

User Guide



**Connecticut Veterinary Medical
Diagnostic Laboratory**
61 North Eagleville Road, Unit 3089
Storrs, CT 06269
Phone: 860-486-3738
Fax: 860-486-3936
CVMDL@uconn.edu
www.cvmdl.uconn.edu

**Business Hours: Monday – Friday
8:30am to 4:30pm**

Laboratory Director: Dr. Joan Smyth, MVB, PhD, DECVP, MRCVS

Laboratory History

The **Connecticut Veterinary Medical Diagnostic Laboratory (CVMDL)** has a rich history of working to safeguard animal and human health, and to protect the agricultural community of New England. For over 50 years CVMDL has been at the forefront of laboratory based veterinary disease diagnosis and disease surveillance. We are part of the Department of Pathobiology and Veterinary Science located on the Storrs campus of the University of Connecticut. The CVMDL is the only veterinary diagnostic laboratory in New England that is fully accredited by the American Association of Veterinary Laboratory Diagnosticians. We are also a member laboratory of USDA's National Animal Health Laboratory Network (NAHLN) and FDA's Veterinary Laboratory Investigation and Response Network (Vet-LIRN). We have a strict Quality Assurance Program that follows the guidelines set forth by the AAVLD Essential Requirements for accreditation. This program assures that the results provided to you by the CVMDL are accurate, reliable, and traceable.

The CVMDL provides or facilitates surveillance for disease outbreaks affecting poultry, livestock, companion animals and wildlife. We provide regulatory testing services for interstate transport, and in-depth diagnostic testing services for veterinarians, federal and state agencies, zoo/aquariums, producers, and pet owners.

Laboratory Mission

The **Connecticut Veterinary Medical Diagnostic Laboratory (CVMDL)** strives to safeguard animal and human health by providing excellence in veterinary diagnostic laboratory services, professional expertise, and collaboration with state and federal agencies to detect and monitor current and emerging disease important to animal and human health. We are committed to providing current, timely, and personalized expert service to our client veterinarians, animal owners, producers, academic collaborators and partner agencies. As part of the University of Connecticut's Department of Pathobiology and Veterinary Science, the CVMDL strives to develop new approaches to disease identification, investigation, and prevention, and to contribute to the education of graduate, undergraduate and post-doctoral students (including veterinarians) seeking advanced training in disease related studies.

AAVLD Accreditation: The CVMDL has full accreditation status with the American Associate of Veterinary Laboratory Diagnosticians (AAVLD). We have a Quality Assurance program that meets the AAVLD Essential Requirements. These requirements incorporate the World Organization for Animal Health (OIE) guidelines and are based upon ISO/IEC 17025 General Requirements for the Testing and Calibration of Laboratories.

NAHLN: The CVMDL is a full member of the National Animal Health Laboratory Network (NAHLN), a partnership between the USDA, NIFA (National Institute of Food and Agriculture), and the AAVLD. The goal of this partnership is to provide accessible, timely, accurate, and consistent animal disease laboratory services nationwide, provide laboratory data to meet epidemiological and disease reporting needs, maintain the capacity and capability to provide laboratory services in support of responses to foreign animal disease outbreaks or other adverse animal health events. NAHLN focus is on diseases of livestock (exotic, zoonotic, and emerging diseases), while including diseases of non-livestock species.

VET-LIRN: The CVMDL is a member of FDA's Veterinary Laboratory Investigation and Response Network (Vet-LIRN). This program helps coordinate facilities, equipment, and professional expertise of government and veterinary diagnostic laboratories across the country and Canada in response to high priority chemical and microbial feed/drug contamination events. The network provides the means for rapid response to reports of animal injury related to such events, and establishes protocols to facilitate veterinary diagnostic reporting to FDA.

CVMDL is a full service veterinary diagnostic laboratory, and accepts fresh intact carcasses from animals of all species for necropsy, as well as preserved necropsy or biopsy specimens. Veterinary biological specimens such as blood, serum, tissue, milk, feces, urine, etc., are accepted for testing by serological, microbiological, molecular and other technologies. A complete listing of available tests and submission information follows, and is also available at www.cvmdl.uconn.edu.

Submission Information

General Guidelines

- CVMDL only accepts specimens for testing from veterinarians, researchers, or agencies, with the exception of animals for necropsy, ticks for pathogen testing and milk for mastitis testing. Specimens for testing must be accompanied with the proper submission form. These forms are designed to provide the laboratory with necessary and concise information to produce results as quickly as possible, please be as thorough as possible in completing the forms. Our submission forms can be downloaded at www.CVMDL.UConn.Edu/resources/forms.php
- Specimens can be sent to the following address:
 - CVMDL
 - 61 North Eagleville Road, Unit 3089
 - Storrs, CT 06269
 - 860-486-3738
- Contacting the Laboratory:
 - The main laboratory telephone number is **860-486-3738**
 - We can also be reached by email at **CVMDL@uconn.edu**
- **Laboratory Hours**
 - **Monday through Friday 8:30am to 4:30 pm, Eastern Standard Time**
 - **Observed Holidays**
 - **New Year's Day**
 - **Memorial Day**
 - **Fourth of July**
 - **Labor Day**
 - **Thanksgiving**
 - **Christmas**

Specimen Labeling Best Practices: Correct sample identification and integrity are paramount.

- Label all samples with the owner's name in waterproof marker. Please do not use stick-on labels as they often come off.
- If multiple cases are submitted in one box, package each case separately to ensure that all samples are assigned to the proper case.
- Use serum shipping boxes (call the laboratory for shipping supplies) or similar boxes with dividers to separate tubes from one another. Do NOT package loose blood tubes in crumpled paper or packing peanuts.
- Enclose sufficient ice packs to preserve the quality of fresh tissues. This should be at least a 2:1 ratio of ice to tissues. If available, insulated styrofoam-lined containers should be used.
- Formalin fixed tissue can be shipped with formalin-moistened gauze inside a heat sealed bag or in a leak proof plastic jar. Residual formalin should be poured off once tissues are fixed and prior to shipping.
- Pack with absorbent materials to soak up spills should they occur. All specimens should be packed in a manner to avoid leakage or breakage. If there are concerns about potential leakage, line the box with plastic bags to help contain fluid.

