BIOVET®

A DIVISION OF ANTECH®

2025

DIRECTORY

BOVINE AND SMALL RUMINANTS

To reach us

Biovet has 2 laboratories in Quebec
Saint-Hyacinthe and Quebec City
We have the largest customized pickup network providing the transport of samples in Quebec, even in rural areas.

Ask for a pick up or contact Customer Service
Phone: 450 771-7291 or 1-888-824-6838
Email: sac@biovet-inc.com
Fax: 450 771-4158
Address: 4375, av. Beaudry, Saint-Hyacinthe QC J2S 8W2 (Head office) | 945, av. Newton, Local 126-127, Québec QC G1P 4M3

Opening Hours

	Saint-Hyacinthe	Quebec City
Lundi au vendredi :	8:00 AM to 9:00 PM	12:30 PM to 21:00 PM
Samedi :	8:30 AM to 2:00 PM	CLOSED
Dimanche :	CLOSED	CLOSED

About Biovet

Biovet offers a full range of veterinary diagnostic services including hematology, biochemistry, microbiology, serology, molecular biology, endocrinology, coagulation and cytology. The analyses are performed on site by qualified technical personnel under the supervision of microbiologists and clinical pathologists certified by the American College of Veterinary Pathologists.

Our primary goal is to provide reliable analysis results in the shortest possible time. To this end, Biovet has set up an efficient and personalized sample collection system that makes it possible to reach a large number of veterinary clinics in Quebec. Your samples are analyzed upon receipt, and the results are transmitted to you by the method of your choice through the implementation of a computerized analysis management system. The Biovet laboratory also runs several internal and external quality controls, which ensure the accuracy of the results.

Biovet is proud to provide you with online access to your results. With Bionet, you can have fast, free and real-time access to your result reports, anytime, anywhere with an internet connection. For more information on the Bionet service, you can contact us at bionet@biovet-inc.com or call us at 1-888-824-6838. You can also visit us online at: www.biovet.ca/bionet.

Animal health is important to us, which is why Biovet specialists (clinical pathologists and microbiologists) are available to answer your questions. Whether it's determining the best test to diagnose a given condition or interpreting the results, our team is here to assist you.

This User's Guide contains information that is useful when dealing with Biovet. We are proud to be associated with your practice and we work continually on improving our services so that we may always better meet your needs.

The Team at Biovet

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Antech

Smarter Diagnostics. Better Care.™

Biovet is becoming ANTECH™

We're pleased to share that Biovet will become ANTECH™ in 2025, meaning you'll soon have access to a wider portfolio that includes North America's largest reference laboratory network, best-in-class in-house diagnostics from Heska, the industry's most trusted imaging equipment from Sound™, and breakthrough telemedicine from AIS™.

Helping you navigate all of these new and exciting options will be the same Quebec team you've come to know and trust. They will continue providing you with unparalleled support via the same contact points you've always used.

Legend

Samples

	See the sampling materials section below for the abbreviations of the various tubes and others
	Variety of samples that will be detailed in the test description.

Turnaround Time (TAT)

	Result on the day of receipt
D	Day

Abbreviations

	Analyzes done externally: it is best to contact us prior to submitting the sample to ensure availability of the test. Transport fee are excluded.
Ag	Antigen
Ab	Antibody
ELISA	Enzyme-linked immunosorbent assay
MFIA	Multiplexed Fluorometric Immunoassay
	New
PCR	Polymerase Chain Reaction
qPCR	Quantitative Polymerase Chain Reaction
SN	Seroneutralization
TAT	TURNAROUND TIME
U.R.	Price upon request

Sampling material

Order at www.biovet.ca/online

CODE		PKG	DESCRIPTION – TYPE OF SAMPLE
▲			**IMPORTANT:** see Appendix A - Guidelines for storing and shipping samples to the laboratory.
TRD-328		10	**Shipping bags for samples** Description: Ziploc™ Shipping bags for samples, with pocket for request form Usage: IMPORTANT, USE ONLY ONE BAG OF SAMPLES PER REQUEST FORM **You need shipping bags? Ask our delivery man.**
TRD-332		1	**EZTest - Steam** Description: EZTest is a self-contained biological indicator for monitoring sterilization. Usage: Return the EZTest – cycle for Autoclave Quality Assurance Program, see Microbiology section. Do NOT refrigerate. Comment: use the Biovet request form supplied with the kit. You will find the price in the microbiology section
TRD-319		1	**Shipping Unit** Description: 40-tube box for sampling
TRD-338		20	**Polyfoam box** Description: Polyfoam box for 2 or 4 sampling tubes
TRD-760		1	**One-bottle, blood culture system** Description: bottle for blood cultures. You will find the price in the microbiology section
TRD-344		1	**Sterile container, 60 ml, twist cap** Description: sterile plastic container Usage: urinalysis or culture, parasitology, PCR feces analysis. Comment: store samples between 4°C and 8°C.
TRD-325		1	**Swab with AMIES transport medium** Description: Swab and tube with Amies transport medium with or without charcoal. Usage: erobic or anaerobic culture Comment: Keep the swab between 2 and 8°C. Punch biopsy biopsies can be submitted on a swab in contact with the transport environment for a culture. Punch biopsies can be send on a swab in contact with the transport medium for culture, or in a red-top tube with a few drops of physiological water.
TRD-354		1	**Sterile polyester swab (PCR)** Description: sterile polyester swab used ONLY for PCR analysis. Usage: PCR analyses (respiratory diseases) Procedure: once the sample has been taken, place the swab(s) in a sterile preservative-free tube (TRD-310). Comment: not suitable for aerobic or anaerobic culture EXCEPT if you add a few drops of physiological water to the tube. Store samples between 4°C and 8°C.
TRD-314		10	**Slide holder** Description: cytology slide holder. Comment: Please do NOT write anything on the blade holders, put your information on the label.

CODE	PKG	DESCRIPTION – TYPE OF SAMPLE
TRD-324	1	**Container pre-filled with formalin** (40 mL)
TRD-323	1	**Container pre-filled with formalin** (60 mL)
TRD-321	1	**Container pre-filled with formalin** (90 mL)
TRD-322	1	**Container pre-filled with formalin** (120 mL)
TRD-360 		**Container pre-filled with formalin (480 mL)** Description: The amount of formaldehyde in the specimen container is about half the volume of the container. Procedure: The volume of formaldehyde should be 10 times that of the tissue. See Appendix - Protocol for the Handling and Sending of Large Masses. Comment: contains 10% neutral buffered formalin.
TRD-427 	25	**Amber tube** (5 mL) Description : sampling tube with cap **– Serum** Usage: Vitamin E. See protocol in biochemistry section. Comment : Beware, vitamin E is photosensitive and should not be exposed to light.
TRD-352	100	**Lavander tube** (1.3 mL)
TRD-302	100	**Lavander tube** (3 mL)
TRD-303 	100	**Lavander tube** (10 mL) Description : collection tube with lavender cap containing EDTA. **– (L) Whole Blood EDTA** Procedure: Whole blood collected in a tube containing an anticoagulant (EDTA-K2 or EDTA-K3), stirred at least 10-20 times immediately after collection. EDTA is bactericidal (so no blood culture or microbiological test can be added). Be careful to use the correct tube format, as there must be blood at least up to the label. If the anticoagulant/anticoagulant ratio is too high, the lab will note: Volume suboptimal; anticoagulant/blood ratio too high. **– (PL) Plasma EDTA** Procedure: Supernatant of whole blood collected in an EDTA tube, stirred at least 10-20 times immediately after collection. The plasma is separated from the blood and placed in a plastic tube. Label tube “Plasma EDTA” in addition to animal ID. – Other usages: For cytology of body fluids including thoracic, abdominal, synovial fluids, cystic or cavity fluids (except for urine cytology which must be submitted in a red cap tube or sterile Container). Comment: store samples between 4°C and 8°C.
TRD-300	100	**Red top tube** (3 mL)
TRD-310 	100	**Red top tube** (8 mL) Description: anticoagulant-free or additive-free sampling tube. – (S) **Serum** : Procedure: centrifuge it and send us the supernatant or wait and once the blood has coagulated, remove the supernatant from the clot. Comment: store samples between 4°C and 8°C.

