELETAL MUSCLE    NERVE, SCIATIC     EYE
    OVARIES            UTERUS             CERVIX
    VAGINA             TRACHEA            URINARY BLADDER
```

ANIMAL 3924A31 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.051	2.140
KIDNEYS	2.388	0.565
HEART	1.179	0.279
SPLEEN	0.606	0.143
BRAIN	2.185	0.517
ADRENAL GL	0.086	0.020
OVARIES	0.191	0.045
TERMINAL BODY WT.	422.9	

```
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      TWO 3MM, RED FOCAL AREAS, RIGHT MEDIAN
                      AND RIGHT
                      LATERAL LOBES
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    MICRO: ((3)) VASCULAR ECTASIA
            (4)  CORTICAL CELL HYPERTROPHY
            (2)  INFARCTION
                      SAME SITE AS CORTICAL HYPERTROPHY
SKIN
    GROSS:        STAINED
                      YELLOW, UROGENITAL AREA
LYMPH ND, MED
    MICRO:   3   SINUS ERYTHROCYTOSIS
             3   HEMOSIDEROSIS
            (3)  LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
BRAIN
    MICRO: ((2)) VACUOLIZATION
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
OVARIES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3924A31 (CONTINUED)

GROSS: CYST
LEFT, YELLOW FLUID
MICRO+((3)) CYST(S)
LUNGS
MICRO: (1) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	LIVER	PANCREAS
DUODENUM	JEJUNUM	ILEUM
CECUM	COLON	RECTUM
PITUITARY	PARATHYROID GL	SKIN
MAMMARY GL	SPLEEN	LYMPH ND, S-MAN
THYMIC REGION	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	NERVE, SCIATIC
EYE	UTERUS	CERVIX
VAGINA	TRACHEA	URINARY BLADDER

ANIMAL 3943A32 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.868	2.030
KIDNEYS	3.031	0.519
HEART	1.507	0.258
SPLEEN	0.601	0.103
BRAIN	2.060	0.352
ADRENAL GL	0.144	0.025
OVARIES	0.150	0.026
TERMINAL BODY WT.	584.5	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: SWOLLEN
SLIGHT, ALL LOBES
MICRO: ((1)) FATTY CHANGE
PANCREAS
MICRO: (1) LYMPHOID INFILTRATES
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED FOCUS
MICRO+ P #B ADENOMA
MICRO: (3) CYST(S)
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: ((5)) VASCULAR ECTASIA
((3)) THROMBOSIS
SKIN
GROSS: ALOPECIA
MULTIPLE AREAS
MAMMARY GL
GROSS: MASS
RIGHT INGUINAL AREA, 10X15X4MM, WHITE MILKY SUBSTANCE
MICRO+ (P) #B FIBROADENOMA
MICRO: 2 HYPERPLASIA
((4)) GALACTOCELE
SPLEEN
GROSS: SIZE DECREASE
SLIGHT
LYMPH ND, S-MAN

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3943A32 (CONTINUED)

```
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED, BILATERAL
    MICRO:   3    PLASMACYTOSIS
            (3)   LYMPHOID HYPERPLASIA
LYMPH ND, MED
    MICRO:   2    SINUS ERYTHROCYTOSIS
             3    HEMOSIDEROSIS
             2    MASTOCYTOSIS
THYMIC REGION
    MICRO: ((3)) EPITHELIAL CYST(S)
             3    INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2    MYOFIBER ATROPHY
BRAIN
    MICRO: ((2)) VACUOLIZATION
                      CEREBELLUM
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
OVARIES
    GROSS:        CYST
                      LEFT, 4X4X3MM
     MICRO↑ (4)   CYST(S)
LUNGS
    MICRO:  (1)   MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) MINERALIZATION
            (1)   RENAL CALCULI
                      RIGHT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         DUODENUM          JEJUNUM
    ILEUM             CECUM             COLON
    RECTUM            THYROID GL        PARATHYROID GL
    SKIN              SPLEEN            LYMPH ND, MES
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    NERVE, SCIATIC    EYE               UTERUS
    CERVIX            VAGINA            TRACHEA
    URINARY BLADDER
```

ANIMAL 3953A33 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.994	2.159
KIDNEYS	2.514	0.679
HEART	1.210	0.327
SPLEEN	0.528	0.143
BRAIN	1.934	0.522
ADRENAL GL	0.064	0.017
OVARIES	0.109	0.029
TERMINAL BODY WT.	370.3	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      DARK RED FOCI, LEFT LATERAL
    MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
CECUM
    MICRO:   P    NEMATODIASIS
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
            (P)   THYROGLOSSAL DUCT CYST
ADRENAL GL
    MICRO: ((2)) CORTICAL CELL HYPERTROPHY
LYMPH ND, S-MAN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3953A33 (CONTINUED)

```
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   3   SINUS ERYTHROCYTOSIS
             3   HEMOSIDEROSIS
             3   MASTOCYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
           ((2)) HEMOSIDEROSIS
             2   MASTOCYTOSIS
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     PERIOCULAR, RIGHT
OVARIES
    GROSS:       CYST
                     RIGHT, 2X2X2MM, BLOOD FILLED
LUNGS
    MICRO:  (1)  PERIVASCULAR INFILTRATE(S)
           ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     RIGHT, MILD
     MICRO+  1   HYDRONEPHROSIS
                     RIGHT
    MICRO:  (3)  PAPILLARY HYPERPLASIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            COLON
    RECTUM           PITUITARY        PARATHYROID GL
    SKIN             MAMMARY GL       SPLEEN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SKELETAL MUSCLE  BRAIN            NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           VAGINA           TRACHEA
    URINARY BLADDER
```

ANIMAL 3879A34 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	13.964	3.225
KIDNEYS	3.741	0.864
HEART	1.744	0.403
SPLEEN	0.733	0.169
BRAIN	2.000	0.462
ADRENAL GL	0.137	0.032
OVARIES	0.153	0.035
TERMINAL BODY WT.	433.0	

```
HEART
    MICRO: ((2)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((2)) FATTY CHANGE
PITUITARY
    GROSS:       MASS
                     8X5X4MM,RED AND WHITE
     MICRO+  P   #B ADENOMA
THYROID GL
    MICRO:  (3)  C CELL HYPERPLASIA
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3879A34 (CONTINUED)

```
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MULTIPLE WHITE FOCI, BILATERAL
                     MICRO+((1)) CORTICAL CELL HYPERTROPHY
                ADRENAL GL
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      RIGHT, RED
                ADRENAL GL
                    GROSS:        SIZE INCREASE
                                      RIGHT,2X NORMAL
                     MICRO+ (5)  INFARCTION
                    MICRO: ((4)) VASCULAR ECTASIA
                            (3)  THROMBOSIS
                SKIN
                    GROSS:        ABSCESS
                                      CLITORIAL GLAND, GREEN MATERIAL
                                      25X5X5MM
                     MICRO+ (3)  ABSCESS, CLITORAL/PREPUTIAL GLAND
                SUBCUTIS
                    GROSS:        MASS
                                      UNDER LEFT HIND LEG, 20X15X10MM, FILLED
                                      WITH RED
                                      FLUID
                MAMMARY GL
                    GROSS:        MASS
                                      20X20X10MM,RIGHT AXILLARY, FILLED WITH
                                      WHITE
                                      MATERIAL
                     MICRO+  P   #B FIBROADENOMA
                MAMMARY GL
                    GROSS:        GALACTOCELE
                                      3X3X2MM,BEHIND RIGHT HIND LEG
                     MICRO+((5)) GALACTOCELE
                    MICRO: ((4)) MASTITIS
                                      ASSOCIATED WITH RUPTURED GALACTOCELES
                             P   #M ADENOCARCINOMA
                                      TWO SEPARATE MAMMARY TUMORS ARE PRESENT
                PAWS/FEET
                    GROSS:        ULCERATED
                                      4X3MM, HIND FEET, BILATERAL
                     MICRO+ (4)  ULCERATION
                    MICRO:  (2)  OSSEUS METAPLASIA
                            (4)  FIBROSIS
                LYMPH ND, S-MAN
                    MICRO: ((4)) PLASMACYTOSIS
                LYMPH ND, MES
                    MICRO: ((3)) HISTIOCYTIC AGGREGATES
                           ((2)) HEMOSIDEROSIS
                THYMIC REGION
                    MICRO:   5   INVOLUTIONAL ATROPHY
                                      NO THYMUS
                SPINAL CORD
                    MICRO: ((2)) VACUOLIZATION
                EYE
                    MICRO:  (3)  HEMORRHAGE, RETROORBITAL
                            (3)  CORNEAL VASCULARIZATION
                                      UNILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3879A34 (CONTINUED)

```
                    (2)  CORNEAL ULCER
VAGINA
    MICRO: ((2)) VAGINITIS
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3)) RENAL CALCULI
                     LEFT WORSE
           ((3)) TUBULAR PROTEINOSIS
           ((2)) TUBULAR BASOPHILIA
           ((3)) FIBROSIS, INTERSTITIAL
            (1)  NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA             SALIVARY GL       ESOPHAGUS
    PANCREAS          DUODENUM          JEJUNUM
    ILEUM             CECUM             COLON
    RECTUM            PARATHYROID GL    SPLEEN
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    SKELETAL MUSCLE   BRAIN             NERVE, SCIATIC
    OVARIES           UTERUS            CERVIX
THE FOLLOWING TISSUES WERE MISSING:
    URINARY BLADDER
```

ANIMAL 3862A35 12-SEP-89 STUDY DAY 539
TYPE OF DEATH: SACRIFICED MORIBUND

```
STOMACH
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE RED FOCAL AREAS, INSIDE LINING
     MICRO+ (4)  ULCER
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       SWOLLEN
                     ALL LOBES
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE TAN FOCAL AREAS, ALL LOBES
     MICRO+  4   #M HISTIOCYTIC SARCOMA
                     DIFFUSE NEOPLASTIC INFILTRATE
                     INVOLVES HEPATOCELLULAR DESTRUCTION
    MICRO: ((3)) FATTY CHANGE
            (3)  THROMBOSIS
                     ASSOCIATED WITH THE TUMOR
ILEUM
    GROSS:       CONTENTS ABNORMAL
                     CONTAINS THICK BROWN-RED MATERIAL
PITUITARY
    GROSS:       SIZE INCREASE
                     10X8X6MM
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
THYROID GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3862A35 (CONTINUED)

```
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
SKIN
    GROSS:       STAINED
                     URINE, UROGENITAL AREA
MAMMARY GL
    MICRO:   2   HYPERSECRETION
SPLEEN
    GROSS:       SIZE INCREASE
                     2X NORMAL
     MICRO+  4   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
    MICRO:   2   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
             3   MASTOCYTOSIS
             4   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO ENLARGED PITUITARY
     MICRO+ (4)  COMPRESSION
EYE
    GROSS:       CRUST
                     RED, PERIOCULAR AREA, BILATERAL
OVARIES
    MICRO:  (3)  CYST(S)
UTERUS
    GROSS:       CONTENTS ABNORMAL
                     CONTAINS THICK GREEN MATERIAL
VAGINA
    MICRO:   1   VAGINITIS
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED PINK AND DARK RED
     MICRO+((4)) HEMORRHAGE
    MICRO: ((2)) #M HISTIOCYTIC SARCOMA
                     MANY PERIVASCULAR METASTATIC FOCI
KIDNEYS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MOTTLED TAN AND BROWN, BILATERAL
     MICRO+((3)) TUBULAR ATROPHY
    MICRO: ((1)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   HISTIOCYTIC SARCOMA
                     LIVER DESTRUCTION
             P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3862A35 (CONTINUED)

JEJUNUM	ILEUM	CECUM
COLON	RECTUM	PARATHYROID GL
ADRENAL GL	SKIN	BONE, STERNUM
BONE, FEMUR	SPINAL CORD	NERVE, SCIATIC
EYE	UTERUS	CERVIX
URINARY BLADDER		

ANIMAL 3767A36 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.060	2.020
KIDNEYS	2.351	0.589
HEART	1.188	0.298
SPLEEN	0.558	0.140
BRAIN	2.108	0.528
ADRENAL GL	0.070	0.018
OVARIES	0.117	0.029
TERMINAL BODY WT.	399.0	

MESENTARY/OM'TUM
MICRO: 5 ARTERITIS
INVOLVES ARTERIES TO THE PANCREAS AND DUODENUM

LIVER
MICRO: ((2)) CHOLANGIOFIBROSIS
((2)) BILIARY HYPERPLASIA
(1) FATTY CHANGE

PANCREAS
MICRO: (2) ACINAR ATROPHY

CECUM
MICRO: P NEMATODIASIS

THYROID GL
MICRO: P THYROGLOSSAL DUCT CYST

ADRENAL GL
GROSS: SIZE INCREASE
RIGHT
2X NORMAL
MICRO+ (P) #B PHEOCHROMOCYTOMA
SMALL

ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
WHITE AND TAN FOCI, BILATERAL
MICRO+ (4) CORTICAL CELL VACUOLIZATION

EARS
GROSS: THICKER THAN NORMAL
BILATERAL
MICRO+((3)) AURICULAR CHONDROPATHY
BILATERAL

MAMMARY GL
MICRO: 2 HYPERSECRETION

LYMPH ND, S-MAN
MICRO: 2 PLASMACYTOSIS

LYMPH ND, MED
MICRO: 3 MASTOCYTOSIS
2 HEMOSIDEROSIS

LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
((3)) LYMPHATIC ECTASIA, CYSTIC

THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
NO THYMUS

EYE
GROSS: OPACITY
RIGHT

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3767A36 (CONTINUED)

MICRO+ (4) CATARACT
PART OF THE LENS IS MINERALIZED
MICRO: 3 HEMORRHAGE, RETROORBITAL
(3) SYNECHIA
UTERUS
GROSS: SIZE INCREASE, SEGMENTAL
RIGHT UTERINE HORN, 6X3X3MM
MICRO+ P #B STROMAL POLYP
KIDNEYS
MICRO: ((2)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	DUODENUM
JEJUNUM	ILEUM	COLON
RECTUM	PITUITARY	PARATHYROID GL
SKIN	SPLEEN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
OVARIES	CERVIX	VAGINA
TRACHEA	LUNGS	URINARY BLADDER

ANIMAL 3774A37 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	13.533	3.641
KIDNEYS	3.414	0.919
HEART	1.183	0.318
SPLEEN	0.425	0.114
BRAIN	2.163	0.582
ADRENAL GL	0.148	0.040
OVARIES	0.084	0.023
TERMINAL BODY WT.	371.7	

STOMACH
GROSS: ULCERATED
4X2MM, MULTIPLE, GLANDULAR AREA
MICRO+ (1) ULCER
MINIMAL SUPERFICIAL FOCUS
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: SHAPE/CONTOUR CHANGE
NON-SMOOTH SURFACE
MICRO+ (4) FIBROSIS
LARGE AREA CAPSULAR FIBROSIS, ONE AREA, ALSO ONE MINIMAL FOCUS
LIVER
GROSS: SWOLLEN
ALL LOBES
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE AND BLACK FOCI, ALL LOBES
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
7X5X4MM, DARK RED AND TAN FOCI
MICRO+ P #M CARCINOMA
VERY LARGE
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MULTIPLE BLACK FOCI, BILATERAL
MICRO+ (4) INFARCTION

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3774A37 (CONTINUED)

```
                    MICRO: ((4)) VASCULAR ECTASIA
                           ((3)) THROMBOSIS
                            (3)  CORTICAL CELL VACUOLIZATION
EARS
    GROSS:                  THICKER THAN NORMAL
                                SLIGHTLY THICKENED, BILATERAL
     MICRO+((4)) AURICULAR CHONDROPATHY
                                METAPLASTIC BONE IS PRESENT
MAMMARY GL
    GROSS:                  GALACTOCELE
                                4X3X2MM TO PUNCTATE, MULTIPLE AREAS
     MICRO+  3              HYPERSECRETION
MAMMARY GL
    GROSS:                  MASS
                                80X55X30MM, RIGHT AXILLARY, TAN, FIRM,
                                MULTILOBULAR
     MICRO+  P              #B FIBROADENOMA
LYMPH ND, S-MAN
    MICRO:   2              PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
            (4)  LYMPHOID HYPERPLASIA
                                ONE LARGE NODULAR FOCUS
           ((2)) HEMOSIDEROSIS
LYMPH ND, OTHER
    GROSS:                  SIZE INCREASE
                                SUBLUMBAR, SLIGHT
     MICRO+  2              PLASMACYTOSIS
                                LUMBAR NODE
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3              INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4              HYPERPLASIA
BRAIN
    GROSS:                  DEPRESSION/INDENTATION
                                DUE TO ENLARGED PITUITARY
     MICRO+ (3)             COMPRESSION
    MICRO:  (1)             #M CARCINOMA
                                SMALL FOCUS FROM PITUITARY TUMOR IN THE
                                MIDBRAIN
            (4)             HEMORRHAGE
            (4)             THROMBOSIS
                                MIDBRAIN, ASSOCIATED WITH TUMOR
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
UTERUS
    GROSS:                  MASS
                                LARGE AMOUNT OF ADIPOSE TISSUE, LEFT
                                BROAD LIGAMENT AREA
TRACHEA
    MICRO:  (3)             SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:  (3)             MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3774A37 (CONTINUED)

BILATERAL
((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

ADIPOSE TISSUE	HEART	AORTA
SALIVARY GL	ESOPHAGUS	PANCREAS
DUODENUM	JEJUNUM	ILEUM
CECUM	RECTUM	THYROID GL
PARATHYROID GL	SKIN	SPLEEN
BONE, STERNUM	BONE, FEMUR	SKELETAL MUSCLE
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	VAGINA
URINARY BLADDER		

ANIMAL 4017A38 9-FEB-90 STUDY DAY 689
TYPE OF DEATH: FOUND DEAD

HEART
MICRO: ((2)) FIBROSIS
LIVER
GROSS: POSTMORTEM CHANGE
PANCREAS
GROSS: NODULE
5X5X5MM, HARD
MICRO+ (P) #B ISLET CELL ADENOMA
JEJUNUM
GROSS: POSTMORTEM CHANGE
ILEUM
GROSS: POSTMORTEM CHANGE
COLON
GROSS: POSTMORTEM CHANGE
PITUITARY
GROSS: SIZE INCREASE
10X10X10MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
MICRO+ 4 HEMORRHAGE
MICRO: (4) FIBROSIS
THYROID GL
MICRO: (P) THYROGLOSSAL DUCT CYST
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
RIGHT, MOTTLED RED AND TAN
MICRO+((3)) HEMORRHAGE
MICRO: ((3)) THROMBOSIS
((3)) CORTICAL CELL VACUOLIZATION
MAMMARY GL
MICRO: 2 HYPERSECRETION
LYMPH ND, S-MAN
MICRO: 2 PLASMACYTOSIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
((2)) HEMORRHAGE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4017A38 (CONTINUED)

```
SKELETAL MUSCLE
    MICRO:   4   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AROUND PITUITARY
UTERUS
    GROSS:       POSTMORTEM CHANGE
                     LEFT SIDE
LUNGS
    GROSS:       POSTMORTEM CHANGE
    MICRO:   4   CONGESTION
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    STOMACH          LIVER            DUODENUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             SPLEEN           BONE, STERNUM
    BONE, FEMUR      BONE MARROW      BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    JEJUNUM          ILEUM            CECUM
```

ANIMAL 3919A39 16-JAN-90 STUDY DAY 665
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:       EMACIATION
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO:  (1)  CHOLANGIOFIBROSIS
           ((1)) FIBROSIS
                     SMALL FIBROTIC FOCI ADJACENT TO BLOOD
                     VESSELS
CECUM
    MICRO:   P   NEMATODIASIS
PITUITARY
    MICRO:  (P)  #B ADENOMA
THYROID GL
    MICRO: ((4)) THYROGLOSSAL DUCT CYST
            (P)  #B C CELL ADENOMA
           ((2)) CALCIFIC CONCRETIONS, COLLOID
PARATHYROID GL
    MICRO:   3   HYPERPLASIA
ADRENAL GL
    MICRO: ((3)) VASCULAR ECTASIA
           ((4)) HEMORRHAGE
           ((2)) THROMBOSIS
           ((2)) CORTICAL CELL HYPERTROPHY
           ((3)) CORTICAL CELL VACUOLIZATION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3919A39 (CONTINUED)

```
                    ((3)) INFARCTION
MAMMARY GL
    MICRO: ((1)) MINERALIZATION
LYMPH ND, MED
    MICRO:   4   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MOTTLED RED AND CREAM
     MICRO+  3   SINUS ERYTHROCYTOSIS
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:  (3)  EPITHELIAL CYST(S)
             3   INVOLUTIONAL ATROPHY
             3   MASTOCYTOSIS
           ((3)) ARTERITIS
BRAIN
    MICRO: ((3)) VACUOLIZATION
                     CEREBELLUM
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     RED, BILATERAL, PERIOCULAR REGION
EYE
    GROSS:       OPACITY
                     BILATERAL, LINEAR
     MICRO+((4)) KERATITIS
                     BILATERAL, ONE EYE MORE SEVERE THAN THE
                     OTHER
    MICRO:   4   CORNEAL VASCULARIZATION
                     UNILATERAL IN THE WORSE AFFECTED EYE
VAGINA
    MICRO:   1   VAGINITIS
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, ALL LOBES
KIDNEYS
    GROSS:       DIMPLED/PITTED
                     BILATERAL
     MICRO+  5   TUBULAR PROTEINOSIS
    MICRO:   3   FIBROSIS, INTERSTITIAL
            (5)  THROMBOSIS
                     RENAL VEIN THROMBOSES, SEVERE IN THE
                     RIGHT, SEVERAL
                     SMALL MINERALIZED THROMBI IN THE LEFT
             4   TUBULAR ATROPHY
           ((4)) GLOMERULOSCLEROSIS
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   CHRONIC RENAL DISEASE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            COLON
    RECTUM           SKIN             SPLEEN
    LYMPH ND, S-MAN  BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  NERVE, SCIATIC
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3919A39 (CONTINUED)

OVARIES UTERUS CERVIX
TRACHEA LUNGS URINARY BLADDER

ANIMAL 3915A40 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.960	2.967
KIDNEYS	2.790	0.639
HEART	1.260	0.288
SPLEEN	0.644	0.147
BRAIN	1.953	0.447
ADRENAL GL	0.115	0.026
OVARIES	0.109	0.025
TERMINAL BODY WT.	436.8	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: NODULE
RIGHT MEDIAN LOBE, NEAR HILUS, CREAM 4X4X2MM
MICRO+ (P) #B HEPATOCELLULAR ADENOMA
MICRO: ((2)) CHOLANGIOFIBROSIS
((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
((2)) BILIARY HYPERPLASIA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED 2X2MM FOCAL AREA LEFT SIDE
MICRO+ (P) #B ADENOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL, BLACK AND CREAM 2MM FOCAL AREAS MULTIPLE, THROUGHOUT
MICRO+((4)) HEMORRHAGE
MICRO: ((5)) VASCULAR ECTASIA
(4) INFARCTION
((3)) THROMBOSIS
MAMMARY GL
GROSS: GALACTOCELE
MUTIPLE 1MM TO2MM THROUGHOUT
MAMMARY GL
GROSS: MASS
RIGHT CERVICAL REGION 35X25X10MM, SOFT AND SMOOTH AND CREAM
RIGHT AXILLARY REGION 35X30X10MM TAN AND MULTILOBLULAR
MICRO+ P #B FIBROADENOMA
TAIL
GROSS: ULCERATED
7X7MM DARK TAN NEAR BASE
MICRO: (P) EPIDERMAL INCLUSION CYST
LYMPH ND, MED
MICRO: 3 SINUS ERYTHROCYTOSIS
((2)) HEMOSIDEROSIS
2 MASTOCYTOSIS
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
SPINAL CORD
MICRO: ((1)) VACUOLIZATION
UTERUS
MICRO: (P) #B STROMAL POLYP
TRACHEA
MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3915A40 (CONTINUED)

```
GROSS:        COLOR CHANGE, DIFFUSE
                  ALL LOBES, DARK RED
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
                  BILATERAL
           ((2)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           THYROID GL
    PARATHYROID GL   SKIN             SPLEEN
    LYMPH ND, S-MAN  LYMPH ND, MES    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    BRAIN            NERVE, SCIATIC   EYE
    OVARIES          CERVIX           VAGINA
    LUNGS            URINARY BLADDER
```

ANIMAL 3750A41 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.834	2.375
KIDNEYS	2.565	0.620
HEART	1.212	0.293
SPLEEN	0.492	0.119
BRAIN	1.903	0.460
ADRENAL GL	0.050	0.012
OVARIES	0.075	0.018
TERMINAL BODY WT.	414.0	

```
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    MICRO:  (1)  BILIARY HYPERPLASIA
CECUM
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     2X2MM DARK RED FOCAL AREA, LEFT SIDE
     MICRO+ (P)  #B ADENOMA
                     VERY SMALL
ADRENAL GL
    MICRO:  (2)  VASCULAR ECTASIA
MAMMARY GL
    MICRO: ((3)) GALACTOCELE
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   3   HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
            (2)  EPITHELIAL CYST(S)
VAGINA
    MICRO:   1   VAGINITIS
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     RIGHT, MILD
     MICRO+((3)) HYDRONEPHROSIS
    MICRO: ((3)) RENAL CALCULI
           ((1)) TUBULAR PROTEINOSIS
            (1)  NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3750A41 (CONTINUED)

JEJUNUM	ILEUM	COLON
RECTUM	THYROID GL	PARATHYROID GL
SKIN	SPLEEN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	TRACHEA	LUNGS
URINARY BLADDER		

ANIMAL 3772A42 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.019	2.972
KIDNEYS	2.843	0.703
HEART	1.425	0.352
SPLEEN	1.687	0.417
BRAIN	2.022	0.500
ADRENAL GL	0.122	0.030
OVARIES	0.088	0.022
TERMINAL BODY WT.	404.4	

STOMACH
MICRO: ((1)) GLAND ECTASIA
PITUITARY
GROSS: NODULE
2X2X2MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: SIZE INCREASE
2X'S
MICRO: ((3)) CYST(S)
THYROID GL
MICRO: P THYROGLOSSAL DUCT CYST
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: (5) THROMBOSIS
SKIN
GROSS: ALOPECIA
MULTIPLE AREAS
MAMMARY GL
GROSS: GALACTOCELE
20X12X10MM, RIGHT SHOULDER AREA
30X20X20MM, RIGHT UROGENITAL AREA
MICRO+((4)) GALACTOCELE
MICRO: (4) MASTITIS
(3) HYPERPLASIA
P #B FIBROADENOMA
PAWS/FEET
GROSS: SWOLLEN
BOTH FEET
MICRO+ 5 FIBROSIS
PAWS/FEET
GROSS: ULCERATED
BOTH FEET
MICRO+ 5 ULCERATION
MICRO: ((4)) OSSEUS METAPLASIA
SPLEEN
GROSS: SIZE INCREASE
2X NORMAL
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3772A42 (CONTINUED)

```
LYMPH ND, MED
    MICRO: ((2)) SINUS ERYTHROCYTOSIS
                 3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, REN
    GROSS:       CONSISTENCY CHANGE
                     JELLY LIKE
     MICRO+((4)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, REN
    GROSS:       SIZE INCREASE
                     3X'S
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     LUMBAR SLIGHT
                     POPLITEAL, 12X10X5MM, LEFT HIND LEG AREA
                     RIGHT POPLITEAL LYMPH NODE, 6X5X4MM
     MICRO+  5   PLASMACYTOSIS
                     LUMBAR AND POPLITEAL NODES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:  (3)  PLEURAL FIBROSIS
                     THERE ARE FIBROUS ADHESIONS BETWEEN TWO
                     LUNG LOBES WITH
                     MANY MAST CELLS AND A FEW LYMPHOCYTES
                     PRESENT.
KIDNEYS
    MICRO: ((3)) RENAL CALCULI
                     BILATERAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    PARATHYROID GL   SKIN             SPLEEN
    BONE, STERNUM    BONE, FEMUR      BRAIN
    NERVE, SCIATIC   EYE              OVARIES
    UTERUS           CERVIX           VAGINA
    URINARY BLADDER
```

ANIMAL 3712A43 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.491	2.302
KIDNEYS	2.987	0.551
HEART	1.543	0.284

```
ADIPOSE TISSUE
    GROSS:       MASS
                     NECROTIC FAT, LEFT OVARIAN
                     FAT,45X20X10MM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3712A43 (CONTINUED)

SPLEEN	0.666	0.123
BRAIN	1.973	0.364
ADRENAL GL	0.091	0.017
OVARIES	0.399	0.074
TERMINAL BODY WT.	542.6	

```
     MICRO+  3   STEATITIS
    MICRO:  (P)  FAT NECROSIS
HEART
    MICRO: ((2)) FIBROSIS
            (1)  MYOCARDITIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) CHOLANGITIS
PITUITARY
    MICRO: ((3)) CYST(S)
THYROID GL
    GROSS:       SIZE DECREASE
                     RIGHT, 1/3 OF NORMAL
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BROWN MOTTLING, BILATERAL
     MICRO+((3)) INFARCTION
ADRENAL GL
    GROSS:       SIZE INCREASE
                     2X NORMAL, BILATERIAL
    MICRO: ((3)) THROMBOSIS
           ((4)) VASCULAR ECTASIA
MAMMARY GL
    MICRO:   3   HYPERSECRETION
             3   HYPERPLASIA
LYMPH ND, S-MAN
    MICRO:   3   MASTOCYTOSIS
             3   PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   3   SINUS ERYTHROCYTOSIS
             3   HEMOSIDEROSIS
             3   MASTOCYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
OVARIES
    GROSS:       CYST
                     CLEAR FLUID, BILATERAL
     MICRO+ (4)  CYST(S)
UTERUS
    GROSS:       MASS
                     20X15X10MM, RED, RIGHT HORN
     MICRO+ (P)  #B STROMAL POLYP
                     THE MASS IS ULCERATED AND HEMORRHAGIC
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
            (2)  HEMORRHAGE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA          SALIVARY GL      ESOPHAGUS
    PANCREAS       DUODENUM         JEJUNUM
    ILEUM          CECUM            COLON
    RECTUM         THYROID GL       PARATHYROID GL
    SKIN           SPLEEN           BONE, STERNUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3712A43 (CONTINUED)

BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	CERVIX	VAGINA
KIDNEYS	URINARY BLADDER	

ANIMAL 3779A44 5-JUL-89 STUDY DAY 470
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
ORAL/PHARYNGEAL
    GROSS:        SIZE INCREASE
                      OVER GROWN INCISORS
LIVER
    MICRO: ((1)) CHOLANGITIS
           ((3)) HEPATOCELLULAR NECROSIS
           ((1)) EXTRAMEDULLARY HEMATOPOIESIS
JEJUNUM
    GROSS:        GASEOUS
ILEUM
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED COLOR
ADRENAL GL
    GROSS:        MASS
                      LEFT, 3X4MM
     MICRO+ (5)   THROMBOSIS
SUBCUTIS
    GROSS:        MASS
                      85X60X45MM, FIRM, MOIST, VENTRAL REGION
                      ON RIGHT LEG.
MAMMARY GL
    MICRO:   P    #M ADENOCARCINOMA
                      LARGE, NECROTIC, LISTED GROSSLY UNDER
                      SUBCUTIS
SPLEEN
    GROSS:        SIZE INCREASE
                      52X15MM
     MICRO+  4    EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, MED
    MICRO:   2    SINUS ERYTHROCYTOSIS
           ((1)) HEMOSIDEROSIS
THYMIC REGION
    GROSS:        NODULE
                      MULTIPLE,1X1MM TO3X3MM
    MICRO:   4    INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4    HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   2    MYOFIBER ATROPHY
EYE
    GROSS:        COLOR CHANGE, DIFFUSE
                      BILATERAL, PALE IN COLOR
VAGINA
    MICRO:   2    VAGINITIS
LUNGS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3779A44 (CONTINUED)

```
GROSS:        NODULE
                  RIGHT APICAL LOBE, 1.5X2MM
 MICRO+ (P)  #M ADENOCARCINOMA
                  NECROTIC CENTER
                  METASTATIC FROM MAMMARY GLAND
MICRO:  (2)  BRONCHIOALVEOLAR CELL HYPERPLASIA
        (1)  MINERALIZATION, PULMONARY VESSEL(S)
CAUSE OF DEATH
    MICRO:   P   ADENOCARCINOMA, MAMMARY GLAND
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    PITUITARY        THYROID GL       PARATHYROID GL
    SKIN             SUBCUTIS         LYMPH ND, S-MAN
    LYMPH ND, MES    BONE, STERNUM    BONE, FEMUR
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           TRACHEA          KIDNEYS
    URINARY BLADDER
```

ANIMAL 3775A45 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.138	2.512
KIDNEYS	3.249	0.733
HEART	1.396	0.315
SPLEEN	0.775	0.175
BRAIN	1.973	0.445
ADRENAL GL	0.121	0.027
OVARIES	0.154	0.035
TERMINAL BODY WT.	443.5	

```
HEART
    MICRO: ((2)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) FATTY CHANGE
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
            (3)  C CELL HYPERPLASIA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BILATERAL, WHITE AND TAN FOCI
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO: ((4)) VASCULAR ECTASIA
           ((2)) FIBROSIS
LYMPH ND, MES
    MICRO:   3   MASTOCYTOSIS
             2   SINUS ERYTHROCYTOSIS
           ((1)) HISTIOCYTIC AGGREGATES
           ((2)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
OVARIES
    GROSS:       CYST
                     RIGHT, 1X1X1MM, CLEAR FLUID
     MICRO+ (3)  CYST(S)
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3775A45 (CONTINUED)

(2) ADENITIS, SUBMUCOSAL GLANDS
LUNGS
MICRO: (2) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((2)) RENAL CALCULI
((1)) NEPHRITIS, INTERSTITIAL
((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
PANCREAS	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	PITUITARY	PARATHYROID GL
SKIN	SPLEEN	LYMPH ND, S-MAN
BONE, STERNUM	BONE, FEMUR	BONE MARROW
BRAIN	SPINAL CORD	EYE
UTERUS	CERVIX	VAGINA
URINARY BLADDER		

THE FOLLOWING TISSUES WERE MISSING:
MAMMARY GL NERVE, SCIATIC

ANIMAL 3832A46 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	5.926	2.414
KIDNEYS	2.818	1.148
HEART	1.298	0.529
SPLEEN	0.335	0.136
BRAIN	2.113	0.861
ADRENAL GL	0.117	0.048
OVARIES	0.039	0.016
TERMINAL BODY WT.	245.5	

TOTAL BODY
GROSS: EMACIATION
SALIVARY GL
MICRO: (3) ATROPHY
SEROUS GLANDS
STOMACH
GROSS: ULCERATED
BLACK COLORED ULCERS, MULTIPLE
THROUHGOUT
MICRO+((3)) ULCER
SUPERFICIAL, IN THE GLANDULAR MUCOSA
MICRO: ((2)) GLAND ECTASIA
PANCREAS
MICRO: (1) ACINAR ATROPHY
PITUITARY
GROSS: SIZE INCREASE
10X10X5MM
MICRO+ P #B ADENOMA
VERY LARGE
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
TAN, BROWN, AND RED
MICRO+ (5) HEMORRHAGE
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL, WHITE AND TAN FOCI
MICRO+((3)) HEMORRHAGE
MICRO: ((4)) THROMBOSIS
((4)) VASCULAR ECTASIA
((4)) INFARCTION
MAMMARY GL
MICRO: 2 HYPERSECRETION
3 MASTOCYTOSIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3832A46 (CONTINUED)

```
                                3   FIBROSIS
                                        TISSUE IS PRESENT ADJACENT TO THE
                                        SALIVARY GLANDS
LYMPH ND, S-MAN
    GROSS:                      SIZE INCREASE
                                        2X NORMAL,BILATERAL
     MICRO+  4                  PLASMACYTOSIS
LYMPH ND, MED
    MICRO:  3                   SINUS ERYTHROCYTOSIS
            3                   MASTOCYTOSIS
            2                   HEMOSIDEROSIS
LYMPH ND, MES
    MICRO:  2                   MASTOCYTOSIS
          ((1))                 HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:  5                   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:  4                   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:  4                   MYOFIBER ATROPHY
BRAIN
    MICRO:  3                   HYDROCEPHALUS
           (4)                  COMPRESSION
OVARIES
    GROSS:                      SIZE DECREASE
                                        BILATERAL, 1/2 OF NORMAL
VAGINA
    GROSS:                      CONTENTS ABNORMAL
                                        GREEN PUS FILLED
     MICRO+  1                  VAGINITIS
                                        MINIMAL TISSUE INVOLVEMENT, BUT A
                                        MUCOPURULENT DISCHARGE
                                        IS PRESENT IN THE LUMEN.
LUNGS
    MICRO:  (2)                 MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3))                RENAL CALCULI
                                        BILATERAL
          ((1))                 TUBULAR PROTEINOSIS
           (2)                  PAPILLARY HYPERPLASIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART           AORTA           ESOPHAGUS
    LIVER           DUODENUM        JEJUNUM
    ILEUM           CECUM           COLON
    RECTUM          THYROID GL      PARATHYROID GL
    SKIN            SPLEEN          BONE, STERNUM
    BONE, FEMUR     SPINAL CORD     NERVE, SCIATIC
    EYE             OVARIES         UTERUS
    CERVIX          TRACHEA         URINARY BLADDER
```

ANIMAL 3723A47 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.145	2.637
KIDNEYS	2.635	0.685

```
STOMACH
    MICRO: ((2))                GLAND ECTASIA
           (2)                  LYMPHOID INFILTRATES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3723A47 (CONTINUED)

HEART	1.823	0.474
SPLEEN	0.762	0.198
BRAIN	2.069	0.538
ADRENAL GL	0.084	0.022
OVARIES	0.157	0.041
TERMINAL BODY WT.	384.7	

```
LIVER
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PANCREAS
    GROSS:       NODULE
                     3X3X2MM, DARK RED
     MICRO+ (P)  #B ISLET CELL ADENOMA
ILEUM
    GROSS:       CONTENTS ABNORMAL
                     CONTAINS YELLOW MUCUS MATERIAL
PITUITARY
    GROSS:       NODULE
                     1X1X1MM, TAN
     MICRO+ (P)  #B ADENOMA
                     VERY SMALL
THYROID GL
    MICRO:   P   THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO: ((4)) VASCULAR ECTASIA
           ((2)) THROMBOSIS
LYMPH ND, MES
    MICRO:   3   SINUS ERYTHROCYTOSIS
             3   HEMOSIDEROSIS
           ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    MAMMARY GL       SPLEEN           BONE, STERNUM
    BONE, FEMUR      BONE MARROW      BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           TRACHEA          LUNGS
    URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    LYMPH ND, S-MAN
```

ANIMAL 3796A48 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.231	2.150
KIDNEYS	2.598	0.605
HEART	1.175	0.274
SPLEEN	0.520	0.121
BRAIN	2.036	0.474

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     RIGHT CAUDATE LOBE, 4X5MM, DARK RED
                     FOCAL AREA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3796A48 (CONTINUED)

ADRENAL GL	0.072	0.017	MICRO↑((1)) FATTY CHANGE
OVARIES	0.125	0.029	MICRO: ((2)) BILIARY HYPERPLASIA
TERMINAL BODY WT.	429.4		((2)) CHOLANGIOFIBROSIS

PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
PUNCTATE BLACK FOCAL AREAS SCATTERED ON SURFACE
MICRO↑((3)) HEMOSIDEROSIS
MICRO: P #B ADENOMA
THYROID GL
MICRO: (P) THYROGLOSSAL DUCT CYST
ADRENAL GL
GROSS: SIZE INCREASE
RIGHT, SLIGHT
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE BLACK AND CREAM FOCAL AREAS, 3MM TO PUNCTATE
MICRO↑((4)) VASCULAR ECTASIA
MICRO: ((3)) THROMBOSIS
3 HEMORRHAGE
(4) INFARCTION
SKIN
MICRO: (3) ABSCESS, CLITORAL/PREPUTIAL GLAND
MAMMARY GL
MICRO: 2 HYPERSECRETION
3 HYPERPLASIA
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MES
MICRO: 2 PLASMACYTOSIS
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
EYE
GROSS: CRUST
RIGHT, RED, PERIOCULAR REGION
MICRO: (3) HEMORRHAGE, RETROORBITAL
LUNGS
MICRO: 4 CONGESTION
((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) TUBULAR PROTEINOSIS
(1) NEPHRITIS, INTERSTITIAL
((2)) TUBULAR BASOPHILIA

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	PARATHYROID GL
SPLEEN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	BRAIN
SPINAL CORD	NERVE, SCIATIC	OVARIES
UTERUS	CERVIX	VAGINA
TRACHEA	URINARY BLADDER	

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3679A49 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.561	2.469
KIDNEYS	2.882	0.615
HEART	1.347	0.288
SPLEEN	0.644	0.138
BRAIN	1.928	0.412
ADRENAL GL	0.097	0.021
OVARIES	0.110	0.023
TERMINAL BODY WT.	468.3	

ADIPOSE TISSUE
GROSS: NODULE
5X4X3MM, TAN, NEAR RIGHT UTERINE HORN
MICRO+ (4) FAT NECROSIS
HEART
MICRO: 2 FIBROSIS
ORAL/PHARYNGEAL
GROSS: OVERGROWN INCISORS
STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
3X3MM DARK RED FOCUS, RIGHT MEDIAN LOBE
3X2MM DARK RED FOCUS, RIGHT LATERAL LOBE
MICRO: ((1)) FATTY CHANGE
((1)) EXTRAMEDULLARY HEMATOPOIESIS
JEJUNUM
GROSS: CONTENTS ABNORMAL
CONTAINS YELLOW MUCUS
PITUITARY
GROSS: SIZE INCREASE
5X5X5MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
MICRO+((5)) VASCULAR ECTASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: ((2)) VASCULAR ECTASIA
((2)) #B ADENOMA
TWO SMALL EXPANSILE NODULES
MAMMARY GL
MICRO: (4) MASTITIS
GRANULOMATOUS DUE TO DAMAGED MAMMARY TISSUE
3 HYPERSECRETION
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
(4) SINUS ERYTHROCYTOSIS
LYMPH ND, MES
MICRO: 3 LYMPHOID HYPERPLASIA
((1)) HISTIOCYTIC AGGREGATES
3 PLASMACYTOSIS
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
NO THYMUS
SKELETAL MUSCLE
MICRO: 3 MYOFIBER ATROPHY
BRAIN

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3679A49 (CONTINUED)

```
                    GROSS:        DEPRESSION/INDENTATION
                                      DUE TO ENLARGED PITUITARY
                     MICRO+ (2)   COMPRESSION
                                      MIDBRAIN
                    MICRO: ((1)) VACUOLIZATION
                                      CEREBELLUM
EYE
                    GROSS:        CRUST
                                      RED, LEFT PERIOCULAR AREA
UTERUS
                    GROSS:        SIZE INCREASE, SEGMENTAL
                                      10X3X3MM, LEFT UTERINE HORN
KIDNEYS
                    GROSS:        HYDRONEPHROSIS
                                      MILD, BILATERAL
                     MICRO+  3    HYDRONEPHROSIS
                    MICRO: ((2)) RENAL CALCULI
                           ((2)) TUBULAR BASOPHILIA
                           ((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA              SALIVARY GL       ESOPHAGUS
    PANCREAS           DUODENUM          JEJUNUM
    ILEUM              CECUM             COLON
    RECTUM             THYROID GL        SKIN
    SPLEEN             BONE, STERNUM     BONE, FEMUR
    BONE MARROW        SPINAL CORD       NERVE, SCIATIC
    EYE                OVARIES           UTERUS
    CERVIX             VAGINA            TRACHEA
    LUNGS              URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 3974A50 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.478	2.710
KIDNEYS	2.976	0.646
HEART	1.471	0.319
SPLEEN	0.597	0.130
BRAIN	2.129	0.462
ADRENAL GL	0.185	0.040
OVARIES	0.112	0.024
TERMINAL BODY WT.	460.5	

```
LIVER
                    GROSS:        SWOLLEN
                                      ALL LOBES, SLIGHT
                    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
CECUM
                    MICRO:    P   NEMATODIASIS
PITUITARY
                    GROSS:        NODULE
                                      1X1X1MM, DARK RED
                     MICRO+   P   #B ADENOMA
                    MICRO:   (2)  VASCULAR ECTASIA
THYROID GL
                    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
                    GROSS:        SIZE INCREASE
                                      2X NORMAL, BILATERAL
ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      DARK RED FOCI, PUNCTATE, BILATERAL
                     MICRO+((5)) VASCULAR ECTASIA
                    MICRO: ((4)) THROMBOSIS
MAMMARY GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3974A50 (CONTINUED)

```
                    GROSS:        MASS
                                      60X50X15MM, YELLOW PUS FILLED , WITH
                                      YELLOW NODULES
                                      VENTRAL, LOWER LEFT
                     MICRO+((4)) GALACTOCELE
MAMMARY GL
                    GROSS:        GALACTOCELE
                                      RIGHT VENTRAL REGION, 2X2X2MM, THREE,
                                      WHITE MILKY SUB.
                     MICRO+((4)) GALACTOCELE
                    MICRO:  (4)   #B FIBROADENOMA
                            (3)   MASTITIS
LYMPH ND, S-MAN
                    MICRO:   2    PLASMACYTOSIS
LYMPH ND, MES
                    MICRO: ((4)) HISTIOCYTIC AGGREGATES
                             3   MASTOCYTOSIS
LYMPH ND, PANC
                    MICRO:   3    SINUS ERYTHROCYTOSIS
THYMIC REGION
                    MICRO:   5    INVOLUTIONAL ATROPHY
                                      NO THYMUS
SKELETAL MUSCLE
                    MICRO:   3    MYOFIBER ATROPHY
OVARIES
                    GROSS:        CYST
                                      RIGHT, 3X3X2MM, CLEAR FLUID FILLED
                     MICRO+ (3)   CYST(S)
LUNGS
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      MOTTLED PINK AND TAN, ALL LOBES
                    MICRO:  (1)   MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
                    MICRO: ((2)) RENAL CALCULI
                                      BILATERAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    HEART            AORTA            SALIVARY GL
                    ESOPHAGUS        STOMACH          PANCREAS
                    DUODENUM         JEJUNUM          ILEUM
                    COLON            RECTUM           PARATHYROID GL
                    SKIN             SPLEEN           BONE, STERNUM
                    BONE, FEMUR      BONE MARROW      BRAIN
                    SPINAL CORD      NERVE, SCIATIC   EYE
                    UTERUS           CERVIX           VAGINA
                    TRACHEA          URINARY BLADDER
```

ANIMAL 3804A51 30-JUN-89 STUDY DAY 465
TYPE OF DEATH: SACRIFICED MORIBUND

```
STOMACH
                    MICRO: ((1)) GLAND ECTASIA
PITUITARY
                    GROSS:        SIZE INCREASE
                                      10X6X5MM
                     MICRO+  P    #M CARCINOMA
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3804A51 (CONTINUED)

```
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
     MICRO+((4)) VASCULAR ECTASIA
    MICRO:  (4)  CYST(S)
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE FOCI, BILATERAL
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
MAMMARY GL
    GROSS:        GALACTOCELE
                      MULTIPLE 3X3X3 TO 6X5X3MM, THROUGHOUT
                      ENTIRE MAMMARY GLAND
     MICRO+((3)) GALACTOCELE
    MICRO:  (3)  MASTITIS
            (3)  FIBROSIS
           ((1)) MINERALIZATION
SPLEEN
    MICRO:   3   HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:   4   LYMPHOID HYPERPLASIA
             2   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO PITUITARY ENLARGEMENT
     MICRO+ (4)  COMPRESSION
LUNGS
    MICRO: ((2)) ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO: ((3)) TUBULAR PROTEINOSIS
           ((1)) RENAL CALCULI
           ((2)) MINERALIZATION
           ((3)) TUBULAR BASOPHILIA
           ((2)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    THYROID GL       PARATHYROID GL   SKIN
    THYMIC REGION    BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  SPINAL CORD
    NERVE, SCIATIC   EYE              OVARIES
    UTERUS           CERVIX           VAGINA
    TRACHEA          URINARY BLADDER
```

ANIMAL 3952A52 1-JAN-90 STUDY DAY 650

TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:        EMACIATION
TOTAL BODY
    GROSS:        UNKEMPT
STOMACH
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3952A52 (CONTINUED)

```
    GROSS:        CONTENTS ABNORMAL
                      CONTAINS YELLOW MUCUS
    MICRO:  (4)   EDEMA
                      ALL LESIONS IN THE NONGLANDULAR STOMACH
            (3)   GASTRITIS
            (4)   MUCOSAL HYPERPLASIA
LIVER
    GROSS:        POSTMORTEM CHANGE
                      MILD, ALL LOBES
    MICRO: ((1))  BILIARY HYPERPLASIA
           ((1))  CHOLANGIOFIBROSIS
DUODENUM
    GROSS:        POSTMORTEM CHANGE
                      INCLUDING JEJUNUM, ILEUM, CECUM AND
                      COLON
PITUITARY
    GROSS:        SIZE INCREASE
                      6X6X5MM
     MICRO+  P    #B ADENOMA
                      VERY LARGE
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE TAN FOCI, BILATERAL
     MICRO+((2))  CORTICAL CELL HYPERTROPHY
    MICRO: ((3))  VASCULAR ECTASIA
            (1)   FIBROSIS
MAMMARY GL
    MICRO:   3    HYPERSECRETION
SPLEEN
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL
    MICRO:   4    HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:   3    SINUS ERYTHROCYTOSIS
             2    PLASMACYTOSIS
LYMPH ND, MES
    GROSS:        POSTMORTEM CHANGE
    MICRO: ((2))  HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3    INVOLUTIONAL ATROPHY
            (2)   EPITHELIAL CYST(S)
SKELETAL MUSCLE
    MICRO:   3    MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
    MICRO:   2    HYDROCEPHALUS
EYE
    GROSS:        CRUST
                      RED, PERIOCULAR TISSUE
OVARIES
    MICRO:  (4)   CYST(S)
UTERUS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3952A52 (CONTINUED)

```
        GROSS:        CONTENTS ABNORMAL
                          CONTAINS THICK GREEN MATERIAL
        MICRO:   P    #B STROMAL POLYP
                          SECTION IS POOR; APPEARS TO BE A SMALL
                          POLYP IN THE REGION
                          OF THE CERVIX
VAGINA
    MICRO: ((1)) VAGINITIS
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                          ALL LOBES MOTTLED LIGHT AND DARK RED
     MICRO+  5    CONGESTION
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:   P    ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         PANCREAS          DUODENUM
    RECTUM            THYROID GL        PARATHYROID GL
    SKIN              BONE, STERNUM     BONE, FEMUR
    BONE MARROW       SPINAL CORD       NERVE, SCIATIC
    EYE               CERVIX            TRACHEA
    URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    JEJUNUM           ILEUM             CECUM
    COLON
```

ANIMAL 3875A53 13-OCT-89 STUDY DAY 570
TYPE OF DEATH: SACRIFICED MORIBUND

```
STOMACH
    GROSS:        CONTENTS ABNORMAL
                          WHITE MUCOUS ADHERED TO WALLS
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                          TAN FOCI, CAUDATE LOBE
     MICRO+((P)) #B HEPATOCELLULAR ADENOMA
                          TWO NODULES, ONE VERY SMALL
    MICRO: ((1)) FATTY CHANGE
           ((1)) EXTRAMEDULLARY HEMATOPOIESIS
PITUITARY
    GROSS:        MASS
                          BX15X6 MM, DARK RED
     MICRO+  P    #B ADENOMA
                          VERY LARGE
    MICRO: ((5)) VASCULAR ECTASIA
ADRENAL GL
    GROSS:        CYST
                          BXBX9 MM, RED-TINGED FLUID FILLED, LEFT
                          MULTIPLE 2X2 MM, RIGHT
     MICRO+ (5)   CYST(S)
    MICRO: ((3)) INFARCTION
SKIN
    GROSS:        ABSCESS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3875A53 (CONTINUED)

```
                                        5X4X4 MM, CLITORAL GLAND, RIGHT
     MICRO+ (3)  ADENITIS, CLITORAL/PREPUTIAL GLAND
MAMMARY GL
    GROSS:       GALACTOCELE
                     MULTIPLE, NECK AND INGUINAL REGION
     MICRO+((4)) GALACTOCELE
PAWS/FEET
    GROSS:       SWOLLEN
                     LEFT HIND FOOT
     MICRO+  4   FIBROSIS
PAWS/FEET
    GROSS:       ULCERATED
                     LEFT HIND FOOT, 15X15X8 MM
                     RIGHT HIND FOOT, 4X4X2 MM
     MICRO+  5   ULCERATION
LYMPH ND, S-MAN
    GROSS:       SIZE INCREASE
                     4X NORMAL
     MICRO+((5)) PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
LYMPH ND, REN
    GROSS:       SIZE INCREASE
                     4-5X NORMAL
     MICRO+  4   PLASMACYTOSIS
LYMPH ND, OTHER
    GROSS:       SIZE INCREASE
                     17X6X4 MM, LEFT
                     3X NORMAL, RIGHT
     MICRO+  5   PLASMACYTOSIS
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY MASS
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     DARK RED, BILATERAL, PERIOCULAR REGION
LUNGS
    GROSS:       NODULE
                     MULTIPLE 1X1 MM, TAN NODULES, ALL LOBES
    MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
             4   CONGESTION
                     NO NODULES OR INFILTRATES NOTED
           ((1)) HEMORRHAGE
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR PROTEINOSIS
            (1)  RENAL CALCULI
           ((1)) MINERALIZATION
           ((1)) TUBULAR BASOPHILIA
CAUSE OF DEATH
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3875A53 (CONTINUED)

MICRO: P ADENOMA, PITUITARY

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	THYROID GL
PARATHYROID GL	SPLEEN	THYMIC REGION
BONE, STERNUM	BONE, FEMUR	SPINAL CORD
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	VAGINA
TRACHEA	URINARY BLADDER	

ANIMAL 3744A54 5-NOV-89 STUDY DAY 593

TYPE OF DEATH: FOUND DEAD

TOTAL BODY
GROSS: UNKEMPT
TOTAL BODY
GROSS: POSTMORTEM CHANGE
LIVER
MICRO: ((3)) FATTY CHANGE
((4)) HEPATOCELLULAR NECROSIS
BOTH LESIONS ARE DIFFUSELY CENTRILOBULAR
PITUITARY
GROSS: SIZE INCREASE
3X NORMAL
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
RED
THYROID GL
MICRO: (P) #B FOLLICULAR CELL ADENOMA
((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
MICRO: ((5)) VASCULAR ECTASIA
(3) CORTICAL CELL VACUOLIZATION
SKIN
GROSS: STAINED
ENTIRE VENTRAL SURFACE, YELLOW-BROWN
MAMMARY GL
MICRO: ((4)) GALACTOCELE
SPLEEN
MICRO: 3 LYMPHOID DEPLETION
LYMPH ND, S-MAN
MICRO: ((3)) PLASMACYTOSIS
LYMPH ND, MES
MICRO: ((1)) HEMOSIDEROSIS
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
MICRO: 4 MYOFIBER ATROPHY
BRAIN
GROSS: DEPRESSION/INDENTATION
OVER PITUITARY
EYE
MICRO: (3) HYPOPYON

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3744A54 (CONTINUED)

```
                                  4   KERATITIS
                                          ONE EYE AFFECTED
                                 (3)  CORNEAL VASCULARIZATION
LUNGS
    GROSS:          NODULE
                            MULTIPLE 1-3MM, TAN, ALL LOBES
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    COLON            RECTUM           PARATHYROID GL
    SKIN             BONE, STERNUM    BONE, FEMUR
    BONE MARROW      BRAIN            SPINAL CORD
    NERVE, SCIATIC   OVARIES          UTERUS
    CERVIX           VAGINA           TRACHEA
    URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    DUODENUM         JEJUNUM          ILEUM
    CECUM
```

ANIMAL 3739A55 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.885	2.268
KIDNEYS	2.522	0.579
HEART	1.329	0.305
SPLEEN	0.639	0.147
BRAIN	2.176	0.499
ADRENAL GL	0.185	0.042
OVARIES	0.111	0.025
TERMINAL BODY WT.	435.9	

```
MESENTARY/OM'TUM
    MICRO:  (4)  STEATITIS
                     MESENTERY ADJACENT TO THE DUODENUM HAS
                     A NODULAR FOCUS
                     OF FIBROTIC GRANULOMATOUS INFLAMMATION.
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((2)) FATTY CHANGE
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
CECUM
    MICRO:   P   NEMATODIASIS
PITUITARY
    MICRO:  (2)  FOCI OF CELL ALTERATION
ADRENAL GL
    GROSS:       CYST
                     6X6X6MM, LEFT, FILLED WITH DARK RED
                     FLUID
     MICRO+  5   INFARCTION
                     UNILATERAL
    MICRO:   5   HEMORRHAGE
MAMMARY GL
    MICRO:   2   HYPERPLASIA
PAWS/FEET
    GROSS:       ULCERATED
                     5X5X3MM, LEFT HIND FOOT
     MICRO+  4   ULCERATION
    MICRO:   3   FIBROSIS
THYMIC REGION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3739A55 (CONTINUED)

MICRO: 3 INVOLUTIONAL ATROPHY
BRAIN
MICRO: ((2)) VACUOLIZATION
CEREBELLUM
LUNGS
MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((2)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	COLON
RECTUM	THYROID GL	PARATHYROID GL
SKIN	SPLEEN	LYMPH ND, S-MAN
LYMPH ND, MES	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	SPINAL CORD
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	VAGINA
TRACHEA	URINARY BLADDER	

ANIMAL 3760A56 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.635	2.115
KIDNEYS	2.708	0.538
HEART	1.761	0.350
SPLEEN	0.385	0.077
BRAIN	1.970	0.392
ADRENAL GL	0.085	0.017
OVARIES	0.113	0.022
TERMINAL BODY WT.	502.9	

STOMACH
GROSS: CONTENTS ABNORMAL
BLACK TARRY SUBSTANCE
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: (2) BASOPHILIC CELL FOCI
(P) #B HEPATOCELLULAR ADENOMA
PANCREAS
GROSS: NODULE
3X3X3MM, PINK AND TAN
MICRO+ (P) #B ISLET CELL ADENOMA
MICRO: ((1)) LYMPHOID INFILTRATES
PITUITARY
GROSS: SIZE INCREASE
SLIGHT
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
BLACK, PINK, TAN
ADRENAL GL
MICRO: ((3)) HEMORRHAGE
((4)) INFARCTION
(4) THROMBOSIS
SKIN
GROSS: ALOPECIA
SLIGHT, VENTRAL REGION
LYMPH ND, MED
GROSS: COLOR CHANGE, DIFFUSE
DARK RED, BILATERAL
MICRO+ 3 SINUS ERYTHROCYTOSIS
LYMPH ND, MES
MICRO: ((2)) HISTIOCYTIC AGGREGATES
(2) SINUS ERYTHROCYTOSIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3760A56 (CONTINUED)

```
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
OVARIES
    GROSS:       CYST
                     LEFT, 2X2X2MM, CLEAR FLUID
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED MOTTLED, DARK RED FOCI, ALL
                     LOBES
     MICRO+((3)) HEMORRHAGE
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR BASOPHILIA
            (1)  RENAL CALCULI
                     RIGHT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           THYROID GL       PARATHYROID GL
    SKIN             MAMMARY GL       SPLEEN
    LYMPH ND, S-MAN  THYMIC REGION    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           TRACHEA          URINARY BLADDER
```

ANIMAL 3850A57 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.833	2.519
KIDNEYS	3.301	0.703
HEART	1.399	0.298
SPLEEN	0.631	0.134
BRAIN	2.107	0.448
ADRENAL GL	0.104	0.022
OVARIES	0.102	0.022
TERMINAL BODY WT.	469.8	

```
HEART
    MICRO: ((3)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) FATTY CHANGE
PITUITARY
    GROSS:       MASS
                     15X10X5MM, RED
     MICRO+  P   #M CARCINOMA
ADRENAL GL
    MICRO:  (P)  #B ADENOMA
           ((3)) VASCULAR ECTASIA
SKIN
    MICRO:  (1)  FOLLICULAR CYST
MAMMARY GL
    GROSS:       MASS
                     20X20X10MM,LEFT AXILLARY
     MICRO+  P   #B FIBROADENOMA
MAMMARY GL
    GROSS:       GALACTOCELE
                     MULTIPLE, ENTIRE VENTRAL SURFACE, 1-5MM
     MICRO+((4)) GALACTOCELE
    MICRO:   2   HYPERSECRETION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3850A57 (CONTINUED)

```
                                    4   MASTITIS
                                            PYOGRANULOMATOUS, DUE TO SECRETORY
                                            LEAKAGE
LYMPH ND, S-MAN
    MICRO:   4   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AREA OVER PITUITARY
    MICRO: ((2)) VACUOLIZATION
                     CEREBELLUM
LUNGS
    MICRO:   4   CONGESTION
            (2)  ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           THYROID GL       PARATHYROID GL
    SPLEEN           LYMPH ND, MES    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           TRACHEA          URINARY BLADDER
```

ANIMAL 3699A58 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.038	2.519
KIDNEYS	3.228	0.737
HEART	1.293	0.295
SPLEEN	0.660	0.151
BRAIN	1.936	0.442
ADRENAL GL	0.136	0.031
OVARIES	0.116	0.026
TERMINAL BODY WT.	438.1	

```
HEART
    MICRO: ((3)) FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((3)) BASOPHILIC CELL FOCI
           ((1)) FATTY CHANGE
           ((1)) BILIARY HYPERPLASIA
PITUITARY
    GROSS:       MASS
                     5X5X5MM, DARK RED
     MICRO+   P   #B ADENOMA
THYROID GL
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
                     RED FOCI SEEN, BOTH
     MICRO+((3)) HEMORRHAGE
    MICRO:  (P)  #B PHEOCHROMOCYTOMA
           ((2)) THROMBOSIS
           ((2)) VASCULAR ECTASIA
           ((3)) CORTICAL CELL VACUOLIZATION
MAMMARY GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3699A58 (CONTINUED)

```
    GROSS:        MASS
                      50X50X50MM, RIGHT UROGENITAL AREA
     MICRO+  P    #B FIBROADENOMA
    MICRO: ((3)) HYPERPLASIA
LYMPH ND, S-MAN
    MICRO:   3   LYMPHOID HYPERPLASIA
            (3)  PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   3   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((2)) SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    MICRO:  (3)  COMPRESSION
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((2)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR PROTEINOSIS
           ((2)) TUBULAR BASOPHILIA
           ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           URINARY BLADDER
```

ANIMAL 3761A59 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.772	2.866
KIDNEYS	3.677	0.978
HEART	1.443	0.384
SPLEEN	0.609	0.162
BRAIN	2.035	0.541
ADRENAL GL	0.176	0.047
OVARIES	0.114	0.030
TERMINAL BODY WT.	375.9	

```
HEART
    MICRO: ((2)) FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED LIGHT AND DARK RED
                     WHITE FOCI BETWEEN MEDIAN LOBES
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
            (1)  FATTY CHANGE
ILEUM
    GROSS:       CONTENTS ABNORMAL
                     CONTAINS YELLOW MUCUS MATERIAL
CECUM
    GROSS:       GASEOUS
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3761A59 (CONTINUED)

```
    GROSS:        MASS
                      12X6X4MM, DARK RED AND TAN FOCI
     MICRO+  P    #M CARCINOMA
THYROID GL
    MICRO:   P    THYROGLOSSAL DUCT CYST
            (P)   #B FOLLICULAR CELL ADENOMA
                      SMALL NODULE
ADRENAL GL
    GROSS:        SIZE INCREASE
                      LEFT, 3X NORMAL
     MICRO+ (5)   INFARCTION
                      MOST OF ONE GLAND IS DESTROYED
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE FOCI DISSEMINATED OVER
                      SURFACE, BILATERAL
                      MULTIPLE DARK RED FOCI, LEFT
     MICRO+  5    HEMORRHAGE
    MICRO: ((5))  VASCULAR ECTASIA
SKIN
    MICRO:  (3)   EPIDERMITIS
                      FOCAL INVOLVING ONE EYELID
EARS
    GROSS:        THICKER THAN NORMAL
                      BILATERAL
     MICRO+((4))  AURICULAR CHONDROPATHY
MAMMARY GL
    GROSS:        GALACTOCELE
                      2X2X1MM TO PUNCTATE, MULTIPLE,
                      THROUGHOUT
     MICRO+  3    HYPERSECRETION
PAWS/FEET
    GROSS:        ULCERATED
                      RIGHT HIND, 10X10X5MM, LEFT HIND,
                      6X6X4MM
     MICRO+ (3)   ULCERATION
    MICRO:  (2)   OSSEUS METAPLASIA
            (3)   FIBROSIS
            (4)   EPIDERMAL HYPERPLASIA
LYMPH ND, S-MAN
    MICRO:   3    PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   3    SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((1))  HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      SUBLUMBAR, BILATERAL, 10X5X3MM
     MICRO+  3    PLASMACYTOSIS
    MICRO:   1    SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   5    INVOLUTIONAL ATROPHY
                      NO THYMUS
SKELETAL MUSCLE
    MICRO:   3    MYOFIBER ATROPHY
BRAIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3761A59 (CONTINUED)

```
                    GROSS:        DEPRESSION/INDENTATION
                                      DUE TO ENLARGED PITUITARY
                     MICRO+  2    COMPRESSION
                    MICRO:   2    HYDROCEPHALUS
                           ((1)) VACUOLIZATION
                                      CEREBELLUM
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
EYE
    GROSS:        CRUST
                                      DARK RED CRUST, RIGHT PERIOCULAR AREA
EYE
    GROSS:        SWOLLEN
                                      RIGHT PERIOCULAR AREA
LUNGS
    GROSS:        SHAPE/CONTOUR CHANGE
                                      MULTIPLE WHITE RAISED AREAS, LEFT LOBE
     MICRO+((3)) PNEUMONITIS, INTERSTITIAL
                                      MOST LESIONS ARE IN ONE LOBE AND MAY BE
                                      DUE TO ASPIRATION
    MICRO: ((3)) ALVEOLAR HISTIOCYTOSIS
           ((1)) PERIVASCULAR INFILTRATE(S)
           ((3)) INTRAALVEOLAR CELLULAR DEBRIS
KIDNEYS
    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR PROTEINOSIS
             3   RENAL CALCULI
                                      RIGHT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA              SALIVARY GL       ESOPHAGUS
    PANCREAS           DUODENUM          JEJUNUM
    ILEUM              CECUM             COLON
    RECTUM             PARATHYROID GL    SPLEEN
    BONE, STERNUM      BONE, FEMUR       BONE MARROW
    NERVE, SCIATIC     EYE               OVARIES
    UTERUS             CERVIX            VAGINA
    TRACHEA            URINARY BLADDER
```

ANIMAL 4000A60 14-JUL-89 STUDY DAY 479

TYPE OF DEATH: SACRIFICED MORIBUND

```
LIVER
    MICRO:  (3)  HEPATOCELLULAR NECROSIS
                                      PROBABLY DUE TO AN INFARCTION
PITUITARY
    GROSS:        SIZE INCREASE
                                      8X8X6MM
     MICRO+  P    #B ADENOMA
                                      VERY LARGE
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                                      DARK RED
THYROID GL
    MICRO: ((P)) THYROGLOSSAL DUCT CYST
ADRENAL GL
    MICRO:  (2)  VASCULAR ECTASIA
SKIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4000A60 (CONTINUED)

```
    GROSS:        STAINED
                      URINE, UROGENITAL AREA
MAMMARY GL
    GROSS:        GALACTOCELE
                      MULTIPLE 3X3X3 TO 15X10X5MM, THROUGHOUT
     MICRO+((3)) GALACTOCELE
    MICRO:  (P)  #B FIBROADENOMA
             3   HYPERSECRETION
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
            (3)  HEMORRHAGE
                      LATERAL VENTRICLE
LUNGS
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    PARATHYROID GL   SKIN             SPLEEN
    LYMPH ND, S-MAN  BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SPINAL CORD      NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           VAGINA           TRACHEA
    KIDNEYS          URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3668B01 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.931	2.345
KIDNEYS	2.524	0.541
HEART	1.288	0.276
SPLEEN	0.538	0.115
BRAIN	1.945	0.417
ADRENAL GL	0.077	0.017
OVARIES	0.065	0.014
TERMINAL BODY WT.	466.2	

LIVER
MICRO: ((1)) BILIARY HYPERPLASIA
((3)) BASOPHILIC CELL FOCI
((1)) MONONUCLEAR CELL INFILTRATE(S)
(1) CHOLANGIOFIBROSIS
PANCREAS
GROSS: NODULE
5X5X5MM DARK TAN
MICRO+ P #B ISLET CELL ADENOMA
PITUITARY
GROSS: SIZE INCREASE
2X NORMAL
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
3X3MM DARK RED FOCAL AREA, RIGHT SIDE
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BLACK 1MM FOCAL AREAS SCATTERED ON SURFACE,
MULTIPLE, BILATERAL
MICRO+((3)) VASCULAR ECTASIA
MICRO: ((2)) THROMBOSIS
VAGINA
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
3X4MM CREAM FOCAL AREA
MICRO+ (3) VAGINITIS
A HISTIOCYTIC INFILATRATE IS PRESENT IN THE MUSCLE WALL
AT ONE SITE.
KIDNEYS
MICRO: ((1)) NEPHRITIS, INTERSTITIAL
(1) MINERALIZATION
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LUNGS

ANIMAL 3783B02 22-JAN-90 STUDY DAY 671
TYPE OF DEATH: SACRIFICED MORIBUND

LIVER
MICRO: ((1)) BILIARY HYPERPLASIA
PITUITARY
GROSS: SIZE INCREASE
7X7X7MM, RED
MICRO+ P #B ADENOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BOTH, DARK FOCI SEEN
SKIN
GROSS: STAINED
BOTH, PERIOCULAR
BRAIN
GROSS: DEPRESSION/INDENTATION

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3783B02 (CONTINUED)

```
                                        AROUND PITUITARY
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
             3   CONGESTION
           ((1)) PNEUMONITIS, INTERSTITIAL
                     TWO SMALL FOCI
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((3)) NEPHRITIS, INTERSTITIAL
                     RENAL PELVIC AREAS
             4   TRANSITIONAL CELL HYPERPLASIA
                     BILATERAL
           ((1)) RENAL CALCULI
           ((3)) TUBULAR BASOPHILIA
             2   PYELITIS
                     RIGHT
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    ADRENAL GL       SKIN              BRAIN
```