Supplies Available

Please call the Admissions office at 860-486-3738 with questions on ordering prepaid shipping labels, serology mailers, or biopsy kits.

Please use the Sample order form to request supplies. The form can be found on the homepage of our website at <http://www.cvmdl.uconn.edu/index.php>.

Shipping

Shipping regulations specify the packaging and transport requirements for specimens sent through the USPS, Fedex and UPS. Failure to comply with these regulations can result in stiff fines. CVMDL recommends that you consult with commercial carrier of your choice.

It is important that clients who package and ship specimens have the required training to ensure that samples are packaged in a manner that satisfies current federal shipping regulations.

For additional information on packaging requirements as outlined by the IATA and DOT please visit these websites:

http://www.ups.com/content/us/en/resources/ship/hazardous/biological_substances.html

<http://www.fedex.com/downloads/shared/packagingtips/pointers.pdf>

http://www.iata.org/whatwedo/cargo/dgr/Documents/DGR52_InfectiousSubstances%28DGR362%29.pdf

Courier

A courier service is available to travel to clinics, farms, zoos, and aquariums to pick up animal(s), except for adult (full-sized) horses, destined for necropsy. For transportation of adult horses to the CVMDL please contact Connecticut Horse Cremation at 860-881-7802 or 860-881-7823. The CVMDL courier runs on a fee for service basis. Fees are determined by the body weight of the animal(s) and the county

in which the animal is located. Courier service pickups can be scheduled by calling the laboratory at 860-486-3738. The courier service runs Monday through Friday, excluding Holidays. While every effort will be made to accommodate a same day retrieval of your animal, there are times when for reasons of logistics or because of previously scheduled pickups, we may not be able to meet your request on the same business day.

Courier Service to Tolland, Windham, and Hartford County	M-F, excluding Holidays	\$100.00<400lbs \$200.00>400lbs	Calls for same day pick up must be received by 12:00pm or they will fall on the next day's list
Courier Service to Middlesex and New London County	M-F, excluding Holidays	\$125.00<400lbs \$225.00>400lbs	Calls for same day pick up must be received by 12:00pm or they will fall on the next day's list
Courier Service to New Haven County	M-F, excluding Holidays	\$150.00<400lbs \$250.00>400lbs	Calls for same day pick up must be received by 11:00am or they will fall on the next day's list
Courier Service to Fairfield and Litchfield County	M-F, excluding Holidays	\$200.00<400lbs \$350.00>400lbs	Calls for same day pick up must be received by 10:00am or they will fall on the next day's list

Customer Service

Admissions/Accessioning

The Admissions and Accessioning Office is the first line of communication with the laboratory (860-486-3738). Admissions staff members provide customer service and greet our clients both in person and over the phone. Staff members are responsible for receiving all specimens, accessioning, data entry, phone and office reception, billing, and reporting. Questions regarding sample submission requirements, capabilities, shipping, turn-around- time and referral testing should be directed to this office. Admissions Office staff can also assist with orders for shipping labels, biopsy mailers, serum mailers, and other supplies.

Sample Submission Guidelines:

Mastitis Submission Guidelines

Fresh milk samples should be accompanied by a Mastitis Submission form (<http://cvmdl.uconn.edu/resources/forms.php>). Indicate which tests are requested on the form. Each sample should be individually labeled with animal name/ID and quarter (if quarter samples are submitted) or pool (if pooled quarter samples are submitted). Samples should be kept cool on gel icepacks, double bagged with absorbent material, and each tube securely tightened to prevent leakage (parafilm or electrical tape can be used). Please note that a cell count cannot be performed on frozen or previously frozen milk samples. Turn-around time is 2-4 business days.

For larger herd tests, contact the Connecticut Department of Agriculture at 860-713-2505 to schedule milk collection.

Microbiology Submission Guidelines

Diagnostic Microbiology (culture requests)

Samples submitted can be fresh tissue, feces, or swabs and should be accompanied by a Microbiology/Serology Form (<http://cvmdl.uconn.edu/resources/forms.php>). Samples should remain on icepacks during transport, double bagged with absorbent material, and each individual sample labeled with animal name/ID. Please indicate the location of sample collection (e.g., uterus, foot abscess) as well as any information regarding bacteria suspected or presumptive diagnosis. Please note that certain bacteria cannot or are unlikely to be isolated with routine cultures (e.g. Mycoplasma, Campylobacter, Mycobacteria, Salmonella, Haemophilus, etc.) and may require additional testing. Please contact the lab at 860-486-3738 for any inquiries. Turnaround time varies by type of culture requested.

Aerobic culture – 3-10 days.

Anaerobic culture – 3-10 days.

Salmonella (Diagnostic) culture – 3-10 days

Mycoplasma culture – 3-30 days. Can be called positive as early as 3 days but cannot be called negative until 30 days.

Mycobacteria – 4-8 weeks. Can be called positive as early as 4 weeks but cannot be called negative until 8 weeks.

Fungal – 3-30 days. Culture is called negative if no growth after 4 weeks incubation.

Salmonella (Environmental)

Samples submitted are environmental milk swabs, generally submitted by state inspectors. Samples should be kept on icepacks, double bagged with absorbent material, and each individual sample labeled with coop number and location taken within the coop. Sample labels should match the samples listed on the Microbiology/Serology form (<http://cvmdl.uconn.edu/resources/forms.php>). Tests are only started on Mondays & Tuesdays. Samples submitted later in the week will be frozen and started at the beginning of the next full week. Turnaround time is 5-14 business days depending on day submitted and testing required.

Environmental Salmonella – 5-8 days. Additional time if typing is needed.