CODE	PKG	DESCRIPTION – TYPE OF SAMPLE
TRD-308 	100	**SST Tube** (3.5 mL)
TRD-759 	**100**	**SST Tube** (8.5 mL) Description: SST sampling tube (Tube with Serum Separator) containing a gel separating red blood cells from the serum after centrifugation. – (SS) Serum Usage: SST serum NOT recommended for drug dosing (KBr, Pheno, etc.) Procedure: You can send us the tube as is or centrifuge it. Note: Store samples between 4 and 8°C.
TRD-351 	**100**	**Green tube** (1.3 mL) Description: sampling tube with green cap containing heparin. **– (PG) Heparinized plasma** Procedure: Whole blood collected in a heparinized tube, stirred at least 10-20 times immediately after collection. Centrifuge and place plasma in glass or plastic tube, labelled "Heparinized Plasma").
TRM-545 	**5**	**Nasopharyngeal swab kit** Description: 30 inches double sheath swab and Tubes with Amies liquid transport medium Usage: suitable for bacteriological examinations and PCR You will find the price in the microbiology and PCR sections

Tests offered – Bovine

CHEMISTRY PROFILES

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
	Abortion Profile qPCR and **ELISA**, see **PCR** and **Serology** sections		
BV1172	**Chemistry Profile** Includes: Alb, ALP, AST, Tot. Bil., Ca, Cl, CK, Creat, Gap, GGT, Glob., Glu, Mg, P, K, Tot. Prot., A/G ratio, Na, TCO2, BUN	1.0 mL Serum **(S)**	
	Complete blood count (CBC), see **HEMATOLOGY** section		
BV1176	**Complete Biovet Profile** Same as Chemistry Profile above ans CBC in Hematology section	1.0 mL EDTA whole blood **(L)** + 1,0 mL Serum **(S)**	
BV1175	**Complete Profile with pathologist's comment** Same as Chemistry Profile above with pathologist's comment	1.0 mL EDTA whole blood **(L)** + 1,0 mL Serum **(S)**	
	Digestive Profiles ELISA and **qPCR**, see **PCR** and **Serology** sections		
BV1224	**Health Profile 1** includes: Leukosis, Neospora, S. Dublin Ab ELISA	1.0 mL Serum **(S)**	
BV1225	**Health Profile 2** Same as Health Profile 1 above with Staph. aureus qPCR	1.0 mL Serum **(S)**	
BV1179	**Hepatic Profile with GLDH** **QC** Includes: Alb, ALP, AST, Tot. Bil., GGT, Glob, Glu, Tot. Prot., BUN, GLDH. * Except for GLDH, which is done externally.	1.5 mL Serum **(S)**	*
BV1180	**Peripartum Profile (Paresis)** includes: AST, Ca, Creat, CK, K, Mg, P, Tot. Prot., BUN.	1.0 mL Serum **(S)**	
BV1178	**Renal Profile** includes: Alb, Ca, Creat, Glu, Na, P, Tot. Prot., BUN.	1.0 mL Serum **(S)**	
	Respiratory Profiles (culture) and qPCR, see **Microbiology** and **CR** sections		

CHEMISTRY

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
CT010	**Albumin**	0.3 mL Serum **(S)**	
CT020	**ALP**	0.3 mL Serum **(S)**	
CT030	**ALT**	0.3 mL Serum **(S)**	
CT060	**AST**	0.3 mL Serum **(S)**	
CT070	**Bilirubin, direct**	0,1 mL Serum **(S)**	
CT070	**Bilirubin, indirect**	0,1 mL Serum **(S)**	
CT090	**Bilirubin, total**	0,1 mL Serum **(S)**	
CT100	**BUN** (urea)	0.3 mL Serum **(S)**	
CT110	**Calcium** (total) Avoid lipemia.	0.3 mL Serum **(S)**	

CHEMISTRY

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
CS18537	**Calcium, ionized** Fasting is necessary. Avoid hemolysis and lipemia. • Do not open cap Sample requirement for accurate measurement of ionized calcium (iCa2+) is serum that has been anaerobically transferred from the spun SST or RTT (using a needle and syringe to avoid air exposure) into a plain unopened red-top vacutainer. Puncture the stopper with the syringe needle and allow the serum to be transferred under pressure. • Do NOT open this tube prior to testing. • Please boldly label the sample tube as "IONIZED CALCIUM SERUM" and keep frozen or refrigerate. Samples that have been exposed to air may have artifactually decreased (iCa2+) and those transported in SST tubes may have been artifactually increased (iCa2+). † The tube submitted for this test will be used ONLY for this analysis, if you require other tests, please provide another tube.	0.5 mL Serum **(S)** †	3 D
CT120	**Chloride**	0.3 mL Serum **(S)**	
CT130	**Creatine Kinase** (CK)	0.3 mL Serum **(S)**	
CT135	**Creatinine**	0.3 mL Serum **(S)**	
BV7072	**Copper QC** This test is done externally.	2.0 mL Serum **(S)**	2-3 D
CT145	**GGT**	0.3 mL Serum **(S)**	
BV7035	**GLDH QC** This test is done externally.	0,5 mL Serum **(S)**	
CT011	**Globulins** (Alb & PT) Refrigerate or freeze.	0,5 mL Serum **(S)**	
CT150	**Glucose**	0.3 mL Serum **(S)**	
CT155	**Iron** (serum)	0,5 mL Serum **(S)**	4 D
CT170	**Magnesium**	1.0 mL Serum **(S)**	
CT180	**Phosphorus**	0.3 mL Serum **(S)**	
CT185	**Potassium** Avoid hemolysis.	0.3 mL Serum **(S)**	
BV7074	**Selenium (serum) QC** This test is done externally.	1.0 mL Serum **(S)**	12-20 D
BV7076	**Selenium + Vitamin E** Please note that vitamin E is photosensitive and should not be exposed to light. It is imperative to centrifuge the sample as quickly as possible, then transfer it to an amber tube and freeze it or place it on ice in order to send it to us as quickly as possible. This test is done externally.	1.0 mL Serum, **amber tube**	12-20 D
CT195	**Sodium**	0.3 mL Serum **(S)**	
CT190	**Total Proteins** Avoid hemolysis and lipemia.	0.3 mL Serum **(S)**	
CT205	**Triglycerides** Fast 12-18 h.	0.3 mL Serum **(S)**	
BV7078	**Vitamin A QC** This test is done externally.	2.0 mL Serum **(S)**	12-20 D

CHEMISTRY

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
CS16016	**Vitamin D** * This test is done externally. * Shipping fee are included.	2.0 mL Serum **(S)**	15-20 j
CS16850	**Vitamin E** **QC** Please note that vitamin E is photosensitive and should not be exposed to light. It is imperative to centrifuge the sample as quickly as possible, then transfer it to an amber tube and freeze it or place it on ice in order to send it to us as quickly as possible. Also available as a combo **Selenium & vitamin E** This test is done externally.	1.0 mL Serum, **amber tube**	12-20 D
BV7079	**Zinc** **QC** This test is done externally.	0.5 mL Serum **(S)**	7 D

ENDOCRINOLOGY

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV0071	**Pregnancy test (milk)**	1,0 mL Milk	2-4 D
BV0065	**Pregnancy test (serum)** From 28 days after insemination.	1.0 mL Serum **(S)** or EDTA Plasma **(PL)**	1-3 D
CT475	**Progesterone** Centrifuge and separate quickly. Do not use SST tube.	1,0 mL Serum **(S)**	

HEMATOLOGY

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
CT330	**CBC** (Complete Blood count) If possible, submit 2 blood smears, not stained, immediately after collection with EDTA blood. The EDTA tube should be kept cold. Avoid lipemia, sample <48 hours. Includes leukocytes, platelets and erythrocyte counts (Gr, Hb, Ht, CGMH, VGM), differential, microscopic examination, fibrinogen, reticulocyte count (if anemia).	1.0 mL EDTA whole blood **(L)**	
CT365	**Fibrinogene**	1.0 mL EDTA whole blood **(L)**	
BV0078	**Hemoglobin** Keep cool. Avoid lipemia.	1.0 mL EDTA whole blood **(L)**	

HISTOPATHOLOGY

Code	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV7096	**Histopathology** (1 tissue) Place the sample in 10% formalin. The formalin volume should be at least 10 times that of the tissue. Use containers with a wide mouth. Hollow organs (e.g., intestines) should be open lengthwise before being placed in formalin to ensure good fixation of the mucosa. For all excisional biopsies, margins will be assessed.		3-5 D
BV7099	**Additional tissue (histopathology)**		

