



University of Pennsylvania School of Veterinary Medicine
Comparative Pathology Core



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<https://www.vet.upenn.edu/research/core-resources-facilities/comparative-pathology-core>

VETERINARY PATHOLOGY SERVICES

FEE

SERVICE DESCRIPTION

Academic rate for non-University of Pennsylvania investigators is 1.5x (fees in red); commercial/industry is 2x.

<u>Necropsy Training</u>	\$200/hour \$300/hour	Complete demonstration of necropsy procedures to qualified personnel by a board-certified veterinary pathologist. Training includes proper tissue dissection for organ collection, and appropriate tissue fixation/trimming techniques.
<u>Slide Evaluation</u>	\$30 (\$45)/Tissue or animal	Tissues evaluated histologically by a board-certified veterinary pathologist. The fee is based on the number of tissues/animals on each slide.
<u>Complete pathological assessment</u> (comprehensive pathological phenotyping of new mutant mouse lines or toxicological pathology screening)		- Recommend multiple animals from each experimental group, including an adequate number of age-, sex-, and strain-matched controls. - Brief ante mortem observation period, followed by euthanasia. - Body weight and blood collection.* - Complete autopsy with organ weights.
Mouse, complete	\$375 (\$563)/animal	- Thorough organ/tissue collection and sampling for histopathological examination.
Other lab rodents and rabbit, complete	\$500 (\$750)/animal	- Tissues fixed in formalin, trimmed, embedded, sectioned and H&E stained.
Dog and other large animals, complete	\$1200 (\$1800)/animal	- Tissues evaluated histologically by a veterinary pathologist with a final interpretative report.
Necropsy only	50% complete fee	
Necropsy with tissue processing	70% complete fee	*Clinical Pathology services are available at an additional cost (see below).

**IMMUNOHISTOCHEMISTRY (IHC),
IMMUNOFLUORESCENCE (IF), and IN SITU
HYBRIDIZATION (ISH) SERVICES**

FEE

Leica BOND RXm Automated Immunostainer

<u>IHC: Working protocols:</u>		Antibodies and protocols already optimized on our platform.
Chromogenic IHC, FFPE	\$30 (\$45)/slide	
Chromogenic IHC, frozen/cytology	\$35 (\$53)/slide	
IF, single marker labeling, FFPE	\$35 (\$53)/slide	
IF, single marker labeling, frozen/cytology	\$40 (\$60)/slide	
IF, multiple markers labeling	\$15 (\$23)/each additional	
<u>IHC: Novel antibody characterization</u>		Workup and optimization of new antibodies (and applications) that have not been previously tested on our platform.
Chromogenic IHC	\$250 (\$375)/antibody	
IF single marker labeling	\$300 (\$450)	
IF multiple markers labeling	\$60 (\$90)/each addl marker	
ISH (RNAscope®), chromogenic <i>singleplex</i>	\$110 (\$165)/slide	Service provided using the RNAscope® technology.
ISH (RNAscope®), fluorescence <i>multiplex</i>	\$220 (\$330)/slide	