Salmonella enteritidis or Salmonella pullorum suspects – 9-14 days

Parasitology

Fresh feces samples should be accompanied by a Microbiology/Serology Form (<http://cvmdl.uconn.edu/resources/forms.php>). Feces need to be as fresh as possible; at least 10 grams (0.35 ounces) are needed. Samples should remain on icepacks during transport, be double-bagged with absorbent material, and each individual sample labeled with animal name/ID. Turnaround time is 1-3 business days.

Molecular Diagnostics Submission Guidelines

All samples should be shipped in leak proof containers, tubes or bags. A secondary container or absorbent material may be needed when shipping liquid. Tick samples should be put in small clear plastic bags and can be shipped at room temperature. Tissue swabs or fresh tissue can be to be shipped directly in a container or in PBS (phosphate buffered saline) on ice. Poultry tracheal/cloacal swab samples need to be shipped in BHI broth based on NVSL guidelines. Nasal swabs may be transported in sterile PBS or viral transport media or other media and shipped chilled, overnight: contact laboratory for additional information. Blood samples are generally collected in EDTA (purple top) tubes, but others may be acceptable, and should be shipped chilled overnight; contact lab for additional information. Bacterial culture samples should be shipped according to the Diagnostic Microbiology sample submission guidelines. All samples should be labeled separately with owner name and sample ID and accompanied by a molecular diagnostic submission form (<http://cvmdl.uconn.edu/resources/forms.php>).

Serology Submission Guidelines (includes Avian, Mammalian and Regulatory serology samples):

Samples should be accompanied by a submission form (<http://cvmdl.uconn.edu/resources/forms.php>) and shipped to the laboratory in leak-proof containers (i.e. red top or tiger top tubes) and packaged to prevent breakage of the containers (preferably in Styrofoam mailers). If there will be a delay in shipping, the samples should be refrigerated. Samples should be shipped with an ice pack, especially during the warmer weather months.

Pathology Submission Guidelines:

The CVMDL is part of the University of Connecticut, an educational facility. Part of our mission is training resident veterinary pathologists, who are graduate veterinarians working under direct supervision of experienced senior veterinary pathologists. Typically our cases are assigned to a resident pathologist and a senior pathologist.

Biopsy Submission Guidelines:

Submission of surgical specimens for histopathological evaluation should be accompanied by a Biopsy submission form (<http://cvmdl.uconn.edu/resources/forms.php>). Include a detailed history including location of mass, size, duration, treatments, and lymph node involvement. Biopsy mailers are available with a prepaid FedEx label. Turn-around time for biopsies is 1-2 working days from receipt. Submissions requiring decalcification will take longer.

Formalin fixed tissue can be shipped with formalin-moistened gauze inside a heat sealed bag or leak proof plastic jar. Residual formalin should be poured off once tissues are fixed and prior to shipping.

Call the laboratory for a biopsy mailer (860) 486-3738

Necropsy Submission Guidelines:

Necropsies are performed daily, Monday through Friday. Necropsy does not occur over the weekend unless in emergency or special situations. After-hours services are currently under Management review.

Live animals are not accepted, except for poultry and fish. Animals submitted for necropsy should be fresh or refrigerated, not frozen. Intact carcasses should be submitted as soon after death as possible. A necropsy submission form must accompany each case.

Fresh specimens from a field necropsy should be large enough to demonstrate the lesion yet small enough to allow for rapid chilling. In some cases submission of an entire organ may be preferred. Ideally, fresh samples should be packaged individually in a leak proof container (zipper lock bags work well for tissue) to prevent cross-contamination. Fresh intestine should be tied off with string and packaged separately from other tissue(s)/organ(s). Samples should be shipped in leak-proof containers with gel ice packs

Returning of Bodies following Necropsy: For bio-safety reasons, bodies cannot be returned for burial at home. The CVMDL has a contract with a local crematory. Please notify the staff if you would like to have a private cremation with a return of ashes, at an additional cost. CVMDL can assist in making private cremation arrangements and will provide contact information for the crematorium upon request.

Carcass Disposal Fees: There is no additional cost for routine carcass disposal for animals weighing less than 500lbs (weight as measured at CVMDL on day of submission). There is a \$100 disposal fee for animals weighing 500lbs or more (weight as measured at CVMDL on day of submission). Please see paragraph above (Returning of Bodies following Necropsy) for information on private cremation services for companion animals

Research Histology Submission Guidelines:

Submission of Histology specimens (paraffin blocks, glass slides, fresh, frozen or fixed tissue) should be accompanied by a Histology submission form (<http://cvmdl.uconn.edu/resources/forms.php>). It is recommended that clients call the Histology laboratory directly (860) 486-3740 to discuss the samples prior to accessioning to assure accurate completion of the submission form.

Samples may be hand delivered or mailed to the CVMDL Admissions office. Slide boxes, slide folders or mailers should be provided by the client if possible, however these items can be provided by the Histology lab for an additional fee. Formalin fixed tissue can be shipped with formalin-moistened gauze inside a heat sealed bag or wide-mouth leak proof plastic jar. Residual formalin should be poured off once tissues are fixed and prior to shipping. Completed samples, slides or blocks will be returned to the client.

Call the CVMDL Histology Laboratory for specific information concerning your submission (860) 486-3740 or the CVMDL Admissions office for general information (860) 486-3738.

Rabies:

In cases involving human exposure (bite, scratch, and mucous membrane contamination with blood or saliva), a Rabies direct fluorescent antibody test (DFA) will be conducted at the Connecticut Department of Public Health located in Rocky Hill (**Connecticut State Department of Public Health Virology Laboratory at 395 West Street, Rocky Hill, CT 06067 (860) 920-6662.**)

If, in addition to rabies testing, a complete necropsy is required, the animal may be sent to the CVMDL by prior arrangement. Under these circumstances rabies samples will be collected and forwarded to the Connecticut State Department of Public Health by courier. Rabies Viral FA testing will also be conducted at the CVMDL. The necropsy will not be performed until the animal has tested negative for rabies.