MICROBIOLOGY			
CODE	**TEST NAME - DESCRIPTION**	**SAMPLE**	**TAT**
BV0082	**Aerobic Colony Count (mesophiles)** Refrigerate, sterile container. This test cannot be added after a milk bacteriology test.	2 mL Milk	2 D
CM070	**Aerobic Culture** Refrigerate. Sterile container or a AMIES swab with a solid transport medium. Refer to Appendix B, if you are hesitating between aerobic or anaerobic culture. Also available:	500 µl urine, liquid, tissue, swab, other	2-5 D
BV1154	**CATB Aerobic culture + Sensitivity** sterile container or a AMIES swab with a solid transport medium. Refer to Appendix B, if you are hesitating between aerobic or anaerobic culture.	500 µl urine, liquid, tissue, swab, other	2-5 D
BV0240	**Follow up - CATB (Culture and sensitivity)** Follow -up culture on same so*urce may be ordered within 2 months of original submission of an Aerobic Culture. Indicate order number and date of the original submission on the requisition form.		
CM030	**Anaerobic Culture** sterile container as small as possible for the sample so that there is as little air as possible in the container, or a AMIES swab with a solid transport medium. DO NOT refrigerate; It is preferable that the sample be sent to the lab the same day. Anaerobic organisms are sensitive to cold, should be stored at room temperature and not in the fridge. Refer to Appendix B, if you are hesitating between aerobic or anaerobic culture.	500 µl urine, liquid, tissue, swab, other	2-5 D
CEXT	**Antimicrobial susceptibility *** (after an Aerobic Culture) see **Appendix E : List of antibiotics (sensitivity)** *Kirby-Bauer method		2 D
BV1243	**Antimicrobial susceptibility** * (After a Milk bacteriology) see **Appendix E : List of antibiotics (sensitivity)** *Kirby-Bauer method		2 D
	Autoclave Quality Assurance Program Must use EZTest - Steam. Easy-to-use, EZTest is a self-contained biological indicator for monitoring sterilization. EZTest - Steam contains Geobacillus stearothermophilus which will only be destroyed by adequate sterilization. These biological indicators comply with ISO 11138 and EN 866 standards and USP requirements. **EZTest Steam** (1 unit)		3 D
CM061	**Blood Culture + Antimicrobial susceptibility** Must use One-bottle, Blood culture system, follow the incubation protocol and DO NOT REFRIGERATE. This test detects the growth of aerobic, anaerobic and micro-aerophilic organisms from blood samples using the blood culture system. **One-bottle, Blood culture system**		7 D
CM225	***Campylobacter jejuni/coli/lari* (culture)** Also available in profile, see **Fecal culture**	1 g Feces or 10 mL Milk	5-10 D
BV1143	***Clostridium perfringens* (culture)** Also available in profile, see **Fecal culture**		
BV0010	**Clostridium perfringens (Toxin profile)** Culture must have been done previously.		
BV1143	**Fecal culture + ATB** Includes aerobic Culture, Campylobacter jejuni/coli/lari, Clostridium perfringens, Salmonella spp. and Shigella. When isolating salmonella or shigella, an Antibiotic Sensitivity will be automatically performed.	10 g Feces	3-10 D

MICROBIOLOGY

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV1199	**Litter / wipe profile** * Wipe placed in a bag, representative sample of the litter, refer to Appendix C. Includes Aerobic Colony Count, Total Coliforms (Enumeration), E. coli (Enumeration), *Staphylococcus* spp. *Streptococcus* spp. and *Klebsiella* spp.	Wipe or 10 g of sand, wood shavings, compost or other*	3-7 D
	See **Appendix D: why choose our service rather than do the milk analyses yourself**.		
BV0039	**Milk bacteriology** Refrigerate, sterile container.	5 mL Milk	1-3 D
BV0066	**Milk bacteriology - Heifer** Refrigerate, sterile container (no pool). For more information on this test, see **Appendix G: Detection Of Mammary Staphylococcal Infections In Primiparous**.	5 mL Milk	2-5 D
BV1200	**Milk Bulk tank Profile** Bulk tank milk in a sterile container. Refrigerate. Submit to lab within 24 hours. Includes numeration of total coliforms and E. coli, as well as mesophilic aerobic colony counts, mesophilic aerobic colony counts after 18hours of incubation at 12.8°C and mesophilic aerobic colony counts after heating the milk at 62.8°C for 30min.	10 mL Milk	3-7 D
BV1152	**Respiratory profil (Culture) + Sensitivity** ▯ transtracheal aspirations or nasopharyngeal swabs with Nasopharyngeal swab kit. Refrigerates. Specific search on different culture media: Bibersteinia trehalosi, Gallibacterium anatis, Histophilus somni, Mannheimia spp, Pasteurella multocida, Trueperella pyogenes and Salmonella spp.. Includes sensitivity testing.	▯	7 D
TRM-545	**Nasopharyngeal swab kit**		
CM240	**Ringworm (Fungal culture)** A culture is performed on a selective medium for Dermatophytes, if a typical growth is observed, a confirmation by our PCR test is performed and included in the price.	Skin scraping, Hair	7-28 D
CM121	***Salmonella* (culture)** Refrigerate, sterile container. Also available as a profile, see **Fecal culture**. See also **Salmonella Serotyping** (PCR section)**.**	Tissue; 10 g feces; other	4 D
	See **Appendix H: about the search for salmonella in cattle**.		
	Wipe (culture), see **Litter / wipe profile**		

PARASITOLOGY

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
CT785	**Baermann** Keep cool.	30 g Feces	5-7 D
CT550	**Cryptosporidium - ag ELISA**	5 g Feces	4-12 D
BV7091	**Cutaneous Scraping (KOH)** **QC** ▯ Crusts, hair; no quantity to specify. This test is done externally.	▯	3-4 D
BV7083	**Parasite identification** **QC** Fresh parasite or preserved in 70% ethanol. This test is done externally.	30 g Feces	1-2 D
CT805	**Parasitology - 6 months old and less (Zinc sulphate)** Refrigerate. The zinc sulfate test is performed on animals UNDER 6 months of age, as it is more sensitive than the Wisconsin test for detecting protozoan infections (coccidiosis, Giardia, Crypto) found in young animals. The test can also detect gastrointestinal whipworm infections, although the Wisconsin test is perhaps more recommended for this purpose.	5 g Feces	

PARASITOLOGY

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV0006 *	**Parasitology - MORE than 6 month old (Wisconsin)** Refrigerate. If the bovine is more than 6 month old, the Wisconsin test is recommended.	5 g Feces	1-3 D
	Wisconsin or **Zinc Sulphate** see **Parsitology**		
BV1203	**Abortion Profile qPCR** fetal tissues (lung, kidney, heart, stomach contents) and placenta (placentome). Includes: BVD, IBR, Campylobacter spp., Chlamydophila spp., Coxiella burnetii, Leptospira spp., Ureaplasma diversum, Neospora caninum & Tritrichomonas fœtus. Also available:		2-3 D
BV1204	**Simplified Abortion Profile PCR** Includes: BVD, IBR, Leptospira spp. and Neospora caninum		
BV0085	**Anaplasma marginale qPCR** Refrigerate	3.0 mL EDTA whole blood **(L)**	1-2 D
CS16115	**Bovine leukemia virus (BLV) PCR** Refrigerate. Possibility of pooling up to 10 samples.	2.0 mL EDTA whole blood**(L)**	1-2 D
BV0046	**BVD qPCR*** Tissues (biopsy, ear notch, etc.), 3 mm. Refrigerate. Possibility of pooling up to 10 samples for serum and whole blood. * Includes testing station.	10 mL EDTA whole blood **(L)**, EDTA plasma **(PL)**, Serum **(S)** or milk, 5 gr Feces	1-2 D
BV1188	**Clostridium multiplex qPCR : C. chauvoei, C. septicum, C. novyi and C. sordelii** pieces of affected tissues (minimum 5 cm x 5 cm x 5 cm, wrapped in absorbent paper towels and placed in a tightly closed container), swab cultures of affected tissues (swabs without transport medium or with 0.5 mL sterile saline to preserve moisture). Refrigerate.		1-2 D
BV0010	**Clostridium perfringens (Toxin profile)** For this test the Clostridium perfringens culture must have been done previously.	Isolate	
BV1214	**Coagulase-negative staphylococci (CNS) qPCR** Refrigerate.	2.0 mL Milk	2-3 D
BV0052	**Coronavirus qPCR** Refrigerate	5 g Feces	1-2 D
BV1205	**Diarrhea Profile qPCR (calf)** 5 g Feces collected at the beginning of clinical signs. Refrigerate (4-8°C). 4 agents: bovine Coronavirus (BoCV), Rotavirus A, Cryptosporidium spp. and E. coli K99 /F5		2-3 D