ANIMAL 3816B03 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.919	2.517
KIDNEYS	2.647	0.747
HEART	1.237	0.349
SPLEEN	0.433	0.122
BRAIN	2.013	0.568
ADRENAL GL	0.158	0.045
OVARIES	0.136	0.038
TERMINAL BODY WT.	354.3	

```
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE DARK RED FOCAL AREAS, ABOUT
                     1MM, ALL
                     LOBES
PITUITARY
    GROSS:       MASS
                     8X5X3MM, RED
     MICRO+  P   #B ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE DARK RED FOCI, BILATERAL
     MICRO+((4)) VASCULAR ECTASIA
    MICRO: ((4)) HEMORRHAGE
             (1)  CORTICAL CELL VACUOLIZATION
MAMMARY GL
    GROSS:       GALACTOCELE
                     MULTIPLE 1-5MM, VENTRAL SURFACE
     MICRO+ (3)  GALACTOCELE
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     SLIGHT, AREA OVER PITUITARY
    MICRO:   2   HYDROCEPHALUS
             (2)  HEMORRHAGE
                     LATERAL VENTRICLES
LUNGS
    MICRO:  (1)  GRANULOMA
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3920B04 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.112	2.952
KIDNEYS	3.198	0.850
HEART	1.254	0.333
SPLEEN	0.516	0.137
BRAIN	1.985	0.527
ADRENAL GL	0.127	0.034
OVARIES	0.115	0.031
TERMINAL BODY WT.	376.4	

ADIPOSE TISSUE
GROSS: ADHESION
TO CECUM
LIVER
GROSS: SWOLLEN
MILD, ALL LOBES
PITUITARY
GROSS: SIZE INCREASE
2.5X NORMAL
MICRO+ P #B ADENOMA
THYROID GL
MICRO: (P) #B C CELL ADENOMA
THIS IS THE LESION REPORTED GROSSLY AS PARATHYROID
PARATHYROID GL
GROSS: SIZE INCREASE
2X NORMAL, LEFT
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE BROWN FOCI, BILATERAL
MICRO+((4)) VASCULAR ECTASIA
ADRENAL GL
GROSS: SIZE INCREASE
SLIGHT, BILATERAL
MICRO: ((4)) THROMBOSIS
((2)) FIBROSIS
((1)) HEMOSIDEROSIS
((3)) CORTICAL CELL VACUOLIZATION
((3)) HEMORRHAGE
MAMMARY GL
GROSS: MASS
60X50X45MM, TAN, MULTILOBULAR, LEFT AXILLARY AREA
MICRO+ P #B FIBROADENOMA
MICRO: ((4)) GALACTOCELE
ASSOCIATED WITH THE TUMOR
LYMPH ND, PANC
GROSS: COLOR CHANGE, DIFFUSE
RED
CERVIX
GROSS: SIZE INCREASE
3X NORMAL
KIDNEYS
GROSS: HYDRONEPHROSIS
MINIMAL, BILATERAL
MICRO: ((2)) TUBULAR PROTEINOSIS
((3)) TUBULAR BASOPHILIA
((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER CECUM LYMPH ND, PANC
CERVIX LUNGS
THE FOLLOWING TISSUES WERE MISSING:
ADIPOSE TISSUE PARATHYROID GL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3951B05 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.850	2.095
KIDNEYS	2.511	0.594
HEART	1.279	0.303
SPLEEN	0.450	0.107
BRAIN	1.965	0.465
ADRENAL GL	0.078	0.018
OVARIES	0.102	0.024
TERMINAL BODY WT.	422.4	

LIVER
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
(1) CHOLANGITIS
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
2X2MM DARK RED FOCUS
MICRO+ P #B ADENOMA
MICRO: (3) FOCI OF CELL ALTERATION
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE BROWN FOCI, BILATERAL
MICRO+((4)) VASCULAR ECTASIA
ADRENAL GL
GROSS: SIZE INCREASE
2X NORMAL, LEFT
MICRO+ (3) INFARCTION
MICRO: ((3)) THROMBOSIS
(2) FIBROSIS
((1)) HEMOSIDEROSIS
SPLEEN
GROSS: SIZE DECREASE
1/4 OF NORMAL
LUNGS
MICRO: (1) PERIVASCULAR INFILTRATE(S)
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
SPLEEN KIDNEYS

ANIMAL 3749B06 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	13.778	3.415
KIDNEYS	2.583	0.640
HEART	1.256	0.311
SPLEEN	0.621	0.154
BRAIN	1.827	0.453
ADRENAL GL	0.164	0.041
OVARIES	0.082	0.020
TERMINAL BODY WT.	403.4	

PITUITARY
GROSS: SIZE INCREASE
2.5X NORMAL
MICRO+ (4) VASCULAR ECTASIA
A LARGE HEMORRHAGIC SINUS IS PRESENT
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
TAN AND DARK RED
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE TAN AND BROWN FOCI, BILATERAL
MICRO+ (1) CORTICAL CELL HYPERTROPHY
ADRENAL GL
GROSS: SIZE INCREASE
LEFT, 1.5X NORMAL, RIGHT, 0.5X NORMAL
MICRO+ (4) INFARCTION
MICRO: ((4)) VASCULAR ECTASIA
((1)) FIBROSIS
(4) HEMORRHAGE
SKIN
GROSS: ALOPECIA
MULTIPLE PARTIAL AREAS
MAMMARY GL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3749B06 (CONTINUED)

```
                                    GROSS:        MASS
                                                      65X75X40MM, TAN, MULTILOBULAR, RIGHT
                                                      AXILLARY AREA
                                                      30X30X20MM, TAN, MULTILOBULAR, RIGHT
                                                      THORACIC AREA
                                                      20X10X6MM, TAN, MULTILOBULAR, LEFT
                                                      INGUINAL AREA
                                     MICRO+((P)) #B FIBROADENOMA
                                                      ALL MASSES ARE SIMILIAR
                                KIDNEYS
                                    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
                                           ((1)) RENAL CALCULI
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    LIVER             SKIN              LUNGS
```

ANIMAL 3867B07 3-APR-89 STUDY DAY 377

TYPE OF DEATH: SACRIFICED MORIBUND

```
                                LIVER
                                    GROSS:        SWOLLEN
                                                      ALL LOBES
                                    MICRO: ((1)) EXTRAMEDULLARY HEMATOPOIESIS
                                PITUITARY
                                    GROSS:        SIZE INCREASE
                                                      2X NORMAL
                                     MICRO+  P    #B ADENOMA
                                ADRENAL GL
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      MULTIPLE TAN FOCI, BILATERAL
                                    MICRO:  (P)   #B ADENOMA
                                           ((1)) EXTRAMEDULLARY HEMATOPOIESIS
                                SKIN
                                    GROSS:        ALOPECIA
                                                      PARTIAL, VENTRAL SURFACE
                                MAMMARY GL
                                    GROSS:        MASS
                                                      60X55X30MM, TAN, NECROTIC; LEFT
                                                      AXILLARY AREA
                                                      25X20X10MM, TAN, RIGHT INGUINAL AREA
                                     MICRO+  P    #M ADENOCARCINOMA
                                MAMMARY GL
                                    GROSS:        GALACTOCELE
                                                      MULTIPLE 2X2X2 TO 5X4X3MM
                                     MICRO+((4)) GALACTOCELE
                                    MICRO:   P    #B FIBROADENOMA
                                SPLEEN
                                    GROSS:        SIZE INCREASE
                                                      55X15X10MM
                                     MICRO+  4    EXTRAMEDULLARY HEMATOPOIESIS
                                LYMPH ND, OTHER
                                    GROSS:        SIZE INCREASE
                                                      AXILLARY LYMPH NODES, 8X5X3MM, BILATERAL
                                     MICRO+  5    PLASMACYTOSIS
                                                      AXILLARY NODE
                                KIDNEYS
                                    MICRO: ((2)) RENAL CALCULI
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3867B07 (CONTINUED)

BILATERAL
(1) MINERALIZATION
((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
MICRO: P ADENOCARCINOMA, MAMMARY GLAND
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
SKIN LUNGS

ANIMAL 3698B08 11-FEB-90 STUDY DAY 691
TYPE OF DEATH: SACRIFICED MORIBUND

TOTAL BODY
GROSS: EMACIATION
LIVER
GROSS: SWOLLEN
MICRO: ((3)) FATTY CHANGE
JEJUNUM
GROSS: POSTMORTEM CHANGE
ILEUM
GROSS: POSTMORTEM CHANGE
PITUITARY
GROSS: SIZE INCREASE
10X6X6MM
MICRO+ P #M CARCINOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE TAN AND BROWN FOCI, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
GROSS: SIZE INCREASE
0.5X NORMAL, RIGHT
MICRO+ (4) INFARCTION
MICRO: (3) FIBROSIS
SKIN
GROSS: STAINED
URINE, UROGENITAL AREA
MAMMARY GL
GROSS: MASS
20X10X8MM, TAN; LEFT AXILLARY AREA
MICRO+ (5) GALACTOCELE
LYMPH ND, S-MAN
GROSS: COLOR CHANGE, DIFFUSE
RED
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MES
GROSS: POSTMORTEM CHANGE
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO ENLARGED PITUITARY
MICRO+ 4 COMPRESSION
EYE
GROSS: CRUST
RED, PERIOCULAR AREA, BILATERAL
VAGINA

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3698808 (CONTINUED)

GROSS: CONTENTS ABNORMAL
CONTAINS THICK GREEN MATERIAL
MICRO+ 2 VAGINITIS
LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
ALL LOBES MOTTLED LIGHT AND DARK PINK
MICRO+ 4 CONGESTION
MICRO: (1) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) RENAL CALCULI
CAUSE OF DEATH
MICRO: P CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
SKIN EYE

ANIMAL 3809809 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.123	2.720
KIDNEYS	2.602	0.776
HEART	1.541	0.459
SPLEEN	0.713	0.213
BRAIN	1.976	0.589
ADRENAL GL	0.070	0.021
OVARIES	0.249	0.074
TERMINAL BODY WT.	335.5	

LIVER
MICRO: ((1)) BILIARY HYPERPLASIA
((1)) CHOLANGIOFIBROSIS
((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED FOCAL AREA SEEN
MICRO+ (P) #B ADENOMA
MICRO: ((2)) HEMOSIDEROSIS
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
GROSS: SIZE INCREASE
LEFT, SLIGHT
MICRO: (4) VASCULAR ECTASIA
((3)) HEMORRHAGE
OVARIES
GROSS: CYST
LEFT, 3X3X3MM
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LUNGS KIDNEYS

ANIMAL 3721810 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.782	2.183
KIDNEYS	2.898	0.587
HEART	1.463	0.296
SPLEEN	0.832	0.168
BRAIN	2.186	0.443
ADRENAL GL	0.128	0.026
OVARIES	0.140	0.028
TERMINAL BODY WT.	493.8	

STOMACH
GROSS: ULCERATED
GLANDULAR AREA, 2X2X1MM
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
LEFT LATERAL, DARK RED FOCI
WHITE FOCI BETWEEN MEDIAN LOBES
MICRO+((1)) FATTY CHANGE
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3721810 (CONTINUED)

```
PANCREAS
    MICRO:    P   #B ISLET CELL ADENOMA
                      MISTAKEN FOR A NODE
PITUITARY
    GROSS:        SIZE INCREASE
                      1 1/2X NORMAL
     MICRO+   P   #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      DARK RED AND TAN FOCI
     MICRO+ (4)   VASCULAR ECTASIA
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE FOCI DISSEMINATED OVER
                      SURFACE, BILATERAL
                      MULTIPLE DARK RED FOCI, BILATERAL
     MICRO+((2)) CORTICAL CELL HYPERTROPHY
    MICRO:  (4)   INFARCTION
            (4)   VASCULAR ECTASIA
MAMMARY GL
    GROSS:        MASS
                      25X25X10MM, LEFT INGUINAL AREA, CREAM,
                      FIRM, MULTILOBULAR
     MICRO+   P   #B FIBROADENOMA
PAWS/FEET
    GROSS:        ULCERATED
                      RIGHT HIND PAW, 10X10X8MM
     MICRO+   4   ULCERATION
    MICRO:    4   FIBROSIS
            ((3)) EPIDERMAL HYPERPLASIA
SPLEEN
    GROSS:        SIZE INCREASE
                      SLIGHT
LYMPH ND, PANC
    GROSS:        NODULE
                      6X5X2MM
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      RIGHT POPLITEAL, 8X7X4MM
                      RIGHT SUBLUMBAR, 10X5X2MM
     MICRO+   3   PLASMACYTOSIS
                      POPLITEAL NODE
LYMPH ND, OTHER
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED, RIGHT SUBLUMBAR
    MICRO:  (2)   LYMPHATIC ECTASIA, CYSTIC
                      LUMBAR NODE
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    GROSS:        CONTENTS ABNORMAL
                      RIGHT, WHITE CREAM-LIKE SUBSTANCE,
                      SMALL AMOUNT
     MICRO+((2)) RENAL CALCULI
                      BILATERAL
    MICRO:  (2)   HYDRONEPHROSIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3721B10 (CONTINUED)

RIGHT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
SPLEEN
THE FOLLOWING TISSUES WERE MISSING:
LYMPH ND, PANC

ANIMAL 3751B11 2-MAR-90 STUDY DAY 710
TYPE OF DEATH: SACRIFICED MORIBUND

ADIPOSE TISSUE
GROSS: NODULE
DARK RED, 2-4MM ATTACHED TO STOMACH AREA
MICRO+((P)) #B HEMANGIOMA
THIS LESION MAY HAVE ORIGINATED IN A LYMPH NODE, BUT IT IS NOT IDENTIFIABLE.

PERITONEAL CAV
GROSS: CONTENTS ABNORMAL
FILLED WITH DARK RED FLUID

STOMACH
MICRO: ((1)) GLAND ECTASIA
(P) KERATIN CYST

LIVER
GROSS: MASS
LEFT MEDIAN, 20X15X10MM, DARK RED
MICRO+ P #M HEPATOCELLULAR CARCINOMA
MOST OF THE MASS IS NECROTIC AND HEMORRHAGIC
MICRO: ((2)) FATTY CHANGE

ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BOTH, WHITE FOCI SEEN
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: ((4)) VASCULAR ECTASIA
(3) INFARCTION
(3) CORTICAL CELL HYPERPLASIA, NODULAR

SKIN
GROSS: ULCERATED
BOTH HIND FEET
MICRO+ (4) ULCERATION
SEE PAWS FEET ENTRY

PAWS/FEET
MICRO: (4) ULCERATION
(4) FIBROSIS

EYE
GROSS: CRUST
BOTH

LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED FOCAL AREAS SEEN ON ALL LOBES
MICRO+((4)) HEMORRHAGE
MICRO: ((3)) #M CARCINOMA
MULTIPLE METASTATIC ODULES FROM THE LIVER
5 CONGESTION
THE TISSUE IS BADLY AUTOLYSED

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3751B11 (CONTINUED)

KIDNEYS
MICRO: ((1)) RENAL CALCULI
RIGHT

CAUSE OF DEATH
MICRO: P CARCINOMA, LIVER
THE MASS BECAME NECROTIC AND HEMORRHAGED

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
EYE

ANIMAL 3927B12 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.302	2.628
KIDNEYS	3.407	0.792
HEART	1.477	0.343
SPLEEN	0.695	0.162
BRAIN	1.892	0.440
ADRENAL GL	0.080	0.019
OVARIES	0.124	0.029
TERMINAL BODY WT.	430.0	

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
CREAM 2MM FOCAL AREA, RIGHT MEDIAN NEAR HILUS
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
((2)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
((1)) BILIARY HYPERPLASIA
((1)) CHOLANGIOFIBROSIS

PITUITARY
GROSS: MASS
DARK RED 10X5X5MM
MICRO↑ P #B ADENOMA

MAMMARY GL
GROSS: GALACTOCELE
SCATTERED THROUGHT PUNCTATE TO 6X5X6MM
MICRO↑ P #B FIBROADENOMA
SMALL NODULE

LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
ALL LOBES MOTTLED LIGHT AND DARK RED
MICRO↑ 4 CONGESTION

KIDNEYS
MICRO: ((2)) RENAL CALCULI

ANIMAL 3964B13 3-MAY-89 STUDY DAY 407

TYPE OF DEATH: SACRIFICED MORIBUND

PITUITARY
GROSS: SIZE INCREASE
3X NORMAL
MICRO↑ P #B ADENOMA

PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
TAN AND DARK RED

EARS
GROSS: THICKER THAN NORMAL
BILATERAL
MICRO↑((4)) AURICULAR CHONDROPATHY
BILATERAL

MAMMARY GL
GROSS: MASS
50X50X20MM, TAN, MULTILOBULAR; EXTENDS FROM LEFT HIND LEG TO RECTUM

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3964B13 (CONTINUED)

MICRO+ P #B FIBROADENOMA
LUNGS
MICRO: (1) INTERSTITIAL FIBROSIS
KIDNEYS
MICRO: ((1)) NEPHRITIS, INTERSTITIAL
((1)) RENAL CALCULI
CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER

ANIMAL 3983B14 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.921	3.636
KIDNEYS	2.319	0.565
HEART	1.315	0.320
SPLEEN	0.414	0.101
BRAIN	2.041	0.497
ADRENAL GL	0.123	0.030
OVARIES	0.133	0.032
TERMINAL BODY WT.	410.3	

STOMACH
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE DARK RED FOCAL AREAS
MICRO+((3)) EDEMA
NONGLANDULAR STOMACH
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
3X2MM TAN FOCUS, RIGHT MEDIAN LOBE
PITUITARY
GROSS: SIZE INCREASE
4X3X3MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
TAN AND DARK RED
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE BROWN FOCAL AREAS, BILATERAL
MICRO+ (4) HEMORRHAGE
MICRO: (3) VASCULAR ECTASIA
MAMMARY GL
GROSS: MASS
80X80X40MM, TAN, MULTILOBULAR,
NECROTIC, LEFT INGUINAL AREA
MICRO+ P #B FIBROADENOMA
SPLEEN
GROSS: SIZE DECREASE
1/2 OF NORMAL
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO ENLARGED TO PITUITARY
MICRO+ (3) COMPRESSION
MICRO: (3) HEMORRHAGE
(2) HEMOSIDEROSIS
CERVIX
GROSS: SIZE INCREASE
2X NORMAL
KIDNEYS
MICRO: (1) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER SPLEEN CERVIX
VAGINA LUNGS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3676B15 26-JAN-90 STUDY DAY 675
TYPE OF DEATH: SAC DUE TO ENLARGED MASS

```
LIVER
    MICRO:  (3)  EOSINOPHILIC CELL FOCI
PITUITARY
    GROSS:       SIZE INCREASE
                     2X NORMAL, APPEARS CYSTIC, BUT IT IS
                     NOT FLUID FILLED
     MICRO+((2)) FOCI OF CELL ALTERATION
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     TAN FOCI, BILATERAL
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO:  (2)  CORTICAL CELL VACUOLIZATION
            (4)  INFARCTION
MAMMARY GL
    GROSS:       MASS
                     150X80X50 MM, LEFT INGUINAL REGION
                     MULTILOBULAR, FIRM, GREY-RED-TAN
     MICRO+  P   #B FIBROADENOMA
UTERUS
    GROSS:       MASS
                     30X10X7 MM, ORANGE JELLY-LIKE
                     RIGHT HORN
     MICRO+  P   #B STROMAL POLYP
                     ONLY THE MASS, NO UTERINE TISSUE IS
                     PRESENT
LUNGS
    MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
            (1)  PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
                     LEFT
           ((2)) CYST(S)
                     LEFT
CAUSE OF DEATH
    MICRO:   P   NOT DETERMINED
```

ANIMAL 3906B16 18-JUL-89 STUDY DAY 483
TYPE OF DEATH: SACRIFICED MORIBUND

```
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     3X2MM DARK RED FOCUS, RIGHT MEDIAN LOBE
    MICRO:  (1)  MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    GROSS:       SIZE INCREASE
                     7X7X5MM
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK BROWN
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE TAN AND BROWN FOCI, BILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3906B16 (CONTINUED)

```
                    MICRO+  4   HEMORRHAGE
                   MICRO: ((4)) VASCULAR ECTASIA
SKIN
    GROSS:         STAINED
                       UROGENITAL AREA, URINE
MAMMARY GL
    GROSS:         MASS
                       15X10X5MM, LEFT INGUINAL AREA, TAN, FIRM
                    MICRO+  P   #B FIBROADENOMA
BRAIN
    GROSS:         DEPRESSION/INDENTATION
                       DUE TO ENLARGED PITUITARY
EYE
    GROSS:         CRUST
                       DARK RED PERIOCULAR AREA, LEFT
LUNGS
    MICRO:   4     CONGESTION
KIDNEYS
    MICRO: ((3)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P     ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SKIN               BRAIN              EYE
```

ANIMAL 3990B17 6-SEP-89 STUDY DAY 533

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:         EMACIATION
TOTAL BODY
    GROSS:         UNKEMPT
LIVER
    GROSS:         COLOR CHANGE, DIFFUSE
                       ALL LOBES PALE YELLOW
ADRENAL GL
    GROSS:         COLOR CHANGE, FOCAL/MULTIFOCAL
                       3X3MM DARK RED FOCUS, LEFT
                    MICRO+  3   HEMORRHAGE
                   MICRO: ((3)) HEMOSIDEROSIS
EYE
    GROSS:         EXOPHTHALMIA
                       BILATERAL
UTERUS
    GROSS:         COLOR CHANGE, FOCAL/MULTIFOCAL
                       15X2MM AREA, RED, LEFT UTERINE HORN
LUNGS
    GROSS:         COLOR CHANGE, FOCAL/MULTIFOCAL
                       SPIDER WEB BLACK LINES THROUGH ALL LOBES
                    MICRO+  3   CONGESTION
KIDNEYS
    GROSS:         HYDRONEPHROSIS
                       MODERATE, BILATERAL
                    MICRO+  3   HYDRONEPHROSIS
                       BILATERAL
CAUSE OF DEATH
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3990B17 (CONTINUED)

MICRO: P NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER EYE UTERUS

ANIMAL 3806B18 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.569	2.480
KIDNEYS	2.408	0.697
HEART	1.220	0.353
SPLEEN	0.580	0.168
BRAIN	1.984	0.574
ADRENAL GL	0.129	0.037
OVARIES	0.067	0.019
TERMINAL BODY WT.	345.6	

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
3X2MM TAN FOCUS, BETWEEN MEDIAN LOBES
MICRO: ((1)) BILIARY HYPERPLASIA
((1)) CHOLANGITIS
PITUITARY
GROSS: SIZE INCREASE
2.5X NORMAL
PITUITARY
GROSS: NODULE
2X2X2MM, TAN
MICRO+ P #B ADENOMA
THYROID GL
GROSS: SIZE INCREASE
2X NORMAL
MICRO+ P #B C CELL ADENOMA
PARATHYROID GL
GROSS: SIZE INCREASE
2X NORMAL, RIGHT
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
LEFT MOTTLED TAN AND DARK RED
RIGHT, MULTIPLE WHITE FOCI DISSEMINATED
OVER SURFACE
MICRO+ (4) HEMORRHAGE
ADRENAL GL
GROSS: SIZE INCREASE
3.5X NORMAL, LEFT
MICRO+ (4) INFARCTION
MICRO: P #B PHEOCHROMOCYTOMA
((4)) VASCULAR ECTASIA
EARS
GROSS: THICKER THAN NORMAL
BILATERAL
MICRO+((4)) AURICULAR CHONDROPATHY
CHRONIC ACTIVE INFLAMMATION
EARS
GROSS: COLOR CHANGE, DIFFUSE
RED, BILATERAL
LUNGS
GROSS: NODULE
LEFT LOBE AND RIGHT DIAPHRAGMATIC LOBE;
1X2 TO 2X3MM;
WHITE, AT SURFACE
MICRO+((3)) ALVEOLAR HISTIOCYTOSIS
KIDNEYS
MICRO: ((1)) RENAL CALCULI
((3)) NEPHRITIS, INTERSTITIAL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3806B18 (CONTINUED)

LYMPHOPLASMACYTIC INFILTRATES IN THE
PELVIC REGION,
BILATERAL

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
PARATHYROID GL

ANIMAL 3903B19 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.641	2.400
KIDNEYS	2.322	0.729
HEART	1.193	0.375
SPLEEN	0.506	0.159
BRAIN	1.941	0.610
ADRENAL GL	0.074	0.023
OVARIES	0.155	0.049
TERMINAL BODY WT.	318.3	

LIVER
MICRO: ((2)) CHOLANGIOFIBROSIS
((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
GROSS: MASS
5X5X5MM, DARK RED
MICRO+ P #M CARCINOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER
SURFACE, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: ((4)) VASCULAR ECTASIA
((3)) HEMORRHAGE
BRAIN
GROSS: DEPRESSION/INDENTATION
AROUND PITUITARY
MICRO+ 3 COMPRESSION
MICRO: ((P)) #M CARCINOMA
METASTATIC FROM THE PITUITARY
2 HYDROCEPHALUS
((3)) HEMORRHAGE
((3)) HEMOSIDEROSIS
OVARIES
GROSS: CYST
LEFT, 5X5X5MM
LUNGS
MICRO: (1) PNEUMONITIS, INTERSTITIAL
KIDNEYS
MICRO: ((2)) RENAL CALCULI
((3)) PAPILLARY HYPERPLASIA
LEFT IS WORSE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
OVARIES

ANIMAL 4001B20 12-JAN-90 STUDY DAY 661
TYPE OF DEATH: SAC DUE TO ENLARGED MASS

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
2X2 MM, DARK RED FOCAL AREA, LEFT
LATERAL LOBE
LIVER
GROSS: SWOLLEN
SLIGHT, ALL LOBES
PITUITARY
GROSS: MASS
7X7X4 MM, DARK RED

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 4001B20 (CONTINUED)

```
     MICRO+  P   #B ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     RED AND TAN, BILATERAL
     MICRO+ (4)  INFARCTION
    MICRO:  (2)  FIBROSIS
           ((1)) HEMOSIDEROSIS
MAMMARY GL
    GROSS:       MASS
                     120X120X60 MM, VENTRAL SURFACE, RIGHT
                     INGUINAL REGION
                     MULTILOBULAR
     MICRO+  P   #B FIBROADENOMA
MAMMARY GL
    GROSS:       GALACTOCELE
                     MULTIPLE, CERVICAL AND INGUINAL REGION,
                     1X1 MM TO 4X4 MM
     MICRO+((4)) GALACTOCELE
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY MASS
     MICRO+  3   COMPRESSION
    MICRO: ((1)) VACUOLIZATION
                     CEREBELLUM
OVARIES
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     YELLOW AREAS, BILATERAL
     MICRO+  3   STROMAL CELL HYPERPLASIA
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
            (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     MILD, YELLOW FLOCULENT FLUID, BILATERAL
     MICRO+((2)) HYDRONEPHROSIS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LIVER
```

ANIMAL 3846B21 21-NOV-89 STUDY DAY 609

TYPE OF DEATH: FOUND DEAD

```
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     3X3MM PINK FOCAL AREA LEFT MEDIAN LOBE
     MICRO+  4   #M LEUKEMIA, UNCLASSIFIED
    MICRO: ((2)) HEPATOCELLULAR NECROSIS
            (P)  #B HEPATOCELLULAR ADENOMA
                     SMALL NODULE
           ((2)) BILIARY HYPERPLASIA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     1MM CREAM FOCAL AREAS SCATTERED ON
                     SURFACE, BILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3846B21 (CONTINUED)

```
                    MICRO: ((4)) VASCULAR ECTASIA
NARES/NOSE
    GROSS:          CRUST
                        RED PERINASAL REGION
MAMMARY GL
    GROSS:          MASS
                        RIGHT CERVICAL REGION 60X50X15MM, CREAM
                        MULTILOBULAR AND SOFT
     MICRO+   P     #B FIBROADENOMA
SPLEEN
    GROSS:          SIZE INCREASE
                        70X10X20MM
     MICRO+   5     #M LEUKEMIA, UNCLASSIFIED
BRAIN
    GROSS:          MASS
                        4X3X2MM DARK RED, VENTRAL SURFACE ABOVE
                        PITUITARY
     MICRO+ (P)     #M LEUKEMIA, UNCLASSIFIED
                        THERE ARE TWO SPACE OCCUPYING VASCULAR
                        LESIONS IN THE
                        BRAIN, ONE IN THE MIDBRAIN AND ONE IN
                        THE CEREBELLUM.
                        THE TISSUE IS TOO AUTOLYSED TO IDENTIFY
                        THE LEUKEMIC
                        CELL TYPE
BRAIN
    GROSS:          HEMORRHAGE
                        POSTERIOR MENGINEAL FOSSA
     MICRO+((4))    HEMORRHAGE
OVARIES
    GROSS:          POSTMORTEM CHANGE
UTERUS
    GROSS:          POSTMORTEM CHANGE
LUNGS
    GROSS:          COLOR CHANGE, DIFFUSE
                        ALL LOBES DARK RED
     MICRO+   5     CONGESTION
LUNGS
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                        2MM DARK RED FOCAL AREAS MULTIPLE
                        SCATTERED ON ALL LOBES
     MICRO+((3))    HEMORRHAGE
    MICRO: ((1))    PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((1))    RENAL CALCULI
CAUSE OF DEATH
    MICRO:    P     LEUKEMIA, UNCLASSIFIED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    NARES/NOSE      NASAL CAVITY
```

ANIMAL 3908B22 27-FEB-90 STUDY DAY 707

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:          EMACIATION
STOMACH
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3908B22 (CONTINUED)

```
    GROSS:        THICKER THAN NORMAL
                      BOTH GLANDULAR AND NONGLANDULAR, 2X
                      NORMAL
     MICRO+((4)) MUCOSAL HYPERPLASIA
    MICRO: ((2)) EDEMA
                      NONGLANDULAR STOMACH
LIVER
    MICRO:  (2)  HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PANCREAS
    GROSS:        NODULE
                      3X3X2MM CREAM
     MICRO+  P   #B ISLET CELL ADENOMA
ILEUM
    GROSS:        NODULE
                      3X3X2MM ATTACHED TO LINING WITH A THIN
                      STRAND OF TISSUE
PITUITARY
    GROSS:        MASS
                      DARK RED, MULTILOBULAR, 10X10X5MM
     MICRO+  P   #M CARCINOMA
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      BILATERAL, 1MM CREAM FOCAL AREAS,
                      SCATTERED ON SURFACE
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO: ((5)) VASCULAR ECTASIA
            (4)  INFARCTION
SKIN
    GROSS:        ALOPECIA
                      RIGHT, ABDOMINAL REGION
EARS
    GROSS:        THICKER THAN NORMAL
                      BILATERAL
     MICRO+  4   AURICULAR CHONDROPATHY
MAMMARY GL
    GROSS:        GALACTOCELE
                      ENTIRE AREA, PUNCTATE TO 3MM
     MICRO+((4)) GALACTOCELE
    MICRO: ((2)) MINERALIZATION
           ((3)) MASTITIS
             4   HYPERPLASIA
LYMPH ND, MES
    GROSS:        SIZE INCREASE
                      2X NORMAL
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      ABOVE PITUITARY MASS
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
LUNGS
    MICRO:   4   CONGESTION
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((2)) RENAL CALCULI
                      RIGHT
CAUSE OF DEATH
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3908B22 (CONTINUED)

```
                                    MICRO:   P   CARCINOMA, PITUITARY
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    ILEUM            SKIN             LYMPH ND, MES
```

ANIMAL 3691B23 8-MAR-90 STUDY DAY 716

TYPE OF DEATH: SAC DUE TO ULCERATED MASS

```
                                LIVER
                                    MICRO: ((1)) EXTRAMEDULLARY HEMATOPOIESIS
                                COLON
                                    GROSS:       PARASITE
                                                     PINWORMS
                                PITUITARY
                                    GROSS:       SIZE INCREASE
                                                     5X5X5MM
                                     MICRO+  P   #B ADENOMA
                                PITUITARY
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     TAN AND DARK BROWN
                                     MICRO+((3)) HEMORRHAGE
                                    MICRO: ((3)) HEMOSIDEROSIS
                                ADRENAL GL
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     MULTIPLE BROWN FOCI, LEFT
                                ADRENAL GL
                                    GROSS:       SIZE INCREASE
                                                     2X NORMAL, RIGHT
                                MAMMARY GL
                                    GROSS:       MASS
                                                     70X80X30MM, CONTAINS THICK TAN
                                                     MATERIAL, NECROTIC;
                                                     RIGHT INGUINAL AREA
                                                     20X15X10MM, TAN; MULTILOBULAR, LEFT
                                                     INGUINAL AREA
                                     MICRO+  P   #B FIBROADENOMA
                                    MICRO: ((4)) GALACTOCELE
                                           ((4)) MASTITIS
                                SPLEEN
                                    GROSS:       SIZE INCREASE
                                                     2.5X NORMAL
                                     MICRO+  4   EXTRAMEDULLARY HEMATOPOIESIS
                                BRAIN
                                    GROSS:       DEPRESSION/INDENTATION
                                                     DUE TO ENLARGED PITUITARY
                                     MICRO+ (3)  COMPRESSION
                                    MICRO:   2   HYDROCEPHALUS
                                LUNGS
                                    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
                                KIDNEYS
                                    GROSS:       NODULE
                                                     1X1X3MM, CREAM; ON CORTEX; LEFT
                                    MICRO: ((1)) RENAL CALCULI
                                           ((1)) NEPHRITIS, INTERSTITIAL
                                CAUSE OF DEATH
                                    MICRO:   P   ADENOMA, PITUITARY
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    COLON
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3896B24 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.019	3.820
KIDNEYS	3.553	1.232
HEART	1.258	0.436
SPLEEN	0.750	0.260
BRAIN	1.961	0.680
ADRENAL GL	0.123	0.043
OVARIES	0.118	0.041
TERMINAL BODY WT.	288.5	

```
LIVER
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
           ((2)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY
    GROSS:       MASS
                     5X7X2MM DARK RED, ANTERIOR PORTION
     MICRO+  P   #B ADENOMA
MAMMARY GL
    GROSS:       MASS
                     UROGENTIAL REGION, 50X30X20MM BLACK AND
                     CREAM, MULTILOBULAR
                     CERVICAL REGION, 30X20X10MM, BLACK AND
                     CREAM ,MULTILOBULAR
     MICRO+  P   #M ADENOCARCINOMA
MAMMARY GL
    GROSS:       GALACTOCELE
                     PUNCTATE, SCATTERED THROUGHOUT
     MICRO+((3)) GALACTOCELE
LYMPH ND, S-MAN
    GROSS:       SIZE INCREASE
                     SLIGHT
     MICRO+  2   PLASMACYTOSIS
    MICRO:   4   SINUS ERYTHROCYTOSIS
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     ABOVE PITUITARY MASS
     MICRO+  3   COMPRESSION
    MICRO:  (P)  #B ASTROCYTOMA
                     BRAINSTEM, MAINLY UNILATERAL
            (3)  HEMORRHAGE
                     ASSOCIATED WITH THE PITUITARY TUMOR
          ((1)) VACUOLIZATION
            2   HYDROCEPHALUS
EYE
    GROSS:       SWOLLEN
                     RIGHT, PERIOCULAR TISSUE
OVARIES
    GROSS:       CYST
                     3MM IN DIAMETER, RIGHT
     MICRO+ (2)  CYST(S)
OVARIES
    GROSS:       NODULE
                     2X2X2MM WHITE, LEFT
     MICRO+ (3)  STROMAL CELL HYPERPLASIA
LUNGS
    GROSS:       NODULE
                     2-3MM, MEDIUM BROWN; RIGHT APICAL LOBE
     MICRO+ (2)  PLEURITIS
                     ACUTE, NECROTIZING, CAUSE NOT APPARENT
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((1)) RENAL CALCULI
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3896B24 (CONTINUED)

3 TUBULAR ATROPHY
(3) PYELITIS
LEFT
(3) PAPILLARY NECROSIS
LEFT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
SKIN EYE

ANIMAL 3673B25 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.887	1.899
KIDNEYS	2.590	0.452
HEART	1.404	0.245
SPLEEN	0.827	0.144
BRAIN	2.059	0.359
ADRENAL GL	0.084	0.015
OVARIES	0.106	0.018
TERMINAL BODY WT.	573.2	

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
CAUDATE, RIGHT, 5X4MM DARK RED FOCAL AREA
MICRO+ (P) #B HEPATOCELLULAR ADENOMA
MICRO: ((1)) CHOLANGITIS
((1)) MONONUCLEAR CELL INFILTRATE(S)
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE BLACK AND CREAM FOCAL AREAS ON SURFACE, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: ((3)) HEMORRHAGE
((1)) HEMOSIDEROSIS
((2)) FIBROSIS
((3)) VASCULAR ECTASIA
MAMMARY GL
GROSS: MASS
RIGHT AXILLARY REGION, MULTILOBULAR, 20X20X10MM, CREAM
MICRO+ P #B FIBROADENOMA
MICRO: ((3)) GALACTOCELE
LYMPH ND, OTHER
GROSS: SIZE INCREASE
2X NORMAL, BILATERAL SUBLUMBAR
MICRO+ 3 PLASMACYTOSIS
LUMBAR NODE
MICRO: (4) LYMPHATIC ECTASIA, CYSTIC
LUNGS
MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
((1)) PERIVASCULAR INFILTRATE(S)
((3)) HEMORRHAGE
((1)) PNEUMONITIS, INTERSTITIAL
KIDNEYS
MICRO: ((1)) RENAL CALCULI
((3)) TUBULAR PROTEINOSIS
((2)) TUBULAR BASOPHILIA
((1)) NEPHRITIS, INTERSTITIAL
((2)) PAPILLARY HYPERPLASIA

ANIMAL 3792B26 7-JUL-89 STUDY DAY 472
TYPE OF DEATH: SACRIFICED MORIBUND
TOTAL BODY

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3792B26 (CONTINUED)

```
                    GROSS:        UNKEMPT
PITUITARY
                    GROSS:        SIZE INCREASE
                                      20X10X10MM
                     MICRO+   P   #B ADENOMA
                                      VERY LARGE
PITUITARY
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      DARK RED
ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      BOTH, TAN AND RED
MAMMARY GL
                    GROSS:        GALACTOCELE
                                      MULTIPLE 3X3X3MM
                     MICRO+((3)) GALACTOCELE
LUNGS
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MOTTLED RED AND PINK
                     MICRO+   3   CONGESTION
KIDNEYS
                    GROSS:        HYDRONEPHROSIS
                                      LEFT, MODERATE
                    MICRO: ((1)) RENAL CALCULI
                           ((3)) PAPILLARY HYPERPLASIA
                            (3)  HEMORRHAGE
                                      LEFT PELVIS
CAUSE OF DEATH
                    MICRO:    P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    LIVER             ADRENAL GL
```

ANIMAL 3748B27 27-OCT-89 STUDY DAY 584

TYPE OF DEATH: SACRIFICED MORIBUND

```
PITUITARY
                    GROSS:        MASS
                                      10X5X5MM DARK RED AND MULTILOBULAR
                     MICRO+   P   #B ADENOMA
                                      VERY LARGE
                    MICRO: ((4)) HEMORRHAGE
                           ((2)) HEMOSIDEROSIS
                           ((2)) MINERALIZATION
ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      1MM DARK BROWN AND CREAM FOCAL AREAS,
                                      MULTIPLE
                     MICRO+((1)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
                    GROSS:        SIZE INCREASE
                                      2X NORMAL
                    MICRO: ((4)) VASCULAR ECTASIA
                           ((3)) THROMBOSIS
                            (3)  INFARCTION
                            (2)  MINERALIZATION
                            (2)  FIBROSIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3748B27 (CONTINUED)

((2)) HEMOSIDEROSIS

SKIN
GROSS: STAINED
YELLOW UROGENTIAL REGION

MAMMARY GL
GROSS: GALACTOCELE
1MM SCATTERED ENTIRE BODY
MICRO+((4)) GALACTOCELE
MICRO: ((1)) MINERALIZATION
((2)) MASTITIS

BRAIN
GROSS: DEPRESSION/INDENTATION
ABOVE PITUITARY
MICRO+ (4) COMPRESSION
MICRO: 2 HYDROCEPHALUS
((3)) VACUOLIZATION
CEREBELLUM

LUNGS
MICRO: (2) GRANULOMA

KIDNEYS
MICRO: ((1)) NEPHRITIS, INTERSTITIAL
((2)) RENAL CALCULI
((2)) PAPILLARY HYPERPLASIA
LEFT
((2)) TUBULAR ATROPHY

CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER

ANIMAL 3706B28 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.987	2.324
KIDNEYS	2.001	0.466
HEART	1.244	0.289
SPLEEN	0.690	0.161
BRAIN	1.692	0.394
ADRENAL GL	0.084	0.020
OVARIES	0.064	0.015
TERMINAL BODY WT.	429.8	

LIVER
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
((2)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
((1)) CHOLANGITIS

PITUITARY
GROSS: SIZE INCREASE
10X5X5XMM
MICRO+ P #B ADENOMA

PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
TAN AND RED

ADRENAL GL
GROSS: SIZE INCREASE
LEFT, 2X NORMAL
MICRO+((5)) VASCULAR ECTASIA
UNILATERAL

ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
WHITE AND TAN FOCI, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: (5) THROMBOSIS
(5) INFARCTION

MAMMARY GL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3706B28 (CONTINUED)

```
                    GROSS:        MASS
                                      60X50X30MM, VENTRAL REGION, LOWER
                                      GENITAL AREA
                     MICRO+  P    #M ADENOCARCINOMA
                LYMPH ND, S-MAN
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      DARK RED, BILATERAL
                     MICRO+  1    SINUS ERYTHROCYTOSIS
                KIDNEYS
                    MICRO:  (2)   PAPILLARY HYPERPLASIA
                           ((2)) RENAL CALCULI
                                      RIGHT
                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    LUNGS
```

ANIMAL 3681B29 26-JUN-89 STUDY DAY 461

TYPE OF DEATH: SACRIFICED MORIBUND

```
                PITUITARY
                    GROSS:        MASS
                                      10X8X6 MM, DARK RED
                     MICRO+  P    #B ADENOMA
                    MICRO: ((5)) HEMORRHAGE
                ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      TAN FOCI AND DARK RED, BILATERAL
                     MICRO+((1)) CORTICAL CELL HYPERTROPHY
                ADRENAL GL
                    GROSS:        SIZE INCREASE
                                      2X NORMAL, BILATERAL
                     MICRO+ (3)   INFARCTION
                    MICRO: ((3)) VASCULAR ECTASIA
                SKIN
                    GROSS:        CRUST
                                      RED, PERINASAL REGION
                                      RED, PERIOCULAR REGION, BILATERAL
                SKIN
                    GROSS:        STAINED
                                      YELLOW, UROGENITAL REGION
                MAMMARY GL
                    GROSS:        GALACTOCELE
                                      SEVERAL, ALONG SIDES
                     MICRO+((3)) GALACTOCELE
                    MICRO:  (4)   MASTITIS
                BRAIN
                    GROSS:        DEPRESSION/INDENTATION
                                      DUE TO PITUITARY MASS
                     MICRO+  4    COMPRESSION
                    MICRO:   3    HYDROCEPHALUS
                NASAL CAVITY
                    MICRO:  (3)   HEMORRHAGE
                LUNGS
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      RED, ALL LOBES
                     MICRO+  3    CONGESTION
                    MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3681B29 (CONTINUED)

```
KIDNEYS
    MICRO: ((1)) MINERALIZATION
           ((1)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LIVER            SKIN             NARES/NOSE
    EYE
```

ANIMAL 3830B30 9-MAR-90 STUDY DAY 717

TYPE OF DEATH: SAC DUE TO ULCERATED MASS

```
STOMACH
    GROSS:        CONTENTS ABNORMAL
                      BLACK MATERAL
LIVER
    GROSS:        COLOR CHANGE, DIFFUSE
                      PALE, ALL LOBES
LIVER
    GROSS:        SWOLLEN
                      ALL LOBES
    MICRO: ((1)) CHOLANGITIS
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
            (3)  EOSINOPHILIC CELL FOCI
CECUM
    GROSS:        CONTENTS ABNORMAL
                      BLACK MATERIAL
PITUITARY
    GROSS:        MASS
                      5X5X3MM, RED
     MICRO+   P   #B ADENOMA
ADRENAL GL
    GROSS:        SIZE INCREASE
                      2X NORMAL, BILATERAL
     MICRO+((5)) VASCULAR ECTASIA
    MICRO:  (4)  INFARCTION
SUBCUTIS
    GROSS:        MASS
                      TWO, RIGHT AXILLARY, ULCERATED,
                      70X45X20MM AND
                      LEFT INGUINAL, 90X55X30MM
MAMMARY GL
    MICRO:   P   #M ADENOCARCINOMA
             P   #B FIBROADENOMA
                      THESE MASSES WERE RECORDED GROSSLY
                      UNDER SUBCUTIS
SPLEEN
    GROSS:        SIZE INCREASE
                      4X NORMAL
     MICRO+  4   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, REN
    GROSS:        COLOR CHANGE, DIFFUSE
                      RED, BILATERAL
    MICRO:   2   PLASMACYTOSIS
BRAIN
    GROSS:        DEPRESSION/INDENTATION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3830830 (CONTINUED)

```
                                        AREA OVER PITUITARY
     MICRO+ (4)  COMPRESSION
LACRYMAL GL
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK BROWN, BILATERAL
OVARIES
    GROSS:       CYST
                     CLEAR FLUID, BILATERAL
     MICRO+((4)) CYST(S)
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     MILD, BILATERAL
     MICRO+  3   HYDRONEPHROSIS
                     BILATERAL
    MICRO: ((3)) NEPHRITIS, INTERSTITIAL
           ((3)) TUBULAR PROTEINOSIS
           ((3)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    STOMACH          CECUM            SUBCUTIS
    LACRYMAL GL
```

ANIMAL 3849831 3-JAN-90 STUDY DAY 652

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:       EMACIATION
TOTAL BODY
    GROSS:       UNKEMPT
LIVER
    MICRO: ((4)) FATTY CHANGE
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
JEJUNUM
    GROSS:       CONTENTS ABNORMAL
                     YELLOW LIQUID FLUID
ILEUM
    GROSS:       CONTENTS ABNORMAL
                     YELLOW LIQUID FLUID
PITUITARY
    GROSS:       SIZE INCREASE
                     10X8X5MM
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
     MICRO+((4)) HEMORRHAGE
    MICRO: ((3)) HEMOSIDEROSIS
SKIN
    GROSS:       CRUST
                     PERIOCULAR TISSUE, BILATERAL
SKIN
    GROSS:       STAINED
                     URINE , GENITAL REGION
MAMMARY GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3849B31 (CONTINUED)

```
    GROSS:        MASS
                      30X15X15MM, VENTRAL SHOULDER REGION,
                      OVAL, FIRM
     MICRO+  P    #B FIBROADENOMA
MAMMARY GL
    GROSS:        GALACTOCELE
                      MULTIPLE, VENTRAL REGION
SPLEEN
    GROSS:        SIZE DECREASE
                      1/4 NORMAL
     MICRO+  3    LYMPHOID DEPLETION
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      VENTRAL SURFACE
     MICRO+  2    COMPRESSION
    MICRO:   3    HYDROCEPHALUS
EYE
    GROSS:        SWOLLEN
                      BILATERAL, PEROCULAR
     MICRO+  4    KERATITIS
                      MOST LESIONS ARE UNILATERAL, KERATITIS
                      IS MILD IN THE
                      SECOND EYE
    MICRO:   4    UVEITIS
             3    HYPOPYON
          ((3))   CORNEAL VASCULARIZATION
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      BILATERAL, BRIGHT RED
     MICRO+  4    CONGESTION
    MICRO: ((1))  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2))  RENAL CALCULI
                      LEFT
           ((1))  NEPHRITIS, INTERSTITIAL
           ((1))  TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:   P    ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    JEJUNUM           ILEUM            SKIN
```

ANIMAL 3752B32 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.563	2.692
KIDNEYS	2.645	0.674
HEART	1.332	0.340
SPLEEN	0.588	0.150
BRAIN	2.169	0.553
ADRENAL GL	0.080	0.020
OVARIES	0.220	0.056
TERMINAL BODY WT.	392.3	

```
LIVER
    MICRO: ((1))  HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
           ((1))  MONONUCLEAR CELL INFILTRATE(S)
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE FOCI DISSEMINATED OVER
                      SURFACE, BILATERAL
     MICRO+((1))  CORTICAL CELL HYPERTROPHY
LUNGS
    MICRO: ((1))  PERIVASCULAR INFILTRATE(S)
             4    CONGESTION
           (1)    MINERALIZATION, PULMONARY VESSEL(S)
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3752B32 (CONTINUED)

KIDNEYS
MICRO: (1) RENAL CALCULI

ANIMAL 3997B33 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.379	1.974
KIDNEYS	2.378	0.379
HEART	1.513	0.241
SPLEEN	0.693	0.111
BRAIN	1.967	0.314
ADRENAL GL	0.235	0.037
OVARIES	0.245	0.039
TERMINAL BODY WT.	627.1	

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
FEW DARK FOCAL AREAS SEEN ON ALL LOBES
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
GROSS: NODULE
2X3X2MM, CYST LIKE
MICRO↑((4)) VASCULAR ECTASIA
ADRENAL GL
GROSS: SIZE INCREASE
LEFT, 2X'S
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
WHITE FOCI SEEN, BOTH
MICRO↑((1)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
GROSS: CYST
LEFT, ENTIRE SURFACE
RIGHT, 2X2X2MM
MICRO↑((5)) VASCULAR ECTASIA
MICRO: ((2)) FIBROSIS
((2)) HEMORRHAGE
LYMPH ND, S-MAN
GROSS: SIZE INCREASE
SLIGHT
MICRO↑ 2 PLASMACYTOSIS
OVARIES
GROSS: CYST
LEFT, 3X3X3MM
MICRO↑((3)) CYST(S)
MICRO: (2) HEMORRHAGE
LUNGS
MICRO: (1) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: (3) RENAL CALCULI
LEFT
((2)) PAPILLARY HYPERPLASIA
MUCH OF THE PAPILLA IS ERODED BY THE CALCULI

ANIMAL 3791B34 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.536	2.210
KIDNEYS	2.870	0.665
HEART	1.308	0.303
SPLEEN	0.440	0.102
BRAIN	2.203	0.511

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
WHITE FOCI BETWEEN MEDIAN LOBES
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
SEVERAL DARK FOCI, BILATERAL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3791B34 (CONTINUED)

ADRENAL GL	0.076	0.018
OVARIES	0.136	0.032
TERMINAL BODY WT.	431.5	

MICRO+ ((3)) VASCULAR ECTASIA
SPLEEN
GROSS: SIZE DECREASE
SLIGHT
MICRO: 3 HEMOSIDEROSIS
LUNGS
MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
((1)) PERIVASCULAR INFILTRATE(S)
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER KIDNEYS

ANIMAL 3910B35 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.511	5.203
KIDNEYS	4.262	1.528
HEART	1.407	0.504
SPLEEN	0.784	0.281
BRAIN	1.837	0.659
ADRENAL GL	0.131	0.047
OVARIES	0.645	0.231
TERMINAL BODY WT.	278.9	

STOMACH
GROSS: CONTENTS ABNORMAL
YELLOW MUCOUS MATERIAL
LIVER
GROSS: SWOLLEN
ALL LOBES, SLIGHT
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
RED FOCI SEEN ON ALL LOBES
MICRO: (1) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
GROSS: MASS
6X5X5MM, RED AND TAN
MICRO+ P #B ADENOMA
MICRO: ((4)) VASCULAR ECTASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+ (2) CORTICAL CELL HYPERTROPHY
ADRENAL GL
GROSS: SIZE INCREASE
BOTH, 3X'S
MICRO: ((3)) CORTICAL CELL VACUOLIZATION
3 CONGESTION
BRAIN
GROSS: DEPRESSION/INDENTATION
AROUND PITUITARY
MICRO+ (3) COMPRESSION
OVARIES
GROSS: CYST
LEFT, 10X10X10MM
MICRO+ (5) CYST(S)
UTERUS
GROSS: CYST
RIGHT SIDE, 5X5X5MM
MICRO+ (4) GLANDULAR ECTASIA
LUNGS
MICRO: 3 CONGESTION
KIDNEYS
GROSS: DIMPLED/PITTED
BOTH, SLIGHT

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3910835 (CONTINUED)

MICRO+((3)) TUBULAR PROTEINOSIS
KIDNEYS
GROSS: COLOR CHANGE, DIFFUSE
BOTH, PALE
MICRO: ((1)) NEPHRITIS, INTERSTITIAL
((1)) RENAL CALCULI
((1)) MINERALIZATION
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
STOMACH

ANIMAL 3965836 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.172	2.065
KIDNEYS	2.195	0.555
HEART	1.128	0.285
SPLEEN	0.421	0.106
BRAIN	2.033	0.514
ADRENAL GL	0.090	0.023
OVARIES	0.380	0.096
TERMINAL BODY WT.	395.8	

LIVER
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
GROSS: SIZE INCREASE
2X NORMAL
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
TAN AND DARK RED
MICRO+((3)) VASCULAR ECTASIA
THYROID GL
MICRO: (P) #B C CELL ADENOMA
PARATHYROID GL
GROSS: SIZE INCREASE
RIGHT, 2X NORMAL
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: ((5)) VASCULAR ECTASIA
(4) INFARCTION
SPLEEN
GROSS: SIZE DECREASE
1/2 OF NORMAL
OVARIES
GROSS: CYST
5X5X5MM, YELLOW FLUID FILLED, LEFT
MICRO+((4)) CYST(S)
LUNGS
MICRO: (1) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: (1) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
PARATHYROID GL SPLEEN

ANIMAL 3934837 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.094	2.370
KIDNEYS	2.663	0.625
HEART	1.251	0.294

LIVER
MICRO: (1) CHOLANGITIS
PITUITARY
GROSS: SIZE INCREASE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3934B37 (CONTINUED)

SPLEEN	0.509	0.120
BRAIN	1.966	0.462
ADRENAL GL	0.088	0.021
OVARIES	0.118	0.028
TERMINAL BODY WT.	425.9	

```
                                  5X7X3MM
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED AND TAN
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY SIZE
     MICRO+ (2)  COMPRESSION
OVARIES
    GROSS:       CYST
                     LEFT, 2X2X2MM, YELLOW FLUID
     MICRO+ (3)  CYST(S)
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     ALL LOBES MOTTLED LIGHT AND DARK PINK
    MICRO:  (1)  PNEUMONITIS, INTERSTITIAL
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
```

ANIMAL 3746B38 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.092	2.931
KIDNEYS	3.454	0.837
HEART	1.527	0.370
SPLEEN	0.659	0.160
BRAIN	1.850	0.448
ADRENAL GL	0.110	0.027
OVARIES	0.074	0.018
TERMINAL BODY WT.	412.6	

```
LIVER
    GROSS:       NODULE
                     10X5X2MM DARK RED, LEFT MEDIAN LOBE
    MICRO: ((3)) EOSINOPHILIC CELL FOCI
                (P)  #B HEPATOCELLULAR ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BLACK 3X4MM FOCAL AREA RIGHT SIDE
     MICRO+ (4)  VASCULAR ECTASIA
    MICRO:  (P)  #B ADENOMA
                     SMALL NODULE
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BILATERAL DARK BROWN 2MM FOCAL AREAS,
                     MULTIPLE
     MICRO+((4)) VASCULAR ECTASIA
    MICRO:  (4)  INFARCTION
MAMMARY GL
    GROSS:       MASS
                     RIGHT, AXILLARY REGION, MULTILOBULAR,
                     50X40X20MM, CREAM
     MICRO+  P   #B FIBROADENOMA
MAMMARY GL
    GROSS:       GALACTOCELE
                     SCATTERED THROUGHOUT, PUNCTATE TO 2MM
     MICRO+((2)) GALACTOCELE
LUNGS
    MICRO:  (1)  PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((1)) RENAL CALCULI
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3713B39 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.696	2.706
KIDNEYS	2.822	0.653
HEART	1.586	0.367
SPLEEN	1.446	0.335
BRAIN	1.900	0.440
ADRENAL GL	0.091	0.021
OVARIES	0.145	0.034
TERMINAL BODY WT.	432.2	

LIVER
GROSS: COLOR CHANGE, DIFFUSE
CAUDATE, LEFT, YELLOW AND TAN
MICRO: (P) #B HEPATOCELLULAR ADENOMA
SMALL NODULE
PITUITARY
GROSS: NODULE
2X2X2MM, DARK RED
MICRO+ P #B ADENOMA
LYMPH ND, S-MAN
GROSS: COLOR CHANGE, DIFFUSE
BILATERAL, DARK RED
MICRO+ 4 SINUS ERYTHROCYTOSIS
MICRO: 2 PLASMACYTOSIS
LYMPH ND, MED
GROSS: COLOR CHANGE, DIFFUSE
DARK RED, BILATERAL
MICRO+ 2 SINUS ERYTHROCYTOSIS
MICRO: ((1)) HEMOSIDEROSIS
((3)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, REN
GROSS: COLOR CHANGE, DIFFUSE
DARK RED, BILATERAL
MICRO: (4) LYMPHATIC ECTASIA, CYSTIC
((2)) HEMOSIDEROSIS
LYMPH ND, PANC
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED FOCI
UTERUS
GROSS: MASS
60X40X20MM, LEFT HORN, 30X20X20MM, LEFT HORN
RED, AND TAN
MICRO+ P #B STROMAL POLYP
MICRO: 5 HEMORRHAGE
THE POLYP IS NECROTIC AND BLEEDING
BLOOD FILLS THE LUMEN
CERVIX
GROSS: CONTENTS ABNORMAL
BLACK TARRY SUBSTANCE
VAGINA
GROSS: CONTENTS ABNORMAL
BLACK TARRY SUBSTANCE
MICRO+ 4 HEMORRHAGE
INTRALUMINAL
LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
WHITE 8X5MM PATCH, RIGHT DIAPHRAGMATIC LOBE
MICRO: ((1)) PNEUMONITIS, INTERSTITIAL
(1) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3713B39 (CONTINUED)

LYMPH ND, PANC CERVIX

ANIMAL 3954B40 17-JUL-89 STUDY DAY 482
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
TOTAL BODY
    GROSS:        UNKEMPT
LIVER
    MICRO: ((2)) FATTY CHANGE
PITUITARY
    GROSS:        SIZE INCREASE
                      10X10X8MM
     MICRO+  P    #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE TAN AND BROWN FOCI, BILATERAL
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO:  (2)  INFARCTION
SKIN
    MICRO:  (2)  FOLLICULITIS
                      EYELID
                      PROBABLY NOT THE CAUSE OF THE CRUSTING
NARES/NOSE
    GROSS:        CRUST
                      DARK RED, PERINASAL AREA
MAMMARY GL
    GROSS:        MASS
                      20X15X8MM, WHITE, FIRM, MULTILOBULAR;
                      LEFT INGUINAL AREA
     MICRO+  P    #B FIBROADENOMA
    MICRO: ((4)) GALACTOCELE
            (1)  MINERALIZATION
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
    MICRO:   4   HEMORRHAGE
                      MAY BE DUE TO PITUITARY MASS
                      LESION IS IN MIDBRAIN
                      TISSUE IS DAMAGED AND HARD TO EVALUATE
EYE
    GROSS:        CRUST
                      DARK RED, PERIOCULAR AREA, BILATERAL
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE FOCAL AREAS, RIGHT
                      DIAPHRAGMATIC AND LEFT LOBE
     MICRO+  4   CONGESTION
KIDNEYS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3954840 (CONTINUED)

```
                                        MULTIPLE TAN FOCAL AREAS, CORTICAL
                                        SURFACE, BILATERAL
                    MICRO: ((3)) PYELITIS
                           ((4)) PAPILLARY HYPERPLASIA
                                        ALL LESIONS ARE BILATERAL
                           ((2)) RENAL CALCULI
                CAUSE OF DEATH
                    MICRO:   P   ADENOMA, PITUITARY
                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    NARES/NOSE       EYE              NASAL CAVITY
```

ANIMAL 3669841 21-FEB-90 STUDY DAY 701

TYPE OF DEATH: SACRIFICED MORIBUND

```
                LIVER
                    MICRO: ((1)) FATTY CHANGE
                           ((2)) CHOLANGIOFIBROSIS
                PITUITARY
                    GROSS:       SIZE INCREASE
                                     10X5X5MM
                     MICRO+  P   #M CARCINOMA
                PITUITARY
                    GROSS:       COLOR CHANGE, DIFFUSE
                                     DARK RED
                ADRENAL GL
                    GROSS:       SIZE INCREASE
                                     RIGHT, 2X NORMAL
                     MICRO+ (5)  INFARCTION
                                     MOST OF THE GLAND IS DESTROYED
                ADRENAL GL
                    GROSS:       COLOR CHANGE, DIFFUSE
                                     RIGHT, DARK RED
                    MICRO: ((4)) VASCULAR ECTASIA
                MAMMARY GL
                    GROSS:       MASS
                                     50X30X15MM, VENTRAL UPPER LEFT, YELLOW
                                     FLUID FILLED,
                                     AND SOLID BROWN SUBSTANCE
                                     30X20X10MM, TAN SOLID MATERIAL, YELLOW
                                     FLUID; LOWER
                                     LEFT VENTRAL REGION
                     MICRO+  P   #B FIBROADENOMA
                    MICRO: ((4)) GALACTOCELE
                                     SOME ARE WITHIN THE MASS
                LYMPH ND, MED
                    GROSS:       COLOR CHANGE, DIFFUSE
                                     DARK RED, BILATERAL
                     MICRO+  4   HEMOSIDEROSIS
                    MICRO:   4   SINUS ERYTHROCYTOSIS
                BRAIN
                    GROSS:       DEPRESSION/INDENTATION
                                     DUE TO PITUITARY SIZE
                     MICRO+  4   COMPRESSION
                    MICRO:   2   HYDROCEPHALUS
                EYE
                    GROSS:       CRUST
                                     RED, PERIOCULAR, BILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3669B41 (CONTINUED)

```
LUNGS
    MICRO:   4   CONGESTION
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO:  (1)  RENAL CALCULI
            (2)  HYDRONEPHROSIS
                     RIGHT
CAUSE OF DEATH
    MICRO:   P   CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SKIN             EYE
```

ANIMAL 3663B42 19-JAN-90 STUDY DAY 668

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:       UNKEMPT
ORAL/PHARYNGEAL
    GROSS:       CRUST
                     YELLOW-BROWN, PERIORAL REGION
     MICRO+ (3)  FOLLICULITIS
                     SEE ENTRY FOR SKIN; THIS IS A SKIN
                     LESION.
STOMACH
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     RED FOCAL AREAS, GLANDULAR PORTION
STOMACH
    GROSS:       THICKER THAN NORMAL
                     NON-GLANDULAR PORTION WHERE IT MEETS
                     GLANDULAR PORTION
LIVER
    MICRO: ((3)) FATTY CHANGE
PITUITARY
    GROSS:       MASS
                     8X7X5 MM, DARK RED
     MICRO+  P   #B ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, BILATERAL
SKIN
    GROSS:       STAINED
                     YELLOW-BROWN, UROGENITAL REGION
    MICRO:  (3)  FOLLICULITIS
                     SKIN SUBMITTED AS OROPHARYNGEAL AREA
NARES/NOSE
    GROSS:       CRUST
                     RED, PERINASAL REGION
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY MASS
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     RED, PERIOCULAR REGION, BILATERAL
OVARIES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3663B42 (CONTINUED)

```
                                    GROSS:        CYST
                                                      1X1X1 MM, BILATERAL
                                     MICRO+((4)) CYST(S)
                                    MICRO:  (3)  STROMAL CELL HYPERPLASIA
                                VAGINA
                                    GROSS:        CONTENTS ABNORMAL
                                                      YELLOW-GREEN MUCOUS
                                    MICRO:   2   VAGINITIS
                                NASAL CAVITY
                                    MICRO:  (3)  RHINITIS
                                                      UNILATERAL
                                LUNGS
                                    GROSS:        COLOR CHANGE, DIFFUSE
                                                      RED, ALL LOBES
                                     MICRO+   4   CONGESTION
                                                      THERE IS ASPIRATED FOOD IN ONE AIRWAY,
                                                      PROBABLY AN
                                                      AGONAL EVENT
                                KIDNEYS
                                    MICRO: ((3)) RENAL CALCULI
                                                      LEFT IS WORSE
                                CAUSE OF DEATH
                                    MICRO:   P   ADENOMA, PITUITARY
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    STOMACH           ADRENAL GL       NARES/NOSE
                                    EYE
```

ANIMAL 3734B43 12-JAN-90 STUDY DAY 661

TYPE OF DEATH: SAC DUE TO ENLARGED MASS

```
                                PITUITARY
                                    GROSS:        MASS
                                                      10X7X4 MM
                                     MICRO+   P   #B ADENOMA
                                    MICRO: ((4)) VASCULAR ECTASIA
                                ADRENAL GL
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      TAN AND RED FOCI, BILATERAL
                                     MICRO+ (2)  CORTICAL CELL HYPERTROPHY
                                ADRENAL GL
                                    GROSS:        SIZE INCREASE
                                                      2X NORMAL, BILATERAL
                                     MICRO+ (P)  #B ADENOMA
                                    MICRO: ((4)) VASCULAR ECTASIA
                                            (3)  INFARCTION
                                MAMMARY GL
                                    GROSS:        MASS
                                                      100X95X50 MM, RIGHT SIDE, VENTRAL
                                                      SURFACE
                                                      YELLOW CREAMY MATERIAL
                                     MICRO+   P   #B FIBROADENOMA
                                BRAIN
                                    GROSS:        DEPRESSION/INDENTATION
                                                      DUE TO PITUITARY MASS
                                     MICRO+   4   COMPRESSION
                                    MICRO:   2   HYDROCEPHALUS
                                OVARIES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3734B43 (CONTINUED)

```
                                    GROSS:        CYST
                                                      2X2X1 MM, RIGHT
                                     MICRO+   P   CYST(S)
                                OVARIES
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      YELLOW AREAS, LEFT
                                LUNGS
                                    MICRO: ((2)) ALVEOLAR HISTIOCYTOSIS
                                KIDNEYS
                                    MICRO: ((2)) RENAL CALCULI
                                           ((2)) PAPILLARY HYPERPLASIA
                                CAUSE OF DEATH
                                    MICRO:    P   ADENOMA, PITUITARY
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    LIVER
```

ANIMAL 3949B44 26-SEP-89 STUDY DAY 553

TYPE OF DEATH: SACRIFICED MORIBUND

```
                                TOTAL BODY
                                    GROSS:        EMACIATION
                                TOTAL BODY
                                    GROSS:        UNKEMPT
                                STOMACH
                                    GROSS:        CONTENTS ABNORMAL
                                                      CONTAINS YELLOW MUCUS
                                STOMACH
                                    GROSS:        THICKER THAN NORMAL
                                                      ENTIRE STOMACH
                                     MICRO+((4)) MUCOSAL HYPERPLASIA
                                    MICRO:    4   EDEMA
                                                      ALL LESIONS ARE IN THE NONGLANDULAR
                                                      STOMACH
                                              4   GASTRITIS
                                LIVER
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      3X3MM BROWN FOCUS, LEFT LATERAL LOBE
                                     MICRO+((4)) FATTY CHANGE
                                    MICRO: ((1)) BILIARY HYPERPLASIA
                                           ((1)) CHOLANGIOFIBROSIS
                                PITUITARY
                                    GROSS:        SIZE INCREASE
                                                      8X6X6MM
                                     MICRO+   P   #B ADENOMA
                                PITUITARY
                                    GROSS:        COLOR CHANGE, DIFFUSE
                                                      DARK RED
                                SKIN
                                    GROSS:        STAINED
                                                      URINE, UROGENITAL AREA
                                BRAIN
                                    GROSS:        DEPRESSION/INDENTATION
                                                      DUE TO ENLARGED PITUITARY
                                     MICRO+   4   COMPRESSION
                                    MICRO:    3   HYDROCEPHALUS
                                EYE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3949B44 (CONTINUED)

```
                                    GROSS:        CRUST
                                                      RED, LEFT PERIOCULAR AREA
                                     MICRO+ (4)   CONJUNCTIVITIS
                                                      THE EYE ITSELF IS NOT EXAMINED
                                VAGINA
                                    GROSS:        CONTENTS ABNORMAL
                                                      CONTAINS THICK GREEN MATERIAL
                                LUNGS
                                    MICRO: ((2)) PERIVASCULAR INFILTRATE(S)
                                           ((2)) PNEUMONITIS, INTERSTITIAL
                                            (2)  HEMORRHAGE
                                KIDNEYS
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      MOTTLED TAN AND BROWN, BILATERAL
                                     MICRO+((4)) TUBULAR BASOPHILIA
                                    MICRO:  (1)  NEPHRITIS, INTERSTITIAL
                                           ((1)) RENAL CALCULI
                                                      LEFT
                                CAUSE OF DEATH
                                    MICRO:   P   ADENOMA, PITUITARY
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    SKIN              VAGINA
```

ANIMAL 3697B45 26-OCT-89 STUDY DAY 583

TYPE OF DEATH: SACRIFICED MORIBUND

```
                                TOTAL BODY
                                    GROSS:        UNKEMPT
                                PITUITARY
                                    GROSS:        SIZE INCREASE
                                                      10X10X5MM
                                     MICRO+   P   #B ADENOMA
                                PITUITARY
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      DARK RED AND TAN
                                ADRENAL GL
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      BOTH, RED AND TAN
                                SKIN
                                    GROSS:        CRUST
                                                      RIGHT EYE, RUST COLOR
                                BRAIN
                                    GROSS:        DEPRESSION/INDENTATION
                                                      AROUND PITUITARY
                                    MICRO:   3    HYDROCEPHALUS
                                                      THE TISSUE IS ARTIFACTUALLY DAMAGED
                                UTERUS
                                    GROSS:        CYST
                                                      RIGHT, 9X6X3MM
                                     MICRO+ (2)   GLANDULAR ECTASIA
                                LUNGS
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      RIGHT APICAL, RED AREA
                                KIDNEYS
                                    MICRO: ((2)) RENAL CALCULI
                                                      RIGHT
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3697B45 (CONTINUED)

CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER SKIN LUNGS

ANIMAL 3873B46 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.979	2.015
KIDNEYS	2.805	0.515
HEART	1.436	0.264
SPLEEN	0.522	0.096
BRAIN	1.974	0.362
ADRENAL GL	0.098	0.018
OVARIES	0.052	0.010
TERMINAL BODY WT.	544.7	

LIVER
MICRO: ((2)) FATTY CHANGE
PITUITARY
GROSS: MASS
BILOBE, DARK RED, 8X5X5MM
MICRO+ P #B ADENOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE, 1MM BLACK FOCAL SCATTERED ON SURFACE
BILATERAL
MICRO+((3)) HEMORRHAGE
MICRO: ((4)) VASCULAR ECTASIA
((1)) HEMOSIDEROSIS
((2)) FIBROSIS
MAMMARY GL
GROSS: MASS
LEFT ABDOMINAL REGION, 30X30X10MM, MULTILOBULAR, DARK CREAM
MICRO+ P #M ADENOCARCINOMA
MAMMARY GL
GROSS: GALACTOCELE
MULTIPLE, SCATTERED OVER ENTIRE AREA, PUNCTATE TO 2MM
BRAIN
GROSS: DEPRESSION/INDENTATION
ABOVE PITUITARY MASS
MICRO+ (3) COMPRESSION
LUNGS
MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) NEPHRITIS, INTERSTITIAL
((1)) TUBULAR PROTEINOSIS
((1)) RENAL CALCULI

ANIMAL 3705B47 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.658	2.446
KIDNEYS	2.346	0.749
HEART	1.098	0.351
SPLEEN	0.506	0.162
BRAIN	2.035	0.650
ADRENAL GL	0.117	0.037
OVARIES	0.136	0.043
TERMINAL BODY WT.	313.0	

PITUITARY
GROSS: MASS
10X10X5MM,RED
MICRO+ P #B ADENOMA
MICRO: ((5)) HEMORRHAGE
((4)) HEMOSIDEROSIS
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BROWN FOCI, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3705B47 (CONTINUED)

```
        MICRO: ((4)) VASCULAR ECTASIA
               ((2)) FIBROSIS
               ((2)) HEMOSIDEROSIS
TAIL
    GROSS:           TRAUMATIZED
                         TIP BLUNTED
     MICRO+  4       CELLULITIS
    MICRO:  (4)      ABSCESS
BRAIN
    GROSS:           DEPRESSION/INDENTATION
                         AREA OVER PITUITARY
     MICRO+ (3)      COMPRESSION
    MICRO:   2       HYDROCEPHALUS
               ((1)) VACUOLIZATION
                         CEREBELLUM
LUNGS
    MICRO:  (2)      MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1))     RENAL CALCULI
                         LEFT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LIVER
```

ANIMAL 3814B48 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:           EMACIATION
                         MARKED
TOTAL BODY
    GROSS:           POSTMORTEM CHANGE
PITUITARY
    GROSS:           MASS
                         10X10X5MM, RED
     MICRO+  P       #B ADENOMA
ADRENAL GL
    GROSS:           COLOR CHANGE, FOCAL/MULTIFOCAL
                         MULTIPLE WHITE FOCI, BILATERAL
     MICRO+((2))     CORTICAL CELL HYPERTROPHY
    MICRO: ((5))     VASCULAR ECTASIA
            (4)      INFARCTION
SKIN
    GROSS:           MASS
                         TWO, LEFT AXILLARY, 25X20X10MM, SOFT AND
                         LEFT INGUINAL, 20X20X10, FILLED WITH
                         YELLOW MATERIAL
NARES/NOSE
    GROSS:           CRUST
                         RED
     MICRO+  2       RHINITIS
                         FOOD MATERIAL IS PRESENT AS IN THE
                         NASAL CAVITIES.
MAMMARY GL
    MICRO:   P       #B FIBROADENOMA
             P       #B ADENOMA
           ((4))     GALACTOCELE
BRAIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3814B48 (CONTINUED)