In cases in which specimens submitted to the CVMDL for Rabies Testing Only must be sent by courier to the State Department of Health due to exposure status, a \$25.00 shipping and handling fee will be charged. If a complete necropsy is required, the animal may be sent to the CVMDL by prior arrangement. Under these circumstances the shipping and handling fee is waived. The necropsy will not be performed until the animal is tested negative for Rabies virus at CVMDL.

If a full necropsy is not required, submission of the head only is preferred for rabies testing. Specimens should be properly packaged – contained in two separately sealed heavy plastic bags, preferably within a sealed cardboard container. A submission form on the outside of the container must accompany each specimen. Rabies testing is performed Monday through Friday (excluding Holidays). Specimens should arrive at the laboratory prior to 1:00 pm for same day testing. Specimens received during evenings, weekends, or holidays will be processed the next business day. Rabies examination results are reported to the submitter first by telephone, and also by case report sent by fax (if available), email, or US Mail.

A fee of \$30.00 is charged for Rabies direct fluorescent antibody (DFA) performed at the CVMDL. In addition, at the expense of the submitter, CVMDL reserves the right to conduct Rabies direct fluorescent antibody (DFA) testing on select if history and vaccination status warrant.

Reportable Diseases

Several diseases of animals are reportable to the State Veterinarian or federal agency, as required by law. The CVMDL will notify the state veterinarian or appropriate authority for the state of the submitter if any reportable disease is diagnosed. If you are uncertain about the reportable status of any disease, check with the office of your State Veterinarian.

Referral Laboratory Policy

The CVMDL will utilize reference laboratories for any testing needs that cannot be performed in-house. The laboratories utilized are either other AAVLD accredited laboratories or have met equivalent Quality Assurance standards.

Referral test results will be reported through our Laboratory Information Management system and will identify the reference laboratory used, the test requested, and the result obtained. Fees incurred for referral testing will be added to the invoice for each case along with a \$25 shipping fee. Please note the charge for shipping may be higher if the specimen is considered hazardous or requires dry ice.

Result Reporting

Results are reported to the submitted veterinarian/agency (or owner in the case of owner submitted necropsies) as soon as they become available. A preliminary report will be sent on all pathology cases with gross findings identified at necropsy. When a preliminary report is sent, all currently pending tests will be listed. Final reports are usually sent when histopathology and microbiology tests have been

completed. Any results obtained after a case has been finalized (e.g. referral results) will be reported as an addendum to the final report.

The preferred method of reporting is by E-mail. The CVMDL will also send reports via fax or regular mail at no additional charge, at the request of the submitter. Veterinarians, Zoos, Aquariums, and CVMDL client agencies will soon access their results online through our website. The web access system is password protected and will only show cases that were submitted on that specific account. To obtain your user id and password, please contact the laboratory at 860-486-3738.

When calling for results please have the following information:

- Owner First and Last Name
- Animal Name or ID
- Date submitted
- Test Requested

Fee/Billing Policy

The submitter is financially responsible for fees incurred on their behalf in pursuit of a diagnosis. Fees are due 30 days after invoice receipt.

We issue invoices once monthly. Our invoices contain two parts; the first is the Customer Invoice that contains the dollar amount due and a detachable portion to return with your payment. The second portion is the transaction detail sheet that contains an itemization of the charges for each submission represented on the Customer Invoice with associated charges.

There is a \$10.00 minimum charge per case. This does not apply to regulatory testing.

We can accept payment by MasterCard, Visa, Cash, Check, or Money order. To make credit card payments, please contact the laboratory directly at 860-486-3738; please have your invoice number and the total dollar amount owed readily available.

Check or money order payments are made out to the University of Connecticut and can be sent to the following address

University of Connecticut
Office of the Bursar
233 Glenbrook Road, Unit 4231
Storrs, CT 06269

It is vital that you include your invoice number to ensure proper posting of your payment

Accounts that are not paid in full will receive monthly reminder notices. These notices will arrive in the first week of the month and are labeled as Customer Statement at the top. Please call the lab at 860-486-3738 for any questions regarding these statements. Please note that delinquent accounts are turned over to an outside collection agency after 150 days without activity.

Directions to the Laboratory

From Interstate 84 (East or West)

Take Exit 68. Turn South onto Route 195, crossing Routes 32 and 44 on the way to campus. After crossing the Route 44 intersection, continue to the second stoplight (Storrs Congregational Church, a large brick church with white steeple, on corner of 195 and North Eagleville) and turn right onto North Eagleville Road. Our building is the second building on the left just behind the Chemistry building. There is a Connecticut Veterinary Medical Diagnostic Laboratory sign at the end of the driveway. Park in one of the spots designated for patho clients, then follow the sidewalk to the rear entrance of the building (small red double doors). The admissions office is the first office on the right just inside the entrance.

From New London, Groton

Take route 395 north to exit 81W to route 2 west. Follow route 2 west to exit 25 (Willimantic/Franklin) for route 32. Take route 32 into Willimantic to the Frog Bridge. Cross over route 66 to Jackson Street. Jackson Street will turn into route 195. Follow route 195 through Mansfield. Once you pass the EO Smith High School, at the 4th stop light take a left onto North Eagleville Road (Storrs Congregational Church, a large brick church with white steeple, on corner of 195 and North Eagleville). Our building is the second building on the left just behind the Chemistry building. There is a Connecticut Veterinary Medical Diagnostic Laboratory sign at the end of the driveway. Park in one of the spots designated for patho clients, then follow the sidewalk to the rear entrance of the building (small red double doors). The admissions office is the first office on the right just inside the entrance.

