IDEXX BioAnalytics

2025 IDEXX BioAnalytics Directory of Services

NORTH AMERICA

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About Us

What you can expect from us

At IDEXX BioAnalytics, we offer customized testing solutions, meaningful data, and global expertise in research testing services.

Our global network of experts is ready to support your research testing needs by providing fast, accurate and reliable results with expert consultation you can access directly for even greater insight. IDEXX BioAnalytics delivers comprehensive Health Monitoring, Biological Materials Testing and Preclinical Services.

What we do

Reference Lab Services for Biomedical Research

Services designed to support vivarium personnel, researchers, and investigators performing in vitro and vivo work.

Dedicated exclusively to partnering with bio-pharmaceutical, discovery and R&D programs.

For over 20 years, our teams have been supporting R&D programs across Europe and North America.

Integrated, comprehensive and analytical support through a single point of contact in the two biggest regulatory regions, Europe and North America.

Summary of Services

Reliable & reproducible results

- Detailed SOPs, sample & data archives
- VICH GL09 (GCP) capability

Accelerate research

- Industry-leading expertise in supporting preclinical and veterinary clinical trials
- Comprehensive solutions through in-house testing
- Comprehensive support including laboratory project management and customised reporting
- Active risk reduction to make sure samples are collected, handled and tested according to the study protocol

Innovative technologies

- Development and validation of assays to accurately measure physiologic and pathologic biomarkers

Logistics support

- Global support for single or multi-center studies
- Full support from the onset of the study until final report
- Management of specialized external laboratories
- Sampling & shipping instructions
- Easy access to collection materials
- Sample pick-up and cross border shipment
- Customized reports

Scientific expertise

- Regulatory-compliant assays for reducing the number of cases required for statistical significance
- Improving study outcome by reducing cost and time
- Positively impact the health and welfare of humans and animals (3R) by accelerating the development of novel, better and safer treatments for pets, laboratory animals and livestock

Important note

IDEXX BioAnalytics is constantly expanding its range of laboratory services and new assays may have been implemented since this directory was produced.

For more information please visit:
www.idexxbioanalytics.com

Directory of Tests and Services

How to find a test

This directory contains IDEXX BioAnalytics' three main testing categories: Preclinical Testing, Animal Health Monitoring, and Biologics and Cell Health.

Each testing category feature our most commonly requested tests, panels, and profiles. This includes the test name, test components, specimen requirements, turnaround time (TAT), and test codes.

You'll find additional useful information such as how to collect and send in samples, and other submission suggestions.

Streamlined process to deliver fast, accurate results

Our team is here every step of the way to ensure your research continues to move forward.

Connect with your account manager for a quote

Register for an account in our online submission portal

Request supplies for sample collection, if necessary

Visit our online submission portal and submit your order

Package and ship your samples

Samples arrive at lab and tests are completed

Reports are delivered

Invoice and payment

Getting Started

Visit IDEXX BioAnalytics' **Support** page. Here you will find detailed information on how to request access to the client portal, order sample collection material, as well as the recommended sample collection and shipping procedures. You can also reach out to our Client Support Service team or set a meeting with your local account manager. This is a great first step in partnering with IDEXX BioAnalytics.

Your Account Manager will:

- Assist with quote proposals and pricing
- Provide ongoing staff training and support
- Keep you up-to-date on new products, services or industry trends

Support

Our Client Support Services (CSS) team is available to answer phone calls and emails Monday through Friday 8:00 am - 8:00 pm ET. They can be reached at:

Client Support Services
1-800-669-0825
idexxbioanalytics@idexx.com

The CSS team can help you with:

- Account setup/updates and online access
- Online submission support
- Requesting collection supplies
- Sample preparation and shipping
- Pricing questions and quoting requests
- Any other questions regarding our services

General Submission Information

To get started, complete the **New Client Registration form** on our website. Once your registration has been processed (within 1 business day), you will receive an automated email with your login credentials to access our secure online portal.

After receiving your login credentials, you can set up your submission paperwork **online.** Visit our **website tutorials** for information on how to use the system, ask us for a pdf guide, or request virtual training. After completing a submission form, please place a copy of the packing slip in your shipping container to expedite sample check-in and assure your samples can be moved immediately to the laboratory for processing.

Specimen Preparation and Handling

Supplies

You can send a request for supplies to the CSS team

- **Clinical Pathology Supply Request Form**
- **Histopathology Supply Request Form**
- **Health Monitoring Sample Collection Kit Request**

Specimen labeling is critical

- Proper labeling helps ensure accuracy in testing
- IDs on sample vials must match IDs on submission paperwork
- For studies: Always label tubes, smears, specimen jars, etc., with the animal ID, study ID and collection date. Label all cytology slides with the animal ID and the site
- Do not cover the entire specimen tube with a label, as this will prevent the technologist from assessing color and clarity of the specimen
- Split-off tubes must be labeled appropriately (e.g., “plasma” with anticoagulant used, or “serum”)
- Always include a printed copy of your submission confirmation paperwork in the box with your specimens

Final preparation of samples for shipping and delivery

Your samples should be in zip lock bags or sample boxes and inside a box or shipping container, packed with filler material to prevent samples from being jostled during transit. The submission confirmation form should be inside the container. If samples should remain cool during transport please put on gel packs or dry ice depending upon specific needs; no wet ice please.

Courier pick-up & shipping

Depending on your location, IDEXX BioAnalytics may provide courier services in your area. Courier services are only available for Clinical Pathology specimens being shipped to the North Grafton, MA or West Sacramento, CA lab locations.
For more details or to find out if your location is serviced by a courier, please contact the Client Support Service team at 1-800-669-0825 or **idexxbioanalytics@idexx.com**

Clients may utilize FedEx or their own preferred overnight carrier for the direct shipping of samples to our laboratory locations. Please contact FedEx at 1-800-GOFEDEX for information on proper shipping and transport packaging requirements and for shipment pick-up or drop-off services.

Label the outside of all boxes with the following:
To IDEXX BioAnalytics
Attn. Sample Receiving
From (Your Company Name)

Results Delivery Options

We provide results by email and turnaround time (TAT) varies depending on the test requested. Sample submission and case status, as well as final results, can be viewed anytime via our **secure online portal**. Final results will also be delivered via PDF when all testing is completed for an accession. We offer several options for reporting to make your data easy to use. Contact the CSS team to assist you with customizing your reporting options to suit your needs.

Reporting Options for Health Monitoring

Individual sample or multi-sample reports

- IDEXX BioAnalytics provides a multi-sample/animal PDF file report, containing all samples and animals on one document.
- We are able to provide individual case reports as an option during the online submission process or by notifying our CSS team before sample receipt. Individual case reports cannot be generated after samples have been received in the lab.
- Please let the CSS team know before your samples arrive if you would like Excel or CSV files in addition to PDFs.
- Opti-Tracking is a self-serve health monitoring report that is accessible via the secure online portal. The report provides a statistical overview of the number of positive results for a given test, building, room, etc. for a specific timeframe. The data can be easily exported to share with collaborators or during transfers to other facilities.

Reporting Options for Biologics and Cell Health

Individual sample or multi-sample reports

- IDEXX BioAnalytics provides a multi-sample/material PDF file report, containing all samples and material on one document.
- Individual case reports can be generated using the Certificates of Analysis reporting feature on our secure online portal.

Reporting Options for Preclinical Testing

PDF, Excel, and CSV formats available

- Please let the CSS team know before your samples arrive if you would like Excel or CSV files in addition to PDFs.
- For special formatting requests such as display order of analytes, please indicate specific needs in the general instructions section of submission form or contact Client Support Services prior to sample submission.

Individual sample or multi-sample reports

- On the IDEXX submission form or online submission portal, there is an option to have your reports grouped in two different ways. We are able to provide a single PDF file containing all sample results or individual PDFs per animal.

Preliminary or final reports

- Please contact CSS to adjust your account settings for preliminary reports or only final reports
- A preliminary PDF will be sent when EACH testing section (chemistry, hematology, coagulation, etc.) is completed. Once all sections are completed, a final PDF with any accompanying excel or csv files will be delivered by email. For example, if you order chemistry, hematology, and urinalysis services on a single submission, you will receive at least 4 emails. This option is best suited for clients who order a combination of tests that have short and long turnaround times; like a chemistry panel and send-out testing or hematology and microbiology.
- If final reports only is selected, a single PDF is emailed after all testing on an accession is completed.

Where to find us

Lab Locations - North America

North Grafton, MA
IDEXX BioAnalytics
3 Centennial Drive
North Grafton, MA 01536

Monday to Friday 9.00-5.00
Saturday: 9:00-12:00
Sunday: Closed

Offered Services:
- Research Clinical Pathology Lab Services

West Sacramento, CA
IDEXX BioAnalytics
2825 KOVR Drive
West Sacramento, CA 95605

Monday to Saturday: 9.00-5.00
Sunday: Closed

Offered Services:
- Research Clinical Pathology Lab Services

Columbia, MO
IDEXX BioAnalytics
4011 Discovery Drive
Columbia, MO 65201

Monday to Friday: 9.00-5.00
Saturday & Sunday: Closed

Offered Services:
- Health Monitoring
- Biological and Cell Health
- Histology Lab Services
- Histopathology Services
- Cytokine Testing

Lab Locations - Europe

IDEXX GmbH
IDEXX BioAnalytics
Im Moldengraben 65
D-70806 Kornwestheim
Germany

Monday to Friday: 08.00-16:30
Sample reception *until 14:00*
Saturday: 09.00-15:30
Sample reception *until 13:00*
Sunday: Closed

Offered Services:
- Health Monitoring
- Biological and Cell Health
- Research Clinical Pathology Lab Services
- Histology Lab Services
- Histopathology Services