PCR

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV1206	**Digestive Profile qPCR** 5 g Feces collected at the beginning of clinical signs. Refrigerate (4–8°C). 8 agents: BVDV, bovine Coronavirus (BoCV), Rotavirus A, Torovirus, Cryptosporidium spp., Giardia intestinalis, Salmonella spp. and E. coli K99 /F5		2-3 D
BV0048	**Free-martin** (DNA – genetic)	1.0 mL EDTA whole blood **(L)**	2-3 D
CS14456	**Herpesvirus type 1 BoHV1 (IBR) qPCR**	5.0 mL Serum **(S)**, Swabs, lung	2-3 D

CT974	**Leptospira spp. qPCR (EDTA whole blood)**	1.0 mL EDTA whole blood **(L)**	2-3 D
CT976	**Leptospira spp. qPCR (urine)**	10 mL Urine	2-3 D
BV0072	**M. paratuberculosis qPCR** ▯ intestines cont. (tightly close container).	▯ Milk, 5 g Feces	2-3 D
BV0075	**Mycoplasma bovis qPCR**	2.0 mL Milk, swab, lung	2-3 D
BV0036	**Mycoplasma spp qPCR**	2.0 mL Milk, swab, lung	2-3 D
BV1196	**M. bovis + Mycocoplasma spp**	2.0 mL Milk, swab, lung	2-3 D
BV1211	**Respiratory Profile - complete qPCR** ▯ transtracheal aspirations or nasopharyngeal swabs with Nasopharyngeal swab kit. Refrigerate. Includes: Bacterial and viral Respiratory Profile. See Appendix E: New approach to the diagnosis of respiratory infections in cattle.	▯	1-2 D
TRM-545	**Nasopharyngeal swab kit**		
	To learn more see: **Appendix E: New approach to the diagnosis of respiratory infections in cattle.**		
BV1210	**Respiratory Profile - bacterial qPCR** ▯ transtracheal aspirations or nasopharyngeal swabs with Nasopharyngeal swab kit. Refrigerate. Includes: Histophilus somni, M. bovis, Mannheima haemolytica, Pasteurella multocida & Trueperella pyogenes. See Appendix E: New approach to the diagnosis of respiratory infections in cattle. Also available **Respiratory profil (Culture) + Sensitivity** see **Microbiology** section	▯	1-2 D
BV1213	**Respiratory Profile - viral qPCR** ▯ transtracheal aspirations or nasopharyngeal swabs with Nasopharyngeal swab kit. Refrigerate. Includes: BoCV (Coronavirus), BoHV1 (IBR), BRSV, BVDV, PI3 and Influenza Virus D (IVD). See Appendix E: New approach to the diagnosis of respiratory infections in cattle.	▯	1-2 D
BV1212	**Respiratory Profile - viral PLUS qPCR** ▯ transtracheal aspirations or nasopharyngeal swabs with Nasopharyngeal swab kit. Refrigerate. Inclut : Viral Respiratory Profile (BoHV1, BCoCV, BRSV, PI3, BVDV, Influenza D) + Mycoplasma bovis. See Appendix E: New approach to the diagnosis of respiratory infections in cattle.	▯	1-2 D
BV0093	**Salmonella spp. qPCR**	10 g Feces, tissue, other	2-3 D
BV0081	**Salmonella (culture) after positive PCR** Required for antibiotic susceptibility testing or serotyping		2-3 D
BV0092	**Salmonella serotyping (100 serotypes)** For this test the Salmonella culture must have been done previously.	Isolate	5-10 D
	See **Appendix H: about the search for salmonella in cattle**		
BV0096	**Salmonella spp-Typhimurium-Dublin qPCR**	10 g Feces, tissue, swab	2-3 D
BV0102	**Staphylococcus aureus qPCR** Refrigerate.	2,0 mL Milk	2-3 D
BV0091	**S. aureus, S. agalactiae, S. uberis & S. dysgalactiae**		
BV0104	**S. agalactiae, S. uberis S. dysgalactiae & M. bovis**		
BV0111	**Ureaplasma diversum qPCR**	vaginal swab, placenta.	2-3 D

SEROLOGY / VIROLOGY

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV1226	**Abortion Profile** **QC** BVDV p80 ab ELISA (CER), IBR Indirect ab ELISA, Neospora ab ELISA Leptospira (6 serovars) ab MAT *Except for Leptospira which is done externally and turnaround Time is about 1 week.	1.0 mL serum **(S)**	2-5 D *
BV0115	**Bovine Leukosis (BLV) - Ab ELISA**	Milk	1-2 D‡
BV0068	**Bovine Leukosis (BLV) - Ab ELISA**	1.0 mL Serum **(S)**	1-2 D‡
BV0069	**Price for herd (25 to 49)**	1.0 mL Serum **(S)**	1-2 D‡
BV0070	**Price for herd (50 and +)**	1.0 mL Serum **(S)**	1-2 D‡
BV0043	**Brucellosis - Ab APAT** CFIA form mandatory	1.0 mL serum **(S)**	1-2 D‡
BV0044	**BVD Ag ELISA, immunotolerant** For test on serum the animal must be 3 months old or older.	1.0 mL Serum **(S)**	2-5 D‡
BV0112	**Price for herd (25 to 49)**		
BV0113	**Price for herd (50 and +)**		
BV0238	**BVD immunotolérant Ag ELISA (Idexx) - Grande biopsie d'oreille** If less than 3 months.	Large ear notch	2-5 j‡
BV0045	**BVD p80 - Ab ELISA**	0.5 mL serum **(S)**	2-5 D‡
BV7060	**BVD type I - Ac SN** **QC**	1.5 mL serum **(S)**	5-10 D
BV7061	**BVD type 2 - Ac SN** **QC** Those tests are done externally.		
BV0051	**Coronavirus - Ag ELISA**	5 g Feces	2-5 D‡
BV1208	**Digestive Profile (ELISA)** Includes: Cryptosporidium, E. coli K99, Rotavirus and Coronavirus Ag ELISA	5 g Feces	2-5 D *
BV0114	**E. coli K99 Ag ELISA**	5 g Feces	2-5 D‡
BV0063	**IBR - Ab cELISA** (competitive)	1.0 mL serum **(S)**	2-5 D‡
BV0064	**IBR - Ab ELISA indirect**	1.0 mL serum **(S)**	2-5 D‡
BV7069	**IBR - Ab SN** **QC**	1.5 mL serum **(S)**	5-10 D
BV7087	**Leptospira (6 serovars) - Ab MAT** This test is done externally.	1.0 mL serum **(S)**	1 W
BV0059	**Leptospira hardjo Ac IgG ELISA**	1.0 mL serum **(S)**	2-5 D‡
BV0073-L	**M. paratuberculosis - Ab ELISA** (milk)	1.0 mL serum **(S)**	2-5 D‡
BV0073-S	**M. paratuberculosis - AB ELISA** (serum)	1.0 mL serum **(S)**	2-5 D‡
BV0077	**Mycoplasma bovis - Ab ELISA**	1.0 mL serum **(S)**	2-5 D‡
BV0088	**Neospora caninum - Ab ELISA**	1.0 mL Serum **(S)**	1-2 D‡
BV0089	**Price for herd (25 to 49)**		
BV0090	**Price for herd (50 and +)**		
BV0116	**Rotavirus - Ag ELISA**	5 g Feces	2-5 D‡
BV0055-L	**Salmonella Dublin Ac ELISA** (individual milk)	1,0 mL de lait individuel	1-2 j‡
BV0055-R	**Salmonella Dublin Ac ELISA** (bulk milk)	1,0 mL bulk milk	1-2 j‡
BV0055-S	**Salmonella Dublin Ab ELISA** (serum)	1.0 mL Serum **(S)**	1-2 D‡

SEROLOGY / VIROLOGY

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV0056	**S. Dublin Ab ELISA Pool de 5**	1.0 mL Serum **(S)***	1-2 D ǂ
BV0057	**S. Dublin Ab ELISA Price for herd (25 to 49)**	1.0 mL Serum **(S)***	1-2 D ǂ
BV0058	**S. Dublin Ab ELISA Price for herd (50 and +)** * Available on serum only	1.0 mL Serum **(S)***	1-2 D ǂ

ǂThese tests are performed from Monday to Friday.

UROLOGY

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
CT760	**Urinalysis** Keep cool.	5.0 mL urine	24 h
BV1013	**Urinalysis with pathologist's comment**	5.0 mL urine	24 h

OTHER SERVICES AND FEES

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BVFR03	**Cancellation fees**		
BVFR08	**Emergency fees (RUSH)**		
BVFR06	**Intermediate fees**		
CREVW	**Pathologist's comments**		
BVFR01	**Pooling fees** (max. 5 samples)		
	Shipping fees NOT included (unless otherwise specified)		
TRA-0042	**QC: Shipping fees in Quebec**		
TRA-0006	**CA: Shipping fees in Canada**		
TRA-0003	**US: Shipping fees in United States**		
	Cooler upon request		

Prices are subject to change without notice.

