



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 autopsy procedures to qualified personnel by a board-certified veterinary pathologist. Training includes proper tissue dissection for organ collection, and appropriate tissue 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)		- Brief ante mortem observation period, followed by euthanasia. - Body weight and blood collection.* - Complete autopsy with organ weights. - Thorough organ/tissue selection and sampling for histopathological examination. - Tissues fixed in formalin, trimmed, embedded, sectioned and H&E stained.
Mouse, complete	\$375 (\$563)/animal	
Other lab rodents and rabbit, complete	\$500 (\$750)/animal	
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	- Evaluation of multiple animals from each experimental group, including an adequate number of age-, sex-, and strain-matched controls is recommended.
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>		
Chromogenic IHC, FFPE	\$30 (\$45)/slide	Antibodies and protocols already validated on our platform (does not include non-stock antibody cost). Overview of the validated stainings and protocols.
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>		
Chromogenic IHC	\$250 (\$375)/antibody	Workup and optimization of new antibodies (and applications) that have not been previously tested on our platform (does not include antibody cost).
IF single marker labeling	\$300 (\$450)	
IF multiple markers labeling	\$60 (\$90)/each add marker	
ISH (RNAscope®), chromogenic <i>singleplex</i>	\$110 (\$165)/slide	Service provided using the RNAscope® technology (does not include probe cost).
ISH (RNAscope®), fluorescence <i>multiplex</i> (3 probes)	\$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 or OCT 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>			<p>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).</p> <p>*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.</p>
	BF 20x	\$7 (\$10.5)/slide	
	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>			<p><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.</p> <p>Note: Complicated Genie algorithms have to be discussed with the pathologists on a case-by-case basis.</p>
Generation of algorithms:	Tier I	\$120 (\$180)/Algorithm	
	Tier II	\$175 (\$262)/Algorithm	
	Tier III	\$300 (\$450)/Algorithm	
<u>Running the analysis:</u>			
	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	\$3.5 (\$4.75)	Standardized grossing and orientation of tissue specimens.
	Specialized trimming	\$6 (\$9)	Tailored/complex trimming and orientation of tissue specimens.
	Processing and embedding	\$3 (\$4.5)	Standard paraffin-embedding of tissue specimens.
	Specialized processing and embedding	\$6 (\$9)	Tailored/complex paraffin embedding of tissue specimens.
	Standard sectioning	\$5 (\$7.5)	Standard microtome sectioning of paraffin blocks on charged slide.
	Specialized sectioning	\$8 (\$12)	Tailored microtome sectioning of specific structures on charged slides.
	H&E Stain	\$4 (\$6)	Standard H&E stain (fee includes sectioning on non-charged slides).
	Decalcification	\$3 (\$4.5)	Pre-processing of tissue samples containing bone.
<u>Histochemical stains</u>			Fee includes sectioning on non-charged slides.
	Level I	\$6 (\$9)	Gram, PAS, Acid fast, Congo red, Iron, Toluidine blue, Alcian blue.
	Level II	\$8 (\$12)	Trichrome, Luxol-Blue, Melanin bleach, Giemsa, Copper, PSR.
	Level III	\$10 (\$15)	GMS, Warthin-Starry, Von Kossa.
	Paraffin strip	\$10 (\$15)/tube	Serial microtome sections from FFPE material for DNA or RNA extraction.
	Archived material retrieval	\$5-\$10 (\$7-\$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*	\$25 to \$30 (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.
Clinical Pathology services are offered through IDEXX BioAnalytics (https://www.idexxbioanalytics.com/welcome-portal). Quotes are renewed annually and fees are subject 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.