VETERINARY PATHOLOGY SERVICES | FEE | SERVICE DESCRIPTION
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Autopsy Training | $150/hour; $225/hour | Complete demonstration of autopsy procedures to qualified personnel by a board-certified veterinary pathologist. Training includes proper tissue dissection for organ weights, interpretation of gross lesions, and appropriate tissue trimming techniques.
Photomicroscopy | Per slide: $15 ($22); Composite creation for publication: $30 ($45) | Composites for publication will be formatted in Adobe Photoshop to the journal specifications.
Photomicroscopy | Single tissue per slide: $20 ($30); 2 tissues per slide: $25 ($37); >2 tissues per slide: $45 ($67); Special tissue fee: $5 ($7); Slide review per hour: $200 ($300) | Tissues evaluated histologically by a board-certified veterinary pathologist with a final interpretative report. Charges are on a per slide or per hour basis.
Complete pathological assessment (comprehensive pathological PHENOTYPING of new mutant mouse lines or toxicological pathology screening) | $300 per mouse; $450 per mouse | ▪ Recommend 3-5 mice of each genotype, including the same number of age-and sex-matched controls exposed to the same environment and experimental conditions.
 ▪ Brief ante mortem observation period, followed by euthanasia.
 ▪ Body weight and blood/urine collection.*
 ▪ Complete autopsy with organ weights.
 ▪ Tissues fixed in 10% buffered formalin, trimmed, embedded, sectioned and H&E stained.
 ▪ Tissues evaluated histologically by a board-certified veterinary pathologist with a final interpretative report.

*CBC/Serum Chemistry/Urinalysis tests are recommended and available at additional cost.

HISTOLOGY SERVICES | FEE
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Trim, Cassette, Embed Tissue | $6 ($9) |
Sectioning (uncharged slides) | $2 ($3) |
Sectioning (Probe On charged slides for IHC) | $4 ($6) |
H&E Stain | $2 ($3) |
Decalcification | $2 ($3) |
Frozen section, unstained charged slide (for IHC) | $7 ($10) |
Histochemical stains | Level I: $4 ($6); Level II: $6 ($9); Level III: $8 ($12) | Level I: Gram, PAS, Acid fast, Congo red, Iron, Toluidine blue, Alcian blue
Level II: Trichrome, Luxol-Blue, Melanin bleach, Giemsa, Copper
Level III: GMS, Warthin-Starry, Von Kossa

Paraffin strip | $10 ($15)/tube; $5 ($7)/addl tube |

IMMUNOHISTOCHEMISTRY & IMMUNOFLUORESCENCE SERVICES | FEE | Leica BOND RXm Automated Immunostainer
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IHC: Working protocols | $20 ($30)/per slide | Antibodies already optimized on our platform
IHC: Novel Ab characterization | $150 ($225)/per ab | New antibodies (and applications) that have not been previously tested on our platform

Investigators are responsible for collecting their own materials (slides, blocks, left over of samples, etc.) following the conclusion of the project. Please be advised that after 3 months from the conclusion of the project, any material left behind by the investigators will be automatically discarded.
I. Animal + Researcher information - Prior to submission of samples to the clinical pathology laboratory, the following information must be provided:

<table>
<thead>
<tr>
<th>Animal information</th>
<th>Animal identifier, Examples: animal name, ID number, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Species</td>
</tr>
<tr>
<td></td>
<td>Breed or strain</td>
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<tr>
<td></td>
<td>Birthdate (approximate)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Laboratory + Researcher information</th>
<th>Laboratory or company name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Principal investigator/researcher name</td>
</tr>
<tr>
<td></td>
<td>Contact information (name, number, email) for PI/researcher for issues with samples or questions about samples or requested tests.</td>
</tr>
</tbody>
</table>

II. Test information
   a. See complete information below
   b. Available tests will depend on:
      i. Sample volume
      ii. Tube type(s) used
      iii. Time from collection until submission
   c. Make sure to include control animals (or use test animals as their own controls if a treatment will be applied and equivalent control animals are not available).