Ovine and caprine

Tests offered – Ovine and caprine

CHEMISTRY PROFILES (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
	CBC (Complete Blood count), see **HEMATOLOGY** section		
BV1172	**Chemistry Profile** Includes: Alb, AST, Tot. Bil., Ca, Cl, Crea, CK, Gap, Glob, Gluc, K, Mg, Na, P, Tot. Prot., A/G ratio, TCO_2, BUN.	1.0 mL serum **(S)**	
BV1176	**Complete Biovet Profile** Chemistry: same as Chemistry Profile above. Hematology: same as CBC below.	1,0 mL EDTA whole blood **(L)** + 1,0 mL Serum **(S)**	
BV1175	**Complete profile with pathologist's comment**		
	Digestive ELISA and **qPCR Profiles**, see **PCR** and **Serology** sections		
BV1223	**Renal Profile** inclut: Alb, Ca, Créat, Glu, Na, P, Tot. Prot., BUN	1.0 mL serum **(S)**	

CHEMISTRY (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
CT010	**Albumin**	0.3 mL serum **(S)**	
CT020	**ALP**	0.3 mL serum **(S)**	
CT030	**ALT**	0.3 mL serum **(S)**	
CT060	**AST**	0.3 mL serum **(S)**	
CT100	**BUN** (urea)	0.3 mL serum **(S)**	
CT110	**Calcium** (total) Avoid lipemia.	0.3 mL serum **(S)**	
CS18537	**Calcium, ionized** Fasting is necessary. Avoid hemolysis and lipemia. • Do not open cap Sample requirement for accurate measurement of ionized calcium (iCa2+) is serum that has been anaerobically transferred from the spun SST or RTT (using a needle and syringe to avoid air exposure) into a plain unopened red-top vacutainer. Puncture the stopper with the syringe needle and allow the serum to be transferred under pressure. • Do NOT open this tube prior to testing. • Please boldly label the sample tube as "IONIZED CALCIUM SERUM" and keep frozen or refrigerate. Samples that have been exposed to air may have artifactually decreased (iCa2+) and those transported in SST tubes may have been artifactually increased (iCa2+). †The tube submitted for this test will be used ONLY for this analysis, if you require other tests, please provide another tube.	0.5 mL serum **(S)** †	3 D
CT120	**Chloride**	0.3 mL serum **(S)**	
CT125	**Cholesterol**	0.3 mL serum **(S)**	
CT130	**Creatine Kinase** (CK)	0.3 mL serum **(S)**	
CT135	**Creatinine**	0.3 mL serum **(S)**	
BV7072	**Copper** **QC** This test is done externally.	2.0 mL serum **(S)**	2-3 D
CT145	**GGT**	0.3 mL serum **(S)**	

CHEMISTRY (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
CT011	**Globulines** (Alb & PT) Refrigerate or freeze.	0.5 mL serum **(S)**	
CT150	**Glucose**	0.3 mL serum **(S)**	
CT155	**Iron** (serum)	0.5 mL serum **(S)**	4 D
CT170	**Magnesium** Avoid hemolysis.	1.0 mL serum **(S)**	
CT180	**Phosphorus** Avoid hemolysis.	0.3 mL serum **(S)**	
CT185	**Potassium** Avoid hemolysis.	0.3 mL serum **(S)**	
BV7074	**Selenium (serum) QC** Avoid hemolysis. This test is done externally.	1.0 mL Serum **(S)**	12-20 D
BV7076	**Selenium + Vitamin E** Please note that vitamin E is photosensitive and should not be exposed to light. It is imperative to centrifuge the sample as quickly as possible, then transfer it to an amber tube and freeze it or place it on ice in order to send it to us as quickly as possible.	1,0 mL Serum, **amber tube**	12-20 D
CT195	**Sodium**	0.3 mL serum **(S)**	
CT115	**TCO2** (Bicarbonates) Avoid contact with air. Tightly closed tube.	0.3 mL serum **(S)**	
CT190	**Total Proteins** Avoid hemolysis and lipemia.	0.3 mL serum **(S)**	
CT205	**Triglycerides** Fast 12-18 h.	0.3 mL serum **(S)**	
BV7078	**Vitamin A QC** This test is done externally.	2.0 mL serum **(S)**	12-20 D
CS16016	**Vitamin D *** This test is done externally. *Shipping fee are included.	2.0 mL serum **(S)**	12-20 D
CS16850	**Vitamin E QC** Please note that vitamin E is photosensitive and should not be exposed to light. It is imperative to centrifuge the sample as quickly as possible, then transfer it to an amber tube and freeze it or place it on ice in order to send it to us as quickly as possible. Also available as a combo **Selenium & vitamin E** This test is done externally.	1.0 mL serum, **amber tube**	12-20 D
BV7079	**Zinc QC** This test is done externally.	0.5 mL serum **(S)**	1 W

HEMATOLOGY (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
CT332	**CBC (Complete Blood count)** If possible, submit 2 blood smears, not stained, prepared immediately after collection with EDTA blood. The EDTA tube should be kept cold. Sample <48 hours. Include leukocytes, platelets and erythrocyte counts (Gr, Hb, Ht, CGMH, VGM), differential, microscopic examination, fibrinogen, reticulocyte count (if anemia).	1.0 mL Whole blood EDTA **(L)**	
CT365	**Fibrinogene**	1.0 mL Whole blood EDTA **(L)**	

HEMATOLOGY (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV0078	**Hemoglobin** Keep cool. Avoid lipemia.	1.0 mL Whole blood EDTA **(L)**	

HISTOPATHOLOGY (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV7096	**Histopathology** (1 tissue) Place the sample in 10% formalin. The formalin volume should be at least 10 times that of the tissue. Use containers with a wide mouth. Hollow organs (e.g., intestines) should be open lengthwise before being placed in formalin to ensure good fixation of the mucosa. For all excisional biopsies, margins will be assessed.		3-5 D
BV7099	**Additional tissue (histopathology)**		

MICROBIOLOGY (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV0082	**Aerobic Colony Count (mesophiles)** Refrigerate, sterile container. This test cannot be added after a milk bacteriology test.	2 mL Milk	2 D
CM070	**Aerobic Culture** Refrigerate. Sterile container or a AMIES swab with a solid transport medium. Refer to Appendix B, if you are hesitating between aerobic or anaerobic culture. Also available:	500 µl urine, liquid, tissue, swab, other	2-5 D
BV1143	**CATB Aerobic culture + Sensitivity** sterile container or a AMIES swab with a solid transport medium. Refer to Appendix B, if you are hesitating between aerobic or anaerobic culture.	500 µl urine, liquid, tissue, swab, other	2-5 D
BV0240	**Follow up - CATB (Culture and sensitivity)** Follow -up culture on same so*urce may be ordered within 2 months of original submission of an Aerobic Culture. Indicate order number and date of the original submission on the requisition form.		
CM030	**Anaerobic Culture** sterile container as small as possible for the sample so that there is as little air as possible in the container, or a AMIES swab with a solid transport medium. DO NOT refrigerate; It is preferable that the sample be sent to the lab the same day. Anaerobic organisms are sensitive to cold, should be stored at room temperature and not in the fridge. Refer to Appendix B, if you are hesitating between aerobic or anaerobic culture.	500 µl urine, liquid, tissue, swab, other	2-5 D
BV1242	**Aerobic + anaerobic Culture + Sensitivity** 2 samples are required 1 for aerobic culture and the other for anaerobic culture (see instruction for anaérobique culture).		
CEXT	**Antimicrobial susceptibility *** (after an Aerobic Culture) see **Appendix E : List of antibiotics (sensitivity)** * Kirby-Bauer method		2 D
BV1243	**Antimicrobial susceptibility** * (After a Milk bacteriology) see **Appendix E : List of antibiotics (sensitivity)** * Kirby-Bauer method		2 D
BV0239	**Autoclave Quality Assurance Program** Must use EZTest - Steam. Easy-to-use, EZTest is a self-contained biological indicator for monitoring sterilization. EZTest - Steam contains Geobacillus stearothermophilus which will only be destroyed by adequate sterilization. These biological indicators comply with ISO 11138 and EN 866 standards and USP requirements.		3 D