<http://www.uconn.edu/pdf/wholemap.pdf>

Key to Abbreviations in Fee Schedule

AGID - Agar gel Immunodiffusion

Agg- Agglutination

CMT – California Mastitis Test

ELISA - Enzyme Linked Immunosorbent Assay

DFA – Direct Fluorescent Antibody

HI - Hemagglutination Inhibition

IFA - Indirect Fluorescent Antibody

IHC - Immunohistochemistry

PCR - Polymerase Chain Reaction

PRNT – Plaque Reduction Neutralization Test

Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Adenovirus	Molecular Diagnostics	PCR	Tissue, Swab, Blood	M-F	5	\$95.00	This is a nested PCR and requires testing with an additional gene target.
Anaplasma Phagocytophilum	Serology	IFA	Serum 1-2ml	Tu, Th	2-4	\$28.00	Bovine, Canine, Equine Price reduced to \$25 if combined with Lyme ELISA and Western blot
Anaplasma Phagocytophilum	Molecular Diagnostics	PCR	Tick	M-F	3-5	\$50.00	Includes Tick Identification
Antibiotic Susceptibility	Microbiology		Bacterial Culture	M-F	1-2 after primary culture obtained	\$18.00	
Antibiotic Susceptibility, State Herd Profile	Mastitis		Bacterial Culture	M-F	3	120.00(8 tests per herd)	
Avian Influenza	Serology	AGID	Serum 1ml	M-Th	2-3	\$2.00 contract \$2.25 non-contract	
Avian Influenza	Serology	AGID	Eggs	M-W	2-3	\$3.00 contract \$4.00 non-contract	
Avian Influenza	Molecular Diagnostics	PCR	Tracheal swab in BHI broth	M-F	2-3	\$43.00	
<i>Babesia microti</i>	Molecular Diagnostics	PCR	Tick	M-F	3-5	\$50.00	Includes Tick Identification

Agent	Lab Section	Test Method		Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Bacterial Culture, including Identification	Microbiology	Fresh tissue or swabs in media			M-F	3-10	\$35.00	
Bacterial Culture, including Omnilog Identification	Microbiology	Fresh tissue or swabs in media			M-F	3-10	\$65.00	
Bacterial Culture and CMT, Non State Program	Mastitis	Culture & CMT	Milk		M-F	2-3	\$6.00 per sample	
Bacteriology State Mastitis Control Program	Mastitis	Culture	Milk		M-F	2-3	\$2.25	
Blue Tongue	Serology	AGID	Serum 2ml		M-F		Available as referral test	
<i>Borrelia burgdorferi</i> (Lyme Disease)	Molecular Diagnostics	PCR	Tick		M-F	3-5	\$50.00	Includes Tick Identification
<i>Borrelia burgdorferi</i> (Lyme Disease)	Microbiology	Culture	Joint fluid, CSF, Urine, Tissue		By arrangement	Up to 30	\$50.00	Contact Laboratory
<i>Borrelia burgdorferi</i> (Lyme Disease)	Serology	ELISA	Serum, Joint fluid, cerebrospinal fluid 2ml		M-F	2-3	\$17.00	Canine, Equine
<i>Borrelia burgdorferi</i> (Lyme Disease)	Serology	IFA	Serum, Joint fluid, cerebrospinal fluid 2ml		M-F	2-3	\$28.00	Bovine, Camelid, Caprine, Feline, Ovine,
<i>Borrelia burgdorferi</i> (Lyme Disease)	Serology	Western Blot	Serum, Joint fluid, cerebrospinal fluid 2ml		M-F	2-3	\$45.00	Bovine, Camelid, Canine, Caprine, , Equine, Feline, Ovine

Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
<i>Borrelia burgdorferi</i> (Lyme Disease)ELISA and Western Blot Combo	Serology	ELISA and Western Blot	Serum, Joint fluid, cerebrospinal fluid 2ml	M-F	5-7	\$60.00	Canine, Equine
<i>Borrelia burgdorferi</i> (Lyme Disease) IFA and Western Blot Combo	Serology	IFA and Western Blot	Serum, Joint fluid, cerebrospinal fluid 2ml	M-F	5-7	\$70.00	Bovine, Camelid, Caprine, Feline, Ovine,
<i>Borrelia burgdorferi</i> (Lyme Disease) ELISA, Western Blot, and Anaplasma Phagocytophilum	Serology	ELISA/IFA and Western Blot	Serum 2ml	M-F	5-7	\$85.00	Request as Serology Tick Panel on submission form
Bovine Leukosis Virus	Serology	AGID	Serum 2ml	M-Th	2-4	\$6.50	
Blood Parasites, Giemsa Stain	Parasitology	Stain	Whole Blood in EDTA	M-F	1-2	\$30.00	
Brucella	Serology	Plate, Card, Agglutination	Serum 2ml	M-F	2	\$7.00	
Brucella	Serology/ Mastitis	Ring	Milk	M-F	2-4	\$4.00	
Calicivirus	Histology	IHC	Paraffin block or slide	M-F	5	\$50.00	\$25.00 for each additional block or slide, same antibody. Cutting fee applies (Please see Histology, Unstained Section)
California Mastitis Test(CMT), State Program	Mastitis	CMT	Milk	M-F	1	\$0.75 per sample	

Canine Distemper Virus	Histology	IHC	Paraffin block or slide	M-F	5	\$50.00	\$25.00 for each additional block or slide, same antibody. Cutting fee applies (Please see Histology, Unstained Section)
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Caprine Arthritis Encephalitis (CAE)	Serology	AGID	Serum 2ml	M-Th	2-4	\$6.50	
Chlamydia	Molecular Diagnostics	PCR	Tissue, Swab, Blood	M-F	5	\$60.00	
Coronavirus	Histology	IHC	Paraffin block or slide	M-F	5	\$50.00	\$25.00 for each additional block or slide, same antibody. Cutting fee applies (Please see Histology, Unstained Section)
<i>Cryptosporidium</i> and <i>Giardia</i> FA	Parasitology	FA	Feces	M-F	1-2	\$27.00	
Digital Camera on Microscope	Histology	Equipment User Fee	NA	M-F	NA	\$10.00 per ¼ hour	By appointment
Direct Microscopic Cell Count	Mastitis	Direct Cell Count	Milk	M-F	1	\$1.25 per sample	
<i>Escherichia coli</i> 0157:H7	Mastitis	Culture	Milk	M-F	3-5	\$30.00	
<i>E. coli/Klebsiella</i> differentiation from Milk Culture	Mastitis	Differential Culture	Milk	M-F	2-3 after primary culture obtained	\$15.00 in addition to milk culture	
Equine Herpes Virus (1-3 samples)	Serology	PRNT	Serum 2ml	M-F	5-7	Available as referral	