III. General sample handling guidelines
   General
   - Avoid freezing whole blood.
   - Do not force blood through needle into collection tubes as this will result in hemolysis.
   - Submit samples to laboratory as soon after collection as possible; review test information that follows.
   - Collection tubes can be provided (additional charge) with advanced notice to the lab.

   Hematology
   - CBCs – Submit whole blood within a few hours of collection (ideally) and at maximum <12 hours. Keep samples refrigerated, and do not freeze whole blood. Mix thoroughly after collection (invert several times).
   - Anticoagulants – EDTA or heparin are acceptable. EDTA better preserves morphology, but heparin allows for additional chemistry testing. Be mindful of blood to anticoagulant ratio during collection so to avoid sample dilution or pre-analytical errors from excessive or insufficient anticoagulant.

   Chemistry
   - If both a CBC and chemistry panel are desired, submit a green top as soon as possible, ideally 30 minutes to 1 hour after collection.
   - For delayed submission, centrifuge sample and freeze serum or heparinized plasma until submission.

   Coagulation
   - Centrifuge and separate citrated plasma, freezing until submission unless citrated whole blood samples can be submitted within 15-30 minutes of collection. Keep sample on ice without freezing sample.

   Slides
   - Avoid exposure of smear slides or sample (blood, bone marrow cytology) to formalin.

IV. Laboratory submissions
   a. Not all samples are run the same day as submission. Serum or plasma samples for chemistry/flex panels may be frozen and samples processed at a later date, especially if sample volumes are low, if dilutions will be necessary because of low sample volume, or if results are expected to be very elevated (and would otherwise yield a ‘greater than’ value).
   b. Samples requiring dilutions may incur additional fees, depending on volume and desired testing.
   c. Stat fees: Stat fee of $15/sample will apply to CBCs and chemistries submitted after 4 pm.
   d. Please inform the laboratory at the time of submission if abnormal results are anticipated (e.g. elevated enzymes) so we can minimize sample wasting from excessive instrument dilutions.

V. Laboratory contacts
   a. Clinical Pathology Laboratory – 215.898.8877; Hours: 8 am - 5:30 pm, Monday - Friday
   b. Head of service – Dr. Nicole Weinstein DVM, DACVP (Clinical Pathology)
   c. Laboratory Supervisor – Marla Washington
   d. Lead laboratory technician and coordinator of research testing – Samantha Fromm
### VI. Testing options