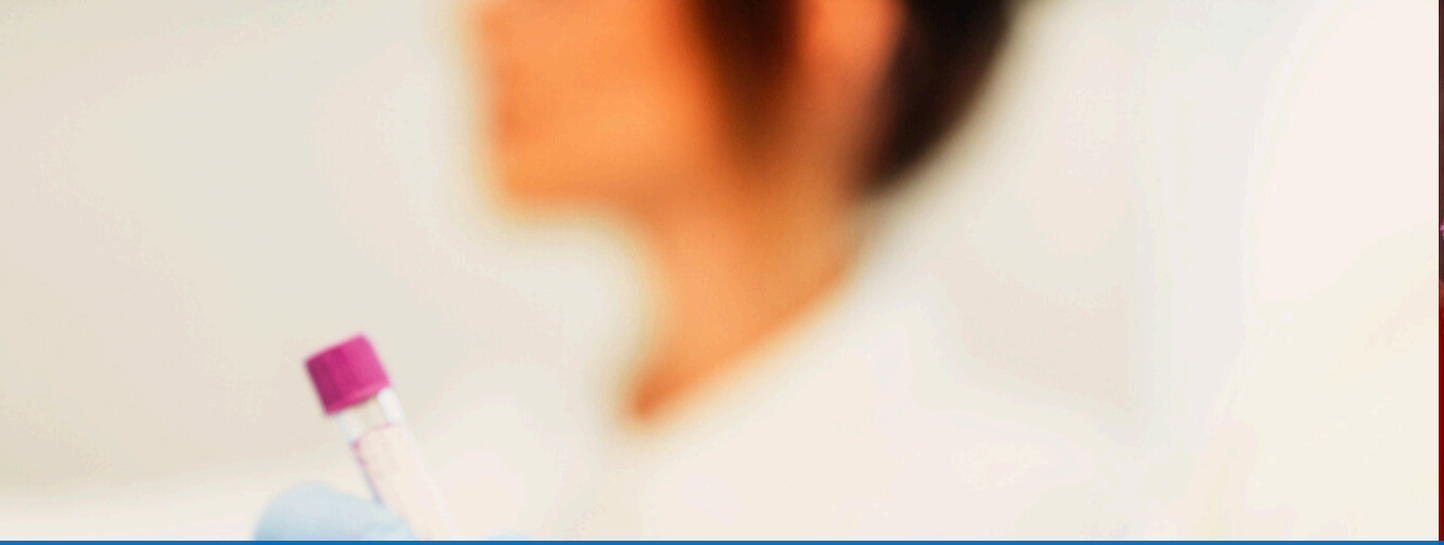
Contact us

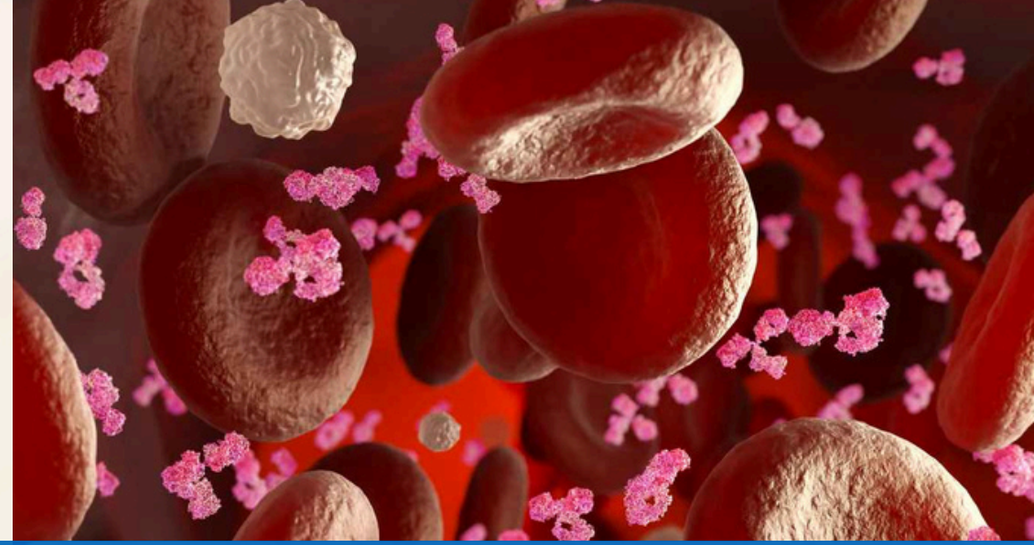
Customer Service - North America

idexxbioanalytics@idexx.com
1-800-669-0825
Monday–Friday
8:00 am–8:00 pm ET

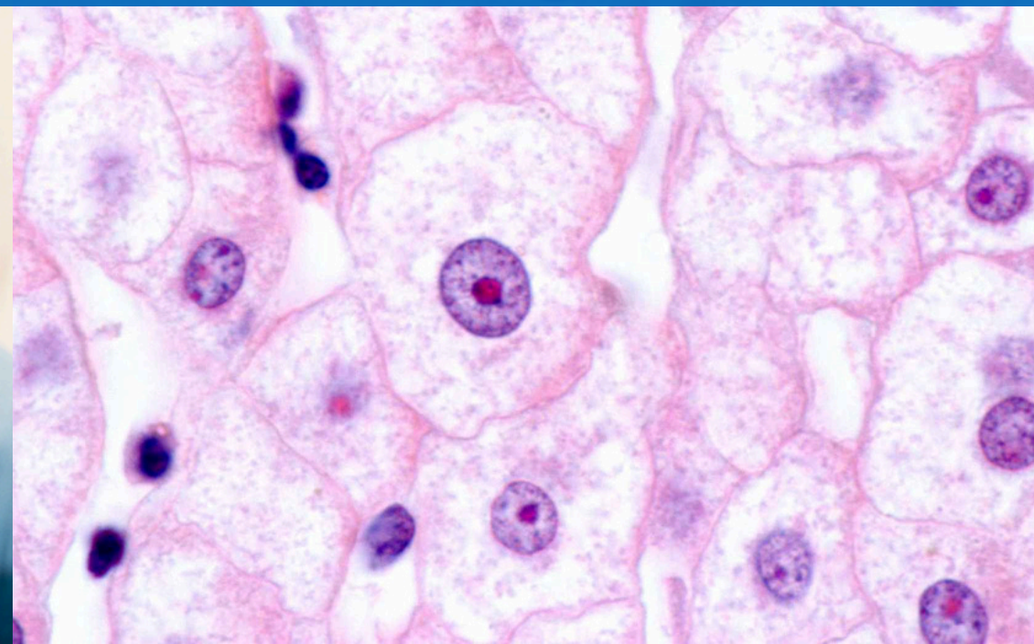
Customer Service - Europe

idexxbioanalytics-europe@idexx.com
Monday–Friday
8:30 am–16:00 CET





Preclinical Testing



Accuracy, Speed, and Support to Drive Research Forward

No matter the research, we have you covered

As a customer-focused organization, we work to ensure that we support the complete array of clinical and anatomic pathology testing required by our customers.

Therapeutic Areas

- Oncology
- Cardiovascular Diseases
- Inflammatory Diseases
- Neurodegenerative Diseases
- Metabolic Diseases
- Wound Healing

Types of Studies

- Basic Research
- Discovery
- Model Development
- Safety & Toxicology

Modality

- Medical Devices
- Antibody Therapeutics
- Vaccines
- Xenograft Models
- Cell & Gene Therapy

Cell Based Applications

- Mammalian Cells
- Tumor Research
- Stem Cells
- Bioproduction
- Organoid / Microphysiological Systems

Preclinical Testing

2025 Directory of Tests and Services

Clinical Pathology

- Chemistry
- Hematology
- Coagulation
- Inflammatory Markers
- Pathology Services

Small Molecule Bioanalysis

Anatomic Pathology

- Histology
- IHC Staining
- Research and Toxicology Pathology
- Candidate Selection Histopathology
- Model Development
- Diagnostic Pathology
- Digital Image Analysis
- Whole Slide Scanning

Custom Projects

IDEXX Core Lab Testing Services

Send-Out Testing Services

Clinical Chemistry

Standard Panels

	Comprehensive Chemistry	Comprehensive Chemistry 2	Rodent Expanded Tox	Standard Tox	Short Tox	Tox Panel with LDH	Liver Panel	Renal Panel	Lipid Rodent	Lipid Nonrodent
Test code	**6006**	**60509**	**60514**	**62794**	**60513**	**60888**	**60405**	**60406**	**6290**	**6291**
Serum volume requirement	200 µL	270 µL	240 µL	140 µL	120 µL	110 µL	130 µL	120 µL	60 µL	50 µL
Alanine Aminotransferase (ALT)	•	•	•	•	•	•	•			
Albumin (ALB)	•	•	•	•		•	•	•		
Albumin:Globulin Ratio	•									
Alkaline Phosphatase (ALP)	•	•	•	•	•	•	•			
Amylase (AMY)		•								
Aspartate Aminotransferase (AST)	•	•	•	•	•	•	•			
Bile Acids,Total			•		•					
Bilirubin Total (TBIL)	•	•	•	•	•	•	•			
Blood Urea Nitrogen (BUN)	•	•	•	•	•			•		
BUN:Creatinine Ratio	•		•	•						
Calcium (Ca)	•	•						•		
Chloride (Cl)	•	•	•					•		
Cholesterol (CHOL)	•	•	•						•	•
Creatine Kinase (CK)	•	•	•	•			•			
Creatinine (CREA)	•	•	•	•	•			•		
Gamma-glutamyltransferase (GGT)		•	•	•	•		•			
Globulin (GLB)	•			•		•				
Glucose (GLU)	•	•	•							
HDL Cholesterol (HDL-C)			•						•	•
Lactate Dehydrogenase (LDH)		•				•				
Lipase (LIP)		•								
LDL Cholesterol (LDL-C) †			•						•	•
Phosphorous (PHOS)	•	•	•					•		
Potassium (K)	•	•	•					•		
Sodium (Na)	•	•	•					•		
Sodium:Potassium Ratio	•									
Total Protein (TP)	•	•	•	•		•	•	•		
Triglycerides (TRIG)		•	•						•	•
Uric Acid		•								

†LDL Cholesterol is calculated for species other than rat or mouse.

Clinical Chemistry

Individual Tests

Please note that volumes listed are for single analyte testing, if multiple analytes are needed, volumes will be reduced. Information on custom chemistry panels is available in the custom chemistry section. Unless otherwise stated, the following tests can be performed on the common laboratory species.

