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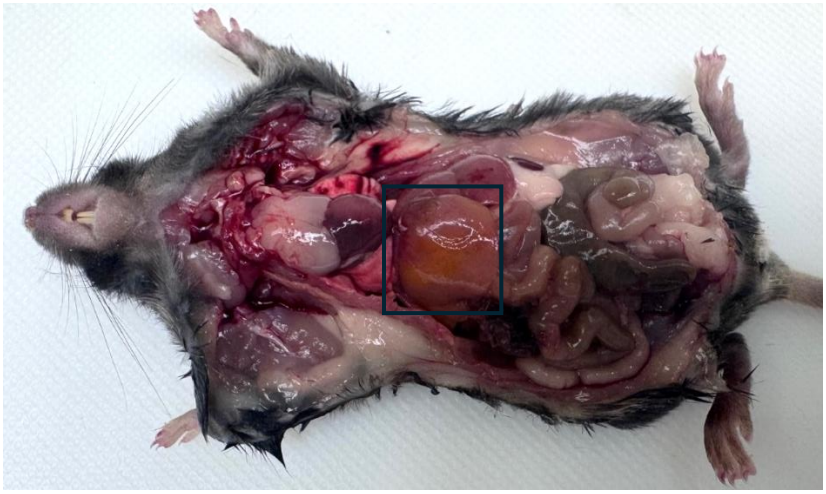
2025 TSMS, Case #1

Authors: Amanda Duggan DVM, Annie Devorak DVM, Gaya Balamayooran DVM, Dipl. ACVP, PhD, Nancy Kock DVM, Dipl. ACVP, PhD (Wake Forest University)

History/Signalment: Five 9-13-week-old female C57Bl/6 mice belonging to 2 separate cohorts of 20 mice each received portal vein injections of murine colon adenocarcinoma cells (MC38) and were found deceased within 1 week after the procedure. The mouse pictured below was found deceased on the morning after the procedure.

Gross findings: Postmortem decomposition of the mice ranged from minimal to advanced. In the only mouse with gross findings, the median and right lobes of the liver were diffusely yellow to orange.



SCHOOL OF MEDICINE

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Translational Science Mystery Session
Case #2

Authors: Claire Kazen, DVM, MPH; Rani Sellers, DVM, PhD DACVP

History/Signalment: A 16-week-old spayed female, black and tan (sable) ferret (*Mustela putorius furo*), obtained from Marshall BioResources, was submitted for necropsy following an experimental craniotomy procedure to insert cerebral and cerebellar implants. All procedures were performed under an IACUC approved protocol. The ferret arrested while under anesthesia and was subsequently submitted for necropsy.

Gross Pathology: At necropsy, there were several small surgical skin incisions on the head as well as a moderate amount of subdural hemorrhage overlying the dorsal aspect of the cerebellum. Surgical implants were present in the rostral, middle, and posterior cranium with probes extending into the brain parenchyma. There were no other significant gross abnormalities.

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TSMS 2025, Case 3

Authors: *J. Cesar Menk[1,2], Devin Kenney[3,4], Scott Adams[3,4], Aziza Sattarov[3,5], Yu-Ting Chiou[3], Anna Tseng[3,4], Aoife O'Connell[3], Mariano Carossino[1,2], Florian Douam[3,4], and Nicholas Crossland[3,4,5]*

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History/Signalment: A 7-month-old C57BL6/Ntac mouse was inoculated via footpad injection and euthanized at 13 days post-inoculation for necropsy. Additional cohort studies revealed sex-specific differences in disease severity and neuropathological outcomes.

Gross findings: N/A

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TSMS 2025, Case 4

Authors: Julie White, DVM, Dipl. ACVP; Melissa M. Walker, PhD

Signalment: 6-week-old, female CD-17 SCID mouse

History: Experimental model of IBD; sacrificed on study day 49

Relevant Clinical Findings: Mice start to lose weight on or around day 16

Necropsy Findings: Thin body condition; colon contained soft stool; colon wall was thickened and opaque with an increased colon weight: length ratio compared to naïve mice.

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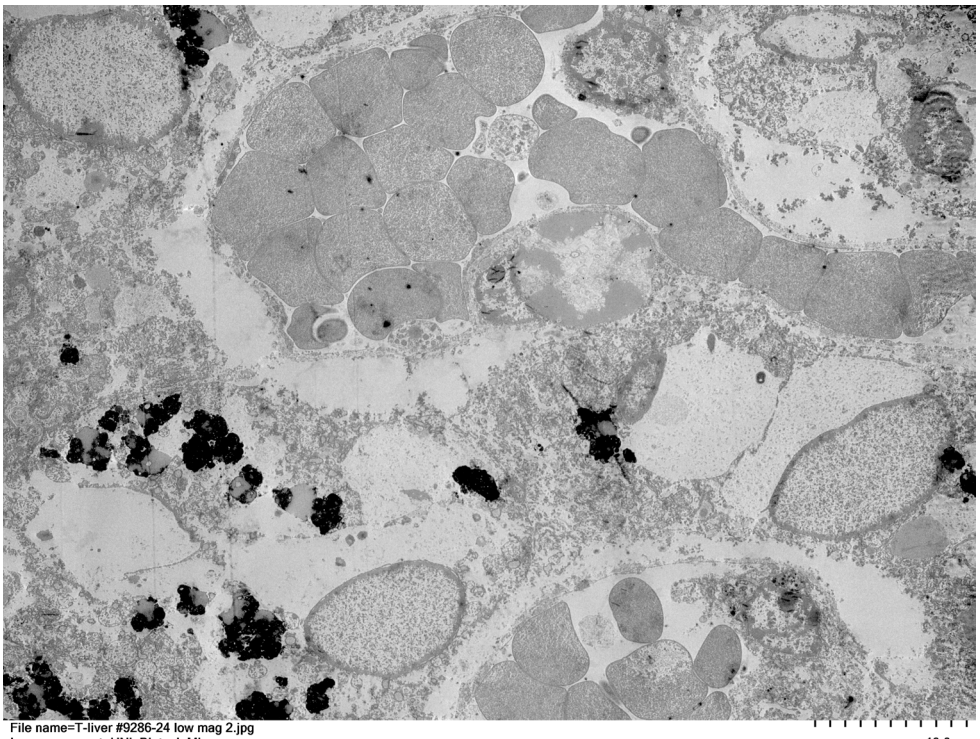
2025 TSMS Case 5