```
                                    GROSS:        DEPRESSION/INDENTATION
                                                      AREA OVER PITUITARY
                                     MICRO+  3    COMPRESSION
                                    MICRO: ((1)) VACUOLIZATION
                                NASAL CAVITY
                                    MICRO:   4    RHINITIS
                                                      A LOT OF FOOD MATERIAL IS PRESENT IN
                                                      THE SINUSES
                                LUNGS
                                    MICRO:   3    CONGESTION
                                KIDNEYS
                                    MICRO: ((2)) RENAL CALCULI
                                CAUSE OF DEATH
                                    MICRO:   P    ADENOMA, PITUITARY
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    LIVER             SKIN
```

ANIMAL 3803B49 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.671	2.331
KIDNEYS	2.654	0.713
HEART	1.114	0.299
SPLEEN	0.491	0.132
BRAIN	1.895	0.509
ADRENAL GL	0.085	0.023
OVARIES	0.118	0.032
TERMINAL BODY WT.	372.0	

```
LIVER
    MICRO: ((1)) BILIARY HYPERPLASIA
                 (1)  MONONUCLEAR CELL INFILTRATE(S)
                ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY
    GROSS:        SIZE INCREASE
                      2X NORMAL
     MICRO+  P    #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      3X4MM DARK RED FOCAL AREA LEFT ANTERIOR
                      SIDE
ADRENAL GL
    GROSS:        SIZE INCREASE
                      2X NORMAL
     MICRO+((5)) VASCULAR ECTASIA
    MICRO: ((5)) THROMBOSIS
                 (4)  FIBROSIS
                      PROBABLY AN OLD THROMBOSIS SITE
                  3   HEMORRHAGE
OVARIES
    GROSS:        CYST
                      LEFT, 3MM IN DIAMETER
UTERUS
    GROSS:        SIZE INCREASE, SEGMENTAL
                      LEFT, 6X7X6MM , FILLED WITH CLEAR FLUID
     MICRO+ (2)   LUMINAL ECTASIA
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((2)) RENAL CALCULI
            (3)  CYST(S)
                      LEFT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    OVARIES           LUNGS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3768B50 18-DEC-89 STUDY DAY 636
TYPE OF DEATH: SAC DUE TO ENLARGED MASS

```
LIVER
    GROSS:        SWOLLEN
                      SLIGHT
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    GROSS:        SIZE INCREASE
                      5X10X5MM
     MICRO+  P    #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      DARK RED AND TAN
     MICRO+((5)) VASCULAR ECTASIA
    MICRO:   4    HEMORRHAGE
            ((2)) HEMOSIDEROSIS
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      BOTH, TINY WHITE FOCI SEEN
ADRENAL GL
    GROSS:        SIZE INCREASE
                      RIGHT, 1 1/2X
     MICRO+((4)) VASCULAR ECTASIA
    MICRO: ((2)) THROMBOSIS
            ((4)) HEMORRHAGE
MAMMARY GL
    GROSS:        MASS
                      90X60X50MM, UPPER RIGHT SIDE
     MICRO+  P    #B FIBROADENOMA
LYMPH ND, S-MAN
    GROSS:        SIZE INCREASE
                      2X'S
     MICRO+  3    PLASMACYTOSIS
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      AROUND PITUITARY
     MICRO+  2    COMPRESSION
    MICRO:   2    HYDROCEPHALUS
            ((1)) VACUOLIZATION
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
            ((1)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P    ADENOMA, PITUITARY
```

ANIMAL 3763B51 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.504	3.913
KIDNEYS	3.466	1.085
HEART	1.305	0.408
SPLEEN	0.784	0.245

```
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK TAN AND RED
PITUITARY
    GROSS:        SIZE INCREASE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3763851 (CONTINUED)

BRAIN	2.017	0.631
ADRENAL GL	0.219	0.069
OVARIES	0.084	0.026
TERMINAL BODY WT.	319.6	

BILATERAL, SLIGHT
MICRO+ P #B ADENOMA
MICRO: (1) HEMOSIDEROSIS
EYE
GROSS: CRUST
RIGHT, PERIOCULAR
LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE SMALL WHITE FOCAL AREAS, LEFT LOBE AND RIGHT DIAPHRAGMATIC LOBE
MICRO+ (2) ALVEOLAR HISTIOCYTOSIS
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
MICRO: ((2)) TUBULAR BASOPHILIA
((1)) NEPHRITIS, INTERSTITIAL
((2)) TUBULAR PROTEINOSIS
((2)) RENAL CALCULI
((2)) PAPILLARY HYPERPLASIA
LEFT, ASSOCIATED WITH CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER SKIN
THE FOLLOWING TISSUES WERE MISSING:
EYE

ANIMAL 3863852 7-OCT-89 STUDY DAY 564
TYPE OF DEATH: FOUND DEAD

LIVER
MICRO: (2) CHOLANGIOFIBROSIS
PITUITARY
GROSS: MASS
BILOBED, DARK RED 10X5X5MM
MICRO+ P #B ADENOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
CREAM 1MM FOCAL AREAS SCATTERED ON SURFACE
MICRO+ (2) CORTICAL CELL HYPERTROPHY
MICRO: ((4)) VASCULAR ECTASIA
(4) INFARCTION
((4)) HEMORRHAGE
SKIN
MICRO: ((4)) STEATITIS
GRANULOMATOUS
INVOLVES SUBCUTANEOUS FAT AROUND GALACTOCELES.
MAMMARY GL
GROSS: GALACTOCELE
10X10X5MM, INGUINAL REGION
MICRO+((3)) GALACTOCELE
MICRO: (3) MASTITIS
BRAIN
GROSS: POSTMORTEM CHANGE
UTERUS
GROSS: POSTMORTEM CHANGE
LUNGS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3863B52 (CONTINUED)

```
                                    GROSS:        COLOR CHANGE, DIFFUSE
                                                      DARK RED, ALL LOBES
                                     MICRO+  5    CONGESTION
                                    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
                                           ((1)) PNEUMONITIS, INTERSTITIAL
                                KIDNEYS
                                    MICRO: ((2)) TUBULAR BASOPHILIA
                                           ((1)) NEPHRITIS, INTERSTITIAL
                                           ((2)) FIBROSIS, INTERSTITIAL
                                CAUSE OF DEATH
                                    MICRO:   P   ADENOMA, PITUITARY
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    BRAIN
```

ANIMAL 3771B53 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.060	3.063
KIDNEYS	4.569	0.995
HEART	1.593	0.347
SPLEEN	1.089	0.237
BRAIN	2.092	0.456
ADRENAL GL	0.177	0.039
OVARIES	0.504	0.110
TERMINAL BODY WT.	459.0	

```
LIVER
    MICRO: ((2)) FATTY CHANGE
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
           ((1)) BILIARY HYPERPLASIA
           ((2)) CHOLANGIOFIBROSIS
PITUITARY
    GROSS:       MASS
                     10X5X5MM  MOTTLED DARK RED AND CREAM
     MICRO+  P   #B ADENOMA
    MICRO: ((4)) HEMORRHAGE
           ((3)) HEMOSIDEROSIS
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE BLACK AND CREAM 1MM FOCAL
                     AREAS, BILATERAL
     MICRO+((2)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
    GROSS:       SIZE INCREASE
                     BILATERAL, 2X NORMAL
     MICRO+ (4)  INFARCTION
    MICRO: ((3)) VASCULAR ECTASIA
           ((4)) HEMORRHAGE
MAMMARY GL
    GROSS:       MASS
                     30X25X10MM RIGHT AXILLARY ,
                     MULTILOBULAR , CREAM
     MICRO+  P   #B FIBROADENOMA
MAMMARY GL
    GROSS:       GALACTOCELE
                     2MM TO 3MM SCATTERED THROUGHOUT
SPLEEN
    GROSS:       SIZE INCREASE
                     SLIGHT
LYMPH ND, OTHER
    GROSS:       CYST
                     SUBLUMBAR, 4MM IN DIAMETER, BILATERAL
     MICRO+((5)) LYMPHATIC ECTASIA, CYSTIC
                     SUBLUMBAR NODES
    MICRO:   2   PLASMACYTOSIS
BRAIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3771B53 (CONTINUED)

```
                                    GROSS:        DEPRESSION/INDENTATION
                                                      ABOVE PITUITARY MASS
                                EYE
                                    GROSS:        CRUST
                                                      LEFT, RED, PERIOCULAR AREA
                                OVARIES
                                    GROSS:        NODULE
                                                      8MM IN DIAMETER, LEFT DARK PINK AND FIRM
                                     MICRO+  P    #M GRANULOSA/THECA CELL TUMOR
                                UTERUS
                                    GROSS:        SIZE INCREASE, SEGMENTAL
                                                      RIGHT HORN 4X3X3MM
                                     MICRO+ (2)   LUMINAL ECTASIA
                                VAGINA
                                    MICRO:   1    VAGINITIS
                                LUNGS
                                    GROSS:        COLOR CHANGE, DIFFUSE
                                                      ALL LOBES, DARK RED
                                     MICRO+  3    CONGESTION
                                    MICRO:  (1)   MINERALIZATION, PULMONARY VESSEL(S)
                                KIDNEYS
                                    MICRO: ((1)) RENAL CALCULI
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    SKIN              SPLEEN            EYE
```

ANIMAL 3834B54 20-NOV-89 STUDY DAY 608

TYPE OF DEATH: SACRIFICED MORIBUND

```
                                TOTAL BODY
                                    GROSS:        UNKEMPT
                                TOTAL BODY
                                    GROSS:        EMACIATION
                                                      SEVERE
                                LIVER
                                    GROSS:        COLOR CHANGE, DIFFUSE
                                                      VERY PALE
                                     MICRO+((4)) FATTY CHANGE
                                LIVER
                                    GROSS:        SWOLLEN
                                                      ALL LOBES, SLIGHT
                                    MICRO: ((1)) CHOLANGITIS
                                CECUM
                                    GROSS:        GASEOUS
                                CECUM
                                    GROSS:        CONTENTS ABNORMAL
                                                      JAUNDICE MATERIAL PRESENT
                                PITUITARY
                                    GROSS:        SIZE INCREASE
                                                      5X5X5MM
                                     MICRO+  P    #B ADENOMA
                                PITUITARY
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      DARK RED AND TAN
                                     MICRO+((4)) VASCULAR ECTASIA
                                ADRENAL GL
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3834B54 (CONTINUED)

```
                                        BOTH, WHITE FOCI SEEN
                    MICRO+((1)) CORTICAL CELL HYPERTROPHY
                    MICRO: ((3)) VASCULAR ECTASIA
                           ((3)) THROMBOSIS
                SKIN
                    GROSS:      CRUST
                                    BOTH EYES, DARK RED
                LUNGS
                    MICRO:   3  CONGESTION
                KIDNEYS
                    MICRO:  (1) NEPHRITIS, INTERSTITIAL
                           ((1)) RENAL CALCULI
                CAUSE OF DEATH
                    MICRO:   P  ADENOMA, PITUITARY
                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    CECUM           SKIN            EYE
```

ANIMAL 3991B55 23-OCT-89 STUDY DAY 580

TYPE OF DEATH: SACRIFICED MORIBUND

```
                ADIPOSE TISSUE
                    GROSS:      NODULE
                                    1CM NODULE IN LUMBAR ABDOMINAL FAT
                LIVER
                    MICRO: ((4)) FATTY CHANGE
                           ((1)) MONONUCLEAR CELL INFILTRATE(S)
                           ((1)) CHOLANGITIS
                PITUITARY
                    GROSS:      MASS
                                    8MM IRREGULAR RED MASS
                     MICRO+  P  #B ADENOMA
                    MICRO:   4  HEMORRHAGE
                ADRENAL GL
                    GROSS:      MASS
                                    3MM DARK NODULE ON SURFACE OF LEFT
                     MICRO+((4)) VASCULAR ECTASIA
                ADRENAL GL
                    GROSS:      COLOR CHANGE, FOCAL/MULTIFOCAL
                                    1MM WHITE FOCI ON SURFACE OF RIGHT
                    MICRO: ((1)) FIBROSIS
                SKIN
                    GROSS:      STAINED
                                    PERINEUM
                PAWS/FEET
                    GROSS:      SWOLLEN
                                    RIGHT TARSUS
                     MICRO+  4  FIBROSIS
                PAWS/FEET
                    GROSS:      ULCERATED
                                    RIGHT TARSUS
                     MICRO+  4  ULCERATION
                    MICRO:   3  EPIDERMAL HYPERPLASIA
                TAIL
                    GROSS:      NODULE
                                    5MM BLACK SKIN NODULE NEAR TAIL BASE
                     MICRO+ (4) ABSCESS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3991855 (CONTINUED)

```
                                        THE CYST IS INFECTED
    MICRO:  (P)  EPIDERMAL INCLUSION CYST
LYMPH ND, OTHER
    MICRO: ((4)) LYMPHATIC ECTASIA, CYSTIC
             3   PLASMACYTOSIS
                        LUMBAR NODE, MISTAKEN FOR ADIPOSE TISSUE
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                        LARGE IN VENTRAL MIDBRAIN
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
            (3)  ENCEPHALOMALACIA
                        CORTEX OVERLYING THE DISTENDED LATERAL
                        VENTRICLES
EYE
    GROSS:       CRUST
                        BILATERAL
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SKIN             EYE              LUNGS
THE FOLLOWING TISSUES WERE MISSING:
    ADIPOSE TISSUE
```

ANIMAL 3736B56 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	13.587	4.207
KIDNEYS	5.628	1.743
HEART	1.681	0.521
SPLEEN	1.382	0.428
BRAIN	1.892	0.586
ADRENAL GL	0.605	0.187
OVARIES	0.029	0.009
TERMINAL BODY WT.	322.9	

```
LIVER
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    GROSS:       SIZE INCREASE
                        7X5X4MM
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                        MULTIPLE DARK RED AND TAN FOCI
ADRENAL GL
    GROSS:       SIZE INCREASE
                        LEFT 2 1/2X NORMAL, RIGHT 4X NORMAL
     MICRO+ (5)  INFARCTION
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                        TAN AND RED WITH MULTIPLE WHITE FOCI,
                        BILATERAL
     MICRO+((5)) VASCULAR ECTASIA
    MICRO:  (P)  #B PHEOCHROMOCYTOMA
SKIN
    GROSS:       ALOPECIA
                        PARTIAL, ABDOMINAL AREA
MAMMARY GL
    GROSS:       MASS
                        LEFT INGUINAL, 65X45X25MM, TAN AND
                        PARTIAL NECROSIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3736856 (CONTINUED)

```
                    MICRO+  P   #B FIBROADENOMA
                   MICRO: ((3)) MINERALIZATION
                          (P)  #M ADENOCARCINOMA
                                   SMALL NODULE
                                   THIS LESION WAS SUBMITTED AS A LYMPH
                                   NODE
PAWS/FEET
    GROSS:                 ULCERATED
                                   20X20X2MM RIGHT, 20X25X3MM LEFT
                    MICRO+  5   ULCERATION
                   MICRO: ((4)) OSSEUS METAPLASIA
                            5   FIBROSIS
SPLEEN
    GROSS:                 SIZE INCREASE
                                   2X NORMAL
                    MICRO+  4   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, REN
    GROSS:                 SIZE INCREASE
                                   3X NORMAL
                    MICRO+  4   PLASMACYTOSIS
                                   THERE IS A LARGE AMOUNT OF EDEMA AND
                                   INFLAMMATION IN THE
                                   CONNECTIVE TISSUE SURROUNDING THE NODE.
LYMPH ND, OTHER
    GROSS:                 SIZE INCREASE
                                   INGUINAL LYMPH NODE, 3X3X2MM, DARK
                                   BROWN COLOR
                                   10X7X3MM, RIGHT HIND POPLITEAL
                    MICRO+  5   PLASMACYTOSIS
                                   POPLITEAL NODE
BRAIN
    GROSS:                 DEPRESSION/INDENTATION
                                   DUE ENLARGED PITUITARY
                    MICRO+ (4)  COMPRESSION
OVARIES
    GROSS:                 SIZE DECREASE
                                   1/2 NORMAL
LUNGS
    MICRO: ((1)) ALVEOLAR HISTIOCYTOSIS
           ((1)) PERIVASCULAR INFILTRATE(S)
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
           ((1)) PNEUMONITIS, INTERSTITIAL
KIDNEYS
    GROSS:                 HYDRONEPHROSIS
                                   LEFT MODERATE, RIGHT SEVERE
                    MICRO+  3   HYDRONEPHROSIS
KIDNEYS
    GROSS:                 CONTENTS ABNORMAL
                                   WHITE CHEESE-LIKE SUBSTANCE, BILATERAL
                    MICRO+((4)) PYELITIS
                                   LESIONS ARE BILATERAL
KIDNEYS
    GROSS:                 SIZE INCREASE
                                   RIGHT, 2X NORMAL
    MICRO: ((4)) TUBULAR ATROPHY
           ((1)) TUBULAR PROTEINOSIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3736856 (CONTINUED)

```
                                  ((4)) TRANSITIONAL CELL HYPERPLASIA
                                  ((2)) NEPHRITIS, INTERSTITIAL
                        URETER
                            GROSS:        CONTENTS ABNORMAL
                                              LEFT CONTAINS CHEESE-LIKE SUBSTANCE
                        URETER
                            GROSS:        DILATATION/DISTENTION
                                              BILATERAL DISTENTION
                             MICRO+  5    DILATION
                            MICRO:   4    MUCOSAL HYPERPLASIA
                                     5    URETERITIS
                                              CONTAINS GRANULAR DEBRIS
                        URINARY BLADDER
                            GROSS:        DILATATION/DISTENTION
                                              MODERATELY DISTENTED WITH URINE
                            MICRO:   3    CYSTITIS
                                     3    TRANSITIONAL CELL HYPERPLASIA
                        THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                            SKIN              OVARIES
```

ANIMAL 3756857 31-DEC-89 STUDY DAY 649

TYPE OF DEATH: FOUND DEAD

```
                        TOTAL BODY
                            GROSS:        UNKEMPT
                        LIVER
                            GROSS:        POSTMORTEM CHANGE
                                              MILD, ALL LOBES
                            MICRO: ((1)) BILIARY HYPERPLASIA
                        DUODENUM
                            GROSS:        POSTMORTEM CHANGE
                                              INCLUDING JEJUNUM, ILEUM, CECUM AND
                                              COLON
                        PITUITARY
                            GROSS:        SIZE INCREASE
                                              10X10X7MM
                             MICRO+  P    #B ADENOMA
                                              VERY LARGE
                        PITUITARY
                            GROSS:        COLOR CHANGE, DIFFUSE
                                              DARK RED
                        THYROID GL
                            GROSS:        SIZE INCREASE
                                              SLIGHT, BILATERAL
                        ADRENAL GL
                            GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                              MULTIPLE TAN FOCI, BILATERAL
                            MICRO:  (4)   INFARCTION
                                    (4)   HEMORRHAGE
                                  ((4)) VASCULAR ECTASIA
                        LYMPH ND, MES
                            GROSS:        POSTMORTEM CHANGE
                        BRAIN
                            GROSS:        DEPRESSION/INDENTATION
                                              DUE TO ENLARGED PITUITARY
                             MICRO+  4    COMPRESSION
                        UTERUS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3756B57 (CONTINUED)

```
                                    GROSS:        POSTMORTEM CHANGE
                                VAGINA
                                    GROSS:        CONTENTS ABNORMAL
                                                      CONTAINS THICK GREEN MATERIAL
                                     MICRO+  3    VAGINITIS
                                LUNGS
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      ALL LOBES MOTTLED LIGHT AND DARK RED
                                     MICRO+  5    CONGESTION
                                    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
                                KIDNEYS
                                    MICRO: ((1)) RENAL CALCULI
                                CAUSE OF DEATH
                                    MICRO:   P    ADENOMA, PITUITARY
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    THYROID GL
```

ANIMAL 3892B58 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.013	3.008
KIDNEYS	2.865	1.229
HEART	1.101	0.472
SPLEEN	0.360	0.154
BRAIN	1.864	0.799
ADRENAL GL	0.221	0.095
OVARIES	0.081	0.035
TERMINAL BODY WT.	233.2	

```
                                TOTAL BODY
                                    GROSS:        EMACIATION
                                TOTAL BODY
                                    GROSS:        UNKEMPT
                                PITUITARY
                                    GROSS:        MASS
                                                      15X15X15MM, DARK RED AND TAN
                                     MICRO+   P    #B ADENOMA
                                ADRENAL GL
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      BOTH, WHITE FOCI SEEN
                                ADRENAL GL
                                    GROSS:        SIZE INCREASE
                                                      LEFT, SEVERAL X'S
                                                      RIGHT, 2X'S
                                     MICRO+ (P)   #B PHEOCHROMOCYTOMA
                                    MICRO: ((5)) VASCULAR ECTASIA
                                           (4)   INFARCTION
                                MAMMARY GL
                                    GROSS:        GALACTOCELE
                                                      RIGHT UROGENITAL AREA, FILLED WITH
                                                      BLACK MATERIAL
                                     MICRO+((4)) GALACTOCELE
                                    MICRO: ((P)) #B ADENOMA
                                           ((4)) MASTITIS
                                TAIL
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      1-3MM TAN FOCAL AREAS ON ENTIRE TAIL
                                     MICRO+((4)) ULCERATION
                                LYMPH ND, S-MAN
                                    GROSS:        SIZE INCREASE
                                                      SLIGHT
                                     MICRO+  4    PLASMACYTOSIS
                                    MICRO:  (3)   LYMPHATIC ECTASIA, CYSTIC
                                BRAIN
                                    GROSS:        DEPRESSION/INDENTATION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3892B58 (CONTINUED)

```
                                        AROUND PITUITARY
     MICRO+  4   COMPRESSION
EYE
    GROSS:       CRUST
                     BOTH
EYE
    GROSS:       SWOLLEN
                     BOTH
CERVIX
    GROSS:       CONTENTS ABNORMAL
                     GREEN CREAM MATERIAL
VAGINA
    MICRO:   1   VAGINITIS
                     A PURULENT DISCHARGE IS PRESENT IN THE
                     LUMEN
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LIVER            EYE              CERVIX
    LUNGS
```

ANIMAL 3824B59 4-JAN-90 STUDY DAY 653
TYPE OF DEATH: FOUND DEAD

```
HEART
    GROSS:       SIZE INCREASE
                     2X NORMAL, LEFT ATRIUM
     MICRO+  4   @PN ENDOCARDIAL MYXOMATOSIS
                     LEFT ATRIUM AND VENTRICLE
    MICRO: ((4)) MYOCARDIAL DEGENERATION/FIBROSIS
                     LEFT ATRIUM
            (5)  THROMBOSIS
                     DISEASED LEFT WALL
LIVER
    GROSS:       SWOLLEN
                     MILD, ALL LOBES
JEJUNUM
    GROSS:       POSTMORTEM CHANGE
ILEUM
    GROSS:       POSTMORTEM CHANGE
PITUITARY
    GROSS:       SIZE INCREASE
                     2X NORMAL
     MICRO+  P   #B ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE TAN FOCI, BILATERAL
     MICRO+((5)) VASCULAR ECTASIA
MAMMARY GL
    GROSS:       CYST
                     30X20X15MM, LEFT INGUINAL AREA; BROWN
                     FLUID FILLED;
                     THIS CYST REPRESENTS MASS DESCRIBED IN
                     CLIN OBS.
     MICRO+((3)) GALACTOCELE
PAWS/FEET
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 300 PPM FEMALE

ANIMAL 3824B59 (CONTINUED)

```
    GROSS:        ULCERATED
                      3X3X3MM, BOTH HIND FEET
     MICRO+ (3)   ULCERATION
    MICRO:  (4)   FIBROSIS
           ((3)) EPIDERMAL HYPERPLASIA
LYMPH ND, S-MAN
    GROSS:        COLOR CHANGE, DIFFUSE
                      RED
    MICRO:   2    PLASMACYTOSIS
UTERUS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      5X2MM, DARK RED AREA; LEFT UTERINE HORN
    MICRO:  (2)   GLANDULAR ECTASIA
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      ALL LOBES DARK RED
     MICRO+  4    CONGESTION
    MICRO: ((3)) PULMONARY EDEMA
             3    ALVEOLAR HISTIOCYTOSIS
                      LESIONS ARE DUE TO CONGESTIVE HEART
                      FAILURE
           ((4)) INTRAALVEOLAR CELLULAR DEBRIS
           ((2)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO:  (2)   RENAL CALCULI
                      RIGHT
CAUSE OF DEATH
    MICRO:   P    ENDOCARDIAL MYXOMATOSIS/CONGESTIVE
                   HEART FAILURE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LIVER
```

ANIMAL 3782B60 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.112	2.533
KIDNEYS	2.644	0.735
HEART	1.499	0.417
SPLEEN	0.687	0.191
BRAIN	2.019	0.561
ADRENAL GL	0.091	0.025
OVARIES	0.100	0.028
TERMINAL BODY WT.	359.8	

```
LIVER
    MICRO: ((2)) BASOPHILIC CELL FOCI
             (1)  HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE FOCI DISSEMINATED OVER
                      SURFACE, BILATERAL
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO:  (5)   VASCULAR ECTASIA
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      SEVERAL CREAM 2MM FOCAL AREAS BILATERAL
                      DIAPHRAGMATIC LOBE
     MICRO+((3)) ALVEOLAR HISTIOCYTOSIS
    MICRO:   3    CONGESTION
           ((1)) PERIVASCULAR INFILTRATE(S)
           ((1)) PNEUMONITIS, INTERSTITIAL
           ((2)) MINERALIZATION, PULMONARY VESSEL(S)
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3743C01 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.335	2.277
KIDNEYS	2.374	0.649
HEART	0.948	0.259
SPLEEN	0.652	0.178
BRAIN	1.985	0.542
ADRENAL GL	0.085	0.023
OVARIES	0.120	0.033
TERMINAL BODY WT.	366.0	

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
RIGHT MEDIAN LOBE, 6X4MM NEAR HILUS
MICRO+ (P) #B HEPATOCELLULAR ADENOMA
PITUITARY
GROSS: NODULE
3X3X2MM CENTER DARK RED
MICRO+ P #B ADENOMA
PITUITARY
GROSS: SIZE INCREASE
2X NORMAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LUNGS KIDNEYS

ANIMAL 3895C02 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.372	2.214
KIDNEYS	2.609	0.690
HEART	1.402	0.371
SPLEEN	0.922	0.244
BRAIN	1.893	0.501
ADRENAL GL	0.074	0.020
OVARIES	0.095	0.025
TERMINAL BODY WT.	378.2	

LIVER
MICRO: ((1)) CHOLANGIOFIBROSIS
PITUITARY
GROSS: NODULE
2X2X2MM, DARK RED
MICRO+ P #B ADENOMA
THYROID GL
GROSS: SIZE INCREASE
3X NORMAL, LEFT
MICRO+ P #B C CELL ADENOMA
ALSO INVADING THE PARATHYROID
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI, RIGHT
MULTIPLE WHITE AND BROWN FOCI, LEFT
MICRO+((2)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
GROSS: SIZE INCREASE
2X NORMAL, LEFT
MICRO+ (5) CORTICAL CELL VACUOLIZATION
POSSIBLE EARLY INFARCTION SITE
MICRO: (4) VASCULAR ECTASIA
UTERUS
GROSS: POLYP
10X6X6MM, RIGHT UTERINE HORN
MICRO+ P #B STROMAL POLYP
KIDNEYS
MICRO: ((2)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LUNGS

ANIMAL 3963C03 29-DEC-89 STUDY DAY 647
TYPE OF DEATH: SACRIFICED MORIBUND

TOTAL BODY
GROSS: UNKEMPT
PITUITARY

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3963C03 (CONTINUED)

GROSS: MASS
12X10X7 MM, DARK RED
MICRO+ P #B ADENOMA
VERY LARGE

ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
RED FOCI, BILATERAL
MICRO+((3)) CONGESTION
MICRO: ((1)) CORTICAL CELL HYPERTROPHY

TAIL
GROSS: NECROTIC
40 MM AREA AT TIP
MICRO+ 4 ULCERATION
MICRO: ((4)) CELLULITIS

BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO PITUITARY MASS
MICRO+ 4 COMPRESSION
MICRO: 3 HYDROCEPHALUS

LUNGS
MICRO: (4) PLEURAL FIBROSIS

KIDNEYS
GROSS: CYST
6X5X3 MM, OUTER CORTEX, RIGHT
MICRO+ (4) CYST(S)
RIGHT
MICRO: (2) TRANSITIONAL CELL HYPERPLASIA
LEFT

CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER

ANIMAL 4027C04 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.369	2.053
KIDNEYS	3.419	0.617
HEART	1.663	0.300
SPLEEN	0.620	0.112
BRAIN	2.337	0.422
ADRENAL GL	0.138	0.025
OVARIES	0.109	0.020
TERMINAL BODY WT.	553.8	

ADIPOSE TISSUE
GROSS: MASS
TWO LARGE FATTY MASSES, RIGHT
AXILLARY,50X40X15MM
AND LEFT AXILLARY, 50X40X10MM
MICRO+((P)) #B LIPOMA

LIVER
MICRO: ((1)) FATTY CHANGE

PITUITARY
GROSS: MASS
10X5X5MM, RED
MICRO+ P #B ADENOMA
MICRO: 4 HEMORRHAGE
((1)) HEMOSIDEROSIS

ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY

ADRENAL GL
GROSS: SIZE INCREASE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 4027C04 (CONTINUED)

```
                                        LEFT,2X NORMAL
     MICRO+ (3)  INFARCTION
    MICRO: ((4)) VASCULAR ECTASIA
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AREA OVER PITUITARY
     MICRO+ (4)  COMPRESSION
    MICRO:   3   HYDROCEPHALUS
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
           ((2)) GRANULOMA
                     ONE LOBE, PROBABLY DUE TO ASPIRATION
                     SMALL FOCI
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR PROTEINOSIS
           ((2)) RENAL CALCULI
                     RIGHT
```

ANIMAL 3802C05 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.060	2.391
KIDNEYS	2.560	0.676
HEART	1.335	0.352
SPLEEN	0.527	0.139
BRAIN	1.825	0.482
ADRENAL GL	0.062	0.016
OVARIES	0.082	0.022
TERMINAL BODY WT.	378.9	

```
PITUITARY
    GROSS:       MASS
                     DARK RED, 10X4X3MM
     MICRO+  P   #B ADENOMA
    MICRO: ((4)) VASCULAR ECTASIA
MAMMARY GL
    GROSS:       GALACTOCELE
                     PUNCTATE, SCATTERED THROUGHOUT
     MICRO+((3)) GALACTOCELE
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED LIGHT AND DARK RED
    MICRO:  (1)  PNEUMONITIS, INTERSTITIAL
KIDNEYS
    MICRO:  (2)  TUBULAR PROTEINOSIS
           ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LIVER
```

ANIMAL 3688C06 27-OCT-89 STUDY DAY 584

TYPE OF DEATH: FOUND DEAD

```
LIVER
    MICRO: ((2)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY
    GROSS:       MASS
                     15X10X5MM, DARK RED
     MICRO+  P   #B ADENOMA
    MICRO:   4   HEMORRHAGE
           ((4)) VASCULAR ECTASIA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     1MM CREAM FOCAL AREAS, LEFT
MAMMARY GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3688C06 (CONTINUED)

```
    GROSS:        GALACTOCELE
                      ENTIRE BODY
                      1MM
     MICRO+((3)) GALACTOCELE
LYMPH ND, S-MAN
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
     MICRO+  4   SINUS ERYTHROCYTOSIS
BRAIN
    GROSS:        POSTMORTEM CHANGE
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      ABOVE PITUITARY
     MICRO+  4   COMPRESSION
    MICRO:   2   HYDROCEPHALUS
EYE
    GROSS:        CRUST
                      RED PERIOCULAR, BILATERAL
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED ALL LOBES
     MICRO+  5   CONGESTION
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    ADRENAL GL       SKIN             EYE
```

ANIMAL 3855C07 27-FEB-90 STUDY DAY 707
TYPE OF DEATH: FOUND DEAD

```
STOMACH
    GROSS:        THICKER THAN NORMAL
                      ENTIRE STOMACH
     MICRO+ (3)  EDEMA
                      NONGLANDULAR STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO:  (1)  MONONUCLEAR CELL INFILTRATE(S)
            (1)  TELANGIECTASIS
JEJUNUM
    GROSS:        POSTMORTEM CHANGE
ILEUM
    GROSS:        POSTMORTEM CHANGE
PITUITARY
    GROSS:        SIZE INCREASE
                      6X6X5MM
     MICRO+  P   #8 ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
     MICRO+((4)) VASCULAR ECTASIA
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3855C07 (CONTINUED)

```
                                        MULTIPLE WHITE FOCI DISSEMINATED OVER
                                        SURFACE, BILATERAL
     MICRO+((3)) CORTICAL CELL HYPERTROPHY
    MICRO: ((4)) VASCULAR ECTASIA
SKIN
    MICRO:  (2)  DERMATITIS
                     EYELID
SPLEEN
    GROSS:       SIZE DECREASE
                     1/2 OF NORMAL
LYMPH ND, S-MAN
    GROSS:       COLOR CHANGE, DIFFUSE
                     RED
     MICRO+  4   SINUS ERYTHROCYTOSIS
    MICRO:   2   PLASMACYTOSIS
LYMPH ND, MES
    GROSS:       POSTMORTEM CHANGE
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO ENLARGED PITUITARY
     MICRO+  3   COMPRESSION
EYE
    GROSS:       CRUST
                     RED, PERIOCULAR AREA, BILATERAL
UTERUS
    GROSS:       CONTENTS ABNORMAL
                     CONTAINS THICK GREEN MATERIAL
     MICRO+  3   PYOMETRA
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED LIGHT AND DARK PINK;
                     MULTIPLE WHITE FOCI, RIGHT
                     DIAPHRAGMATIC LOBE
     MICRO+((2)) HEMORRHAGE
    MICRO:   4   CONGESTION
            ((1)) PERIVASCULAR INFILTRATE(S)
             (1)  INTRAALVEOLAR CELLULAR DEBRIS
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SPLEEN           EYE              KIDNEYS
```

ANIMAL 3866C08 22-DEC-89 STUDY DAY 640
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:       UNKEMPT
TOTAL BODY
    GROSS:       PALLOR
ESOPHAGUS
    GROSS:       CONTENTS ABNORMAL
                     THICK YELLOW MUCOUS MATERIAL FILLED
PITUITARY
    GROSS:       MASS
                     10X10X6 MM, DARK RED
     MICRO+  P   #B ADENOMA
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3866C08 (CONTINUED)

```
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      RED WITH WHITE FOCI, BILATERAL
                     MICRO+((1)) CORTICAL CELL HYPERTROPHY
                    MICRO:  (4)  INFARCTION
                           ((3)) VASCULAR ECTASIA
MAMMARY GL
    GROSS:        GALACTOCELE
                      25X20X10 MM, YELLOW MILKY FLUID FILLED,
                      LEFT SIDE, ABDOMINAL
                      REGION
     MICRO+((4)) GALACTOCELE
MAMMARY GL
    GROSS:        MASS
                      40X30X22 MM, UNDER LEFT FRONT PAW,
                      VENTRAL SIDE
                      FIRM, TAN, THICK YELLOW MATERIAL PRESENT
     MICRO+  P   #B FIBROADENOMA
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      2X NORMAL, BILATERAL, SUBLUMBAR AND
                      POPLITEAL LYMPH NODES
     MICRO+  4   PLASMACYTOSIS
                      POPLITEAL AND LUMBAR NODES
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO PITUITARY MASS
     MICRO+  3   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
OVARIES
    GROSS:        COLOR CHANGE, DIFFUSE
                      YELLOW, BILATERAL
    MICRO:  (3)  CYST(S)
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MOTTLED PINK, TAN AND RED, ALL LOBES
    MICRO: ((1)) ALVEOLAR HISTIOCYTOSIS
           ((1)) GRANULOMA
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
                      RIGHT
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LIVER
```

ANIMAL 3973C09 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.737	2.634
KIDNEYS	2.940	0.721
HEART	1.184	0.290
SPLEEN	0.612	0.150
BRAIN	2.010	0.493
ADRENAL GL	0.086	0.021
OVARIES	0.080	0.020

```
LIVER
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
                 (3)  HEMORRHAGE
PITUITARY
    GROSS:        MASS
                      4X3X3MM, RED AND TAN
     MICRO+  P   #B ADENOMA
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3973C09 (CONTINUED)
TERMINAL BODY WT. 407.6

GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: ((4)) VASCULAR ECTASIA
((1)) FIBROSIS

MAMMARY GL
GROSS: MASS
30X30X30MM, LEFT NECK AREA
MICRO+ P #B FIBROADENOMA

LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
ALL LOBES MOTTLED LIGHT AND DARK PINK
MICRO+((2)) HEMORRHAGE
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
3 CONGESTION

KIDNEYS
MICRO: ((1)) RENAL CALCULI
((1)) NEPHRITIS, INTERSTITIAL

ANIMAL 3926C10 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.492	2.360
KIDNEYS	2.262	0.509
HEART	1.218	0.274
SPLEEN	0.487	0.110
BRAIN	2.008	0.452
ADRENAL GL	0.063	0.014
OVARIES	0.119	0.027
TERMINAL BODY WT.	444.6	

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED AREAS, ALL LOBES
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
((1)) MONONUCLEAR CELL INFILTRATE(S)

PITUITARY
GROSS: SIZE INCREASE
2X NORMAL
MICRO+ (P) #B ADENOMA

PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED FOCI

ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: (3) INFARCTION
(3) VASCULAR ECTASIA

EARS
GROSS: COLOR CHANGE, DIFFUSE
BILATERAL, PINK

EARS
GROSS: THICKER THAN NORMAL
BILATERAL
MICRO+ 4 AURICULAR CHONDROPATHY

LUNGS
GROSS: SHAPE/CONTOUR CHANGE
WHITE PATCHY AREAS
MICRO+((3)) ALVEOLAR HISTIOCYTOSIS
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
((2)) MINERALIZATION, PULMONARY VESSEL(S)
(2) HEMORRHAGE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3926C10 (CONTINUED)

KIDNEYS
MICRO: ((1)) MINERALIZATION

ANIMAL 4022C11 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.577	2.383
KIDNEYS	2.565	0.578
HEART	1.156	0.260
SPLEEN	0.415	0.094
BRAIN	2.069	0.466
ADRENAL GL	0.055	0.012
OVARIES	1.108	0.250
TERMINAL BODY WT.	443.8	

LIVER
MICRO: ((1)) FATTY CHANGE
SPLEEN
GROSS: SIZE DECREASE
SLIGHT
OVARIES
GROSS: CYST
LEFT, 12X12X12MM
MICRO+ 5 CYST(S)
CERVIX
GROSS: NODULE
5X3X3MM, HARD
MICRO+ 4 MUSCLE HYPERTROPHY
CAUSE NOT APPARENT
LUNGS
MICRO: (1) MINERALIZATION, PULMONARY VESSEL(S)
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
SPLEEN KIDNEYS

ANIMAL 3882C12 27-SEP-89 STUDY DAY 554
TYPE OF DEATH: SACRIFICED MORIBUND

TOTAL BODY
GROSS: UNKEMPT
ORAL/PHARYNGEAL
GROSS: CRUST
RED
LIVER
MICRO: ((1)) FATTY CHANGE
PITUITARY
GROSS: SIZE INCREASE
10X10X10MM
MICRO+ P #B ADENOMA
EYE
GROSS: CRUST
BOTH
LUNGS
MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
((1)) PERIVASCULAR INFILTRATE(S)
((3)) PNEUMONITIS, INTERSTITIAL
SMALL PYOGRANULOMATOUS LESIONS
KIDNEYS
MICRO: ((1)) TUBULAR PROTEINOSIS
((1)) RENAL CALCULI
(1) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
ORAL/PHARYNGEAL SKIN EYE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3801C13 29-DEC-89 STUDY DAY 647
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        UNKEMPT
LIVER
    MICRO:  (3)   FIBROSIS
                      LESION IS AN OLD SCAR
            ((3)) FATTY CHANGE
            ((3)) HEMOSIDEROSIS
PITUITARY
    GROSS:        MASS
                      7X12X4 MM, DARK RED, BLOOD INSIDE
     MICRO↑  P    #B ADENOMA
    MICRO:   3    HEMORRHAGE
EARS
    GROSS:        THICKER THAN NORMAL
                      PINNA, BILATERAL
     MICRO↑  4    AURICULAR CHONDROPATHY
MAMMARY GL
    GROSS:        MASS
                      45X40X20 MM, UNDER LEFT FRONT PAW
                      YELLOW-GREEN , CREAMY MATERIAL FILLED
                      MULTILOBULAR
     MICRO↑  P    #M ADENOCARCINOMA
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO↑  3    COMPRESSION
    MICRO: ((1))  VACUOLIZATION
EYE
    GROSS:        CRUST
                      RED, PERIOCULAR REGION, BILATERAL
     MICRO↑ (2)   CONJUNCTIVITIS
VAGINA
    GROSS:        CONTENTS ABNORMAL
                      YELLOW-GREEN MUCOUS MATERIAL FILLED
     MICRO↑  4    VAGINITIS
                      PURULENT DISCHARGE
KIDNEYS
    MICRO: ((2))  TUBULAR PROTEINOSIS
           ((2))  RENAL CALCULI
            (1)   NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P    ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SKIN              LUNGS
```

ANIMAL 4019C14 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.817	2.200
KIDNEYS	2.593	0.527
HEART	1.437	0.292
SPLEEN	0.639	0.130

```
ADIPOSE TISSUE
    GROSS:        MASS
                      NECROTIC FAT, LEFT OVARIAN FAT,
                      25X10X5MM,
                      YELLOW-BROWN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 4019C14 (CONTINUED)

BRAIN	2.229	0.453
ADRENAL GL	0.146	0.030
OVARIES	0.116	0.024
TERMINAL BODY WT.	491.7	

MICRO+ (4) FAT NECROSIS
MICRO: (4) STEATITIS
LIVER
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY
GROSS: MASS
5X5X3MM, RED
MICRO+ P #B ADENOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI,BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: (5) INFARCTION
((4)) VASCULAR ECTASIA
((4)) HEMORRHAGE
SKIN
GROSS: ALOPECIA
MULTIPLE AREAS, ENTIRE BODY
TAIL
GROSS: NODULE
MULTIPLE BLACK,1-3MM, ENTIRE TAIL
MICRO+((4)) ABSCESS
TWO SIMILIAR LESIONS, INFECTED CYSTS
MICRO: (4) EPIDERMAL INCLUSION CYST
KIDNEYS
MICRO: (2) RENAL CALCULI
LEFT
((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
SKIN MAMMARY GL LUNGS

ANIMAL 3871C15 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.461	2.260
KIDNEYS	2.203	0.526
HEART	1.305	0.312
SPLEEN	0.713	0.170
BRAIN	2.063	0.493
ADRENAL GL	0.051	0.012
OVARIES	0.039	0.009
TERMINAL BODY WT.	418.5	

LIVER
MICRO: ((1)) BILIARY HYPERPLASIA
(1) CHOLANGIOFIBROSIS
PITUITARY
GROSS: SIZE INCREASE
6X6X5MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
THYROID GL
GROSS: SIZE INCREASE
1.5X NORMAL, RIGHT
MICRO: (1) C CELL HYPERPLASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((3)) CORTICAL CELL HYPERTROPHY
MICRO: ((1)) CORTICAL CELL VACUOLIZATION
SPLEEN
GROSS: NODULE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3871C15 (CONTINUED)

3X2X2MM, DARK RED
MICRO+ (P) ANOMALY
THERE IS A NODULAR SWELLING SURROUNDED BY CONNECTIVE TISSUE ON THE SPLEEN.
MICRO: 4 HEMOSIDEROSIS
((3)) FIBROSIS

BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO ENLARGED PITUITARY
MICRO+ (4) COMPRESSION
MICRO: ((1)) VACUOLIZATION
CEREBELLUM

OVARIES
GROSS: SIZE DECREASE
1/4 OF NORMAL, BILATERAL

LUNGS
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
(1) PNEUMONITIS, INTERSTITIAL
((2)) ALVEOLAR HISTIOCYTOSIS

KIDNEYS
MICRO: ((1)) NEPHRITIS, INTERSTITIAL
(3) RENAL CALCULI
RIGHT

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
OVARIES

ANIMAL 3826C16 16-JUN-89 STUDY DAY 451
TYPE OF DEATH: SACRIFICED MORIBUND

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL

PITUITARY
GROSS: SIZE INCREASE
10X NORMAL
MICRO+ P #M CARCINOMA

PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED FOCI CONCENTRATED IN ONE AREA

SKIN
GROSS: CRUST
PERIOCULAR, BILATERAL

KIDNEYS
MICRO: ((1)) RENAL CALCULI
LEFT

CAUSE OF DEATH
MICRO: P CARCINOMA, PITUITARY

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER SKIN LUNGS

ANIMAL 3993C17 16-JAN-90 STUDY DAY 665
TYPE OF DEATH: SACRIFICED MORIBUND

TOTAL BODY
GROSS: EMACIATION

TOTAL BODY

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3993C17 (CONTINUED)

GROSS:		UNKEMPT
LIVER		
GROSS:		COLOR CHANGE, DIFFUSE PALE TAN, ALL LOBES
MICRO↑	3	FATTY CHANGE
PITUITARY		
GROSS:		SIZE INCREASE 6X5X5MM
MICRO↑	P	#B ADENOMA
PITUITARY		
GROSS:		COLOR CHANGE, DIFFUSE DARK RED
MICRO↑	((4))	VASCULAR ECTASIA
ADRENAL GL		
GROSS:		COLOR CHANGE, FOCAL/MULTIFOCAL MULTIPLE BROWN FOCI, BILATERAL
MICRO:	(4)	CORTICAL CELL VACUOLIZATION
	(3)	VASCULAR ECTASIA
	(3)	MEDULLARY CELL HYPERPLASIA
NARES/NOSE		
GROSS:		CRUST RED, PERINASAL AREA
MAMMARY GL		
GROSS:		MASS 30X20X10MM, TAN, MULTILOBULAR; LEFT AXILLARY AREA 10X10X5MM, TAN; RIGHT SIDE
MICRO↑	P	#B ADENOMA LARGE MASS, BUT ENCAPSULATED
SPLEEN		
GROSS:		SIZE DECREASE 1/4 OF NORMAL
MICRO:	4	HEMOSIDEROSIS
BRAIN		
GROSS:		DEPRESSION/INDENTATION DUE TO ENLARGED PITUITARY
EYE		
GROSS:		CRUST RED, PERIOCULAR AREA, BILATERAL
LUNGS		
MICRO:	(2)	MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS		
GROSS:		HYDRONEPHROSIS MILD, BILATERAL
MICRO↑	1	HYDRONEPHROSIS
KIDNEYS		
GROSS:		GRANULAR BILATERAL
MICRO↑	4	TUBULAR PROTEINOSIS
KIDNEYS		
GROSS:		COLOR CHANGE, DIFFUSE PALE TAN, BILATERAL
MICRO↑	3	FIBROSIS, INTERSTITIAL
MICRO:	4	TUBULAR ATROPHY
	(4)	THROMBOSIS
	((2))	NEPHRITIS, INTERSTITIAL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3993C17 (CONTINUED)

((2)) MINERALIZATION
((2)) TRANSITIONAL CELL HYPERPLASIA
CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
SKIN NARES/NOSE BRAIN
EYE NASAL CAVITY

ANIMAL 3904C18 27-DEC-89 STUDY DAY 645
TYPE OF DEATH: SAC DUE TO ENLARGED MASS

ADRENAL GL
GROSS: COLOR CHANGE, DIFFUSE
LEFT, RED AND TAN
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
RIGHT, WHITE AND RED FOCI
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: ((3)) VASCULAR ECTASIA
MAMMARY GL
GROSS: MASS
110X80X50MM, RIGHT UPPER VENTRAL REGION, OUTER PORTION CRUSTY AND ULCERATED, CORE, FIRM WITH CRATER APPEARANCE.
MICRO+ P #B FIBROMA
LUNGS
GROSS: NODULE
MULTIPLE WHITE 1-3MM, ALL LOBES
MICRO+((2)) ALVEOLAR HISTIOCYTOSIS
CAUSE OF DEATH
MICRO: P NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER KIDNEYS

ANIMAL 3664C19 5-JAN-90 STUDY DAY 654
TYPE OF DEATH: FOUND DEAD

TOTAL BODY
GROSS: EMACIATION
TOTAL BODY
GROSS: UNKEMPT
LIVER
GROSS: POSTMORTEM CHANGE
DUODENUM
GROSS: POSTMORTEM CHANGE
INCLUDING ENTIRE DIGESTIVE TRACT.
PITUITARY
GROSS: SIZE INCREASE
10X9X5MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
TAN AND DARK RED
SKIN
GROSS: STAINED
YELLOW, UROGENITAL AREA
BRAIN

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3664C19 (CONTINUED)

```
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO PITUITARY INCREASE.
     MICRO+  2    COMPRESSION
    MICRO:   3    HYDROCEPHALUS
EYE
    GROSS:        CRUST
                      BILATERAL, RED
EYE
    GROSS:        SWOLLEN
                      BILATERAL
UTERUS
    GROSS:        POSTMORTEM CHANGE
                      BILATERAL
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED, ALL LOBES
     MICRO+  4    CONGESTION
    MICRO:  (1)   PERIVASCULAR INFILTRATE(S)
KIDNEYS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      RED FOCI, BILATERAL
    MICRO:  (2)   RENAL CALCULI
            (1)   NEPHRITIS, INTERSTITIAL
            (1)   TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:   P    ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LIVER             SKIN              EYE
```

ANIMAL 3694C20 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.184	2.236
KIDNEYS	2.276	0.554
HEART	1.416	0.345
SPLEEN	0.623	0.152
BRAIN	1.997	0.486
ADRENAL GL	0.091	0.022
OVARIES	0.101	0.025
TERMINAL BODY WT.	410.8	

```
LIVER
    MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
           ((1)) BILIARY HYPERPLASIA
PITUITARY
    GROSS:        SIZE INCREASE
                      2X NORMAL
     MICRO+  P    #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      2X2MM DARK RED FOCUS
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE TAN AND BROWN FOCI, BILATERAL
     MICRO+((2)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
    GROSS:        SIZE INCREASE
                      2X NORMAL, LEFT
    MICRO:  (3)   FIBROSIS
           ((4)) VASCULAR ECTASIA
           ((3)) THROMBOSIS
MAMMARY GL
    GROSS:        MASS
                      25X25X20MM, TAN, MULTILOBULAR, RIGHT
                      AXILLARY AREA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3694C20 (CONTINUED)

```
                                    MICRO+  P   #B FIBROADENOMA
                                OVARIES
                                    GROSS:      CYST
                                                    3X2MM, YELLOW FLUID FILLED, RIGHT
                                    MICRO+ (3)  CYST(S)
                                LUNGS
                                    MICRO:  (1) MINERALIZATION, PULMONARY VESSEL(S)
                                KIDNEYS
                                    MICRO:  (1) TUBULAR PROTEINOSIS
```

ANIMAL 3800C21 13-JUN-89 STUDY DAY 448
TYPE OF DEATH: SACRIFICED MORIBUND

```
                                LIVER
                                    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
                                PITUITARY
                                    GROSS:      SIZE INCREASE
                                                    4X NORMAL SIZE, IRREGULAR SHAPE
                                    MICRO+  P   #B ADENOMA
                                                    VERY LARGE
                                    MICRO: ((4)) VASCULAR ECTASIA
                                MAMMARY GL
                                    GROSS:      MASS
                                                    ONE LARGE, 30X25X10MM AND MULTIPLE
                                                    SMALLER MASSES
                                                    AND NODULES FILLED WITH YELLOW OR WHITE
                                                    MATERIAL
                                                    LOCATION OF MASSES, NECK AREA
                                    MICRO+  P   #B FIBROADENOMA
                                MAMMARY GL
                                    GROSS:      GALACTOCELE
                                                    MULTIPLE, ENTIRE MAMMARY AREA
                                BRAIN
                                    GROSS:      DEPRESSION/INDENTATION
                                                    AREA OVER PITUITARY
                                    MICRO:   3  HYDROCEPHALUS
                                                    THE TISSUE IS DAMAGED AND DIFFICULT TO
                                                    EVALUATE
                                LUNGS
                                    MICRO:   4  CONGESTION
                                            (2) MINERALIZATION, PULMONARY VESSEL(S)
                                KIDNEYS
                                    MICRO: ((2)) RENAL CALCULI
                                                    RIGHT WORSE
                                CAUSE OF DEATH
                                    MICRO:   P  ADENOMA, PITUITARY
```

ANIMAL 3709C22 15-DEC-89 STUDY DAY 633
TYPE OF DEATH: FOUND DEAD

```
                                TOTAL BODY
                                    GROSS:      POSTMORTEM CHANGE
                                                    SEVERE
                                THORACIC CAV
                                    GROSS:      FLUID
                                                    APPROX 4CC, PINK-YELLOW FLUID
                                THORACIC CAV
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3709C22 (CONTINUED)

```
                    GROSS:        MASS
                                      10X7X4 MM, TAN , ATTACHED TO TISSUE ON
                                      LEFT SIDE
                                      THAT SURROUNDS THE AORTA
                STOMACH
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      BLACK FOCAL AREAS, GLANDULAR PORTION
                LIVER
                    GROSS:        SWOLLEN
                                      ALL LOBES
                LIVER
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MOTTLED TAN AND RED, ALL LOBES
                     MICRO↑((4)) #M HISTIOCYTIC SARCOMA
                                      EXTENSIVE INFILTRATES AND EMBOLI
                    MICRO: ((4)) HEPATOCELLULAR NECROSIS
                PITUITARY
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      DARK RED FOCAL AREAS
                     MICRO↑  P   #B ADENOMA
                ADRENAL GL
                    GROSS:        SIZE INCREASE
                                      2-3X NORMAL, BILATERAL
                    MICRO: ((4)) VASCULAR ECTASIA
                SKIN
                    MICRO:   P   #M HISTIOCYTIC SARCOMA
                MAMMARY GL
                    GROSS:        MASS
                                      20X25X10 MM, TAN, FIRM, UNDER LEFT
                                      FRONT LEG
                    MICRO:   2   HYPERSECRETION
                                      THE MASS IS SKIN, NOT MAMMARY GLAND
                            (2)  MASTITIS
                SPLEEN
                    GROSS:        MASS
                                      5X5X3MM, AT ONE POLE
                     MICRO↑  4   #M HISTIOCYTIC SARCOMA
                                      PROBABLY THE CAUSE OF THE INFARCTION
                    MICRO:   4   EXTRAMEDULLARY HEMATOPOIESIS
                            (5)  INFARCTION
                LYMPH ND, MED
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      DARK RED
                     MICRO↑  4   SINUS ERYTHROCYTOSIS
                LYMPH ND, MED
                    GROSS:        SIZE INCREASE
                                      3X NORMAL
                     MICRO↑  P   #M HISTIOCYTIC SARCOMA
                THYMIC REGION
                    MICRO: ((2)) EPITHELIAL CYST(S)
                             4   INVOLUTIONAL ATROPHY
                LUNGS
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MOTTLED RED AND TAN, ALL LOBES
                     MICRO↑  3   CONGESTION
                    MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3709C22 (CONTINUED)

((1)) #M HISTIOCYTIC SARCOMA
A FEW SMALL PERIVASCULAR INFILTRATES
KIDNEYS
MICRO: ((2)) RENAL CALCULI
BILATERAL
CAUSE OF DEATH
MICRO: P HISTIOCYTIC SARCOMA
INVOLVES LIVER, SPLEEN, LUNGS, SKIN,
AND MEDIASTINUM
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
STOMACH

ANIMAL 3684C23 29-OCT-89 STUDY DAY 586
TYPE OF DEATH: FOUND DEAD

STOMACH
GROSS: CONTENTS ABNORMAL
CONTAINS YELLOW MUCUS
LIVER
MICRO: ((3)) FATTY CHANGE
JEJUNUM
GROSS: POSTMORTEM CHANGE
ILEUM
GROSS: POSTMORTEM CHANGE
CECUM
GROSS: POSTMORTEM CHANGE
PITUITARY
GROSS: SIZE INCREASE
6X5X5MM
MICRO↑ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE TAN FOCI, BILATERAL
MICRO↑((1)) CORTICAL CELL HYPERTROPHY
NARES/NOSE
GROSS: CRUST
DARK RED, PERINASAL AREA
SPLEEN
GROSS: SIZE DECREASE
SLIGHT
LYMPH ND, S-MAN
GROSS: COLOR CHANGE, DIFFUSE
RED
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO ENLARGED PITUITARY
MICRO↑ 4 COMPRESSION
MICRO: (2) HEMORRHAGE
DUE TO PITUITARY TUMOR
3 HYDROCEPHALUS
EYE
GROSS: CRUST
DARK RED, PERIOCULAR AREA, BILATERAL
UTERUS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3684C23 (CONTINUED)

```
    GROSS:        POSTMORTEM CHANGE
                      RIGHT UTERINE HORN, MILD
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      ALL LOBES MOTTLED DARK PINK AND DARK RED
     MICRO+  5    CONGESTION
    MICRO: ((2)) BRONCHOPNEUMONIA
           ((1)) HEMORRHAGE
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
                      RIGHT
CAUSE OF DEATH
    MICRO:   P    ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SKIN              SPLEEN            LYMPH ND, S-MAN
    EYE
```

ANIMAL 3686C24 7-JUL-89 STUDY DAY 472

TYPE OF DEATH: FOUND DEAD

```
LIVER
    GROSS:        POSTMORTEM CHANGE
DUODENUM
    GROSS:        POSTMORTEM CHANGE
JEJUNUM
    GROSS:        POSTMORTEM CHANGE
ILEUM
    GROSS:        POSTMORTEM CHANGE
BRAIN
    GROSS:        HEMORRHAGE
                      VENTRAL SIDE NEAR PITUITARY, BRIGHT RED
                      BLOOD
    MICRO:  (3)   COMPRESSION
                      PROBABLY DUE TO A PITUITARY TUMOR
LUNGS
    GROSS:        POSTMORTEM CHANGE
    MICRO:   5    CONGESTION
CAUSE OF DEATH
    MICRO:   P    NOT DETERMINED
                      PROBABLY A PITUITARY TUMOR, BUT LOST
                      DUE TO AUTOLYSIS?
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LIVER             KIDNEYS
```

ANIMAL 3935C25 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.323	2.909
KIDNEYS	2.663	0.751
HEART	1.167	0.329
SPLEEN	0.581	0.164
BRAIN	1.989	0.561
ADRENAL GL	0.089	0.025
OVARIES	0.093	0.026
TERMINAL BODY WT.	354.8	

```
PITUITARY
    GROSS:        SIZE INCREASE
                      7X5X5MM
     MICRO+  P    #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED AND TAN
     MICRO+((4)) VASCULAR ECTASIA
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3935C25 (CONTINUED)

```
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      BILATERAL, WHITE AND TAN FOCI
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO: ((4)) VASCULAR ECTASIA
           ((3)) THROMBOSIS
MAMMARY GL
    MICRO: ((3)) HYPERSECRETION
LYMPH ND, S-MAN
    MICRO:   1   SINUS ERYTHROCYTOSIS
LYMPH ND, MED
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED, BILATERAL
LYMPH ND, REN
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED BILATERAL
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LIVER
THE FOLLOWING TISSUES WERE MISSING:
    LYMPH ND, MED    LYMPH ND, REN
```

ANIMAL 3680C26 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.397	4.204
KIDNEYS	2.610	0.885
HEART	0.981	0.333
SPLEEN	0.315	0.107
BRAIN	2.000	0.678
ADRENAL GL	0.119	0.040
OVARIES	0.078	0.026
TERMINAL BODY WT.	294.9	

```
TOTAL BODY
    GROSS:        UNKEMPT
SALIVARY GL
    GROSS:        PUSTULE
                      YELLOW AND BROWN PUS, LEFT, 3X3X3MM
ESOPHAGUS
    MICRO:  (3)   #M HISTIOCYTIC SARCOMA
                      SURROUNDS THE ESOPHAGUS IN THE
                      MEDIASTINAL REGION
LIVER
    GROSS:        SWOLLEN
                      ALL LOBES, MILD
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      TAN FOCI, 2X2X2 TO 3X3XX3MM, ALL LOBES
     MICRO+  3    #M HISTIOCYTIC SARCOMA
                      MANY PERIVASCULAR INFILTRATES
                      THROUGHOUT THE LIVER
    MICRO: ((2)) HEPATOCELLULAR NECROSIS
PANCREAS
    GROSS:        MASS
                      50X50X20MM, TAN
     MICRO+  P    #M HISTIOCYTIC SARCOMA
                      ALSO INVOLVES ADHESIONS AND
                      INFILTRATIVE INVASION OF
                      THE STOMACH, DUODENUM, AND LIVER.
PANCREAS
    GROSS:        ADHESION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3680C26 (CONTINUED)

```
                                        MASS ADHESION TO ALL INTESTINES
                                        INCLUDING KIDNEYS, ADRENALS.
PITUITARY
    GROSS:          SIZE INCREASE
                        SLIGHT
     MICRO+   P     #B ADENOMA
PITUITARY
    GROSS:          COLOR CHANGE, DIFFUSE
                        BLACK AND TAN
SKIN
    GROSS:          MASS
                        30X30X2MM, CRUSTED BLACK AND BROWN,
                        DORSAL, LEFT ABD. AREA
     MICRO+   P     #M HISTIOCYTIC SARCOMA
                        THE MASS IS ULCERATED AND NECROTIC
MAMMARY GL
    MICRO:   P      #B FIBROADENOMA
                        ADHESIONS OF THE TUMOR TO SALIVARY
                        GLANDS ARE PRESENT
            ((4))   GALACTOCELE
                        MISTAKEN FOR A SALIVARY GLAND PUSTULE
LYMPH ND, OTHER
    GROSS:          SIZE INCREASE
                        POPLITEAL, LEFT, 3X NORMAL
THYMIC REGION
    GROSS:          NODULE
                        4, 3X2X2MM TO 4X4X4MM, TAN AND FIRM
     MICRO+((P))    #M HISTIOCYTIC SARCOMA
                        INVOLVES SEVERAL NODES
    MICRO:   4      INVOLUTIONAL ATROPHY
LUNGS
    MICRO:  (1)     MINERALIZATION, PULMONARY VESSEL(S)
           ((1))    PERIVASCULAR INFILTRATE(S)
            (1)     #M HISTIOCYTIC SARCOMA
                        A SMALL METASTATIC NODULE
            (1)     PNEUMONITIS, INTERSTITIAL
KIDNEYS
    GROSS:          MASS
                        3X3X3MM, TOP OF KIDNEY, TAN
     MICRO+ (3)     #M HISTIOCYTIC SARCOMA
                        RIGHT
    MICRO:  (1)     RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SALIVARY GL
```

ANIMAL 3797C27 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.574	2.736
KIDNEYS	2.242	0.715
HEART	1.092	0.348
SPLEEN	0.562	0.179
BRAIN	2.199	0.702
ADRENAL GL	0.087	0.028
OVARIES	0.141	0.045
TERMINAL BODY WT.	313.4	

```
LIVER
    MICRO: ((1))    BILIARY HYPERPLASIA
ADRENAL GL
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                        MULTIPLE WHITE FOCI, BILATERAL
     MICRO+((2))    CORTICAL CELL HYPERTROPHY
ADRENAL GL
    GROSS:          SIZE INCREASE
                        LEFT, 2X NORMAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3797C27 (CONTINUED)

```
                                    MICRO+ (5)  INFARCTION
                                   MICRO: ((4)) VASCULAR ECTASIA
                              MAMMARY GL
                                   GROSS:       MASS
                                                    TWO,LEFT AXILLARY,20X15X5MM, TAN AND
                                                    RIGHT
                                                    AXILLARY, 15X20X10MM, WHITE
                                    MICRO+  P   #B FIBROADENOMA
                              PAWS/FEET
                                   GROSS:       SWOLLEN
                                                    LEFT HIND FOOT,SLIGHTLY
                                    MICRO+((4)) ABSCESS
                              LUNGS
                                   MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
                                           (1)  ALVEOLAR HISTIOCYTOSIS
                                           (1)  PNEUMONITIS, INTERSTITIAL
                              KIDNEYS
                                   MICRO:  (1)  MINERALIZATION
```

ANIMAL 3933C28 4-SEP-89 STUDY DAY 531

TYPE OF DEATH: FOUND DEAD

```
                              LIVER
                                   GROSS:       SWOLLEN
                                                    MILD, ALL LOBES
                              PITUITARY
                                   GROSS:       MASS
                                                    8X6X5 MM, DARK RED, TAN AND PINK
                                    MICRO+  P   #B ADENOMA
                                   MICRO:   4   HEMORRHAGE
                              THYROID GL
                                   GROSS:       SIZE INCREASE
                                                    2X NORMAL, BILATERAL
                                    MICRO+ (3)  C CELL HYPERPLASIA
                                   MICRO: ((P)) THYROGLOSSAL DUCT CYST
                              ADRENAL GL
                                   GROSS:       COLOR CHANGE, DIFFUSE
                                                    DARK RED, BILATERAL
                                    MICRO+  4   HEMORRHAGE
                              ADRENAL GL
                                   GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                    TAN FOCI, BILATERAL
                                   MICRO:  (5)  VASCULAR ECTASIA
                              SKIN
                                   GROSS:       ALOPECIA
                                                    MULTIPLE AREAS, CHEST AND ABDOMEN
                              MAMMARY GL
                                   GROSS:       GALACTOCELE
                                                    MULTIPLE, CERVICAL, INGUINAL AND ALONG
                                                    BOTH SIDES
                                    MICRO+((3)) GALACTOCELE
                                   MICRO: ((2)) MASTITIS
                              LYMPH ND, S-MAN
                                   GROSS:       COLOR CHANGE, DIFFUSE
                                                    RED
                                   MICRO:   2   PLASMACYTOSIS
                              LYMPH ND, MED
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3933C28 (CONTINUED)

```
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      RED
THYMIC REGION
                    MICRO:   4    CONGESTION
                                      THIS IS PROBABLY THE TISSUE REPORTED AS
                                      LYMPH NODE
BRAIN
                    GROSS:        DEPRESSION/INDENTATION
                                      DUE TO PITUITARY MASS
                     MICRO+ (3)   COMPRESSION
BRAIN
                    GROSS:        HEMORRHAGE
                                      POSTERIOR MENIGIAL FOSSA
                     MICRO+   4   HEMORRHAGE
                                      WITHIN THE VENTRICLES
UTERUS
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      DARK RED AREAS, BILATERAL
VAGINA
                    GROSS:        CONTENTS ABNORMAL
                                      BLOOD
VAGINA
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      DARK RED
LUNGS
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MOTTLED DARK AND LIGHT RED, ALL LOBES
                     MICRO+((3)) HEMORRHAGE
                    MICRO:   4    CONGESTION
                           ((1)) PERIVASCULAR INFILTRATE(S)
                            (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
                    MICRO: ((2)) TUBULAR PROTEINOSIS
                           ((2)) RENAL CALCULI
CAUSE OF DEATH
                    MICRO:   P    ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    LIVER             SKIN              UTERUS
                    VAGINA
THE FOLLOWING TISSUES WERE MISSING:
                    LYMPH ND, MED
```

ANIMAL 3795C29 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.753	2.123
KIDNEYS	2.790	0.607
HEART	1.196	0.260
SPLEEN	0.724	0.158
BRAIN	1.964	0.428
ADRENAL GL	0.137	0.030
OVARIES	0.120	0.026
TERMINAL BODY WT.	459.4	

```
LIVER
                    MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY
                    GROSS:        MASS
                                      5X5X5MM, RED-BROWN
                     MICRO+   P   #M CARCINOMA
                    MICRO: ((4)) VASCULAR ECTASIA
ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MULTIPLE RED AND WHITE FOCI, BILATERAL
                     MICRO+((4)) VASCULAR ECTASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3795C29 (CONTINUED)

MICRO: ((1)) CORTICAL CELL HYPERTROPHY
((2)) FIBROSIS
((4)) THROMBOSIS
(1) HEMOSIDEROSIS

TAIL
GROSS: NODULE
MULTIPLE, BLACK, ENTIRE SURFACE
MICRO+ (3) FOLLICULITIS

BRAIN
GROSS: DEPRESSION/INDENTATION
SLIGHT, AREA OVER PITUITARY
MICRO+ (4) COMPRESSION

LUNGS
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
(1) PNEUMONITIS, INTERSTITIAL
(1) MINERALIZATION, PULMONARY VESSEL(S)

KIDNEYS
MICRO: ((2)) RENAL CALCULI
(1) NEPHRITIS, INTERSTITIAL
((1)) TUBULAR PROTEINOSIS

ANIMAL 3717C30 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.658	4.022
KIDNEYS	3.513	1.212
HEART	1.087	0.375
SPLEEN	0.676	0.233
BRAIN	1.942	0.670
ADRENAL GL	0.115	0.040
OVARIES	0.082	0.028
TERMINAL BODY WT.	289.9	

TOTAL BODY
GROSS: EMACIATION

LIVER
GROSS: SWOLLEN
SLIGHT, ALL LOBES

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED FOCI ON ALL LOBES
MICRO: (1) MONONUCLEAR CELL INFILTRATE(S)

PITUITARY
GROSS: MASS
10X10X5MM, DARK RED AND TAN
MICRO+ P #B ADENOMA

ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL, MULTIPLE BLACK AND CREAM FOCAL AREAS
MICRO: (4) VASCULAR ECTASIA
((3)) HEMORRHAGE

MAMMARY GL
GROSS: MASS
20X20X10MM, VENTRAL, UROGENITAL AREA, SMOOTH, TAN
MICRO+ P #B FIBROADENOMA

MAMMARY GL
GROSS: GALACTOCELE
UPPER VENTRAL SHOULDER AREA 2X2X2MM
MICRO+((2)) GALACTOCELE

BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO PITUITARY SIZE
MICRO+ 3 COMPRESSION

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3717C30 (CONTINUED)

```
                                    MICRO:   2   HYDROCEPHALUS
                                EYE
                                    GROSS:       CRUST
                                                     PEROCULAR, BILATERAL
                                LUNGS
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     ALL LOBES MOTTLED PINK AND RED
                                KIDNEYS
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     LEFT, DARK RED  FOCAL AREA GREATER
                                                     CURVATURE
                                     MICRO+((2)) TUBULAR BASOPHILIA
                                    MICRO: ((1)) TUBULAR PROTEINOSIS
                                           ((2)) RENAL CALCULI
                                           ((1)) NEPHRITIS, INTERSTITIAL
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    SKIN             EYE              LUNGS
```

ANIMAL 3794C31 1-FEB-90 STUDY DAY 681
TYPE OF DEATH: FOUND DEAD

```
                                LIVER
                                    MICRO: ((1)) CHOLANGIOFIBROSIS
                                PITUITARY
                                    GROSS:       MASS
                                                     10X5X5MM, RED
                                     MICRO+  P   #B ADENOMA
                                ADRENAL GL
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     MULTIPLE WHITE AND GREY FOCI, BILATERAL
                                     MICRO+((3)) CORTICAL CELL HYPERTROPHY
                                    MICRO: ((4)) VASCULAR ECTASIA
                                           ((2)) HEMOSIDEROSIS
                                SUBCUTIS
                                    GROSS:       MASS
                                                     15X10X5MM, RIGHT INGUINAL AREA
                                     MICRO+ (4)  ABSCESS
                                                     PROBABLY SECONDARY TO A RUPTURED
                                                     GALACTOCELE
                                NARES/NOSE
                                    GROSS:       CRUST
                                                     PERINASAL, RED
                                BRAIN
                                    GROSS:       DEPRESSION/INDENTATION
                                                     AREA OVER PITUITARY
                                    MICRO:   2   HYDROCEPHALUS
                                EYE
                                    GROSS:       CRUST
                                                     PERIOCULAR, RED, BILATERAL
                                NASAL CAVITY
                                    MICRO:   3   RHINITIS
                                LUNGS
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     THREE WHITE FOCAL AREAS, RIGHT APICAL,
                                                     1X1MM
                                                     AND RIGHT DIAPHRAGMATIC 1X1MM AND 3X3MM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3794C31 (CONTINUED)

