

CAMELID DIAGNOSTIC PLANS/PANELS



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The following diagnostic plans have been developed primarily as an **educational** tool to assist the veterinarian in designing a complete, although not exhaustive, diagnostic strategy. To encourage veterinarians to select only the tests that are deemed clinically appropriate in each situation, the price of the diagnostic plan is not discounted from the sum of the individual test costs. **Superscript numbers match the individual tests to the sample needed.** For the test groupings labeled as panels, there may be a discounted price versus the costs of the individual tests. Diagnostic plans and panels can be requested by writing the complete name as the test request. If appropriate samples are included all tests will be performed.

DIAGNOSTIC PLAN/PANEL	TESTS PERFORMED	PRICES	SAMPLES NEEDED
<i>Camelid Abortion Fetal Tissue Diagnostic Plan</i>	<p>(3) Aerobic bacterial cultures¹ Listeria included (1 sensitivity included); Bovine Virus Diarrhea Virus (BVDV) FA²; Bovine Virus Diarrhea Virus (BVDV) SN, Type 1³ and Type 2⁴; Campylobacter jejuni Culture⁵; (2) Campylobacter fetus (Vibrio) FAs⁶; Chlamydophila FA⁷; Chlamydophila PCR⁸; Coxiella burnettii PCR⁹; Equine Herpesvirus -1 (Rhinopneumonitis) FA¹⁰; Histopathology¹¹; Field Necropsy Surcharge; (2) Leptospira PCRs¹²; Toxoplasma FA¹³; Toxoplasma gondii IgG ELISA¹⁴; Virus isolation¹⁵</p> <p>May also want to consider adding Selenium to fetal liver especially if stillbirths and/or neonatal deaths are involved.</p>	<p>\$693.50 per fetus</p> <p>Testing may qualify for N.Y State contract case subsidy.</p>	<p>Fresh tissue^{1,2,5,6,7,8,9,10,12,13,15}: lung, placenta including cotyledons, abomasal contents, kidney, liver, heart, adrenal, skin, heart blood^{3,4,14} in sterile red top tube AND Formalin fixed tissue¹¹: placenta, liver, lung, brain, adrenal, heart, thymus, small intestine, kidney, fetal skin. SHIP FRESH TISSUE CHILLED AND PROTECT FIXED TISSUE FROM FREEZING. Kit is available. See Ruminant Abortion Kit for more complete instructions. If full necropsy desired, see Necropsy Testing.</p>

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* indicates test performed at a referral laboratory

VSS-WEB-016-V06

LTT – Lavender Top Tube
RTT – Red Top Tube
CAMELID PANELS
4/18/2018 Version 1

DIAGNOSTIC PLAN/PANEL	TESTS PERFORMED	PRICES	SAMPLES NEEDED
<i>Camelid Abortion Serology Panel + Selenium</i>	Bovine Virus Diarrhea Virus (BVDV) SN, Type 1¹ and Type 2²; Brucella card agglutination³; Coxiella burnettii ELISA⁴; Equine Herpesvirus-1 (Rhinopneumonitis) SN⁵; Equine Rhinovirus-1 (ER-A) (Equine Rhinitis A Virus) SN⁶; Leptospira MAT, 5 standard serovars⁷; Selenium, whole blood⁸; Toxoplasma gondii IgG ELISA⁹	\$142.00 single \$239.50 paired (1 selenium) Testing may qualify for N.Y State contract case subsidy.	Maternal serum^{1,2,3,4,5,6,9} (separated) and maternal EDTA whole blood⁸ (LTT). SHIP CHILLED. When acute and convalescent samples are/will be collected, for most serology assays they should always be tested in parallel, and paired results interpreted. If acute samples are submitted alone please indicated if all tests should be performed. If second, convalescent samples are later submitted, tests on both samples will be run in parallel and fees for both samples will be charged. To avoid testing acute samples twice, hold and submit with convalescent samples. If convalescent samples will not be collected, or when infectious abortion is strongly suspected due to history, immediate testing of acute sample may be warranted.
<i>Camelid Diarrhea Diagnostic Plan</i>	Camelid Enteric Coronavirus PCR¹; Fecal quantitative²; Johne's AGID³; Salmonella culture⁴ (no sensitivity included) Johne's Culture, Non-Bovine on fresh feces may also be warranted. The lag time for culture is 12-16 weeks although positive samples may be shorter. In neonatal crias an Aerobic bacterial culture and a Rotavirus Latex Antigen Detection, Group A on feces should also be considered.	\$88.75 Testing may qualify for N.Y State contract case subsidy.	Fresh Feces^{1,2,4} in leak-proof container (20 g) and serum (separated)³. One fecal sample⁴ (1 g, fill to line on container but do not overfill) can be put in ParaPak [®] transport media to assist with Salmonella recovery. ParaPak[®] transport media is available. SHIP CHILLED, EXCEPT FOR PARAPAK[®] WHICH SHOULD BE KEPT AT ROOM TEMPERATURE.
<i>Camelid Liver Panel (Large Animal Liver Panel + NEFA)</i>	AST; SDH; GGT; GLDH; Non-esterified Fatty Acid (NEFA); Total/Direct/ Indirect Bilirubin; Total Protein; Albumin; Globulin; A/G Ratio; CK; Triglycerides	\$38.00	Serum (separated) or heparinized plasma (separated from a green top tube). SHIP CHILLED