Test name	Specimen requirements	Turnaround time	Test code
Alanine Aminotransferase (ALT/SGPT)	40 µL serum	1-2 days	**6225**
Albumin (ALB)	40 µL serum	1-2 days	**62006**
Alkaline Phosphatase (ALP)	40 µL serum	1-2 days	**6201**
Amylase (AMY)	40 µL serum	1-2 days	**6203**
Aspartate Aminotransferase (AST/SCOT)	40 µL serum	1-2 days	**6224**
Betahydroxybutrate (BHB)	40 µL serum	1-2 days	**62645**
Bicarbonate	40 µL serum	1-2 days	**6209**
Bile Acid Panel (Pre- and Postprandial) *Please clearly label pre and post samples*	40 µL serum, each	1-2 days	**6257**
Bile Acids, Total	40 µL serum	1-2 days	**6258**
Bilirubin-Total, Conjugated, Uncojugated	55 µL serum	1-2 days	**6204**
Blood Urea Nitrogen (BUN)	40 µL serum	1-2 days	**6207**
C-Reactive protein (CRP) -Mouse only	40 µL serum	7-10 days	**62485**
C-Reactive protein (CRP) -NHP only	100 µL serum	7-10 days	**62484**
C-Reactive protein (CRP) -Dog only	30 µL serum	1-2 days	**63580**
Calcium (Ca)	40 µL serum	1-2 days	**6208**
Chloride (Cl)	50 µL serum	1-2 days	**6210**
Cholesterol, Total	40 µL serum	1-2 days	**6211**
Creatinine Kinase (CK, CPK)	45 µL serum	1-2 days	**6212**
Creatinine (CREA)	55 µL serum	1-2 days	**6213**
Fructosamine	40 µL serum	1-2 days	**6245**
Gamma-glutamyltransferase (GGT)	50 µL serum	1-2 days	**6214**
Glucose (GLU)	40 µL serum	1-2 days	**6215**

Test name	Specimen requirements	Turnaround time	Test code
Glutamate dehydrogenase (GLDH) -Rodent only	60µL serum	1-2 days	**62274**
Hatpoglobin	40 µL serum	1-2 days	**62846**
High-Density Lipoprotein Cholesterol (HDL-C)	40 µL serum	1-2 days	**6292**
Iron (Fe)	35 µL serum	1-2 days	**6962**
Lactate Dehydrogenase (LDH)	40 µL serum	1-2 days	**6218**
Lipase (LIP)	40 µL serum	1-2 days	**6219**
Low-Density Lipoprotein Cholesterol (LDL-C) †	45 µL serum	1-2 days	**62620**
Magnesium (Mg)	40 µL serum	1-2 days	**6220**
Nonesterified Fatty Acids (NEFA)	40 µL serum	1-2 days	**62845**
Phosphorus (PHOS)	40 µL serum	1-2 days	**6221**
Potassium (K)	50 µL serum	1-2 days	**6229**
Plasma Free Hemaglobin	40 µL serum	1-2 days	**62185**
Plasma Protein by refractrometry	500 µL LTT	1-2 days	**6314**
SDMA by Immunoassay-Dog, cat, rat, NHP	80 µL serum	1-2 days	**63638**
Sodium (Na)	50 µL serum	1-2 days	**6231**
Sorbitol Dehydrogenase (SDH)	50 µL serum	1-2 days	**6227**
Total Protein (TP)	40 µL serum	1-2 days	**6222**
Total T4	50 µL serum	1-2 days	**6804**
Triglycerides (TRIG)	40 µL serum	1-2 days	**6242**
Uric acid	60 µL serum	1-2 days	**6228**

†LDL Cholesterol is calculated for species other than rat or mouse.

Clinical Chemistry

Protein Electrophoresis

- Protein Electrophoresis is a well-established technique routinely used in clinical laboratories for screening serum, plasma, and urine for protein abnormalities. Proteins are separated into fractions, primarily based on their charges at a given pH.

- Fresh serum, plasma, urine, and other body fluid samples are recommended for analysis. Refrigerated samples are stable up to one week. Frozen samples are acceptable for up to one month.

Test name	Specimen requirements	Turnaround time	Test code
Protein Electrophoresis, Serum	150 µL serum	5-10 days	**6223**
Protein Electrophoresis, Urine, CSF	150 µL fluid	5-10 days	**61367**

Hematology and Chemistry Profiles Combined

Test name	Specimen requirements	Turnaround time	Test code
Comprehensive Chemistry and CBC	200 µL serum, 150 µL LTT	1-2 days	**61331**

Custom Chemistry

With IDEXX BioAnalytics, you have the ability to create your own chemistry panel. The following tests can be performed on the common laboratory species. Please contact Client Support Services (CSS) or your Account Manager with your preferred panel of analytes for a test code to utilize when ordering.

- Custom Serum Chemistry 2–10 routine analytes
- Expanded Custom Chemistry 11+ routine analytes
- Premium Custom Chemistry †
- Urine Chemistries

Routine Analytes

Albumin (ALB)	Blood Urea Nitrogen (BUN)	Lipase (LIP)
ALB/GLOB Ratio*	BUN:Creatinine Ratio*	Na/K Ratio*
Alkaline Phosphatase (ALP)	Calcium (Ca)	Phosphorus (PHOS)
Alanine Aminotransferase (ALT)	Chloride (Cl)	Potassium (K)
Amylase (AMY)	Cholesterol (CHOL)	SDMA ‡
Anion Gap*	Creatine Kinase (CK, CPK)	Sodium (Na)
Aspartate Aminotransferase (AST)	Creatinine (CREA)	Total Protein (TP)
Bicarbonate	Globulin (GLOB)*	Triglycerides (TRIG)
Bilirubin, Conjugated	Glucose (GLU)	Uric Acid
Bilirubin, Unconjugated*	Gamma-glutamyltransferase (GGT)	
Bilirubin, Total	Lactate Dehydrogenase (LDH)	

Premium Analytes

Bile Acids	Magnesium (Mg)	HDL Cholesterol (HDL-C)
LDL Cholesterol (LDL-C)	Sorbitol Dehydrogenase (SDH)	Glutamate Dehydrogenase (GLDH)

† Additional tests can be incorporated into the premium custom chemistry panels; pricing will vary.
‡ SDMA for Immunoassay validated species only.
*Calculated values are complimentary and not counted as analytes.

Clinical Chemistry

Urinalysis Panels and Profiles

Unless otherwise stated, the following tests can be performed on the common laboratory species.

	Urinalysis, complete	Urinalysis without microscopic exam	Research Custom profile UA with UPCR 62369
Test code	**6910**	**69109**	**62369**
Urine volume requirement	550 µL	500 µL	800 µL
Volume	•	•	•
Color	•	•	•
Clarity	•	•	•
Specific gravity§	•	•	•
pH†	•	•	•
Protein†	•	•	•
Glucose†	•	•	•
Ketones†	•	•	•
Urobilinogen†	•	•	•
Bilirubin†	•	•	•
Blood (Heme)†	•	•	•
WBC‡	•		•
RBC‡	•		•
Bacteria‡	•		•
EPI cell‡	•		•
Mucus‡	•		•
Casts‡	•		•
Crystals‡	•		•
Urine creatinine			•
Urine protein			•
Urine protein/creatinine			•

† Testing performed by reagent dipsticks and reported semi-quantitatively. Positive protein is verified using 3% sulfosalicylic acid (SSA) protein precipitation test. Positive bilirubin results are confirmed by Ictotest.
‡ Microscopic examination performed using an inverted phase scope.
§ Specific gravity is measured via refractometer.

Urine Chemistry Individual Tests

Test name	Specimen requirements	Turnaround time	Test code
Calcium (Ca)	40 µL urine	1-2 days	**6967**
Chloride (Cl)	50 µL urine	1-2 days	**6970**
Creatinine (CREA)	40 µL urine	1-2 days	**6993**
Glucose (GLU)	40 µL urine	1-2 days	**60853**
Magnesium (Mg)	40 µL urine	1-2 days	**6244**
Phosphorus (PHOS)	50 µL urine	1-2 days	**6968**
Potassium (K)	50 µL urine	1-2 days	**6966**
Sodium (Na)	50 µL urine	1-2 days	**6965**
Total Protein (TP)	40 µL urine	1-2 days	**6992**
Uric Acid	40 µL urine	1-2 days	**6944**
Urea Nitrogen	50 µL urine	1-2 days	**6969**

Standard Urine Panels

Test name and components	Specimen requirements	Turnaround time	Test code
Urine Protein:Creatinine Ratio	250 µL urine	1-2 days	**6994**
Uric Acid:Creatinine Ratio	250 µL urine	1-2 days	**6998**
Urine Phosphate:Serum Phosphate Ratio	270 µL urine and 80 µL serum	1-2 days	**6991**

Clinical Chemistry

Additional Clinical Chemistry Specimen Information

Serum
Serum is the fluid component of clotted blood. During clotting, coagulation factors and some other molecules from plasma are consumed, forming a new fluid called serum. Serum can only form if blood is allowed to clot and cannot be collected using an anti-coagulant. Once a blood clot has formed, the sample is then centrifuged to separate serum fluid from the cell components.

- Tube type: Serum separator tubes (SST) have a red cap with yellow ring or a gold top (mini tubes). Tubes contain clot activator and gel to separate clot from serum during centrifugation. Non-additive tubes can also be used for collection.
- Sample handling: Gently invert tube 8 to 10 times after collection. Let specimen clot for approximately 30-60 minutes at room temperature then centrifuge at approximately 2,000 to 2,500 rcf for 10 to 15 minutes. Afterwards, draw off serum into a sample transfer tube. Label the tube with sample ID, collection date, and sample type (serum).
- Sample storage: Store samples refrigerated at 2–8°C if shipping within 24 hours of collection. Otherwise, freeze samples in transport tubes at –20°C. Do not freeze samples in SST containers as this may cause cracks in the gel barriers and serum contamination with cell components.
- Sample shipping: Ship samples on cold packs or dry ice.

Other sample types
- Serum is the preferred specimen for most chemistry analytes; however, lithium heparin plasma or EDTA plasma may be used for some analytes. Please refer to the methodology chart (next page) for acceptable sample types.
- Centrifuged fluids can also be analyzed.
- Do not use serum separator tubes for certain endocrine and specialized testing including progesterone, and therapeutic drug monitoring (e.g., phenobarbital). Use red top tube (RRT) with clot activator instead.

Specimen Quality
Grossly hemolyzed samples may be analyzed, however, results should be reviewed carefully for possible interference effects. Moderate to grossly lipemic samples are ultra-centrifuged before analysis, except for specimens that have triglyceride requested.

Urine Submissions
The best urine specimen is obtained by cystocentesis using aseptic technique. This collection procedure prevents contamination and provides specimens for urinalysis testing and cultures.