MICRO+ (3) ALVEOLAR HISTIOCYTOSIS
MICRO: 4 CONGESTION
((1)) PERIVASCULAR INFILTRATE(S)
(1) PNEUMONITIS, INTERSTITIAL
KIDNEYS
MICRO: ((1)) RENAL CALCULI
CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
SKIN NARES/NOSE EYE

ANIMAL 3912C32 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.334	2.560
KIDNEYS	2.797	0.859
HEART	1.332	0.409
SPLEEN	0.568	0.174
BRAIN	2.017	0.620
ADRENAL GL	0.074	0.023
OVARIES	0.143	0.044
TERMINAL BODY WT.	325.6	

LIVER
MICRO: ((1)) BILIARY HYPERPLASIA
PITUITARY
GROSS: SIZE INCREASE
2X NORMAL
MICRO: (2) VASCULAR ECTASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: (3) VASCULAR ECTASIA
LUNGS
MICRO: (2) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) NEPHRITIS, INTERSTITIAL
LEFT
((1)) RENAL CALCULI
RIGHT

ANIMAL 3842C33 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.300	3.635
KIDNEYS	3.362	0.994
HEART	1.411	0.417
SPLEEN	1.392	0.411
BRAIN	2.021	0.597
ADRENAL GL	0.123	0.036
OVARIES	0.098	0.029
TERMINAL BODY WT.	338.4	

LIVER
MICRO: (1) CHOLANGIOFIBROSIS
PITUITARY
GROSS: SIZE INCREASE
6X6X4MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL, DARK BROWN FOCUS
MICRO+ (5) VASCULAR ECTASIA
MICRO: (3) INFARCTION
MAMMARY GL
GROSS: MASS
LEFT INGUINAL, 60X45X20MM, CREAM COLORED
LEFT AXILLARY, 55X45X30MM, WHITE COLORED, MULTILOBULAR

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3842C33 (CONTINUED)

```
                    MICRO+ (P)  #B FIBROADENOMA
                    MICRO:  (P)  #M ADENOCARCINOMA
                                     THIS MASS IS ULCERATED
SPLEEN
    GROSS:          SIZE INCREASE
                                     2X NORMAL
                    MICRO+  3   EXTRAMEDULLARY HEMATOPOIESIS
BRAIN
    GROSS:          DEPRESSION/INDENTATION
                                     DUE TO ENLARGED PITUITARY
                    MICRO+  3   COMPRESSION
                    MICRO: ((1)) VACUOLIZATION
                                     CEREBELLUM AND BRAINSTEM
EYE
    GROSS:          LOST AT NECROPSY
                                     RIGHT
KIDNEYS
    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR PROTEINOSIS
           ((1)) RENAL CALCULI
           ((1)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LUNGS
```

ANIMAL 3960C34 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.267	2.671
KIDNEYS	2.655	0.630
HEART	1.388	0.329
SPLEEN	0.510	0.121
BRAIN	1.980	0.469
ADRENAL GL	0.089	0.021
OVARIES	0.117	0.028
TERMINAL BODY WT.	421.8	

```
LIVER
    MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY
    GROSS:          SIZE INCREASE
                                     1 1/2X NORMAL
                    MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                                     DARK RED AND TAN FOCI
                    MICRO+((4)) VASCULAR ECTASIA
ADRENAL GL
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                                     SURFACE, BILATERAL
                    MICRO+((1)) CORTICAL CELL HYPERTROPHY
                    MICRO: ((4)) VASCULAR ECTASIA
                           (2)  INFARCTION
                           (2)  THROMBOSIS
LUNGS
    MICRO:  (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
```

ANIMAL 3770C35 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.585	2.721
KIDNEYS	2.598	0.668
HEART	1.182	0.304

```
LIVER
    GROSS:          SWOLLEN
                                     SLIGHT, RIGHT MEDIAN
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3770C35 (CONTINUED)

SPLEEN	0.521	0.134
BRAIN	1.986	0.511
ADRENAL GL	0.092	0.024
OVARIES	0.137	0.035
TERMINAL BODY WT.	389.0	

GROSS: SIZE INCREASE
SLIGHT
MICRO+((4)) VASCULAR ECTASIA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK BROWN FOCUS
MICRO+ (3) FIBROSIS
MICRO: ((2)) CYST(S)
ADRENAL GL
GROSS: SIZE INCREASE
SLIGHT, LEFT
MICRO+ (4) INFARCTION
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: (3) VASCULAR ECTASIA
LUNGS
MICRO: (2) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER

ANIMAL 3831C36 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.542	2.468
KIDNEYS	3.067	0.718
HEART	1.283	0.300
SPLEEN	0.691	0.162
BRAIN	2.032	0.476
ADRENAL GL	0.094	0.022
OVARIES	0.382	0.089
TERMINAL BODY WT.	427.1	

LIVER
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
((1)) BILIARY HYPERPLASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
GROSS: CYST
RIGHT, 3X3X2MM, DARK RED
MICRO+((4)) VASCULAR ECTASIA
MICRO: ((2)) CORTICAL CELL VACUOLIZATION
(4) INFARCTION
SKIN
GROSS: ALOPECIA
MULTIPLE
EARS
GROSS: THICKER THAN NORMAL
BOTH
MICRO+((4)) AURICULAR CHONDROPATHY
OVARIES
GROSS: CYST
RIGHT, 5X5X5MM
LEFT, 2X2X1MM
MICRO+((4)) CYST(S)
UTERUS
GROSS: MASS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3831C36 (CONTINUED)

```
                                        30X30X30MM, ATTACHED TO BOTH HORNS AND
                                        CERVIX
                                        ATTACHED TO BLADDER
     MICRO+ (P)  #M STROMAL SARCOMA
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SKIN            LUNGS
```

ANIMAL 4002C37 15-NOV-89 STUDY DAY 603

TYPE OF DEATH: SACRIFICED MORIBUND

```
LIVER
    MICRO: ((1)) CHOLANGITIS
PITUITARY
    GROSS:       SIZE INCREASE
                     6X4X3MM
     MICRO+ (P)  #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED AND TAN
MAMMARY GL
    GROSS:       MASS
                     45X30X20 MM, 1/2 CRATER, FIRM, OTHER
                     1/2 YELLOW OZIW,
                     OOZING SUBSTANCE
     MICRO+  P   #B FIBROADENOMA
    MICRO: ((4)) ABSCESS
                     THE CENTER OF THE MASS IS NECROTIC AND
                     CONTAINS
                     MULTIPLE ABSCESSES.
PAWS/FEET
    GROSS:       ULCERATED
                     RIGHT FOOT, 20X15X5MM, LEFT FOOT,
                     15X15X5MM
     MICRO+  5   ULCERATION
    MICRO: ((2)) OSSEUS METAPLASIA
              5   FIBROSIS
SPLEEN
    GROSS:       SIZE INCREASE
                     2X NORMAL
     MICRO+  3   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
    GROSS:       SIZE INCREASE
                     2X NORMAL, BILATERAL
     MICRO+  3   PLASMACYTOSIS
LYMPH ND, REN
    GROSS:       SIZE INCREASE
                     4X NORMAL, BILATERAL
     MICRO+((4)) LYMPHATIC ECTASIA, CYSTIC
    MICRO: ((3)) FIBROSIS
              4   LYMPHOID HYPERPLASIA
LUNGS
    MICRO:   3   CONGESTION
           ((1)) PNEUMONITIS, INTERSTITIAL
           ((1)) ALVEOLAR HISTIOCYTOSIS
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 4002C37 (CONTINUED)

KIDNEYS
MICRO: ((2)) RENAL CALCULI
CAUSE OF DEATH
MICRO: P FIBROADENOMA, MAMMARY GLAND/SEPTICEMIA

ANIMAL 3821C38 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	13.525	3.055
KIDNEYS	2.976	0.672
HEART	1.294	0.292
SPLEEN	0.559	0.126
BRAIN	1.950	0.441
ADRENAL GL	0.084	0.019
OVARIES	0.111	0.025
TERMINAL BODY WT.	442.6	

LIVER
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY
GROSS: MASS
DARK RED, 10X10X4MM
MICRO+ P #B ADENOMA
MICRO: ((4)) VASCULAR ECTASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL, BLACK AND CREAM FOCAL AREAS, PUNCTATE
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: ((4)) VASCULAR ECTASIA
MAMMARY GL
GROSS: GALACTOCELE
PUNCTATE SCATTERED THROUGHOUT
MICRO+((3)) GALACTOCELE
MAMMARY GL
GROSS: MASS
BILATERAL, AXILLARY, 60X60X10MM LEFT, 45X50X15MM, RIGHT
BOTH ARE MULTILOBULAR AND MOTTLED CREAM AND DARK TAN
RIGHT HAS A 4X3MM RED ULCREATED AREA ON SKIN SURFACE
MICRO+ (P) #M ADENOCARCINOMA
MAMMARY GL
GROSS: CYST
RIGHT INGUINAL REGION 10X5X5MM
FILLED WITH A DARK GREEN THICK MATERIAL
LEFT DORSAL ABDOMINAL REGION 10X3X4MM
FILLED WITH A THIN DARK BROWN FLUID
MICRO: (P) #B FIBROADENOMA
(4) MASTITIS
BRAIN
GROSS: DEPRESSION/INDENTATION
ABOVE PITUITARY MASS
LUNGS
MICRO: (1) PERIVASCULAR INFILTRATE(S)
((1)) PNEUMONITIS, INTERSTITIAL
KIDNEYS
MICRO: ((1)) RENAL CALCULI

ANIMAL 3931C39 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.582	2.741
KIDNEYS	2.740	0.648

LIVER
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3931C39 (CONTINUED)

HEART	1.331	0.315
SPLEEN	0.574	0.136
BRAIN	1.954	0.462
ADRENAL GL	0.112	0.027
OVARIES	0.063	0.015
TERMINAL BODY WT.	422.6	

GROSS: SIZE INCREASE
2X NORMAL
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
2 DARK RED FOCAL AREAS, RIGHT 3X4MM AND LEFT 2X2MM
MICRO+((3)) VASCULAR ECTASIA
MAMMARY GL
GROSS: GALACTOCELE
1MM TO PUNCTATE SCATTERED THROUGHOUT
MICRO+((4)) GALACTOCELE
MAMMARY GL
GROSS: NODULE
RIGHT INGUINAL REGION 2X2X2MM, LEFT AXILLARY 5X6X5MM
DARK TAN
MICRO+ P #M ADENOCARCINOMA
MAMMARY GL
GROSS: MASS
LEFT UROGENTIAL REGION 70X60X50MM
MULTILOBULAR
MICRO+ P #B FIBROADENOMA
LUNGS
MICRO: 4 CONGESTION
KIDNEYS
MICRO: ((1)) TUBULAR BASOPHILIA
((1)) NEPHRITIS, INTERSTITIAL
((1)) TUBULAR PROTEINOSIS
((1)) RENAL CALCULI

ANIMAL 3929C40 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.539	3.465
KIDNEYS	2.800	0.841
HEART	1.137	0.341
SPLEEN	0.598	0.180
BRAIN	1.968	0.591
ADRENAL GL	0.138	0.041
OVARIES	0.121	0.036
TERMINAL BODY WT.	333.0	

PITUITARY
GROSS: NODULE
5X4X2MM DARK RED, RIGHT SIDE
MICRO+ P #B ADENOMA
ADRENAL GL
GROSS: SIZE INCREASE
BILATERAL, SLIGHT
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL MULTIPLE BLACK 1MM FOCAL AREAS
MICRO+((4)) HEMORRHAGE
MICRO: ((4)) VASCULAR ECTASIA
MAMMARY GL
GROSS: MASS
35X20X10MM CREAM MULTILOBULAR, RIGHT AXILLARY REGION
MICRO+ P #B FIBROADENOMA
LUNGS
GROSS: COLOR CHANGE, DIFFUSE
ALL LOBES, DARK RED
KIDNEYS
GROSS: HYDRONEPHROSIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3929C40 (CONTINUED)

RIGHT MODERATE
MICRO+ 3 HYDRONEPHROSIS
RIGHT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER LUNGS

ANIMAL 3940C41 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.134	2.008
KIDNEYS	2.655	0.655
HEART	1.205	0.297
SPLEEN	0.466	0.115
BRAIN	1.998	0.493
ADRENAL GL	0.043	0.011
OVARIES	0.119	0.029
TERMINAL BODY WT.	405.1	

LIVER
MICRO: ((4)) FATTY CHANGE
PITUITARY
GROSS: MASS
10X7X5MM, DARK RED
MICRO+ P #M CARCINOMA
ADRENAL GL
GROSS: SIZE DECREASE
1/2 OF NORMAL, BILATERAL
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((3)) CORTICAL CELL HYPERTROPHY
MICRO: (3) CORTICAL CELL VACUOLIZATION
SKIN
GROSS: ABSCESS
CLITORAL GLAND, 7X5X3MM, GREEN CREAM MATERIAL
MICRO+ P ABSCESS, CLITORAL/PREPUTIAL GLAND
EARS
GROSS: THICKER THAN NORMAL
THICKENED, BILATERAL
MICRO+ 4 AURICULAR CHONDROPATHY
MAMMARY GL
GROSS: GALACTOCELE
10X5X3MM TO PUNCTATE, RIGHT VENTRAL
MICRO+((3)) GALACTOCELE
MICRO: (P) #B FIBROADENOMA
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO ENLARGED PITUITARY
MICRO+ (4) COMPRESSION
MICRO: 2 HYDROCEPHALUS
UTERUS
GROSS: POLYP
32X6X6MM, LEFT, DARK RED SOLID SUBSTANCE
MICRO+ P #B STROMAL POLYP
LUNGS
MICRO: (1) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: (1) TUBULAR PROTEINOSIS

ANIMAL 3687C42 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.

LIVER

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3687C42 (CONTINUED)

LIVER	11.950	2.058
KIDNEYS	2.940	0.506
HEART	1.371	0.236
SPLEEN	0.526	0.091
BRAIN	1.947	0.335
ADRENAL GL	0.096	0.017
OVARIES	0.092	0.016
TERMINAL BODY WT.	580.6	

MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY
GROSS: SIZE INCREASE
3X3X3MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
TAN AND RED FOCI, BILATERAL
MICRO+((3)) VASCULAR ECTASIA
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO PITUITARY SIZE
MICRO+ 4 COMPRESSION
LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DIAPHRAGMATIC, LOBE, WHITE FOCI, 2X2MM
MICRO+((2)) ALVEOLAR HISTIOCYTOSIS
TWO FOCI
MICRO: (2) INTERSTITIAL FIBROSIS
(1) PERIVASCULAR INFILTRATE(S)
KIDNEYS
MICRO: ((1)) TUBULAR PROTEINOSIS

ANIMAL 3852C43 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.047	2.259
KIDNEYS	2.634	0.494
HEART	1.500	0.281
SPLEEN	0.621	0.116
BRAIN	2.057	0.386
ADRENAL GL	0.061	0.011
OVARIES	0.109	0.020
TERMINAL BODY WT.	533.3	

LIVER
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
((1)) CHOLANGIOFIBROSIS
PITUITARY
GROSS: NODULE
LEFT SIDE, DARK RED, 4X4X4MM
MICRO+ P #B ADENOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: (2) VASCULAR ECTASIA
MAMMARY GL
GROSS: MASS
12X10X5MM, LEFT AXILLARY REGION
MICRO+ P #M ADENOCARCINOMA
MAMMARY GL
GROSS: GALACTOCELE
PUNCTATE, SCATTERED IN THE ABDONIMAL REGION
MICRO+((2)) GALACTOCELE
KIDNEYS
MICRO: ((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LUNGS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3727C44 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.794	3.394
KIDNEYS	2.925	1.013
HEART	1.258	0.436
SPLEEN	0.556	0.193
BRAIN	1.951	0.676
ADRENAL GL	0.141	0.049
OVARIES	0.088	0.030
TERMINAL BODY WT.	288.6	

LIVER
MICRO: (1) CYSTIC DEGENERATION
PITUITARY
GROSS: MASS
10X5X6MM DARK RED
MICRO+ P #M CARCINOMA
MICRO: ((3)) HEMOSIDEROSIS
NARES/NOSE
GROSS: CRUST
PERINASAL REGION
MAMMARY GL
GROSS: GALACTOCELE
SCATTERED THROUGHOUT, PUNCTATE TO 2MM
MICRO+((3)) GALACTOCELE
MAMMARY GL
GROSS: NODULE
LEFT INGUINAL REGION, MULTILOBULAR, DARK TAN AND CREAM
AN AREA 4X5MM CYSTIC FILLED WITH BLACK THICK MATERIAL
MICRO+ P #B ADENOMA
PAWS/FEET
GROSS: ULCERATED
RED BLILATERAL, 3X3MM
MICRO+ (4) ULCERATION
MICRO: (3) FIBROSIS
LYMPH ND, S-MAN
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
MICRO: ((3)) PLASMACYTOSIS
BRAIN
GROSS: DEPRESSION/INDENTATION
ABOVE PITUITARY MASS
MICRO+ (4) COMPRESSION
EYE
GROSS: CRUST
BILATERAL, RED, PERIOCULAR
NASAL CAVITY
MICRO: (2) SUBMUCOSAL MINERALIZATION
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
SKIN NARES/NOSE EYE
LUNGS KIDNEYS

ANIMAL 3900C45 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.963	2.293
KIDNEYS	2.817	0.589
HEART	1.536	0.321
SPLEEN	0.491	0.103
BRAIN	1.882	0.394
ADRENAL GL	0.071	0.015

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
2-5MM, DARK RED FOCI ALL LOBES
WHITE FOCI BETWEEN MEDIAN LOBES
MICRO+ (P) #B HEPATOCELLULAR ADENOMA
PITUITARY
GROSS: NODULE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3900C45 (CONTINUED)

OVARIES	0.502	0.105
TERMINAL BODY WT.	478.2	

5X4X2MM, DARK RED
MICRO+ P #B ADENOMA
ADRENAL GL
GROSS: SIZE DECREASE
SLIGHT, BILATERAL
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: (3) VASCULAR ECTASIA
MAMMARY GL
GROSS: GALACTOCELE
4X4MM TO PUNCTATE, ABDOMINAL REGION
MICRO+ 3 HYPERSECRETION
SPLEEN
GROSS: SIZE DECREASE
SLIGHT
MICRO: 3 HEMOSIDEROSIS
LYMPH ND, S-MAN
GROSS: COLOR CHANGE, DIFFUSE
RED
MICRO: 2 PLASMACYTOSIS
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO ENLARGED PITUITARY
MICRO+ 2 COMPRESSION
OVARIES
GROSS: CYST
LEFT, 4MM IN DIAMETER
MICRO+ (3) CYST(S)
LUNGS
MICRO: ((2)) ALVEOLAR HISTIOCYTOSIS
((1)) PERIVASCULAR INFILTRATE(S)
(2) MINERALIZATION, PULMONARY VESSEL(S)
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
KIDNEYS

ANIMAL 3840C46 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.606	2.332
KIDNEYS	3.339	0.734
HEART	1.405	0.309
SPLEEN	0.579	0.127
BRAIN	2.054	0.452
ADRENAL GL	0.087	0.019
OVARIES	0.096	0.021
TERMINAL BODY WT.	454.7	

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
SEVERAL DARK RED 1MM RED FOCAL AREAS SCATTERED ALL LOBES
MICRO+ (3) TELANGIECTASIS
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
3X2MM BLACK FOCAL AREA CENTER POSTERIOR PORTION
MICRO+ P #B ADENOMA
LYMPH ND, MED
GROSS: COLOR CHANGE, DIFFUSE
RIGHT, DARK RED
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3840C46 (CONTINUED)

KIDNEYS
MICRO: ((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LUNGS
THE FOLLOWING TISSUES WERE MISSING:
LYMPH ND, MED

ANIMAL 4007C47 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.478	3.564
KIDNEYS	13.017	4.427
HEART	1.385	0.471
SPLEEN	0.916	0.312
BRAIN	2.190	0.745
ADRENAL GL	0.116	0.039
OVARIES	0.097	0.033
TERMINAL BODY WT.	294.0	

PITUITARY
GROSS: MASS
8X5X4MM, RED AND WHITE
MICRO+ P #B ADENOMA
MICRO: (5) VASCULAR ECTASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
WHITE FOCI, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: ((3)) VASCULAR ECTASIA
MAMMARY GL
GROSS: GALACTOCELE
MULTIPLE 1-5MM, LEFT INGUINAL AREA
MICRO+ (4) GALACTOCELE
BRAIN
GROSS: DEPRESSION/INDENTATION
MODERATE,AREA OVER PIUITARY
MICRO+ (3) COMPRESSION
LUNGS
MICRO: (1) PERIVASCULAR INFILTRATE(S)
KIDNEYS
GROSS: MASS
LEFT,35X25X15MM, INVOLVING ENTIRE KIDNEY
MICRO+ P #M TRANSITIONAL CELL CARCINOMA
LEFT KIDNEY
MASS IS NECROTIC AND HEMORRHAGIC
MICRO: ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER

ANIMAL 3936C48 1-FEB-90 STUDY DAY 681
TYPE OF DEATH: SACRIFICED MORIBUND

TOTAL BODY
GROSS: EMACIATION
HEART
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
WHITE MOTTLING, ENTIRE GLAND
MICRO+((3)) MINERALIZATION
MICRO: (3) FIBROSIS
STOMACH
GROSS: THICKER THAN NORMAL
SLIGHTLY, ENTIRE GLAND
MICRO+((3)) EDEMA
SUBMUCOSAL
MICRO: 3 GASTRITIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3936C48 (CONTINUED)

```
                                        NONGLANDULAR STOMACH
LIVER
    MICRO: ((2)) FATTY CHANGE
PITUITARY
    GROSS:       MASS
                     10X5X5MM, DARK RED
     MICRO+  P   #B ADENOMA
    MICRO: ((4)) VASCULAR ECTASIA
            (4)  HEMORRHAGE
EARS
    GROSS:       THICKER THAN NORMAL
                     BILATERAL
     MICRO+((3)) AURICULAR CHONDROPATHY
NARES/NOSE
    GROSS:       CRUST
                     PERINASAL AREA, RED
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AREA OVER PITUITARY
     MICRO+  4   COMPRESSION
    MICRO: ((1)) VACUOLIZATION
                     CEREBELLUM
EYE
    GROSS:       CRUST
                     PERIOCULAR, RED
    MICRO: ((4)) KERATITIS
                     BILATERAL
           ((4)) HYPOPYON
                     BILATERAL
            (3)  CORNEAL ULCER
                     UNILATERAL
LUNGS
    MICRO: ((2)) PNEUMONITIS, INTERSTITIAL
           ((2)) INTRAALVEOLAR CELLULAR DEBRIS
KIDNEYS
    GROSS:       COLOR CHANGE, DIFFUSE
                     YELLOW, BILATERAL
KIDNEYS
    GROSS:       GRANULAR
                     SLIGHTLY, BILATERAL
     MICRO+((1)) TUBULAR PROTEINOSIS
    MICRO:  (1)  RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SKIN             NARES/NOSE       NASAL CAVITY
```

ANIMAL 3762C49 6-AUG-89 STUDY DAY 502

TYPE OF DEATH: FOUND DEAD

```
STOMACH
    GROSS:       DIVERTICULUM
                     NONGLANDULAR MUCOSA
    MICRO:  (4)  ULCER
                     NONGLANDULAR STOMACH
LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3762C49 (CONTINUED)

```
    MICRO: ((3)) FATTY CHANGE
PITUITARY
    GROSS:       MASS
                     DARK RED 15X8X5MM
     MICRO+  P   #B ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     DARK BROWN WITH 1MM CREAM FOCAL AREAS,
                     BILATERAL
    MICRO: ((3)) VASCULAR ECTASIA
            (4)  INFARCTION
EARS
    GROSS:       THICKER THAN NORMAL
                     BILATERAL
     MICRO+  4   AURICULAR CHONDROPATHY
MAMMARY GL
    GROSS:       MASS
                     LEFT INGUINAL REGION, 65X45X30MM CREAM
                     AND FIRM
     MICRO+ (P)  #B FIBROADENOMA
BRAIN
    GROSS:       POSTMORTEM CHANGE
EYE
    GROSS:       CRUST
                     PERIOCULAR AREA, DARK RED, BILATERAL
LUNGS
    MICRO: ((3)) INTRAALVEOLAR CELLULAR DEBRIS
           ((3)) BRONCHOPNEUMONIA
                     THE TISSUE IS AUTOLYSED AND DIFFICULT
                     TO EVALUATE
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
                     RIGHT
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SKIN             EYE
```

ANIMAL 3704C50 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.155	2.260
KIDNEYS	2.383	0.530
HEART	1.245	0.277
SPLEEN	0.421	0.094
BRAIN	2.142	0.477
ADRENAL GL	0.077	0.017
OVARIES	0.163	0.036
TERMINAL BODY WT.	449.2	

```
LIVER
    MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
            (1)  MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    GROSS:       MASS
                     5X5X5MM, RED
     MICRO+  P   #B ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI,BILATERAL
     MICRO+((2)) CORTICAL CELL HYPERTROPHY
    MICRO:  (4)  INFARCTION
            (4)  HEMORRHAGE
           ((3)) VASCULAR ECTASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3704C50 (CONTINUED)

```
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    LUNGS
```

ANIMAL 3956C51 10-SEP-89 STUDY DAY 537
TYPE OF DEATH: FOUND DEAD

```
LIVER
    GROSS:        POSTMORTEM CHANGE
    MICRO: ((1)) FATTY CHANGE
           ((1)) BILIARY HYPERPLASIA
           ((1)) CHOLANGIOFIBROSIS
PITUITARY
    GROSS:        SIZE INCREASE
                      5X5X5MM
     MICRO+  P    #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
     MICRO+((4)) HEMORRHAGE
ADRENAL GL
    GROSS:        COLOR CHANGE, DIFFUSE
                      BOTH, DARK RED
     MICRO+  4    CONGESTION
    MICRO: ((3)) VASCULAR ECTASIA
           ((1)) CORTICAL CELL HYPERTROPHY
EYE
    GROSS:        CRUST
                      BOTH, RUST
UTERUS
    GROSS:        POSTMORTEM CHANGE
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MOTTLED PINK AND RED
     MICRO+  5    CONGESTION
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
             (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:        HYDRONEPHROSIS
                      RIGHT, SLIGHT
     MICRO+  2    HYDRONEPHROSIS
                      RIGHT
    MICRO: ((1)) RENAL CALCULI
                      LEFT
CAUSE OF DEATH
    MICRO:   P    ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SKIN              EYE
```

ANIMAL 3710C52 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE
ORGAN WEIGHT ABS.(G) REL. LIVER

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3710C52 (CONTINUED)

LIVER	10.448	2.093
KIDNEYS	2.690	0.539
HEART	1.466	0.294
SPLEEN	0.625	0.125
BRAIN	1.902	0.381
ADRENAL GL	0.077	0.015
OVARIES	0.401	0.080
TERMINAL BODY WT.	499.1	

GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE RED FOCAL AREAS, MEDIAN LOBES
MICRO↑ (3) EOSINOPHILIC CELL FOCI
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
((1)) MONONUCLEAR CELL INFILTRATE(S)

PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
LEFT SIDE, DARK RED 2X2MM FOCAL AREA
MICRO↑ P #B ADENOMA

MAMMARY GL
GROSS: MASS
UROGENTIAL REGION, 35X25X10MM, MULTILOBULAR AND CREAM
MICRO↑ P #B FIBROADENOMA

OVARIES
GROSS: CYST
RIGHT, 5MM IN DIAMETER
MICRO↑ (4) CYST(S)

LUNGS
MICRO: (2) MINERALIZATION, PULMONARY VESSEL(S)

KIDNEYS
MICRO: ((1)) RENAL CALCULI
((1)) NEPHRITIS, INTERSTITIAL
(1) TUBULAR BASOPHILIA

ANIMAL 3672C53 8-MAR-90 STUDY DAY 716
TYPE OF DEATH: SAC DUE TO ENLARGED MASS

LIVER
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
(3) HEPATOCELLULAR HYPERTROPHY
ONE FOCUS; MAY BE EARLY ADENOMA, BUT BOUNDARIES ARE NOT DEFINABLE.

PITUITARY
GROSS: SIZE INCREASE
3X NORMAL
MICRO↑ P #B ADENOMA

PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
TAN AND DARK RED
MICRO↑((4)) VASCULAR ECTASIA

SUBCUTIS
MICRO: P #M UNDIFFERENTIATED SARCOMA
MUCH OF THE MASS IS NECROTIC

MAMMARY GL
GROSS: MASS
55X55X30MM, TAN, CONTAINS THICK TAN MATERIAL, NECROTIC
LEFT INGUINAL AREA
80X60X55MM, TAN, MULTILOBULAR, RIGHT INGUINAL AREA
50X30X25MM, TAN, MULTILOBULAR, RIGHT AXILLARY AREA
30X30X20MM, TAN, MULTILOBULAR, THORACIC AREA

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3672C53 (CONTINUED)

```
                    MICRO↑  P   #M ADENOCARCINOMA
                                    THREE MASSES
                                    THE FOURTH MASS IS SUBCUTANEOUS
SPLEEN
    GROSS:          SIZE INCREASE
                                    2X NORMAL
                    MICRO↑  4   EXTRAMEDULLARY HEMATOPOIESIS
BRAIN
    GROSS:          DEPRESSION/INDENTATION
                                    DUE TO ENLARGED PITUITARY
KIDNEYS
    GROSS:          MASS
                                    8X6X6MM, TAN; RIGHT
                    MICRO↑  P   #B EMBRYONAL NEPHROMA/NEPHROBLASTOMA
                                    RIGHT KIDNEY
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((2)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:      P   ADENOMA, PITUITARY
                P   ADENOCARCINOMA, MAMMARY GLAND
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    BRAIN               LUNGS
```

ANIMAL 3735C54 18-JAN-90 STUDY DAY 667

TYPE OF DEATH: FOUND DEAD

```
LIVER
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                                    DARK RED MOTTLED, ALL LOBES
                    MICRO↑((3)) FATTY CHANGE
PITUITARY
    GROSS:          MASS
                                    8X5X5MM, PINKISH
                    MICRO↑  P   #B ADENOMA
ADRENAL GL
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                                    MULTIPLE WHITE FOCI, BILATERAL
                    MICRO↑((3)) VASCULAR ECTASIA
    MICRO: ((2)) CORTICAL CELL HYPERTROPHY
                4   CONGESTION
           ((3)) THROMBOSIS
           ((1)) HEMOSIDEROSIS
EARS
    GROSS:          THICKER THAN NORMAL
                                    BILATERAL
                    MICRO↑  4   AURICULAR CHONDROPATHY
EARS
    GROSS:          COLOR CHANGE, DIFFUSE
                                    RED, BILATERAL
BRAIN
    GROSS:          DEPRESSION/INDENTATION
                                    AREA OVER PITUITARY
                    MICRO↑  4   COMPRESSION
    MICRO:      2   HYDROCEPHALUS
EYE
    GROSS:          CRUST
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3735C54 (CONTINUED)

```
                                        PERIOCULAR, RED, BILATERAL
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED, ALL LOBES
     MICRO+  4    CONGESTION
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    SKIN             EYE
```

ANIMAL 3839C55 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.481	2.529
KIDNEYS	2.671	0.712
HEART	1.574	0.420
SPLEEN	0.586	0.156
BRAIN	2.144	0.572
ADRENAL GL	0.098	0.026
OVARIES	0.095	0.025
TERMINAL BODY WT.	375.0	

```
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      RIGHT MEDIAN LOBE 3X3MM CREAM FOCI NEAR
                      HILUS
     MICRO+ (P)   #B HEPATOCELLULAR ADENOMA
    MICRO: ((1)) BILIARY HYPERPLASIA
            (1)  CHOLANGIOFIBROSIS
PITUITARY
    GROSS:        SIZE INCREASE
                      2X NORMAL
     MICRO+  P    #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      DARK RED 3X4MM FOCAL AREA,ANTERIOR
                      PORTION
     MICRO+((4)) VASCULAR ECTASIA
    MICRO:  (4)  CYST(S)
ADRENAL GL
    GROSS:        SIZE INCREASE
                      RIGHT, 2X NORMAL
     MICRO+ (4)   INFARCTION
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      BILATERAL, BLACK AND CREAM PUNTATE
                      FOCAL AREAS
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO:  (4)  HEMORRHAGE
           ((3)) VASCULAR ECTASIA
           ((3)) THROMBOSIS
EARS
    GROSS:        THICKER THAN NORMAL
                      BILATERAL
     MICRO+((2)) AURICULAR CHONDROPATHY
MAMMARY GL
    GROSS:        GALACTOCELE
                      SCATTERED THROUGHTOUT, PUNTATE TO 3MM
     MICRO+((2)) GALACTOCELE
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
           ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3839C55 (CONTINUED)

LUNGS

ANIMAL 3671C56 7-JUN-89 STUDY DAY 442
TYPE OF DEATH: SACRIFICED MORIBUND

LIVER
MICRO: 4 FATTY CHANGE
PITUITARY
GROSS: SIZE INCREASE
10X8X6MM
MICRO↑ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
MICRO↑((4)) HEMORRHAGE
MICRO: ((1)) HEMOSIDEROSIS
SKIN
GROSS: STAINED
URINE, UROGENITAL AREA
MAMMARY GL
GROSS: MASS
10X10X7MM, TAN; FIRM; LEFT AXILLARY AREA
MICRO↑ (P) #B ADENOMA
MICRO: ((2)) GALACTOCELE
LYMPH ND, S-MAN
GROSS: COLOR CHANGE, DIFFUSE
RED
MICRO↑ 4 SINUS ERYTHROCYTOSIS
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO ENLARGED PITUITARY
LUNGS
MICRO: (1) PNEUMONITIS, INTERSTITIAL
(2) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) TUBULAR PROTEINOSIS
((2)) RENAL CALCULI
CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
BRAIN

ANIMAL 3683C57 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.929	3.858
KIDNEYS	3.339	1.297
HEART	1.115	0.433
SPLEEN	0.537	0.209
BRAIN	1.642	0.638
ADRENAL GL	0.074	0.029
OVARIES	0.081	0.031
TERMINAL BODY WT.	257.4	

TOTAL BODY
GROSS: UNKEMPT
TOTAL BODY
GROSS: EMACIATION
ILEUM
GROSS: CONTENTS ABNORMAL
CONTAINS YELLOW MUCUS
PITUITARY
GROSS: SIZE INCREASE
10X8X6MM, TAN AND DARK RED

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3683C57 (CONTINUED)

```
                                    MICRO+  P   #B ADENOMA
                                   MICRO: ((3)) HEMORRHAGE
                                          ((2)) HEMOSIDEROSIS
                                ADRENAL GL
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                                                     SURFACE, BILATERAL
                                    MICRO+((1)) CORTICAL CELL HYPERTROPHY
                                   MICRO: ((3)) VASCULAR ECTASIA
                                MAMMARY GL
                                    GROSS:       GALACTOCELE
                                                     MULTIPLE, 2X2X3MM TO PUNCTATE
                                MAMMARY GL
                                    GROSS:       MASS
                                                     30X20X15MM, TAN, MULTILOBULAR, CONTAINS
                                                     BROWN FLUID
                                                     LEFT INGUINAL AREA
                                                     20X20X6MM, TAN, FIRM, MULTILOBULAR,
                                                     LEFT THORACIC AREA
                                    MICRO+  P   #B FIBROADENOMA
                                                     CONTAINS CYSTIC SPACES, FOCI OF
                                                     INFLAMMATION, AND
                                                     MINERALIZATION. THREE SITES.
                                    MICRO:  (4)  MASTITIS
                                             P   #B ADENOMA
                                PAWS/FEET
                                    GROSS:       ULCERATED
                                                     LEFT HIND PAW, 6X6X3MM
                                    MICRO+ (4)  ULCERATION
                                    MICRO:  (4)  FIBROSIS
                                           ((3)) EPIDERMAL HYPERPLASIA
                                LYMPH ND, OTHER
                                    GROSS:       SIZE INCREASE
                                                     SUBLUMBAR, LEFT 6X3X2MM
                                                     LEFT POPLITEAL, 8X5X3MM
                                    MICRO+  4   PLASMACYTOSIS
                                                     LUMBAR AND POPLITEAL NODES
                                BRAIN
                                    GROSS:       DEPRESSION/INDENTATION
                                                     DUE TO ENLARGED PITUITARY
                                    MICRO+ (3)  COMPRESSION
                                KIDNEYS
                                    MICRO: ((1)) TUBULAR PROTEINOSIS
                                           ((1)) RENAL CALCULI
                                           ((1)) NEPHRITIS, INTERSTITIAL
                                           ((1)) TUBULAR BASOPHILIA
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    LIVER            ILEUM            LUNGS
```

ANIMAL 3726C58 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	15.562	4.055
KIDNEYS	3.278	0.854
HEART	1.372	0.357

```
STOMACH
    GROSS:       ULCERATED
                     3X2MM, GLANDULAR PORTION
LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3726C58 (CONTINUED)

SPLEEN	0.871	0.227
BRAIN	1.861	0.485
ADRENAL GL	0.155	0.040
OVARIES	0.098	0.026
TERMINAL BODY WT.	383.8	

```
    GROSS:        SWOLLEN
                      MILD, ALL LOBES
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      3X2MM DARK RED FOCUS, RIGHT MEDIAN LOBE
    MICRO:  (1)   MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    GROSS:        SIZE INCREASE
                      5X4X4MM
     MICRO+  P    #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      TAN AND DARK RED
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE AND BROWN FOCI, BILATERAL
     MICRO+((1))  CORTICAL CELL HYPERTROPHY
ADRENAL GL
    GROSS:        SIZE INCREASE
                      2.5X NORMAL, RIGHT
     MICRO+  4    INFARCTION
    MICRO: ((4))  VASCULAR ECTASIA
           ((2))  FIBROSIS
MAMMARY GL
    GROSS:        MASS
                      50X45X40MM, TAN, MULTILOBULAR, LEFT
                      AXILLARY AREA
                      85X45X35MM, TAN, FIRM, LEFT INGUINAL
                      AREA
     MICRO+  P    #B FIBROADENOMA
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO+ (4)   COMPRESSION
    MICRO: ((2))  VACUOLIZATION
                      CEREBELLUM AND BRAINSTEM
UTERUS
    GROSS:        POLYP
                      5X3X2MM, DARK RED, RIGHT UTERINE HORN
     MICRO+ (P)   #B STROMAL POLYP
LUNGS
    MICRO: ((1))  PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((1))  RENAL CALCULI
             (1)  NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    STOMACH
```

ANIMAL 3665C59 26-MAY-89 STUDY DAY 430

TYPE OF DEATH: SACRIFICED MORIBUND

```
STOMACH
    GROSS:        GASEOUS
LIVER
    MICRO: ((2))  FATTY CHANGE
DUODENUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 3665C59 (CONTINUED)

```
    GROSS:        GASEOUS
JEJUNUM
    GROSS:        GASEOUS
ILEUM
    GROSS:        GASEOUS
CECUM
    GROSS:        GASEOUS
PITUITARY
    GROSS:        SIZE INCREASE
                      SLIGHT
     MICRO+ (P)   #B ADENOMA
PITUITARY
    GROSS:        CYST
                      2X1X1MM, CLEAR FLUID FILLED
     MICRO+  P    CYST(S)
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE TAN AND BROWN FOCI, BILATERAL
     MICRO+((4)) VASCULAR ECTASIA
    MICRO: ((3)) HEMORRHAGE
SKIN
    GROSS:        STAINED
                      URINE, UROGENITAL AREA
NARES/NOSE
    GROSS:        CRUST
                      RED, PERINASAL AREA
     MICRO+  3    RHINITIS
                      PURULENT DISCHARGE
SPLEEN
    GROSS:        SIZE DECREASE
                      SLIGHT
    MICRO:   3    EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
    GROSS:        SIZE INCREASE
                      SLIGHT
     MICRO+  3    PLASMACYTOSIS
    MICRO:   4    SINUS ERYTHROCYTOSIS
EYE
    GROSS:        CRUST
                      DARK RED, LEFT PERIOCULAR AREA
    MICRO:   3    KERATITIS
                      LESIONS ARE UNILATERAL
             (3)  HYPHEMA
NASAL CAVITY
    MICRO:   3    RHINITIS
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:   P    NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    STOMACH          DUODENUM         JEJUNUM
    ILEUM            CECUM            SKIN
    LUNGS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 4008C60 10-JAN-90 STUDY DAY 659
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        UNKEMPT
TOTAL BODY
    GROSS:        EMACIATION
PITUITARY
    GROSS:        MASS
                      20X10X5MM, DARK RED AND SOFT
     MICRO+  P    #B ADENOMA
    MICRO:  (3)   HEMORRHAGE
           ((3)) HEMOSIDEROSIS
            (3)   FIBROSIS
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      BILATERAL, DARK RED AND TAN FOCI
     MICRO+((3)) VASCULAR ECTASIA
ADRENAL GL
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK BROWN, BILATERAL
    MICRO: ((3)) THROMBOSIS
            (4)   INFARCTION
SKIN
    GROSS:        STAINED
                      SLIGHTLY YELLOW AND WET, UROGENITAL
                      REGION
MAMMARY GL
    GROSS:        MASS
                      BLOOD FILLED WITH SOFT TISSUE, VENTRAL
                      50X40X20MM, INSIDE RIGHT LEG
     MICRO+ (P)   #M ADENOCARCINOMA
    MICRO: ((2)) GALACTOCELE
LYMPH ND, S-MAN
    GROSS:        SIZE INCREASE
                      2X NORMAL, LEFT SIDE
     MICRO+  2    PLASMACYTOSIS
LYMPH ND, S-MAN
    GROSS:        COLOR CHANGE, DIFFUSE
                      BILATERAL, DARK RED
     MICRO+  4    SINUS ERYTHROCYTOSIS
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO PITUITARY MASS.
     MICRO+  4    COMPRESSION
    MICRO:   2    HYDROCEPHALUS
           ((1)) HEMORRHAGE
                      INTRAVENTRICULAR
           ((1)) VACUOLIZATION
KIDNEYS
    GROSS:        HYDRONEPHROSIS
                      BILATERAL, MILD
     MICRO+ (3)   HYDRONEPHROSIS
                      RIGHT, DUE TO EROSION OF THE PAPILLA
    MICRO: ((4)) PYELITIS
                      BILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 1000 PPM FEMALE

ANIMAL 4008C60 (CONTINUED)

((4)) PAPILLARY HYPERPLASIA
((4)) TRANSITIONAL CELL HYPERPLASIA
((3)) PYELONEPHRITIS
RIGHT
(3) INFARCTION
RIGHT

CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
LIVER LUNGS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3917D01 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.474	2.558
KIDNEYS	2.423	0.540
HEART	1.340	0.299
SPLEEN	0.603	0.134
BRAIN	1.858	0.414
ADRENAL GL	0.076	0.017
OVARIES	0.105	0.023
TERMINAL BODY WT.	448.6	

STOMACH
GROSS: CONTENTS ABNORMAL
YELLOW AND WHITE FLUID

LIVER
GROSS: SWOLLEN
SLIGHT, ALL LOBES
MICRO: ((1)) BILIARY HYPERPLASIA
((2)) CHOLANGIOFIBROSIS
((1)) MONONUCLEAR CELL INFILTRATE(S)
(P) #B HEPATOCELLULAR ADENOMA

PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED FOCI
MICRO+ (2) FOCI OF CELL ALTERATION

THYROID GL
MICRO: (P) THYROGLOSSAL DUCT CYST

ADRENAL GL
MICRO: ((4)) VASCULAR ECTASIA
((2)) FIBROSIS
((1)) HEMOSIDEROSIS
((3)) HEMORRHAGE
(3) CORTICAL CELL VACUOLIZATION

MAMMARY GL
GROSS: MASS
LEFT VENTRAL REGION ABOVE LEG,
SPERICAL, SOFT, 25X25X10MM
MICRO+ (P) #B FIBROADENOMA
MICRO: (3) HYPERSECRETION

LYMPH ND, S-MAN
GROSS: COLOR CHANGE, DIFFUSE
DARK RED, BILATERAL

LYMPH ND, MED
GROSS: COLOR CHANGE, DIFFUSE
DARK RED, BILATERAL
MICRO+ 3 SINUS ERYTHROCYTOSIS
MICRO: (3) LYMPHATIC ECTASIA, CYSTIC

THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY

TRACHEA
MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	PANCREAS
DUODENUM	JEJUNUM	ILEUM
CECUM	COLON	RECTUM
PARATHYROID GL	SKIN	SPLEEN
LYMPH ND, S-MAN	LYMPH ND, MES	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	VAGINA	LUNGS
KIDNEYS	URINARY BLADDER	

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3980D02 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.579	2.317
KIDNEYS	2.724	0.659
HEART	1.463	0.354
SPLEEN	0.629	0.152
BRAIN	2.027	0.490
ADRENAL GL	0.078	0.019
OVARIES	0.073	0.018
TERMINAL BODY WT.	413.4	

STOMACH
GROSS: ULCERATED
GLANDULAR AREA 2X1X1MM
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) BILIARY HYPERPLASIA
((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
((2)) CHOLANGIOFIBROSIS
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
5X5X4MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED 3X3MM FOCAL AREA ON RIGHT SIDE
MICRO+((4)) VASCULAR ECTASIA
THYROID GL
MICRO: ((1)) CALCIFIC CONCRETIONS, COLLOID
(3) C CELL HYPERPLASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: ((4)) VASCULAR ECTASIA
((2)) FIBROSIS
MAMMARY GL
GROSS: MASS
RIGHT AXILLARY, 20X10X5MM FILLED WITH THICK GREEN MATERIAL
LEFT INGUINAL MULTILOBULAR 15X15X5MM, CREAM AND FIRM
RIGHT INGUINAL, 40X30X10MM, MULTILOBULAR, CREAM AND FIRM
MICRO+ (P) #M ADENOCARCINOMA
TWO SEPARATE NEOPLASMS
MAMMARY GL
GROSS: GALACTOCELE
SCATTERED THROUGHOUT, 3X3X1MM
MICRO+((5)) GALACTOCELE
MICRO: (P) #B FIBROADENOMA
((4)) MASTITIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
NO THYMUS
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO PITUITARY ENLARGEMENT
MICRO+ (4) COMPRESSION

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3980D02 (CONTINUED)

```
OVARIES
    MICRO:  (3)  CYST(S)
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
           ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((3)) RENAL CALCULI
                     BILATERAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    RECTUM           PARATHYROID GL   SKIN
    SPLEEN           LYMPH ND, S-MAN  BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    SPINAL CORD      NERVE, SCIATIC   EYE
    UTERUS           CERVIX           VAGINA
    URINARY BLADDER
```

ANIMAL 3893D03 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.552	2.522
KIDNEYS	2.156	0.636
HEART	1.018	0.300
SPLEEN	0.699	0.206
BRAIN	1.864	0.550
ADRENAL GL	0.062	0.018
OVARIES	0.208	0.061
TERMINAL BODY WT.	339.1	

```
HEART
    MICRO:  (2)  FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
           ((1)) BILIARY HYPERPLASIA
            (1)  CHOLANGIOFIBROSIS
            (1)  CYSTIC DEGENERATION
THYROID GL
    GROSS:       SIZE INCREASE
                     2X NORMAL, LEFT
     MICRO+ (P)  #B C CELL ADENOMA
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       SIZE DECREASE
                     RIGHT, SLIGHT
    MICRO: ((3)) VASCULAR ECTASIA
            (3)  CORTICAL CELL VACUOLIZATION
            (2)  CORTICAL CELL HYPERTROPHY
MAMMARY GL
    GROSS:       MASS
                     20X15X10MM, LEFT UROGENITAL AREA
     MICRO+  P   #B ADENOMA
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
OVARIES
    MICRO: ((4)) STROMAL CELL HYPERPLASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3893D03 (CONTINUED)

LUNGS
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
MICRO: (1) RENAL CALCULI
RIGHT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
PANCREAS	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	PITUITARY	PARATHYROID GL
SKIN	SPLEEN	LYMPH ND, S-MAN
BONE, STERNUM	BONE, FEMUR	BONE MARROW
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	UTERUS	CERVIX
VAGINA	TRACHEA	URINARY BLADDER

ANIMAL 3715D04 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.665	2.355
KIDNEYS	2.440	0.539
HEART	1.223	0.270
SPLEEN	0.592	0.131
BRAIN	1.939	0.428
ADRENAL GL	0.088	0.019
OVARIES	0.101	0.022
TERMINAL BODY WT.	452.8	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) FATTY CHANGE
PITUITARY
GROSS: NODULE
2X2X2MM, DARK RED
MICRO↑ P #B ADENOMA
THYROID GL
MICRO: (P) THYROGLOSSAL DUCT CYST
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO↑((1)) CORTICAL CELL HYPERTROPHY
MAMMARY GL
GROSS: GALACTOCELE
UROGENITAL AREA
MICRO↑((2)) HYPERSECRETION
MICRO: (P) #B FIBROADENOMA
SPLEEN
MICRO: 3 HEMOSIDEROSIS
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MED
MICRO: 2 SINUS ERYTHROCYTOSIS
LYMPH ND, MES
MICRO: 3 SINUS ERYTHROCYTOSIS
((1)) HISTIOCYTIC AGGREGATES
((2)) HEMOSIDEROSIS
3 MASTOCYTOSIS
OVARIES
MICRO: ((3)) STROMAL CELL HYPERPLASIA
UTERUS
GROSS: CYST
LEFT, 6X3X3MM
VAGINA

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3715D04 (CONTINUED)

```
    MICRO:   1   VAGINITIS
LUNGS
    MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
                     RIGHT
             (1)  NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             THYMIC REGION    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    EYE              UTERUS           CERVIX
    TRACHEA          URINARY BLADDER
```

ANIMAL 3722D05 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.484	2.490
KIDNEYS	2.236	0.587
HEART	1.082	0.284
SPLEEN	0.435	0.114
BRAIN	1.864	0.489
ADRENAL GL	0.088	0.023
OVARIES	0.136	0.036
TERMINAL BODY WT.	381.0	

```
HEART
    MICRO:  (1)  MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO:   4   MUCOSAL HYPERPLASIA
             3   EDEMA
             3   GASTRITIS
                     LESIONS ARE NONGLANDULAR STOMACH
LIVER
    GROSS:       COLOR CHANGE, DIFFUSE
                     PALE, ALL LOBES
     MICRO+((4)) FATTY CHANGE
    MICRO: ((1)) CHOLANGITIS
           ((1)) BILIARY HYPERPLASIA
PITUITARY
    GROSS:       MASS
                     10X8X5MM, TAN-PINK
     MICRO+  P   #M CARCINOMA
THYROID GL
    MICRO:  (P)  #B C CELL ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI, BILATERAL
     MICRO+((2)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
    GROSS:       SIZE INCREASE
                     2-3X NORMAL, BILATERAL
     MICRO+ (4)  INFARCTION
    MICRO: ((4)) VASCULAR ECTASIA
           ((2)) FIBROSIS
LYMPH ND, MES
    MICRO: ((3)) HEMOSIDEROSIS
           ((2)) HISTIOCYTIC AGGREGATES
             2   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3722D05 (CONTINUED)

SKELETAL MUSCLE
MICRO: 2 MYOFIBER ATROPHY
BRAIN
GROSS: DEPRESSION/INDENTATION
AREA OVER PITUITARY
MICRO+ 3 COMPRESSION
MICRO: 2 HYDROCEPHALUS
SPINAL CORD
MICRO: ((1)) VACUOLIZATION
EYE
GROSS: CRUST
PERIOCULAR, RED, BILATERAL
MICRO: (4) HEMORRHAGE, RETROORBITAL
UTERUS
MICRO: P #B STROMAL POLYP
CERVIX
GROSS: NODULE
2MM, RED; AT MOUTH OF CERVIX
VAGINA
MICRO: 2 VAGINITIS
LUNGS
MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
(1) PERIVASCULAR INFILTRATE(S)
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
PANCREAS	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	PARATHYROID GL	SKIN
MAMMARY GL	SPLEEN	LYMPH ND, S-MAN
BONE, STERNUM	BONE, FEMUR	BONE MARROW
NERVE, SCIATIC	OVARIES	CERVIX
TRACHEA	KIDNEYS	URINARY BLADDER

ANIMAL 4026D06 14-MAY-88 STUDY DAY 53
TYPE OF DEATH: FOUND DEAD

TOTAL BODY
GROSS: EMACIATION
LIVER
GROSS: POSTMORTEM CHANGE
MILD
JEJUNUM
GROSS: POSTMORTEM CHANGE
MODERATE
ILEUM
GROSS: POSTMORTEM CHANGE
MODERATE
SKIN
GROSS: CRUST
RED, PERIOCULAR AREA, BILATERAL
SKIN
GROSS: STAINED
URINE, UROGENITAL AREA
SPLEEN
GROSS: SIZE DECREASE
1/2 OF NORMAL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 4026D06 (CONTINUED)

MICRO↑ 4 LYMPHOID DEPLETION
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
BONE MARROW
MICRO: ((4)) HEMORRHAGE
LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
ALL LOBES MOTTLED LIGHT AND DARK PINK
MICRO↑ 4 CONGESTION
MICRO: (1) MINERALIZATION, PULMONARY VESSEL(S)
(1) HEMORRHAGE
CAUSE OF DEATH
MICRO: P NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	LIVER
PANCREAS	DUODENUM	JEJUNUM
RECTUM	PITUITARY	THYROID GL
ADRENAL GL	SKIN	MAMMARY GL
LYMPH ND, S-MAN	LYMPH ND, MES	BONE, STERNUM
BONE, FEMUR	SKELETAL MUSCLE	BRAIN
SPINAL CORD	NERVE, SCIATIC	EYE
OVARIES	UTERUS	CERVIX
VAGINA	TRACHEA	KIDNEYS
URINARY BLADDER		

THE FOLLOWING TISSUES WERE MISSING:
PARATHYROID GL
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:

ILEUM	CECUM	COLON

ANIMAL 3885D07 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.631	2.583
KIDNEYS	2.640	0.708
HEART	1.143	0.307
SPLEEN	0.553	0.148
BRAIN	2.147	0.576
ADRENAL GL	0.094	0.025
OVARIES	0.121	0.032
TERMINAL BODY WT.	372.9	

STOMACH
MICRO: ((2)) GLAND ECTASIA
LIVER
MICRO: ((1)) BILIARY HYPERPLASIA
(1) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
GROSS: NODULE
(2) NODULES, RED, 3X2X2 AND 2X2X2MM
MICRO↑ P #B ADENOMA
THYROID GL
MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
RED MOTTLED, BILATERAL
MICRO↑((4)) INFARCTION
SOME OF THE INFARCTS ARE CHRONIC AND FIBROTIC
MICRO: ((2)) CORTICAL CELL HYPERTROPHY
((3)) THROMBOSIS
((4)) HEMORRHAGE
SUBCUTIS
GROSS: MASS
FATTY, RIGHT ABDOMEN, 20X15X5MM

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3885D07 (CONTINUED)

```
     MICRO+ (P)  #B LIPOMA
MAMMARY GL
    MICRO:   2   HYPERSECRETION
            (3)  MASTITIS
                     SMALL GRANULOMATOUS FOCUS
SPLEEN
    MICRO:   4   HEMOSIDEROSIS
LYMPH ND, MED
    MICRO:   4   SINUS ERYTHROCYTOSIS
           ((3)) HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:  (2)  MYOFIBER ATROPHY
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             LYMPH ND, S-MAN  BONE, STERNUM
    BONE, FEMUR      BONE MARROW      BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           LUNGS            URINARY BLADDER
```

ANIMAL 3719D08 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.296	2.691
KIDNEYS	2.605	0.621
HEART	1.274	0.304
SPLEEN	0.792	0.189
BRAIN	1.933	0.461
ADRENAL GL	0.073	0.017
OVARIES	0.067	0.016
TERMINAL BODY WT.	419.7	

```
HEART
    MICRO: ((2)) FIBROSIS
STOMACH
    MICRO:  (1)  GLAND ECTASIA
LIVER
    MICRO: ((1)) BILIARY HYPERPLASIA
           ((1)) CHOLANGITIS
           ((2)) CHOLANGIOFIBROSIS
CECUM
    GROSS:       CONTENTS ABNORMAL
                     CONTAINS WATERY FECAL MATERIAL
PITUITARY
    GROSS:       MASS
                     10X7X4MM, DARK RED AND TAN FOCI
     MICRO+  P   #B ADENOMA
                     VERY LARGE
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3719D08 (CONTINUED)

```
                    MICRO+((2)) CORTICAL CELL HYPERTROPHY
                   MICRO: ((4)) VASCULAR ECTASIA
                          ((3)) THROMBOSIS
                           (3)  CORTICAL CELL VACUOLIZATION
MAMMARY GL
    GROSS:                 GALACTOCELE
                               5X3X2MM TO PUNCTATE, LEFT SIDE
                    MICRO+((3)) GALACTOCELE
    MICRO:   3              HYPERSECRETION
PAWS/FEET
    GROSS:                 ULCERATED
                               7X5X3MM RIGHT, 9X5X4MM LEFT
                    MICRO+  4   ULCERATION
    MICRO:   4              FIBROSIS
SPLEEN
    MICRO:   3              HEMOSIDEROSIS
LYMPH ND, S-MAN
    GROSS:                 COLOR CHANGE, DIFFUSE
                               SLIGHTLY RED
                    MICRO+  3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2))            HISTIOCYTIC AGGREGATES
             3              PLASMACYTOSIS
             2              SINUS ERYTHROCYTOSIS
LYMPH ND, OTHER
    GROSS:                 SIZE INCREASE
                               SUBLUMBAR, 15X5X3MM, BILATERAL
                    MICRO+  4   PLASMACYTOSIS
                               LUMBAR NODE
    MICRO: ((3))            LYMPHATIC ECTASIA, CYSTIC
             2              SINUS ERYTHROCYTOSIS
SKELETAL MUSCLE
    MICRO:   3              MYOFIBER ATROPHY
BRAIN
    GROSS:                 DEPRESSION/INDENTATION
                               DUE TO ENLARGED PITUITARY
                    MICRO+  4   COMPRESSION
SPINAL CORD
    MICRO: ((1))            VACUOLIZATION
VAGINA
    MICRO:   2              VAGINITIS
KIDNEYS
    MICRO: ((3))            RENAL CALCULI
                               BILATERAL
           ((1))            TUBULAR PROTEINOSIS
           ((2))            TUBJLAR BASOPHILIA
URINARY BLADDER
    MICRO:  (4)             EDEMA
                               MAY BE AN ARTIFACT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    THYMIC REGION    BONE, STERNUM    BONE, FEMUR
    BONE MARROW      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3719D08 (CONTINUED)

TRACHEA LUNGS

ANIMAL 3858D09 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	6.945	2.844
KIDNEYS	1.844	0.755
HEART	0.842	0.345
SPLEEN	0.346	0.142
BRAIN	1.898	0.777
ADRENAL GL	0.079	0.032
OVARIES	0.216	0.088
TERMINAL BODY WT.	244.2	

TOTAL BODY
GROSS: UNKEMPT
STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) BILIARY HYPERPLASIA
PITUITARY
GROSS: SIZE INCREASE
10X8X3MM
MICRO+ P #B ADENOMA
VERY LARGE
THYROID GL
MICRO: (P) #B FOLLICULAR CELL ADENOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK TAN AND RED, LEFT, FOCI
MICRO+((4)) INFARCTION
ADRENAL GL
GROSS: SIZE INCREASE
LEFT, 2X NORMAL
MICRO: ((5)) VASCULAR ECTASIA
MAMMARY GL
MICRO: 3 HYPERSECRETION
SPLEEN
MICRO: 4 HEMOSIDEROSIS
LYMPH ND, S-MAN
MICRO: 2 PLASMACYTOSIS
LYMPH ND, MED
MICRO: (2) LYMPHATIC ECTASIA, CYSTIC
2 SINUS ERYTHROCYTOSIS
3 HEMOSIDEROSIS
LYMPH ND, MES
MICRO: ((2)) HISTIOCYTIC AGGREGATES
4 MASTOCYTOSIS
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO PITUITARY SIZE
MICRO+ (3) COMPRESSION
OVARIES
GROSS: CYST
2X2X2MM, LEFT, CLEAR FLUID,
MICRO+ (P) CYST(S)
UTERUS
GROSS: DILATATION/DISTENTION
LEFT HORN, CLEAR LIQUID FILLED,
40X10X10MM
MICRO+ (3) LUMINAL ECTASIA
CERVIX

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3858D09 (CONTINUED)

```
                    MICRO:   2   CERVICITIS
LUNGS
                    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
                    MICRO:  (1)  TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    HEART              AORTA              SALIVARY GL
                    ESOPHAGUS          PANCREAS           DUODENUM
                    JEJUNUM            ILEUM              CECUM
                    COLON              RECTUM             PARATHYROID GL
                    SKIN               BONE, STERNUM      BONE, FEMUR
                    BONE MARROW        SKELETAL MUSCLE    SPINAL CORD
                    NERVE, SCIATIC     EYE                VAGINA
                    TRACHEA            URINARY BLADDER
```

ANIMAL 3891D10 26-FEB-90 STUDY DAY 706

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
                    GROSS:          EMACIATION
STOMACH
                    MICRO: ((2)) GLAND ECTASIA
LIVER
                    MICRO: ((4)) FATTY CHANGE
                           ((2)) CHOLANGIOFIBROSIS
                           ((1)) BILIARY HYPERPLASIA
CECUM
                    GROSS:          CONTENTS ABNORMAL
                                        YELLOW PUS FILLED
                     MICRO+   4     TYPHLITIS
                                        THERE ARE ABSCESSES PRESENT IN THE WALL
RECTUM
                    MICRO:   4     PROCTITIS
                                        AN INTENSE NEUTROPHILIC INFILTRATE IS
                                        PRESENT AROUND THE
                                        ANUS
PITUITARY
                    GROSS:          SIZE INCREASE
                                        10X10X3MM
                     MICRO+   P     #B ADENOMA
PITUITARY
                    GROSS:          COLOR CHANGE, DIFFUSE
                                        DARK RED
                     MICRO+   4     HEMORRHAGE
ADRENAL GL
                    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                                        LEFT, DARK GREY FOCI
                     MICRO+((5)) VASCULAR ECTASIA
ADRENAL GL
                    GROSS:          CYST
                                        RIGHT, CYSTIC, MAKING ADRENAL SOFT AND
                                        MUSHY
                     MICRO+((5)) VASCULAR ECTASIA
                    MICRO: ((4)) THROMBOSIS
                           (2)   FIBROSIS
                           (4)   INFARCTION
SKIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3891D10 (CONTINUED)

```
    GROSS:        STAINED
                      URINE, GENITAL REGION
MAMMARY GL
    GROSS:        GALACTOCELE
                      GENITAL AREA, 3X3X3MM, 5X5X5MM
     MICRO+  2    HYPERSECRETION
    MICRO:  (2)   MASTITIS
SPLEEN
    GROSS:        SIZE DECREASE
                      SLIGHT
    MICRO:   4    HEMOSIDEROSIS
LYMPH ND, S-MAN
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED, BILATERAL
LYMPH ND, MES
    MICRO:   3    SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO: ((3)) EPITHELIAL CYST(S)
             4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3    MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO PITUITARY SIZE
     MICRO+  3    COMPRESSION
    MICRO:   2    HYDROCEPHALUS
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
OVARIES
    GROSS:        CYST
                      RIGHT, 3X3X3MM, CLEAR FLUID
     MICRO+ (4)   CYST(S)
VAGINA
    MICRO:   3    VAGINITIS
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO:  (3)   CYST(S)
            (1)   TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:   P    ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         PANCREAS          DUODENUM
    JEJUNUM           ILEUM             COLON
    THYROID GL        PARATHYROID GL    SKIN
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    NERVE, SCIATIC    EYE               UTERUS
    CERVIX            TRACHEA           URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    LYMPH ND, S-MAN
```

ANIMAL 3976D11 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE
ORGAN WEIGHT ABS.(G) REL. LIVER

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3976D11 (CONTINUED)

LIVER	8.847	2.644
KIDNEYS	2.062	0.616
HEART	1.049	0.314
SPLEEN	0.476	0.142
BRAIN	1.919	0.574
ADRENAL GL	0.087	0.026
OVARIES	0.129	0.039
TERMINAL BODY WT.	334.6	

```
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      3X2MM TAN FOCUS, RIGHT MEDIAN LOBE
LIVER
    GROSS:        ANOMALY
                      4X3X2MM, ATTACHED TO RIGHT MEDIAN LOBE
     MICRO+ (P)   ANOMALOUS LOBULATION
    MICRO: ((1)) BILIARY HYPERPLASIA
            (1)  MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    MICRO: ((2)) VASCULAR ECTASIA
THYROID GL
    GROSS:        SIZE INCREASE
                      3.5X NORMAL, RIGHT
     MICRO+ (P)   #M C CELL CARCINOMA
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      TAN AND BROWN, BILATERAL
     MICRO+((5)) VASCULAR ECTASIA
    MICRO: ((5)) THROMBOSIS
            (3)  INFARCTION
MAMMARY GL
    MICRO:   3   HYPERSECRETION
            (3)  GALACTOCELE
SPLEEN
    GROSS:        SIZE DECREASE
                      1/4 OF NORMAL
     MICRO+  3   HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   3   SINUS ERYTHROCYTOSIS
           ((2)) HEMOSIDEROSIS
LYMPH ND, MES
    MICRO:   4   MASTOCYTOSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
LUNGS
    MICRO:  (3)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    SKIN             BONE, STERNUM    BONE, FEMUR
    BONE MARROW      BRAIN            SPINAL CORD
    NERVE, SCIATIC   EYE              OVARIES
    UTERUS           CERVIX           VAGINA
    TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3959D12 2-OCT-89 STUDY DAY 559
TYPE OF DEATH: FOUND DEAD

```
HEART
    MICRO:  (1)  MYOCARDIAL DEGENERATION/FIBROSIS
LIVER
    GROSS:       POSTMORTEM CHANGE
CECUM
    GROSS:       TORTUOUS
                     INCLUDING DUODENUM , JEJUNUM, ILEUM
CECUM
    GROSS:       GASEOUS
                     SEVERE, INCLUDING DUODENUM, JEJUNUM,
                     ILEUM
    MICRO:   4   CONGESTION
PITUITARY
    GROSS:       SIZE INCREASE
                     6X6X5MM
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BROWN AND DARK RED
THYROID GL
    MICRO:  (1)  C CELL HYPERPLASIA
ADRENAL GL
    MICRO:   4   CONGESTION
            ((3)) VASCULAR ECTASIA
             (1)  FIBROSIS
SKIN
    GROSS:       ALOPECIA
                     PARTIAL, VENTRAL SURFACE
MAMMARY GL
    MICRO:   3   HYPERSECRETION
            ((2)) MINERALIZATION
              3   FIBROSIS
SPLEEN
    GROSS:       SIZE DECREASE
                     1/4 OF NORMAL
    MICRO:   5   HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:   3   LYMPHOID HYPERPLASIA
LYMPH ND, MES
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     TAN AND RED
     MICRO+((3)) SINUS ERYTHROCYTOSIS
    MICRO: ((1)) HEMOSIDEROSIS
           ((3)) FIBROSIS
                     ONE NODE
                     ADJACENT FAT AND VESSELS ALSO FIBROTIC
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO ENLARGED PITUITARY
     MICRO+  4   COMPRESSION
UTERUS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3959D12 (CONTINUED)

GROSS: POSTMORTEM CHANGE
TRACHEA
MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
MICRO: 4 CONGESTION
(2) HEMORRHAGE
PLEURAL SURFACE
KIDNEYS
GROSS: CALCULUS
MULTIPLE 1X1X1MM, RIGHT KIDNEY
MICRO+((3)) RENAL CALCULI
BILATERAL
MICRO: ((1)) TUBULAR PROTEINOSIS
CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
STOMACH	LIVER	PANCREAS
DUODENUM	JEJUNUM	ILEUM
COLON	RECTUM	PARATHYROID GL
SKIN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	SPINAL CORD
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	VAGINA
URINARY BLADDER		

ANIMAL 3886D13 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.339	3.190
KIDNEYS	2.342	0.659
HEART	1.073	0.302
SPLEEN	0.659	0.185
BRAIN	2.066	0.581
ADRENAL GL	0.053	0.015
OVARIES	0.088	0.025
TERMINAL BODY WT.	355.5	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
3X3MM RED FOCUS, CAUDATE LOBE
MICRO: (1) MONONUCLEAR CELL INFILTRATE(S)
CECUM
GROSS: CONTENTS ABNORMAL
CONTAINS WATERY FECAL MATERIAL
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
2X2MM DARK RED FOCUS
MICRO+ (P) #B ADENOMA
THYROID GL
MICRO: (P) THYROGLOSSAL DUCT CYST
ADRENAL GL
MICRO: (3) CORTICAL CELL HYPERTROPHY
MAMMARY GL
GROSS: MASS
35X30X15MM, TAN, MULTILOBULAR, LEFT AXILLARY AREA
MICRO+ P #M ADENOCARCINOMA
WELL DIFFERENTIATED
LYMPH ND, S-MAN
MICRO: (3) LYMPHATIC ECTASIA, CYSTIC

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3886D13 (CONTINUED)

```
                                        3   PLASMACYTOSIS
                              LYMPH ND, MED
                                  MICRO:  3   HEMOSIDEROSIS
                              LYMPH ND, MES
                                  MICRO: ((1)) HISTIOCYTIC AGGREGATES
                              THYMIC REGION
                                  MICRO:  3   INVOLUTIONAL ATROPHY
                              URINARY BLADDER
                                  MICRO: (4)  EDEMA
                                                  PROBABLY ARTIFACT
                              THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                  HEART           AORTA           SALIVARY GL
                                  ESOPHAGUS       PANCREAS        DUODENUM
                                  JEJUNUM         ILEUM           CECUM
                                  RECTUM          PARATHYROID GL  SKIN
                                  SPLEEN          BONE, STERNUM   BONE, FEMUR
                                  BONE MARROW     SKELETAL MUSCLE BRAIN
                                  SPINAL CORD     NERVE, SCIATIC  EYE
                                  OVARIES         UTERUS          CERVIX
                                  VAGINA          TRACHEA         LUNGS
                                  KIDNEYS
```

ANIMAL 3967D14 27-FEB-90 STUDY DAY 707

TYPE OF DEATH: FOUND DEAD