MICROBIOLOGY (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
	EZTest Steam (1 unit)		
CM225	***Campylobacter jejuni/coli/lari* (culture)** Also available in profile, see **Fecal culture**	1 g Feces 325 mL Bulk Milk 10 mL Milk	5-10 D
BV1143	**Clostridium perfringens (culture)** Also available in profile, see **Fecal culture**		5-10 D
BV0134	**Corynebacterium pseudotuberculosis Search**	Swab	2-5 D
BV1143	**Fecal culture + ATB** Includes aerobic Culture, *Campylobacter jejuni/coli/lari, Clostridium perfringens, Salmonella* spp. and *Shigella*.	10 g Feces	3-10 D
BV0039	**Milk bacteriology** Refrigerate, sterile container.	5 mL Milk	1-3 D
	See **Appendix D: why choose our service rather than do the milk analyses yourself**.		
BV1200	**Milk Bulk tank Profile** Bulk tank milk in a sterile container. Refrigerate. Submit to lab within 24 hours. Includes numeration of total coliforms and E. coli, as well as mesophilic aerobic colony counts, mesophilic aerobic colony counts after 18hours of incubation at 12.8°C and mesophilic aerobic colony counts after heating the milk at 62.8°C for 30min.	50 mL Milk	3-7 D
CM121	**Salmonella (culture)** Refrigerate, sterile container. Also available as a profile, see **Fecal culture**. See also **Salmonella Serotyping** (PCR section)**.**	10 g feces, tissue, other	4 D
BV0050	**Total Coliforms (Enumeration)** Refrigerate, sterile container.	2 mL Milk	2 D

PARASITOLOGY (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
CT785	**Baermann** Keep cool.	30 g Feces	5-7 D
CT550	**Cryptosporidium - Ag ELISA**	5 g Feces	4-12 D
BV7091	**Cutaneous Scraping (KOH)** **QC** This test is done externally.	Crusts, hair	3-4 D
BV7083	**Parasite identification** **QC** Fresh parasite or preserved in 70% ethanol. This test is done externally.	Parasite	1-2 D
BV7026	**Parasitology (Wisconsin)** **QC** This test is done externally.	5 g Feces	3-4 D
	Wisconsin, see **Parsitology**		

PCR (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV0087	**Chlamydophila spp qPCR** fetal tissues (lung, kidney, heart, stomach contents) and placenta (placentome).		2-3 D
BV0010	**Clostridium perfringens (Profil des toxines)** For this test the Clostridium perfringens culture must have been done previously.	Isolate	

PCR (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV0053	**Coxiella burnetii qPCR** fetal tissues (lung, kidney, heart, stomach contents) and placenta (placentome).		1-3 D
BV1144	**Dermatophytes (Ringworm) qPCR** Samples of hair and/or hair dander (min 10) or culture media with hair. Take the hair and dander from border of lesions in an empty sterile container. In the absence of visible lesions, brush the coat with a toothbrush. The main zoophilic species detected are: Microsporum canis, Trichophyton spp (benhamiae, bullosum, equinum, erinacei, mentagrophytes, quinckeanum, simii, verrucosum) and Nannizzia gypsea (essentially geophilic species, formerly known as Microsporum gypseum). These three species or species complexes are now highlighted using a new real-time PCR (qPCR) multiplex.		1-2 D
BV1206	**Digestive Profile qPCR** feces collected at the beginning of clinical signs. Refrigerate (4-8°C). 8 agents: BVDV, bovine Coronavirus (BoCV), Rotavirus A, Torovirus, Cryptosporidium spp., Giardia intestinalis, Salmonella spp. and E. coli K99 /F5		2-3 D
BV0237	**Intestinal parasites qPCR (Small ruminant)** Allows to identify and quantify the eggs of the main trichostrongyles of small ruminants, namely Teledorsagia spp, Trichostrongylus spp, Haemonchus contortus, Cooperia spp et Nematodirus spp.	5g Feces	1-3 D
CT974	**Leptospira spp. qPCR (EDTA whole blood)**	2.0 mL EDTA whole blood **(L)**	2-3 D
CT976	**Leptospira spp. qPCR (urine)**	10 mL Urine or Tissue.	2-3 D
BV0072	**M. paratuberculosis qPCR** 5 g Feces, intestines cont. (tightly close container); milk.		2-3 D
BV0036	**Mycoplasma spp qPCR**	lung	2-3 D
BV1196	**M. bovis & Mycoplasma spp qPCR**		
BV1211	**Respiratory Profile qPCR** transtracheal aspirations or nasopharyngeal swabs. Refrigerate. Includes: BoCV (Coronavirus), BoHV1 (IBR), BRSV, BVDV Histophilus somni, M. bovis, Mannheima haemolytica, Pasteurella multocida, PI3, Trueperella pyogenes and Influenza Virus D (IVD).		1-2 D
	Ringworm see **Dermatophytes**		
BV0093	**Salmonella spp. qPCR**	10 g Feces, tissue, other	2-3 D
BV0102	**Staphylococcus aureus qPCR**	2.0 mL Milk	2-3 D
BV0030	**Toxoplasma gondii qPCR**	1 g Feces	2-3 D

SEROLOGY (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV7057	**Brucella ovis Ab ELISA** **QC** This test is done externally.	0.5 mL Serum **(S)**	8-14 D
BV0043	**Brucellosis - Ab APAT** CFIA form mandatory	1.0 mL Serum **(S)**	1-2 D*
BV7094	**Caprine Arthritis Encephalitis Ab ELISA** **QC** This test is done externally.	0.2 mL Serum **(S)**	5 D

SEROLOGY (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BV7066	**CLA Caseous Lymphadenitis - Ab ELISA US (C. pseudotuberculosis)** This test is done externally.	1.5 mL Serum **(S)**	4 D
BV7084	**Chlamydophila abortus - ab ELISA QC** This test is done externally.	0.5 mL Serum **(S)**	8-14 D
BV1208	**Digestive Profile (ELISA)** Includes: Cryptosporidium, E. coli K99, Rotavirus and Coronavirus Ag ELISA	5 g Feces	2-5 D‡
BV7087	**Leptospira (6 serovars) - Ab MAT QC** This test is done externally.	1.0 mL Serum **(S)**	1 W
BV0073	**M. paratuberculosis - Ab ELISA**	1.0 mL Serum **(S)**	2-5 D‡
BV7071	**Maedi Visna (Ovine Progressive Pneumonia) - Ab ELISA QC** This test is done externally.	0.2 mL Serum **(S)**	7-15 D
BV7195	**Q Fever (Coxiella burnetii) ac ELISA QC**	2.0 mL Serum **(S)**	3-5 D‡
BV7095	**Toxoplasma IgG Elisa Ab US** This test is done externally.	1.0 mL Serum **(S)**	7-15 D

‡These tests are performed from Monday to Friday.

UROLOGY (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
CT760	**Urinalysis** Keep cool.	5.0 mL Fresh urine	1 D
BV1013	**Urinalysis with pathologist's comment**	5.0 mL Fresh urine	1 D

OTHER SERVICES AND FEES (OVINE AND CAPRINE)

CODE	TEST NAME - DESCRIPTION	SAMPLE	TAT
BVFR03	**Cancellation fees**		
BVFR08	**Emergency fees (RUSH)**		
BVFR06	**Intermediate fees**		
CREVW	**Pathologist's comments**		
BVFR01	**Pooling fees** (max. 5 samples)		
	Shipping fees NOT included (unless otherwise specified)		
TRA-0042	**QC: Shipping fees in Quebec**		
TRA-0006	**CA: Shipping fees in Canada**		
TRA-0003	**QC: Shipping fees in United States**		
	Cooler upon request		

Prices are subject to change without notice.

Appendix A – Guidelines for storing and shipping samples to the laboratory

The way samples are stored between collection and arrival at the laboratory is very important both to facilitate their processing and to ensure the validity of the analyzes.

Below you will find guidelines for some of the most common samples that are submitted to the laboratory for bacteriological or PCR testing.

Do not hesitate to contact us for more information.

Milk for bacteriological or PCR testing

- Samples should be placed in sterile tightly closed containers, with screw caps and sealed.
- **By no means should "containers" such as plastic bags, examination gloves, Vacutainer tubes or others be used.**
- Samples should be refrigerated as quickly as possible (it is important not to freeze them!) and should be stored between 2 and 8°C.
- They must arrive at the laboratory as soon as possible (ideally within 48 hours after collection).