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<p><i>Camelid Neurologic Diagnostic Plan</i></p> <p>PLEASE STRONGLY CONSIDER RABIES TESTING AT YOUR STATE HEALTH DEPARTMENT</p>	<p>Aerobic bacterial culture¹; Histopathology²; Field Necropsy Surcharge²; Lead, blood or Lead, tissue³; Listeria culture⁴; Virus Isolation⁵; West Nile Virus (WNV) PCR⁶</p> <p>May also want to consider Cerebrospinal Fluid Cytology which requires CSF in EDTA tube (LTT) and (2) air dried slides of CSF. Protect slides from formalin exposure.</p> <p>If whole head is submitted a rabies brain extraction fee will be applied. Please submit completed NYS rabies specimen history form and write out clear instructions on what additional diagnostic tests should be performed.</p>	<p>\$336.25</p> <p>Testing may qualify for N.Y State contract case subsidy.</p>	<p>CSF^{1,5,6} sample taken using sterile technique and placed in sterile red top tube +/- (1) swab¹ inoculated with CSF, OR (1) swab¹ of meninges prior to contamination and placed in aerobic transport media (Amies with charcoal), fresh brain (cerebrum, cerebellum and brainstem)^{4,5,6} placed in sterile container, EDTA or Heparin whole blood³ (LTT or GTT) or fresh liver³ in sterile container, full set of fixed tissues² placed in formalin, including multiple sections of brain and spinal cord. SHIP CHILLED AND PROTECT FIXED TISSUE FROM FREEZING. PLEASE INDICATE IF RABIES TESTING IS PENDING. See Tissues for Rabies Diagnosis for photos of brain samples needed for rabies testing.</p>

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Camelid Respiratory (Acute) Diagnostic Plan	<p>Aerobic bacterial culture¹ (1 sensitivity included); Bovine Respiratory Syncytial Virus (BRSV) FA²; Chlamydomphila PCR³; Coronavirus FA⁴; Cytology⁵; Fibrinogen (heat-precipitated)⁶; Hemogram, routine (CBC)⁷; Histopathology⁸; Field Necropsy Surcharge⁸; Mycoplasma Culture⁹; Virus Isolation¹⁰</p> <p>Testing for evidence of lungworms, quantitative fecal may be warranted depending on season. Also selenium on an EDTA whole blood sample or liver and vitamin E on a serum sample (separated) may be appropriate in some situations. Limited serology testing is available but paired acute and convalescent serum samples for BRSV SN may be warranted in acute disease episodes.</p>	<p>\$354.75 (ante mortem samples)</p> <p>\$374.25 (full set of necropsy samples)</p> <p>Testing may qualify for N.Y State contract case subsidy.)</p>	<p>Ante mortem samples: transtracheal wash (TTW)(preferred sample) or bronchial alveolar lavage (BAL) fluid in RTT^{1,2,3,4,9,10} (alternatively can use viral transport media), and in EDTA tube⁵(LTT), (2) air dried slides⁵ of fluid, (1) swab inoculated with sample^{1,9} placed in aerobic transport media (Amies w/o charcoal). Nasal or pharyngeal swabs^{3,10} in viral transport media or a RTT with 0.5 ml sterile saline AND also in aerobic transport media (Amies w/o charcoal)^{1,9}. EDTA whole blood^{6,7} (LTT), and (2) air dried blood smears⁷. SHIP CHILLED EXCEPT FOR SLIDES WHICH SHOULD BE KEPT AT ROOM TEMPERATURE.</p> <p>TTW fluid is a superior sample for detection of significant bacterial pathogens causing lower airway disease. Results of nasal or pharyngeal swab cultures must be interpreted with caution as many bacterial organisms may be present as normal commensals in the upper respiratory tract. See Transtracheal Wash Procedure for more information. It may be helpful to collect and bank a serum sample for possible acute and convalescent serology.</p> <p>Necropsy samples: Section of fresh lung^{1,2,3,4,9,10} +/- (1) swab inoculated with sample^{1,9} and placed in aerobic transport media (Amies w/o charcoal), and full set of tissues⁸ placed in formalin. SHIP FRESH TISSUE CHILLED AND PROTECT FIXED TISSUE FROM FREEZING.</p>
Coagulation Panel, Large Animal	aPTT ; PT ; Fibrinogen (Clauss method)	\$42.50	2 ml separated citrate plasma in plastic or siliconized glass tube (blue top and then separated and transferred). SHIP CHILLED.