```
                              JEJUNUM
                                  GROSS:      POSTMORTEM CHANGE
                              ILEUM
                                  GROSS:      POSTMORTEM CHANGE
                              CECUM
                                  MICRO:  P   NEMATODIASIS
                              COLON
                                  MICRO:  P   NEMATODIASIS
                              PITUITARY
                                  GROSS:      SIZE INCREASE
                                                  8X6X6MM
                                   MICRO+ P   #M CARCINOMA
                                                  VERY LARGE
                              PITUITARY
                                  GROSS:      COLOR CHANGE, FOCAL/MULTIFOCAL
                                                  TAN AND DARK RED
                                   MICRO+ 4   HEMORRHAGE
                              ADRENAL GL
                                  GROSS:      COLOR CHANGE, FOCAL/MULTIFOCAL
                                                  MULTIPLE WHITE FOCI DISSEMINATED OVER
                                                  SURFACE, BILATERAL
                                                  2X2MM DARK RED FOCUS, LEFT
                                   MICRO+ (4) INFARCTION
                                  MICRO: (5) VASCULAR ECTASIA
                                        ((3)) THROMBOSIS
                                        ((3)) HEMORRHAGE
                                        ((2)) CORTICAL CELL HYPERTROPHY
                              MAMMARY GL
                                  GROSS:      MASS
                                                  15X10X8MM, TAN, UROGENITAL AREA
                                   MICRO+ (4) MASTITIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3967D14 (CONTINUED)

```
                                        MULTIFOCAL NODULES OF GRANULOMATOUS
                                        MASTITIS AND FIBROSIS
                                        ASSOCIATED WITH GALACTOCELES
        MICRO: ((4)) GALACTOCELE
               ((3)) FIBROSIS
    LYMPH ND, S-MAN
        GROSS:       COLOR CHANGE, DIFFUSE
                         RED
         MICRO+  2   SINUS ERYTHROCYTOSIS
        MICRO:   3   PLASMACYTOSIS
                 3   FIBROSIS
                         CAPSULAR, ONE NODE
    LYMPH ND, MES
        GROSS:       POSTMORTEM CHANGE
        MICRO:   4   SINUS ERYTHROCYTOSIS
    THYMIC REGION
        MICRO:   3   INVOLUTIONAL ATROPHY
    SKELETAL MUSCLE
        MICRO:   3   MYOFIBER ATROPHY
    BRAIN
        GROSS:       DEPRESSION/INDENTATION
                         DUE TO ENLARGED PITUITARY
         MICRO+  4   COMPRESSION
    UTERUS
        GROSS:       POSTMORTEM CHANGE
    VAGINA
        MICRO:   2   VAGINITIS
    TRACHEA
        MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
    LUNGS
        GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                         ALL LOBES MOTTLED PINK AND DARK RED
         MICRO+  5   CONGESTION
    KIDNEYS
        MICRO: ((3)) TUBULAR PROTEINOSIS
               (1)  RENAL CALCULI
                         RIGHT
    CAUSE OF DEATH
        MICRO:   P   CARCINOMA, PITUITARY
    THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
        HEART            AORTA            SALIVARY GL
        ESOPHAGUS        STOMACH          LIVER
        PANCREAS         DUODENUM         JEJUNUM
        ILEUM            RECTUM           THYROID GL
        PARATHYROID GL   SKIN             SPLEEN
        BONE, STERNUM    BONE, FEMUR      BONE MARROW
        SPINAL CORD      NERVE, SCIATIC   EYE
        OVARIES          UTERUS           CERVIX
        URINARY BLADDER
```

ANIMAL 3971D15 10-NOV-89 STUDY DAY 598

TYPE OF DEATH: SAC DUE TO ENLARGED MASS

```
    LIVER
        MICRO:  (1)  MONONUCLEAR CELL INFILTRATE(S)
    PANCREAS
        MICRO:  (3)  LYMPHOID INFILTRATES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3971D15 (CONTINUED)

```
COLON
    MICRO:   P   NEMATODIASIS
NARES/NOSE
    GROSS:       CRUST
                     RED, PERINASAL AREA
MAMMARY GL
    GROSS:       MASS
                     75X65X45MM, TAN, MULTILOBULAR; LEFT
                     THORACIC AREA
     MICRO+  P   #B FIBROADENOMA
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
UTERUS
    MICRO:   2   LUMINAL ECTASIA
NASAL CAVITY
    MICRO:  (3)  HEMORRHAGE
LUNGS
    MICRO: ((2)) PNEUMONITIS, INTERSTITIAL
            (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
            (1)  TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P   NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          DUODENUM
    JEJUNUM          ILEUM            CECUM
    RECTUM           PITUITARY        THYROID GL
    PARATHYROID GL   ADRENAL GL       SKIN
    NARES/NOSE       SPLEEN           LYMPH ND, S-MAN
    BONE, STERNUM    BONE, FEMUR      SKELETAL MUSCLE
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    EYE              OVARIES          CERVIX
    VAGINA           TRACHEA          URINARY BLADDER
```

ANIMAL 3868D16 21-MAR-90 STUDY DAY 729

TYPE OF DEATH: FOUND DEAD

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       POSTMORTEM CHANGE
PITUITARY
    GROSS:       SIZE INCREASE
                     15X12X5MM
     MICRO+  P   #B ADENOMA
                     VERY LARGE
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, TAN, AND BROWN
THYROID GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3868D16 (CONTINUED)

```
    MICRO:   P   THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BILATERAL, DARK TAN AND RED FOCI
     MICRO+((3)) VASCULAR ECTASIA
    MICRO:  (P)  #B ADENOMA
                     BOTH MASSES IN THE SAME GLAND
            (P)  #B PHEOCHROMOCYTOMA
             4   HEMORRHAGE
           ((2)) FIBROSIS
            (2)  CORTICAL CELL HYPERPLASIA, NODULAR
MAMMARY GL
    GROSS:       MASS
                     20X20X10MM, SPHERICAL, FIRM, NODULAR
                     VENTRAL, UNDER LEFT ARM
     MICRO+ (P)  #B FIBROADENOMA
    MICRO:   2   HYPERSECRETION
           ((3)) FIBROSIS
SPLEEN
    MICRO:   4   HEMOSIDEROSIS
LYMPH ND, S-MAN
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, BILATERAL
     MICRO+  3   SINUS ERYTHROCYTOSIS
    MICRO:   3   PLASMACYTOSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY SIZE
     MICRO+  4   COMPRESSION
    MICRO:   2   HYDROCEPHALUS
             4   HEMORRHAGE
                     MENINGEAL, DUE TO PITUITARY TUMOR
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED AND TAN, ALL LOBES
     MICRO+  5   CONGESTION
    MICRO: ((3)) HEMORRHAGE
           ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO:  (2)  RENAL CALCULI
                     RIGHT
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    SKIN             LYMPH ND, MES    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           URINARY BLADDER
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See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3868D16 (CONTINUED)

THE FOLLOWING TISSUES WERE MISSING:
PARATHYROID GL

ANIMAL 3777D17 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.867	2.994
KIDNEYS	2.217	0.844
HEART	1.356	0.516
SPLEEN	0.928	0.353
BRAIN	1.825	0.694
ADRENAL GL	0.088	0.033
OVARIES	0.087	0.033
TERMINAL BODY WT.	262.8	

TOTAL BODY
GROSS: EMACIATION
ADIPOSE TISSUE
GROSS: CYST
10X6X4MM, YELLOW FLUID FILLED, RIGHT SUBLUMBAR AREA
STOMACH
MICRO: (4) ULCER
NONGLANDULAR STOMACH
4 EDEMA
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
3X2MM TAN FOCUS, RIGHT MEDIAN LOBE
MICRO+ (P) CLEAR CELL FOCI
FOCUS OF FINELY VACUOLATED SWOLLEN CELLS
MICRO: ((1)) BILIARY HYPERPLASIA
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
2X NORMAL
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
2X1MM RED FOCUS
MICRO+((4)) VASCULAR ECTASIA
ADRENAL GL
MICRO: ((2)) FIBROSIS
((3)) VASCULAR ECTASIA
((1)) CORTICAL CELL HYPERTROPHY
NARES/NOSE
GROSS: CRUST
RED, PERINASAL AREA
MICRO+ 3 HEMORRHAGE
MAMMARY GL
MICRO: 3 HYPERPLASIA
PAWS/FEET
GROSS: SWOLLEN
ALL FOUR FEET
MICRO+ 5 FIBROSIS
MICRO: ((4)) OSSEUS METAPLASIA
((4)) ABSCESS
SPLEEN
MICRO: 3 HEMOSIDEROSIS
LYMPH ND, S-MAN
MICRO: 4 PLASMACYTOSIS
4 LYMPHOID HYPERPLASIA
LYMPH ND, MES
MICRO: 3 MASTOCYTOSIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3777D17 (CONTINUED)

((1)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
MICRO: ((4)) LYMPHATIC ECTASIA, CYSTIC
MISTAKEN GROSSLY FOR ADIPOSE TISSUE
CYST; SUBLUMBAR NODE
THYMIC REGION
MICRO: ((3)) EPITHELIAL CYST(S)
3 INVOLUTIONAL ATROPHY
BONE/JOINT
GROSS: SIZE INCREASE
KNEE JOINTS 2-3X NORMAL, BILATERAL
MICRO+ 5 OSTEOARTHRITIS
BONE, FEMUR
MICRO: 5 OSTEOARTHRITIS
INVOLVES TIBIOFEMORAL JOINT
SKELETAL MUSCLE
MICRO: 3 MYOFIBER ATROPHY
SPINAL CORD
MICRO: ((2)) VACUOLIZATION
TRACHEA
MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
2 ADENITIS, SUBMUCOSAL GLANDS
LUNGS
MICRO: ((3)) ALVEOLAR HISTIOCYTOSIS
((2)) PNEUMONITIS, INTERSTITIAL
GRANULOMATOUS FOCI
KIDNEYS
MICRO: (1) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

ADIPOSE TISSUE	HEART	AORTA
SALIVARY GL	ESOPHAGUS	PANCREAS
DUODENUM	JEJUNUM	ILEUM
CECUM	RECTUM	THYROID GL
PARATHYROID GL	SKIN	BONE, STERNUM
BONE MARROW	BRAIN	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	VAGINA	URINARY BLADDER

ANIMAL 3853D18 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.600	2.576
KIDNEYS	2.485	0.744
HEART	1.192	0.357
SPLEEN	0.643	0.193
BRAIN	2.039	0.611
ADRENAL GL	0.097	0.029
OVARIES	0.110	0.033
TERMINAL BODY WT.	333.9	

SALIVARY GL
MICRO: ((3)) ATROPHY
LIVER
MICRO: ((1)) FATTY CHANGE
((2)) CHOLANGIOFIBROSIS
((1)) BILIARY HYPERPLASIA
CECUM
MICRO: 3 TYPHLITIS
SUPERFICIAL ULCERATION IS PRESENT
PITUITARY
GROSS: SIZE INCREASE
2X NORMAL
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3853D18 (CONTINUED)

LEFT SIDE, PUNCTATE BLACK FOCAL AREAS
THYROID GL
MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
MICRO: (4) INFARCTION
MAMMARY GL
GROSS: GALACTOCELE
SEVERAL PUNCTATE SCATTERED THROUGHOUT
MICRO+ 3 HYPERSECRETION
LYMPH ND, MES
MICRO: 3 MASTOCYTOSIS
((2)) SINUS ERYTHROCYTOSIS
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
SPINAL CORD
MICRO: ((1)) VACUOLIZATION
VAGINA
MICRO: 1 VAGINITIS
LUNGS
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
(1) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) TUBULAR BASOPHILIA
(1) RENAL CALCULI
((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	ESOPHAGUS
STOMACH	PANCREAS	DUODENUM
JEJUNUM	ILEUM	COLON
RECTUM	PARATHYROID GL	SKIN
SPLEEN	LYMPH ND, S-MAN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	NERVE, SCIATIC	EYE
OVARIES	UTERUS	CERVIX
TRACHEA	URINARY BLADDER	

ANIMAL 3817D19 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.988	2.849
KIDNEYS	2.572	0.734
HEART	1.120	0.319
SPLEEN	0.617	0.176
BRAIN	2.303	0.657
ADRENAL GL	0.122	0.035
OVARIES	0.106	0.030
TERMINAL BODY WT.	350.6	

TOTAL BODY
GROSS: EMACIATION
MODERATE
STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
SLIGHT
THYROID GL
MICRO: (1) C CELL HYPERPLASIA
ADRENAL GL
MICRO: ((5)) VASCULAR ECTASIA
((3)) THROMBOSIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3817D19 (CONTINUED)

```
                    ((2)) FIBROSIS
                    ((2)) CORTICAL CELL HYPERTROPHY
MAMMARY GL
    GROSS:          MASS
                        ONE LARGE, 85X55X25MM, MADE UP OF TWO
                        MASSES WHICH
                        HAVE GROWN TOGETHER
     MICRO+ (P)  #B FIBROADENOMA
    MICRO:   3   HYPERSECRETION
LYMPH ND, MES
    MICRO:  (2)  SINUS ERYTHROCYTOSIS
            ((3)) MASTOCYTOSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
             (4) HEMORRHAGE
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    MICRO:   P   #B ASTROCYTOMA
                     UNILATERAL, MIDBRAIN, LARGE MASS
             2   HYDROCEPHALUS
            ((2)) VACUOLIZATION
                     CEREBELLUM
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
UTERUS
    GROSS:          DILATATION/DISTENTION
                     LEFT HORN, CLEAR FLUID
     MICRO+((3)) GLANDULAR ECTASIA
    MICRO: ((1)) METRITIS
LUNGS
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    RECTUM           PITUITARY        SKIN
    SPLEEN           LYMPH ND, S-MAN  BONE, STERNUM
    BONE, FEMUR      BONE MARROW      NERVE, SCIATIC
    EYE              OVARIES          CERVIX
    VAGINA           TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 3905D20 26-JAN-90 STUDY DAY 675

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:          UNKEMPT
SALIVARY GL
    MICRO:  (2)  #M SQUAMOUS CELL CARCINOMA
                     METASTATIC
            (3)  ATROPHY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3905D20 (CONTINUED)

```
ESOPHAGUS
    MICRO:  (1)  #M SQUAMOUS CELL CARCINOMA
                     A SUBMUCOSAL EMBOLUS
STOMACH
    GROSS:       ULCERATED
                     MULTIPLE, NON-GLANDULAR PORTION
     MICRO+  4   GASTRITIS
                     LESIONS ARE IN THE NONGLANDULAR AREA
    MICRO:   4   MUCOSAL HYPERPLASIA
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MOTTLED YELLOW AND RED, ALL LOBES
     MICRO+((3)) FATTY CHANGE
    MICRO: ((1)) CHOLANGIOFIBROSIS
PITUITARY
    GROSS:       NODULE
                     1X1 MM, DARK RED
     MICRO+  P   #B ADENOMA
THYROID GL
    GROSS:       SIZE INCREASE
                     2X NORMAL, RIGHT
     MICRO+((P)) #M SQUAMOUS CELL CARCINOMA
                     THE TUMOR HAS TOTALLY DESTROYED ONE
                     GLAND AND HAS
                     INVADED THE OTHER
THYROID GL
    GROSS:       COLOR CHANGE, DIFFUSE
                     WHITE, RIGHT
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
PARATHYROID GL
    MICRO:   P   #M SQUAMOUS CELL CARCINOMA
                     METASTATIC FROM THE THYROID
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     RED AND TAN, BILATERAL
     MICRO+((5)) VASCULAR ECTASIA
    MICRO: ((5)) THROMBOSIS
SKIN
    GROSS:       STAINED
                     YELLOW, UROGENITAL REGION
EARS
    GROSS:       MASS
                     RIGHT EAR, 2X1.5 CM, NECROTIC CENTER
     MICRO+  P   #M SQUAMOUS CELL CARCINOMA
                     PROBABLY ORIGINATED FROM ZYMBALS GLAND
PAWS/FEET
    GROSS:       ULCERATED
                     6X6X3 MM, LEFT HIND PAW
                     6X5X2 MM, RIGHT HIND PAW
     MICRO+  5   ULCERATION
    MICRO:   3   FIBROSIS
            (3)  ABSCESS
           ((3)) OSSEUS METAPLASIA
SPLEEN
    MICRO:   4   HEMOSIDEROSIS
LYMPH ND, S-MAN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3905D20 (CONTINUED)

```
    MICRO:   4   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    MICRO: ((1)) HEMORRHAGE
                     BRAINSTEM
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     RED, RIGHT PERIOCULAR REGION
    MICRO:   4   KERATITIS
            (3)  CORNEAL ULCER
                     UNILATERAL
VAGINA
    GROSS:       CONTENTS ABNORMAL
                     YELLOW-GREEN MUCOUS MATERIAL
     MICRO+  1   VAGINITIS
TRACHEA
    MICRO: ((1)) #M SQUAMOUS CELL CARCINOMA
                     SMALL SUBMUCOSAL METASTATIC SITES
LUNGS
    MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
CAUSE OF DEATH
    MICRO:   P   SQUAMOUS CELL CARCINOMA, ZYMBAL'S GLAND
                     METASTASES PRESENT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    SKIN             MAMMARY GL       BONE, STERNUM
    BONE, FEMUR      BONE MARROW      NERVE, SCIATIC
    OVARIES          UTERUS           CERVIX
    KIDNEYS          URINARY BLADDER
```

ANIMAL 3857D21 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.844	2.913
KIDNEYS	2.578	0.693
HEART	1.166	0.313
SPLEEN	0.637	0.171
BRAIN	1.943	0.522
ADRENAL GL	0.156	0.042
OVARIES	0.128	0.034
TERMINAL BODY WT.	372.2	

```
COLON
    GROSS:       DIVERTICULUM
                     2X2X2MM
    MICRO:   P   INTUSSESCEPTION
                     PROBABLY A POST MORTUM ARTIFACT AS THE
                     GUT WALL IS HEALTHY
PITUITARY
    GROSS:       MASS
                     5X6X5MM, DARK RED
     MICRO+  P   #B ADENOMA
THYROID GL
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3857D21 (CONTINUED)

```
                                    MULTIPLE WHITE FOCI DISSEMINATED OVER
                                    SURFACE, BILATERAL
     MICRO+((5)) VASCULAR ECTASIA
ADRENAL GL
    GROSS:       SIZE INCREASE
                     BOTH, SLIGHT
    MICRO: ((4)) THROMBOSIS
            (2)  FIBROSIS
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   2   SINUS ERYTHROCYTOSIS
             2   HEMOSIDEROSIS
LYMPH ND, MES
    MICRO:   3   SINUS ERYTHROCYTOSIS
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AROUND PITUITARY
SPINAL CORD
    MICRO: ((3)) VACUOLIZATION
OVARIES
    MICRO:  (3)  CYST(S)
CERVIX
    GROSS:       NODULE
                     1X1X1MM, ON WALL
LUNGS
    MICRO:  (3)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          LIVER
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            RECTUM
    PARATHYROID GL   SKIN             MAMMARY GL
    SPLEEN           THYMIC REGION    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    BRAIN            NERVE, SCIATIC   EYE
    UTERUS           CERVIX           VAGINA
    TRACHEA          URINARY BLADDER
```

ANIMAL 3827D22 2-JAN-90 STUDY DAY 651
TYPE OF DEATH: FOUND DEAD

```
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED TAN AND BROWN
JEJUNUM
    GROSS:       POSTMORTEM CHANGE
ILEUM
    GROSS:       POSTMORTEM CHANGE
PITUITARY
    GROSS:       SIZE INCREASE
                     7X6X6MM
     MICRO+  P   #B ADENOMA
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3827D22 (CONTINUED)

```
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
     MICRO+  5    HEMORRHAGE
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE TAN FOCI, BILATERAL
     MICRO+((5)) VASCULAR ECTASIA
    MICRO: ((3)) HEMOSIDEROSIS
            (3)  CORTICAL CELL HYPERTROPHY
SKIN
    GROSS:        STAINED
                      URINE, UROGENITAL AREA
EARS
    GROSS:        THICKER THAN NORMAL
                      BILATERAL
     MICRO+((4)) AURICULAR CHONDROPATHY
EARS
    GROSS:        COLOR CHANGE, DIFFUSE
                      RED, BILATERAL
    MICRO: ((3)) CELLULITIS
                      THE EAR INFLAMMATION IS CHRONIC AND
                      ACTIVE
                      LESIONS ARE BILATERAL
MAMMARY GL
    MICRO:  (3)  MASTITIS
             3   HYPERSECRETION
LYMPH ND, S-MAN
    GROSS:        COLOR CHANGE, DIFFUSE
                      RED
     MICRO+  3   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    GROSS:        POSTMORTEM CHANGE
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   2   HEMORRHAGE
             3   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
EYE
    MICRO: ((2)) CATARACT
                      SUBCAPSULAR, BILATERAL
UTERUS
    GROSS:        POSTMORTEM CHANGE
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      ALL LOBES MOTTLED LIGHT AND DARK PINK
                      2X2MM WHITE FOCUS, RIGHT DIAPHRAGMATIC
                      LOBE
     MICRO+((4)) HEMORRHAGE
    MICRO:   5   CONGESTION
           ((2)) ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO:  (1)  RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3827D22 (CONTINUED)

HEART	AORTA	SALIVARY GL
ESOPHAGUS	LIVER	PANCREAS
THYROID GL	PARATHYROID GL	SKIN
SPLEEN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	BRAIN
SPINAL CORD	NERVE, SCIATIC	OVARIES
UTERUS	CERVIX	VAGINA
TRACHEA		

THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:

STOMACH	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	URINARY BLADDER	

ANIMAL 3897D23 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.563	2.831
KIDNEYS	2.690	0.659
HEART	1.487	0.364
SPLEEN	0.918	0.225
BRAIN	1.797	0.440
ADRENAL GL	0.122	0.030
OVARIES	0.124	0.030
TERMINAL BODY WT.	408.4	

HEART
MICRO: (2) FIBROSIS
PITUITARY
GROSS: SIZE INCREASE
10X8X5MM
MICRO↑ P #M CARCINOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
THYROID GL
MICRO: (2) C CELL HYPERPLASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
WHITE AND TAN FOCI, BILATERAL
MICRO↑((2)) CORTICAL CELL HYPERTROPHY
MICRO: (4) INFARCTION
((4)) CORTICAL CELL VACUOLIZATION
ASSOCIATED WITH INFARCTIONS
MAMMARY GL
GROSS: MASS
60X60X30MM, VENTRAL, CHEST AREA
BLOOD FILLED
50X30X25MM, VENTRAL, LOWER RIGHT REGION
MICRO↑ P #M ADENOCARCINOMA
MICRO: ((4)) GALACTOCELE
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MES
MICRO: 3 SINUS ERYTHROCYTOSIS
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
(3) EPITHELIAL CYST(S)
BONE MARROW
MICRO: 4 HYPERPLASIA
SKELETAL MUSCLE
MICRO: 2 MYOFIBER ATROPHY
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO PITUITARY SIZE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3897D23 (CONTINUED)

```
        MICRO↑ (4)  COMPRESSION
       MICRO:   3   HYDROCEPHALUS
               (2)  #M CARCINOMA
                        EXTENSION OF PITUITARY TUMOR
             ((3)) VACUOLIZATION
                        CEREBELLUM
UTERUS
    MICRO:  (2)  #B STROMAL POLYP
                        SMALL NODULE
TRACHEA
    MICRO:  (2)  SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       NODULE
                        RIGHT DIAPHRAGMATIC LOBE, 2X2X2MM
     MICRO↑ (P)  #M ADENOCARCINOMA
                        PROBABLY METASTATIC FROM THE MAMMARY
                        TUMOR
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
            (1)  GRANULOMA
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
            (1)  TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA              SALIVARY GL      ESOPHAGUS
    STOMACH            LIVER            PANCREAS
    DUODENUM           JEJUNUM          ILEUM
    CECUM              COLON            RECTUM
    PARATHYROID GL     SKIN             SPLEEN
    BONE, STERNUM      BONE, FEMUR      SPINAL CORD
    NERVE, SCIATIC     EYE              OVARIES
    CERVIX             VAGINA           URINARY BLADDER
```

ANIMAL 3888D24 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	6.651	3.017
KIDNEYS	1.984	0.900
HEART	0.953	0.432
SPLEEN	0.316	0.143
BRAIN	1.750	0.794
ADRENAL GL	0.072	0.033
OVARIES	0.067	0.030
TERMINAL BODY WT.	220.4	

```
TOTAL BODY
    GROSS:       EMACIATION
HEART
    MICRO: ((1)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO:   4   FATTY CHANGE
            ((2)) CHOLANGIOFIBROSIS
            ((1)) CHOLANGITIS
            ((1)) BILIARY HYPERPLASIA
CECUM
    MICRO:   4   CONGESTION
PITUITARY
    GROSS:       MASS
                     10X10X5MM, DARK RED
     MICRO↑  P   #B ADENOMA
    MICRO:   5   HEMORRHAGE
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3888D24 (CONTINUED)

```
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      LEFT, RED FOCAL AREA
                      BOTH, WHITE FOCI SEEN
     MICRO+ (5)   HEMORRHAGE
    MICRO:  (5)   INFARCTION
           ((2))  THROMBOSIS
SKIN
    GROSS:        STAINED
                      UROGENITAL AREA
MAMMARY GL
    MICRO: ((3))  MASTITIS
           ((4))  GALACTOCELE
SPLEEN
    GROSS:        SIZE DECREASE
                      SLIGHT
    MICRO:   4    HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:   3    PLASMACYTOSIS
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2    MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      AROUND PITUITARY
     MICRO+ (4)   COMPRESSION
    MICRO:   3    HYDROCEPHALUS
SPINAL CORD
    MICRO: ((3))  VACUOLIZATION
EYE
    GROSS:        CRUST
                      BOTH
    MICRO:  (4)   HEMORRHAGE, RETROORBITAL
OVARIES
    MICRO:  (3)   CYST(S)
VAGINA
    MICRO:   3    VAGINITIS
LUNGS
    MICRO: ((2))  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2))  RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            COLON            RECTUM
    PARATHYROID GL   SKIN             LYMPH ND, MES
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    NERVE, SCIATIC   UTERUS           CERVIX
    TRACHEA          URINARY BLADDER
```

ANIMAL 3661D25 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.888	2.505
KIDNEYS	2.158	0.685

```
STOMACH
    MICRO: ((1))  GLAND ECTASIA
LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3661D25 (CONTINUED)

HEART	1.014	0.322
SPLEEN	0.494	0.157
BRAIN	2.143	0.681
ADRENAL GL	0.048	0.015
OVARIES	0.094	0.030
TERMINAL BODY WT.	314.9	

GROSS: COLOR CHANGE, DIFFUSE
BROWN AND MOTTLED RED, ALL LOBES
MICRO: ((2)) BILIARY HYPERPLASIA

THYROID GL
MICRO: ((1)) C CELL HYPERPLASIA

ADRENAL GL
MICRO: (3) INFARCTION
(3) HEMORRHAGE

EARS
GROSS: THICKER THAN NORMAL
BILATERAL
MICRO+((4)) AURICULAR CHONDROPATHY
CHRONIC ACTIVE INFLAMMATION
MICRO: ((3)) CELLULITIS

LYMPH ND, S-MAN
MICRO: (4) FIBROSIS
CAPSULAR FIBROSIS, ONE NODE

LYMPH ND, MED
MICRO: 4 SINUS ERYTHROCYTOSIS
3 HEMOSIDEROSIS

LYMPH ND, MES
MICRO: 1 SINUS ERYTHROCYTOSIS

THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
((4)) HEMORRHAGE

TRACHEA
MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA

LUNGS
MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
((2)) HEMORRHAGE
(1) PERIVASCULAR INFILTRATE(S)

KIDNEYS
MICRO: ((1)) NEPHRITIS, INTERSTITIAL

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	PITUITARY
PARATHYROID GL	SKIN	MAMMARY GL
SPLEEN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	BRAIN
SPINAL CORD	NERVE, SCIATIC	EYE
OVARIES	UTERUS	CERVIX
VAGINA	URINARY BLADDER	

ANIMAL 3674D26 14-DEC-89 STUDY DAY 632

TYPE OF DEATH: SACRIFICED MORIBUND

TOTAL BODY
GROSS: EMACIATION

HEART
MICRO: (1) MYOCARDIAL DEGENERATION/FIBROSIS

SALIVARY GL
MICRO: (3) ATROPHY
SEROUS GLANDS

STOMACH

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3674D26 (CONTINUED)

```
    MICRO:   4   EDEMA
            (2)  ULCER
                     LESIONS ARE IN THE NONGLANDULAR STOMACH
PITUITARY
    GROSS:       MASS
                     10X10X5MM, RED
     MICRO+  P   #B ADENOMA
ADRENAL GL
    MICRO: ((1)) CORTICAL CELL HYPERTROPHY
            (P)  #B PHEOCHROMOCYTOMA
           ((4)) VASCULAR ECTASIA
             2   CORTICAL CELL VACUOLIZATION
MAMMARY GL
    GROSS:       GALACTOCELE
                     20X20X10MM, LEFT INGUINAL AREA
     MICRO+((4)) GALACTOCELE
SPLEEN
    GROSS:       SIZE DECREASE
                     1/4 OF NORMAL
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AREA OVER PITUITARY
     MICRO+  3   COMPRESSION
BRAIN
    GROSS:       HYDROCEPHALUS
                     MILD
     MICRO+  2   HYDROCEPHALUS
    MICRO: ((2)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     PERIOCULAR ENCRUSTATION, RED, BILATERAL
VAGINA
    MICRO:   1   VAGINITIS
TRACHEA
    MICRO:   2   ADENITIS, SUBMUCOSAL GLANDS
             3   TRACHEITIS
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            ESOPHAGUS        LIVER
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           THYROID GL       PARATHYROID GL
    SKIN             SPLEEN           LYMPH ND, S-MAN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    LUNGS            URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3707D27 12-APR-89 STUDY DAY 386
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
STOMACH
    MICRO:   4    EDEMA
                      NONGLANDULAR STOMACH
PITUITARY
    GROSS:        SIZE INCREASE
                      12X6X8MM
     MICRO+  P    #M CARCINOMA
                      VERY LARGE
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
     MICRO+  4    HEMORRHAGE
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE TAN FOCI, BILATERAL
     MICRO+((4)) VASCULAR ECTASIA
    MICRO: ((3)) THROMBOSIS
MAMMARY GL
    MICRO: ((4)) GALACTOCELE
SPLEEN
    GROSS:        SIZE DECREASE
                      1/4 OF NORMAL
    MICRO:   3    HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:   3    PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3    INVOLUTIONAL ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO+  4    COMPRESSION
BRAIN
    GROSS:        HYDROCEPHALUS
                      MILD
     MICRO+  3    HYDROCEPHALUS
EYE
    GROSS:        CRUST
                      RED, LEFT PERIOCULAR AREA
KIDNEYS
    GROSS:        CYST
                      2X2X1MM, LEFT
KIDNEYS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      2X2MM TAN FOCUS, LEFT MEDULLA
    MICRO:   2    RENAL CALCULI
                      MAINLY THE RIGHT
CAUSE OF DEATH
    MICRO:   P    CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3707D27 (CONTINUED)

ESOPHAGUS	LIVER	PANCREAS
DUODENUM	JEJUNUM	ILEUM
CECUM	COLON	RECTUM
THYROID GL	PARATHYROID GL	SKIN
BONE, STERNUM	BONE, FEMUR	BONE MARROW
SKELETAL MUSCLE	SPINAL CORD	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	VAGINA	TRACHEA
LUNGS	URINARY BLADDER	

ANIMAL 3968D28 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.322	2.456
KIDNEYS	2.265	0.539
HEART	1.267	0.301
SPLEEN	0.465	0.111
BRAIN	1.768	0.421
ADRENAL GL	0.096	0.023
OVARIES	0.133	0.032
TERMINAL BODY WT.	420.4	

HEART
MICRO: (2) FIBROSIS
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
ALL LOBES, DARK RED FOCI, 2X2X2MM TO 3X3X3MM
MICRO: ((2)) BILIARY HYPERPLASIA
((1)) CHOLANGITIS
ADRENAL GL
MICRO: ((4)) VASCULAR ECTASIA
((2)) CORTICAL CELL HYPERTROPHY
EARS
GROSS: THICKER THAN NORMAL
BILATERAL
MICRO: ((3)) AURICULAR CHONDROPATHY
SPLEEN
MICRO: 4 HEMOSIDEROSIS
LYMPH ND, MED
MICRO: 4 SINUS ERYTHROCYTOSIS
3 HEMOSIDEROSIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
((1)) HEMOSIDEROSIS
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
LUNGS
GROSS: COLOR CHANGE, DIFFUSE
ALL LOBES MOTTLED LIGHT AND DARK PINK
LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
RIM OF LEFT LOBE HAS ONE LONG FOCI
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
MICRO: ((1)) NEPHRITIS, INTERSTITIAL
((1)) TUBULAR BASOPHILIA
((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
STOMACH	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	PITUITARY
THYROID GL	PARATHYROID GL	SKIN
MAMMARY GL	LYMPH ND, S-MAN	BONE, STERNUM

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3968D28 (CONTINUED)

BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	VAGINA	TRACHEA
URINARY BLADDER		

ANIMAL 3887D29 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.464	2.484
KIDNEYS	2.919	0.857
HEART	1.108	0.325
SPLEEN	0.474	0.139
BRAIN	2.096	0.615
ADRENAL GL	0.121	0.036
OVARIES	0.242	0.071
TERMINAL BODY WT.	340.7	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((2)) FATTY CHANGE
((1)) CHOLANGIOFIBROSIS
(1) CHOLANGITIS
PITUITARY
GROSS: MASS
8X8X5MM, TAN AND RED
MICRO+ P #M CARCINOMA
ADRENAL GL
MICRO: ((4)) VASCULAR ECTASIA
((4)) THROMBOSIS
((3)) HEMORRHAGE
((2)) CORTICAL CELL HYPERTROPHY
SKIN
MICRO: (2) FOLLICULAR CYST
NARES/NOSE
GROSS: CRUST
RED, PERINASAL
MAMMARY GL
GROSS: MASS
25X20X10MM, LEFT AXILLARY, TAN
MICRO+ (P) #B FIBROADENOMA
MICRO: ((3)) GALACTOCELE
TAIL
GROSS: NODULE
MULTIPLE 1-3MM, BLACK, ENTIRE SURFACE
MICRO+((3)) FOLLICULITIS
LYMPH ND, MED
MICRO: ((2)) HEMOSIDEROSIS
LYMPH ND, MES
MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
((2)) HEMOSIDEROSIS
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
NO THYMUS
OVARIES
GROSS: CYST
RIGHT, CLEAR FLUID FILLED
MICRO+ (4) CYST(S)
VAGINA
MICRO: 2 VAGINITIS
LUNGS
MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
((1)) PERIVASCULAR INFILTRATE(S)

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3887D29 (CONTINUED)

KIDNEYS
MICRO: ((1)) TUBULAR PROTEINOSIS
((2)) TUBULAR BASOPHILIA
(P) #B EMBRYONAL NEPHROMA/NEPHROBLASTOMA
A SMALL MASS IS PRESENT IN THE RIGHT KIDNEY

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	THYROID GL
PARATHYROID GL	NARES/NOSE	SPLEEN
LYMPH ND, S-MAN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	BRAIN
SPINAL CORD	NERVE, SCIATIC	EYE
UTERUS	CERVIX	NASAL CAVITY
TRACHEA		

THE FOLLOWING TISSUES WERE MISSING:
URINARY BLADDER

ANIMAL 4023D30 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.952	2.844
KIDNEYS	2.659	0.845
HEART	0.996	0.316
SPLEEN	0.591	0.188
BRAIN	1.932	0.614
ADRENAL GL	0.139	0.044
OVARIES	0.081	0.026
TERMINAL BODY WT.	314.7	

LIVER
MICRO: ((1)) BILIARY HYPERPLASIA
(2) CHOLANGIOFIBROSIS
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
2X'S
PITUITARY
GROSS: NODULE
3X2X2MM, DARK RED
MICRO↑ P #B ADENOMA
THYROID GL
MICRO: (P) THYROGLOSSAL DUCT CYST
ADRENAL GL
GROSS: SIZE INCREASE
LEFT, 2X'S
MICRO↑((4)) INFARCTION
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO↑((5)) VASCULAR ECTASIA
MOST OF THE GLANDS IS DESTROYED BY VASCULAR LESIONS
MICRO: ((4)) THROMBOSIS
MAMMARY GL
GROSS: MASS
35X30X20MM, UNDER LEFT SHOULDER BLADE
30X20X20MM, UNDER RIGHT SHOULDER BLADE
MICRO↑ (P) #B FIBROADENOMA
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 4023D30 (CONTINUED)

```
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
SKELETAL MUSCLE
    GROSS:       MASS
                     15X10X10MM, YELLOW, LEFT THIGH
     MICRO+ (P)  #B LIPOMA
                     LOCATED WITHIN THE MUSCLE
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MOTTLED LIGHT AND DARK PINK, OVER ALL
                     LOBES
     MICRO+((2)) HEMORRHAGE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            RECTUM           SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      BRAIN            SPINAL CORD
    NERVE, SCIATIC   EYE              OVARIES
    UTERUS           CERVIX           VAGINA
    TRACHEA          KIDNEYS          URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 4018D31 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.522	2.387
KIDNEYS	2.598	0.651
HEART	1.215	0.305
SPLEEN	0.521	0.131
BRAIN	2.022	0.507
ADRENAL GL	0.094	0.024
OVARIES	0.095	0.024
TERMINAL BODY WT.	399.0	

```
STOMACH
    GROSS:       ULCERATED
                     GLANDULAR PORTION, 4MM IN DIAMETER
     MICRO+ (3)  ULCER
                     GLANDULAR STOMACH, SUPERFICIAL ULCER
    MICRO: ((1)) GLAND ECTASIA
                (3) GASTRITIS
PITUITARY
    GROSS:       MASS
                     4X5MM DARK RED
     MICRO+  P   #B ADENOMA
THYROID GL
    MICRO:  (2)  C CELL HYPERPLASIA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BILATERAL, BLACK AND WHITE FOCAL AREAS,
                     MULTIPLE
     MICRO+((5)) VASCULAR ECTASIA
    MICRO: ((4)) THROMBOSIS
MAMMARY GL
    GROSS:       NODULE
                     LEFT INGUINAL REGION, 4X5X3MM, DARK TAN
     MICRO+  P   #M ADENOCARCINOMA
MAMMARY GL
    GROSS:       MASS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 4018D31 (CONTINUED)

```
                                    RIGHT AXILLARY REGION, 15X10X5MM CREAM
                                    MULTILOBULAR
     MICRO+  P   #B FIBROADENOMA
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO:   3   MASTOCYTOSIS
           ((1)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BRAIN
    MICRO: ((2)) VACUOLIZATION
                     CEREBELUM
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
LUNGS
    MICRO:  (1)  MINERALIZATION, PULMONARY VESSEL(S)
            (2)  HEMORRHAGE
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    PARATHYROID GL   SKIN             SPLEEN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SKELETAL MUSCLE  NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           TRACHEA          KIDNEYS
    URINARY BLADDER
```

ANIMAL 3918D32 6-OCT-89 STUDY DAY 563
TYPE OF DEATH: SACRIFICED MORIBUND

```
STOMACH
    GROSS:       NODULE
                     10X6X3 MM, WHITE, NON-GLANDULAR PORTION
LIVER
    GROSS:       CONSISTENCY CHANGE
                     SOFT, ALL LOBES
    MICRO: ((1)) BILIARY HYPERPLASIA
PITUITARY
    GROSS:       MASS
                     7X6X5 MM, DARK RED
     MICRO+  P   #B ADENOMA
    MICRO:   4   HEMORRHAGE
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     TAN FOCI, BILATERAL
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO:  (4)  VASCULAR ECTASIA
SKIN
    GROSS:       STAINED
                     YELLOW AND BROWN, UROGENITAL REGION
NARES/NOSE
    GROSS:       CRUST
                     RED
MAMMARY GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3918D32 (CONTINUED)

```
                                    MICRO: ((3)) GALACTOCELE
                                             3   HYPERSECRETION
                                LYMPH ND, S-MAN
                                    MICRO:   4   SINUS ERYTHROCYTOSIS
                                             2   HEMOSIDEROSIS
                                LYMPH ND, MES
                                    MICRO: ((1)) HISTIOCYTIC AGGREGATES
                                THYMIC REGION
                                    MICRO: ((2)) EPITHELIAL CYST(S)
                                             4   INVOLUTIONAL ATROPHY
                                BRAIN
                                    GROSS:       DEPRESSION/INDENTATION
                                                     DUE TO PITUITARY MASS
                                BRAIN
                                    GROSS:       HEMORRHAGE
                                                     MODERATE, ABOVE PITUITARY
                                     MICRO+((3)) HEMORRHAGE
                                                     MENINGEAL, MIDBRAIN AND WITHIN THE
                                                     BRAINSTEM
                                    MICRO:  (2)  HYDROCEPHALUS
                                EYE
                                    GROSS:       CRUST
                                                     RED, BILATERAL
                                VAGINA
                                    GROSS:       CONTENTS ABNORMAL
                                                     YELLOW-GREEN MUCUS
                                NASAL CAVITY
                                    MICRO:  (2)  HEMORRHAGE
                                KIDNEYS
                                    MICRO:  (1)  TUBULAR BASOPHILIA
                                CAUSE OF DEATH
                                    MICRO:   P   ADENOMA, PITUITARY
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    HEART            AORTA            SALIVARY GL
                                    ESOPHAGUS        STOMACH          PANCREAS
                                    DUODENUM         JEJUNUM          ILEUM
                                    CECUM            COLON            RECTUM
                                    THYROID GL       PARATHYROID GL   SKIN
                                    NARES/NOSE       SPLEEN           BONE, STERNUM
                                    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
                                    SPINAL CORD      NERVE, SCIATIC   EYE
                                    OVARIES          UTERUS           CERVIX
                                    VAGINA           TRACHEA          LUNGS
                                    URINARY BLADDER
```

ANIMAL 3766D33 21-JUL-89 STUDY DAY 486

TYPE OF DEATH: SACRIFICED MORIBUND

```
                                TOTAL BODY
                                    GROSS:       EMACIATION
                                TOTAL BODY
                                    GROSS:       UNKEMPT
                                STOMACH
                                    MICRO:  (4)  EDEMA
                                                     LESIONS ARE IN THE NONGLANDULAR STOMACH
                                             2   GASTRITIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3766D33 (CONTINUED)

```
LIVER
    MICRO: ((2)) FATTY CHANGE
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    GROSS:       MASS
                     10X5X7 MM, DARK RED
     MICRO+  P   #M CARCINOMA
THYROID GL
    MICRO:  (1)  C CELL HYPERPLASIA
ADRENAL GL
    MICRO: ((4)) VASCULAR ECTASIA
MAMMARY GL
    MICRO:   1   HYPERSECRETION
LYMPH ND, S-MAN
    MICRO:   4   SINUS ERYTHROCYTOSIS
             3   HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO: ((3)) EPITHELIAL CYST(S)
             3   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY MASS
     MICRO+  3   COMPRESSION
BRAIN
    GROSS:       HEMORRHAGE
                     5X5 MM, VENTRAL SURFACE
     MICRO+ (2)  HEMORRHAGE
                     AREA OF THE PITUITARY MASS
    MICRO:   2   HYDROCEPHALUS
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     RED, BILATERAL, PERIOCULAR REGION
EYE
    GROSS:       COLOR CHANGE, DIFFUSE
                     PALE, BILATERAL
VAGINA
    MICRO:   1   VAGINITIS
LUNGS
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
CAUSE OF DEATH
    MICRO:   P   CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             SPLEEN           BONE, STERNUM
    BONE, FEMUR      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3766D33 (CONTINUED)

TRACHEA KIDNEYS URINARY BLADDER

ANIMAL 3711D34 21-FEB-90 STUDY DAY 701
TYPE OF DEATH: SACRIFICED MORIBUND

```
SALIVARY GL
    MICRO:  (3)  ATROPHY
STOMACH
    GROSS:       THICKER THAN NORMAL
                     ENTIRE GLAND
     MICRO+((4)) MUCOSAL HYPERPLASIA
                     BOTH GLANDULAR AND NONGLANDULAR AREAS
    MICRO: ((1)) GLAND ECTASIA
            (3)  GASTRITIS
                     NONGLANDULAR SUBMUCOSA
LIVER
    GROSS:       COLOR CHANGE, DIFFUSE
                     PALE, ALL LOBES
     MICRO+((3)) FATTY CHANGE
LIVER
    GROSS:       NODULE
                     3X3MM, INSIDE CUT SURFACE, LEFT LATERAL
                     LOBE
     MICRO+ (P)  #B HEPATOCELLULAR ADENOMA
PITUITARY
    GROSS:       MASS
                     10X10X8MM, RED
     MICRO+  P   #B ADENOMA
THYROID GL
    GROSS:       SIZE INCREASE
                     SLIGHT, BILATERAL
     MICRO+ (P)  #B C CELL ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE RED AND BROWN FOCI, BILATERAL
ADRENAL GL
    GROSS:       SIZE INCREASE
                     RIGHT, 25% INCREASE
     MICRO+ (5)  VASCULAR ECTASIA
    MICRO:  (4)  FIBROSIS
                     ASSOCIATED WITH THE VASCULAR ECTASIA,
                     POSSIBLY THE SITE
                     OF AN OLD THROMBUS
SKIN
    MICRO:  (2)  FOLLICULITIS
                     EYELID
SUBCUTIS
    GROSS:       COLOR CHANGE, DIFFUSE
                     YELLOW CUTIS
SUBCUTIS
    GROSS:       MASS
                     LEFT INGUINAL, 20X10X5MM, YELLOW AND
                     BLACK
                     FILLED WITH WHITE MATERIAL
MAMMARY GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3711D34 (CONTINUED)

```
    MICRO:  (P)  #B ADENOMA
                     RECORDED GROSSLY UNDER SUBCUTIS
            ((3)) MASTITIS
              2   HYPERSECRETION
LYMPH ND, S-MAN
    MICRO:   4   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     OVER PITUITARY
     MICRO+  3   COMPRESSION
    MICRO:   2   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     PERIOCULAR, RED, BILATERAL
    MICRO:  (3)  KERATITIS
CERVIX
    MICRO:   2   CERVICITIS
VAGINA
    MICRO:   3   VAGINITIS
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     RIGHT, MARKED
     MICRO+  4   HYDRONEPHROSIS
                     BILATERAL
KIDNEYS
    GROSS:       GRANULAR
                     BILATERAL
     MICRO+((2)) TUBULAR PROTEINOSIS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((4)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SUBCUTIS
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SPINAL CORD      NERVE, SCIATIC
    OVARIES          UTERUS           URINARY BLADDER
```

ANIMAL 3984D35 12-JAN-90 STUDY DAY 661

TYPE OF DEATH: SACRIFICED MORIBUND

```
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3984D35 (CONTINUED)

```
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      PALE, ALL LOBES
                     MICRO+((4)) HEPATOCELLULAR NECROSIS
                                      CENTRILOBULAR NECROSIS;
                                      ACUTE
                ILEUM
                    MICRO:    P   NEMATODIASIS
                PITUITARY
                    GROSS:        NODULE
                                      3X2X2MM, DARK RED
                     MICRO+   P   #B ADENOMA
                THYROID GL
                    MICRO:   (P)  THYROGLOSSAL DUCT CYST
                             (3)  C CELL HYPERPLASIA
                ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      RED AND BROWN, RIGHT
                     MICRO+((5)) VASCULAR ECTASIA
                ADRENAL GL
                    GROSS:        SIZE INCREASE
                                      2X NORMAL, RIGHT
                     MICRO+ (5)   INFARCTION
                SKIN
                    GROSS:        STAINED
                                      URINE, UROGENITAL AREA
                SUBCUTIS
                    GROSS:        MASS
                                      20X15X8MM, TAN, MULTILOBULAR; LEFT
                                      SHOULDER AREA
                MAMMARY GL
                    MICRO:   (P)  #B FIBROADENOMA
                                      THIS IS THE SUBCUTANEOUS MASS REPORTED
                                      GROSSLY
                            ((3)) GALACTOCELE
                            ((2)) MASTITIS
                                      GRANULOMATOUS
                SPLEEN
                    GROSS:        SIZE INCREASE
                                      SLIGHT
                     MICRO+   4   EXTRAMEDULLARY HEMATOPOIESIS
                LYMPH ND, MES
                    MICRO: ((1)) HISTIOCYTIC AGGREGATES
                           ((1)) HEMOSIDEROSIS
                THYMIC REGION
                    MICRO:    3   INVOLUTIONAL ATROPHY
                OVARIES
                    MICRO:    4   STROMAL CELL HYPERPLASIA
                                      BILATERAL, DIFFUSE
                UTERUS
                    GROSS:        MASS
                                      60X35X25MM, DARK RED; RIGHT UTERINE HORN
                     MICRO+   P   #M ENDOMETRIAL SARCOMA
                                      THE MASS IS TOTALLY NECROTIC AND
                                      DIFFICULT TO IDENTIFY
                VULVA
                    GROSS:        DISCHARGE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3984D35 (CONTINUED)

RED

TRACHEA
MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: (2) RENAL CALCULI
CAUSE OF DEATH
MICRO: P ENDOMETRIAL SARCOMA, UTERUS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	CECUM	COLON
RECTUM	PARATHYROID GL	SKIN
SUBCUTIS	LYMPH ND, S-MAN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	CERVIX	VAGINA
URINARY BLADDER		

ANIMAL 3872D36 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.103	2.506
KIDNEYS	2.793	0.693
HEART	1.229	0.305
SPLEEN	0.528	0.131
BRAIN	1.970	0.489
ADRENAL GL	0.062	0.015
OVARIES	0.397	0.098
TERMINAL BODY WT.	403.2	

HEART
MICRO: (2) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: (3) BILIARY CYST(S)
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
2X NORMAL
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
RED
THYROID GL
MICRO: (P) THYROGLOSSAL DUCT CYST
ADRENAL GL
MICRO: ((4)) VASCULAR ECTASIA
((3)) HEMORRHAGE
MAMMARY GL
MICRO: ((3)) FIBROSIS
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
NO THYMUS
BRAIN
MICRO: ((2)) VACUOLIZATION
CEREBELLUM
SPINAL CORD
MICRO: ((1)) VACUOLIZATION
OVARIES
GROSS: CYST
CLEAR FLUID, BILATERAL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3872D36 (CONTINUED)

```
        MICRO+((3)) CYST(S)
                        BILATERAL
LUNGS
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
            (2)  ALVEOLAR HISTIOCYTOSIS
            (1)  PNEUMONITIS, INTERSTITIAL
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) RENAL CALCULI
           ((1)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA              SALIVARY GL       ESOPHAGUS
    PANCREAS           DUODENUM          JEJUNUM
    ILEUM              CECUM             RECTUM
    PARATHYROID GL     SKIN              SPLEEN
    LYMPH ND, S-MAN    LYMPH ND, MES     BONE, STERNUM
    BONE, FEMUR        BONE MARROW       SKELETAL MUSCLE
    NERVE, SCIATIC     EYE               UTERUS
    CERVIX             VAGINA            TRACHEA
    URINARY BLADDER
```

ANIMAL 3878D37 29-SEP-89 STUDY DAY 556

TYPE OF DEATH: SACRIFICED MORIBUND

```
HEART
    MICRO:  (2)  MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO:   2   FATTY CHANGE
CECUM
    GROSS:       DILATATION/DISTENTION
                     FLUID FILLED
PITUITARY
    GROSS:       SIZE INCREASE
                     2-3X NORMAL
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     RED
     MICRO+ (5)  VASCULAR ECTASIA
PITUITARY
    GROSS:       HEMORRHAGE
                     ABOUT 1/2 CC. SURROUNDING PITUITARY
     MICRO+  4   HEMORRHAGE
THYROID GL
    MICRO: ((1)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    GROSS:       SIZE INCREASE
                     LEFT, SLIGHT INCREASE, IRREGULAR SHAPE
     MICRO+ (4)  INFARCTION
    MICRO: ((1)) CORTICAL CELL HYPERTROPHY
           ((3)) VASCULAR ECTASIA
SKIN
    MICRO: ((3)) EPIDERMITIS
                     EYELID
SUBCUTIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3878D37 (CONTINUED)

```
    GROSS:        MASS
                      TWO, RIGHT AXILLARY, 20X10X5MM, WHITE
                      AND FIRM
                      LEFT HIND LEG, 30X20X10MM, RED AND
                      YELLOW, SEMI-FIRM
MAMMARY GL
    MICRO:    P   #M ADENOCARCINOMA
                      THIS IS THE LESION LISTED UNDER SUBCUTIS
            (P)   #B FIBROADENOMA
                      THIS IS THE SECOND MASS UNDER SUBCUTIS
          ((4))   GALACTOCELE
LYMPH ND, S-MAN
    MICRO:    3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((3))  HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:    5   INVOLUTIONAL ATROPHY
                      NO THYMUS
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      OVER PITUITARY
     MICRO+   4   COMPRESSION
BRAIN
    GROSS:        CONSISTENCY CHANGE
                      VERY SOFT
    MICRO:    3   HYDROCEPHALUS
EYE
    GROSS:        CRUST
                      RED, PERIOCULAR, BILATERAL
VAGINA
    MICRO:    2   VAGINITIS
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      DARK RED MOTTLED, ALL LOBES
     MICRO+   4   CONGESTION
KIDNEYS
    MICRO: ((2))  RENAL CALCULI
                      BILATERAL
CAUSE OF DEATH
    MICRO:    P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA             SALIVARY GL       ESOPHAGUS
    PANCREAS          DUODENUM          JEJUNUM
    ILEUM             CECUM             COLON
    RECTUM            PARATHYROID GL    SUBCUTIS
    SPLEEN            BONE, STERNUM     BONE, FEMUR
    BONE MARROW       SKELETAL MUSCLE   SPINAL CORD
    NERVE, SCIATIC    EYE               OVARIES
    UTERUS            CERVIX            TRACHEA
    URINARY BLADDER
```

ANIMAL 3989D38 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.144	2.765
KIDNEYS	2.696	0.735

```
LIVER
    MICRO: ((1)) BILIARY HYPERPLASIA
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3989D38 (CONTINUED)

HEART	1.262	0.344
SPLEEN	0.495	0.135
BRAIN	2.052	0.559
ADRENAL GL	0.077	0.021
OVARIES	0.084	0.023
TERMINAL BODY WT.	366.8	

```
    GROSS:        MASS
                      DARK RED AND CREAM, BILOBE 8X7X4MM
     MICRO+  P    #M CARCINOMA
THYROID GL
    MICRO:  (P)   THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE, BLACK AND WHITE, FOCAL AREAS
                      SCATTERED ON
                      SURFACE, BILATERAL
     MICRO+((4))  VASCULAR ECTASIA
    MICRO:  (P)   #B PHEOCHROMOCYTOMA
           ((1))  CORTICAL CELL HYPERTROPHY
MAMMARY GL
    GROSS:        GALACTOCELE
                      SCATTERED THROUGHOUT, PUNCTATE TO 2MM
     MICRO+((4))  GALACTOCELE
    MICRO:  (3)   MASTITIS
                      GRANULOMATOUS
LYMPH ND, S-MAN
    MICRO:   2    PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1))  HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   2    INVOLUTIONAL ATROPHY
BRAIN
    MICRO:   3    HYDROCEPHALUS
             4    COMPRESSION
           ((2))  VACUOLIZATION
                      CEREBELLUM
TRACHEA
    MICRO:  (2)   SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((1))  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO:   2    PYELITIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         STOMACH           PANCREAS
    DUODENUM          JEJUNUM           ILEUM
    CECUM             COLON             RECTUM
    PARATHYROID GL    SKIN              SPLEEN
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    SKELETAL MUSCLE   SPINAL CORD       NERVE, SCIATIC
    EYE               OVARIES           UTERUS
    CERVIX            VAGINA            URINARY BLADDER
```

ANIMAL 4020D39 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.180	2.289
KIDNEYS	2.889	0.543
HEART	1.494	0.281
SPLEEN	0.490	0.092
BRAIN	2.206	0.415

```
LIVER
    MICRO: ((1))  BILIARY HYPERPLASIA
           ((2))  FATTY CHANGE
           ((2))  CHOLANGIOFIBROSIS
PITUITARY
    GROSS:        MASS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 4020D39 (CONTINUED)

ADRENAL GL	0.108	0.020
OVARIES	0.116	0.022
TERMINAL BODY WT.	532.2	

```
                                        5X5X3MM, RED
     MICRO+  P   #B ADENOMA
    MICRO:  (5)  HEMORRHAGE
           ((4)) VASCULAR ECTASIA
ADRENAL GL
    MICRO: ((2)) CORTICAL CELL HYPERTROPHY
            (3)  CORTICAL CELL VACUOLIZATION
            (3)  VASCULAR ECTASIA
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
             2   SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
           ((2)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     SLIGHT, AREA OVER PITUITARY
EYE
    MICRO:  (2)  HEMORRHAGE, RETROORBITAL
VAGINA
    MICRO:   2   VAGINITIS
KIDNEYS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     RIGHT,3MM DARK RED FOCAL AREA, CORTICAL
                     SURFACE
    MICRO: ((2)) TUBULAR BASOPHILIA
           ((1)) TUBULAR PROTEINOSIS
            (4)  CYST(S)
                     RIGHT
           ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    THYROID GL       PARATHYROID GL   SKIN
    MAMMARY GL       SPLEEN           BONE, STERNUM
    BONE, FEMUR      BONE MARROW      BRAIN
    SPINAL CORD      NERVE, SCIATIC   OVARIES
    UTERUS           CERVIX           TRACHEA
    LUNGS            URINARY BLADDER
```

ANIMAL 3925D40 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.392	2.551
KIDNEYS	2.535	0.689
HEART	1.048	0.285
SPLEEN	0.541	0.147
BRAIN	2.004	0.544
ADRENAL GL	0.083	0.023
OVARIES	0.105	0.029

```
GROSS:  EXAMINED - NO SIGNIFICANT LESIONS
HEART
    MICRO:  (2)  FIBROSIS
LIVER
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
           ((1)) CHOLANGITIS
PANCREAS
    MICRO: ((2)) ACINAR ATROPHY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3925D40 (CONTINUED)
TERMINAL BODY WT. 368.2

((1)) LYMPHOID INFILTRATES
ADRENAL GL
MICRO: ((3)) VASCULAR ECTASIA
LYMPH ND, S-MAN
MICRO: 4 PLASMACYTOSIS
LYMPH ND, MED
MICRO: (3) LYMPHATIC ECTASIA, CYSTIC
2 HEMOSIDEROSIS
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
LUNGS
MICRO: ((3)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) RENAL CALCULI
((1)) NEPHRITIS, INTERSTITIAL
(1) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
STOMACH	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	PITUITARY	THYROID GL
SKIN	MAMMARY GL	SPLEEN
LYMPH ND, MES	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	BRAIN
SPINAL CORD	NERVE, SCIATIC	EYE
OVARIES	UTERUS	CERVIX
VAGINA	TRACHEA	URINARY BLADDER

THE FOLLOWING TISSUES WERE MISSING:
PARATHYROID GL

ANIMAL 3833D41 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.993	2.008
KIDNEYS	2.183	0.548
HEART	1.140	0.286
SPLEEN	0.432	0.109
BRAIN	1.877	0.472
ADRENAL GL	0.081	0.020
OVARIES	0.068	0.017
TERMINAL BODY WT.	398.0	

LIVER
MICRO: ((2)) CHOLANGIOFIBROSIS
((2)) BILIARY HYPERPLASIA
((1)) MONONUCLEAR CELL INFILTRATE(S)
ADRENAL GL
GROSS: SIZE DECREASE
1/2 OF NORMAL, LEFT
MICRO+ (4) INFARCTION
MICRO: ((5)) VASCULAR ECTASIA
SKIN
GROSS: ALOPECIA
PARTIAL, THORACIC AREA
SPLEEN
GROSS: SIZE DECREASE
SLIGHT
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
OVARIES
GROSS: CYST
3X2X2MM, YELLOW FLUID FILLED, LEFT
LUNGS
MICRO: (1) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3833D41 (CONTINUED)

GROSS: HYDRONEPHROSIS
MINIMAL, RIGHT
MICRO+ (2) HYDRONEPHROSIS
RIGHT

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	PANCREAS
DUODENUM	JEJUNUM	ILEUM
CECUM	COLON	RECTUM
PITUITARY	THYROID GL	PARATHYROID GL
SKIN	MAMMARY GL	SPLEEN
LYMPH ND, S-MAN	LYMPH ND, MES	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	VAGINA	TRACHEA
URINARY BLADDER		

ANIMAL 3731D42 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.055	2.491
KIDNEYS	3.112	0.701
HEART	1.296	0.292
SPLEEN	0.551	0.124
BRAIN	2.158	0.486
ADRENAL GL	0.130	0.029
OVARIES	0.076	0.017
TERMINAL BODY WT.	443.8	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) FATTY CHANGE
CECUM
MICRO: P NEMATODIASIS
PITUITARY
GROSS: MASS
4X4X4MM, DARK RED
MICRO+ P #B ADENOMA
MICRO: (3) HEMORRHAGE
(3) HEMOSIDEROSIS
THYROID GL
MICRO: 3 C CELL HYPERPLASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BOTH, WHITE FOCI SEEN
LEFT, RED FOCAL AREA
MICRO+((5)) VASCULAR ECTASIA
ADRENAL GL
GROSS: SIZE INCREASE
BOTH, 2X'S
MICRO+ (4) INFARCTION
MICRO: (3) THROMBOSIS
MAMMARY GL
GROSS: MASS
LEFT UROGENITAL AREA, 30X20X10MM AND 40X30X10MM
RIGHT SHOULDER AREA, 20X20X10MM
MICRO+((P)) #B FIBROADENOMA
MICRO: (4) GALACTOCELE
LYMPH ND, S-MAN
MICRO: (3) SINUS ERYTHROCYTOSIS
LYMPH ND, MED
MICRO: 3 SINUS ERYTHROCYTOSIS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3731D42 (CONTINUED)

```
                                  3   HEMOSIDEROSIS
                                (4)   LYMPHATIC ECTASIA, CYSTIC
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   4   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AROUND PITUITARY
    MICRO:   2   HYDROCEPHALUS
SPINAL CORD
    MICRO:   P   #M ASTROCYTOMA
                     PRESENT IN TWO CORD LEVELS
EYE
    MICRO:  (4)  HEMORRHAGE, RETROORBITAL
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    SPLEEN           LYMPH ND, MES    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      NERVE, SCIATIC
    OVARIES          UTERUS           CERVIX
    VAGINA           TRACHEA          KIDNEYS
    URINARY BLADDER
```

ANIMAL 3837D43 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	6.507	2.201
KIDNEYS	2.192	0.741
HEART	1.066	0.361
SPLEEN	0.546	0.185
BRAIN	1.982	0.670
ADRENAL GL	0.081	0.027
OVARIES	0.127	0.043
TERMINAL BODY WT.	295.7	

```
HEART
    MICRO:  (2)  FIBROSIS
LIVER
    MICRO: ((1)) CHOLANGIOFIBROSIS
           ((1)) CHOLANGITIS
CECUM
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:       NODULE
                     4X3X2MM, DARK RED
     MICRO+  P   #B ADENOMA
THYROID GL
    MICRO:  (P)  #B C CELL ADENOMA
ADRENAL GL
    MICRO:  (4)  INFARCTION
           ((3)) VASCULAR ECTASIA
           ((2)) THROMBOSIS
TAIL
    GROSS:       NODULE
                     MANY 1-3MM, TAN AND BROWN, ENTIRE TAIL
     MICRO+((4)) FOLLICULITIS
    MICRO: ((4)) EPIDERMITIS
                     SUPERFICIAL ABSCESS WITH A PURULENT
                     CRUST IS PRESENT
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3837D43 (CONTINUED)

```
                                  ((4)) HYPERKERATOSIS
                                   (3)  FIBROSIS
                                   (4)  DERMATITIS
LYMPH ND, S-MAN
    MICRO:    3   LYMPHOID HYPERPLASIA
                ((2)) HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:    5   INVOLUTIONAL ATROPHY
                      NO THYMUS
SKELETAL MUSCLE
    MICRO:    2   MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:        CRUST
                      BOTH
VAGINA
    MICRO:    2   VAGINITIS
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
            (1)  ADENITIS, SUBMUCOSAL GLANDS
KIDNEYS
    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
            (1)  TUBULAR BASOPHILIA
          ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA              SALIVARY GL       ESOPHAGUS
    STOMACH            PANCREAS          DUODENUM
    JEJUNUM            ILEUM             COLON
    RECTUM             PARATHYROID GL    SKIN
    MAMMARY GL         SPLEEN            BONE, STERNUM
    BONE, FEMUR        BONE MARROW       BRAIN
    NERVE, SCIATIC     EYE               OVARIES
    UTERUS             CERVIX            LUNGS
    URINARY BLADDER
```

ANIMAL 3812D44 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.430	2.747
KIDNEYS	2.645	0.862
HEART	1.115	0.363
SPLEEN	0.446	0.145
BRAIN	1.837	0.599
ADRENAL GL	0.069	0.022
OVARIES	0.069	0.022
TERMINAL BODY WT.	306.9	

```
STOMACH
    MICRO:  (1)  GLAND ECTASIA
            (4)  EDEMA
                     NONGLANDULAR STOMACH
LIVER
    MICRO:  (1)  FATTY CHANGE
PANCREAS
    MICRO:  (4)  ACINAR ATROPHY
                     A LARGE PORTION OF THE PANCREAS IS
                     ATROPHIED
          ((3)) LYMPHOID INFILTRATES
PITUITARY
    GROSS:       SIZE INCREASE
                     10X5X3MM
     MICRO+  P   #B ADENOMA
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3812D44 (CONTINUED)

```
    GROSS:        COLOR CHANGE, DIFFUSE
                      RED AND TAN FOCI
THYROID GL
    MICRO:  (1)   THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:        MASS
                      RED, 2X2X2MM
     MICRO+((4)) VASCULAR ECTASIA
    MICRO: ((1)) CORTICAL CELL HYPERTROPHY
LYMPH ND, S-MAN
    GROSS:        SIZE INCREASE
                      BILATERAL, SLIGHT
     MICRO+  4    PLASMACYTOSIS
    MICRO: ((2)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MED
    MICRO: ((2)) HEMOSIDEROSIS
LYMPH ND, PANC
    MICRO:   4    SINUS ERYTHROCYTOSIS
            (3)   HEMOSIDEROSIS
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   3    HYPERPLASIA
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
UTERUS
    GROSS:        PROLAPSE
                      LEFT UTERINE HORNE
     MICRO+ (P)   #B STROMAL POLYP
CERVIX
    GROSS:        MASS
                      15X15X5MM, PURPLE
VAGINA
    MICRO:   1    VAGINITIS
TRACHEA
    MICRO:  (2)   SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:  (1)   MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    MAMMARY GL       SPLEEN           LYMPH ND, MES
    BONE, STERNUM    BONE, FEMUR      SKELETAL MUSCLE
    BRAIN            NERVE, SCIATIC   EYE
    OVARIES          CERVIX           URINARY BLADDER
```

ANIMAL 3966D45 20-DEC-89 STUDY DAY 638

TYPE OF DEATH: FOUND DEAD

```
HEART
    MICRO: ((2)) FIBROSIS
LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3966D45 (CONTINUED)

```
                    GROSS:        POSTMORTEM CHANGE
                    MICRO: ((1)) CHOLANGIOFIBROSIS
                           ((1)) BILIARY HYPERPLASIA
DUODENUM
                    GROSS:        GASEOUS
JEJUNUM
                    GROSS:        GASEOUS
ILEUM
                    GROSS:        GASEOUS
CECUM
                    GROSS:        GASEOUS
CECUM
                    GROSS:        CONTENTS ABNORMAL
                                      BROWN SANDY LIQUID
CECUM
                    GROSS:        POSTMORTEM CHANGE
PITUITARY
                    GROSS:        SIZE INCREASE
                                      5X3X2MM
                     MICRO+  P    #B ADENOMA
PITUITARY
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      DARK RED AND GREY
                     MICRO+  4    HEMORRHAGE
THYROID GL
                    MICRO:  (P)   THYROGLOSSAL DUCT CYST
ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      LEFT, BLACK FOCI
                     MICRO+((4)) VASCULAR ECTASIA
ADRENAL GL
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      LEFT, GREY
                     MICRO+  4    CONGESTION
                    MICRO: ((1)) HEMOSIDEROSIS
SPLEEN
                    GROSS:        SIZE DECREASE
                                      1/2 OF NORMAL
                    MICRO:   4    HEMOSIDEROSIS
LYMPH ND, MES
                    MICRO:   2    SINUS ERYTHROCYTOSIS
THYMIC REGION
                    MICRO: ((3)) EPITHELIAL CYST(S)
                             4    INVOLUTIONAL ATROPHY
UTERUS
                    MICRO:   2    PYOMETRA
LUNGS
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      ALL LOBES, DARK RED
                     MICRO+  3    CONGESTION
LUNGS
                    GROSS:        POSTMORTEM CHANGE
                                      ALL LOBES
                    MICRO:  (1)   MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
                    GROSS:        POSTMORTEM CHANGE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3966D45 (CONTINUED)

```
                                        BILATERAL
KIDNEYS
    GROSS:          HYDRONEPHROSIS
                        LEFT, MILD
     MICRO+((1)) HYDRONEPHROSIS
CAUSE OF DEATH
    MICRO:   P   NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA               SALIVARY GL       ESOPHAGUS
    STOMACH             PANCREAS          DUODENUM
    PARATHYROID GL      SKIN              MAMMARY GL
    LYMPH ND, S-MAN     BONE, STERNUM     BONE, FEMUR
    BONE MARROW         SKELETAL MUSCLE   BRAIN
    SPINAL CORD         NERVE, SCIATIC    EYE
    OVARIES             CERVIX            TRACHEA
THE FOLLOWING TISSUES WERE MISSING:
    RECTUM
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    JEJUNUM             ILEUM             CECUM
    COLON               VAGINA            URINARY BLADDER
```

ANIMAL 3682D46 4-APR-89 STUDY DAY 378

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:          EMACIATION
PITUITARY
    GROSS:          SIZE INCREASE
                        10X7X6MM
     MICRO+   P     #M CARCINOMA
PITUITARY
    GROSS:          COLOR CHANGE, DIFFUSE
                        DARK RED
THYROID GL
    MICRO:   P     THYROGLOSSAL DUCT CYST
ADRENAL GL
    MICRO:  (3)    VASCULAR ECTASIA
MAMMARY GL
    GROSS:          MASS
                        15X10X7MM, TAN; BROWN FLUID FILLED;
                        RIGHT INGUINAL AREA
     MICRO+ (P)    #M ADENOCARCINOMA
MAMMARY GL
    GROSS:          GALACTOCELE
                        MULTIPLE 2X2X1MM
     MICRO+((3)) GALACTOCELE
    MICRO:  (3)    MASTITIS
                        GRANULOMATOUS, FROM A RUPTURED MILK
                        CYST.
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3     INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   3     HYPERPLASIA
BRAIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3682D46 (CONTINUED)

```
                    GROSS:        DEPRESSION/INDENTATION
                                      DUE ENLARGED PITUITARY
                     MICRO+   4   COMPRESSION
                    MICRO:    2   HYDROCEPHALUS
                EYE
                    GROSS:        CRUST
                                      RED, LEFT PERIOCULAR AREA
                OVARIES
                    GROSS:        CYST
                                      2X2X2MM, CLEAR FLUID FILLED, LEFT
                                      4X4X4MM, CLEAR FLUID FILLED, RIGHT
                     MICRO+  (P)  CYST(S)
                UTERUS
                    MICRO:    2   METRITIS
                VAGINA
                    MICRO:    2   VAGINITIS
                KIDNEYS
                    MICRO:   (1)  MINERALIZATION
                             (1)  NEPHRITIS, INTERSTITIAL
                CAUSE OF DEATH
                    MICRO:    P   CARCINOMA, PITUITARY
                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    HEART             AORTA             SALIVARY GL
                    ESOPHAGUS         STOMACH           LIVER
                    PANCREAS          DUODENUM          JEJUNUM
                    ILEUM             CECUM             COLON
                    RECTUM            SKIN              SPLEEN
                    LYMPH ND, S-MAN   BONE, STERNUM     BONE, FEMUR
                    SKELETAL MUSCLE   SPINAL CORD       NERVE, SCIATIC
                    EYE               CERVIX            TRACHEA
                    LUNGS             URINARY BLADDER
                THE FOLLOWING TISSUES WERE MISSING:
                    PARATHYROID GL
```

ANIMAL 3689D47 12-DEC-89 STUDY DAY 630
TYPE OF DEATH: SACRIFICED MORIBUND

```
                STOMACH
                    MICRO:    3   EDEMA
                             (4)  ULCER
                                      ALL LESIONS ARE IN THE GLANDULAR STOMACH
                              3   GASTRITIS
                           ((4)) MUCOSAL HYPERPLASIA
                LIVER
                    GROSS:        CONSISTENCY CHANGE
                                      SOFT, ALL LOBES
                LIVER
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      PALE YELLOW, ALL LOBES
                     MICRO+   4   FATTY CHANGE
                PITUITARY
                    GROSS:        MASS
                                      9X6X5 MM, DARK RED AND TAN
                     MICRO+   P   #M CARCINOMA
                ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3689D47 (CONTINUED)