Feces for bacteriological or PCR testing

- **S**amples should be placed in tightly closed containers(jars or flasks with screw caps available at the laboratory if required).
- By no means should "containers" such as plastic bags,examination gloves, Vacutainer tubes or others be used.
- If the samples were collected with swabs, it is recommended that they be placed in a solid (agar) or liquid transport medium (e.g., solid or liquid medium).
- However, for samples for PCR testing, it is important that the transport medium is liquid (no transport media agar!)
- Samples should be refrigerated as quickly as possible(it is important not to freeze them!) and they should arrive at the laboratory within 72 hours after collection.

Feces for parasitology

- Samples should be placed in tightly closed containers (jars or flasks with screw caps available at the laboratory if required).
- By no means should "containers" such as plastic bags, examination gloves or others be used.
- Samples should be refrigerated as quickly as possible(it is important not to freeze them!) and they should arrive at the laboratory within 72 hours after collection.

Nasopharyngeal swabs for bacteriological testing

- The ends of swabs should be placed in a solid (agar) or liquid transport medium (eg solid or liquid medium).
- Samples should be refrigerated as quickly as possible and should be stored between 2 and 8°C (it is important not to freeze them!).
- They must arrive at the laboratory as soon as possible(ideally within 48 hours after collection).
- Note that these samples can not be used for PCR testing.

Nasopharyngeal swabs for PCR testing

- The ends of swabs should be placed in sterile containers with 1 mL of buffered saline (PBS) and sealed.
- It is recommended to use tubes with screw caps(available at the laboratory if required).
- Samples should be refrigerated as quickly as possible and stored at 2-8°C.
- They must arrive at the laboratory as soon as possible(ideally within 72 hours after harvest).
- Note that these swabs cannot be used for bacteriological testing.

Appendix B – Aerobic or anaerobic culture: How to choose?

We regularly receive questions about what type of culture to choose (aerobic or anaerobic?) and the samples to be submitted. The appropriate selection of samples and the type of culture is crucial for the culture to obtain a significant result.

Anaerobic germs, by definition, come from oxygen-poor, moisture-rich sites. To successfully grow these germs in the laboratory, it is essential that samples are not exposed to air and retain moisture.

The conditions in which anaerobic germs are likely to be involved must include:

- Tissue necrosis
- Deep abscesses
- Bite wounds
- Wet pleurisy
- Aspiration pneumonia
- Metrits and pyometers
- Oral diseases
- Joint diseases

Appropriate samples for researching anaerobic germs include:

- Fluids (pleural, peritoneal, joint, or cerebrospinal)
- Deep tissues (muscles, liver, etc.)
- Intestinal content

On the other hand, samples that are inappropriate for this type of research include, among others:

- Vaginal swabs
- Airway swabs and aspirations
- Skin swabs or superficial wounds
- Urine (unless taken by bladder puncture)

The following rules must apply for the collection, and retention of samples for anaerobic germ research:

- **Fluids:** If they are taken by aspiration with a syringe, the air must be removed from the barrel of the syringe beforehand. The fluids must be placed in sterile tubes without additives, and the tubes must be filled entirely so as not to leave any air. The tubes must be tightly sealed. The syringe may also be sent to the laboratory after removing the needle.
- **Swabs:** Swabs must be placed in an appropriate anaerobic transport medium, such as those available at Biovet.
- In all cases, the samples must be stored between 4°C and 8°C and reach the laboratory within 48 hours.

Reference

Purvis T. et Burklund A. Do I choose aerobic or anaerobic culture.
www.ksvdl.org/resources/news/diagnostic_insights/january2019/aeorbic-anaerobic-culture.html

Appendix C – Litter profile and wipe culture

Litter profile

It is important to submit a representative sample of the litter to be analyzed. To do this, it is necessaryto proceed as follows:

- Take ten handfuls of litter to be analyzed from ten different places
- Place them in a clean bucket
- Mix well
- Take about two handfuls of the mixture
- Put them in a sealable “Ziploc” or “Whirl-pac” plastic bag.
- Keep the bag refrigerated (4-8°C) and send it to the
- laboratory within 24 to 48 hours.

*Note that there are no universal “guidelines” for interpreting litter culture results. There are no standards for certainly linking certain levels of bacteria with an increased risk of mastitis. However, litter cultures can be useful for assessing the microbiological quality of “clean” litter, comparing recycled litter before and after “treatment” or assessing the “management” of litter. We strongly recommend that you to discuss the use of results with your veterinarian before before sending samples to the laboratory.

It is strongly recommended that you and your veterinarian discuss the use of the results before sending samples to the laboratory.

The Litter Profile includes the following tests:

- Aerobic Colonies count (mesophiles/total count)
- Total coliform count/Escherichia coli
- Staphylococcus spp count.
- Streptococcus spp. count
- Klebsiella spp. count

Wipe culture

The wipe cultures used in the preparation of udders for milking are produced to assess the effectiveness of cleaning and/or disinfection procedures or their storage conditions.

The wipes to be analyzed should be placed in sealable “Ziploc” or “Whirl-pac” plastic bags. The bags must be refrigerated (4°C to 8°C) and sent to the laboratory within 24 to 48 hours.

*Note that there are no universal “guidelines” for interpreting wipe culture results. To assess the storage conditions of the wipes, you can compare a freshly cleaned wipe to another that has been stored for a period of time.

The cultures is produced individually to order. A simple count of mesophilic germs can already provide interesting information. If necessary, a more complete profile can be created including:

- Aerobic Colonies count (mesophiles/total count)
- Total coliform count/ Escherichia coli
- Staphylococcus spp count.
- Streptococcus spp. count
- Klebsiella spp count.

References

Laboratory for udder health. College of Veterinary medicine. University of Minnesota. www.vdl.umn.edu/services-fees/udder-health-mastitis.

Appendix D – Why choose our service rather than do the milk analyses yourself?

1. **Pickup service**
   UA free pick-up service at the clinic is available in most regions. Samples are kept at an optimum temperature until the laboratory.
2. **Quick processing of samples**
   The laboratory is operational 7 days a week and from 8:00 a.m. to midnight (3:30 p.m. on weekends). Samples are seeded as soon as they arrive at the laboratory.
3. **Devices checked and calibrated**
   All our devices (incubators, Maldi Tof, etc.) are checked and calibrated regularly.
4. **Non-selective culture**
   We use a rich, non-selective culture medium that allows the growth of the majority of mammary infection agents (e.g. bacteria except Mycoplasma; yeasts, Prototheca).
5. **Double culture**
   For mastitis cases, we culture "fresh" milk as well as milk that has been incubated at 35°C for a few hours. Cultures are systematically read after 1 and 2 days of incubation.
6. **Standardized results**
   The results of "fresh" milk cultures (direct seeding) are expressed in "colony-forming units per mL" (cfu/mL). The results for milk previously incubated are indicated by "presence" or "absence".
7. **Ultra-precision identification**
   The microorganisms are identified very precisely using a Brüker Maldi Tof device. Maldi Tof technology identifies germs that were difficult to identify otherwise (Negative coagulase Staphylococci)
8. **Real-time results**
   A preliminary report for Staphylococcus and Enterobacteriaceae (E. coli, Klebsiella spp) is sent the day after the samples were received. The final report is sent no more than 3 days later. The results are available in real time via the web (Bionet).
9. **Quality of analysis**
   The tests are performed by qualified technicians supervised by a certified microbiologist in accordance with the recommendations of the National Mastitis Council.

For more information, feel free to contact us.

Appendix E – New approach to the diagnosis of respiratory infections in cattle

We are in the winter with its respiratory problems. This year, we would like to offer you new diagnostic possibilities. Indeed, it appeared that you are mainly interested in the diagnosis by PCR of viral infections and by PCR or culture for bacterial infections. To reconcile these approaches, we have created a new profile, called "respiratory viral profile PLUS" including the detection of Mycoplasma bovis in addition to that of viruses. So, here are the 4 profiles that are now available to you:

1. **Viral Respiratory Profile qPCR:** Includes BoCV (Coronavirus), BoHV1 (IBR), BRSV, BVDV, PI3 and Influenza Virus D (IVD).
2. **Bacterial Respiratory Profile qPCR:** Includes Histophilus somni, M. bovis, Mannheima haemolytica, Pasteurella multocida & Trueperella pyogenes.
3. **Complete Respiratory Profile qPCR:** Includes Bacterial and viral Respiratory Profile.
4. **Viral PLUS Respiratory Profile qPCR:** Viral Respiratory Profile + Mycoplasma bovis.

In addition, in order to reduce costs while maintaining good analytical sensitivity while improving diagnostic sensitivity, we suggest you resort to the use of pooled samples for the "viral respiratory profile" and "viral respiratory profile PLUS" (not for the "bacteria respiratory profile").