Urine for urinalysis
- Ideal specimen: Urine
- Tube type: Non-additive tube, white cap tube with a black ring or plain, silicone-coated plastic tube. Fill the tube close to the top to minimize air in the tube for best results, especially when evaluating ketones and pH.
- Sample storage: Refrigerate (2–8°C) samples. Optimal results are obtained on refrigerated samples less than 48 hours old. Do not freeze.
- Sample shipping: Ship on cold packs but do not freeze as this may damage cells.

Urine for biochemistry analysis
- Ideal specimen: Urine
- Tube type: Non-additive tube, white cap tube with a black ring or plain, silicone-coated plastic tube. Fill the tube close to the top to minimize air in the tube for best results, especially when evaluating ketones and pH.
- Sample storage: Store samples refrigerated at 2–8°C if shipping within 24 hours of collection. Otherwise, freeze samples in transport tubes at –20°C.
- Sample shipping: If shipping within 24 hours of collection, samples can be shipped refrigerated on cold packs. If frozen in storage, ship samples on cold packs or dry ice.

Clinical Chemistry

Methodology and Specimen Types

Most routine chemistry assays are performed on Beckman Coulter analyzers. The Beckman analyzers are fully automated, discrete, computerized chemistry analyzers intended for in vitro quantitative or qualitative determination of a wide range of analysis. They are capable of performing photometric and potentiometric assays on a variety of body fluids.

Below are some of the most common chemistry assays, methodology, and sample types. All chemistry assays were validated for serum matrix as well as urine for applicable analytes, and additional samples types may be accepted as indicated in the chart below. If the assay of interest is not listed below, please contact the Client Support Services (CSS) team to get more information on equipment, methodology or sample types. Reference intervals available for most tests for dogs, cats, and horses.

Test - Unit	Method	Specimen Type
ALT (U/L)	Enzymatic, kinetic	Serum†/EDTA plasma/LH plasma
Albumin (g/dl)	Bromocresol Green (BCG)	Serum†/EDTA plasma/LH plasma
Alb/Glob Ratio	Calculation	Serum†/LH plasma
ALP (U/L)	Enzymatic, kinetic	Serum†/LH plasma
Amylase (U/L)	Chromogenic substrate (CNPG3)	Serum†/LH plasma
AST (U/L)	Enzymatic, kinetic	Serum†/LH plasma
BHB (mg/dl)	BHB dehydrogenase/INT	Serum†/EDTA plasma/LH plasma
Bicarbonate (mmol/L)	Enzymatic, endpoint	Serum†/LH plasma
Bile acids (µmol/L)	Enzymatic, kinetic	Serum†/EDTA plasma/LH plasma
Bilirubin, Total (mg/dl)	Diazo reaction, endpoint	Serum†/LH plasma
Bilirubin, Conjugated (mg/dl)	Nonenzymatic, endpoint	Serum†/LH plasma
Bilirubin, Unconjugated (mg/dl)	Calculation	Serum†/LH plasma
BUN (mg/dl)	Enzymatic, kinetic	Serum†/Urine†/EDTA plasma/LH plasma
BUN/Creat Ratio	Calculation	Serum†/LH plasma
C-Reactive Protein—Canine (mg/L)	Immunoturbidimetric	Serum†
Calcium (mg/dl)	Non-enzymatic (Arsenazo III), endpoint	Serum†/Urine†/LH plasma
Cholesterol (mg/dl)	Enzymatic (Cholesterol Esterase/Oxidase), endpoint	Serum†/EDTA plasma/LH plasma
Creatine kinase (U/L)	Enzymatic, kinetic	Serum†/LH plasma ‡
Creatinine (mg/dl)	Alkaline Picrate /modified Jaffe	Serum†/Urine†/LH plasma
Fructosamine (µmol/L)	Nitroblue Tetrazolium (NBT), kinetic	Serum†/LH plasma
GGT (U/L)	Enzymatic, endpoint	Serum†/EDTA plasma/Globulin
Glucose (mg/dl)	Enzymatic (Hexokinase/G-6-PDH), endpoint	Serum†/Urine†/CSF/EDTA plasma/ LH plasma

Test - Unit	Method	Specimen Type
GLDH (U/L)	Enzymatic, kinetic	Serum†
Haptoglobin (mg/mL)	Peroxidase activity	Serum†/LH plasma
HDL cholesterol (mg/dl)	Direct homogenous assay	Serum†/EDTA plasma/LH plasma
Iron (mg/dl)	Non-enzymatic (TPTZ), endpoint	Serum†/LH plasma
LDH (U/L)	Enzymatic, kinetic	Serum†/LH plasma
LDL cholesterol (mg/dl)–Rodent	Direct homogenous assay	Serum†/EDTA plasma/LH plasma
LDL cholesterol (mg/dl)–Nonrodent	Calculation	Serum†/EDTA plasma/LH plasma
Lipase (U/L)	Enzymatic (1,2-diglyceride), kinetic	Serum†/EDTA plasma/LH plasma
Magnesium (mg/dl)	Non-enzymatic (Xylidyl Blue), endpoint	Serum†/Urine†/LH plasma
Na, K, Cl (mmol/L)	Ion-Selective Electrode (ISE)	Serum†/Urine†/LH plasma
Na/K Ratio	Calculation	Serum†/LH plasma
NEFA (mEq/L)	Enzymatic	Serum†
Phosphorus (mg/dl)	Non-enzymatic, endpoint	Serum†/Urine†/LH plasma
Plasma Free (mg/dl)	Peroxidase activity	Serum†/EDTA plasma/LH plasma
Total protein (g/dl)	Biuret	Serum†/LH plasma ‡
T4 (µg/dl)	Enzymatic immunoassay	Serum†/EDTA plasma/LH plasma
Triglycerides (mg/dl)	Enzymatic, endpoint	Serum†/EDTA plasma/LH plasma
SDH (U/L)	Enzymatic, kinetic	Serum†/LH plasma
SDMA (ug/dL)	Enzymatic immunoassay	Serum†
Uric acid (mg/dl)	Enzymatic, endpoint	Serum†/Urine†/LH plasma
Urine bile acid (µmol/L)	Enzymatic, kinetic	Urine†
Urine/CSF protein (mg/dl)	Pyrogallol Red	Urine†/CSF

† Validated sample type
‡ Plasma samples may occasionally produce falsely low results

Hematology

Hematology is an area of excellence for IDEXX BioAnalytics. We have trained technicians to review blood smears manually to ensure automated differentials are as accurate as possible. Unless otherwise stated, the following tests can be performed on the common laboratory species.

Available components for IDEXX BioAnalytics CBC panels

Erythrogram
- Red Blood Cells (RBC)
- Hematocrit (HCT)
- Total Hemoglobin (HGB)
- Mean Corpuscular Volume (MCV)
- Mean Corpuscular Hemoglobin Concentration (MCHC)
- Mean Corpuscular Hemoglobin (MCH)
- Red Blood Cell Distribution Width (RDW)

WBC differential
- White Blood Cells (WBC)
- Neutrophils (% and absolute)
- Band (% and absolute)
- Lymphocytes (% and absolute)
- Monocytes (% and absolute)
- Eosinophils (% and absolute)
- Basophils (% and absolute)

Platelets
- Platelet Count
- Platelet Estimate
- Platelet Distribution Width (PDW)
- Mean Platelet Volume (MPV)

Reticulocytes
- Reticulocyte Count (% and absolute)
- Reticulocyte Hemoglobin Content

Microscopic evaluation of blood smear
- Provide WBC and RBC morphology
- Atypical cells and infectious agents will be noted

Complete Blood Count (CBC) Panels

	CBC	CBC with Retic Hgb	CBC with MPV and RDW
Test code	**61330**	**62216**	**62649**
Recommended volume	150 µL	150 µL	150 µL
WBC	•	•	•
RBC	•	•	•
HGB	•	•	•
HCT	•	•	•
MCV	•	•	•
MCH	•	•	•
MCHC	•	•	•
WBC Differential	•	•	•
Blood Film Evaluation	•	•	•
Platelet Count†	•	•	•
Platelet Estimate	•	•	•
Reticulocyte Count	•	•	•
MPV and RDW			•
Reticulocyte Hemoglobin Content		•	

† If obtainable

Custom hematology codes can be created for your research needs.
Please contact us to discuss testing and pricing options.

Hematology

Add-ons for Standard Hematology

Test name	Specimen requirements	Turnaround time	Test code
Reticulocyte Count Add-on Automated Mouse, Rat, Primate, Canine, Feline, Bovine, Porcine	No additional sample volume required	1-2 days	**6313**
Platelet Count Add-on Automated Mouse, Rat, Primate, Canine, Feline, Ovine, Bovine, Lagomorph, Porcine, Equine	No additional sample volume required	1-2 days	**60731**
Platelet Count Add-on Manual–All Species	No additional sample volume required	1-2 days	**63091**
Platelet Distribution Width (PDW) and Mean Platelet Volume (MPV) Add-on	No additional sample volume required	1-2 days	**61010**

Hematology and Chemistry Profiles Combined

Test name	Specimen requirements	Turnaround time	Test code
Comprehensive Chemistry and CBC	200 µL serum, 150 µL LTT	1-2 days	**61331**

Individual Tests

Test name	Specimen requirements	Turnaround time	Test code
Platelet Count Automated–Canine, Feline, Ovine, Bovine, Lagomorph, Rat, Equine, Mouse, Porcine, Primate	150 µL LTT	1-2 days	**6037**
Platelet Count Manual–All Species	100 µL LTT	1-2 days	**6027**
Plasma Protein by refractometry	500 µL LTT	1-2 days	**6314**
Reticulocyte Count and RBC Automated Mouse, Rat, Primate, Canine, Feline, Bovine, Porcine	150 µL LTT	1-2 days	**60828**
Automated Nucleated Cell Count	150 µL LTT	1-2 days	**6335**

Additional Hematology Sample Information

Anticoagulated whole blood
Anticoagulated whole blood is blood drawn directly from the animal. Made up of plasma, a fluid component that carries dissolved molecules, and the cellular components, such as red and white blood cells and platelets. Whole blood is drawn into a tube containing anti-coagulant so that cells do not clump together.