Authors: Mary Drozd, PhD, DVM, Dipl. ACVP, (University of Nebraska Veterinary Diagnostic Laboratory Center), Y. Joe Zhou, PhD (Director, Microscopy Core, University of Nebraska-Lincoln) Sarah J. Woodhouse**,** DVM, Dipl. ACZM (Lincoln Children's Zoo)

History/Clinical findings: An 18 year old, male, cotton-top tamarin (*Saguinus oedipus)* was found dead in his enclosure. Last medical exam identified mildly decreased muscling and fat, and multifocal alopecia due to hair pulling by co-housed juveniles. Bloodwork performed 2 years prior had normal CBC and serum chemistry values.

Gross findings: The tamarin had mildly reduced body muscling, moderately reduced subcutaneous and visceral fat, and multifocal head alopecia. The liver was congested, and the right medial, right lateral, and caudate liver lobes had rounded peripheral margins. At the liver hilus, the left lateral and left medial liver lobes were firm and had several, approximately 1.5 x 1 cm diameter, tan, capsular plaques. The right medial and caudate lobes were firm, and tan. The left kidney was diffusely pale.

TEM images: Representative TEM images of affected sections of liver.



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2025 TSMS Case 6

Author: Rebecca Kohnken, DVM PhD Dipl. ACVP (AbbVie)

History/Signalment: Approximately 2 month old male Sprague-Dawley rats were administered a single IV bolus of increasing doses of a non-cross reactive antibody conjugated to a cell-impermeable cytotoxic payload. 7 days post-dose, rats administered the high dose (500mg/kg) demonstrated decreased food consumption and decreased body weight with clinical observations of thin body condition.

Gross Pathology: At necropsy, the kidneys were noted to be pale pink.

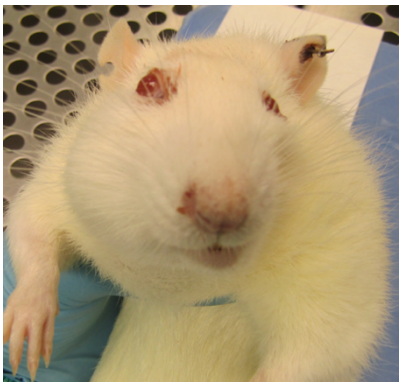
Selected Clinical Pathology Data: Clinical chemistry changes at 500 mg/kg included increased urea nitrogen to 7.4-fold higher than control group mean, increased creatinine to 3-4-fold, decreased albumin (-53%, to 1.4 g/dL), and altered calcium/phosphorus ratio (-12%/+62%). In a repeat of the study with a similar design but lower dose (200 mg/kg), urine was also collected and revealed marked increase in urine protein:creatinine ratio (to 11.4).

Disclosure: Dr. Kohnken is an employee of AbbVie and may own AbbVie stock. The design, study conduct, and financial support for this research were provided by AbbVie. AbbVie participated in the interpretation of data, review, and approval of the publication.

TSMS 2025, Case #7

Authors: Shanny H. Kuo, DVM, MS, PhD, Dipl. ACVP; Jessica M. Snyder, DVM, MS, Dipl. ACVP; University of Washington, Department of Comparative Medicine, Seattle, WA

History/Signalment: An 8-month-old male Sprague Dawley *Dmd*^{mdx} rat presented with a progressively enlarging right facial subcutaneous mass. On physical examination, the mass was firm, round, and circumferentially involved the right mandible and maxilla, extending from the ramus of the jaw to the zygomatic arch and diastema, resulting in malocclusion. Additional clinical findings included pronounced porphyrin staining and periocular alopecia of the right eye. Two markedly enlarged right cervical nodal masses, presumed to be lymph nodes, were also identified. In the past year, two other *Dmd*^{mdx} rats had presented with similar masses.



Gross findings: On external examination, a roughly circumscribed, nodular, and firm subcutaneous mass measuring approximately 3.0 × 3.0 × 0.75 cm is observed protruding from the rostral aspect of the right maxilla. On cut section, the mass is homogeneously beige to yellow-tan in color. At the level of the right submandibular salivary gland and lymph node, there is a firm, heterogeneous, lobulated mass measuring 2.5 × 0.5 × 1.0 cm in size. The cut surface is mottled dark red to pale yellow-tan and exudes approximately 0.1 mL of clear fluid. The lungs are multifocally mottled dark red and fail to collapse completely upon release of negative thoracic pressure.