<table>
<thead>
<tr>
<th>Test</th>
<th>Fees</th>
<th>Description</th>
<th>Sample volume (min)</th>
<th>Sample *preferred</th>
</tr>
</thead>
</table>
| CBC - ICO          | $40.00 | - Instrument counts only  
- Does not include review by technician  
- Blood smear is prepared and stored  
- Pathologist review available for additional fee | 50-75 uL WB         | EDTA WB* (Heparin WB)              |
| CBC - Brief        | $50.00 | Instrument counts + technician review of slide:  
- Manual leukocyte differential  
- Evaluation (brief) for platelet clumps  
- Pathologist review available for additional fee | 50-75 uL WB         | EDTA WB* (Heparin WB)              |
| CBC - Comprehensive| $65.00 | Instrument counts + technician review of slide:  
- PCV + Total protein, if sample volume permits  
- Manual leukocyte differential, assessment of RBC morphology, platelet evaluation  
- Pathologist review included if certain criteria met | 150 uL WB          | EDTA WB* (Heparin WB)              |
| Blood smear evaluation | $30.00 | Pathologist evaluation of bone marrow with written report | Prepared smears &/or 50-100 uL WB | EDTA WB*                    |
| Bone marrow        | $55.00 | Pathologist evaluation of bone marrow with written report; concurrent CBC submission allows for improved analysis | Prepared smears     |                                    |
| PT + PTT           | $48.00 | Coagulation - PT + PTT tests  
- Manual leukocyte differential  
- Evaluation (brief) for platelet clumps  
- Pathologist review available for additional fee | 0.5 mL C-P          | Citrated WB or plasma              |
| D-dimer            | $35.00 | Coagulation - D-dimer test (can be added to PT + PTT tests) | 0.5 mL C-P          | Citrated WB or plasma              |
| Chemistry          |        | Routine tests: Glucose, BUN, Creatinine, calcium, phosphorous, magnesium, Total protein, albumin, (globulin), cholesterol, ALT, AST, ALP, GGT, Total bilirubin, Sodium, Potassium, Chloride, ECO2, (anion gap)  
Add-on tests: Amylase, lipase, triglycerides, creatine kinase |                      |                                    |
| - Individual       | $15.00 | Any tests above (excluding those in parentheses) | 100 uL S/H-P ~200 uL WB | Serum; Heparinized plasma         |
|                    |        |                                                                                                                                            | 125 uL S/H-P ~300-350 uL WB | Serum; Heparinized plasma         |
| - Flex 4           | $33.00 | Any 4 tests above                                                                                                                          | 175 uL S/H-P ~400 uL WB | Serum; Heparinized plasma         |
| - Flex 6           | $38.00 | Any 6 tests above                                                                                                                          | 200 uL S/H-P ~400 uL WB | Serum; Heparinized plasma         |
| - Renal or Liver   | $40.00 | Renal – BUN, CRT, Ca, P, Alb, Na, K, Cl, ECO2, Anion gap  
Liver – Glucose, BUN, TP, alb, cholesterol, ALT, AST, ALP, GGT, T.bili | 1 mL S/H-P ~1 mL WB | Serum; Heparinized plasma         |
| - Complete panel   | $46.00 | All chemistry tests listed under ‘routine tests’ above                                                                                       | ~250-500 uL fluid | Fluid in EDTA and/or Red top tube  |
| - Custom dilutions | $10.00 | Custom dilutions (see below); charged per sample                                                                                               |                      |                                    |
| Lactate            | $20.00 | Available only as individual test. Notify lab in advance; submit on ice, within 30 minutes of collection.                                          | 150-200 uL WB       | Heparin WB only                    |
| Urinalysis         | $30.00 | Complete urinalysis  
- Dipstick or supernatant analysis only                                                                                                          | 1 mL urine 300-500 uL urine | Urine                             |
| Cytology           | $50.00 | Pathologist evaluation of masses, organs, skin, etc                                                                                             | Slides              | Slides                            |
| Fluid analysis     | $55.00 | Gross analysis, cell counts + protein, pathologist evaluation of fluid + written report, e.g. abdominal, pleural, pericardial, CSF  
- Fluid in EDTA and/or Red top tube | ~250-500 uL fluid |                                    |

Note: Academic rate for non-University of Pennsylvania investigators is 1.5x; commercial/industry is 2x.

### Custom dilutions*

<table>
<thead>
<tr>
<th>Option 1</th>
<th>Available tests per sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALP, ALT, AST, BUN, Cholesterol, CK, Creatinine, GGT, Glucose, Lipase, Triglycerides</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Option 2</th>
<th>Available tests per sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALP, ALT, AST, BUN, Calcium, Cholesterol, CK, Creatinine, ECO2, GGT, Glucose, Lipase, Magnesium, Phosphorous, Total protein, Triglycerides</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option 3</th>
<th>Available tests per sample</th>
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</thead>
<tbody>
<tr>
<td>Albumin, Calcium, Total protein, Total bilirubin</td>
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<table>
<thead>
<tr>
<th>Option 4</th>
<th>Available tests per sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amylase, Calcium, Magnesium, Phosphorous, Total bilirubin, Total protein</td>
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</tbody>
</table>

* Diluted flex panels will typically allow for half as much required volume. Dilutions may result in no value reported or a ‘less than’ value due to detection limits of the instrument, diluting of the analyte, and low sample volumes. Additional fees may apply depending on numbers of dilutions and/or options selected. Depending on sample volume, not all tests per option may be able to be performed.