- Ideal specimen for most hematology services: EDTA whole blood in a lavender top tube (LTT) tube filled to the recommended level. A proper blood to anticoagulant ratio is important for accurate results.
- Also accepted: Heparin-anticoagulated whole blood in a green top tube (GNTT) or sodium citrated whole blood in a light blue top tube (BTT). These sample types may incur an additional charge due to manual handling needs.
- Tube type: Lavender top EDTA (LTT) strongly preferred. Lithium heparin green top tube (GNTT) or light blue top tube (BTT) sometimes acceptable.
- Sample handling: Observe fill lines to achieve proper blood to anticoagulant ratio. Mix by gently inverting tube 8 to 10 times to prevent clotting and hemolysis. Label the tube with the sample ID and collection date. If collecting blood from one animal into multiple tubes, fill the LTT last to avoid contaminating other sample tubes with EDTA.
- Sample storage: Refrigerate (2–8°C) samples. Optimal results are obtained on refrigerated samples less than 72 hours old. DO NOT FREEZE. These samples degrade rapidly at room temperature and are destroyed by freezing.
- Sample shipping: Ship refrigerated on cold packs, ideally same day or day following collection. Samples received 72 hours or more past collection may show significant degradation that can affect results. Ensure samples do not come into direct contact with cold packs during shipment. Samples can be placed within an internal container to prevent freezing.

Hematology

Additional Hematology Sample Information

Other sample notes
Blood sampling tips to improve sample quality:

- To avoid hemolysis, blood samples should be taken immediately after the vein has been raised.
- Avoid “pumping or milking” the blood from the vein as this can induce coagulation and erythrocyte lysis.
- Avoid high negative pressure in the syringe, as this can cause erythrocytes to rupture.
- Do not squirt blood forcefully through the syringe into the tube. Instead apply gentle pressure and allow the blood to run down the side of the tube wall.

Specimen quality
Samples that are grossly hemolyzed or clotted greater than 50% will not be run. Exposure to extreme temperatures, both hot and cold, will affect the results.

Hematology methodology information
IDEXX BioAnalytics utilizes a SYSMEX XT-V for routine hematology testing. The SYSMEX XT-V Analyzer is a fully automated diagnostic instrument for veterinary hematology. The analyzer uses whole blood samples to provide results for CBC, differentials, and reticulocyte count testing. Other fluid types can also be analyzed as needed. Please reach out to Client Support Services if you have inquiries regarding other sample types.

Our Sysmex instruments are validated for mouse, rat, NHP, canine, feline, equine, bovine, porcine samples. We have also partially validated some other species; specifically, they are not validated for automated differentials on rabbit, llama/alpaca, or caprine samples. Nor are they validated for platelet counts on llama/alpaca or caprine or retic work on rabbits, ovine, llama/alpaca, or caprine. IDEXX BioAnalytics can still provide these services through manual methods.

Paramter	Methodology
White Blood Cell count **(WBC)**	Optical
Red Blood Cell count **(RBC)**	Impedance
Hemoglobin concentration **(HGB)**	SLS-Hemoglobin
Hematocrit **(HCT)**	Direct Measurement
Mean Corpuscular Volume **(MCV)**	Calculation
Mean Corpuscular Hemoglobin **(MCH)**	Calculation
Mean Corpuscular Hemoglobin Concentration **(MCHC)**	Calculation
Platelet count **(PLT)**	Impedance/Optical
Reticulocytes **(RET)**	Fluorescent Flow Cytometry

- The SYSMEX XT-V white blood cell differential (WBC DIFF) methods, consisting of a flow cytometry method with semiconductor laser using forward scattered light, side scattered light, and side fluorescent scatter light, is intended to quantitatively measure the WBC differential. Reported hematological parameters are Neutrophils, Bands, Lymphocytes, Monocytes, Eosinophils, Basophils, Metamyelocyte, Myelocyte, Promyelocyte, and Unclassified.
- The SYSMEX XT-V reticulocyte count method enumerates reticulocytes by fluorescent flow cytometry. RBCs are stained with polymethine dye. A two-dimensional scattergram of the cell volume (forward scatter) versus the amount of nucleic acid (side fluorescent scatter) is analyzed. The analyzer fractionates RBCs, reticulocytes, and platelets.
- Each CBC also includes a manual smear review by a trained technician. This smear review is to identify possible abnormalities not detectable by instruments.

Please contact us for methods used for manually performed tests.

Coagulation

Standard Panels

Test name	Coagulation Profile 2	Coagulation Mini	Research Custom Panel 60774	Research Custom Panel 60843
Test code	**6045**	**6005**	**60774**	**60843**
Volume requirement	270 µL citrated plasma	225 µL citrated plasma	150 µL LTT for platelet count and 270 µL citrated plasma for coagulation tests	150 µL LTT for platelet count and 225 µL citrated plasma for coagulation tests
Prothrombin Time (PT)	•	•	•	•
Activated Partial Thromboplastin Time (PTT)	•	•	•	•
Fibrinogen–Clauss method (with mechanical clot detection)	•		•	
Platelet Count, Automated			•	•

Coagulation Individual Tests

Test name	Specimen requirements	Turnaround time	Test code
Prothrombin Time (PT)	160 µL citrated plasma	1-3 days	**6311**
Partial Thromboplastin Time (PTT)	160 µL citrated plasma	1-3 days	**6312**
Fibrinogen–Clauss method (with mechanical clot detection)	200 µL citrated plasma	1-3 days	**6308**
Fibrinogen by Heat Precipitation	1 mL BTT or LTT	1-3 days	**6306**

Hematology and Coagulation Profiles Combined)

Test name	Specimen requirements	Turnaround time	Test code
CBC and Coag Profile 2	270 µL citrated plasma and 150 µL LTT	1-2 days	**6004**

IDEXX BioAnalytics also offers D-Dimer, FDP, and Factor testing through send-out laboratories.

Additional Coagulation Sample Information

Plasma
Plasma is the fluid component of blood. To harvest plasma, blood must be mixed with an anti-coagulant or clotting will occur rapidly, consuming molecules in the plasma that are required for testing. Blood is then centrifuged to separate plasma fluid from the cell components.

- Ideal specimen: Citrated plasma in non-additive tube
- Tube type: Light blue top tube (BTT), sodium citrate anticoagulant (3.2%) then non-additive tube for storage and shipment
- Sample handling: Fill tube to appropriate volume. A correct blood to anticoagulant ratio is important for accurate results. Gently invert tube 10 times to mix and prevent clotting. Centrifuge as soon as possible at 1500 rcf for 15 minutes. Pipette plasma off of the cells without the disturbing the buffy coat in between and transfer into a non-additive tube. Label the tube with samples ID, collection date and “citrated plasma”. Plasma cannot be transferred to another blue-top tube; the specimen will be over-diluted with sodium citrate anticoagulant.
- Sample storage: Freeze at -20°C
- Sample shipping: Ship samples on dry ice. Samples must arrive frozen to the laboratory.

Other sample notes

- Sodium citrate plasma (free of tissue fluids) is required for analysis of PT, PTT, and fibrinogen by Clauss method. Sodium oxalate, EDTA, and heparin are not suitable anticoagulants for testing and are not accepted.
- EDTA whole blood or citrated whole blood is required for fibrinogen by heat precipitation. For small animals, fibrinogen by Clauss method is recommended and is more accurate for low levels of fibrinogen. Fibrinogen by heat precipitation is more commonly utilized for large animal species.
- The ratio of anticoagulant to blood is important. Increased or decreased volumes of anticoagulant may cause erroneous test results. Proper ratio is 1 part 3.2% sodium citrate to 9 parts whole blood when collecting.
- Plasma held unnecessarily long at 2–8°C might undergo “cold activation” resulting in a significant shortening of the PT.

Coagulation methodology information
IDEXX BioAnalytics utilizes Stago Compact Max analyzers for testing. This fully automated instrument uses chronometric and photometric methodologies.

Cytokines

Our cutting-edge multiplex technology provides sensitive, quantitative measurement of multiple cytokines and chemokines from a single sample, over a wide dynamic range. Leverage our industry-leading assay expertise, stringent quality control and assurance procedures to ensure more reliable data and reproducible results.

Test name	Specimen requirements	Turnaround time	Test code
Mouse 25-Plex Panel IL-1α, IL-1β, IL-2, IL-4, IL-5, IL-6, IL-7, IL-9, IL-10, IL12(p70), IL12(p40), IL-13, IL-15, IL-17, G-CSF, GM-CSF, IFN-γ, IP-10, KC, MCP-1, MIP-1α, MIP-1β, MIP-2, RANTES, TNFα	35 µL serum	10 days	**62579**
Mouse 10-Plex Panel IL-1α, IL-1β, IL-2, IL-6, TNFα, GM-CSF, IL-12(p70), IFN-γ, IL-4, IL-10	35 µL serum	10 days	**63438**
Rat 27-Plex Panel I IL-1α, IL-1β, IL-2, IL-4, IL-5, IL-6, IL-10, IL-12(p70), IL-13, IL-17A, IL-18, EGF, Ecotxin/CCL 11, Fractalkine, G-CSF, GM-CSF, GRO/KC, IFN-γ, IP-10, Leptin, LIX, MCP-1, MIP1α, MIP-2, RANTES, TNFα, VEGF	35 µL serum	10 days	**62831**
Rat 10-Plex Panel IL-1α, IL-1β, IL-2, IL-4, IL-6, IL-10, IL-12(p70), GM-CSF, IFN-γ, TNFα	35 µL serum	10 days	**63440**
Human 15-Plex Panel IL-1β, IL-2, IL-4, IL-5, IL-6, IL-8, IL-10, IL-12(p40), IL12(p70), IL-13, IL-17, GM-CSF, IFN-γ, MCP-1, TNFα	35 µL serum	10 days	**63475**
Human 10-Plex Panel IL-1β, IL-2, IL-4, IL-6, IL-8, IL-10, IL-12(p70), GM-CSF, IFN-γ, TNFα	35 µL serum	10 days	**63468**
NHP 21-Plex Panel † IL-1RA, IL-17A, IL-1β, IL-2, IL-4, IL-5, IL-6, IL-8, IL-10, IL-15, , GM-CSF, IFN-γ, MCP-1, TGFα, TNFα, G-CSF, sCD40L, MIP-1α, MIP-1β, VEGF, IL-18	35 µL serum	10 days	**63620**

† requires a minimum sample number

Additional Sample Information

- Preferred sample type: Serum
- Also accepted: EDTA plasma, cell culture supernatant. Please inquire abbout additional sample types.
- Tube type: Serum separator tube (STT), red top tube (RTT), or Lavender top (LTT) EDTA tube.
- Sample handling: Allow serum samples to clot for 30 minutes at room temperature then centrifuge 10 minutes at 2,000 to 2,500 rcf, remove serum from clot immediately and transfer to a non-additive tube. When collecting plasma, fill tube to appropriate volume. Gently invert tube 10 times to mix and prevent clotting. Keep whole blood at 4°C until processing. Centrifuge as soon as possible at 1500 rcf for 15 minutes. Pipette plasma off the cells without disturbing the buffy coat and transfer into a non-additive tube. Label the tube with sample ID, collection date, and “EDTA plasma. Samples must be non-hemolyzed and non-lipemic.
- Sample storage: </= -20°C, -80°C preferred. Minimize time between collection and storage (below 1 hour). It is recommended using storage tubes that are compatible with dry ice. Avoid freeze/thaw cycles.
- Sample shipping: Frozen, on dry ice to be shipped overnight. Samples must be received frozen.