```
                                    RED FOCI, BILATERAL
     MICRO+((3)) VASCULAR ECTASIA
    MICRO:  (4)  INFARCTION
SKIN
    GROSS:       STAINED
                     BLOOD, UROGENITAL REGION
    MICRO:   2   ADENITIS, CLITORAL/PREPUTIAL GLAND
NARES/NOSE
    GROSS:       CRUST
                     RED, PERINASAL REGION
MAMMARY GL
    GROSS:       GALACTOCELE
                     MULTIPLE, 2X2 MM, CERVICAL AREA
     MICRO+((2)) GALACTOCELE
    MICRO:   3   HYPERSECRETION
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
LYMPH ND, REN
    GROSS:       COLOR CHANGE, DIFFUSE
                     LEFT, DARK RED
     MICRO+  2   SINUS ERYTHROCYTOSIS
    MICRO: ((2)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY MASS
     MICRO+ (4)  COMPRESSION
    MICRO:   3   HYDROCEPHALUS
           ((1)) VACUOLIZATION
                     CEREBELLUM
UTERUS
    GROSS:       PROLAPSE
                     LEFT UTERINE HORN PROLAPSED THROUGH
                     CERVIX AND VAGINA
                     15X15X10 MM, DARK RED MASS AT END OF
                     HORN(OUTSIDE BODY)
     MICRO+  P   #B STROMAL POLYP
                     THE MASS IS EDEMATOUS AND HEMORRHAGIC
    MICRO:   3   METRITIS
             4   EDEMA
             5   HEMORRHAGE
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO:   4   TUBULAR ATROPHY
           ((2)) TUBULAR PROTEINOSIS
             1   PYELITIS
                     BILATERAL
           (1)   NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3689D47 (CONTINUED)

ILEUM	CECUM	COLON
RECTUM	THYROID GL	PARATHYROID GL
NARES/NOSE	SPLEEN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SPINAL CORD
NERVE, SCIATIC	EYE	OVARIES
CERVIX	VAGINA	TRACHEA

THE FOLLOWING TISSUES WERE MISSING:

SALIVARY GL	LYMPH ND, S-MAN	URINARY BLADDER

ANIMAL 3677D48 10-NOV-89 STUDY DAY 598
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        UNKEMPT
STOMACH
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      3X3MM RED FOCAL AREA, GLANDULAR PORTION
     MICRO↑  3    GASTRITIS
                      NONGLANDULAR STOMACH
    MICRO:  (1)   GLAND ECTASIA
             3    EDEMA
LIVER
    MICRO: ((3)) FATTY CHANGE
           ((1)) BILIARY HYPERPLASIA
PITUITARY
    GROSS:        SIZE INCREASE
                      6X5X4MM
     MICRO↑  P    #B ADENOMA
                      VERY LARGE
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      RED AND TAN
THYROID GL
    MICRO:  (P)   #B C CELL ADENOMA
PARATHYROID GL
    GROSS:        SIZE INCREASE
                      3X2X2MM, RIGHT
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      RED AND TAN, BILATERAL
     MICRO↑((4)) VASCULAR ECTASIA
    MICRO: ((3)) THROMBOSIS
SKIN
    GROSS:        STAINED
                      BROWN, UROGENITAL AREA
NARES/NOSE
    GROSS:        CRUST
                      DARK RED, PERINASAL AREA
MAMMARY GL
    MICRO: ((3)) HYPERSECRETION
SPLEEN
    GROSS:        SIZE DECREASE
                      SLIGHT
LYMPH ND, MED
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3677D48 (CONTINUED)

```
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO: ((2)) MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO ENLARGED PITUITARY
     MICRO+  3   COMPRESSION
    MICRO:   2   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     RED, PERIOCULAR AREA, BILATERAL
VAGINA
    MICRO:   1   VAGINITIS
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         PANCREAS          DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            PARATHYROID GL
    SKIN              NARES/NOSE        SPLEEN
    LYMPH ND, S-MAN   BONE, STERNUM     BONE, FEMUR
    BONE MARROW       SPINAL CORD       NERVE, SCIATIC
    EYE               OVARIES           UTERUS
    CERVIX            LUNGS             KIDNEYS
    URINARY BLADDER
```

ANIMAL 3836D49 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.427	2.336
KIDNEYS	2.305	0.725
HEART	1.002	0.315
SPLEEN	0.427	0.134
BRAIN	1.990	0.626
ADRENAL GL	0.059	0.019
OVARIES	0.082	0.026
TERMINAL BODY WT.	317.9	

```
LIVER
    MICRO: ((2)) BILIARY HYPERPLASIA
PANCREAS
    MICRO: ((4)) ACINAR ATROPHY
                     SEVERAL SMALL FOCI
ADRENAL GL
    MICRO:  (2)  VASCULAR ECTASIA
            (2)  CORTICAL CELL VACUOLIZATION
         ((1)) CORTICAL CELL HYPERTROPHY
SPLEEN
    GROSS:       SIZE DECREASE
                     SLIGHT
    MICRO:   3   HEMOSIDEROSIS
LYMPH ND, MED
    MICRO:   4   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE DARK RED FOCAL AREAS, RIGHT
                     DIAPHRAGMATIC LOBE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3836D49 (CONTINUED)

MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) RENAL CALCULI
RIGHT

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	PITUITARY
THYROID GL	PARATHYROID GL	SKIN
MAMMARY GL	LYMPH ND, S-MAN	LYMPH ND, MES
BONE, STERNUM	BONE, FEMUR	BONE MARROW
SKELETAL MUSCLE	BRAIN	SPINAL CORD
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	VAGINA
TRACHEA	URINARY BLADDER	

ANIMAL 4024D50 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.486	2.272
KIDNEYS	2.484	0.595
HEART	1.151	0.276
SPLEEN	0.441	0.106
BRAIN	1.794	0.430
ADRENAL GL	0.121	0.029
OVARIES	0.295	0.071
TERMINAL BODY WT.	417.5	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((2)) FATTY CHANGE
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK RED FOCAL AREA SEEN
MICRO+ (P) #B ADENOMA
THYROID GL
MICRO: ((P)) THYROGLOSSAL DUCT CYST
ADRENAL GL
GROSS: CYST
RIGHT, 3X3X3MM, FILLED WITH DARK RED FLUID
MICRO+ (5) VASCULAR ECTASIA
MICRO: ((1)) CORTICAL CELL VACUOLIZATION
(5) INFARCTION
(P) #B ADENOMA
MAMMARY GL
MICRO: (3) MASTITIS
2 HYPERSECRETION
LYMPH ND, S-MAN
GROSS: SIZE INCREASE
2X'S
MICRO+ 4 PLASMACYTOSIS
MICRO: 4 LYMPHOID HYPERPLASIA
LYMPH ND, MED
MICRO: 3 SINUS ERYTHROCYTOSIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
((1)) SINUS ERYTHROCYTOSIS
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
OVARIES

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 4024D50 (CONTINUED)

```
                                    GROSS:        CYST
                                                      LEFT, 5X5X5MM
                                     MICRO+((5)) CYST(S)
                                TRACHEA
                                    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
                                LUNGS
                                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                                      LEFT, DARK RED FOCAL AREA
                                    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    HEART             AORTA             SALIVARY GL
                                    ESOPHAGUS         PANCREAS          DUODENUM
                                    JEJUNUM           ILEUM             CECUM
                                    RECTUM            PARATHYROID GL    SKIN
                                    SPLEEN            BONE, STERNUM     BONE, FEMUR
                                    BONE MARROW       SKELETAL MUSCLE   BRAIN
                                    SPINAL CORD       NERVE, SCIATIC    EYE
                                    UTERUS            CERVIX            VAGINA
                                    KIDNEYS           URINARY BLADDER
```

ANIMAL 3773D51 12-MAR-90 STUDY DAY 720

TYPE OF DEATH: SACRIFICED MORIBUND

```
                                TOTAL BODY
                                    GROSS:        UNKEMPT
                                ADIPOSE TISSUE
                                    MICRO:  (3)   FAT NECROSIS
                                                      SMALL NODULE REPORTED GROSSLY UNDER
                                                      MAMMARY GLAND MASS
                                            (3)   STEATITIS
                                LIVER
                                    GROSS:        COLOR CHANGE, DIFFUSE
                                                      LIGHTER ALL LOBES
                                    MICRO:  (2)   FIBROSIS
                                                      AROUND A VESSEL
                                PITUITARY
                                    GROSS:        MASS
                                                      10X10X4MM
                                     MICRO+  P    #B ADENOMA
                                ADRENAL GL
                                    MICRO:  (3)   INFARCTION
                                           ((2)) CORTICAL CELL HYPERTROPHY
                                MAMMARY GL
                                    GROSS:        MASS
                                                      1X1X2CM, RIGHT SIDE
                                    MICRO: ((3)) GALACTOCELE
                                                      SEE ADIPOSE TISSUE FOR MASS
                                             3    HYPERSECRETION
                                LYMPH ND, S-MAN
                                    MICRO:   3    PLASMACYTOSIS
                                LYMPH ND, MES
                                    MICRO: ((2)) SINUS ERYTHROCYTOSIS
                                           ((2)) HEMOSIDEROSIS
                                           ((1)) HISTIOCYTIC AGGREGATES
                                           ((2)) MASTOCYTOSIS
                                THYMIC REGION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3773D51 (CONTINUED)

```
    MICRO:  (3)  FIBROSIS
             2   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AREA OVER PITUITARY
     MICRO+  4   COMPRESSION
    MICRO:   2   HYDROCEPHALUS
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     BILATERAL
VAGINA
    MICRO:   2   VAGINITIS
LUNGS
    MICRO:  (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    THYROID GL       PARATHYROID GL   SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           TRACHEA          URINARY BLADDER
```

ANIMAL 3793D52 25-DEC-89 STUDY DAY 643
TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:       EMACIATION
TOTAL BODY
    GROSS:       UNKEMPT
LIVER
    GROSS:       POSTMORTEM CHANGE
                     MODERATE, ALL LOBES
    MICRO: ((3)) HEPATOCELLULAR NECROSIS
                     CENTRILOBULAR FOCI
JEJUNUM
    GROSS:       POSTMORTEM CHANGE
ILEUM
    GROSS:       POSTMORTEM CHANGE
CECUM
    GROSS:       DILATATION/DISTENTION
                     SEVERE WITH GAS AND SEMI-SOLID FECAL
                     MATERIAL
CECUM
    GROSS:       TORTUOUS
    MICRO:   4   CONGESTION
           ((3)) TYPHLITIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3793D52 (CONTINUED)

```
                                        THE TISSUE IS SEVERELY AUTOLYSED
PITUITARY
    GROSS:          SIZE INCREASE
                        5X5X5MM
     MICRO+   P     #B ADENOMA
                        VERY LARGE
PITUITARY
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                        TAN AND DARK RED
     MICRO+   4     HEMORRHAGE
ADRENAL GL
    MICRO:    P     #B ADENOMA
                        THE MASS IS PARTLY NECROTIC
              (4)   CORTICAL CELL HYPERTROPHY
SKIN
    MICRO:   (P)    FOLLICULAR CYST
                        RECORDED GROSSLY AS A SUBCUTANEOUS MASS
SUBCUTIS
    GROSS:          MASS
                        8X5X5MM, TAN AND DARK RED, CONTAINS
                        DARK RED FLUID;
                        NEAR VAGINA
                        6X4X4MM, TAN; LEFT AXILLARY AREA
SUBCUTIS
    GROSS:          EDEMA
                        DARK RED, INGUINAL AREA
NARES/NOSE
    GROSS:          CRUST
                        TAN, PERINASAL AREA
MAMMARY GL
    MICRO: ((3))    FIBROSIS
                3   HYPERSECRETION
              (P)   #B FIBROADENOMA
                        THIS TISSUE IS SO AUTOLYSED THAT IT IS
                        DIFFICULT TO
                        RECOGNIZE THE CELL TYPE
                        RECORDED GROSSLY AS A SUBCUTANEOUS MASS
LYMPH ND, S-MAN
    GROSS:          SIZE INCREASE
                        SLIGHT
     MICRO+((3))    PLASMACYTOSIS
LYMPH ND, MED
    MICRO:    4     SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    GROSS:          POSTMORTEM CHANGE
LYMPH ND, MES
    GROSS:          SIZE INCREASE
                        SLIGHT
    MICRO: ((1))    HEMOSIDEROSIS
THYMIC REGION
    MICRO:    5     INVOLUTIONAL ATROPHY
                        NO THYMUS
BONE MARROW
    MICRO:    4     HYPERPLASIA
SKELETAL MUSCLE
    MICRO:    3     MYOFIBER ATROPHY
BRAIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3793D52 (CONTINUED)

```
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO+  4    COMPRESSION
BRAIN
    GROSS:        HEMORRHAGE
                      MODERATE AMOUNT INSIDE BRAIN
     MICRO+ (3)   HEMORRHAGE
                      ASSOCIATED WITH THE PITUITARY TUMOR
    MICRO:   3    HYDROCEPHALUS
VAGINA
    MICRO:  (1)   VAGINITIS
LUNGS
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      ALL LOBES MOTTLED LIGHT AND DARK PINK
     MICRO+((3))  PNEUMONITIS, GRANULOMATOUS
                      MANY FRAGMENTS OF ASPIRATED FOOD DEBRIS
                      ARE PRESENT IN
                      THE LUNGS AT THE CENTER OF INFLAMMATORY
                      FOCI.
KIDNEYS
    GROSS:        POSTMORTEM CHANGE
                      MILD, BILATERAL
    MICRO: ((1))  TUBULAR PROTEINOSIS
           (1)    MINERALIZATION
CAUSE OF DEATH
    MICRO:   P    ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         STOMACH           PANCREAS
    DUODENUM          THYROID GL        PARATHYROID GL
    SUBCUTIS          NARES/NOSE        SPLEEN
    BONE, STERNUM     BONE, FEMUR       SPINAL CORD
    NERVE, SCIATIC    EYE               OVARIES
    UTERUS            CERVIX            TRACHEA
    URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    JEJUNUM           ILEUM             COLON
    RECTUM
```

ANIMAL 3819D53 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.201	2.247
KIDNEYS	2.215	0.541
HEART	1.372	0.335
SPLEEN	0.441	0.108
BRAIN	1.976	0.483
ADRENAL GL	0.081	0.020
OVARIES	0.095	0.023
TERMINAL BODY WT.	409.5	

```
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    MICRO: ((1)) FATTY CHANGE
           ((1)) CHOLANGIOFIBROSIS
CECUM
    GROSS:        PARASITE
                      PINWORMS
PITUITARY
    GROSS:        MASS
                      10X10X5MM,RED-BROWN
     MICRO+  P    #M CARCINOMA
THYROID GL
    MICRO:  (4)   THYROGLOSSAL DUCT CYST
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3819D53 (CONTINUED)

```
                    (P)  #B C CELL ADENOMA
ADRENAL GL
    MICRO: ((5)) INFARCTION
           ((4)) VASCULAR ECTASIA
           ((1)) CORTICAL CELL HYPERTROPHY
SKIN
    GROSS:       STAINED
                     YELLOW,GENITAL AREA
MAMMARY GL
    GROSS:       MASS
                     15X10X10MM, TAN
     MICRO+ (P)  #B FIBROADENOMA
    MICRO: ((4)) GALACTOCELE
                     SOME ARE WITHIN THE FIBROADENOMA
SPLEEN
    MICRO:   4   HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:  (4)  PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
           ((1)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     MARKED, AREA OVER PITUITARY
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     RED, PERIOCULAR AREA, BILATERAL
VAGINA
    MICRO:   1   VAGINITIS
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
            (2)  ADENITIS, SUBMUCOSAL GLANDS
LUNGS
    MICRO: ((2)) PNEUMONITIS, INTERSTITIAL
                     ONE LOBE, SEVERAL FOCI
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((3)) TUBULAR PROTEINOSIS
           ((1)) MINERALIZATION
           ((2)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SPINAL CORD      NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3890D54 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.283	3.336
KIDNEYS	3.313	0.900
HEART	1.431	0.389
SPLEEN	0.768	0.209
BRAIN	1.889	0.513
ADRENAL GL	0.186	0.051
OVARIES	0.170	0.046
TERMINAL BODY WT.	368.2	

```
STOMACH
    MICRO: ((2)) GLAND ECTASIA
PANCREAS
    GROSS:       NODULE
                     3X3X3MM, DARK RED
     MICRO+ (P)  #B ISLET CELL ADENOMA
                     THE MASS IS HIGHLY VASCULAR
COLON
    GROSS:       PARASITE
                     PINWORMS
PITUITARY
    GROSS:       HEMORRHAGE
                     4X4X2MM, DARK RED
     MICRO+  P   #B ADENOMA
THYROID GL
    MICRO:  (P)  #M C CELL CARCINOMA
            (4)  THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO+ (5)  INFARCTION
ADRENAL GL
    GROSS:       CYST
                     3X3X3MM, DARK RED
     MICRO+((5)) VASCULAR ECTASIA
    MICRO:   3   HEMORRHAGE
            (3)  FIBROSIS
SKIN
    GROSS:       ALOPECIA
                     MULTIPLE, SEVERE
MAMMARY GL
    GROSS:       MASS
                     20X30X20MM, RIGHT SHOULDER AREA
     MICRO+  P   #B FIBROADENOMA
MAMMARY GL
    GROSS:       GALACTOCELE
                     20X30X10MM, LEFT UROGENITAL AREA
     MICRO+((5)) GALACTOCELE
    MICRO: ((2)) #B ADENOMA
                     TWO SMALL NODULES WITHIN THE SECTION
                     WITH A GALACTOCELE
PAWS/FEET
    GROSS:       ULCERATED
                     RIGHT FOOT
     MICRO+ (4)  ULCERATION
    MICRO:  (4)  FIBROSIS
           ((3)) EPIDERMAL HYPERPLASIA
SPLEEN
    GROSS:       CYST
                     (4) 1-3MM
     MICRO+ (P)  CAPSULAR CYST
SPLEEN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3890D54 (CONTINUED)

```
    GROSS:        SIZE DECREASE
                      SLIGHT
LYMPH ND, S-MAN
    MICRO:   2    PLASMACYTOSIS
LYMPH ND, MED
    MICRO:   2    SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
             3   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO: ((3)) MYOFIBER ATROPHY
OVARIES
    GROSS:        CYST
                      RIGHT, 3X3X3MM
     MICRO+ (3)   CYST(S)
LUNGS
    MICRO:   3    CONGESTION
            (1)   MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            SKIN             BONE, STERNUM
    BONE, FEMUR      BONE MARROW      BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    UTERUS           CERVIX           VAGINA
    TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    RECTUM           PARATHYROID GL
```

ANIMAL 3877D55 2-JAN-90 STUDY DAY 651

TYPE OF DEATH: FOUND DEAD

```
LIVER
    GROSS:        POSTMORTEM CHANGE
                      MILD, ALL LOBES
    MICRO: ((1)) CHOLANGITIS
           ((2)) FATTY CHANGE
DUODENUM
    GROSS:        POSTMORTEM CHANGE
                      INCLUDING JEJUNUM, ILEUM, CECUM AND
                      COLON
PITUITARY
    GROSS:        SIZE INCREASE
                      6X10X5MM
     MICRO+  P    #B ADENOMA
                      VERY LARGE
PITUITARY
    GROSS:        COLOR CHANGE, DIFFUSE
                      LIGHT RED
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3877D55 (CONTINUED)

```
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MULTIPLE BROWN FOCI, BILATERAL
                     MICRO+((4)) VASCULAR ECTASIA
                    MICRO:  (4)  INFARCTION
                SKIN
                    GROSS:        STAINED
                                      URINE, UROGENITAL AREA
                MAMMARY GL
                    MICRO:  (4)  GALACTOCELE
                LYMPH ND, S-MAN
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      RED
                LYMPH ND, MES
                    GROSS:        POSTMORTEM CHANGE
                THYMIC REGION
                    MICRO:   3   INVOLUTIONAL ATROPHY
                BRAIN
                    GROSS:        DEPRESSION/INDENTATION
                                      DUE TO ENLARGED PITUITARY
                     MICRO+  3   COMPRESSION
                    MICRO:   2   HYDROCEPHALUS
                EYE
                    GROSS:        CRUST
                                      RED, PERIOCULAR AREA, BILATERAL
                    MICRO: ((3)) CATARACT
                                      UNILATERAL
                UTERUS
                    GROSS:        POSTMORTEM CHANGE
                LUNGS
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      ALL LOBES MOTTLED LIGHT AND DARK PINK
                     MICRO+  5   CONGESTION
                    MICRO: ((2)) PERIVASCULAR INFILTRATE(S)
                KIDNEYS
                    GROSS:        POSTMORTEM CHANGE
                                      MILD, BILATERAL
                CAUSE OF DEATH
                    MICRO:   P   ADENOMA, PITUITARY
                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    HEART             AORTA             SALIVARY GL
                    ESOPHAGUS         STOMACH           PANCREAS
                    DUODENUM          JEJUNUM           RECTUM
                    THYROID GL        SKIN              SPLEEN
                    LYMPH ND, S-MAN   LYMPH ND, MES     BONE, STERNUM
                    BONE, FEMUR       BONE MARROW       SKELETAL MUSCLE
                    SPINAL CORD       NERVE, SCIATIC    OVARIES
                    UTERUS            CERVIX            TRACHEA
                    KIDNEYS           URINARY BLADDER
                THE FOLLOWING TISSUES WERE MISSING:
                    PARATHYROID GL
                THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
                    ILEUM             CECUM             COLON
                    VAGINA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3738D56 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.663	2.180
KIDNEYS	2.445	0.552
HEART	1.258	0.284
SPLEEN	0.473	0.107
BRAIN	1.871	0.422
ADRENAL GL	0.085	0.019
OVARIES	0.099	0.022
TERMINAL BODY WT.	443.2	

LIVER
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
(1) CHOLANGIOFIBROSIS
((1)) BILIARY HYPERPLASIA
PITUITARY
GROSS: MASS
5X5X5MM, DARK RED
MICRO+ P #M CARCINOMA
MICRO: (4) VASCULAR ECTASIA
THYROID GL
GROSS: SIZE DECREASE
LEFT, 1/2 NORMAL
MICRO: ((2)) C CELL HYPERPLASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BOTH, WHITE FOCI SEEN
MICRO+((1)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
GROSS: CYST
LEFT, 2X2X2MM
MICRO+((3)) VASCULAR ECTASIA
MICRO: (4) INFARCTION
((2)) FIBROSIS
MAMMARY GL
MICRO: ((4)) GALACTOCELE
(3) FIBROSIS
LYMPH ND, MES
MICRO: 2 SINUS ERYTHROCYTOSIS
2 MASTOCYTOSIS
((2)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
UTERUS
GROSS: CYST
5X5X5MM, LEFT SIDE
TRACHEA
MICRO: (2) ADENITIS, SUBMUCOSAL GLANDS
(2) SUBMUCOSAL GLAND ECTASIA
LUNGS
MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((2)) RENAL CALCULI
BILATERAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	PANCREAS
DUODENUM	JEJUNUM	ILEUM
CECUM	COLON	RECTUM
PARATHYROID GL	SKIN	SPLEEN
LYMPH ND, S-MAN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	BRAIN
SPINAL CORD	NERVE, SCIATIC	EYE
OVARIES	UTERUS	CERVIX
VAGINA	URINARY BLADDER	

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3788D57 14-APR-89 STUDY DAY 388
TYPE OF DEATH: FOUND DEAD

TOTAL BODY		
GROSS:		EMACIATION
MESENTARY/OM'TUM		
MICRO:	(5)	THROMBOSIS PRESENT IN A LARGE MESENTERIC ARTERY
LIVER		
GROSS:		POSTMORTEM CHANGE ALL LOBES
CECUM		
GROSS:		DILATATION/DISTENTION SEVERE WITH SEMISOLID FECAL MATERIAL
MICRO:	5	CONGESTION THE TISSUE IS AUTOLYSED
PITUITARY		
MICRO:	(P)	#B ADENOMA
THYROID GL		
MICRO:	(P)	THYROGLOSSAL DUCT CYST
NARES/NOSE		
GROSS:		CRUST RED, PERINASAL AREA
MAMMARY GL		
MICRO:	2	HYPERSECRETION
SPLEEN		
GROSS:		SIZE DECREASE 1/2 OF NORMAL
MICRO:	3	HEMOSIDEROSIS
LYMPH ND, MES.		
GROSS:		SIZE INCREASE 2X NORMAL
MICRO+	4	FIBROSIS
LYMPH ND, MES		
GROSS:		COLOR CHANGE, FOCAL/MULTIFOCAL TAN AND DARK RED
MICRO+	4	SINUS ERYTHROCYTOSIS
THYMIC REGION		
MICRO:	5	INVOLUTIONAL ATROPHY NO THYMUS
EYE		
GROSS:		CRUST RED, PERIOCULAR AREA, BILATERAL
UTERUS		
GROSS:		POSTMORTEM CHANGE
VAGINA		
GROSS:		CONTENTS ABNORMAL CONTAINS THICK GREEN MATERIAL
MICRO+	1	VAGINITIS
VULVA		
GROSS:		DISCHARGE YELLOW
LUNGS		
MICRO:	4	CONGESTION
	((3))	ALVEOLAR HISTIOCYTOSIS
KIDNEYS		

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3788D57 (CONTINUED)

GROSS: POSTMORTEM CHANGE
MILD, BILATERAL

CAUSE OF DEATH
MICRO: P NOT DETERMINED

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	LIVER
PANCREAS	DUODENUM	JEJUNUM
COLON	RECTUM	ADRENAL GL
SKIN	NARES/NOSE	LYMPH ND, S-MAN
BONE, STERNUM	BONE, FEMUR	BONE MARROW
SKELETAL MUSCLE	BRAIN	SPINAL CORD
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	NASAL CAVITY
TRACHEA	KIDNEYS	URINARY BLADDER

THE FOLLOWING TISSUES WERE MISSING:
PARATHYROID GL

THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
ILEUM

ANIMAL 3662D58 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.642	2.408
KIDNEYS	2.397	0.668
HEART	1.139	0.317
SPLEEN	0.498	0.139
BRAIN	2.159	0.602
ADRENAL GL	0.098	0.027
OVARIES	0.103	0.029
TERMINAL BODY WT.	358.9	

STOMACH
GROSS: DIVERTICULUM
4X4X3MM, NONGLANDULAR PORTION
MICRO: ((1)) GLAND ECTASIA

LIVER
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)

PITUITARY
GROSS: SIZE INCREASE
3X NORMAL
MICRO+ P #B ADENOMA

PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
4X2MM DARK RED FOCUS

THYROID GL
MICRO: (P) THYROGLOSSAL DUCT CYST

ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE BROWN FOCI, BILATERAL
MICRO+((4)) VASCULAR ECTASIA

ADRENAL GL
GROSS: SIZE INCREASE
2X NORMAL, RIGHT
MICRO+ (4) INFARCTION
MICRO: (P) #B PHEOCHROMOCYTOMA
SMALL NODULE

LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS

LYMPH ND, MES
MICRO: ((4)) HISTIOCYTIC AGGREGATES

THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY

EYE
GROSS: CRUST

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3662D58 (CONTINUED)

```
                                        RED, RIGHT PERIOCULAR AREA
EYE
    GROSS:        SWOLLEN
                        RIGHT PERIOCULAR AREA
VAGINA
    MICRO:   2    VAGINITIS
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         PANCREAS          DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            PARATHYROID GL
    SKIN              MAMMARY GL        SPLEEN
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    SKELETAL MUSCLE   BRAIN             SPINAL CORD
    NERVE, SCIATIC    EYE               OVARIES
    UTERUS            CERVIX            LUNGS
    KIDNEYS           URINARY BLADDER
```

ANIMAL 3970D59 10-FEB-89 STUDY DAY 325

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
MESENTARY/OM'TUM
    MICRO:  (P)   VASCULAR HAMARTOMA
                        AN ANOMALY IS PRESENT IN ONE OF THE
                        LARGE ARTERIES
            (3)   THROMBOSIS
                        ASSOCIATED WITH THE ANOMALY
STOMACH
    MICRO: ((4)) MUCOSAL HYPERPLASIA
                        NONGLANDULAR STOMACH
             3    EDEMA
ILEUM
    GROSS:        DILATATION/DISTENTION
                        MARKED
    MICRO:   3    CONGESTION
CECUM
    GROSS:        DILATATION/DISTENTION
                        SEVERE, CONTAINS LIQUID FECAL MATERIAL
                        AND MUCUS
    MICRO:   3    CONGESTION
             3    TYPHLITIS
PITUITARY
    MICRO:  (3)   FOCI OF CELL ALTERATION
THYROID GL
    MICRO:  (P)   THYROGLOSSAL DUCT CYST
SKIN
    GROSS:        STAINED
                        URINE, UROGENITAL AREA
SPLEEN
    GROSS:        SIZE DECREASE
                        1/2 OF NORMAL
    MICRO:   4    HEMOSIDEROSIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3970D59 (CONTINUED)

LYMPH ND, MES
MICRO: 3 SINUS ERYTHROCYTOSIS
((2)) HEMOSIDEROSIS
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
NO THYMUS
EYE
GROSS: CRUST
DARK RED, PERIOCULAR AREA, BILATERAL
VAGINA
MICRO: 1 VAGINITIS
TRACHEA
MICRO: (3) SUBMUCOSAL GLAND ECTASIA
CAUSE OF DEATH
MICRO: P NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	LIVER	PANCREAS
DUODENUM	JEJUNUM	COLON
RECTUM	ADRENAL GL	SKIN
MAMMARY GL	LYMPH ND, S-MAN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	LUNGS	KIDNEYS
URINARY BLADDER		

THE FOLLOWING TISSUES WERE MISSING:
PARATHYROID GL

ANIMAL 3714D60 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.332	2.273
KIDNEYS	2.725	0.744
HEART	1.148	0.313
SPLEEN	0.547	0.149
BRAIN	2.006	0.547
ADRENAL GL	0.079	0.022
OVARIES	0.146	0.040
TERMINAL BODY WT.	366.5	

STOMACH
MICRO: ((2)) GLAND ECTASIA
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
SEVERAL DARK RED 2MM FOCAL AREAS, CAUDATE LOBES
MICRO: ((1)) BILIARY HYPERPLASIA
((2)) CHOLANGIOFIBROSIS
PITUITARY
GROSS: SIZE INCREASE
2X NORMAL
MICRO: P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
2MM RED FOCAL AREA, POSTERIOR PORTION
THYROID GL
MICRO: P THYROGLOSSAL DUCT CYST
ADRENAL GL
MICRO: ((2)) CORTICAL CELL HYPERTROPHY
((5)) VASCULAR ECTASIA
((2)) FIBROSIS
((1)) HEMOSIDEROSIS
MAMMARY GL
MICRO: ((2)) HYPERSECRETION

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 2000 PPM FEMALE

ANIMAL 3714D60 (CONTINUED)

```
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((3)) SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
            (3)  FIBROSIS
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
OVARIES
    GROSS:       CYST
                     RIGHT, 15MM IN DIAMETER
VAGINA
    MICRO:   1   VAGINITIS
LUNGS
    MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((2)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             SPLEEN           BONE, STERNUM
    BONE, FEMUR      BONE MARROW      BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    TRACHEA          URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3969E01 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.996	2.390
KIDNEYS	2.515	0.547
HEART	1.087	0.236
SPLEEN	0.491	0.107
BRAIN	1.912	0.416
ADRENAL GL	0.091	0.020
OVARIES	0.080	0.017
TERMINAL BODY WT.	460.1	

STOMACH
MICRO: (3) EDEMA
NONGLANDULAR STOMACH
LIVER
GROSS: MASS
25X20X10MM, LEFT LATERAL LOBE MOTTLED RED AND DARK RED
MICRO+ (P) #B HEPATOCELLULAR ADENOMA
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
GROSS: NODULE
DARK RED 4X3X4MM LEFT SIDE
MICRO+ P #M CARCINOMA
MASS IS SMALL BUT IS LOCALLY INFILTRATIVE INTO THE BRAIN
THYROID GL
MICRO: (1) THYROGLOSSAL DUCT CYST
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL, MULTIPLE BLACK AND CREAM PUNCTATE FOCAL AREAS
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: ((5)) VASCULAR ECTASIA
(3) HEMORRHAGE
MAMMARY GL
GROSS: NODULE
RIGHT AXILLARY REGION, 10X20X8MM, MULTILOBULAR
MICRO+ (P) #B FIBROADENOMA
MICRO: ((3)) GALACTOCELE
PAWS/FEET
GROSS: ULCERATED
RIGHT 5X5MM DARK TAN
MICRO+ (4) ULCERATION
MICRO: (3) FIBROSIS
LYMPH ND, MED
MICRO: 4 SINUS ERYTHROCYTOSIS
2 HEMOSIDEROSIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
((1)) SINUS ERYTHROCYTOSIS
LYMPH ND, OTHER
GROSS: SIZE INCREASE
BILATERAL, SUBLUMBAR, 2X NORMAL
MICRO+((4)) LYMPHATIC ECTASIA, CYSTIC
SUBLUMBAR NODES
MICRO: 3 PLASMACYTOSIS
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
BRAIN
MICRO: (2) #M CARCINOMA
LOCAL INFILTRATION FROM THE PITUITARY TUMOR

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3969E01 (CONTINUED)

```
                    ((3)) VACUOLIZATION
                              CEREBELLUM
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED LIGHT AND DARK PINK
    MICRO:  (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((1)) RENAL CALCULI
           ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           SKIN
    SPLEEN           LYMPH ND, S-MAN  BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    NERVE, SCIATIC   EYE              OVARIES
    UTERUS           CERVIX           VAGINA
    TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 3901E02 12-JAN-90 STUDY DAY 661
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:       EMACIATION
TOTAL BODY
    GROSS:       UNKEMPT
LIVER
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    GROSS:       MASS
                     11X10X5 MM, DARK RED
     MICRO+  P   #B ADENOMA
                     VERY LARGE
    MICRO: ((4)) HEMORRHAGE
            (3)  HEMOSIDEROSIS
           ((4)) VASCULAR ECTASIA
THYROID GL
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
           ((1)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     TAN AND RED FOCI, BILATERAL
     MICRO+((3)) VASCULAR ECTASIA
    MICRO:  (4)  INFARCTION
           ((3)) HEMORRHAGE
MAMMARY GL
    GROSS:       GALACTOCELE
                     12X13X6 MM, LEFT INGUINAL REGION
     MICRO+((4)) GALACTOCELE
    MICRO: ((P)) #B FIBROADENOMA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3901E02 (CONTINUED)

```
                                        TWO SMALL NODULES
LYMPH ND, S-MAN
    GROSS:          SIZE INCREASE
                        2X NORMAL
     MICRO+  4      PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
           ((1)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   4      INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   3      HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   2      MYOFIBER ATROPHY
BRAIN
    GROSS:          DEPRESSION/INDENTATION
                        DUE TO PITUITARY MASS
     MICRO+  4      COMPRESSION
    MICRO:   2      HYDROCEPHALUS
           ((2)) VACUOLIZATION
                        CEREBELLUM AND BRAINSTEM
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:          CRUST
                        RED, PERIOCULAR REGION, BILATERAL
OVARIES
    GROSS:          CYST
                        10X8X5 MM, RIGHT
     MICRO+ (4)     CYST(S)
VAGINA
    MICRO: ((2)) VAGINITIS
LUNGS
    GROSS:          COLOR CHANGE, DIFFUSE
                        RED, ALL LOBES
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((2)) NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P      ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART           AORTA           SALIVARY GL
    ESOPHAGUS       STOMACH         PANCREAS
    DUODENUM        JEJUNUM         ILEUM
    CECUM           COLON           SKIN
    SPLEEN          BONE, STERNUM   BONE, FEMUR
    NERVE, SCIATIC  EYE             UTERUS
    CERVIX          TRACHEA         URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    RECTUM          PARATHYROID GL
```

ANIMAL 3859E03 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE
ORGAN WEIGHT ABS.(G) REL. STOMACH

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3859E03 (CONTINUED)

LIVER	9.558	2.736
KIDNEYS	9.899	2.833
HEART	1.330	0.381
SPLEEN	0.535	0.153
BRAIN	2.172	0.622
ADRENAL GL	0.078	0.022
OVARIES	0.062	0.018
TERMINAL BODY WT.	349.4	

```
    MICRO:  (2)  EDEMA
                     NONGLANDULAR STOMACH
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     2X2MM TAN FOCUS, RIGHT MEDIAN LOBE
     MICRO+ (3)  CLEAR CELL FOCI
LIVER
    GROSS:       MASS
                     20X15X6MM, LEFT LATERAL LOBE
     MICRO+((P)) #B HEPATOCELLULAR ADENOMA
                     SEVERAL SMALL NODULAR LESIONS ARE
                     PRESENT IN ONE LOBE
    MICRO:  (3)  EOSINOPHILIC CELL FOCI
PANCREAS
    GROSS:       NODULE
                     5X5X5MM, RED, FIRM
     MICRO+  P   #B ISLET CELL ADENOMA
PITUITARY
    GROSS:       SIZE INCREASE
                     5X5X5MM
     MICRO+  P   #M CARCINOMA
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
     MICRO+ (4)  HEMORRHAGE
THYROID GL
    MICRO:   3   C CELL HYPERPLASIA
ADRENAL GL
    MICRO: ((4)) VASCULAR ECTASIA
           ((4)) INFARCTION
           ((3)) THROMBOSIS
MAMMARY GL
    GROSS:       MASS
                     30X30X15MM, TAN, DARK RED FLUID FILLED,
                     LEFT
                     AXILLARY AREA
     MICRO+ (P)  #B ADENOMA
MAMMARY GL
    GROSS:       GALACTOCELE
                     MULTIPLE 2X2MM, THROUGHOUT MAMMARY GLAND
     MICRO+  2   HYPERSECRETION
    MICRO:  (2)  #B FIBROADENOMA
            (3)  MASTITIS
           ((2)) MINERALIZATION
SPLEEN
    GROSS:       SIZE DECREASE
                     1/4 OF NORMAL
LYMPH ND, S-MAN
    MICRO:   4   SINUS ERYTHROCYTOSIS
             3   HEMOSIDEROSIS
           ((1)) MASTOCYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BRAIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3859E03 (CONTINUED)

```
    MICRO:   3   COMPRESSION
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
TRACHEA
    MICRO:  (2)  SUBMUCOSAL GLAND ECTASIA
KIDNEYS
    GROSS:       MASS
                     25X25X15MM, TAN AND RED, LEFT
     MICRO+  P   #B EMBRYONAL NEPHROMA/NEPHROBLASTOMA
    MICRO: ((2)) RENAL CALCULI
           ((1)) TUBULAR PROTEINOSIS
URINARY BLADDER
    MICRO:  (4)  EDEMA
                     PROBABLY AN ARTIFACT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           VAGINA           LUNGS
```

ANIMAL 3939E04 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.587	2.423
KIDNEYS	2.400	0.677
HEART	1.215	0.343
SPLEEN	0.441	0.124
BRAIN	1.992	0.562
ADRENAL GL	0.081	0.023
OVARIES	0.062	0.017
TERMINAL BODY WT.	354.4	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO:  (3)  EOSINOPHILIC CELL FOCI
           ((3)) BASOPHILIC CELL FOCI
           ((2)) BILIARY HYPERPLASIA
           ((2)) CHOLANGIOFIBROSIS
PITUITARY
    GROSS:       NODULE
                     MULTIPLE 2X2X2 TO 4X3X3MM, DARK RED
     MICRO+  P   #B ADENOMA
THYROID GL
    MICRO:  (P)  #B C CELL ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO: ((3)) VASCULAR ECTASIA
            (2)  THROMBOSIS
           ((3)) CORTICAL CELL VACUOLIZATION
MAMMARY GL
    GROSS:       MASS
                     15X10X5MM, TAN, RIGHT INGUINAL AREA
     MICRO+ (P)  #B ADENOMA
    MICRO:   3   HYPERSECRETION
SPLEEN
    GROSS:       SIZE DECREASE
                     1/4 OF NORMAL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3939E04 (CONTINUED)

LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
((4)) SINUS ERYTHROCYTOSIS
LYMPH ND, MED
MICRO: 2 HEMOSIDEROSIS
LYMPH ND, MES
MICRO: ((2)) MASTOCYTOSIS
((2)) HISTIOCYTIC AGGREGATES
((2)) HEMOSIDEROSIS
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
KIDNEYS
MICRO: ((2)) RENAL CALCULI
((1)) NEPHRITIS, INTERSTITIAL
URINARY BLADDER
MICRO: (1) LYMPHOCYTIC INFILTRATE(S)
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	PARATHYROID GL
SKIN	SPLEEN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	VAGINA	TRACHEA
LUNGS		

ANIMAL 3913E05 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.178	2.497
KIDNEYS	2.514	0.768
HEART	1.126	0.344
SPLEEN	0.426	0.130
BRAIN	2.080	0.635
ADRENAL GL	0.076	0.023
OVARIES	0.127	0.039
TERMINAL BODY WT.	327.5	

HEART
MICRO: ((1)) FIBROSIS
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
ALL LOBES MOTTLED LIGHT AND DARK RED
CECUM
MICRO: 4 TYPHLITIS
PITUITARY
GROSS: CYST
4X5X3MM
MICRO+ (4) CYST(S)
MICRO: ((4)) CYSTIC RATHKE'S CLEFT
THYROID GL
GROSS: SIZE DECREASE
LEFT, 1/2 NORMAL
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
MICRO: ((3)) VASCULAR ECTASIA
SKIN
GROSS: ABSCESS
CLITORAL GLAND, 5X5X4MM, GREEN CREAM MATERIAL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3913E05 (CONTINUED)

```
                                    MICRO:  (2)  ADENITIS, CLITORAL/PREPUTIAL GLAND
                                                     THE GLANDS CONTAIN SECRETORY MATERIAL,
                                                     BUT NO ABSCESS
                                                     IS SEEN
                                MAMMARY GL
                                    MICRO:   3   HYPERSECRETION
                                SPLEEN
                                    GROSS:       SIZE DECREASE
                                                     SLIGHT
                                LYMPH ND, MES
                                    MICRO: ((1)) HISTIOCYTIC AGGREGATES
                                THYMIC REGION
                                    MICRO:   4   INVOLUTIONAL ATROPHY
                                UTERUS
                                    MICRO:   2   METRITIS
                                           ((2)) LUMINAL ECTASIA
                                TRACHEA
                                    MICRO:  (2)  SUBMUCOSAL GLAND ECTASIA
                                KIDNEYS
                                    MICRO:  (3)  TUBULAR BASOPHILIA
                                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                                    AORTA            SALIVARY GL      ESOPHAGUS
                                    STOMACH          LIVER            PANCREAS
                                    DUODENUM         JEJUNUM          ILEUM
                                    COLON            RECTUM           THYROID GL
                                    PARATHYROID GL   SPLEEN           LYMPH ND, S-MAN
                                    BONE, STERNUM    BONE, FEMUR      BONE MARROW
                                    SKELETAL MUSCLE  BRAIN            SPINAL CORD
                                    NERVE, SCIATIC   EYE              OVARIES
                                    CERVIX           VAGINA           LUNGS
                                    URINARY BLADDER
```

ANIMAL 3921E06 8-JUN-89 STUDY DAY 443

TYPE OF DEATH: SACRIFICED MORIBUND

```
                                HEART
                                    MICRO:  (1)  FIBROSIS
                                PITUITARY
                                    GROSS:       SIZE INCREASE
                                                     3X NORMAL
                                     MICRO+  P   #B ADENOMA
                                PITUITARY
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     TAN AND DARK RED
                                     MICRO+  4   HEMORRHAGE
                                    MICRO: ((4)) VASCULAR ECTASIA
                                ADRENAL GL
                                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                                     MULTIPLE TAN FOCI, BILATERAL
                                                     3X3MM BROWN FOCUS, LEFT
                                     MICRO+((1)) CORTICAL CELL HYPERTROPHY
                                    MICRO:  (3)  INFARCTION
                                EARS
                                    GROSS:       THICKER THAN NORMAL
                                                     BILATERAL
                                     MICRO+((4)) AURICULAR CHONDROPATHY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3921E06 (CONTINUED)

```
                                        BILATERAL
EARS
    GROSS:          COLOR CHANGE, DIFFUSE
                        RED, BILATERAL
MAMMARY GL
    GROSS:          MASS
                        60X50X35MM,
                        TAN; RIGHT AXILLARY AREA
     MICRO+ (P)  #M FIBROSARCOMA
                        THE TUMOR IS PROBABLY NOT DERIVED FROM
                        MAMMARY TISSUE,
                        BUT MAMMARY GLAND IS EMBEDDED IN THE
                        MASS
SPLEEN
    MICRO:   3   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   3   HYPERPLASIA
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO:  (2)  RENAL CALCULI
                        RIGHT
CAUSE OF DEATH
    MICRO:   P   NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    STOMACH          LIVER            PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    THYROID GL       SKIN             BONE, STERNUM
    BONE, FEMUR      SKELETAL MUSCLE  BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 3799E07 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.547	2.212
KIDNEYS	2.416	0.560
HEART	1.218	0.282
SPLEEN	0.595	0.138
BRAIN	1.965	0.455
ADRENAL GL	0.074	0.017
OVARIES	0.126	0.029
TERMINAL BODY WT.	431.5	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) CHOLANGITIS
            (1)  BILIARY HYPERPLASIA
           ((1)) FATTY CHANGE
PITUITARY
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     2X2MM RED FOCUS
     MICRO+  P   #B ADENOMA
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3799E07 (CONTINUED)

```
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MULTIPLE WHITE FOCI DISSEMINATED OVER
                                      SURFACE, BILATERAL
                     MICRO+((1)) CORTICAL CELL HYPERTROPHY
                    MICRO:  (4)  VASCULAR ECTASIA
                MAMMARY GL
                    GROSS:        MASS
                                      30X20X20MM, RIGHT UROGENITAL AREA
                     MICRO+  P   #B ADENOMA
                LYMPH ND, MED
                    MICRO:   4   SINUS ERYTHROCYTOSIS
                             2   HEMOSIDEROSIS
                LYMPH ND, MES
                    MICRO:   3   PLASMACYTOSIS
                            ((2)) HISTIOCYTIC AGGREGATES
                THYMIC REGION
                    MICRO:   4   INVOLUTIONAL ATROPHY
                BRAIN
                    MICRO: ((3)) VACUOLIZATION
                KIDNEYS
                    MICRO: ((2)) RENAL CALCULI
                           ((1)) NEPHRITIS, INTERSTITIAL
                            (1)  TUBULAR BASOPHILIA
                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    HEART             AORTA             SALIVARY GL
                    ESOPHAGUS         PANCREAS          DUODENUM
                    JEJUNUM           ILEUM             CECUM
                    COLON             RECTUM            THYROID GL
                    PARATHYROID GL    SKIN              SPLEEN
                    LYMPH ND, S-MAN   BONE, STERNUM     BONE, FEMUR
                    BONE MARROW       SKELETAL MUSCLE   SPINAL CORD
                    NERVE, SCIATIC    EYE               OVARIES
                    UTERUS            CERVIX            VAGINA
                    TRACHEA           LUNGS             URINARY BLADDER
```

ANIMAL 3985E08 26-OCT-89 STUDY DAY 583

TYPE OF DEATH: FOUND DEAD

```
                STOMACH
                    MICRO: ((1)) GLAND ECTASIA
                             4   EDEMA
                                     NONGLANDULAR PORTION
                PITUITARY
                    GROSS:        MASS
                                     8X6X3 MM
                     MICRO+  P   #B ADENOMA
                THYROID GL
                    MICRO: ((1)) CALCIFIC CONCRETIONS, COLLOID
                ADRENAL GL
                    GROSS:        COLOR CHANGE, DIFFUSE
                                     RED, BILATERAL
                    MICRO: ((5)) VASCULAR ECTASIA
                           ((2)) FIBROSIS
                SKIN
                    GROSS:        STAINED
                                     YELLOW, UROGENITAL EGION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3985E08 (CONTINUED)

```
    MICRO: ((2)) ADENITIS, CLITORAL/PREPUTIAL GLAND
NARES/NOSE
    GROSS:       CRUST
                     RED, PERINASAL REGION
MAMMARY GL
    MICRO:   2   HYPERSECRETION
           ((2)) MINERALIZATION
           ((3)) FIBROSIS
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
             3   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   3   CONGESTION
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY MASS
     MICRO+  4   COMPRESSION
                     THE PITUITARY TUMOR IS COMPRESSING THE
                     BRAIN
    MICRO:   2   HYDROCEPHALUS
            (3)  HEMORRHAGE
                     IN THE LATERAL VENTRICLES
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     RED, BILATERAL, PERIOCULAR REGION
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, ALL LOBES
     MICRO+  4   CONGESTION
KIDNEYS
    MICRO: ((1)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            PANCREAS
    DUODENUM         JEJUNUM          CECUM
    COLON            RECTUM           PARATHYROID GL
    NARES/NOSE       SPLEEN           LYMPH ND, MES
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SKELETAL MUSCLE  NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           NASAL CAVITY     TRACHEA
    URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    ILEUM
```

ANIMAL 3932E09 31-AUG-89 STUDY DAY 527

TYPE OF DEATH: FOUND DEAD

```
HEART
    MICRO:  (2)  FIBROSIS
STOMACH
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3932E09 (CONTINUED)

```
                    MICRO: ((1)) GLAND ECTASIA
                LIVER
                    GROSS:       SWOLLEN
                                     SLIGHT, ALL LOBES
                PITUITARY
                    GROSS:       MASS
                                     8X7X6 MM, RED, GREEN AND YELLOW
                     MICRO+  P   #B ADENOMA
                    MICRO:  (3)  HEMORRHAGE
                                     PORTIONS OF THE MASS ARE NECROTIC
                           ((4)) HEMOSIDEROSIS
                            (3)  THROMBOSIS
                THYROID GL
                    MICRO:   P   THYROGLOSSAL DUCT CYST
                ADRENAL GL
                    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                                     DARK RED WITH TAN FOCI, BILATERAL
                     MICRO+((3)) HEMORRHAGE
                    MICRO:   4   CONGESTION
                            (3)  VASCULAR ECTASIA
                           ((2)) HEMOSIDEROSIS
                MAMMARY GL
                    GROSS:       MASS
                                     45X30X30 MM, RIGHT AXILLARY REGION,
                                     TAN, FIRM
                                     SMALL AMOUNT OF MILKY FLUID
                     MICRO+  P   #B FIBROADENOMA
                    MICRO: ((4)) GALACTOCELE
                SPLEEN
                    GROSS:       SIZE INCREASE
                                     2X NORMAL
                     MICRO+  4   CONGESTION
                SPLEEN
                    GROSS:       ADHESION
                                     SPLEEN ADHERED TO LARGE AMOUNT OF
                                     ADIPOSE TISSUE
                LYMPH ND, S-MAN
                    MICRO:   2   PLASMACYTOSIS
                LYMPH ND, MED
                    MICRO:   3   PLASMACYTOSIS
                             3   LYMPHOID HYPERPLASIA
                THYMIC REGION
                    MICRO:   4   INVOLUTIONAL ATROPHY
                           ((3)) HEMORRHAGE
                BONE MARROW
                    MICRO:   4   HYPERPLASIA
                BRAIN
                    GROSS:       DEPRESSION/INDENTATION
                                     DUE TO PITUITARY MASS
                     MICRO+  3   COMPRESSION
                    MICRO:   3   HYDROCEPHALUS
                UTERUS
                    GROSS:       CYST
                                     5X3X2 MM, RIGHT HORN, ANTERIOR PORTION
                                     NEAR OVARY
                     MICRO+ (4)  GLANDULAR ECTASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3932E09 (CONTINUED)

```
CERVIX
    MICRO:  (3)  HEMORRHAGE
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, ALL LOBES
     MICRO+  4   CONGESTION
    MICRO:   3   INTRAALVEOLAR CELLULAR DEBRIS
            ((3)) HEMORRHAGE
            ((1)) PERIVASCULAR INFILTRATE(S)
             (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((4)) TUBULAR PROTEINOSIS
           ((3)) NEPHRITIS, INTERSTITIAL
           ((3)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA             SALIVARY GL       ESOPHAGUS
    LIVER             PANCREAS          DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            PARATHYROID GL
    SKIN              LYMPH ND, MES     BONE, STERNUM
    BONE, FEMUR       SKELETAL MUSCLE   SPINAL CORD
    NERVE, SCIATIC    EYE               OVARIES
    VAGINA            TRACHEA           URINARY BLADDER
```

ANIMAL 3810E10 24-AUG-89 STUDY DAY 520

TYPE OF DEATH: SACRIFICED MORIBUND

```
PANCREAS
    MICRO: ((5)) ARTERITIS
           ((3)) ACINAR ATROPHY
CECUM
    MICRO:   P   NEMATODIASIS
RECTUM
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
PITUITARY
    GROSS:       SIZE INCREASE
                     13X10X8MM
     MICRO+  P   #B ADENOMA
                     VERY LARGE
THYROID GL
    MICRO:   P   THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BOTH, DARK RED FOCI SEEN
     MICRO+((4)) VASCULAR ECTASIA
    MICRO: ((2)) FIBROSIS
MAMMARY GL
    MICRO: ((3)) GALACTOCELE
TAIL
    GROSS:       NODULE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3810E10 (CONTINUED)

```
                                        MULTIPLE 1-5MM, ENTIRE SURFACE
     MICRO+ (4)  ABSCESS
    MICRO:  (P)  EPIDERMAL INCLUSION CYST
LYMPH ND, S-MAN
    GROSS:       SIZE INCREASE
                     2-3X NORMAL, BILATERAL
     MICRO+  4   PLASMACYTOSIS
    MICRO:   4   LYMPHOID HYPERPLASIA
LYMPH ND, MES
    MICRO: ((1)) HEMOSIDEROSIS
LYMPH ND, REN
    GROSS:       COLOR CHANGE, DIFFUSE
                     BILATERAL, DARK RED
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AREA OVER PITUITARY
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     BILATERAL, DARK RED
HARDERIAN GL
    MICRO: ((1)) ADENITIS
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((3)) TUBULAR PROTEINOSIS
           ((2)) NEPHRITIS, INTERSTITIAL
           ((4)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          LIVER
    DUODENUM         JEJUNUM          ILEUM
    COLON            PARATHYROID GL   SKIN
    SPLEEN           LYMPH ND, REN    BONE, STERNUM
    BONE, FEMUR      SKELETAL MUSCLE  SPINAL CORD
    NERVE, SCIATIC   EYE              OVARIES
    UTERUS           CERVIX           VAGINA
    TRACHEA          URINARY BLADDER
```

ANIMAL 3958E11 26-SEP-89 STUDY DAY 553

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:       EMACIATION
TOTAL BODY
    GROSS:       UNKEMPT
STOMACH
    MICRO: ((1)) GLAND ECTASIA
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3958E11 (CONTINUED)

```
                    GROSS:        SIZE INCREASE
                                      8X6X6MM
                     MICRO+  P    #M CARCINOMA
PITUITARY
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      TAN AND BROWN
                     MICRO+((4)) HEMORRHAGE
THYROID GL
                    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
                    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                                      MULTIPLE BROWN FOCI DISSEMINATED OVER
                                      SURFACE, BILATERAL
                     MICRO+((1)) CORTICAL CELL HYPERTROPHY
                    MICRO: ((4)) VASCULAR ECTASIA
                           ((4)) THROMBOSIS
MAMMARY GL
                    GROSS:        MASS
                                      10X10X10MM, TAN; RIGHT INGUINAL AREA
                     MICRO+((3)) FIBROSIS
                    MICRO:  (4)  MASTITIS
                           ((3)) GALACTOCELE
LYMPH ND, S-MAN
                    MICRO:   4   PLASMACYTOSIS
LYMPH ND, MES
                    MICRO: ((3)) HEMOSIDEROSIS
THYMIC REGION
                    MICRO:   5   INVOLUTIONAL ATROPHY
                                      NO THYMUS
BONE MARROW
                    MICRO:   3   HYPERPLASIA
SKELETAL MUSCLE
                    MICRO:   3   MYOFIBER ATROPHY
BRAIN
                    GROSS:        DEPRESSION/INDENTATION
                                      DUE TO ENLARGED PITUITARY
                     MICRO+  4   COMPRESSION
                    MICRO:   3   HYDROCEPHALUS
                             2   HEMORRHAGE
                                      NEAR PITUITARY TUMOR
EYE
                    GROSS:        CRUST
                                      RED, PERIOCULAR AREA, BILATERAL
UTERUS
                    GROSS:        CONTENTS ABNORMAL
                                      CONTAINS THICK GREEN MATERIAL
CERVIX
                    MICRO:   1   CERVICITIS
VAGINA
                    MICRO:   3   VAGINITIS
LUNGS
                    MICRO:  (3)  BRONCHOPNEUMONIA
                                      ONE LOBE
                            (1)  PNEUMONITIS, INTERSTITIAL
KIDNEYS
                    MICRO: ((3)) RENAL CALCULI
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3958E11 (CONTINUED)

CAUSE OF DEATH
MICRO: P CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	LIVER	PANCREAS
DUODENUM	JEJUNUM	ILEUM
CECUM	COLON	RECTUM
SKIN	SPLEEN	BONE, STERNUM
BONE, FEMUR	SPINAL CORD	NERVE, SCIATIC
EYE	OVARIES	UTERUS
TRACHEA	URINARY BLADDER	

THE FOLLOWING TISSUES WERE MISSING:
PARATHYROID GL

ANIMAL 3996E12 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.280	2.291
KIDNEYS	2.607	0.486
HEART	1.357	0.253
SPLEEN	0.592	0.110
BRAIN	1.911	0.357
ADRENAL GL	0.101	0.019
OVARIES	0.156	0.029
TERMINAL BODY WT.	535.9	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
COLON
MICRO: P NEMATODIASIS
PITUITARY
MICRO: (P) #B ADENOMA
THYROID GL
MICRO: (P) THYROGLOSSAL DUCT CYST
(1) C CELL HYPERPLASIA
ADRENAL GL
GROSS: CYST
LEFT, 2X2X1MM, DARK RED
MICRO↑ (4) VASCULAR ECTASIA
MICRO: ((2)) FIBROSIS
((4)) INFARCTION
UNILATERAL
MAMMARY GL
GROSS: MASS
90X50X30MM, LEFT HIND LEG AREA
MICRO↑ (P) #B FIBROADENOMA
LYMPH ND, MED
MICRO: 4 SINUS ERYTHROCYTOSIS
3 HEMOSIDEROSIS
LYMPH ND, MES
MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
MICRO: 2 MYOFIBER ATROPHY
TRACHEA
MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
KIDNEYS
MICRO: ((2)) RENAL CALCULI
BILATERAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3996E12 (CONTINUED)

RECTUM	PARATHYROID GL	SKIN
SPLEEN	LYMPH ND, S-MAN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	BRAIN
SPINAL CORD	NERVE, SCIATIC	EYE
OVARIES	UTERUS	CERVIX
VAGINA	LUNGS	URINARY BLADDER

ANIMAL 4028E13 28-JAN-90 STUDY DAY 677
TYPE OF DEATH: FOUND DEAD

```
SALIVARY GL
    GROSS:        MASS
                      20X20X10MM, ATTACHED TO GLAND
LIVER
    MICRO: ((2)) FIBROSIS
PANCREAS
    MICRO:  (1)  LYMPHOID INFILTRATES
CECUM
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:        SIZE INCREASE
                      15X5X5MM, DARK RED
     MICRO+  P   #B ADENOMA
    MICRO: ((4)) VASCULAR ECTASIA
THYROID GL
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:        COLOR CHANGE, DIFFUSE
                      BOTH, DARK RED
     MICRO+  4   INFARCTION
    MICRO: ((5)) VASCULAR ECTASIA
            (5)  THROMBOSIS
           ((2)) FIBROSIS
           ((2)) HEMOSIDEROSIS
SUBCUTIS
    GROSS:        MASS
                      1-VENTRAL, RIGHT PAW REGION, 25X30X20MM
                      1-VENTRAL, CENTER NECK REGION,
                      20X20X10MM
MAMMARY GL
    MICRO:   P   #M ADENOCARCINOMA
                      NECK AREA
           ((2)) MINERALIZATION
            (P)  #B FIBROADENOMA
                      REPORTED AS SUBCUTIS
           ((4)) GALACTOCELE
SPLEEN
    MICRO:   3   HEMOSIDEROSIS
LYMPH ND, S-MAN
    MICRO:   4   SINUS ERYTHROCYTOSIS
             2   PLASMACYTOSIS
LYMPH ND, MES
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      RED AND TAN
     MICRO+((2)) HEMOSIDEROSIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4028E13 (CONTINUED)

```
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AROUND PITUITARY
     MICRO+  3   COMPRESSION
EYE
    MICRO:  (3)  HEMORRHAGE, RETROORBITAL
             3   CATARACT
UTERUS
    GROSS:       POSTMORTEM CHANGE
                     BOTH SIDES
    MICRO: ((4)) LUMINAL ECTASIA
CERVIX
    MICRO:   1   CERVICITIS
VAGINA
    MICRO:   3   VAGINITIS
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     BRIGHT RED
     MICRO+  4   CONGESTION
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
           ((1)) PERIVASCULAR INFILTRATE(S)
           ((1)) ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          JEJUNUM
    ILEUM            COLON            RECTUM
    PARATHYROID GL   SKIN             SUBCUTIS
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SKELETAL MUSCLE  NERVE, SCIATIC   OVARIES
    URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    SPINAL CORD
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    DUODENUM
```

ANIMAL 3758E14 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.639	2.437
KIDNEYS	2.800	0.790
HEART	1.552	0.438
SPLEEN	0.459	0.129
BRAIN	1.888	0.533
ADRENAL GL	0.165	0.047
OVARIES	0.083	0.023
TERMINAL BODY WT.	354.5	

```
HEART
    MICRO:  (3)  FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) BILIARY HYPERPLASIA
           ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PANCREAS
    MICRO:  (P)  #B ISLET CELL ADENOMA
PITUITARY
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3758E14 (CONTINUED)

```
    GROSS:        COLOR CHANGE, DIFFUSE
                      RED
PITUITARY
    GROSS:        MASS
                      5X5X5MM
     MICRO+  P    #B ADENOMA
THYROID GL
    MICRO: ((P)) THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:        SIZE INCREASE
                      2-3X NORMAL, LEFT
     MICRO+ (5)   INFARCTION
ADRENAL GL
    GROSS:        COLOR CHANGE, DIFFUSE
                      LEFT, RED
    MICRO: ((2)) CORTICAL CELL HYPERTROPHY
           ((4)) VASCULAR ECTASIA
MAMMARY GL
    MICRO: ((3)) GALACTOCELE
LYMPH ND, S-MAN
    MICRO:   2   HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      AREA OVER PITUITARY
     MICRO+  3    COMPRESSION
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
VAGINA
    MICRO:   1   VAGINITIS
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:  (1)  PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((3)) RENAL CALCULI
           ((3)) PAPILLARY HYPERPLASIA
           ((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA              SALIVARY GL       ESOPHAGUS
    DUODENUM           JEJUNUM           ILEUM
    CECUM              COLON             RECTUM
    PARATHYROID GL     SKIN              SPLEEN
    BONE, STERNUM      BONE, FEMUR       BONE MARROW
    SKELETAL MUSCLE    NERVE, SCIATIC    EYE
    OVARIES            UTERUS            CERVIX
    URINARY BLADDER
```

ANIMAL 4004E15 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.876	2.709

```
HEART
    MICRO:  (3)  MYOCARDIAL DEGENERATION/FIBROSIS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4004E15 (CONTINUED)

KIDNEYS	2.332	0.712
HEART	1.211	0.370
SPLEEN	0.501	0.153
BRAIN	2.101	0.641
ADRENAL GL	0.083	0.025
OVARIES	0.079	0.024
TERMINAL BODY WT.	327.6	

STOMACH
MICRO: ((2)) GLAND ECTASIA
CECUM
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
7X7X5MM
MICRO+ P #B ADENOMA
VERY LARGE
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
LIGHT RED
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((4)) VASCULAR ECTASIA
MICRO: ((2)) CORTICAL CELL HYPERTROPHY
MAMMARY GL
MICRO: ((3)) GALACTOCELE
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
BRAIN
GROSS: DEPRESSION/INDENTATION
DUE TO ENLARGED PITUITARY
MICRO+ (4) COMPRESSION
UTERUS
GROSS: SIZE INCREASE, SEGMENTAL
20X7X7MM, LEFT UTERINE HORN, CONTAINS THICK
CLEAR MATERIAL
MICRO+ (P) #B STROMAL POLYP
KIDNEYS
MICRO: ((2)) RENAL CALCULI
BILATERAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
LIVER	PANCREAS	DUODENUM
JEJUNUM	ILEUM	COLON
RECTUM	THYROID GL	PARATHYROID GL
SKIN	SPLEEN	LYMPH ND, S-MAN
BONE, STERNUM	BONE, FEMUR	BONE MARROW
SKELETAL MUSCLE	SPINAL CORD	NERVE, SCIATIC
EYE	OVARIES	CERVIX
VAGINA	TRACHEA	LUNGS
URINARY BLADDER		

ANIMAL 3838E16 24-FEB-90 STUDY DAY 704
TYPE OF DEATH: FOUND DEAD

STOMACH
MICRO: 3 EDEMA
NONGLANDULAR STOMACH
PITUITARY

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3838E16 (CONTINUED)

```
    MICRO:  (P)  #B ADENOMA
                     SMALL NODULE
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     WHITE FOCI, MULTIPLE, BILATERAL
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO: ((4)) VASCULAR ECTASIA
MAMMARY GL
    MICRO: ((2)) GALACTOCELE
             2   HYPERSECRETION
SPLEEN
    GROSS:       SIZE DECREASE
                     1/2 NORMAL
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
           ((3)) EPITHELIAL CYST(S)
SKELETAL MUSCLE
    GROSS:       ATROPHY
                     MARKED, HINDQUARTERS
     MICRO+  3   MYOFIBER ATROPHY
EYE
    MICRO:   3   KERATITIS
                     BOTH LESIONS UNILATERAL
            (3)  UVEITIS
OVARIES
    MICRO: ((3)) CYST(S)
CERVIX
    MICRO:   1   CERVICITIS
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     RED MOTTLED, ALL LOBES
     MICRO+  4   CONGESTION
    MICRO:  (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
           ((1)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   NOT DETERMINED
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            THYROID GL
    PARATHYROID GL   SKIN             SPLEEN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    BRAIN            SPINAL CORD      NERVE, SCIATIC
    UTERUS           VAGINA           TRACHEA
    URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    RECTUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3994E17 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.992	2.678
KIDNEYS	2.522	0.676
HEART	1.299	0.348
SPLEEN	0.387	0.104
BRAIN	2.096	0.562
ADRENAL GL	0.075	0.020
OVARIES	0.086	0.023
TERMINAL BODY WT.	373.1	

COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
7X5X3MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
DARK TAN FOCI
BILATERAL
MICRO+ (1) CORTICAL CELL HYPERTROPHY
MAMMARY GL
MICRO: 2 HYPERSECRETION
((2)) MINERALIZATION
LYMPH ND, S-MAN
MICRO: (3) SINUS ERYTHROCYTOSIS
LYMPH ND, MED
MICRO: 3 SINUS ERYTHROCYTOSIS
LYMPH ND, MES
MICRO: 2 MASTOCYTOSIS
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
BRAIN
MICRO: ((1)) VACUOLIZATION
CEREBELLUM
SPINAL CORD
MICRO: ((2)) VACUOLIZATION
KIDNEYS
MICRO: ((1)) TUBULAR PROTEINOSIS
(1) RENAL CALCULI
RIGHT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	LIVER
PANCREAS	DUODENUM	JEJUNUM
ILEUM	CECUM	RECTUM
THYROID GL	PARATHYROID GL	SKIN
SPLEEN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	VAGINA	TRACHEA
LUNGS	URINARY BLADDER	

ANIMAL 3869E18 24-JUL-89 STUDY DAY 489
TYPE OF DEATH: FOUND DEAD

TOTAL BODY
GROSS: EMACIATION
STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3869E18 (CONTINUED)

```
    GROSS:        POSTMORTEM CHANGE
                      MILD, ALL LOBES
JEJUNUM
    GROSS:        POSTMORTEM CHANGE
ILEUM
    GROSS:        POSTMORTEM CHANGE
CECUM
    MICRO:    P   NEMATODIASIS
PITUITARY
    GROSS:        SIZE INCREASE
                      10X10X7MM
     MICRO+   P   #M CARCINOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      TAN AND BROWN
     MICRO+   4   HEMORRHAGE
    MICRO: ((4)) VASCULAR ECTASIA
           ((3)) HEMOSIDEROSIS
THYROID GL
    MICRO: ((P)) THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      TAN AND BROWN, LEFT
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
    GROSS:        SIZE INCREASE
                      3X NORMAL, LEFT
     MICRO+ (4)  INFARCTION
    MICRO: ((4)) VASCULAR ECTASIA
SKIN
    GROSS:        STAINED
                      URINE, UROGENITAL AREA
MAMMARY GL
    GROSS:        GALACTOCELE
                      MULTIPLE 3X3X3 TO 8X5X5MM, THROUGHOUT
                      ENTIRE MAMMARY GLAND
     MICRO+((4)) GALACTOCELE
    MICRO: ((4)) MASTITIS
           ((3)) FIBROSIS
LYMPH ND, S-MAN
    MICRO:    4   PLASMACYTOSIS
LYMPH ND, MES
    GROSS:        POSTMORTEM CHANGE
THYMIC REGION
    GROSS:        COLOR CHANGE, DIFFUSE
                      RED
    MICRO:    5   INVOLUTIONAL ATROPHY
                      NO THYMUS
BONE MARROW
    MICRO:    4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:    3   MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO+   3   COMPRESSION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3869E18 (CONTINUED)

```
    MICRO:   2   HYDROCEPHALUS
            (2)  HEMORRHAGE
                     MENINGEAL
UTERUS
    GROSS:       POSTMORTEM CHANGE
CERVIX
    MICRO:   3   CERVICITIS
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     ALL LOBES MOTTLED LIGHT AND DARK RED
     MICRO+  4   CONGESTION
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    GROSS:       POSTMORTEM CHANGE
                     MILD, BILATERAL
    MICRO: ((1)) RENAL CALCULI
                     BILATERAL
CAUSE OF DEATH
    MICRO:   P   CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            PANCREAS
    DUODENUM         COLON            RECTUM
    PARATHYROID GL   SKIN             SPLEEN
    LYMPH ND, MES    BONE, STERNUM    BONE, FEMUR
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           VAGINA
    TRACHEA          URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    JEJUNUM          ILEUM
```

ANIMAL 3928E19 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.252	2.637
KIDNEYS	2.762	0.710
HEART	1.264	0.325
SPLEEN	0.613	0.158
BRAIN	1.948	0.501
ADRENAL GL	0.078	0.020
OVARIES	0.106	0.027
TERMINAL BODY WT.	388.8	