Indeed, when it comes to determining whether a given contagious agent (virus, mycoplasmas) is present or not in a group of animals, it is not necessary to precisely determine the status of each of the animals concerned.

Additionally, if the individual samples are representative of the condition and the affected animals, most of these should be moderately to strongly positive.

However, the sensitivity of real-time PCR (qPCR) is such that if a pool consists of a moderately positive sample and 3 or 4 negative samples, the result of the test performed on the pool will be relatively unaffected.

Example: a pool consisting of a sample with a Ct of 28 (moderate load) and 3 or 4 negative samples (Ct> 38) will give a Ct of around 30-31.

In addition, you can request a bacteriological examination completed by one or more antibiogram (s) for Mannheimia haemolytica, Pasteurella multocida and Histophilus somni.

Taking samples

Material required

1. Paper towel or rag
2. 30 " double sheath swabs (available at Biovet: order@biovet-inc.com)
3. Tubes with Amies liquid transport medium (1 mL in 10 mL tube) suitable for bacteriological examinations and PCR (available from Biovet: order@biovet-inc.com)
4. Pair of scissors
5. Indelible marker
6. Analysis request form
7. Cooler with ice packs

Procedure

1. Select 3 to 5 animals representative of the condition and at the onset of clinical signs (less than 2-3 days).
2. Perform deep nasopharyngeal swabs on the selected animals (1 swab / animal)
   - Clean the orifice of the nasal cavities with paper towels or a cloth to limit contamination of the swabs
   - Swab the nasopharyngeal cavities as described in this video: https://www.youtube.com/watch?v=WB 3luk1nQjY
3. Cut the swab shaft to the appropriate length to allow it to be placed in a tube of transport medium.
4. If necessary, identify the tube with the animal's #
5. Store samples in refrigerator (4-8°C)
6. Complete a request by specifying the required tests
7. Send everything to the laboratory within 24 to 48 hours.

For more information, feel free to contact us.

Appendix F – Antibiotic profiles - cattle and small ruminants (sensitivity – Kirby-Bauer)

ANTIBIOTICS			
Amoxycillin	•		
Ampicillin	•	•	•
Ceftiofur	•	•	•
Cefalotin	•	•	
Cloxacillin		•	
Enrofloxacin	•	•	•
Erythromycin		•	•
Florfenicol	•		•
Gamithromycin			•
Gentamycin	•		
Neomycin	•		
Penicillin G		•	
Penicillin / Novobiocin		•	
Pirlimycin HCl		•	
Polymyxin B	•		
Spectinomycin	•		•
Streptomycin	•		
Sulfisoxazole			•
Sulphamethoxazole / Trimethoprim	•	•	•
Tetracyclin		•	•
Tilmicosin			•
Tildipirosin			•

OTHER AVAILABLE ANTIBIOTICS		
Amikacin	Ciprofloxacin	Nitrofurantoin
Amoxicillin / Clavulanic acid	Clindamycin	Norfloxacin
Apramycin	Doxycyclin	Novobiocin
Azithromycin	Fusidic acid	Ofloxacin
Bacitracin	Imipenem	Oxacillin
Cefovecin	Kanamycin	Piperacillin
Cefoxitin	Lincomycin	Pradofloxacin
Cefpodoxime	Marbofloxacin	Rifampicin
Ceftazidim	Meropeneme	Sulbactam / Ampicillin
Cephalexin	Metronidazole	Ticarcillin
Cephazolin	Moxifloxacin	Tobramycin
Chloramphenicole	Mupirocin	

Appendix G – Detection of mammary staphylococcal infections in primiparous

There is a growing interest in the field to detect and treat Staphylococcus aureus (AS) breast infections in primiparous (bulls) at calving and we were recently asked to offer a special bacteriological examination service for the milk of these animals.

To do this, it can be tempting to use the Petrifilms Staph medium. Express from 3MTM, to start by examining pools of the 4 districts and then to examine individually the samples in which SA aureus would have been detected.

Our experience with Petrifilms Staph. Express has shown us that it is not always easy to differentiate AS from other staphylococci. However, in bulls, infections with staphylococci other than AS (in particular so-called coagulase-negative staphylococci, CNS) are common. Therefore, the risk of confusion between SA and CSN with Petrifilms Staph. Express is not negligible.

In addition, the pathogenic role of CNS in breast infections is currently unclear. Some species would affect milk quality (increased somatic cells) and possibly even subsequent milk production. However, at this stage, it does not seem justified to treat sub-clinical infections with CNS. In short, it is important not to confuse SA and CNS in order to avoid unnecessary treatments.

Therefore, we decided to proceed by examining the 4 quarters individually, to use conventional isolation media (blood agars) and to identify isolates according to the usual methods (including the coagulase test). In addition, we will use an inoculum of 500 µL instead of the usual 10 µL. Finally, we will report the presence of both SA and CNS. On the other hand, the possible presence of other germs will not be reported. Also note that the milks will not be frozen or incubated before being seeded (you are free to freeze the samples before sending them to us).

We are convinced that this approach will offer a better sensitivity than the standard method while ensuring that SA from CNS are definitely differentiated unlike Staph Petrifilms. Express.

For more information, feel free to contact us.

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Appendix H – About the search for salmonella in cattle

Salmonella spp infections are a major concern for both herd and public health

In cattle, salmonellosis can be caused by different serotypes such as Typhimurium, Dublin, Newport, Montevideo, Muenster, Cerro, Muenchen, etc. (Gutema et al, 2019, Hong et al, 2016)

Typhimurium serotype is most common in many species.

Dublin serotype is particularly suitable for cattle in which, unlike other serotypes, it causes persistent infections.

S. Dublin infections are particularly severe in humans.

S. Dublin strains found in Quebec are generally resistant to several families of antibiotics (multidrug-resistant strains).

Biovet provides you with diagnostic tools to detect salmonella from different samples (feces, tissues, milk, blood, food, environment).

We advocate a hybrid approach consisting of combining selective enrichment (bacteriology) and real-time PCR (Goodman et al, 2017). After selective enrichment, the presence of salmonella is checked by real-time PCR.

This approach is faster and more sensitive than the bacteriological method alone.

In cattle, we currently offer 2 different PCRs:

- **qPCR 1-plex Salmonella spp: detects the presence of all salmonella without specifying a serotype**
- **qPCR 3-plex Salmonella spp + S. Typhimurium + S. Dublin:** detects the presence of salmonella and determines whether it is Typhimurium or Dublin serotype (or not)

Given the importance of typhimurium and Dublin serotypes, we strongly recommend the use of 3-plex qPCR which allows you to quickly know if you are dealing with a Typhimurium, Dublin or other serotype.

In the event of a positive PCR, salmonella isolation can be continued to obtain an isolate and its susceptibility to different antimicrobials can be determined using the agar method

If the PCR is negative for Typhimurium and Dublin, then it is also possible to determine the serotype involved from the isolate.

In addition, we continue to offer salmonella research in “standard bacteriology”.

For more information, feel free to contact us.

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Appendix I – Protocol for the handling and sending of large masses of animals for veterinary analysis

Here are clear and detailed instructions on how to ensure the safety and efficiency of the process when sending mass that does not fit into standard formalin containers.

Whether you're a veterinarian or a laboratory professional, handling these samples appropriately is essential to prevent health risks and ensure accurate results.

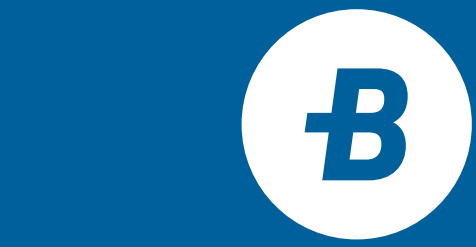
We invite you to carefully follow the recommendations provided in this appendix for the safe and efficient handling of animal masses. If in doubt, don't hesitate to contact our technical team for further help and advice.

Protocol

1. In the smallest possible plastic container, place gauze pads or a "pee pad" and soak them with Epredia™ Formalin 10% (ready-to-use formalin). To do this, use about 100 ml, which is equivalent to a small urine collection jar.
2. Place the mass inside the prepared container and carefully wrap it in the gauze pads or the "pee pad".
3. Close the lid of the container tightly and place it in a closed plastic bag.

Please note that it is strictly forbidden to send a formaldehyde-filled "Ziploc" style bag, as this constitutes a hazard to handling and transportation. Instead, use an appropriate container and follow the instructions provided to ensure the safety of all involved. Please refer to your preservative's Material Safety Data Sheet for details.

Thank you for your commitment to the safety and quality of veterinary testing.



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