Ship your cytokine testing to our laboratory in Columbia, MO. Samples can be received Monday to Friday only.

IDEXX BioAnalytics
ATTN: Sample Receiving
4011 Discovery Drive
Columbia, MO 65201

Methodology information
All panels are tested on the Milliplex MAP Cytokine/Chemokine Magnetic Bead Panel according to the kit protocol as qualified. Plasma samples are diluted 1:2 in kit assay buffer prior to assay run. Data is collected using a Luminex 200 System (Luminex). This antibody-based multiplex panel is designed to measure the following subset of cytokines in a minimal volume of serum, plasma or cell culture supernatant sample. This panel has been qualified for use by IDEXX BioAnalytics and the sensitivity of each of the analytes in the multiplex panel has been qualified as follows in chart on next page.

Cytokines

Mouse Analytes

Analyte	Assay range (pg/mL)	Analyte	Assay range (pg/mL)	Analyte	Assay range (pg/mL)
IL-1α	16.0-10,000	**IL12(p40)**	3.2-10,000	**MCP-1**	16.0-10,000
IL-1β	16.0-10,000	**IL12(p70)**	16.0-10,000	**MIP-1α**	80.0-10,000
IL-2	3.2-10,000	**IL-13**	64.0-40,000	**MIP-1β**	80.0-10,000
IL-4	3.2-10,000	**IL-15**	64.0-10,000	**MIP-2**	80.0-10,000
IL-5	3.2-10,000	**IL-17**	3.2-10,000	**MKC**	16.0-10,000
IL-6	3.2-10,000	**IP-10**	3.2-10,000	**RANTES**	16.0-10,000
IL-7	16.0-10,000	**G-CSF**	3.2-10,000	**TNFα**	16.0-10,000
IL-9	16.0-10,000	**GM-CSF**	16.0-10,000		
IL-10	16.0-10,000	**IFN-γ**	3.2-10,000		

Rat Analytes

Analyte	Assay range (pg/mL)	Analyte	Assay range (pg/mL)	Analyte	Assay range (pg/mL)
IL-1α	48.8-50,000	**IL-17**	29.3-30,000	**IP-10**	9.8-10,000
IL-1β	9.8-10,000	**IL-18**	48.8-50,000	**Leptin**	58.6-60,000
IL-2	48.8-50,000	**EGF**	3.9-1,000	**LIX**	97.7-100,000
IL-4	78.1-20,000	**Eotaxin**	19.5-20,000	**MCP-1**	468.8-120,000
IL-5	78.1-20,000	**Fractalin**	9.8-10,000	**MIP-1α**	9.8-10,000
IL-6	1171.9-300,000	**G-CSF**	19.5-20,000	**MIP-2**	97.7-100,000
IL-10	29.3-30,000	**GM-CSF**	48.8-50,000	**RANTES**	4.9-20,000
IL12(p70)	195.3-50,000	**GRO KC**	234.4-60,000	**TNFα**	9.8-10,000
IL-13	19.5-20,000	**IFN-γ**	234.4-60,000	**VEGF**	19.5-20,000

Human Analytes

Analyte	Assay range (pg/mL)	Analyte	Assay range (pg/mL)	Analyte	Assay range (pg/mL)
IL-1β	8.0-25,000	**IL-8**	4.0-10,000	**IL-17A**	32.0-100,000
IL-2	4.0-10,000	**IL-10**	13.0-40,000	**GM-CSF**	64.0-40,000
IL-4	4.0-10,000	**IL12(p40)**	160.0-100,000	**IFN-γ**	32.0-20,000
IL-5	4.0-10,000	**IL12(p70)**	16.0-50,000	**MCP-1**	16.0-50,000
IL-6	4.0-10,000	**IL-13**	3.2-10,000	**TNFα**	32.0-10,000

NHP Analytes

Analyte	Assay range (pg/mL)	Analyte	Assay range (pg/mL)	Analyte	Assay range (pg/mL)
IL-1RA	9.8-10,000	**IL-10**	48.8-50,000	**TNFα**	25-6,400
IL-1β	2.4-10,000	**IL-15**	2.4-10,000	**TGFα**	2.4-10,000
IL-2	9.8-10,000	**IL-17A**	2.4-10,000	**MCP-1**	2.4-10,000
IL-4	19.5-10,000	**IL-18**	9.8-10,000	**MIP-1α**	9.8-10,000
IL-5	9.8-10,000	**G-CSF**	9.8-10,000	**MIP-1β**	2.4-10,000
IL-6	2.4-10,000	**GM-CSF**	2.4-10,000	**sCD40L**	2.6-2,708
IL-8	9.8-10,000	**IFN-γ**	9.8-10,000	**VEGF**	48.8-50,000

Small Molecule Bioanalysis

IDEXX BioAnalytics provides high quality LC-MS/MS bioanalysis for small molecule compounds. In addition to standard protein precipitation, IDEXX BioAnalytics offers solid phase extraction and solid supported liquid extraction.

Test name	Turnaround time	Test code
Method Feasibility Detecting a novel compound in the mass spectrometer: Compound infusion, ionization and parameter optimization. Eluting the retained compound from the UHPLC: Column and mobile phase selection, compound injection for retention time and peak shape assessment. Testing extraction methods: determine extraction efficiency after protein precipitation, or other extraction methods if necessary. Development & Pre-Qualification: • Optimizing the LC-MS/MS method • Accuracy (3 concentrations tested) • Precision (1 concentration run 10x) • Linearity (8 concentrations tested) • Sensitivity (limit of detection)	5 days	**63489**
Method Optimization Detecting the compound in the UHPLC-mass spectrometer using a client provided method (published or developed). Testing extraction methods: determine extraction efficiency for the client provided method (published or developed). Development & Pre-Qualification: • Optimizing the LC-MS/MS method • Accuracy (3 concentrations tested) • Precision (1 concentration run 10x) • Linearity (8 concentrations tested) • Sensitivity (limit of detection)	3-5 days	**63513**
Method Qualification Reproducibility and Robustness: Assessment of duplicate extracted standard curves and quality control samples for linearity, sensitivity, accuracy and precision on three different analysis days. Optional stability study add-ons: Freeze/thaw, storage stability, specificity.	5 days for basic qualification	**63487**
Non-GLP Sample Analysis Pre- and post-analysis standard curves: minimum of 8 concentrations. Interspersed QCs through samples: 10% of total number of samples tested Summary report in Excel format • Standards & QC, Reporting of used/excluded, nominal, back calculated, accuracy, coefficient of variation • Carryover • Samples: Calculated concentration in tabular format, graphical format optional	3-5 days	**63510**

Test name	Test code
Result Interpretation Study referral and data transfer to our third-party pharmacokinetic analysis vendor	**63508**
Method Services - Additional Analyte Additional analytes or known metabolites (purified sample and internal standard to be provided) may be added to the method for an additional fee.	**63488**
Sample Analysis – Additional Analyte Additional analytes or known metabolites may be quantitated in the biological samples using the developed MRM method (see test code 63488) for an additional fee per sample.	**63543**
Study Support (hourly rate) Single Dose non-compartmental WinNonlin Analysis Formal qualification reports in Word Other formal reports	**63680**

Additional Sample Information

- Sample types accepted: Blood, serum, urine, tissue homogenates
- Recommended sample volume: 150 µL (mouse); 250 µL (all other species)
- Please provide the analyte and its internal standard (≥10 mg) for the standard and quality control manufacture.
- Biological matrices can be provided for certain species (plasma, serum, urine); others may incur an additional fee.
- Turn around time is dependent on scheduling the study through the DMPK Smartsheet
- Redacted report sample available upon request.

Please see our growing compound method library **here.**

Instrumentation

IDEXX BioAnalytics uses a Sciex 5500+ mass spectrometer with a Shimadzu Nexera UHPLC frontend located in our North Grafton Massachusetts site.

Histology

We offer a wide variety of services to fit your needs. We accept fresh, snap frozen, or fixed whole organs or trimmed tissues, formalin fixed paraffin embedded tissue blocks, or even prepared unstained slides for staining.

Our flexible services include

Fixed Tissue Submitted as Untrimmed Tissues / Trimmed Tissues in Labeled Cassettes
Embedding Only
Unstained Slide
Hematoxylin and Eosin (H&E) Stained Slide
Immunohistochemistry (IHC) Stained Slide † (see special stains list)
Special Stained Slide (see special stains list)

Tissue Submitted in Paraffin Blocks
Unstained Slide
Hematoxylin and Eosin (H&E) Stained Slide
Immunohistochemistry (IHC) Stained Slide † (see special stains list)
Special Stained Slide (see special stains list)

Additional Procedures
Decalcification
Special embedding (cell suspensions, small tissues, special orientation, organoids) using agarose gel
Special embedding of large animal tissues (e.g., eyes, bones)

Frozen Tissue Submitted as Untrimmed Tissue or in OCT Blocks
Unstained Slide
Hematoxylin and Eosin (H&E) Stained Slide
Special Stained Slide (see special stains list)

Other Services
Processing of Light-Sensitive Frozen Specimens
Special Embedding Procedures in OCT
Digital Slide Scanning

Histology Slide Preparation Service Turnaround Times

Turn-around-time is dependent on study size and laboratory queue. Please contact us with study details to discuss specific needs. Typical turn-around-times are listed below:

- 2 weeks (10 working days) for routine slide preparation.
- 4–5 weeks for large studies or specialized embedding or sectioning requests. Call for more specific information.
- 3–day advance notice is recommended in order to guarantee your turnaround times.
- A STAT service may be available. Please call us for additional information.

† Slide preparation performed by IDEXX BioAnalytics, IHC staining performed at qualified vendor laboratory.