TISSUE MICROARRAY (TMA) SERVICES		FEE	
<u>TMA generation</u>			
15 well block		\$75 (\$110)/block	Generation of a TMA starting from paraffin blocks. The service does not include the selection of the blocks.
40 well block		\$200 (\$300)/block	
70 well block		\$400 (\$600)/block	
TMA annotation/evaluation		\$5 (\$7)/per well	Evaluation and annotation of TMA slides by a veterinary pathologist
DIGITAL PATHOLOGY		FEE	Aperio VERSA & eSlide Manager
<u>Digital Slide Scanning</u>			The Aperio VERSA is a digital slide scanner that provides brightfield and fluorescence imaging of tissues configured to a sophisticated database management system (eSlide Manager) for central storage, analysis, and sharing. The system is fully integrated with advanced imaging software, which offers state-of-the-art quantitative analysis of tissues, cells, and subcellular structures (Image Analysis Service).
BF 20x		\$7 (\$10.5)/slide	*Scanning at 63x is done on regions of interest, not the entire slides **A \$5/slide fee will be added for scans exciding 3 hours of scanning
BF 40X		\$15 (\$30)/slide	
BF 63X		\$25 (\$37.5)/slide*	
FL 20X		\$13 (\$20)/slide**	
FL 40X		\$20 (\$30)/slide**	
<u>Image Analysis</u>			
Generation of algorithms:	Tier I	\$120(\$180)/Algorithm	<u>Tier I:</u> BF/IF Positive pixel count, BF Color Deconvolution, BF Nuclear, IF Area Quantification <u>Tier II:</u> BF/IF Cytoplasmic, Membrane, Microvasculature, Simple Genie <u>Tier III:</u> Integration of Tier I/II algorithms with Genie
	Tier II	\$175(\$262)/Algorithm	
	Tier III	\$300(\$450)/Experiment	
<u>Running the analysis:</u>			Note: Complicated Genie algorithms have to be discussed with the pathologists on a case-by-case basis.
Simple whole slide analysis		\$10(\$15)/slide	
Complex slide analysis		\$20(\$30)/slide	
<u>Image analysis training:</u>			
Hourly fee (minimum 30 minutes)		200(\$300)/hour	
HISTOLOGY SERVICES		FEE	
Standard trimming		\$4 (\$6)	Standardized grossing and orientation of tissue specimens
Specialized trimming		\$6.5 (\$9.75)	Tailored/complex trimming and orientation of tissue specimens
Processing and embedding		\$4 (\$6)	Standard paraffin-embedding of tissue specimens
Specialized processing and embedding		\$6.5 (\$9.75)	Tailored/complex paraffin embedding of tissue specimens
Unstained slide sectioning		\$5.5 (\$8.25)	Standard microtome sectioning of paraffin blocks on charged slides
Specialized sectioning		\$10 (\$15)	Tailored microtome sectioning of specific structures on charged slides
H&E Stain		\$5 (\$7.5)	Standard H&E stain (fee includes sectioning on non-charged slides)
Decalcification (formic acid)		\$4 (\$6)	Pre-processing of tissue samples containing bone
Decalcification (EDTA)		\$6 (\$9)	Softer decalcification for samples requiring subsequent IHC
Histochemical stains:			
	Level I	\$7 (\$10.5)	Level I Gram, PAS, Acid fast, Congo red, Iron, Toluidine blue, Alcian blue
	Level II	\$9 (\$13.5)	Level II Trichrome, Luxol Fast Blue, Melanin bleach, Giemsa, Copper
	Level III	\$14 (\$21)	Level III GMS, Warthin-Starry, Von Kossa Fee includes sectioning on non-charged slides
Paraffin strip		\$10 (\$15)/tube	Collection of serial microtome sections from FFPE material for DNA or RNA extraction
Archived material retrieval		\$5-\$10 (\$7.5-\$15)/case	Database search and retrieval of archived tissue specimens
A 40% increase of the original fee is charged for frozen tissue preparations such as OCT embedding and cryostat sectioning , and frozen section staining .			

CLINICAL PATHOLOGY SERVICES		FEE
Comprehensive Research CBC*	\$12 to \$17 (depending on number of samples submitted)	Panel contains RBC, WBC, HCT, HGB, Erythrocyte indices, WBC differential, platelet count, absolute and percent reticulocyte count, and pathologist review
Blood smear, cytological evaluation	\$30.00/slide	Pathologist review of blood smear includes written report with leukocyte differential, assessment of morphology, and interpretive comments
Bone marrow, cytological evaluation	\$75.00/slide	Pathologist evaluation of bone marrow cytology with written report; concurrent CBC submission allows for improved analysis
Other samples, cytological evaluation	\$50.00/slide	Pathologist evaluation of masses, organs, skin, etc
Custom Chemistry Panels*	Individual and combination of tests available – inquire for pricing and options.	<u>Examples of routine tests:</u> Glucose, BUN, Creatinine, calcium, phosphorous, magnesium, Total protein, albumin, (globulin), cholesterol, ALT, AST, ALP, GGT, Total bilirubin, Sodium, Potassium, Chloride, ECO ₂
Shipping and handling	\$40.00/1-10 samples \$60.00/11-20 samples \$80.00/21-30 samples \$100.00/>30 samples	Shipping and handling fees for outsourced clinical pathology tests

Services are offered through IDEXX BioAnalytics (<https://www.idexxbioanalytics.com/welcome-portal>). IDEXX fees are susceptible to change.

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. A 30% increase of the original fee is charged for STAT requests. The CPC reserves the right to assess the feasibility of STAT requests on a case-by-case basis.