Equine Herpes Virus (Herd testing)	Serology	PRNT	Serum 2ml	M-F	5-7	Available as referral	
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Equine Herpes Virus	Molecular Diagnostics	Nested PCR	Nasal Swabs, Blood	M-F	5	\$95.00	This is a nested PCR and requires testing with an additional gene target. Will detect neurologic strain.
Equine Infectious Anemia (EIA, Coggins)	Serology	AGID	Serum 2ml	M-F	2-3	\$6.50	GVL and VSPS electronic reporting available at no additional charge
Equine Infectious Anemia (EIA, Coggins)	Serology	ELISA	Serum 2ml	M-F	4 hours	\$30.00	GVL and VSPS electronic reporting available at no additional charge. Samples must be received by 12pm for same day turnaround.
Exotic Newcastle Disease	Molecular Diagnostics	PCR	Tracheal swab in BHI broth	M-F	2-3	\$43.00	
Fecal Floatation or Sedimentation	Parasitology	Float	Fresh feces	M-F	1-2	\$15.00	
Fecal Quantitative	Parasitology	McMaster	Fresh feces – minimum 10 grams	M-F	2-3	\$25.00	
Field Necropsy Histopathology	Necropsy/Histology	Histopathology	Formalin-fixed tissue	M-F	10-30	See necropsy fee per species	

Feline Herpes Virus	Histology	IHC	Paraffin block or slide	M-F	5	\$50.00	\$25.00 for each additional block or slide, same antibody. Cutting fee applies (Please see Histology, Unstained Section)
Feline Infectious Peritonitis	Histology	IHC	Paraffin block or slide	M-F	5	\$50.00	\$25.00 for each additional block or slide, same antibody. Cutting fee applies (Please see Histology, Unstained Section)
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Fungal Culture	Microbiology	Culture	Fresh Tissue or swabs in transport media	M-F	3-30	\$35.00	Called negative after 30 days incubation without growth
Fungal Identification	Molecular Diagnostics	PCR	Tissue, Swab, Blood	M-F	5	\$60.00	
<i>Giardia</i> and <i>Cryptosporidium</i> FA	Parasitology	FA	Feces	M-F	1-3	\$27.00	
Herpes Virus	Molecular Diagnostics	PCR	Tissue, Swab, Blood	M-F	5	\$95.00	This is a nested PCR and requires testing with an additional gene target.
Histology, Duplicate	Histology	Stain	Paraffin block	M-F	3	\$6.00	Stained slide or stained levels from same block
Histology, H&E Stain	Histology	H &E Stain	Formalin-Fixed tissue in cassettes	M-F	2	\$18.00	Process, Embed, Cut, Stain
Histology, Special Stain	Histology	Special stain	Paraffin block or slides	M-F	2	\$20.00	Many stains available call laboratory Cutting fee applies (Please see Histology, Unstained Section)
Histology, Tissue Decalcification	Histology	Decal	Formalin-Fixed tissue	M-F	Varies with sample size	\$15.00 per case	

Histology, Unstained section	Histology	Histology	Paraffin block	M-F	3	\$6.00	\$2.00 for additional unstained section same block
Histotechnologist, Consulting	Histology	NA	NA	M-F	NA	\$60.00 per hour	By appointment
Histotechnologist, Embedding only	Histology	Paraffin embedding	Paraffin infiltrated tissue	M-F	2	\$1.50 per block	
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Histotechnologist, Sample processing to wax only	Histology	NA	Formalin-fixed tissue in cassettes	M-F	2	\$1.50 per block	
Histotechnologist, Specimen trimming	Histology	NA	Fixed tissue	M-F	2	\$15.00 per ¼ hour	
Histopathology, Fish, Reptile, Amphibian Small	Pathology	Histopathology	Formalin-fixed fish or tissue sets 1-5 fish from same tank/system	M-F	10-30	\$65.00	Small fish, reptiles, and amphibians are defined as those animals under 8 inches in length
Histopathology, Fish, Reptile, Amphibian large	Pathology	Histopathology	Formalin-fixed fish or tissue sets 1-5 fish from same tank/system	M-F	10-30	\$90.00	Large fish, reptiles, and amphibians are defined as those animals over 8 inches in length
Histopathology, Adult Marine Mammal, Shark, Avian Zoo Species	Pathology	Histopathology	Formalin-fixed fish or tissue sets	M-F	10-30	\$170.00	
Histopathology, Surgical Biopsy	Pathology	Histopathology	Formalin-fixed tissue	M-F	24 hours	\$50.00 1-2 sites \$15.00 each additional	

Immunohistochemistry (IHC), antibody optimization	Histology	IHC	Paraffin block or slide	By Arrangement		\$150.00 Simple \$250.00 Complex	Cutting fee applies (Please see Histology, Unstained Section)
IHC, One block	Histology	IHC	Paraffin block or slide	M-F	5	\$50.00	\$25.00 for each additional block or slide, same antibody. Cutting fee applies (Please see Histology, Unstained Section)
IHC, Positive Control Acquisition	Histology	IHC		By Arrangement	\$50.00 per control		
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
IHC, Autostainer User Fee	Histology	IHC	NA	M-F	NA	\$50.00	By appointment
Iridoviral DNA	Molecular Diagnostics	PCR	Tissue, Swab, Blood	M-F	5	\$60.00	\$25.00 additional if sequencing is required
Johne's Disease	Serology	ELISA	Serum 2ml, Milk	M-F	3-5	\$10.00/Sample (1-6 samples) \$7.00/Sample (7 or more, Herd Test)	Bovine: test on serum or milk Caprine, Ovine: test on serum only
Johne's Fecal Culture	Microbiology	Culture	Feces, ruminant	M-F	Up to 50	Available as referral test	
Leptospira	Molecular Diagnostics	PCR	Tissue, Swab, Blood	M-F	5	\$60.00	\$25.00 additional if sequencing is required
Listeria Culture	Microbiology	Culture	Fresh Tissue, Milk	M-F	3-5	\$35.00	