Histology

Immunhistochemistry Biomarker List

Indication	Antibody Name	Species
Apoptosis/Cell Death	Cleaved Caspase 3	Mouse; Rat; Canine; Porcine
Apoptosis/Cell Death	TUNEL	Mouse; Porcine; Human
Bone	Cathepsin K	Ovine
Cardiovascular & Lymphatic	Cardiac Troponin T	Rat; Porcine
Cardiovascular & Lymphatic	CD32	Mouse; Rat; Feline; Canine; Caprine; Ovine; Porcine; Human
Cardiovascular & Lymphatic	CX43	Rat
Cardiovascular & Lymphatic	Von Willebrand Factor (vWF)	Canine; Ovine; Porcine; Non-Human Primate; Human
Cell Adhesion Molecule	CD144	Human
Cell Adhesion Molecule	E-Cadherin	Canine; Feline; Equine
Cell Cycle	P21	Rat
Cell Cycle	P63	Human; Porcine
Coagulation	Factor VIII	Canine; Feline
Coagulation	Von Willebrand Factor (vWF)	Canine; Ovine; Porcine; Non-Human Primate; Human
Collagen	Collagen I	Human; Porcine
Collagen	Collagen II	Human; Ovine
Collagen	Collagen III	Human
Collagen	Collagen IV	Human
Complement	Complement Factor H	Rabbit; Human
Complement	Complement Factor I	Rabbit; Human
Cytokeratins	Cytokeratin 14	Porcine; Human
Cytokeratins	Cytokeratin 4	Porcine; Human
Cytokeratins	Cytokeratin AE1/AE3	Canine; Feline
Endocrine	Calcitonin	Canine; Feline
Endocrine	Insulin	Porcine; Human
Endocrine	PTH	Canine; Feline
Endocrine	TTF-1	Canine; Feline
Human Cell Markers	Human Alu Sequence (via ISH)	N/A
Human Cell Markers	Human Mitochondria	N/A
Human Cell Markers	Human Mitochondria	N/A
Immunology/Inflammation	CD163	Porcine; Human
Immunology/Inflammation	CD18 Canine	Canine
Immunology/Inflammation	CD18 Feline	Feline
Immunology/Inflammation	CD20	Canine; Feline; Equine
Immunology/Inflammation	CD3	Canine; Feline; Equine; Porcine; Mouse
Immunology/Inflammation	CD34	Canine; Feline; Rat
Immunology/Inflammation	CD45	Human
Immunology/Inflammation	CD68	Mouse; Rat; Porcine; Human; Non-Human Primate

Indication	Antibody Name	Species
Immunology/Inflammation	cKIT (CD117)	Canine; Feline
Immunology/Inflammation	Fas Receptor (CD95)	Human
Immunology/Inflammation	Granzyme B	Canine; Feline; Non-Human Primate; Human
Immunology/Inflammation	HAM56	Ovine
Immunology/Inflammation	Human IgG	Human
Immunology/Inflammation	ITGA5	Porcine
Immunology/Inflammation	Monkey IgG	Non-Human Primate
Immunology/Inflammation	MPO	Rat; Mouse; Canine
Immunology/Inflammation	MUM1	Canine; Feline; Equine
Immunology/Inflammation	PAX5	Canine; Feline; Equine; Rabbit
Immunology/Inflammation	S100A9 / MRP-14	N/A
Infectious Disease	Feline Corona Virus	N/A
Intermediate Filaments	Desmin	Canine; Feline
Intermediate Filaments	Vimentin	Canine; Feline; Equine; Human
Lysosome	CD107a / LAMP1	Mouse
Melanocyte marker	SOX10	Canine
Melanocyte marker	Melanoma – PNL2	Canine; Feline
Miscellaneous	Beta tubulin	Porcine
Miscellaneous	cMAF	Porcine
Miscellaneous	MYH11	Porcine
Miscellaneous	MYL1 (MY32)	Porcine
Muscle	Alpha-Smooth Muscle Actin (SMA)	Mouse; Rat; Rabbit; Feline; Canine; Porcine; Ovine; Equine
Muscle	MYH11	Porcine
Muscle	MYL1 (MY32)	Porcine
Muscle	SM22alpha / Transgelin	Porcine
Nervous System	GAP43	Porcine
Nervous System	GFAP	Mouse; Rat; Canine; Porcine
Nervous System	IBA-1	Canine; Feline; Ovine; Porcine
Nervous System	Neurofilament-Heavy Chain	Rat; Porcine
Nervous System	PGP9.5	Canine
Nervous System	S100B	Mouse; Porcine; Human
Nervous System	Synaptophysin	Canine; Feline
Nervous System	Tyrosine Hydroxylase	Canine; Porcine; Non-Human Primate
Neuroendocrine	Chromogranin A	Canine; Feline
Neuroendocrine	PGP9.5	Canine
Oncology	Melan A /Mart-1	Canine; Feline
Oncology	Melanoma – PNL2	Canine; Feline

Histology

Immunhistochemistry Biomarker List (continued)

Indication	Antibody Name	Species
Oncology	Melanoma – PNL2	Canine; Feline
Oncology	PSMA	Human
Oncology	SATB2	Canine
Oncology	Tryptase	Canine
Oncology	TTF-1	Canine; Feline
Proliferation	BRDU	N/A
Proliferation	Ki67	Mouse; Rat; Canine; Porcine; Feline
Reporter Molecular/Tags	GFP	N/A
Reporter Molecular/Tags	mCherry	N/A
Reporter Molecular/Tags	PEG	N/A
Reporter Molecular/Tags	Turbo GFP	N/A
Transcription Factors	MUM1	Canine; Feline; Equine

Please call if your ideal IHC stain is not listed. We may be able to accommodate your request.

Histology Slide Preparation Special Stains

Stain	Purpose
Alcian Blue (pH 1.0 or pH 2.5) with or without PAS	Carbohydrates/Mucin
Congo Red Amyloid	Amyloid
Rhodanine (Copper)	Copper
Cresyl Violet—Nissl	Neurons/Pituitary
Oil Red O (frozen tissue only)	Lipids
Giemsa	Microorganisms/Nuclear Elements
Glycogen-Digested PAS/H	Carbohydrates/Mucin
Churukian's Ammoniacal Silver Method (PcAg)	Pneumocystis (lung)/Fungi
Gram's (modified Brown-Hopps)	Microorganisms
Hall's Bilirubin	Bile
Hematoxylin and Eosin (H&E)	Nuclear/Cytoplasmic
Luxol Fast Blue (LFB)	Neuro/Pituitary
Methylene Blue	Nuclear Elements
Movat's Pentachrome	Connective/Muscle
Periodic Acid-Schiff (PAS)	Microorganisms/Neuro/Pituitary
Prussian blue (Perl's Iron)	Iron (Hemosiderin)
Safranin-O	Cartilage
Toluidine Blue	Nuclear Elements
Trichrome—Masson's	Connective/Muscle
Alizarin Red S	Calcium
Steiner (modified)	Microorganisms
Ziehl-Neelsen (AFB)	Acid-fast bacteria
Picrosirius Red	Collagen
Von Kossa	Calcium
Verhoeff Van Gieson (VVG)	Connective/Muscle/Elastic
Grocott methenamine silver (GMS)	Microorganisms

Please call if your ideal stain is not listed. We may be able to accommodate your request.

Histology Sample Preparation

IDEXX BioAnalytics recognizes that sample quality is directly correlated to the quality of slides and/or pathological report you will receive. In order to receive the best results, we recommend following the guidelines for tissue collection, preservation and shipping. Please contact us with questions about our standard practices or to discuss customized protocols for your upcoming study.

Contact your local Account Manager, or Client Support Services at 1-800-669-0825 or idexxbioanalytics@idexx.com for further assistance.

Collected Sample Preparation

- Place tissues in formalin for at least 24 hours before shipment. Tissue to formalin ratio should be 1 to 20 for proper fixation. Whole rodent and tissues such as lung, brain, bone marrow and spinal cord have specialized collection protocols.
- Make sure tissues are not tightly packed in jars or cassettes. Smaller tissues can be placed in a cassette or submitted attached to surrounding organs.
- Label cassettes with a pencil. Even indelible ink will fade during processing.
- Tissues can be shipped in 70% alcohol or formalin. If you plan to perform IHC testing after preparation, please consult with our Client Support Services team for the proper fixation protocol.
- Store fixed samples at room temperature. Frozen samples must be stored and shipped on dry ice.

Packing for Shipment

To preserve sample integrity and prevent leakage samples should be triple-bagged with each layer tied, knotted or secured individually.

- Screw-topped containers are preferred. Make sure the lid is tightly secured to the jar and place a layer of Parafilm or tape to secure the lid to the jar.
- Invert the jar to check for leaks and reseal if needed.
- Place jar(s) into one gallon sealable bag with absorbent material such as paper towels and seal the bag.
- Place samples in a sealable bag in a second sealable bag and seal or double-line (one bag inside of another) the shipping box with large garbage bags and tie off each bag separately.
- Prior to knotting the first garbage bag, place absorbent packing materials around the bagged samples to not only absorb any leaked fluid but to prevent jostling and stabilize samples during shipment.
- If sample jars are too large to seal in a one gallon sealable bag, you can also use garbage bags to triple line the shipping container. Absorbent material should be placed around the samples in the first garbage bag prior to tying a knot in the bag.
- Place the Histology Submission Form(s) or online submission packing slip and other supporting documents (if needed) on the outside of the second garbage bag. Do not tape the inventory form to the outside of the box or place with samples in the same sealable bag.

We welcome you to submit diagrams or other special instructions if you would like to customize your study. We also have experience with a wide variety of research animal models. Consult with us to help determine the best collection and shipping protocol for your research application.

Pathology Services - Preclinical and Research

Our team of veterinary pathologists has extensive experience and expertise with a wide variety of research models. Our pathologists are available to consult on study design, sample collection, tissue scoring options, troubleshooting unexpected challenges, and interpreting study results in order to produce meaningful data, identify treatment related effects, and advance your research.

We employ standardized tissue trimming guidelines and toxicologic pathology nomenclature when processing and interpreting tissue samples. As with our histology services, we are flexible and will accept trimmed or untrimmed tissues or carcasses* and also will evaluate both IDEXX BioAnalytics prepared slides or glass or digital slides prepared elsewhere. Histopathological findings are presented as a formal Contributing Scientist Report.