```
HEART
    MICRO:  (2)  FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       ANOMALY
                     3X3X1MM, LEFT LATERAL LOBE
     MICRO+ (P)  ANOMALOUS LOBULATION
    MICRO: ((1)) FATTY CHANGE
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
            (3)  BASOPHILIC CELL FOCI
COLON
    MICRO:   P   NEMATODIASIS
PITUITARY
    MICRO:   P   #B ADENOMA
                     SMALL NODULE
THYROID GL
    MICRO:  (4)  THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BILATERAL, BLACK 1MM FOCAL AREAS
                     MULTIPLE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3928E19 (CONTINUED)

```
     MICRO+((4)) VASCULAR ECTASIA
MAMMARY GL
    MICRO: ((3)) GALACTOCELE
             2   HYPERSECRETION
            (3)  MASTITIS
SPLEEN
    GROSS:       CYST
                     2MM IN DIAMETER AT ONE END
LYMPH ND, S-MAN
    MICRO:   2   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
           ((2)) MASTOCYTOSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
           ((2)) EPITHELIAL CYST(S)
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    MICRO: ((1)) VACUOLIZATION
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
UTERUS
    GROSS:       POLYP
                     2 RIGHT HORN, ONE, BROWN 10X9X9MM NEAR
                     BASE
                     SECOND NEAR OVARY, RED 5X5X6MM
     MICRO+ (P)  #B STROMAL POLYP
    MICRO:   5   LUMINAL ECTASIA
            (4)  HEMORRHAGE
                     THERE IS ONE POLYP, BUT THE SECOND
                     STRUCTURE IS CLOTTED
                     NECROTIC BLOOD AND CELLULAR DEBRIS,
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     ALL LOBES, DARK RED
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     2 CREAM FOCAL AREAS VENTRAL SIDE OF
                     DIAPHRAGMATIC LOBE
     MICRO+((2)) PNEUMONITIS, INTERSTITIAL
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     RIGHT MILD
     MICRO+ (2)  HYDRONEPHROSIS
                     RIGHT
    MICRO: ((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            RECTUM
    PARATHYROID GL   SKIN             SPLEEN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    NERVE, SCIATIC   EYE              OVARIES
    CERVIX           VAGINA           URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3670E20 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	8.744	2.295
KIDNEYS	2.141	0.562
HEART	1.232	0.323
SPLEEN	0.426	0.112
BRAIN	1.956	0.513
ADRENAL GL	0.118	0.031
OVARIES	0.077	0.020
TERMINAL BODY WT.	381.0	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
WHITE FOCI BETWEEN MEDIAN LOBES
MICRO: (P) #B HEPATOCELLULAR ADENOMA
SMALL NODULE
PITUITARY
GROSS: MASS
7X7X5MM, DARK RED
MICRO+ P #B ADENOMA
MICRO: 4 VASCULAR ECTASIA
THYROID GL
MICRO: (P) THYROGLOSSAL DUCT CYST
ADRENAL GL
GROSS: SIZE DECREASE
RIGHT, 1/2 OF NORMAL
ADRENAL GL
GROSS: SIZE INCREASE
LEFT, 2X NORMAL
MICRO+ 5 INFARCTION
MOST OF ONE GLAND IS DESTROYED
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
LEFT, DARK RED AND WHITE FOCI
MICRO+((3)) THROMBOSIS
MAMMARY GL
GROSS: MASS
LEFT AXILLARY, 15X10X5MM, CREAM COLORED
MICRO+ (P) #B FIBROADENOMA
MAMMARY GL
GROSS: GALACTOCELE
MULTIPLE ABDOMINAL REGION, 15X10X5MM TO PUNCTATE
MICRO+((5)) GALACTOCELE
MICRO: (P) #B ADENOMA
(5) MASTITIS
ASSOCIATED WITH RUPTURED GALACTOCELE
SPLEEN
GROSS: SIZE DECREASE
SLIGHT
MICRO: 3 HEMOSIDEROSIS
LYMPH ND, S-MAN
GROSS: COLOR CHANGE, DIFFUSE
RED
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: ((3)) EPITHELIAL CYST(S)
SKELETAL MUSCLE
MICRO: 2 MYOFIBER ATROPHY
BRAIN

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3670E20 (CONTINUED)

```
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO+  3    COMPRESSION
    MICRO: ((1)) VACUOLIZATION
OVARIES
    MICRO:  (3)  STROMAL CELL HYPERPLASIA
VAGINA
    MICRO:   1   VAGINITIS
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
           ((2)) TUBULAR BASOPHILIA
           ((1)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART              AORTA              SALIVARY GL
    ESOPHAGUS          PANCREAS           DUODENUM
    JEJUNUM            ILEUM              CECUM
    COLON              RECTUM             SKIN
    BONE, STERNUM      BONE, FEMUR        BONE MARROW
    SPINAL CORD        NERVE, SCIATIC     EYE
    UTERUS             CERVIX             TRACHEA
    URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 3992E21 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.055	2.518
KIDNEYS	2.463	0.514
HEART	1.248	0.261
SPLEEN	0.710	0.148
BRAIN	2.090	0.437
ADRENAL GL	0.092	0.019
OVARIES	0.107	0.022
TERMINAL BODY WT.	478.7	

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) BILIARY HYPERPLASIA
            (3)  EOSINOPHILIC CELL FOCI
PITUITARY
    MICRO: ((2)) FOCI OF CELL ALTERATION
THYROID GL
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
            (P)  #B C CELL ADENOMA
ADRENAL GL
    MICRO:  (5)  VASCULAR ECTASIA
           ((1)) HEMOSIDEROSIS
MAMMARY GL
    GROSS:       MASS
                     90X60X30MM, RED, FIRM CENTER
     MICRO+  P   #B FIBROADENOMA
    MICRO: ((4)) GALACTOCELE
LYMPH ND, S-MAN
    MICRO:   2   PLASMACYTOSIS
            (3)  LYMPHOID HYPERPLASIA
LYMPH ND, MES
    MICRO:   3   LYMPHOID HYPOPLASIA
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
           ((2)) EPITHELIAL CYST(S)
SKELETAL MUSCLE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3992E21 (CONTINUED)

```
    MICRO:   2   MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
LUNGS
    MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO:  (1)  RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART              AORTA              SALIVARY GL
    ESOPHAGUS          PANCREAS           DUODENUM
    JEJUNUM            ILEUM              CECUM
    COLON              RECTUM             PARATHYROID GL
    SKIN               SPLEEN             BONE, STERNUM
    BONE, FEMUR        BONE MARROW        BRAIN
    NERVE, SCIATIC     EYE                OVARIES
    UTERUS             CERVIX             VAGINA
    TRACHEA            URINARY BLADDER
```

ANIMAL 3666E22 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.293	3.697
KIDNEYS	2.538	1.010
HEART	0.987	0.393
SPLEEN	0.305	0.121
BRAIN	1.966	0.782
ADRENAL GL	0.198	0.079
OVARIES	0.125	0.050
TERMINAL BODY WT.	251.4	

```
TOTAL BODY
    GROSS:       EMACIATION
TOTAL BODY
    GROSS:       UNKEMPT
HEART
    MICRO:  (2)  FIBROSIS
STOMACH
    MICRO:   3   EDEMA
                     NONGLANDULAR STOMACH
LIVER
    MICRO:   3   FATTY CHANGE
PANCREAS
    MICRO:  (P)  #B ISLET CELL ADENOMA
                     SMALL NODULE
PITUITARY
    GROSS:       MASS
                     10X10X12MM
     MICRO+  P   #M CARCINOMA
    MICRO: ((4)) VASCULAR ECTASIA
THYROID GL
    MICRO:  (4)  THYROGLOSSAL DUCT CYST
           ((3)) FOLLICULAR CYSTS
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
    GROSS:       CYST
                     LEFT, 3X3X2MM, DARK RED
     MICRO+((5)) VASCULAR ECTASIA
    MICRO: ((4)) THROMBOSIS
            (4)  INFARCTION
MAMMARY GL
    GROSS:       MASS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3666E22 (CONTINUED)

```
                                        10X10X10MM, LEFT SHOULDER AREA
     MICRO+ (P)  #B ADENOMA
SPLEEN
    GROSS:       SIZE DECREASE
                     1/2
    MICRO:   4   HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((4)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
BONE MARROW
    MICRO:   4   HYPOPLASIA
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     AROUND PITUITARY
     MICRO+  4   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:       CRUST
                     BOTH
OVARIES
    GROSS:       CYST
                     LEFT, 1X1X1MM
CERVIX
    GROSS:       CONTENTS ABNORMAL
                     GREEN CREAM MATERIAL
VAGINA
    MICRO: ((1)) VAGINITIS
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
               3 CONGESTION
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    SKIN             LYMPH ND, S-MAN  BONE, STERNUM
    BONE, FEMUR      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    PARATHYROID GL
```

ANIMAL 3851E23 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	6.825	2.066

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3851E23 (CONTINUED)

KIDNEYS	1.844	0.558
HEART	0.942	0.285
SPLEEN	0.541	0.164
BRAIN	2.039	0.617
ADRENAL GL	0.040	0.012
OVARIES	0.069	0.021
TERMINAL BODY WT.	330.4	

```
LIVER
    MICRO:  (1)  BILIARY HYPERPLASIA
PITUITARY
    GROSS:       MASS
                     5X10X10MM, DARK RED
     MICRO+  P   #B ADENOMA
    MICRO: ((4)) HEMORRHAGE
           ((4)) HEMOSIDEROSIS
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BOTH, RED FOCAL AREAS SEEN
     MICRO+ (4)  INFARCTION
ADRENAL GL
    GROSS:       SIZE DECREASE
                     BOTH, SLIGHT
    MICRO:  (4)  THROMBOSIS
MAMMARY GL
    MICRO: ((3)) GALACTOCELE
            (2)  MASTITIS
TAIL
    GROSS:       NODULE
                     MANY 1-3MM WHITE AND BROWN, ON ENTIRE
                     TAIL
     MICRO+((4)) ABSCESS
                     MULTIPLE, ORIGINATING IN HAIR FOLLICLES
    MICRO: ((4)) FOLLICULITIS
              4  DERMATITIS
LYMPH ND, S-MAN
    MICRO: ((3)) PLASMACYTOSIS
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    MICRO:   4   COMPRESSION
VAGINA
    MICRO:   2   VAGINITIS
TRACHEA
    MICRO:  (1)  ADENITIS, SUBMUCOSAL GLANDS
LUNGS
    MICRO: ((1)) MINERALIZATION, PULMONARY VESSEL(S)
            (2)  PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
                     LEFT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           THYROID GL
    PARATHYROID GL   SKIN             SPLEEN
    LYMPH ND, MES    BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SPINAL CORD      NERVE, SCIATIC
    EYE              OVARIES          UTERUS
    CERVIX           URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3914E24 15-FEB-90 STUDY DAY 695
TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:        UNKEMPT
STOMACH
    GROSS:        GASEOUS
                      GROSSLY INFLATED
STOMACH
    GROSS:        CONTENTS ABNORMAL
                      BLACK MATERIAL
LIVER
    GROSS:        COLOR CHANGE, DIFFUSE
                      PALE, ALL LOBES
     MICRO+  4    FATTY CHANGE
PITUITARY
    GROSS:        MASS
                      8X5X4MM, RED
     MICRO+  P    #B ADENOMA
ADRENAL GL
    GROSS:        SIZE INCREASE
                      2-3X NORMAL, LEFT
     MICRO+((5)) VASCULAR ECTASIA
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE FOCI, LEFT
SKIN
    GROSS:        STAINED
                      YELLOW-RED, ENTIRE DORSAL SURFACE
SKIN
    GROSS:        CRUST
                      RED, PERIANAL AREA
    MICRO:  (P)   ADENITIS, CLITORAL/PREPUTIAL GLAND
SUBCUTIS
    GROSS:        MASS
                      OVOID, 25X15X5MM, LEFT AXILLARY
NARES/NOSE
    GROSS:        CRUST
                      RED, PERINASAL AREA
     MICRO+  2    RHINITIS
MAMMARY GL
    MICRO: ((3)) GALACTOCELE
PAWS/FEET
    GROSS:        ULCERATED
                      RIGHT, 5X5X2MM, RED, LEFT, 5X3X2MM, RED
    MICRO: ((3)) EPIDERMAL HYPERPLASIA
           ((4)) HYPERKERATOSIS
SPLEEN
    MICRO:   4    HEMOSIDEROSIS
LYMPH ND, MES
    GROSS:        SIZE INCREASE
                      3X NORMAL
     MICRO+  2    LYMPHOID HYPERPLASIA
LYMPH ND, MES
    GROSS:        COLOR CHANGE, DIFFUSE
                      RED
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3914E24 (CONTINUED)

```
                    MICRO+((3)) SINUS ERYTHROCYTOSIS
                   MICRO: ((2)) HISTIOCYTIC AGGREGATES
                          ((3)) HEMOSIDEROSIS
LYMPH ND, REN
    GROSS:          COLOR CHANGE, DIFFUSE
                        RED, BILATERAL
LYMPH ND, REN
    GROSS:          SIZE INCREASE
                        2-3X NORMAL, BILATERAL
LYMPH ND, PANC
    MICRO:    3     PLASMACYTOSIS
                        THIS MAY BE THE NODE MISTAKEN FOR RENAL.
THYMIC REGION
    MICRO:    5     INVOLUTIONAL ATROPHY
                        NO THYMUS
SKELETAL MUSCLE
    GROSS:          ATROPHY
                        HINDQUARTERS
     MICRO+   4     MYOFIBER ATROPHY
BRAIN
    GROSS:          DEPRESSION/INDENTATION
                        AREA OVER PITUITARY
     MICRO+   3     COMPRESSION
    MICRO:    2     HYDROCEPHALUS
EYE
    GROSS:          CRUST
                        RED, PERIOCULAR AREA, BILATERAL
    MICRO:    4     KERATITIS
VAGINA
    GROSS:          CONTENTS ABNORMAL
                        GREEN MATERIAL
     MICRO+   4     VAGINITIS
                        THE TISSUE IS SEVERELY AUTOLYSED AND
                        DIFFICULT TO EVAL-
                        UATE. THE LUMEN CONTAINS A LARGE VOLUME
                        OF PUS.
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:          COLOR CHANGE, FOCAL/MULTIFOCAL
                        DARK RED MOTTLED, ALL LOBES
     MICRO+   4     CONGESTION
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
            (1)  ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO:  (2)  RENAL CALCULI
                        LEFT
           ((1)) MINERALIZATION
CAUSE OF DEATH
    MICRO:    P     ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             ESOPHAGUS
    STOMACH           PANCREAS          DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            THYROID GL
    PARATHYROID GL    LYMPH ND, S-MAN   BONE, STERNUM
    BONE, FEMUR       BONE MARROW       SPINAL CORD
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3914E24 (CONTINUED)

```
    NERVE, SCIATIC   OVARIES          UTERUS
    CERVIX           URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    LYMPH ND, REN
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    SALIVARY GL
```

ANIMAL 3941E25 9-JAN-90 STUDY DAY 658

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
SALIVARY GL
    MICRO: ((3)) ATROPHY
STOMACH
    GROSS:        ULCERATED
                      MULTILPLE 3X2MM
     MICRO+((4)) ULCER
                      GLANDULAR STOMACH
    MICRO: ((1)) GLAND ECTASIA
            (3)  EDEMA
LIVER
    MICRO: ((2)) FATTY CHANGE
PITUITARY
    GROSS:        MASS
                      DARK RED, 5X6X3MM
     MICRO+  P   #M CARCINOMA
THYROID GL
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
            (3)  C CELL HYPERPLASIA
ADRENAL GL
    MICRO: ((4)) VASCULAR ECTASIA
            (4)  INFARCTION
SKIN
    MICRO:  (2)  FOLLICULITIS
                      PERINEUM
MAMMARY GL
    MICRO:   3   HYPERSECRETION
PAWS/FEET
    GROSS:        SWOLLEN
                      RIGHT HIND PAW, BETWEEN DIGITS AND
                      ANKLE JOINT
     MICRO+ (2)  FIBROSIS
PAWS/FEET
    GROSS:        ULCERATED
                      LEFT HIND PAW, RED, 5X5MM
     MICRO+ (3)  ULCERATION
    MICRO:   4   OSSEUS METAPLASIA
SPLEEN
    GROSS:        SIZE DECREASE
                      1/2 OF NORMAL
    MICRO:   4   HEMOSIDEROSIS
LYMPH ND, MED
    MICRO:   3   HEMOSIDEROSIS
LYMPH ND, MES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3941E25 (CONTINUED)

```
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROUS:       DEPRESSION/INDENTATION
                     ABOVE PITUITARY MASS
     MICRO+ (4)  COMPRESSION
EYE
    GROSS:       CRUST
                     BILATERAL, RED PERIOCULAR REGION
    MICRO: ((2)) KERATITIS
VAGINA
    MICRO:   2   VAGINITIS
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO:  (2)  RENAL CALCULI
                     RIGHT
CAUSE OF DEATH
    MICRO:   P   CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   LYMPH ND, S-MAN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SPINAL CORD      NERVE, SCIATIC   OVARIES
    UTERUS           CERVIX           URINARY BLADDER
```

ANIMAL 3907E26 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.831	2.635
KIDNEYS	2.843	0.584
HEART	1.400	0.288
SPLEEN	0.419	0.086
BRAIN	2.141	0.440
ADRENAL GL	0.088	0.018
OVARIES	0.115	0.024
TERMINAL BODY WT.	486.9	

```
LIVER
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE RED FOCAL AREAS, ALL LOBES
PITUITARY
    GROSS:       MASS
                     5X5X5MM, DARK RED
     MICRO+  P   #B ADENOMA
    MICRO: ((4)) HEMORRHAGE
           ((4)) HEMOSIDEROSIS
THYROID GL
    MICRO:  (P)  #B FOLLICULAR CELL ADENOMA
           ((P)) THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, BILATERAL
     MICRO+((4)) VASCULAR ECTASIA
ADRENAL GL
    GROSS:       SIZE INCREASE
                     (1) 2X NORMAL
     MICRO+ (5)  INFARCTION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3907E26 (CONTINUED)

MICRO: ((3)) THROMBOSIS
MAMMARY GL
MICRO: (P) #B FIBROADENOMA
SMALL NODULE
3 HYPERSECRETION
LYMPH ND, S-MAN
MICRO: 4 SINUS ERYTHROCYTOSIS
3 PLASMACYTOSIS
LYMPH ND, MED
MICRO: 4 SINUS ERYTHROCYTOSIS
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
BONE MARROW
MICRO: 4 HYPOPLASIA
BRAIN
GROSS: DEPRESSION/INDENTATION
SLIGHT, AREA OVER PITUITARY
SPINAL CORD
MICRO: ((1)) VACUOLIZATION
TRACHEA
MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
MICRO: (1) MINERALIZATION, PULMONARY VESSEL(S)
(1) PNEUMONITIS, INTERSTITIAL
KIDNEYS
MICRO: ((1)) RENAL CALCULI
((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	LIVER
PANCREAS	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	PARATHYROID GL	SKIN
SPLEEN	LYMPH ND, MES	BONE, STERNUM
BONE, FEMUR	SKELETAL MUSCLE	BRAIN
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	VAGINA
URINARY BLADDER		

ANIMAL 3922E27 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.828	2.813
KIDNEYS	3.145	0.817
HEART	1.141	0.296
SPLEEN	0.583	0.151
BRAIN	2.057	0.534
ADRENAL GL	0.098	0.025
OVARIES	0.228	0.059
TERMINAL BODY WT.	385.0	

HEART
MICRO: ((3)) MYXOMATOUS DEGENERATION OF VALVES
STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE RED FOCI, LEFT LATERAL LOBE
MICRO: ((1)) FATTY CHANGE
(1) CHOLANGIOFIBROSIS
((1)) BILIARY HYPERPLASIA
(P) #B HEPATOCELLULAR ADENOMA
(1) CHOLANGITIS
PITUITARY
MICRO: (P) #B ADENOMA

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3922E27 (CONTINUED)

```
THYROID GL
    MICRO:  (3)  C CELL HYPERPLASIA
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE BROWN FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO+((4)) VASCULAR ECTASIA
    MICRO: ((2)) FIBROSIS
             3   HEMORRHAGE
             P   #B PHEOCHROMOCYTOMA
LYMPH ND, S-MAN
    GROSS:       SIZE INCREASE
                     2X NORMAL
     MICRO+  4   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
            (3)  SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
EYE
    MICRO:  (3)  HEMORRHAGE, RETROORBITAL
OVARIES
    GROSS:       CYST
                     4X4X4MM, CLEAR FLUID FILLED, LEFT
    MICRO:   3   STROMAL CELL HYPERPLASIA
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
            (1)  PNEUMONITIS, INTERSTITIAL
KIDNEYS
    GROSS:       DIMPLED/PITTED
                     BILATERAL
     MICRO+((3)) TUBULAR PROTEINOSIS
    MICRO: ((3)) TUBULAR BASOPHILIA
           ((2)) FIBROSIS, INTERSTITIAL
           ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    MAMMARY GL       SPLEEN           BONE, STERNUM
    BONE, FEMUR      BONE MARROW      BRAIN
    SPINAL CORD      NERVE, SCIATIC   UTERUS
    CERVIX           VAGINA           TRACHEA
    URINARY BLADDER
```

ANIMAL 3728E28 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.927	2.225
KIDNEYS	2.021	0.377
HEART	1.199	0.224
SPLEEN	0.692	0.129

```
HEART
    MICRO:  (1)  FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3728E28 (CONTINUED)

BRAIN	2.116	0.395	MICRO: ((3)) FATTY CHANGE
ADRENAL GL	0.191	0.036	((1)) CHOLANGITIS
OVARIES	0.040	0.007	((1)) MONONUCLEAR CELL INFILTRATE(S)
TERMINAL BODY WT.	536.0		

PITUITARY
GROSS: NODULE
3X2X2MM, TAN
MICRO+ P #B ADENOMA
ADRENAL GL
GROSS: SIZE DECREASE
3/4 NORMAL
LEFT
ADRENAL GL
GROSS: SIZE INCREASE
RIGHT, 3 1/2X NORMAL
MICRO+ (4) INFARCTION
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
LEFT, MULTIPLE WHITE FOCI
RIGHT, TAN AND DARK RED
MICRO+ (5) THROMBOSIS
MICRO: 4 HEMOSIDEROSIS
((2)) MINERALIZATION
EARS
GROSS: THICKER THAN NORMAL
RED AND THICKENED
MICRO+((5)) AURICULAR CHONDROPATHY
MAMMARY GL
MICRO: (3) GALACTOCELE
SPLEEN
GROSS: SIZE DECREASE
SLIGHT
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MED
GROSS: COLOR CHANGE, DIFFUSE
RED
MICRO+ 2 SINUS ERYTHROCYTOSIS
MICRO: 2 HEMOSIDEROSIS
LYMPH ND, MES
MICRO: 3 SINUS ERYTHROCYTOSIS
((1)) HISTIOCYTIC AGGREGATES
2 MASTOCYTOSIS
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
VAGINA
MICRO: 2 VAGINITIS
LUNGS
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
(1) PNEUMONITIS, INTERSTITIAL
KIDNEYS
MICRO: ((2)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
PANCREAS	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	THYROID GL	SKIN
SPLEEN	BONE, STERNUM	BONE, FEMUR

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3728E28 (CONTINUED)

BONE MARROW SKELETAL MUSCLE BRAIN
SPINAL CORD NERVE, SCIATIC EYE
OVARIES UTERUS CERVIX
TRACHEA URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
PARATHYROID GL

ANIMAL 3894E29 8-DEC-89 STUDY DAY 626
TYPE OF DEATH: FOUND DEAD

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
DUODENUM
GROSS: GASEOUS
JEJUNUM
GROSS: GASEOUS
ILEUM
GROSS: GASEOUS
CECUM
GROSS: GASEOUS
PITUITARY
GROSS: SIZE INCREASE
10X5X4MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
THYROID GL
MICRO: ((1)) C CELL HYPERPLASIA
(4) THYROGLOSSAL DUCT CYST
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
TAN FOCI, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
GROSS: COLOR CHANGE, DIFFUSE
DARK RED, BILATERAL
MICRO+((4)) VASCULAR ECTASIA
MICRO: ((1)) HEMOSIDEROSIS
MAMMARY GL
MICRO: (P) #B ADENOMA
((2)) FIBROSIS
2 HYPERSECRETION
LYMPH ND, S-MAN
GROSS: COLOR CHANGE, DIFFUSE
DARK RED, BILATERAL
MICRO+ 3 SINUS ERYTHROCYTOSIS
MICRO: ((2)) HEMOSIDEROSIS
LYMPH ND, MED
MICRO: 4 SINUS ERYTHROCYTOSIS
3 HEMOSIDEROSIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3894E29 (CONTINUED)

THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
BONE MARROW
MICRO: 4 HYPERPLASIA
UTERUS
GROSS: DILATATION/DISTENTION
MIDDLE OF LEFT UTERINE HORN, 6X6X6MM
MICRO+ (2) LUMINAL ECTASIA
VAGINA
MICRO: 1 VAGINITIS
TRACHEA
MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
GROSS: COLOR CHANGE, DIFFUSE
ALL LOBES, DARK RED
MICRO+ 4 CONGESTION
MICRO: (1) PNEUMONITIS, INTERSTITIAL
((1)) HEMORRHAGE
CAUSE OF DEATH
MICRO: P ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	PARATHYROID GL
SKIN	SPLEEN	BONE, STERNUM
BONE, FEMUR	SKELETAL MUSCLE	BRAIN
SPINAL CORD	NERVE, SCIATIC	EYE
OVARIES	CERVIX	KIDNEYS
URINARY BLADDER		

ANIMAL 3898E30 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	7.125	2.720
KIDNEYS	2.445	0.933
HEART	1.168	0.446
SPLEEN	0.449	0.171
BRAIN	1.979	0.755
ADRENAL GL	0.144	0.055
OVARIES	0.100	0.038
TERMINAL BODY WT.	262.0	

STOMACH
GROSS: CONTENTS ABNORMAL
BROWN WATERY SUBSTANCE
MICRO: ((2)) GLAND ECTASIA
PITUITARY
GROSS: SIZE INCREASE
10X8X5MM
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
DARK RED
THYROID GL
MICRO: (3) C CELL HYPERPLASIA
ADRENAL GL
GROSS: SIZE INCREASE
LEFT, 2X NORMAL
MICRO+((5)) VASCULAR ECTASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
WHITE AND RED FOCI, BILATERAL
MICRO+((1)) CORTICAL CELL HYPERTROPHY
SKIN

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3898E30 (CONTINUED)

```
                    GROSS:        MASS
                                      15X15X15MM, CRUSTED ON OUTSIDE, SMOOTH
                                      ON INSIDE
                                      VENTRAL, UNDER LEFT ARM
                    MICRO:   (2)  HYPERKERATOSIS
                                      THE MASS IS RECORDED UNDER MAMMARY GLAND
                MAMMARY GL
                    GROSS:        GALACTOCELE
                                      MULTIPLE 2X2MM
                     MICRO+((4)) GALACTOCELE
                    MICRO:   (P)  #M MALIGNANT MIXED TUMOR
                                      THE BULK OF THE MASS RESEMBLES A
                                      FIBROSARCOMA, BUT
                                      GLANDULAR ELEMENTS ARE ALSO PRESENT.
                             (2)  MASTITIS
                SPLEEN
                    MICRO:    3   HEMOSIDEROSIS
                LYMPH ND, S-MAN
                    MICRO:    3   PLASMACYTOSIS
                LYMPH ND, MES
                    MICRO: ((3)) HISTIOCYTIC AGGREGATES
                THYMIC REGION
                    MICRO:    4   INVOLUTIONAL ATROPHY
                             (2)  EPITHELIAL CYST(S)
                SKELETAL MUSCLE
                    MICRO:    2   MYOFIBER ATROPHY
                BRAIN
                    MICRO:    4   COMPRESSION
                EYE
                    GROSS:        CRUST
                                      BILATERAL, PERIOCULAR
                OVARIES
                    MICRO: ((3)) STROMAL CELL HYPERPLASIA
                                      BILATERAL
                VAGINA
                    MICRO:    1   VAGINITIS
                LUNGS
                    MICRO:   (1)  MINERALIZATION, PULMONARY VESSEL(S)
                KIDNEYS
                    MICRO: ((1)) TUBULAR PROTEINOSIS
                           ((2)) RENAL CALCULI
                                      BILATERAL
                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    HEART            AORTA            SALIVARY GL
                    ESOPHAGUS        LIVER            PANCREAS
                    DUODENUM         JEJUNUM          ILEUM
                    CECUM            COLON            RECTUM
                    PARATHYROID GL   BONE, STERNUM    BONE, FEMUR
                    BONE MARROW      SPINAL CORD      NERVE, SCIATIC
                    EYE              UTERUS           CERVIX
                    TRACHEA          URINARY BLADDER
```

ANIMAL 3938E31 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE
ORGAN WEIGHT ABS.(G) REL. LIVER

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3938E31 (CONTINUED)

LIVER	8.512	2.384
KIDNEYS	2.329	0.652
HEART	1.087	0.304
SPLEEN	0.453	0.127
BRAIN	1.832	0.513
ADRENAL GL	0.143	0.040
OVARIES	0.073	0.020
TERMINAL BODY WT.	357.1	

```
    MICRO: ((3)) FATTY CHANGE
PITUITARY
    GROSS:       MASS
                     9X6X5MM DARK RED
     MICRO+  P   #B ADENOMA
    MICRO: ((3)) HEMOSIDEROSIS
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BILATERAL, MULTIPLE BLACK AND CREAM
                     SCATTERED THROUGHOUT
     MICRO+((4)) HEMORRHAGE
ADRENAL GL
    GROSS:       SIZE INCREASE
                     BILATERAL, 2X NORMAL
     MICRO+ (4)  INFARCTION
    MICRO: ((5)) VASCULAR ECTASIA
           ((4)) THROMBOSIS
           ((2)) FIBROSIS
SKIN
    GROSS:       STAINED
                     UROGENTIAL REGION, YELLOW
MAMMARY GL
    GROSS:       NODULE
                     2 IN THE LEFT AXILLARY REGION
                     ONE IS 25X10X3MM DARK YELLOW AND SOFT
                     ONE IS 25X15X10MM CREAM AND
                     MULTILOBULAR AND FIRM
     MICRO+((P)) #B FIBROADENOMA
MAMMARY GL
    GROSS:       GALACTOCELE
                     SCATTERED THROUGHOUT, PUNCTATE TO 2MM
     MICRO+((3)) GALACTOCELE
    MICRO: ((3)) MASTITIS
           ((1)) MINERALIZATION
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     ABOVE PITUITARY MASS
     MICRO+  4   COMPRESSION
EYE
    GROSS:       CRUST
                     BILATERAL, RED, PERIOCULAR REGION
VAGINA
    MICRO:   2   VAGINITIS
TRACHEA
    MICRO: ((1)) ADENITIS, SUBMUCOSAL GLANDS
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3938E31 (CONTINUED)

COLON	RECTUM	THYROID GL
PARATHYROID GL	SKIN	SPLEEN
LYMPH ND, MES	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SPINAL CORD	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	LUNGS	URINARY BLADDER

THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
CECUM

ANIMAL 3732E32 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	13.068	2.652
KIDNEYS	2.566	0.521
HEART	1.474	0.299
SPLEEN	0.747	0.152
BRAIN	2.166	0.440
ADRENAL GL	0.119	0.024
OVARIES	0.260	0.053
TERMINAL BODY WT.	492.8	

LIVER
MICRO: ((1)) FATTY CHANGE
((1)) MONONUCLEAR CELL INFILTRATE(S)
CECUM
MICRO: 3 TYPHLITIS
3 EDEMA
SUBMUCOSA
PITUITARY
MICRO: (1) FOCI OF CELL ALTERATION
THYROID GL
MICRO: ((3)) C CELL HYPERPLASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
RED AND TAN FOCI, BILATERAL
MICRO+((4)) VASCULAR ECTASIA
MICRO: (1) CORTICAL CELL HYPERTROPHY
((4)) THROMBOSIS
((4)) HEMORRHAGE
((1)) HEMOSIDEROSIS
MAMMARY GL
GROSS: MASS
70X40X30MM, VENTRAL LOWER RIGHT
MICRO+ (P) #B FIBROADENOMA
LYMPH ND, MES
MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
OVARIES
GROSS: CYST
LEFT, 3X3X3MM, CEAR FLUID FILLED
MICRO+((4)) CYST(S)
TRACHEA
MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
(1) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: (1) MINERALIZATION
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	STOMACH	PANCREAS
DUODENUM	JEJUNUM	ILEUM
COLON	RECTUM	SKIN

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3732E32 (CONTINUED)

SPLEEN	LYMPH ND, S-MAN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	UTERUS	CERVIX
VAGINA	URINARY BLADDER	

THE FOLLOWING TISSUES WERE MISSING:
PARATHYROID GL

ANIMAL 3685E33 28-JUL-89 STUDY DAY 493
TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
STOMACH
    MICRO: ((1)) GLAND ECTASIA
             4   EDEMA
         ((4)) ULCER
                   NONGLANDULAR PORTION
THYROID GL
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      TAN AND BROWN, BILATERAL
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
    GROSS:        SIZE INCREASE
                      0.5X NORMAL, RIGHT
     MICRO+((3)) HEMORRHAGE
    MICRO: ((2)) VASCULAR ECTASIA
             (3)  THROMBOSIS
SKIN
    GROSS:        STAINED
                      URINE, UROGENITAL AREA
    MICRO: ((3)) EPIDERMITIS
                      EYELIDS
MAMMARY GL
    MICRO:   2   HYPERSECRETION
SPLEEN
    GROSS:        SIZE DECREASE
                      1/4 OF NORMAL
    MICRO:   4   HEMOSIDEROSIS
THYMIC REGION
    MICRO:  (2)  EPITHELIAL CYST(S)
             4   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:        SHAPE/CONTOUR CHANGE
                      COMPRESSION, LEFT HEMISPHERE
BRAIN
    GROSS:        MASS
                      MENINGES, 10X10X5MM, TAN; LEFT SIDE OF
                      SKULL
     MICRO+ (P)  #B MENINGIOMA
                      VERY LARGE MASS
    MICRO:   3   HYDROCEPHALUS
EYE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3685E33 (CONTINUED)

```
    GROSS:        CRUST
                      DARK RED, PERIOCULAR AREA, BILATERAL
    MICRO:    4   KERATITIS
             (4)  CORNEAL ULCER
                      LESIONS ARE UNILATERAL
              2   HYPOPYON
VAGINA
    MICRO:    3   VAGINITIS
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:    P   MENINGIOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         LIVER             PANCREAS
    DUODENUM          JEJUNUM           CECUM
    COLON             RECTUM            PITUITARY
    PARATHYROID GL    LYMPH ND, S-MAN   LYMPH ND, MES
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    SKELETAL MUSCLE   SPINAL CORD       NERVE, SCIATIC
    OVARIES           UTERUS            CERVIX
    TRACHEA           LUNGS             URINARY BLADDER
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    ILEUM
```

ANIMAL 3823E34 9-MAR-90 STUDY DAY 717

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:        EMACIATION
                      MARKED
LIVER
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      ONE 3MM WHITE FOCI, RIGHT MEDIAN LOBE,
                      NEAR HILUS
     MICRO↑ (P)   #B HEPATOCELLULAR ADENOMA
    MICRO:  (2)   CHOLANGIOFIBROSIS
PITUITARY
    GROSS:        MASS
                      RED, 5X5X3MM
     MICRO↑ (P)   #B ADENOMA
                      SMALL NODULE
PARATHYROID GL
    MICRO: ((P)) #B ADENOMA
                      TWO NODULES IN ONE GLAND
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE AND TAN FOCI, BILATERAL
     MICRO↑((1)) CORTICAL CELL HYPERTROPHY
ADRENAL GL
    GROSS:        SIZE INCREASE
                      2X NORMAL, LEFT
    MICRO: ((3)) VASCULAR ECTASIA
             (2)  THROMBOSIS
            ((2)) HEMORRHAGE
SKIN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3823E34 (CONTINUED)

```
    GROSS:        CRUST
                      RED, PERIANAL AREA
     MICRO↑ (2)   EPIDERMITIS
                      EYELIDS
NARES/NOSE
    GROSS:        CRUST
                      RED, PERINASAL AREA
MAMMARY GL
    MICRO:  (3)   GALACTOCELE
LYMPH ND, S-MAN
    MICRO:    4   SINUS ERYTHROCYTOSIS
              3   HEMOSIDEROSIS
LYMPH ND, MED
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
LYMPH ND, MES
    MICRO: ((4)) SINUS ERYTHROCYTOSIS
           ((3)) HEMOSIDEROSIS
THYMIC REGION
    MICRO: ((3)) HEMORRHAGE
              5  INVOLUTIONAL ATROPHY
                      NO THYMUS
SKELETAL MUSCLE
    MICRO:    3   MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      SLIGHT, OVER PITUITARY
    MICRO:    P   #M LYMPHOSARCOMA, (NEOPLASTIC
                   RETICULOSIS)
                      A LARGE DIFFUSELY INFILTRATIVE MASS IS
                      PRESENT IN THE MIDBRAI
                      MIDBRAIN AND MENINGES
              3   HYDROCEPHALUS
           ((3)) VACUOLIZATION
                      CEREBELLUM
SPINAL CORD
    MICRO: ((2)) VACUOLIZATION
EYE
    GROSS:        CRUST
                      RED, PERIOCULAR AREA, BILATERAL
LUNGS
    MICRO:  (2)   MINERALIZATION, PULMONARY VESSEL(S)
              4   CONGESTION
CAUSE OF DEATH
    MICRO:    P   LYMPHOSARCOMA, BRAIN
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         STOMACH           PANCREAS
    DUODENUM          JEJUNUM           ILEUM
    CECUM             COLON             RECTUM
    THYROID GL        NARES/NOSE        SPLEEN
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    NERVE, SCIATIC    EYE               UTERUS
    CERVIX            VAGINA            NASAL CAVITY
    TRACHEA           KIDNEYS           URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    OVARIES
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3828E35 1-FEB-89 STUDY DAY 316
TYPE OF DEATH: SACRIFICED MORIBUND

```
LIVER
    GROSS:        COLOR CHANGE, DIFFUSE
                      PALE, ALL LOBES
    MICRO: ((1)) EXTRAMEDULLARY HEMATOPOIESIS
CECUM
    MICRO:    P   NEMATODIASIS
MAMMARY GL
    GROSS:        MASS
                      80X60X40MM, RIGHT AXILLARY AREA
     MICRO+   P   #M ADENOCARCINOMA
SPLEEN
    GROSS:        SIZE INCREASE
                      3X NORMAL
     MICRO+   4   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, MES
    MICRO:    3   LYMPHOID HYPERPLASIA
THYMIC REGION
    MICRO: ((2)) EPITHELIAL CYST(S)
                 2   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:    4   HYPERPLASIA
CERVIX
    MICRO:    1   CERVICITIS
TRACHEA
    MICRO:   (4)  THROMBOSIS
                      PRESENT IN THE INTERSTITIUM NEAR THE
                      TRACHEA
LUNGS
    GROSS:        NODULE
                      MULTIPLE TAN 3X3X3MM NODULES, ALL LOBES
     MICRO+((P)) #M ADENOCARCINOMA
                      MANY LARGE METASTATIC EMBOLI
CAUSE OF DEATH
    MICRO:    P   ADENOCARCINOMA, MAMMARY GLAND
                      WITH METASTASES TO THE LUNGS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        STOMACH          PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    COLON            RECTUM           PITUITARY
    THYROID GL       PARATHYROID GL   ADRENAL GL
    SKIN             LYMPH ND, S-MAN  BONE, STERNUM
    BONE, FEMUR      SKELETAL MUSCLE  BRAIN
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           VAGINA
    KIDNEYS          URINARY BLADDER
```

ANIMAL 3977E36 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.456	2.450
KIDNEYS	2.430	0.630

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3977E36 (CONTINUED)

HEART	1.151	0.298
SPLEEN	0.666	0.173
BRAIN	1.878	0.487
ADRENAL GL	0.070	0.018
OVARIES	0.089	0.023
TERMINAL BODY WT.	386.0	

```
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      LEFT MEDIAN LOBE, DARK RED FOCIM 2X2MM
    MICRO:  (2)   CHOLANGIOFIBROSIS
           ((1)) BILIARY HYPERPLASIA
           ((1)) CHOLANGITIS
PITUITARY
    GROSS:        SIZE INCREASE
                      3X3X3MM
     MICRO+  P    #B ADENOMA
PITUITARY
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      WHITE AND TAN, RED FOCAL AREAS
THYROID GL
    GROSS:        MASS
                      4X3X2MM, TAN, RIGHT
     MICRO+  P    #B C CELL ADENOMA
    MICRO:  (P)   THYROGLOSSAL DUCT CYST
ADRENAL GL
    MICRO: ((3)) VASCULAR ECTASIA
           ((3)) HEMORRHAGE
            (2)  THROMBOSIS
            (1)  CORTICAL CELL HYPERTROPHY
EARS
    GROSS:        THICKER THAN NORMAL
                      BILATERAL
     MICRO+((4)) AURICULAR CHONDROPATHY
                      BILATERAL
MAMMARY GL
    MICRO:   2    HYPERSECRETION
LYMPH ND, S-MAN
    MICRO:   3    PLASMACYTOSIS
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
BRAIN
    MICRO:   2    COMPRESSION
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      PINK AND RED MOTTLED, ALL LOBES
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((2)) RENAL CALCULI
                      RIGHT
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         PANCREAS          DUODENUM
    JEJUNUM           ILEUM             CECUM
    COLON             RECTUM            PARATHYROID GL
    SKIN              SPLEEN            LYMPH ND, MES
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    SKELETAL MUSCLE   SPINAL CORD       NERVE, SCIATIC
    EYE               OVARIES           UTERUS
    CERVIX            VAGINA            URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3820E37 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.201	2.854
KIDNEYS	3.045	0.945
HEART	1.326	0.411
SPLEEN	0.523	0.162
BRAIN	1.875	0.582
ADRENAL GL	0.115	0.036
OVARIES	0.100	0.031
TERMINAL BODY WT.	322.4	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) BILIARY HYPERPLASIA
(2) CHOLANGIOFIBROSIS
(3) BASOPHILIC CELL FOCI
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: MASS
MOTTLED RED AND CREAM 7X5X3MM
MICRO+ P #B ADENOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BILATERAL, DARK BROWN 2 TO 4MM FOCAL AREAS
MICRO+((4)) INFARCTION
MICRO: ((4)) HEMORRHAGE
(5) VASCULAR ECTASIA
((2)) FIBROSIS
((2)) HEMOSIDEROSIS
MAMMARY GL
MICRO: ((3)) GALACTOCELE
SPLEEN
MICRO: 3 HEMOSIDEROSIS
LYMPH ND, S-MAN
MICRO: 4 SINUS ERYTHROCYTOSIS
3 LYMPHOID HYPERPLASIA
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
EYE
MICRO: (2) HEMORRHAGE, RETROORBITAL
VAGINA
MICRO: (3) @PN MUCOSAL HYPERPLASIA
LUNGS
MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
((1)) PNEUMONITIS, INTERSTITIAL
(1) ALVEOLAR HISTIOCYTOSIS
KIDNEYS
MICRO: ((2)) RENAL CALCULI
RIGHT
((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
RECTUM	THYROID GL	PARATHYROID GL
SKIN	LYMPH ND, MES	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
BRAIN	SPINAL CORD	NERVE, SCIATIC
OVARIES	UTERUS	CERVIX
TRACHEA	URINARY BLADDER	

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3785E38 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.034	2.194
KIDNEYS	2.550	0.507
HEART	1.307	0.260
SPLEEN	0.629	0.125
BRAIN	1.930	0.384
ADRENAL GL	0.080	0.016
OVARIES	0.069	0.014
TERMINAL BODY WT.	503.0	

```
ADIPOSE TISSUE
    GROSS:        NODULE
                      RIGHT OVARIAN FAT, YELLOW 10X10X5MM
     MICRO+ (3)   STEATITIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((1)) CHOLANGITIS
            (1)  CHOLANGIOFIBROSIS
           ((3)) BASOPHILIC CELL FOCI
PANCREAS
    MICRO: ((3)) ARTERITIS
             4   ACINAR ATROPHY
PITUITARY
    GROSS:        NODULE
                      (2) DARK RED 3X3X2MM AND 4X3X2MM, LEFT
                      SIDE
     MICRO+  P    #B ADENOMA
    MICRO: ((4)) VASCULAR ECTASIA
            (3)  HEMOSIDEROSIS
THYROID GL
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
ADRENAL GL
    MICRO: ((2)) CORTICAL CELL HYPERTROPHY
            (3)  THROMBOSIS
MAMMARY GL
    GROSS:        GALACTOCELE
                      SCATTERED THROUGHOUT, PUNTATE TO 4X4MM
     MICRO+((3)) GALACTOCELE
MAMMARY GL
    GROSS:        MASS
                      VENTRAL THORACIC REGION, MULTILOBULAR,
                      DARK TAN
                      30X15X15MM
     MICRO+ (P)   #B FIBROADENOMA
    MICRO: ((3)) MASTITIS
            (P)  #B ADENOMA
                      SMALL NODULE
           ((3)) FIBROSIS
LYMPH ND, MED
    MICRO:   3   SINUS ERYTHROCYTOSIS
             3   HEMOSIDEROSIS
LYMPH ND, MES
    GROSS:        SIZE INCREASE
                      2X NORMAL
LYMPH ND, MES
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED
     MICRO+  4    SINUS ERYTHROCYTOSIS
                      HEMORRHAGE EXTENDS INTO THE ABDOMINAL
                      FAT
    MICRO: ((3)) HEMOSIDEROSIS
THYMIC REGION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3785E38 (CONTINUED)

```
    MICRO:   2   INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
    MICRO:   2   MYOFIBER ATROPHY
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
UTERUS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     LEFT, 3X3MM DARK RED FOCAL AREA MIDDLE
                     OF HORN
     MICRO+ (3)  HEMORRHAGE
UTERUS
    GROSS:       SIZE INCREASE, SEGMENTAL
                     3X3X4MM RIGHT HORN NEAR BASE
     MICRO+  P   #M STROMAL SARCOMA
                     INFILTRATIVE IN THE WALL OF ONE HORN
VAGINA
    MICRO:   1   VAGINITIS
                     THERE IS A PURULENT DISCHARGE, BUT
                     MINIMAL INFLAMMATION
                     OF THE WALLS
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((1)) TUBULAR PROTEINOSIS
            (2)  MINERALIZATION
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    SPLEEN           LYMPH ND, S-MAN  BONE, STERNUM
    BONE, FEMUR      BONE MARROW      BRAIN
    NERVE, SCIATIC   EYE              OVARIES
    CERVIX           TRACHEA          LUNGS
    URINARY BLADDER
```

ANIMAL 3874E39 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	12.226	3.140
KIDNEYS	3.366	0.864
HEART	1.411	0.362
SPLEEN	0.800	0.205
BRAIN	1.884	0.484
ADRENAL GL	0.128	0.033
OVARIES	0.080	0.021
TERMINAL BODY WT.	389.4	

```
HEART
    MICRO: ((1)) MYOCARDIAL DEGENERATION/FIBROSIS
STOMACH
    MICRO: ((2)) GLAND ECTASIA
LIVER
    MICRO: ((1)) CHOLANGIOFIBROSIS
           ((1)) FATTY CHANGE
           ((1)) BILIARY HYPERPLASIA
PITUITARY
    GROSS:       MASS
                     9X9X9MM, DARK RED
     MICRO+  P   #B ADENOMA
                     VERY LARGE
THYROID GL
    MICRO: ((1)) CALCIFIC CONCRETIONS, COLLOID
           ((2)) C CELL HYPERPLASIA
            (P)  #B C CELL ADENOMA
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3874E39 (CONTINUED)

```
    GROSS:        SIZE INCREASE
                      BOTH, SLIGHT
     MICRO+ (4)   INFARCTION
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      MULTIPLE WHITE FOCI DISSEMINATED OVER
                      SURFACE, BILATERAL
     MICRO+((4)) HEMORRHAGE
    MICRO: ((4)) THROMBOSIS
           ((3)) VASCULAR ECTASIA
            (4)  MINERALIZATION
           ((3)) FIBROSIS
MAMMARY GL
    GROSS:        MASS
                      40X30X40MM, LEFT SIDE, SHOULDER AREA
                      (1)20X20X10MM, LEFT GENITAL AREA
                      (1)15X15X10MM, RIGHT GENITAL
     MICRO+ (P)   #M ADENOCARCINOMA
    MICRO:   P    #B FIBROADENOMA
           ((4)) MASTITIS
PAWS/FEET
    GROSS:        ULCERATED
                      5X5MM, RIGHT HIND FOOT
     MICRO+((4)) ULCERATION
    MICRO: ((4)) FIBROSIS
           ((3)) EPIDERMAL HYPERPLASIA
LYMPH ND, S-MAN
    GROSS:        SIZE INCREASE
                      SLIGHT
     MICRO+((4)) PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
LYMPH ND, OTHER
    GROSS:        SIZE INCREASE
                      LUMBAR, 2X'S
     MICRO+  3    PLASMACYTOSIS
                      LUMBAR NODES
    MICRO: ((3)) LYMPHATIC ECTASIA, CYSTIC
THYMIC REGION
    MICRO:   3    INVOLUTIONAL ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      AROUND PITUITARY
     MICRO+ (4)   COMPRESSION
    MICRO: ((2)) VACUOLIZATION
                      CEREBELLUM
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
VAGINA
    MICRO:   4    VAGINITIS
                      CAUDAL PORTION WORST AFFECTED
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
            (2)  HEMORRHAGE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3874E39 (CONTINUED)

KIDNEYS
MICRO: ((3)) RENAL CALCULI
((2)) TUBULAR PROTEINOSIS
((2)) TUBULAR BASOPHILIA

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
PANCREAS	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	PARATHYROID GL	SKIN
SPLEEN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	URINARY BLADDER	

ANIMAL 3902E40 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.256	2.126
KIDNEYS	3.002	0.689
HEART	1.322	0.304
SPLEEN	0.525	0.121
BRAIN	1.916	0.440
ADRENAL GL	0.081	0.019
OVARIES	0.066	0.015
TERMINAL BODY WT.	435.4	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
COLON
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
SLIGHT
PITUITARY
GROSS: NODULE
2X2X2MM, DARK RED
MICRO+ P #B ADENOMA
THYROID GL
MICRO: ((1)) C CELL HYPERPLASIA
ADRENAL GL
MICRO: ((4)) VASCULAR ECTASIA
((3)) THROMBOSIS
((4)) HEMORRHAGE
EARS
GROSS: THICKER THAN NORMAL
BILATERAL
MICRO+((4)) AURICULAR CHONDROPATHY
THERE IS CHRONIC AND ACTIVE CARTILAGE INFLAMMATION
PRESENT
MAMMARY GL
MICRO: (3) GALACTOCELE
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
3 LYMPHOID HYPERPLASIA
LYMPH ND, MED
MICRO: 3 SINUS ERYTHROCYTOSIS
3 HEMOSIDEROSIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY
NO THYMUS

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3902E40 (CONTINUED)

```
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
UTERUS
    GROSS:       DILATATION/DISTENTION
                     LEFT HORN, 15X10MM AREA, CLEAR FLUID
     MICRO+((3)) LUMINAL ECTASIA
    MICRO:  (4)  GLANDULAR ECTASIA
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO:  (2)  MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((2)) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    RECTUM           PARATHYROID GL   SKIN
    SPLEEN           BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  BRAIN
    NERVE, SCIATIC   EYE              OVARIES
    CERVIX           VAGINA           URINARY BLADDER
```

ANIMAL 3787E41 27-FEB-90 STUDY DAY 707

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:       EMACIATION
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       COLOR CHANGE, DIFFUSE
                     PALE
    MICRO: ((1)) MONONUCLEAR CELL INFILTRATE(S)
            (2)  HEPATOCELLULAR NECROSIS
CECUM
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:       MASS
                     DARK RED, 8X5X5MM
     MICRO+  P   #B ADENOMA
ADRENAL GL
    GROSS:       COLOR CHANGE, DIFFUSE
                     BILATERAL, DARK BROWN
     MICRO+  4   CONGESTION
    MICRO:  (4)  VASCULAR ECTASIA
SKIN
    MICRO:   5   CELLULITIS
                     AROUND AREA OF ABSCESS
            (3)  DERMAL FIBROSIS
MAMMARY GL
    GROSS:       MASS
                     (2) 50X45X10MM INGUINAL REGION AND
                     25X25X15MM LEFT AXILLARY
                     LARGER ONE CREAM MULTILOBULAR AND CYSTIC
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3787E41 (CONTINUED)

```
                                        FILLED WITH THICK CREAM MATERIAL
                                        SMALLER ONE NECROTIC AND ULCERATED ON
                                        SKIN SURFACE
                 MICRO+  P   #B FIBROADENOMA
                MICRO:  (5)  ABSCESS
                                        MAY BE ASSOCIATED WITH A TUMOR, BUT TOO
                                        NECROTIC TO TELL
            SPLEEN
                GROSS:       SIZE INCREASE
                                        50X20X10MM
                 MICRO+  4   EXTRAMEDULLARY HEMATOPOIESIS
            LYMPH ND, S-MAN
                MICRO:   3   PLASMACYTOSIS
            LYMPH ND, MES
                MICRO: ((1)) HISTIOCYTIC AGGREGATES
            THYMIC REGION
                MICRO:   4   INVOLUTIONAL ATROPHY
            BONE MARROW
                MICRO:   4   HYPERPLASIA
            SKELETAL MUSCLE
                MICRO:   4   MYOFIBER ATROPHY
            BRAIN
                GROSS:       DEPRESSION/INDENTATION
                                        ABOVE PITUITARY MASS
                 MICRO+ (3)  COMPRESSION
            OVARIES
                MICRO: ((3)) STROMAL CELL HYPERPLASIA
            LUNGS
                MICRO: ((1)) PNEUMONITIS, INTERSTITIAL
                                        TWO SMALL GRANULOMATOUS FOCI
            KIDNEYS
                MICRO: ((2)) RENAL CALCULI
                       ((1)) TUBULAR PROTEINOSIS
            CAUSE OF DEATH
                MICRO:   P   ADENOMA, PITUITARY
                         P   ABSCESS/SEPTICEMIA
                                        MAMMARY GLAND REGION
            THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                HEART             AORTA             SALIVARY GL
                ESOPHAGUS         PANCREAS          DUODENUM
                JEJUNUM           ILEUM             COLON
                RECTUM            THYROID GL        PARATHYROID GL
                BONE, STERNUM     BONE, FEMUR       SPINAL CORD
                NERVE, SCIATIC    EYE               UTERUS
                CERVIX            VAGINA            TRACHEA
                URINARY BLADDER
```

ANIMAL 3660E42 2-MAR-90 STUDY DAY 710

TYPE OF DEATH: SACRIFICED MORIBUND

```
            TOTAL BODY
                GROSS:       UNKEMPT
            SALIVARY GL
                MICRO:  (3)  ATROPHY
            STOMACH
                MICRO: ((1)) GLAND ECTASIA
            LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3660E42 (CONTINUED)

```
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      PALE FOCAL AREAS SEEN
     MICRO+  4    FATTY CHANGE
    MICRO: ((2)) CHOLANGIOFIBROSIS
CECUM
    GROSS:        CONTENTS ABNORMAL
                      YELLOW MATERIAL
PITUITARY
    GROSS:        SIZE INCREASE
                      7X5X5MM
     MICRO+  P    #M CARCINOMA
THYROID GL
    MICRO:  (1)   THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      BOTH, WHITE FOCI SEEN
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO: ((4)) VASCULAR ECTASIA
           ((3)) HEMORRHAGE
SKIN
    GROSS:        STAINED
                      UROGENITAL AREA
MAMMARY GL
    MICRO: ((4)) GALACTOCELE
LYMPH ND, S-MAN
    MICRO:   3    PLASMACYTOSIS
             4    SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO:   3    SINUS ERYTHROCYTOSIS
           ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4    INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4    HYPOPLASIA
SKELETAL MUSCLE
    MICRO:   2    MYOFIBER ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      AROUND PITUITARY
    MICRO:   2    HYDROCEPHALUS
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
EYE
    GROSS:        CRUST
                      BOTH, SEVERE
CERVIX
    GROSS:        CYST
                      CYST LIKE, 10X10X10MM, FILLED WITH
                      GREEN CREAM FLUID
VAGINA
    MICRO:   2    VAGINITIS
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
            (1)  ADENITIS, SUBMUCOSAL GLANDS
LUNGS
    MICRO:   4    CONGESTION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3660E42 (CONTINUED)

((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
MICRO: ((1)) TUBULAR PROTEINOSIS
((1)) RENAL CALCULI
CAUSE OF DEATH
MICRO: P CARCINOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	ESOPHAGUS
PANCREAS	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	PARATHYROID GL	SKIN
SPLEEN	BONE, STERNUM	BONE, FEMUR
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	URINARY BLADDER

ANIMAL 3841E43 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.278	2.309
KIDNEYS	2.760	0.687
HEART	1.135	0.282
SPLEEN	0.524	0.130
BRAIN	2.161	0.538
ADRENAL GL	0.089	0.022
OVARIES	0.109	0.027
TERMINAL BODY WT.	401.8	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((2)) BILIARY HYPERPLASIA
((2)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
((1)) CHOLANGIOFIBROSIS
PITUITARY
GROSS: MASS
8X8X8MM, DARK RED AND TAN
MICRO+ P #B ADENOMA
MICRO: ((4)) VASCULAR ECTASIA
THYROID GL
MICRO: ((1)) C CELL HYPERPLASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
BOTH, WHITE FOCI SEEN
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: ((4)) INFARCTION
((3)) VASCULAR ECTASIA
MAMMARY GL
GROSS: MASS
RIGHT AXILLARY AREA, 30X40X15MM
MICRO+ (P) #B FIBROADENOMA
MAMMARY GL
GROSS: GALACTOCELE
UROGENITAL AREA, FILLED WITH WHITE CREAM MATERIAL
MICRO+((3)) GALACTOCELE
MICRO: ((2)) MINERALIZATION
LYMPH ND, MED
MICRO: 3 SINUS ERYTHROCYTOSIS
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
BRAIN
GROSS: DEPRESSION/INDENTATION
AROUND PITUITARY
MICRO+ 3 COMPRESSION
EYE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3841E43 (CONTINUED)

```
    MICRO:  (2)  HEMORRHAGE, RETROORBITAL
OVARIES
    MICRO:  (3)  CYST(S)
LUNGS
    GROSS:       SHAPE/CONTOUR CHANGE
                     RIGHT SIDE OF LUNG, RAISED WHITE AREAS
                     SEEN
     MICRO+((3)) ALVEOLAR HISTIOCYTOSIS
    MICRO:  (1)  PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((3)) NEPHRITIS, INTERSTITIAL
                     LYMPHOPLASMACYTIC INFILTRATE IN THE
                     PELVIC REGION,
                     BILATERAL
URINARY BLADDER
    MICRO:   4   CYSTITIS
             3   TRANSITIONAL CELL HYPERPLASIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           PARATHYROID GL
    SKIN             SPLEEN           LYMPH ND, S-MAN
    LYMPH ND, MES    BONE, STERNUM    BONE, FEMUR
    BONE MARROW      SKELETAL MUSCLE  SPINAL CORD
    NERVE, SCIATIC   UTERUS           CERVIX
    VAGINA           TRACHEA
```

ANIMAL 3813E44 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.936	1.968
KIDNEYS	2.878	0.518
HEART	1.393	0.251
SPLEEN	0.841	0.151
BRAIN	2.088	0.376
ADRENAL GL	0.072	0.013
OVARIES	1.244	0.224
TERMINAL BODY WT.	555.8	

```
HEART
    MICRO:  (2)  FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO: ((3)) FATTY CHANGE
           ((1)) MONONUCLEAR CELL INFILTRATE(S)
PITUITARY
    MICRO:  (P)  #B ADENOMA
THYROID GL
    MICRO: ((3)) C CELL HYPERPLASIA
ADRENAL GL
    MICRO: ((4)) VASCULAR ECTASIA
           ((4)) HEMORRHAGE
MAMMARY GL
    MICRO: ((2)) MINERALIZATION
           ((2)) HYPERSECRETION
PAWS/FEET
    GROSS:       ULCERATED
                     10X5X1MM, LEFT
     MICRO+ (4)  ULCERATION
    MICRO:  (3)  EPIDERMAL HYPERPLASIA
            (4)  FIBROSIS
SPLEEN
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3813E44 (CONTINUED)

```
    MICRO:   3   EXTRAMEDULLARY HEMATOPOIESIS
LYMPH ND, S-MAN
    MICRO:  (3)  PLASMACYTOSIS
LYMPH ND, MED
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
                     BILATERAL
     MICRO+  4   SINUS ERYTHROCYTOSIS
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BONE MARROW
    MICRO:   4   HYPERPLASIA
BRAIN
    MICRO: ((1)) VACUOLIZATION
SPINAL CORD
    MICRO: ((1)) VACUOLIZATION
OVARIES
    GROSS:       CYST
                     ;LEFT, 5X4X3MM, CLEAR FLUID FILLED
                     RIGHT, 3X2X2MM, CLEAR FLUID FILLED
     MICRO+ (5)  CYST(S)
KIDNEYS
    MICRO: ((1)) NEPHRITIS, INTERSTITIAL
           ((1)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA            SALIVARY GL      ESOPHAGUS
    PANCREAS         DUODENUM         JEJUNUM
    ILEUM            CECUM            COLON
    RECTUM           PARATHYROID GL   SKIN
    LYMPH ND, MES    BONE, STERNUM    BONE, FEMUR
    SKELETAL MUSCLE  NERVE, SCIATIC   EYE
    UTERUS           CERVIX           VAGINA
    TRACHEA          LUNGS            URINARY BLADDER
```

ANIMAL 3884E45 20-OCT-89 STUDY DAY 577

TYPE OF DEATH: SACRIFICED MORIBUND

```
TOTAL BODY
    GROSS:       EMACIATION
STOMACH
    MICRO: ((1)) GLAND ECTASIA
             4   EDEMA
LIVER
    MICRO: ((2)) FATTY CHANGE
            (1)  BILIARY HYPERPLASIA
PANCREAS
    MICRO:  (1)  LYMPHOID INFILTRATES
PITUITARY
    GROSS:       MASS
                     10X10X5MM, DARK RED
     MICRO+  P   #B ADENOMA
THYROID GL
    GROSS:       SIZE DECREASE
                     1/4 NORMAL, LEFT
    MICRO: ((2)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3884E45 (CONTINUED)

```
        MICRO: ((3)) VASCULAR ECTASIA
SKIN
        GROSS:       CRUST
                         PERIOCULAR AREA, BILATERAL
SUBCUTIS
        GROSS:       MASS
                         RIGHT AXILLARY, 40X20X10MM, TAN
MAMMARY GL
        MICRO: ((4)) GALACTOCELE
                (P)  #B FIBROADENOMA
SPLEEN
        MICRO:   3   HEMOSIDEROSIS
LYMPH ND, MES
        MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
        MICRO:   4   INVOLUTIONAL ATROPHY
               ((2)) EPITHELIAL CYST(S)
SKELETAL MUSCLE
        MICRO:   2   MYOFIBER ATROPHY
BRAIN
        GROSS:       DEPRESSION/INDENTATION
                         OVER PITUITARY
         MICRO+  3   COMPRESSION
VAGINA
        GROSS:       CONTENTS ABNORMAL
                         GREEN MATERIAL
         MICRO+  1   VAGINITIS
TRACHEA
        MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
        MICRO:   4   CONGESTION
               ((1)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
        MICRO: ((2)) RENAL CALCULI
                         BILATERAL
CAUSE OF DEATH
        MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
        HEART            AORTA            SALIVARY GL
        ESOPHAGUS        DUODENUM         JEJUNUM
        CECUM            COLON            RECTUM
        PARATHYROID GL   SKIN             SUBCUTIS
        BONE, STERNUM    BONE, FEMUR      BONE MARROW
        SPINAL CORD      NERVE, SCIATIC   EYE
        OVARIES          UTERUS           CERVIX
        URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
        LYMPH ND, S-MAN
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
        ILEUM
```

ANIMAL 4025E46 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	13.734	3.817
KIDNEYS	2.879	0.800

```
STOMACH
        MICRO: ((1)) GLAND ECTASIA
LIVER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4025E46 (CONTINUED)

HEART	1.753	0.487	GROSS:		COLOR CHANGE, DIFFUSE
SPLEEN	2.214	0.615			PALE, ALL LOBES
BRAIN	2.046	0.569	MICRO:	((2))	CHOLANGITIS
ADRENAL GL	0.097	0.027		((2))	EXTRAMEDULLARY HEMATOPOIESIS
OVARIES	0.120	0.033		((1))	BILIARY HYPERPLASIA
TERMINAL BODY WT.	359.8			((1))	CHOLANGIOFIBROSIS
			CECUM		
			MICRO:	((P))	NEMATODIASIS
			PITUITARY		
			GROSS:		MASS
					10X5X5MM, TAN
			MICRO↑	P	#M CARCINOMA
			THYROID GL		
			MICRO:	((2))	CALCIFIC CONCRETIONS, COLLOID
				((2))	C CELL HYPERPLASIA
			ADRENAL GL		
			GROSS:		COLOR CHANGE, FOCAL/MULTIFOCAL
					MULTIPLE WHITE FOCI, BILATERAL
			MICRO↑	((2))	CORTICAL CELL HYPERTROPHY
			SKIN		
			MICRO:	4	CELLULITIS
					ASSOCIATED WITH THE MAMMARY TUMOR
			SUBCUTIS		
			GROSS:		MASS
					CRATERFORM, 80X40X15MM, FIRM, FLUID FILLED;
					RIGHT INGUINAL REGION
			MAMMARY GL		
			MICRO:	P	#M ADENOCARCINOMA
				4	MASTITIS
				((3))	FIBROSIS
			SPLEEN		
			GROSS:		SIZE INCREASE
					3X NORMAL
			MICRO↑	4	EXTRAMEDULLARY HEMATOPOIESIS
			SPLEEN		
			GROSS:		NODULE
					3X3X1MM, YELLOW, NEAR POLE
			MICRO↑	(4)	INFARCTION
					CHRONIC, POSSIBLY FROM A BACTERIAL EMBOLUS
			LYMPH ND, MES		
			MICRO:	((3))	HISTIOCYTIC AGGREGATES
				((3))	HEMOSIDEROSIS
			BONE MARROW		
			MICRO:	4	HYPERPLASIA
			BRAIN		
			GROSS:		DEPRESSION/INDENTATION
					AREA OVER PITUITARY
			MICRO↑	3	COMPRESSION
			SPINAL CORD		
			MICRO:	((1))	VACUOLIZATION
			LUNGS		
			MICRO:	((2))	ALVEOLAR HISTIOCYTOSIS
				((1))	PERIVASCULAR INFILTRATE(S)
				(P)	#M CARCINOMA

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4025E46 (CONTINUED)

SMALL NODULE, PROBABLY METASTATIC FROM
THE MAMMARY GLAND

KIDNEYS
MICRO: ((2)) TUBULAR BASOPHILIA
((1)) NEPHRITIS, INTERSTITIAL
((1)) TUBULAR PROTEINOSIS

THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	COLON
RECTUM	SUBCUTIS	LYMPH ND, S-MAN
BONE, STERNUM	BONE, FEMUR	SKELETAL MUSCLE
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	VAGINA
TRACHEA	URINARY BLADDER	

THE FOLLOWING TISSUES WERE MISSING:
PARATHYROID GL THYMIC REGION

ANIMAL 4013E47 27-NOV-89 STUDY DAY 615
TYPE OF DEATH: FOUND DEAD

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: SWOLLEN
ALL LOBES
PANCREAS
MICRO: (1) LYMPHOID INFILTRATES
PITUITARY
GROSS: SIZE INCREASE
5X5X5MM
MICRO+ P #B ADENOMA
VERY LARGE
PITUITARY
GROSS: COLOR CHANGE, DIFFUSE
RED
MICRO+((4)) HEMORRHAGE
MICRO: ((2)) HEMOSIDEROSIS
ADRENAL GL
MICRO: ((4)) VASCULAR ECTASIA
(3) THROMBOSIS
(3) INFARCTION
((3)) HEMORRHAGE
((1)) HEMOSIDEROSIS
(1) FIBROSIS
MAMMARY GL
MICRO: ((4)) GALACTOCELE
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
BRAIN
GROSS: DEPRESSION/INDENTATION
AROUND PITUITARY
MICRO+ (4) COMPRESSION
MICRO: (3) HEMORRHAGE
WITHIN THE LATERAL VENTRICLES
LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4013E47 (CONTINUED)

```
                                        ALL LOBES MOTTLED RED AND PINK
     MICRO+  4   CONGESTION
KIDNEYS
    GROSS:       HYDRONEPHROSIS
                     RIGHT, SLIGHT
     MICRO+  2   HYDRONEPHROSIS
                     RIGHT
    MICRO: ((3)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
           ((2)) RENAL CALCULI
           ((2)) TUBULAR BASOPHILIA
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           THYROID GL
    PARATHYROID GL   SKIN             SPLEEN
    LYMPH ND, MES    THYMIC REGION    BONE, STERNUM
    BONE, FEMUR      BONE MARROW      SKELETAL MUSCLE
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           TRACHEA          URINARY BLADDER
```

ANIMAL 3916E48 22-MAR-90 STUDY DAY 730

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	14.407	3.382
KIDNEYS	3.862	0.906
HEART	1.809	0.425
SPLEEN	0.600	0.141
BRAIN	1.963	0.461
ADRENAL GL	0.132	0.031
OVARIES	0.127	0.030
TERMINAL BODY WT.	426.0	

```
HEART
    MICRO:  (2)  FIBROSIS
STOMACH
    MICRO: ((1)) GLAND ECTASIA
LIVER
    GROSS:       SWOLLEN
                     ALL LOBES
    MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION
PITUITARY
    GROSS:       SIZE INCREASE
                     2X NORMAL
     MICRO+  P   #B ADENOMA
THYROID GL
    MICRO:  (4)  ARTERITIS
ADRENAL GL
    GROSS:       MASS
                     LEFT, 4X5X3MM DARK RED, BILOBE
     MICRO+ (5)  INFARCTION
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     BILATERAL,DARK RED MULTIPLE 2MM FOCAL
                     AREAS
     MICRO+((4)) HEMORRHAGE
    MICRO: ((3)) VASCULAR ECTASIA
           ((2)) HEMOSIDEROSIS
           ((1)) FIBROSIS
SKIN
    GROSS:       ALOPECIA
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3916E48 (CONTINUED)

```
                                        MULTIPLE AREAS ON THE VENTRAL SIDE
MAMMARY GL
    GROSS:          GALACTOCELE
                        MULTIPLE 2X2MM
     MICRO+((4)) GALACTOCELE
    MICRO: ((4)) HYPERSECRETION
            (P)  #B ADENOMA
                        SMALL NODULE
LYMPH ND, S-MAN
    MICRO:   3   PLASMACYTOSIS
             3   LYMPHOID HYPERPLASIA
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
           ((1)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
EYE
    MICRO:  (4)  HEMORRHAGE, RETROORBITAL
UTERUS
    MICRO:  (3)  GLANDULAR ECTASIA
LUNGS
    GROSS:          COLOR CHANGE, DIFFUSE
                        ALL LOBES, DARK PINK
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
            (1)  MINERALIZATION, PULMONARY VESSEL(S)
           ((1)) PNEUMONITIS, INTERSTITIAL
KIDNEYS
    GROSS:          DIMPLED/PITTED
                        RIGHT, 2MM PITTED AREA NEAR THE GREATER
                        CURVATURE
KIDNEYS
    GROSS:          HYDRONEPHROSIS
                        RIGHT SLIGHT
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((1)) NEPHRITIS, INTERSTITIAL
           ((2)) TUBULAR BASOPHILIA
           ((2)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    AORTA             SALIVARY GL       ESOPHAGUS
    PANCREAS          DUODENUM          JEJUNUM
    ILEUM             CECUM             COLON
    RECTUM            PARATHYROID GL    SKIN
    SPLEEN            BONE, STERNUM     BONE, FEMUR
    BONE MARROW       SKELETAL MUSCLE   BRAIN
    SPINAL CORD       NERVE, SCIATIC    OVARIES
    CERVIX            VAGINA            TRACHEA
    URINARY BLADDER
```

ANIMAL 3950E49 30-JUN-89 STUDY DAY 465
TYPE OF DEATH: SACRIFICED MORIBUND

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
PITUITARY
    GROSS:          SIZE INCREASE
                        8X8X5MM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3950E49 (CONTINUED)