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<i>Dermatology Diagnostic Plans</i>	Aerobic bacterial culture ¹ (1 sensitivity included); Biopsy for parasite exam ² ;	Deep lesion: \$233.00	<u>Deep lesion:</u> (2) fresh skin biopsies ^{1,2,3,4} in plain RTT with 0.5 ml sterile saline to keep moist (not wet) +/- swab ^{1,3} from deep in tissue placed in aerobic transport media (Amies with charcoal), multiple formalin fixed skin biopsies ⁵ . SHIP CHILLED AND PROTECT FIXED TISSUE FROM FREEZING.
<i>Deep lesion</i>	Fungal culture ³ ; Gram stain ⁴ ; Histopathology (biopsy) ⁵	Testing may qualify for N.Y State contract case subsidy.	
<i>Superficial lesion</i>	Fungal culture ³ ; Gram stain ⁴ ; Histopathology (biopsy) ⁵ ; Skin scraping for ectoparasite identification ⁶ ; Cytology ⁷	Superficial lesion: \$213.00	<u>Superficial lesion:</u> (1) hair and skin scraping ^{3,4} for fungal culture and gram stain sent in a sealable paper envelope, (1) skin scraping ⁶ for ectoparasite identification in an escape proof, non-porous container, (2) impression smears/skin scrapings/fluid aspirates ⁷ for cytology placed on glass slides and air dried, and multiple formalin fixed skin biopsies ⁵ . No aerobic culture is included in the superficial plan. SHIP AT ROOM TEMPERATURE AND PROTECT FROM TEMPERATURE EXTREMES.
	All skin biopsy submissions should be accompanied by a Dermatohistopathology Submission Form . For additional guidance refer to Dermatopathology Sampling Guide .	Testing may qualify for N.Y State contract case subsidy.	

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<i>Fever of Unknown Origin Diagnostic Plan</i>	<p>(3) Blood cultures, aerobic/fungal¹ (1 sensitivity included); (3) Blood cultures, anaerobic²; Fibrinogen (heat-precipitated)³; Hemogram, routine (CBC)⁴ (examination for blood parasites included); (2) Virus isolations⁵ (nasal, whole blood)</p> <p>If case is chronic, virus isolation can be omitted if desired, see comment to right. If not previously tested a Bovine Virus Diarrhea Virus PCR on serum (>60 days of age) or EDTA whole blood and a Large animal chemistry panel on serum (separated) or heparinized plasma (separated from a green top tube) may be warranted.</p>	<p>\$335.00</p> <p>Chronic case with no virus isolation: \$265.00</p> <p>Testing may qualify for N.Y State contract case subsidy.</p>	<p>(3) Inoculated aerobic/fungal blood culture bottles¹, (3) inoculated anaerobic blood culture bottles², nasal swab⁵ in 0.5 ml saline to keep moist (not wet), (2) tubes EDTA whole blood^{3,4,5} (LTT), and (2) air dried blood smears⁴. SHIP CHILLED EXCEPT FOR SLIDES AND BLOOD CULTURE BOTTLES, WHICH ARE SHIPPED AT ROOM TEMPERATURE. See Blood Culture Technique for more information. To order blood culture bottles go to shipping services or call 607.253.3935. It may be helpful to collect and bank a serum sample for possible acute and convalescent serology.</p> <p>This diagnostic plan is designed to detect a broad spectrum of systemic bacterial, viral, and some blood parasite causes of acute fever of unknown origin, as well as certain inflammatory changes which may assist in determining the underlying problems. Viral causes of illness are best detected acutely and most are unlikely to be detected in a patient with a chronic fever of unknown origin. This plan is intended to be used as an adjunct to targeted, disease-specific testing appropriate to the species, clinical history and geographic location or conditions. See Small Animal Internal Medicine, 5th Edition, 2014, Nelson RW and Couto CG; Chapter 88: Fever of Unknown Origin, pages 1279-1282 for other ideas of testing.</p>
<i>Large Animal Basic Workup</i>	<p>Fibrinogen (heat-precipitated)¹; Hemogram, routine (CBC)²; Large animal chemistry panel³</p> <p>May want to consider NEFA if camelid is anorexic.</p>	\$105.00	EDTA whole blood ^{1,2} (LTT), (2) air dried blood smears ² , and serum ³ (separated) or heparinized plasma ³ (separated from a green top tube). SHIP CHILLED.
<i>Large Animal Renal Panel</i>	<p>Na; K; Cl; Bicarb; Anion gap; Urea; Creatinine; Albumin; Ca; P</p>	\$28.00	Serum (separated) or heparinized plasma (separated from a green top tube). SHIP CHILLED

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<i>Small Ruminant/Camelid Pinkeye Diagnostic Plan</i>	Aerobic bacterial culture ¹ ; Chlamydophila PCR ² ; Mycoplasma culture ³	\$103.75 Testing may qualify for N.Y State contract case subsidy.	Conjunctival swab ^{1,3} in aerobic transport media (Amies w/out charcoal), conjunctival swab ² in sterile tube with 0.5 ml saline to keep moist (not wet). SHIP CHILLED.

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