Listeria	Histology	IHC	Paraffin block or slide	M-F	5	\$50.00	\$25.00 for each additional block or slide, same antibody. Cutting fee applies (Please see Histology, Unstained Section)
Lyme Disease (<i>Borrelia burgdorferi</i>)	Molecular Diagnostics	PCR	Tick	M-F	3-5	\$50.00	Includes Tick Identification
Lyme Disease (<i>Borrelia burgdorferi</i>)	Microbiology	Culture	Joint fluid, CSF, Urine, Tissue	By arrangement	Up to 30	\$50.00	Contact Laboratory
Lyme Disease	Serology	ELISA	Serum, Joint fluid, cerebrospinal fluid 2ml	M-F	2-3	\$17.00	Canine, Equine
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Lyme Disease	Serology	IFA	Serum, Joint fluid, cerebrospinal fluid 2ml	M-F	2-3	\$28.00	Bovine, Camelid, Caprine, Feline, Ovine,
Lyme Disease	Serology	Western Blot	Serum, Joint fluid, cerebrospinal fluid 2ml	M-F	2-3	\$45.00	Bovine, Camelid, Canine, Caprine, Equine, Feline, Ovine
Lyme (ELISA or IFA) and Western Blot Combo	Serology	ELISA and Western Blot	Serum 2ml	M-F	5-7	\$60.00	Canine, Equine
Lyme (ELISA or IFA) and Western Blot Combo	Serology	IFA and Western Blot	Serum 2ml	M-F	5-7	\$70.00	Bovine, Camelid, Caprine, Feline, Ovine
Lyme ELISA, Western Blot, and Anaplasma Phagocytophilum	Serology	ELISA/IFA and Western Blot	Serum 2ml	M-F	5-7	\$85.00	Request as Serology Tick Panel on submission form
Mycobacteria	Molecular Diagnostics	PCR	Tissue, Swab, Blood	M-F	5	\$60.00	\$25.00 additional if sequencing is required

Mycobacteria	Microbiology	Culture	Tissue, Swab, Feces	M-F	4-8 weeks	\$40.00	Positive reported as early as 4 weeks, reported negative after 8 weeks
Mycoplasma Spp	Microbiology	Culture	Tissue, Swab	M-F	3-30	\$35.00	Positive reported as early as 3 days, reported negative after 30 days
Mycoplasma Spp	Molecular Diagnostics	PCR	Tissue, Swab, Blood	M-F	5	\$60.00	\$25.00 additional if sequencing is required
Mycoplasma Composite Culture, State Program	Mastitis	Culture	Milk	M-F	3-10	\$1.75	Positive reported as early as day 3; reported negative after 10 days
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Mycoplasma Culture, Bulk Tank Sample	Mastitis	Culture	Milk	M-F	3-10	\$16.50	Positive reported as early as day 3; reported negative after 10 days
Mycoplasma Composite Culture, Non State Program	Mastitis	Culture	Milk	M-F	3-10	\$5.50	Positive reported as early as day 3; reported negative after 10 days
<i>Mycoplasma gallisepticum</i> (M.g.)	Serology	Agglutination	Serum 1ml	M-F	2	\$2.00	Avian Species
<i>Mycoplasma gallisepticum</i> (M.g.)	Serology	HI	Serum 1ml	M-F	5-7	\$15.00	Avian Species
<i>Mycoplasma synoviae</i> (M.s.)	Serology	Agglutination	Serum 1ml	M-F	2	\$2.00	Avian Species

<i>Mycoplasma synoviae</i> (M.s.)	Serology	HI	Serum 1ml	M-F	5-7	\$15.00	Avian Species
<i>Mycoplasma meleagridis</i> (M.m.)	Serology	Agglutination	Serum 1ml	M-F	2	\$2.00	Avian Species
Necropsy and Histopathology, Aborted Farm Species	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$125.00 in state \$175.00 out of state	Calf, Cria, Foal, Kid, Lamb, Piglet
Necropsy and Histopathology, Agricultural Farm Species less than 200 lbs	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$170.00 in state \$225.00 out of state	Caprine, Ovine, Porcine
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Necropsy and Histopathology, Agricultural Farm Species greater than 200 lbs	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$200.00 in state \$300.00 out of state	Caprine, Ovine, Porcine 100.00 Disposal fee added to all animals over 500 lbs
Necropsy and Histopathology, Farm Species Neonate	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$125.00 in state \$175.00 out of state	Calf, Cria, Foal, Kid, Lamb, Piglet up to 6 weeks of age
Necropsy and Histopathology, Bovine	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$300.00 in state \$400.00 out of state	\$100.00 Disposal fee added to all animals over 500 lbs
Necropsy and Histopathology, Canine	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$250.00 in state \$300.00 out of state	

Necropsy and Histopathology, Commercial Poultry	Necropsy	Histopathology	Freshly Dead Animal 1-5 birds same flock	M-F	10-30	\$90.00 in state \$150.00 out of state	
Necropsy and Histopathology, Equine	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$400.00 in state \$500.00 out of state	\$100.00 Disposal fee added to all animals over 500 lbs. Spinal cord removal additional \$100.00. Shoes must be removed from horses prior to submission
Necropsy and Histopathology, Feline	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$200.00 in state \$250.00 out of state	
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Necropsy and Histopathology, Fresh Small Fish	Necropsy	Histopathology	Freshly Dead Fish 1-5 fish from same tank/system	M-F	10-30	\$65.00	1-5 fish same tank/System Small fish, reptiles, and amphibians are defined as those animals less than 8 inches in length
Necropsy and Histopathology, Fresh large Fish	Necropsy	Histopathology	Freshly Dead Fish 1-5 fish from same tank/system	M-F	10-30	\$90.00	1-5 fish same tank/System Large fish, reptiles, and amphibians are defined as those animals over 8 inches in length
Necropsy and Histopathology, Lama Alpaca	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$200.00 in state \$300.00 out of state	