```
     MICRO+  P   #B ADENOMA
PITUITARY
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
THYROID GL
    MICRO:  (P)  THYROGLOSSAL DUCT CYST
PARATHYROID GL
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED
ADRENAL GL
    GROSS:       SIZE INCREASE
                     3X NORMAL, LEFT
     MICRO+ (5)  INFARCTION
ADRENAL GL
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED, LEFT
     MICRO+ (5)  VASCULAR ECTASIA
    MICRO:  (4)  CONGESTION
MAMMARY GL
    MICRO: ((4)) GALACTOCELE
             3   HYPERSECRETION
          ((1)) MINERALIZATION
SPLEEN
    MICRO:   3   HEMOSIDEROSIS
LYMPH ND, MED
    MICRO:   2   HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   2   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO PITUITARY ENLARGEMENT
EYE
    GROSS:       CRUST
                     DARK RED, RIGHT PERIOCULAR AREA
VAGINA
    MICRO:   2   VAGINITIS
LUNGS
    MICRO: ((2)) MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    PARATHYROID GL   SKIN             LYMPH ND, S-MAN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
    SKELETAL MUSCLE  BRAIN            SPINAL CORD
    NERVE, SCIATIC   EYE              OVARIES
    UTERUS           CERVIX           TRACHEA
    URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4015E50 28-MAR-90 STUDY DAY 736
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.777	2.413
KIDNEYS	2.725	0.673
HEART	1.393	0.344
SPLEEN	0.809	0.200
BRAIN	1.916	0.473
ADRENAL GL	0.129	0.032
OVARIES	0.105	0.026
TERMINAL BODY WT.	405.1	

HEART
MICRO: ((2)) FIBROSIS
STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
GROSS: NODULE
3X3X2MM, TAN, BETWEEN MEDIAN LOBES
MICRO+ (P) #B HEPATOCELLULAR ADENOMA
PITUITARY
MICRO: P #B ADENOMA
THYROID GL
MICRO: ((P)) THYROGLOSSAL DUCT CYST
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
TAN AND BROWN, BILATERAL
MICRO+((3)) VASCULAR ECTASIA
ADRENAL GL
GROSS: SIZE INCREASE
2X NORMAL, LEFT
MICRO+ (5) INFARCTION
MICRO: ((P)) #B ADENOMA
IT IS DIFFICULT TO TELL IF THESE ARE
TRUE ADENOMAS
OR NODULAR HYPERPLASIAS. THEY ARE
LOCATED AT THE SITE
OF THE LARGE INFARCTION.
((3)) THROMBOSIS
MAMMARY GL
MICRO: 2 HYPERSECRETION
LYMPH ND, S-MAN
MICRO: 2 PLASMACYTOSIS
LYMPH ND, MES
MICRO: ((2)) HEMOSIDEROSIS
((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
SPINAL CORD
MICRO: ((1)) VACUOLIZATION
LUNGS
MICRO: ((1)) PNEUMONITIS, INTERSTITIAL
((1)) PERIVASCULAR INFILTRATE(S)
(2) BRONCHIOALVEOLAR CELL HYPERPLASIA
KIDNEYS
MICRO: ((2)) RENAL CALCULI
(1) NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

AORTA	SALIVARY GL	ESOPHAGUS
PANCREAS	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	PARATHYROID GL	SKIN
SPLEEN	BONE, STERNUM	BONE, FEMUR
BONE MARROW	SKELETAL MUSCLE	BRAIN
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	VAGINA

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 4015E50 (CONTINUED)

TRACHEA URINARY BLADDER

ANIMAL 3765E51 20-FEB-90 STUDY DAY 700
TYPE OF DEATH: FOUND DEAD

```
TOTAL BODY
    GROSS:        EMACIATION
STOMACH
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      SEVERAL BLACK 1MM FOCAL AREAS,
                      GLANDULAR PORTION
    MICRO: ((1)) GLAND ECTASIA
LIVER
    MICRO:  (1)  CHOLANGIOFIBROSIS
PITUITARY
    GROSS:        MASS
                      10X5X3MM DARK RED AND SOFT
     MICRO+  P   #B ADENOMA
    MICRO:   5   HEMORRHAGE
ADRENAL GL
    GROSS:        COLOR CHANGE, FOCAL/MULTIFOCAL
                      BILATERAL, PUNCTATE CREAM FOCAL AREAS,
                      MULTIPLE
     MICRO+((1)) CORTICAL CELL HYPERTROPHY
    MICRO: ((4)) VASCULAR ECTASIA
           ((3)) THROMBOSIS
            (3)  INFARCTION
SKIN
    GROSS:        STAINED
                      UROGENTIAL REGION, YELLOW
NARES/NOSE
    GROSS:        CRUST
                      RED, PERINASAL REGION
     MICRO+ (3)  ABSCESS
MAMMARY GL
    GROSS:        GALACTOCELE
                      PUNCTATE SCATTERED THROUGHOUT
     MICRO+((3)) HYPERSECRETION
MAMMARY GL
    GROSS:        NODULE
                      20X10X5MM RIGHT INGUINAL REGION, FIRM
                      AND CREAM
     MICRO+ (P)  #B FIBROADENOMA
PAWS/FEET
    GROSS:        ULCERATED
                      BILATERAL, RED, LEFT 10X5MM, RIGHT 5X3MM
     MICRO+ (4)  ULCERATION
    MICRO:  (4)  FIBROSIS
LYMPH ND, S-MAN
    GROSS:        SIZE INCREASE
                      DARK RED, INCREASE SIZE 2X NORMAL
     MICRO+  4   PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3765E51 (CONTINUED)

```
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE, STERNUM
    GROSS:       DEFORMITY
                     LOWER RIB ON RIGHT SIDE
     MICRO+  P   ANOMALY
                     OF RIB
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    MICRO:   3   MYOFIBER ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     ABOVE PITUITARY MASS
     MICRO+  3   COMPRESSION
    MICRO:   3   HYDROCEPHALUS
EYE
    GROSS:       CRUST
                     LEFT, RED, PERIOCULAR TISSUE
OVARIES
    GROSS:       CYST
                     4X3X3MM, CLEAR FLUID FILLED, LEFT
     MICRO+ (4)  CYST(S)
VAGINA
    MICRO:   2   VAGINITIS
NASAL CAVITY
    MICRO:   4   RHINITIS
            (P)  TOOTH ROOT ABSCESS
LUNGS
    GROSS:       COLOR CHANGE, DIFFUSE
                     ALL LOBES BRIGHT PINK
     MICRO+  4   CONGESTION
LUNGS
    GROSS:       INCOMPLETE COLLAPSE
                     ALL LOBES
    MICRO: ((2)) ALVEOLAR HISTIOCYTOSIS
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          ILEUM            CECUM
    COLON            RECTUM           THYROID GL
    PARATHYROID GL   SKIN             SPLEEN
    BONE, FEMUR      SPINAL CORD      NERVE, SCIATIC
    EYE              UTERUS           CERVIX
    TRACHEA          URINARY BLADDER
```

ANIMAL 3754E52 23-MAR-90 STUDY DAY 731

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.905	2.628
KIDNEYS	3.462	0.834
HEART	1.458	0.351

```
LIVER
    MICRO:  (1)  MONONUCLEAR CELL INFILTRATE(S)
            (1)  CHOLANGIOFIBROSIS
CECUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3754E52 (CONTINUED)

SPLEEN	0.835	0.201
BRAIN	1.939	0.467
ADRENAL GL	0.104	0.025
OVARIES	0.105	0.025
TERMINAL BODY WT.	415.0	

```
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:       MASS
                     7X5X4MM, BLACK AND TAN
     MICRO+  P   #M CARCINOMA
    MICRO: ((3)) HEMORRHAGE
THYROID GL
    MICRO:  (3)  C CELL HYPERPLASIA
           ((P)) THYROGLOSSAL DUCT CYST
ADRENAL GL
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MULTIPLE WHITE FOCI DISSEMINATED OVER
                     SURFACE, BILATERAL
     MICRO+((3)) CORTICAL CELL VACUOLIZATION
MAMMARY GL
    GROSS:       MASS
                     LEFT INGUINAL, MULTILOBULAR, PARTIAL
                     NECROSIS, 35X30X10MM
                     LEFT SHOULDER AREA, 15X15X10MM, RED
                     FLUID FILLED
     MICRO+  P   #B FIBROADENOMA
    MICRO: ((3)) GALACTOCELE
             (P)  #M SQUAMOUS CELL CARCINOMA
                     MAMMARY DUCT TUMOR
LYMPH ND, S-MAN
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK TAN
     MICRO+  4   PLASMACYTOSIS
    MICRO:   4   LYMPHOID HYPERPLASIA
LYMPH ND, MES
    MICRO: ((2)) HISTIOCYTIC AGGREGATES
           ((1)) SINUS ERYTHROCYTOSIS
           ((2)) HEMOSIDEROSIS
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     DUE TO ENLARGED PITUITARY
     MICRO+  3   COMPRESSION
    MICRO: ((2)) VACUOLIZATION
OVARIES
    MICRO: ((3)) CYST(S)
VAGINA
    MICRO:  (1)  VAGINITIS
TRACHEA
    MICRO: ((2)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
    MICRO: ((2)) RENAL CALCULI
           ((3)) TUBULAR PROTEINOSIS
           ((2)) TUBULAR BASOPHILIA
            (1)  NEPHRITIS, INTERSTITIAL
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART          AORTA          SALIVARY GL
    ESOPHAGUS      STOMACH        PANCREAS
    DUODENUM       JEJUNUM        ILEUM
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3754E52 (CONTINUED)

COLON	RECTUM	PARATHYROID GL
SKIN	SPLEEN	BONE, STERNUM
BONE, FEMUR	BONE MARROW	SKELETAL MUSCLE
SPINAL CORD	NERVE, SCIATIC	EYE
UTERUS	CERVIX	URINARY BLADDER

ANIMAL 3995E53 6-FEB-90 STUDY DAY 686
TYPE OF DEATH: FOUND DEAD

```
STOMACH
    MICRO: ((1)) GLAND ECTASIA
            (3)  GASTRITIS
                     NONGLANDULAR STOMACH
THYROID GL
    MICRO: ((3)) C CELL HYPERPLASIA
           ((1)) CALCIFIC CONCRETIONS, COLLOID
ADRENAL GL
    GROSS:       SIZE INCREASE
                     2X NORMAL DARK BROWN
                     RIGHT
     MICRO+((5)) VASCULAR ECTASIA
    MICRO:  (4)  INFARCTION
SKIN
    GROSS:       STAINED
                     YELLOW, UROGENTIAL REGION
     MICRO+ (4)  ULCERATION
                     PERINEAL REGION
MAMMARY GL
    MICRO: ((2)) HYPERSECRETION
LYMPH ND, MES
    MICRO: ((3)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   4   INVOLUTIONAL ATROPHY
BONE, VERTEBRA
    GROSS:       MASS
                     LUMBAR VERTEBRAE 2CMX1.5CMX3CM
                     INVOLVING SPINAL CORD
                     MULTINODULAR BONEY MASS
     MICRO+  P   #M OSTEOSARCOMA
                     A VERY LARGE MASS TOTALLY DESTROYING
                     THE BONE
BONE MARROW
    MICRO:   4   HYPERPLASIA
SKELETAL MUSCLE
    GROSS:       ATROPHY
                     HIND LEG MUSCLES, BILATERAL
     MICRO+  5   MYOFIBER ATROPHY
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     1 TO 3MM CREAM FOCAL AREAS SCATTERED ON
                     ALL LOBES
     MICRO+((3)) #M OSTEOSARCOMA
                     MULTIPLE METASTATIC SITES
    MICRO:   3   CONGESTION
KIDNEYS
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3995E53 (CONTINUED)

```
                    GROSS:        HYDRONEPHROSIS
                                      RIGHT, MILD
                     MICRO+ (3)   HYDRONEPHROSIS
                                      RIGHT
                    MICRO: ((4)) PYELITIS
                                      BILATERAL
                           (2)   RENAL CALCULI
                URINARY BLADDER
                    GROSS:        DILATATION/DISTENTION
                                      60X40X25MM
                    MICRO:    4   CYSTITIS
                                      THE BLADDER IS ENLARGED AND DIFFUSELY
                                      THICKENED AND
                                      INFLAMMED
                              4   TRANSITIONAL CELL HYPERPLASIA
                CAUSE OF DEATH
                    MICRO:    P   OSTEOSARCOMA
                                      VERTEBRAL ORIGIN
                THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
                    HEART             AORTA             SALIVARY GL
                    ESOPHAGUS         LIVER             PANCREAS
                    DUODENUM          JEJUNUM           CECUM
                    COLON             RECTUM            PITUITARY
                    PARATHYROID GL    SPLEEN            LYMPH ND, S-MAN
                    BONE, STERNUM     BONE, FEMUR       BRAIN
                    SPINAL CORD       NERVE, SCIATIC    EYE
                    OVARIES           UTERUS            CERVIX
                    VAGINA            TRACHEA
                THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
                    ILEUM
```

ANIMAL 3678E54 8-MAR-90 STUDY DAY 716

```
TYPE OF DEATH: SAC DUE TO ULCERATED MASS
                TOTAL BODY
                    GROSS:        EMACIATION
                TOTAL BODY
                    GROSS:        UNKEMPT
                                      URINE STAINED
                STOMACH
                    MICRO:    4   ULCER
                                      SEVERE ULCERATION IN THE NONGLANDULAR
                                      STOMACH
                PITUITARY
                    GROSS:        SIZE INCREASE
                                      8X6X5MM
                     MICRO+   P   #B ADENOMA
                PITUITARY
                    GROSS:        COLOR CHANGE, DIFFUSE
                                      DARK RED
                     MICRO+   4   HEMORRHAGE
                THYROID GL
                    MICRO: ((P)) THYROGLOSSAL DUCT CYST
                ADRENAL GL
                    MICRO: ((3)) CORTICAL CELL VACUOLIZATION
                NARES/NOSE
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3678E54 (CONTINUED)

```
    GROSS:        CRUST
                      BILATERAL
     MICRO+  3    HEMORRHAGE
MAMMARY GL
    GROSS:        MASS
                      RIGHT, IRREGULAR, CRUSTED,
                      ULCERATED,40X40X20MM
                      LEFT, SPHERICAL, SUBCUTIS, 35X35X35
     MICRO+ (P)   #B ADENOMA
    MICRO: ((3))  GALACTOCELE
           ((3))  FIBROSIS
SPLEEN
    GROSS:        SIZE DECREASE
                      1/2 NORMAL
    MICRO:   4    HEMOSIDEROSIS
LYMPH ND, MES
    MICRO: ((1))  HISTIOCYTIC AGGREGATES
           ((2))  LYMPHOID NECROSIS
           ((3))  LYMPHOID HYPERPLASIA
THYMIC REGION
    MICRO:   3    LYMPHOID HYPERPLASIA
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO ENLARGED PITUITARY
     MICRO+  4    COMPRESSION
    MICRO:   3    HYDROCEPHALUS
           ((1))  VACUOLIZATION
                      CEREBELLUM
SPINAL CORD
    MICRO: ((1))  VACUOLIZATION
EYE
    MICRO:  (2)   CATARACT
UTERUS
    MICRO:  (3)   GLANDULAR ECTASIA
NASAL CAVITY
    MICRO:   4    RHINITIS
            (4)   TOOTH ROOT ABSCESS
                      THIS IS PROBABLY THE SOURCE OF THE
                      RHINITIS
TRACHEA
    MICRO:  (2)   ADENITIS, SUBMUCOSAL GLANDS
LUNGS
    MICRO:  (1)   MINERALIZATION, PULMONARY VESSEL(S)
KIDNEYS
    MICRO: ((1))  RENAL CALCULI
URINARY BLADDER
    MICRO:   3    CYSTITIS
             4    TRANSITIONAL CELL HYPERPLASIA
CAUSE OF DEATH
    MICRO:   P    ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        LIVER            PANCREAS
    DUODENUM         JEJUNUM          ILEUM
    CECUM            COLON            RECTUM
    PARATHYROID GL   SKIN             LYMPH ND, S-MAN
    BONE, STERNUM    BONE, FEMUR      BONE MARROW
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL
BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3678E54 (CONTINUED)

SKELETAL MUSCLE NERVE, SCIATIC OVARIES
CERVIX VAGINA

ANIMAL 3769E55 9-JAN-90 STUDY DAY 658
TYPE OF DEATH: FOUND DEAD

STOMACH
GROSS: CONTENTS ABNORMAL
FILLED WITH A RED FLUID
STOMACH
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
GLANDULAR PORTION 2 1MM DARK RED FOCAL
AREAS
MICRO: ((1)) GLAND ECTASIA
(3) MUCOSAL HYPERPLASIA
NONGLANDULAR STOMACH
LIVER
GROSS: SWOLLEN
LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MOTTLED RED AND TAN WITH 1MM CREAM
FOCAL AREAS ALL LOBES
MICRO+ P #M HISTIOCYTIC SARCOMA
THE NEOPLASM IS PRESENTLY DIFFUSELY
THROUGHOUT THE LIVER
AND IS ASSOCIATED WITH EXTENSIVE
NECROSIS, INFLAMMATION,
AND COLLAPSE OF THE PARENCHYMA.
CECUM
MICRO: (2) TYPHLITIS
PITUITARY
GROSS: MASS
DARK RED, 5X5X2MM
MICRO+ P #B ADENOMA
MICRO: ((4)) VASCULAR ECTASIA
THYROID GL
MICRO: (2) C CELL HYPERPLASIA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
RIGHT, DARK BROWN 1MM FOCAL AREAS
MICRO+((4)) VASCULAR ECTASIA
SUBCUTIS
GROSS: MASS
7X5X3MM DARK BROWN RIGHT AXILLARY REGION
MICRO+ (P) #B HEMANGIOMA
SMALL NODULE
MAMMARY GL
MICRO: ((2)) MASTITIS
SPLEEN
GROSS: SIZE INCREASE
50X15X5MM
MICRO+ 4 EXTRAMEDULLARY HEMATOPOIESIS
MICRO: 4 CONGESTION
LYMPH ND, S-MAN
GROSS: COLOR CHANGE, DIFFUSE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3769E55 (CONTINUED)

```
                                DARK RED
     MICRO+ (4)  SINUS ERYTHROCYTOSIS
LYMPH ND, MED
    MICRO: ((4)) SINUS ERYTHROCYTOSIS
LYMPH ND, MES
    MICRO:   3   SINUS ERYTHROCYTOSIS
           ((2)) HISTIOCYTIC AGGREGATES
LYMPH ND, REN
    GROSS:       COLOR CHANGE, DIFFUSE
                     DARK RED BILATERAL
     MICRO+  4   SINUS ERYTHROCYTOSIS
    MICRO: ((2)) HEMOSIDEROSIS
           ((3)) EXTRAMEDULLARY HEMATOPOIESIS
THYMIC REGION
    MICRO:   5   INVOLUTIONAL ATROPHY
                     NO THYMUS
BONE MARROW
    MICRO: ((4)) HYPERPLASIA
BRAIN
    GROSS:       DEPRESSION/INDENTATION
                     ABOVE PITUITARY
     MICRO+ (3)  COMPRESSION
TRACHEA
    MICRO: ((3)) SUBMUCOSAL GLAND ECTASIA
LUNGS
    GROSS:       COLOR CHANGE, FOCAL/MULTIFOCAL
                     MOTTLED DARK BROWN AND RED WITH 1MM RED
                     FOCAL AREAS
     MICRO+((3)) #M HISTIOCYTIC SARCOMA
                     MANY METASTATIC NODULES ARE PRESENT IN
                     THE LUNGS, MOST IN
                     THE PERIPHERY OF LOBES AND AROUND BLOOD
                     VESSELS
    MICRO: ((3)) PNEUMONITIS, INTERSTITIAL
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
            (3)  #M HISTIOCYTIC SARCOMA
                     SMALL NODULE IN THE RIGHT CORTEX
CAUSE OF DEATH
    MICRO:   P   HISTIOCYTIC SARCOMA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART            AORTA            SALIVARY GL
    ESOPHAGUS        PANCREAS         DUODENUM
    JEJUNUM          COLON            SKIN
    BONE, STERNUM    BONE, FEMUR      SKELETAL MUSCLE
    SPINAL CORD      NERVE, SCIATIC   EYE
    OVARIES          UTERUS           CERVIX
    VAGINA           URINARY BLADDER
THE FOLLOWING TISSUES WERE MISSING:
    RECTUM           PARATHYROID GL
THE FOLLOWING TISSUES WERE TOO AUTOLYZED FOR EVALUATION:
    ILEUM
```

ANIMAL 3864E56 27-OCT-89 STUDY DAY 584
TYPE OF DEATH: SACRIFICED MORIBUND

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STOMACH
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See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3864E56 (CONTINUED)

```
    GROSS:        DIVERTICULUM
                      2X2X1 MM, NON-GLANDULAR PORTION
    MICRO: ((1)) GLAND ECTASIA
CECUM
    MICRO:   P   NEMATODIASIS
PITUITARY
    GROSS:        MASS
                      12X7X5 MM
     MICRO+  P   #B ADENOMA
ADRENAL GL
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED, BILATERAL
     MICRO+  4   HEMORRHAGE
    MICRO:  (5)  INFARCTION
            ((1)) HEMOSIDEROSIS
            ((4)) VASCULAR ECTASIA
MAMMARY GL
    MICRO:  (2)  MASTITIS
LYMPH ND, S-MAN
    MICRO: ((3)) PLASMACYTOSIS
LYMPH ND, MES
    MICRO: ((1)) HISTIOCYTIC AGGREGATES
THYMIC REGION
    MICRO:   3   INVOLUTIONAL ATROPHY
BRAIN
    GROSS:        DEPRESSION/INDENTATION
                      DUE TO PITUITARY MASS
     MICRO+  4   COMPRESSION
EYE
    GROSS:        CRUST
                      RED, LEFT PERIOCULAR REGION
UTERUS
    GROSS:        CYST
                      10X5X3 MM, AT TOP OF HORN, NEAR RIGHT
                      OVARY
LUNGS
    GROSS:        COLOR CHANGE, DIFFUSE
                      DARK RED, ALL LOBES
     MICRO+  4   CONGESTION
KIDNEYS
    MICRO: ((2)) TUBULAR PROTEINOSIS
           ((1)) TUBULAR BASOPHILIA
           ((2)) RENAL CALCULI
           ((2)) NEPHRITIS, INTERSTITIAL
CAUSE OF DEATH
    MICRO:   P   ADENOMA, PITUITARY
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         LIVER             PANCREAS
    DUODENUM          JEJUNUM           ILEUM
    COLON             RECTUM            THYROID GL
    PARATHYROID GL    SKIN              SPLEEN
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    SKELETAL MUSCLE   SPINAL CORD       NERVE, SCIATIC
    EYE               OVARIES           UTERUS
    CERVIX            VAGINA            TRACHEA
    URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3999E57 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.349	2.210
KIDNEYS	2.742	0.648
HEART	1.279	0.302
SPLEEN	0.613	0.145
BRAIN	2.022	0.478
ADRENAL GL	0.147	0.035
OVARIES	0.119	0.028
TERMINAL BODY WT.	423.0	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) CHOLANGITIS
PITUITARY
GROSS: SIZE INCREASE
SLIGHT
MICRO+ P #B ADENOMA
PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE DARK RED FOCI
THYROID GL
MICRO: ((P)) #B C CELL ADENOMA
ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE DARK RED FOCI, BILATERAL
MULTIPLE WHITE FOCI DISSEMINATED OVER SURFACE, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: ((5)) VASCULAR ECTASIA
((2)) FIBROSIS
((1)) HEMOSIDEROSIS
MAMMARY GL
MICRO: ((1)) MINERALIZATION
((2)) GALACTOCELE
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MED
MICRO: 3 SINUS ERYTHROCYTOSIS
THYMIC REGION
MICRO: 2 INVOLUTIONAL ATROPHY
((2)) EPITHELIAL CYST(S)
KIDNEYS
MICRO: ((3)) RENAL CALCULI
LEFT WORSE
((3)) PAPILLARY HYPERPLASIA
LEFT
((1)) TUBULAR PROTEINOSIS
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	PANCREAS	DUODENUM
JEJUNUM	ILEUM	CECUM
COLON	RECTUM	PARATHYROID GL
SKIN	SPLEEN	LYMPH ND, MES
BONE, STERNUM	BONE, FEMUR	BONE MARROW
SKELETAL MUSCLE	BRAIN	SPINAL CORD
NERVE, SCIATIC	EYE	OVARIES
UTERUS	CERVIX	VAGINA
TRACHEA	LUNGS	URINARY BLADDER

ANIMAL 3776E58 22-MAR-90 STUDY DAY 730
TYPE OF DEATH: SCHEDULED SACRIFICE

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3776E58 (CONTINUED)

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	11.299	2.799
KIDNEYS	2.734	0.677
HEART	1.368	0.339
SPLEEN	0.588	0.146
BRAIN	2.045	0.507
ADRENAL GL	0.078	0.019
OVARIES	0.112	0.028
TERMINAL BODY WT.	403.8	

STOMACH
MICRO: ((1)) GLAND ECTASIA
LIVER
MICRO: ((1)) BILIARY HYPERPLASIA
PANCREAS
MICRO: ((2)) ACINAR ATROPHY
PITUITARY
GROSS: NODULE
3X2X2MM RIGHT ANTERIOR PORTION DARK PINK
MICRO+ P #B ADENOMA
THYROID GL
MICRO: (P) #M FOLLICULAR CELL ADENOCARCINOMA
PARATHYROID GL
GROSS: SIZE INCREASE
3X NORMAL, RIGHT
ADRENAL GL
MICRO: ((2)) CORTICAL CELL HYPERTROPHY
MAMMARY GL
GROSS: MASS
RIGHT, AXILLARY REGION, 60X50X15MM
MULTILOBULAR, MOTTLED CREAM AND YELLOW
MICRO+ P #B FIBROADENOMA
MICRO: (2) HYPERSECRETION
SPLEEN
MICRO: 4 HEMOSIDEROSIS
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MES
MICRO: ((1)) HISTIOCYTIC AGGREGATES
2 HEMOSIDEROSIS
THYMIC REGION
MICRO: 4 INVOLUTIONAL ATROPHY
SKELETAL MUSCLE
MICRO: 2 MYOFIBER ATROPHY
VAGINA
MICRO: 2 VAGINITIS
LUNGS
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
ALL LOBES MOTTLED LIGHT AND DARK RED
MICRO: ((1)) PERIVASCULAR INFILTRATE(S)
KIDNEYS
MICRO: ((1)) NEPHRITIS, INTERSTITIAL
((2)) RENAL CALCULI
((1)) TUBULAR PROTEINOSIS
((1)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:

HEART	AORTA	SALIVARY GL
ESOPHAGUS	DUODENUM	JEJUNUM
ILEUM	CECUM	COLON
RECTUM	PARATHYROID GL	SKIN
BONE, STERNUM	BONE, FEMUR	BONE MARROW
BRAIN	SPINAL CORD	NERVE, SCIATIC
EYE	OVARIES	UTERUS
CERVIX	TRACHEA	URINARY BLADDER

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3818E59 23-MAR-90 STUDY DAY 731
TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	9.190	2.552
KIDNEYS	3.013	0.837
HEART	1.367	0.380
SPLEEN	0.678	0.188
BRAIN	2.147	0.596
ADRENAL GL	0.093	0.026
OVARIES	0.251	0.070
TERMINAL BODY WT.	360.1	

LIVER
MICRO: (1) CHOLANGITIS
PANCREAS
MICRO: (3) ACINAR ATROPHY
CECUM
MICRO: P NEMATODIASIS
PITUITARY
GROSS: SIZE INCREASE
SLIGHT
MICRO↑ P #B ADENOMA
MICRO: ((3)) VASCULAR ECTASIA
THYROID GL
GROSS: SIZE INCREASE
3X NORMAL, RIGHT
MICRO↑ P #B C CELL ADENOMA
PARATHYROID GL
GROSS: SIZE INCREASE
3X NORMAL, RIGHT
MICRO↑ (P) #B ADENOMA
ADRENAL GL
MICRO: (4) INFARCTION
MAMMARY GL
GROSS: MASS
30X30X30MM, LEFT SHOULDER AREA
MICRO↑ (P) #B FIBROADENOMA
MICRO: ((2)) GALACTOCELE
((2)) MASTITIS
LYMPH ND, S-MAN
MICRO: 3 PLASMACYTOSIS
LYMPH ND, MES
MICRO: ((3)) HEMOSIDEROSIS
3 LYMPHOID HYPERPLASIA
THYMIC REGION
MICRO: 3 INVOLUTIONAL ATROPHY
((3)) EPITHELIAL CYST(S)
THE EPITHELIAL CORDS ARE HYPERPLASTIC THROUGHOUT.
SKELETAL MUSCLE
MICRO: 2 MYOFIBER ATROPHY
SPINAL CORD
MICRO: ((1)) VACUOLIZATION
OVARIES
GROSS: CYST
LEFT, 3X3X3MM
RIGHT, 5X5X5MM
MICRO↑((4)) CYST(S)
TRACHEA
MICRO: (2) SUBMUCOSAL GLAND ECTASIA
KIDNEYS
MICRO: ((2)) TUBULAR PROTEINOSIS
((1)) RENAL CALCULI
((2)) TUBULAR BASOPHILIA
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
HEART AORTA SALIVARY GL

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3818E59 (CONTINUED)

ESOPHAGUS	STOMACH	DUODENUM
JEJUNUM	ILEUM	COLON
RECTUM	SKIN	SPLEEN
BONE, STERNUM	BONE, FEMUR	BONE MARROW
BRAIN	NERVE, SCIATIC	EYE
UTERUS	CERVIX	VAGINA
LUNGS	URINARY BLADDER	

ANIMAL 3741E60 28-MAR-90 STUDY DAY 736

TYPE OF DEATH: SCHEDULED SACRIFICE

ORGAN WEIGHT	ABS.(G)	REL.
LIVER	10.076	1.965
KIDNEYS	2.525	0.492
HEART	1.367	0.267
SPLEEN	0.754	0.147
BRAIN	1.899	0.370
ADRENAL GL	0.092	0.018
OVARIES	0.126	0.025
TERMINAL BODY WT.	512.9	

ADIPOSE TISSUE
GROSS: NODULE
MULTIPLE WHITE 2X2X2 TO 4X3X2MM, NEAR PANCREAS
MICRO+ P #M CARCINOMA
METASTATIC

STOMACH
GROSS: MASS
10X10X6MM, WHITE, FIRM, NEAR DUODENUM
MICRO+ (P) #M CARCINOMA
PRESENT ON THE SEROSAL SURFACE WITH ADHESIONS TO THE LIVER
AND OTHER ORGANS. IT IS THE SAME TUMOR AS ON THE3 UTERUS.

LIVER
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
3X3MM TAN FOCUS, RIGHT MEDIAN LOBE
MICRO: ((1)) HEPATOCELLULAR CYTOPLASMIC VACUOLIZATION

PANCREAS
MICRO: P #M CARCINOMA
ADHERANT TO THE MESENTERY AND PANCREAS.

DUODENUM
MICRO: P #M CARCINOMA
MASSIVE TUMOR ON THE SEROSAL SURFACE.

PITUITARY
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
2X2MM RED FOCUS
MICRO+((3)) VASCULAR ECTASIA
MICRO: P #B ADENOMA

ADRENAL GL
GROSS: COLOR CHANGE, FOCAL/MULTIFOCAL
MULTIPLE WHITE AND BROWN FOCI, BILATERAL
MICRO+((2)) CORTICAL CELL HYPERTROPHY
MICRO: ((4)) VASCULAR ECTASIA

LYMPH ND, MED
MICRO: 4 LYMPHATIC ECTASIA, CYSTIC

LYMPH ND, MES
MICRO: P #M CARCINOMA
METASTATIC

THYMIC REGION
MICRO: 5 INVOLUTIONAL ATROPHY

SKELETAL MUSCLE
MICRO: 3 MYOFIBER ATROPHY

OVARIES

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

CHRONIC DIETARY TOXICITY/ONCOGENICITY STUDY WITH ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE (ADBAC) IN RATS

INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM FEMALE

ANIMAL 3741E60 (CONTINUED)

```
    GROSS:        CYST
                      3X3X3MM, RIGHT
UTERUS
    GROSS:        POLYP
                      (2) 15X5X5MM, DARK RED, LEFT UTERINE
                      HORN
     MICRO↑ (5)  HEMORRHAGE
UTERUS
    GROSS:        MASS
                      10X10X8MM, TAN; FIRM, LEFT UTERINE HORN
     MICRO↑  P    #M CARCINOMA
    MICRO:   4    LUMINAL ECTASIA
KIDNEYS
    MICRO: ((1)) RENAL CALCULI
THE FOLLOWING TISSUES WERE MICROSCOPICALLY NORMAL:
    HEART             AORTA             SALIVARY GL
    ESOPHAGUS         JEJUNUM           ILEUM
    CECUM             COLON             RECTUM
    THYROID GL        PARATHYROID GL    SKIN
    MAMMARY GL        SPLEEN            LYMPH ND, S-MAN
    BONE, STERNUM     BONE, FEMUR       BONE MARROW
    BRAIN             SPINAL CORD       NERVE, SCIATIC
    EYE               OVARIES           CERVIX
    VAGINA            TRACHEA           LUNGS
    URINARY BLADDER
```

See necropsy protocol page for list of tissues examined grossly and for explanation of grades.

APPENDIX 13

Chronic Dietary Toxicity/Oncogenicity Study with Alkyl Dimethyl Benzyl Ammonium Chloride (ADBAC) in Rats

Protocol and Protocol Amendments

(26 Pages)

BUSHY RUN RESEARCH CENTER
R. D. 4, Mellon Road, Export, Pennsylvania 15632 Telephone (412) 733-5200

PROTOCOL

TITLE: Chronic Dietary Toxicity/Oncogenicity Study with Alkyl Dimethyl Benzyl Ammonium Chloride (ADBAC) in Rats

BRRC PROJECT NUMBER: 87-37-97103

TESTING FACILITY: Bushy Run Research Center
Union Carbide Corporation
RD 4, Mellon Road
Export, PA 15632

SPONSOR: ADBAC QUAT Joint Venture/
Chemical Specialties Manufacturers Association
Suite 1120
1001 Connecticut Ave., N.W.
Washington, D.C. 20036

SPONSOR'S REPRESENTATIVE: Gerald P. Schoenig, Ph.D.
54 Canterbury Road
Charlottesville, VA 22901

Reviewed and Approved by:

Bushy Run Research Center:

2-23-88
John P. Van Miller, Ph.D., DABT Date
Study Director

2-23-88
William M. Snellings, Ph.D. Date
Project Manager

2-23-88
Linda J. Calisti, B.S. Date
Group Leader, Good Laboratory Practices/Quality Assurance

2/23/88
Fred R. Frank, Ph.D. Date
Director

Sponsor's Representative:

2/24/88
Gerald P. Schoenig, Ph.D. Date

PURPOSE

The purpose of this study will be to evaluate alkyl dimethyl benzyl ammonium chloride (ADBAC) for oncogenicity and chronic toxicity in rats.

GENERAL

Sponsor	ADBAC QUAT Joint Venture/ Chemical Specialties Manufacturers Association
Project Monitor	Gerald P. Schoenig, Ph.D.
Testing Facility	Bushy Run Research Center, Export, PA 15632

Personnel

Toxicology and Animal Care	A. G. Chiaramonte, AALAS Cert. I J. A. DeNinno, AALAS Cert. II C. A. Ferry M. W. Gill, Ph.D. J. M. Hurley, B.S. G. W. Klingensmith, AALAS Cert. I K. A. Loughran, B.S. J. E. Negley, B.S., AALAS Cert. II E. J. Mika L. A. Rack, A.S. C. L. Wagner, B.S. E. V. Weaver, B.A.
Clinical Pathology	P. J. Brown, B.A., MT (ASCP) V. A. Camaione, BA M. F. Harbaugh, A.S., MLT C. M. Troup, Ph.D.
Anatomic Pathology	C. D. DeMann, AALAS Cert. I G. J. DiSalvo, HT(ASCP) P. E. Losco, VMD, ACVP M. A. McGee, HT(ASCP) R. Poland H. M. Steel, AALAS Cert. I
Analytical Chemistry	M. A. Vrbanic, B.A.

Starting Date of Acclimation	March 1, 1988
Starting Date of Administration	March 22, 1988
Proposed Date for Completion of In-Life Phase	March 30, 1990
Proposed Date for Submission of the Draft Final Report	January 4, 1991

Basis for the Study

This study will be performed in compliance with the following guidelines and standards.

EPA Pesticide Assessment Guidelines (Subdivision F, Section 83-5, November 1984).

OECD Guidelines for Testing of Chemicals, No. 453, May 12, 1981.

Good Laboratory Practice Regulations, FIFRA, 40CFR Part 160.

Alteration of Design

Alterations to this protocol may be made as the study progresses. No changes in the protocol will be made without the specific written request or consent of the Sponsor. In the event that the Sponsor authorizes a protocol change verbally, such change will be honored. However, it then becomes the responsibility of the Sponsor to follow such verbal change with a written verification. BRRC reserves the right to revise the protocol or deviate therefrom solely at the discretion of the Study Director, if prior approval of the Sponsor cannot be obtained and the integrity of the study is considered in jeopardy. In this event, the Sponsor shall be notified of the alteration as soon as possible, and written verification of the change will be the responsibility of the Study Director. All protocol modifications will be signed by the Study Director and a representative of the Sponsor.

METHODS

Test Animals

Species	Sprague-Dawley CD® rats
Supplier	Charles River Breeding Laboratories, Portage, Michigan
Rationale	The albino rat is one of the species of choice for chronic toxicity/oncogenicity testing.

Number and Sex	A total of 380 males and 380 females will be obtained from which 300 males and 300 females will be selected for the study.
Age and Weight	The animals will be approximately 35 days of age on the scheduled animal receipt date. Dosing will begin when the animals are not more than 8 weeks old. Body weight range at first dose will be stated in the final report.
Acclimation and Pretest Evaluations	Upon arrival at the laboratory, the animals will be transported to the room selected for the study. Once in the room, the animals will be removed from the shipping cartons and examined. All animals with evidence of disease or physical abnormalities will be discarded. If an unusually large number of rats show evidence of disease or physical abnormalities, the batch of rats will be rejected for use in the study. A total of 20 rats (10 male and 10 female) will be randomly selected for a health screen discussed below. All remaining animals will be housed two per cage for approximately one week in order to acclimate the rats to the automatic watering system. After this period, the animals will be housed individually. During the three-week pretest period, animals will be fed the same basal diet which will be used during the study. Animals will be observed twice daily for any clinical signs of disease or abnormality and individual detailed physical examinations will be conducted weekly. Animals showing abnormalities deemed by the Study Director or other appropriate supervisory personnel to render the animal unacceptable for placement on the study will be sacrificed and discarded on the day observed. If an unusually large number of rats show abnormalities, the batch of rats will be rejected for use in the study. Ten days before the study is scheduled to begin, all rats will be weighed. The rats will be weighed again approximately seven days later (but no sooner than three days prior to dosing). Any rat whose weight gain during this period is not considered normal for this age and strain of rat, or whose absolute body weight at the second weighing is outside ± 20% of the population mean for each sex, will not be considered for the study.

Pretest Health Screen

A pretest health screen will be performed within two days after the receipt of the animals. This health screen will consist of clinical laboratory studies, a viral screen, examinations for fecal parasites, gross necropsy examinations, and histopathologic evaluations of selected tissues. The screen will be performed on 10 animals/sex selected directly from the shipping cartons with as many cartons as possible being represented.

The clinical laboratory studies will be conducted on all 20 rats selected for the health screen. The following clinical laboratory studies will be conducted:

Hematology	Clinical Chemistry
Erythrocyte count	AST (SGPT)
Hematocrit	ALT (SGOT)
Hemoglobin	BUN
Erythrocyte indices	
Total leukocyte count	
Differential leukocyte count	
Platelet count	

The viral screen will be conducted on five animals/sex selected from the 20 rats designated for the health screen. The following viruses will be included in the viral screen:

Pneumonia virus of mice (PVM)
Reovirus type 3 (Reo3)
Kilham rat virus (KRV)
Toolen H-1
Sendai
Lymphocytic choriomeningitis (LCM)
Rat coronavirus
SDA
Micoplasma pulmonis
Minute virus of mice (MVM)
Polyoma virus
Encephalomyelitis (GDVII)
Mouse adenovirus FL/K87 (MAD)

Fecal examination for parasites will be conducted using a cellophane tape test on 5 animals/sex from the 20 animals selected for the prestudy screen, and by zinc sulfate flotation from cecal contents obtained at necropsy on 5 animals/sex.

The gross necropsy examinations will be performed on all 20 animals selected for the health screen.

Histopathology will be performed on three sacrificed animals/sex. At least the following tissues will be examined: liver, kidneys, trachea, lungs, heart, spleen, salivary glands, submandibular lymph nodes, and nasal cavities.

The purpose of this health screen is to determine the suitability of the population of animals proposed for this study. Therefore, the results of this screen will be available before the study begins and the findings will be discussed with the Sponsor's representative.

Identification — Animals shall be uniquely identified prior to initiation of the study by cage identification and a toe clip and ear notch procedure. The method and numbers will be documented in the study records.

Husbandry

Conditions — The experiment will be carried out under standard laboratory conditions in the Chemical Hygiene Fellowship Building of BRRC. Stainless steel cages with wire mesh floors will be used. Cages will be changed and sanitized at least once every two weeks. Paperboard kept under each cage will be changed at least three times per week. Faces of racks will be spaced at least four feet apart and away from walls. The racks will be rotated once every two weeks according to a predetermined schedule in order to better assure equivalent environmental conditions for all animals. Rack rotation will be documented.

All animals will be housed in room 102 of the Chemical Hygiene Fellowship (CHF) building of BRRC from arrival to termination of the study. Temperature and humidity will be recorded continuously using an automatic recorder. The animal room will be maintained at a temperature of 66-77°F and a relative humidity of 40-70%. The temperature and humidity will be checked by a technician at each room check and a record will be kept indicating it was done. Appropriate corrective action will be taken whenever readings outside the specified limits are observed. If the temperature or humidity remains outside the prescribed range for more than 24 hours, the Sponsor's representative will be notified.

The accuracy of the temperature and humidity recording devices will be checked periodically and calibrated when necessary. The verification and calibration data will be recorded. Any time the continuous recording equipment is found to be malfunctioning, a new recorder will be placed in the animal room or the temperature and humidity of the animal room will be manually measured and recorded at each room check.

	Fluorescent lighting will provide illumination 12 hours per day. There will be at least eight air changes per hour.
Diet	Certified Rodent Chow® (#5002, Ralston Purina Company) will be available ad libitum. The analyses of chemical composition and possible contaminants of each batch of diet will be performed by Ralston Purina Company (St. Louis, MO). Feed jars will be changed and sanitized once per week.
Water	Tap water (Municipal Authority of Westmoreland County, Greensburg, PA) will be available ad libitum by automatic watering system with demand control valves mounted on each rack. Water pressure and function of the individual cage rack systems will be checked at each room check and a record will be kept indicating it was done. Drinking water contaminant levels will be measured at regular intervals per EPA specifications, to include the 129 "priority" pollutants, identified in the Federal Register 45 (98), Appendix D, Part 122, and shall comply with human requirements.

Test Substance

Name	Alkyl dimethyl benzyl ammonium chloride (ADBAC) 80% Manufacturing Use Product (MUP)
Source	Sponsor
CAS Registry #	68391-01-5
Sponsor Identification Number	7293K
BRRC Number	50-512
Percent Active	80.8%
Description	Very viscous, white opaque liquid
Stability of Test Material	The test substance is considered to be stable at room temperature for the duration of the study. Stability will be verified periodically during the study.
Storage Conditions	Ambient temperature in an environmentally controlled area.
Estimated Quantity Needed	20 kg; After the assigned study(ies) have been completed, all unused materials will be returned to the Sponsor.

Safety	A Material Safety Data Sheet (MSDS) will be supplied by the Sponsor. The MSDS and this protocol will be reviewed by the pertinent personnel prior to the initiation of the study. This review will be documented. Normal precautions for untested chemicals will be used. These procedures include the use of disposable paper or plastic coats or jumpsuits, hats, booties or shoe covers, and rubber gloves while in the animal rooms. Eye protection will include the use of safety glasses at all times. Disposable paper coats and rubber gloves will be worn during preparation of diets. In addition, monogoggles will be used when handling the undiluted ADBAC 80% MUP, and dust masks may be used if exposure to the feed dust is anticipated.

Administration of Test Material

Route	Oral; mixed in the diet. The oral route of administration is considered to be a meaningful way to evaluate the toxicity of chemicals with the use pattern of ADBAC. The oral route is also a potential route of human exposure.
Dose Selection	Three graduated dosage levels of the test material will be evaluated in three groups of rats. The test substance will be administered in the diet on a constant ppm basis. It is anticipated that at the higher dosage level(s), some toxicological or pharmacological effect(s) will be observed and that at the lower dosage level(s) no treatment-related effects will be seen. Two concurrent control groups will also be used in this study. Dose levels will be expressed in terms of actual ADBAC concentrations.
Preparation of Diets and Storage	Test diets will be prepared by direct addition of ADBAC 80% MUP to ground rodent feed. A concentrated premix will be prepared to ensure maximal loss of the ethanol (approximately 12% by weight) from the test material during the original mixing time of 1 hour. Test diets will be prepared by appropriate dilutions of the concentrated premix or higher diet concentrations. Diets will be prepared based on active ingredient of the test material and corrections will be made for the alcohol lost during initial mixing. Diets will be stored at room temperature.

Analysis of Diets

Before initiation of the study, trial batches of treated diets will be prepared to assess the homogeneity and stability of the prepared diets. Homogeneity (3 samples each from the top, middle, and bottom of the mixing bowl) will be established for the high and low diet concentrations selected for use in the study. In addition, homogeneity of the middle dose will be examined by analyzing one sample, in duplicate, from the top, middle and bottom of the mixing bowl. Stability and longer term homogeneity will be evaluated by determining the ADBAC concentration in triplicate samples from the high and low diet concentrations selected for use in the study. Stability will be determined for diets stored in the polyethylene containers used for storage of the diets and in open glass feed jars stored in the animal room (i.e. under the temperature and humidity conditions that will be maintained during the study). Stability of the test material in the diets will be determined for at least 21 days in the polyethylene storage containers and at least 14 days in the open glass feeders. Subsamples of all diets collected for homogeneity (initial and longer term) will be frozen immediately after collection.

Each week, subsamples of approximately 100 g each will be taken from the top, middle, and bottom of each batch of prepared diet (including control). These subsamples will be mixed thoroughly and analyzed in duplicate for ADBAC concentration (prior to being administered to the animals) during study weeks 1 through 4. In subsequent weeks, the samples will be collected and a portion will be stored frozen. Analyses of all diet concentrations (including control) will be performed for the diets prepared every 4 weeks (i.e. weeks 8, 12, 16, etc.). A portion of all samples will be retained frozen. Periodically, the the results of the analytical procedures will be reviewed by the Sponsor's representative and, if all assays are acceptable, these samples will be discarded.

Standards for acceptable accuracy of mixing will be: the mean of the analyzed samples must be within ± 10% of nominal; the difference between duplicate analyses will not exceed 15%; and individual analyses will be within ± 15% of nominal. If one or more of these standards are not met, the diets will not be fed to the animals (for cases of prospective analyses) until the problem is resolved. For retrospective analyses, additional analyses will be conducted to help establish the cause of the problem. If additional analyses or diet preparations are necessary, these will be performed at no cost to the Sponsor. The Study Director and the Sponsor's representative will be notified immediately when problems of this nature occur.

At study initiation and every 6 months thereafter, a sample of the test substance will be returned to the Sponsor for stability analysis.

Duration of Treatment

The exposure period will be seven days/week for at least 104 weeks.

Study Design

Group Assignment

Based on the second pretest body weights, the animals will be selected for the study from the remaining population. These animals will be divided equally into five groups. Each group will consist of 60 males and 60 females. Group assignment will be made using a weight stratified randomization procedure.

In addition, 10 animals/sex will be selected from the remaining animals to serve as sentinels. These animals will be those with the 10 lowest numbers from the animals not selected for the study groups unless an animal has abnormal clinical signs in which case the next higher numbered animal will be used. The purpose of maintaining these animals will be for use only in the event it is necessary to confirm or deny a disease state in the population. These animals will be maintained in the room, administered control feed on the same schedule as the study animals, and examined for mortality or signs of morbidity at each room check (no record of this examination will be kept). In the event of morbidity or mortality, record of the finding will be made in the Miscellaneous section of the room notebook and the animal will be sacrificed (in the case of morbidity) and discarded. If, at the discretion of the Study Director, a necropsy of the animal is warranted to establish potential disease status, a necropsy will be performed. A listing of significant necropsy findings will be maintained in the study records if appropriate. No detailed records of examinations, body weights, food consumption, etc. will be maintained for these animals. At termination of the study, the animals will be sacrificed by methoxyflurane overdose and discarded without a necropsy being performed.

Animals not selected for the study will remain housed in the study room until the study begins and will be used as replacements in the event any of the selected animals is found unacceptable prior to the start of the study. After the selected animals have received their first treatment, all animals not selected for the study, except sentinels, will be removed from the study room, and no further replacement of animals will be made. The fate of all animals received will be documented.

Page 11

Following body weight measurement just prior to the first treatment, statistical evaluation of the body weights for all groups will be conducted, and statistical equivalence and homogeneity of variance will be examined. In the event that either criterion is not met, changes will be made prior to dosing to ensure statistically equivalent body weights for all groups. Animals with any abnormal clinical signs will also be replaced prior to treatment and the statistical criterion reevaluated.

Organization

Group	Number of Animals Male	Number of Animals Female	ADBAC Dietary Concentrations(ppm)*
1 - Control 1	60	60	0
2 - Low	60	60	To be added by amendment
3 - Mid	60	60	To be added by amendment
4 - High	60	60	To be added by amendment
5 - Control 2	60	60	0

*As percent of active ingredient

Experimental Evaluations

Daily Room Checks

All animals will be observed for mortality and signs of overt toxicity twice each day, seven days a week. The first daily room check will generally be conducted before 8:00 a.m. and the second one will generally be conducted after 2:30 p.m. The times of daily room checks will be recorded. Should mortality and/or signs of overt toxicity be observed, it will be recorded on the day observed. Overt signs will also be recorded on subsequent days until the sign disappears or the animal dies.

Special Surveillance

A special surveillance list will be drawn up when necessary. This list will include all animals that show:

- An obvious trend toward a marked decrease in body weight or food consumption over a one to four week period.

- Life threatening symptomatology observed during daily room checks or during weekly detailed physical examinations.

All rats placed on this list will be checked by supervisory personnel once a day until the animal dies or no longer fits any of the above criteria.

Detailed Physical Examinations	During each study week, a detailed examination of each animal will be performed. These examinations will include, but not necessarily be limited to, an external physical exam, gentle palpation of internal organs, and an assessment for abnormal behavior or clinical signs. Findings, or lack thereof, will be recorded for each individual animal.
Ophthalmic Examinations	Prior to initiation and prior to final sacrifice, a complete ophthalmic examination will be performed on all animals. At the terminal evaluation, the ophthalmologist will be provided with a list of animals previously used for retroorbital bleeding procedures so that he/she can take this into account in evaluation of ophthalmic changes.
Sacrifice of Moribund Animals	Any rat showing signs of severe debility, particularly if death appears imminent, will be sacrificed to prevent loss of tissues through autolysis.
Body Weight	Individual body weights will be measured weekly for the first 14 weeks of the study and every other week thereafter. These data will be reviewed by appropriate laboratory personnel within two working days of being collected. This review will routinely be done on the same day as the data are collected by the technical staff involved in the data collection (data checked, appropriate edits made, and raw data sheets initialed and dated). Individual body weight gains will be computed. The last body weight test period for both sexes will be weights obtained prior to fasting of any of the animals. Fasted body weights will be obtained prior to sacrifice for calculations of organ weights relative to body weights.
Food Consumption	Individual food consumption measurements will be conducted weekly for the first 14 weeks of the study and every other week thereafter. The area under the cage will be examined for food spillage during each room check and significant food spillage will be noted. Significant food spillage will be defined as "piles" or "mounds" of feed but not a "dusting" or "sprinkling" of feed. Food consumption data for animals with significant observed spills will not be used. Sufficient food will be offered to each animal to ensure ad libitum feeding. If additional food is offered to an animal, it will be weighed and included in the food consumption measurement. Food consumption data will be reviewed by appropriate laboratory personnel within two working days of being collected as described above for body weight data. Compound consumption (mg test material/ kg body weight/day) will be calculated.

Clinical Laboratory Tests

Clinical investigations (hematology, clinical chemistry, and urinalysis) will be conducted on 15 animals/sex/group at 6, 12, 18, and 24 months. The animals to be used will be selected randomly prior to the 6 month evaluation and the same animals will be used for each test period. In cases of mortality, the next available animal in a higher cage number for the group (or the first animal available in the group if the animal to be replaced is the last available animal in the group) will be substituted.

The order of bleeding and analysis will be alternating (one animal from each dose group, then repeating) in order to reduce handling and time biases. All blood samples will be obtained from methoxyflurane anesthetized animals via puncture of the retroorbital sinus. Animals will be fasted (approximately 16 to 18 hours) overnight prior to the bleeding procedures. Urine samples will be collected in metabolism cages for 24 hours.

The following procedures will be performed:

Hematology
- erythrocyte count
- hemoglobin
- hematocrit
- erythrocyte indices (calculated)
- platelet count
- total leukocyte count
- differential leukocyte count
- reticulocyte count

Clinical Chemistry
- glucose
- urea nitrogen
- creatinine
- AST (SGPT)
- ALT (SGOT)
- creatine kinase
- gamma glutamyl transpeptidase (GGT)
- alkaline phosphatase
- total protein
- total cholesterol
- albumin
- globulin (calculated)
- A/G ratio (calculated)
- total bilirubin
- direct bilirubin
- indirect bilirubin (calculated)
- calcium
- phosphorus
- sodium
- potassium
- chloride

Urinalysis
- color
- appearance
- specific gravity
- total volume
- pH
- protein
- glucose
- ketone
- bilirubin
- blood
- urobilinogen
- microscopic elements

Anatomic Pathology

At the end of treatment, all surviving animals will be anesthetized with methoxyflurane and killed by severing the brachial vessels to permit exsanguination. Any animal showing severe debility or intoxication (i.e. moribund) will be killed to prevent loss of tissues through autolysis. All animals, including those which die or are sacrificed during the study, will be given complete gross necropsy examinations under the direct supervision of a necropsy pathologist, and the tissues will be fixed in 10% neutral buffered formalin. During this gross examination, the prosector will have the most recent ante mortem findings available. All recorded ante mortem lesions that are verifiable post mortem will be confirmed or denied on the gross pathology record. Those denied will be initialed by the pathologist or other appropriate laboratory personnel.

Necropsies of animals which die or are sacrificed *in extremis* will be performed seven days a week. Animals found dead will be refrigerated when necessary, but every attempt will be made to necropsy all moribund animals as rapidly as possible.

The order of sacrifice, necropsy, tissue removal, and weighing of organs at the terminal sacrifice will be alternating (one animal from each dose group, then repeating) in order to reduce observation, tissue trimming, and organ weighing biases.

The following tissues will be collected for all animals:

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Gross lesions and tissue masses[1]
Spinal cord (cervical, midthoracic, and lumbar)
Brain (cerebral cortex, cerebellar cortex, medulla/pons)
Pituitary
Thyroid - parathyroid complex[3]
Thymic region[4]
Trachea
Lungs with mainstem bronchi[2]
Heart
Salivary gland (mandibular)
Liver
Spleen
Kidneys[5]
Adrenals
Pancreas
Testes
Epididymis
Prostate
Seminal vesicles
Ovaries
Uterus (corpus and cervix)
Vagina
Mammary gland (females)
Esophagus
Stomach
Duodenum
Jejunum
Ileum
Cecum
Colon
Rectum
Urinary bladder[6]
Skin
Representative lymph nodes (mesenteric and submandibular)
Peripheral nerve (sciatic)
Sternum (including marrow)
Femur (including articular surface)
Thigh musculature
Eyes
Aorta

Feet and ears will be saved for identification purposes.

[1]Whenever possible during harvesting of gross lesions, a border of normal appearing tissue will be harvested with the lesions.

[2]Lungs will be inflated with formalin via the trachea.

[3]Parathyroids cannot always be identified during slide preparation. They will be examined if they are in the plane of the section and in all cases where they are noted as grossly enlarged.

[4]At times, these tissues cannot be identified with the unaided eye because of physiologic variation in size. However, tissue from the region will be fixed for microscopic evaluation.

[5]The right kidney will be sectioned crosswise and the left kidney will be sectioned longitudinally for histological processing.

[6]The urinary bladder will be inflated with formalin and opened for examination after fixation.

Organ Weights

The following fresh organs from all surviving animals at the terminal sacrifice will be trimmed, blotted and weighed:

liver	testes (males)
kidneys	ovaries (females)
adrenals	brain (including brain stem)
heart	spleen

Histopathology

All tissues to be examined microscopically will be processed for paraffin embedding, sectioned at 5 microns, and stained with hematoxylin and eosin. Lesions will be graded as to severity, where possible, into 5 categories (minimal, mild, moderate, marked, or severe).

The harvested tissues in the list above for all animals in both control groups and the high dose group will be processed histologically and examined microscopically. In addition, the lungs, liver, kidneys, and all gross lesions will be processed and examined histologically from all animals in the other dose groups.

Multiple embedding will be used for compatible, normal appearing tissues, but tissues with gross lesions and tissue masses will be embedded individually. If during routine sectioning of the paraffin blocks, a tissue is missed, the block will be either resectioned or, if necessary, melted down and the tissues reembedded at the discretion of the Sponsor. Following sectioning, all blocks will be dipped in paraffin.

If pathological lesions are observed from evaluation of the tissues from animals in the high dose group, these tissues will be examined for animals in the lower dose groups. These target organs will be examined at additional cost to the Sponsor.

Statistical Analyses

The data for continuous, parametric variables will be intercompared for the dose and control groups by use of Levene's test for homogeneity of variances, by analysis of variance, and by pooled variance t-tests. The t-tests will be used, if the analysis of variance is significant, to delineate which groups differ from the control groups. If Levene's test indicates heterogeneous variances, the groups will be compared by an analysis of variance for unequal variances followed, if necessary, by separate variance t-tests. For discontinuous data, the Kruskal-Wallace test followed, if necessary, by Mann-Whitney U-tests will be used. Mortality data will be analyzed by life-table analysis. All of the above statistical tests will be performed using BMDP Statistical Software.[1] Histology frequency data will be compared to the control groups using Fisher's exact test[2], if appropriate. If indicated by the pairwise comparisons or apparent trends, other statistical procedures may be employed for analysis of histologic and tumor incidence data. Tests that will be considered include fatal tumor (life-table) analysis, incidental tumor analysis, and Cochran-Armitage linear trend test.[3-4]

The fiducial limit of 0.05 will be used as the critical level of significance for all tests.

RECORDS

All raw data, reports, paraffin blocks, tissue slides, and a sample of test substance from this study will be retained at BRRC for at least 10 years after completion of the study. Tissues preserved in fixative will be retained for at least five years.

Prior to discarding any of the above data or materials, the Sponsor will be contacted and given the option of obtaining it or arranging for continued storage. All data and materials mentioned above will remain the sole property of the Sponsor and can be removed from BRRC at the Sponsor's discretion.

REPORTS

Status Reports

Unaudited status reports will be prepared and issued approximately one month after the completion of study months 6, 12, 18, and 24. These reports will contain summary data on all parameters evaluated up until the point in time defined by the title of the report. Data on continuous variables will be summarized on tables as means and standard deviations while data on discrete variables will be summarized on incidence tables. Narratives will be included where necessary, but the purpose of this report will not be to provide definitive data analyses or conclusions.

Draft Final Report

A draft of the final report will be submitted to the Sponsor within nine months after the completion of the terminal sacrifice. This report will be a comprehensive report which will include all information necessary to provide a complete and accurate description and evaluation of the test procedures and results. It will include: a summary; appropriate text discussions of the experimental design, materials and methods, and results; and summary mean or incidence tables of in-life and pathology data. Two copies of this report will be provided to the Sponsor.

Final Report

The draft final report will be reviewed by the Sponsor, and comments on the report will be provided to BRRC eight weeks from the date of submission of the draft version. BRRC will consider these comments in preparing the final report. Assuming the Sponsor's comments are received at the specified time and no major revisions are required, BRRC will submit a final report within 30 days of receipt of the Sponsor's comments.

The final report will be audited by the QA department and contain a signed quality assurance statement. In addition, it will contain appendices with individual animal data and other pertinent information. It will also conform to the formatting specifications of EPA PR notice 86-5. Four copies of the final report will be submitted to the Sponsor under the time considerations specified in the paragraph above. Additional copies of the report (full or abbreviated) will be sent to the Sponsor upon request at additional cost after issuance of the final report and within 30 days of the request.

GOOD LABORATORY PRACTICE COMPLIANCE

The Bushy Run Research Center, through the administration of a quality assurance program by the Good Laboratory Practices Committee and Quality Assurance Unit, assures compliance of all phases of toxicological studies with existing regulations and generally accepted good laboratory practices.

The study will be subjected to periodic inspections and the final report will be reviewed by the BRRC Quality Assurance Unit. All quality assurance inspection records and the Master Schedule will be made available to the Sponsor during Sponsor visits.

REFERENCES

[1]BMDP Statistical Software (Dixon, W. J. editor, University of California Press, Berkeley), 1985.

[2]Sokal, R. R. and Rohlf, F. J., Biometry, (W. H. Freeman and Company: San Francisco), 1969.

[3]Peto, R., Pike, M., Day, N., Gray, R., Lee, P., Parish, S., Peto, J., Richard, S., and Wahrendorf, J. IARC Monographs: Long-Term and Short-Term Screening Assays for Carcinogens: A Critical Appraisal. World Health Organization, Geneva, Supplement 2, pp 311-426, 1980.

[4]Haseman, J. K. Environ. Health Perspect. 58, 385-392, 1984

BUSHY RUN RESEARCH CENTER
R. D. 4, Mellon Road, Export, Pennsylvania 15632 Telephone (412) 733-5200

PROTOCOL AMENDMENT #1

TITLE: Chronic Dietary Toxicity/Oncogenicity Study with Alkyl Dimethyl Benzyl Ammonium Chloride (ADBAC) in Rats

BRRC PROJECT NUMBER: 87-37-97103

TESTING FACILITY: Bushy Run Research Center
Union Carbide Corporation
RD 4, Mellon Road
Export, PA 15632

SPONSOR: ADBAC QUAT Joint Venture/
Chemical Specialties Manufacturers Association
Suite 1120
1001 Connecticut Ave., N.W.
Washington, D.C. 20036

SPONSOR'S REPRESENTATIVE: Gerald P. Schoenig, Ph.D.
54 Canterbury Road
Charlottesville, VA 22901

Reviewed and Approved by:

Bushy Run Research Center:

John P. Van Miller, Ph.D., DABT — 3-23-88 Date
Study Director

William M. Snellings, Ph.D. — 3-23-88 Date
Project Manager

Linda J. Calisti, B.S. — 3-24-88 Date
Group Leader, Good Laboratory Practices/Quality Assurance

Fred R. Frank, Ph.D. — 3/29/88 Date
Director

Sponsor's Representative:

Gerald P. Schoenig, Ph.D. — 3/28/88 Date

The protocol is amended as follows:

1. Location of Protocol Change: Study Design, Organization, (page 11)

Description of Protocol Change:

Organization

Group	Number of Animals Male	Number of Animals Female	ADBAC Dietary Concentrations(ppm)*
1 - Control 1	60	60	0
2 - Low	60	60	300
3 - Mid	60	60	1000
4 - High	60	60	2000
5 - Control 2	60	60	0

*As percent of active ingredient

Reason for Change:
The actual dose levels used in this study were to be added to the protocol by amendment.

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032388

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R.D. 4, Mellon Road, Export, Pennsylvania 15632
Telephone (412) 733-5200
Telecopier (412) 733-4804

PROTOCOL AMENDMENT #2

TITLE: Chronic Dietary Toxicity/Oncogenicity Study with Alkyl Dimethyl Benzyl Ammonium Chloride (ADBAC) in Rats

BRRC PROJECT NUMBER: 87-37-97103

TESTING FACILITY: Bushy Run Research Center
Union Carbide Corporation
RD 4, Mellon Road
Export, PA 15632

SPONSOR: ADBAC QUAT Joint Venture/
Chemical Specialties Manufacturers Association
Suite 1120
1001 Connecticut Ave., N.W.
Washington, D.C. 20036

SPONSOR'S REPRESENTATIVE: Gerald P. Schoenig, Ph.D.
54 Canterbury Road
Charlottesville, VA 22901

Reviewed and Approved by:

Bushy Run Research Center: 5/18/89
John P. Van Miller, Ph.D., DABT — Date
Study Director

5/22/89
Linda J. Calisti, B.S. — Date
Group Leader, Good Laboratory Practices/Quality Assurance

5/22/89
Fred R. Frank, Ph.D. — Date
Director

Sponsor's Representative: June 5, 1989
Gerald P. Schoenig, Ph.D. — Date

The protocol is amended as follows:

1. Location of Protocol Change: Title Page (Page 1)

   Description of Protocol Change:
   Remove William M. Snellings as Project Manager.

   Reason for Change:
   William M. Snellings has transferred to another division of the Union Carbide Corporation.

2. Location of Protocol Change: Personnel, (Page 2)

   Description of Protocol Change:
   Add Patty J. Heese, A.S., Georgienne E. Ream, Laboratory Technician, and Timothy D. Schwartz, Laboratory Technician to the list of Toxicology and Animal Care Personnel.

   Reason for Change:
   Patty J. Heese, Georgienne E. Ream, and Timothy D. Schwartz joined the Oral/Dermal staff after initiation of the study.

3. Location of Protocol Change: Test Substance, Percent Active, (Page 7)

   Description of Protocol Change:
   The percent of active ingredient in the test substance is 81.09% rather than 80.8% as stated in the original protocol.

   Reason for Change:
   The percent of active ingredient in the test substance stated in the protocol was from a lot of test substance not used for this study. All calculations that included percent of active ingredient for the study used the correct (81.09%) purity value. Therefore, the error in the original protocol will have no impact on the study.

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BUSHY RUN RESEARCH CENTER
6702 Mellon Road, Export, Pennsylvania 15632-8902
Telephone (412) 733-5200
Telecopier (412) 733-4804

PROTOCOL AMENDMENT #3

TITLE: Chronic Dietary Toxicity/Oncogenicity Study with Alkyl Dimethyl Benzyl Ammonium Chloride (ADBAC) in Rats

BRRC PROJECT NUMBER: 87-37-97103

TESTING FACILITY: Bushy Run Research Center
Union Carbide Chemicals and Plastics Company Inc.
6702 Mellon Road
Export, PA 15632-8902

SPONSOR: ADBAC QUAT Joint Venture/
Chemical Specialties Manufacturers Association
1913 Eye Street, N.W.
Washington, DC 20006

SPONSOR'S REPRESENTATIVE: Gerald P. Schoenig, Ph.D.
Toxicology/Regulatory Services
54 Canterbury Road
Charlottesville, VA 22901

Reviewed and Approved by:

Bushy Run Research Center:

Michael W. Gill, Ph.D. — Date
Study Director

Edward H. Fowler, DVM, Ph.D., ACVP — Date
Associate Director

Linda J. Calisti, B.S. — Date
Manager, Good Laboratory Practices/Quality Assurance

John P. Van Miller, Ph.D., DABT — Date
Director

Sponsor's Representative:

Gerald P. Schoenig, Ph.D. — Date
Toxicology Consultant to ADBAC QUAT Joint Venture/Chemical Specialties Manufacturers Association

The protocol is amended as follows:

1. Location of Protocol Change: Title Page (Page 1)

Description of Protocol Change:
The address of the testing facility was changed from "R.D. #4, Mellon Road, Export, PA 15632" to "6702 Mellon Road, Export, PA 15632-8902."

The address of the Sponsor was changed from "Suite 1120, 1001 Connecticut Ave., N.W., Washington, DC 20036" to "1913 Eye St., N.W., Washington, DC 20006."

The company name was changed from "Union Carbide Corporation" to "Union Carbide Chemicals and Plastics Company Inc."

Michael W. Gill, Ph.D., a senior Toxicologist at Bushy Run Research Center (BRRC), assumes the responsibility of Study Director, replacing John P. Van Miller, Ph.D., DABT.

John P. Van Miller, Ph.D., DABT, assumes the responsibility of Director, replacing Fred R. Frank, Ph.D., who retired from his position at BRRC.

The name of the Sponsor Representative's company, Toxicology/Regulatory Services has been added.

Edward H. Fowler, DVM, Ph.D., ACVP, assumes the responsibility for overseeing the General Toxicology Group, replacing John P. Van Miller, Ph.D., DABT.

The title of Gerald P. Schoenig, Ph.D., Toxicology Consultant to ADBAC QUAT Joint Venture/Chemical Specialties Manufacturers Association has been added.

Linda J. Calisti's title was changed from "Group Leader" to "Manager" Good Laboratory Practices/Quality Assurance.

Reason for Change:
Various recent additions and changes in the BRRC and Sponsor addresses, BRRC name, the titles and responsibilities of BRRC personnel, the name of the Sponsor Representative's company and the title of the Sponsor's Representative are included in this amendment.

2. Location of Protocol Change: Test Substance (Page 7)

Description of Protocol Change:
As of October 25, 1989, the description of the test substance had been changed to read: viscous, pale yellow liquid.

Reason for Change:
The description was changed for consistency purposes.

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031891

REPORT AMENDMENT

Study Title
Chronic Dietary Toxicity/Oncogenicity Study with
Alkyl Dimethyl Benzyl Ammonium Chloride (ADBAC) in Rats

MRID No. 41947501

Author
John P. Van Miller, Ph.D., DABT
Laboratory Director, Bushy Run Research Center

Final Report Date
July 8, 1991

Amended Report Date
April 14, 1995

Sponsor
ADBAC Quat Joint Venture/
Chemical Specialties Manufacturers Association
1913 Eye Street, N.W.
Washington, DC 20006

Performing Laboratory
Bushy Run Research Center
6702 Mellon Road
Export, PA 15632-8902

Laboratory Project ID
53-543

STATEMENT OF NO DATA CONFIDENTIALITY CLAIMS

No claim of confidentiality is made for any information contained in this document on the basis of its falling within the scope of FIFRA Section 10 (d)(1)(A), (B) or (C).

Company: ADBAC Quat Joint Venture/Chemical Specialties Manufacturers Association

Agent: Ralph Engel

R. Engel Pres.

President, Chemical Specialties Manufacturers Association

8/21/95

Date

GOOD LABORATORY PRACTICE COMPLIANCE STATEMENT

This report amendment, documenting removal of all data for this study from Bushy Run Research Center to EPL Archives, meets Good Laboratory Practice Standards, 40 CFR Part 160.

Laboratory Director
for Study Director: _____ 7-31-95
John P. Van Miller, Ph.D., DABT. Date

Study Submittor/Sponsor: _____ 8/21/95
Ralph Engel Date
President of Chemical Specialties
Manufacturers Association

BUSHY RUN RESEARCH CENTER
6702 Mellon Road, Export, Pennsylvania 15632-8902

LABORATORY PROJECT ID

53-543 - Amendment

STUDY TITLE

Chronic Dietary Toxicity/Oncogenicity Study with Alkyl Dimethyl Benzyl Ammonium Chloride (ADBAC) in Rats

AMENDMENT DATE

April 14, 1995

Location of Report Amendment: RETENTION OF RECORDS

Description of Report Amendment: The data, documentation, the protocol and any amendments, any specimens and reserve chemical samples, and the final report have been moved to EPL Archives, Inc. (P.O. Box 1253, Sterling, VA).

Rationale: Due to the closing of the Bushy Run Research Center testing facility, the archived records were moved at the request of the Sponsor. This amendment was prepared and signed based on the requirements of the Environmental Protection Agency as outlined in correspondence from Richard Colbert, Office of Compliance, to Union Carbide Corporation received 2/13/95. This procedure is also consistent with guidance from Mr. Stan W. Woolen, Bioresearch Monitoring Program Coordinator, Food and Drug Administration, received 12/2/94.

APPROVED BY

4-14-95

John P. Van Miller, Ph.D., DABT — Date
Director of BRRC/Acting Study Director for the Purpose of this Amendment