Necropsy, Legal Case Surcharge	Necropsy	Histopathology	NA	NA	NA	\$200.00	This fee is added to all private owner legal case submissions
Necropsy and Histopathology, Marine Mammal	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$250.00 <200lb \$350.00 >200lb	
Necropsy and Histopathology, Pet Bird	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$100.00 in state \$150.00 out of state	
Necropsy and Histopathology, Primate	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$250.00 in state \$300.00 out of state	
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Necropsy and Histopathology, Rodent	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$75.00	Guinea Pig, Mouse, Rat
Necropsy and Histopathology, Small Animal Neonate	Necropsy	Histopathology	Freshly Dead Animal	M-F	10-30	\$100.00 in state \$125.00 out of state	Canine, Feline
Newcastle Disease	Serology	HI	Serum 1ml	M-F	5-7	\$15.00	Avian Species
Newcastle Disease (Exotic)	Molecular Diagnostics	PCR	Tracheal swab in BHI broth	M-F	2-3	\$43.00	

Ovine Progressive Pneumonia (OPP)	Serology	AGID	Serum 2ml	M-F	2-4	\$6.50	
Parvovirus	Histology	IHC	Paraffin block or slide	M-F	5	\$50.00	\$25.00 for each additional block or slide, same antibody. Cutting fee applies (Please see Histology, Unstained Section)
Porcine Reproductive and Respiratory Syndrome Virus (PRRSV)	Histology	IHC	Paraffin block or slide	M-F	5	\$50.00	\$25.00 for each additional block or slide, same antibody. Cutting fee applies (Please see Histology, Unstained Section)
Pseudorabies	Serology	ELISA	Serum 2ml	M-F	2-3	\$30.00	
Rabies	Microbiology	FA	Head	M-F	1-2	\$30.00	Please review Rabies Submission Guidelines . Cutting fee applies (Please see Histology, Unstained Section)
Rabies	Histology	IHC	Paraffin block or slide	M-F	1-2	\$50.00	Please review Rabies Submission Guidelines Cutting fee applies (Please see Histology, Unstained Section)
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
Salmonella Culture	Microbiology	Culture	Fresh Tissue, Swab, Feces	M-F	3-10	\$30.00	
<i>Salmonella Pullorum</i>	Serology	Microtiter	Serum 1ml	M-Th	2-3	\$2.00	Avian Species
<i>Salmonella Pullorum</i>	Microbiology	Culture	Necropsy Tissue*, Feces	M-F	9-14	\$35.00	*Necropsy fee applies

Salmonella NPIP Poultry Program	Microbiology	Culture	Environmental Swabs	M-T	5-7	\$25.00	
Swine Influenza	Molecular Diagnostics	PCR	Nasal swab in BHI	M-F	2-3	\$40.00	Porcine, other species as requested
Tick Pathogen 2 panel (Lyme, Anaplasma)	Molecular Diagnostics	PCR	Tick	M-F	3	\$80.00	Price includes Tick Identification
Tick Pathogen 3 Panel (Lyme, Anaplasma, Babesia)	Molecular Diagnostics	PCR	Tick	M-F	3	\$100.00	Price includes Tick Identification
Virus Isolation	Virology	VI	Embryonated Egg or tissue culture	Call lab	14	\$100.00	Lab time dependent on number of passages (1-10); 1 passage per week
West Nile Virus	Serum	IgM Capture ELISA	Serum 2ml	M-W	5-7	\$30.00	Equine
16 S Bacterial Characterization	Molecular Diagnostics	PCR	Tissue, Swab, Blood, Culture	M-F	3	\$85.00	Price includes required sequencing.
Agent	Lab Section	Test Method	Sample Required	Days-Run	Turn Around Time (business days)	Fee	Additional Information
2-Pathogen Tick (Lyme, Anaplasma)	Molecular Diagnostics	PCR	Tick	M-F	3	\$80.00	Price includes Tick Identification
3-Pathogen Tick (Lyme, Anaplasma, Babesia)	Molecular Diagnostics	PCR	Tick	M-F	3	\$100.00	Price includes Tick Identification

IHC Antibodies Available:

Actin, Smooth muscle (clone 1A4)	GFAP (Glial Fibrillary Acidic Protein)	Vimentin
Actin, Muscle Specific (HHF-35)	Histocyte/Myeloid Antigen (MAC 387)	Von Willebrand's
Adenovirus (20/11 & 2/6)	Klebsiella	West Nile Virus
Bovine Viral Diarrhea virus (BVD)	Lambda	
Calicivirus	Leukocyte common Antigen (Pan-Leukocyte)	
	Leptospira canicola	
	<ul style="list-style-type: none">• L. Pomona• L. grippotyphosa• L. icteroh.• L. hardjo	
Canine Distemper Virus	Listeria	
	Lysozome	
CD3 (T cell)	Mast cell Tryptase	
CD 20 (pan-B-cell; clone- L26)	Melan A	
CD45RO (T-cell; clone- UCHL-1)	MUM1 (Plasma cells)	
CD43 (T-cell)	Muscle Specific Actin (clone-HHF-35)	
CD68 (clone-KP-1)	Mycobacterium bovis	
CD79a (B cell)	Myeloid/Histocyte Antigen (clone-MAC 387)	
CD117 (Mast cells)	NSE (Neuron Specific Enolase)	
Chromogranin	Neurofilaments	
Clostridium (by arrangement)	Parvovirus	
Collagen IV	PCNA (by arrangement)	
Coronavirus	PRRSV (by arrangement)	
Cytokeratin,	Rabies	
Desmin (monoclonal)	Smooth Muscle Actin (1A4)	
D2-40	S100	
Epithelial Membrane Antigen	Synaptophysin	
Feline Herpes	Toxoplasma gondii	
Feline Infectious Peritonitis		