Research and Toxicology Pathology Services

Test name and components
Slide Preparation Slides can be prepared from trimmed/untrimmed tissues, tissues pre-embedded in blocks or from whole carcasses for an additional charge.
Anatomic Pathologist Evaluation Pathologist evaluation of tissue, as well as one initial pathologist project consult and one study Contributing Scientist Report. Charges for evaluation vary depending on evaluation criteria and needs of the study. Other fees may include special stains, morphometric analyses, and shipping costs for return of samples.
Additional Anatomic Pathologist Support Additional pathologist consultation, edits and revision on reports, interim reports
Annotated Digital Images (available via cloud service)
Non-Annotated Digital Images (available via cloud service)
Whole Slide Imaging
Necropsy Support
Clinical Pathology Contributing Scientist Report Interpretation of clinical pathology data including hematology, clinical chemistry, cytology
Peer Review

Model Development

Test name and components	Turnaround time	Test code
Rodent Model Development (per animal) Trimming and embedding of wet tissues (up to 5 tissues), decalcification as needed, H&E slide preparation, special slide stain preparation as needed, pathologist evaluation and interpretation on a final report. IHC slides, dissection of tissues from fresh or fixed carcass and return shipping requests will result in an additional charge.	10 days	**63809**

Candidate Selection

Test name and components	Turnaround time	Test code
Candidate Selection Histopathology (per animal) Trimming and embedding of wet tissues (up to 10 organs), decalcification as needed, H&E slide preparation, pathologist evaluation with semi-quantitative grading and interpretation on a final report. Special stained slides, IHC slides, dissection of tissues from fresh or fixed carcass and return shipping requests will result in an additional charge.	3 weeks	**63810**

*We do not accept non-human primate carcasses for dissection

Pathology Services - Diagnostic and Animal Health Monitoring

Our team of veterinary pathologists has extensive experience and expertise with health monitoring, disease surveillance, and the investigation of unexpected diseases or outcomes. Our pathologists can evaluate tissues in all species of research animals from aquatic species to rodents, to non-human primates, in or outside a study. We can accept trimmed or untrimmed tissues, or whole carcasses*.

Our team of veterinary pathologists, laboratory animal veterinarians, and other scientific experts work collaboratively to help guide sample submission to maximize diagnostic yield, facilitate diagnosis, and quickly identify potential interventions or disease management strategies.

A diagnostic pathology report will be available within 10 working days from receipt of specimen. Providing a complete history such as clinical signs, clinical diagnosis, strain or model, and clinical or experimental manipulations will expedite reporting. Turnaround times may be delayed if a complete history is not provided.

Diagnostic Histopathology

Test name	Test codes
Diagnostic Pathology – Rodent Species Mouse, rat, gerbil, hamster, other (smaller than guinea pig)	**86-00068**
Pathology Evaluation of Digital Slides – Rodent Species Mouse, rat, gerbil, hamster, other (smaller than guinea pig)	**86-00070**
Whole Carcass Necropsy – Fresh, fixed or unfixed carcass Mouse, rat, guinea pig, rabbit, and other limited species. Please call for more details	**86-00076**
Diagnostic Pathology – NHP African Green Monkey, Baboon, Cynomolgus Macaque, Marmoset, Non-Human Primate, Rhesus Macaque, Squirrel Monkey	**86-00083**
Pathology Evaluation of Digital Slides – NHP African Green Monkey, Baboon, Cynomolgus Macaque, Marmoset, Non-Human Primate, Rhesus Macaque, Squirrel Monkey	**86-00072**
Biopsy with Microscopic Description – 1 site Any (including non NHP-species)	**63621**
Biopsy with Microscopic Description – 2 sites Any (including non NHP-species)	**63622**
Bone Marrow Histopathology Evaluation – 1 site In-life collection of bone marrow (core) biopsies from non-human primates, dogs, cats, ruminants, horses in colonies or on-study that have clinicopathologic evidence of hematologic pathology or hematotoxicity. Submission of contemporaneous CBC and bone marrow cytology recommended.	**63736**

Test name	Test codes
Diagnostic Pathology – Medium/Large Species Guinea pig, rabbit, ferret, chinchilla, porcine, ovine, equine, canine, bovine, caprine or other species	**86-00090**
Diagnostic Pathology – Avian/Reptile Species Bird, other	**86-00092**
Diagnostic Pathology – Aquatic Species Xenopus, frogs, axolotl, newts, salamanders, other	**86-00087**
Zebrafish Pathology	**86-00022**
Small Fish Pathology Fish (non zebrafish), medaka (0-6cm)	**86-00048**
Medium Fish Pathology Bettas, cavefish, goldfish, killifish (7-13cm)	**86-00049**
Large Fish Pathology Carp, large goldfish, other (over 13cm)	**86-00061**

Necropsy Histopathology Support

We offer Necropsy Histopathology Services to rodents, rabbits, aquatic and other species. Please contact CSS for more information.

*We do not accept non-human primate carcasses for dissection

Pathology Services

Clinical Pathology Supported Services

Test name and components	Test codes
Clinical Pathology Contributing Scientist Report Interpretation of clinical pathology data including hematology, clinical chemistry, cytology	**62600**
Cytology Microscopic examination of samples submitted on glass slide(s).	**6605**
Cytology with Fluid Analysis (except CSF) Microscopic description and interpretation, as well as total protein and automated total nucleated cell count.	**6905**
Cytology with CSF Fluid Analysis Microscopic description and interpretation, as well as hemacytometer RBC, WBC count and microprotein measurements.	**6900**
Bone Marrow Cytology Counts only, no interpretation	**63737**
Bone Marrow Cytology Microscopic description and Interpretation of bone marrow smears. Bone marrow submissions must be accompanied by an EDTA-anticoagulated peripheral blood sample for a CBC. Samples required include LTT for CBC and unfixed, unstained bone marrow smears. For study submissions, inclusion of a detailed study protocol is strongly recommended. Can be combined with bone marrow histology biopsy for a combined interpretative report.	**6607**

Additional Sample Information

Proper collection techniques are vital for obtaining optimal results. Guidance on sample collection and handling is available through the Client Support Services and your Account Manager. A consultation with our pathologists may also be arranged, if needed.

- All smears should be individually labeled with animal ID and collection date.
- All smears should be held at room temperature. Do not refrigerate.
- Ship slides in cardboard or plastic container to prevent breaking, do not allow coolant to come in contact with specimen.
- Do not expose cytologic samples to formalin or formalin fumes.

Custom Projects

Tailored testing plans that are as unique as your research.

IDEXX BioAnalytics excels in providing customized solutions to meet the unique needs of researchers. Our team collaborates closely with clients to design and execute bespoke projects. Whether it's developing specialized assays, conducting unique studies, or integrating multiple methodologies, we ensure precise and reliable results. With a commitment to quality and rapid turnaround times, IDEXX BioAnalytics delivers actionable insights, helping researchers achieve their specific goals and advance their scientific discoveries.

Quality Assurance
- Stringent quality control measures guarantee reliable and reproducible outcomes.

Expert Team
- Experienced scientists deliver high-quality, insightful analysis for bespoke studies.

Rapid Turnaround
- Efficient processes ensure timely delivery of results for critical projects.

Comprehensive Services
- End-to-end support from project design to data interpretation.

Advanced Technologies
- Cutting-edge tools provide precise, reliable results for custom projects.

IDEXX Core Lab Testing Services

IDEXX BioAnalytics strives to supply the best results possible. As a result, IDEXX BioAnalytics runs some specialized testing types through our larger core laboratories located in the same facility as IDEXX BioAnalytics preclinical laboratories.

Microbiology

Test name	Specimen requirements	Turnaround time	Test code
Aerobic and Anaerobic Cultures (ID only)	Two culturettes or sterile container (no formalin); please specify source	Up to 4 days for negative results, longer depending on growth	**64017**
Aerobic and Anaerobic Cultures (ID and Susceptibility)	Two culturettes or sterile container (no formalin); please specify source	Up to 4 days for negative results, longer depending on growth	**6401**
Aerobic Culture (ID Only)	Culturette or sterile container (no formalin); please specify site	Up to 4 days for negative results, longer depending on growth	**6427**
Aerobic Culture (ID and Susceptibility)	Culturette or sterile container (no formalin); please specify site	Up to 4 days for negative results, longer depending on growth	**64006**
Blood Culture (One Timepoint)– **Aerobic culture** (organism ID and susceptibility)**, Anaerobic culture** (organism ID only)	In one 84 mL blood culture bottle, collect 5 mL whole blood for patients 5-20 lb, 7.5 mL for patients 20-40 lb, or 10 mL for patients >40 lb. For patients <5 lb, place 1.5 mL in one yellow-topped Wampole Isolator® tube. Keep at room temperature.	8–10 days (4 weeks if fungal organisms suspected, the lab should be notified.)	**6406**
Environmental Culture	Culturette or sterile container (no formalin); please specify source	Up to 3 days for negative results; longer depending on growth	**6030**
Fast Stain for Mycobacteria spp.	Slide, Culture swab or container	2-3 days	**6408**

Test name	Specimen requirements	Turnaround time	Test code
Fecal Enteric Pathogenic Culture *Campylobacter* spp. Only	3–5 g fresh feces in fecal culture transport media (preferred), RTT, culturette or sterile container	3-6 days, longer depending on growth	**64026**
Fecal culture of enteric pathogens including *Salmonella* spp.*, Shigella* spp.*, Aeromonas* spp.*, Edwardsiella* spp. and *Plesiomonas* spp.	3–5 g fresh feces in fecal culture transport media (preferred), RTT, culturette or sterile container	3-6 days, longer depending on growth	**64021**
Fecal Enteric Pathogenic Culture 1 with *Campylobacter* spp. *Aeromonas* spp., *Edwardsiella* spp., *Plesiomonas* spp., *Salmonella* spp., *Shigella* spp., *Yersinia* spp.	3–5 g fresh feces in fecal culture transport media (preferred), RTT, culturette or sterile container	3-6 days, longer depending on growth	**64022**
Fecal Enteric Pathogenic Culture with *Campylobacter* spp., *Yersinia* spp., *Shigella* spp., *Aeromonas* spp., *Edwardsiella* spp., *Plesiomonas* spp., *Salmonella* spp.	3–5 g fresh feces in fecal culture transport media (preferred), RTT, culturette or sterile container	3-6 days, longer depending on growth	**64034**
Fungal Culture (ID Only)	Culturette, hair/skin scrapings in plastic tube or RTT; fresh tissue in sterile container (no formalin); feed/bedding in closed container/bag; specify site	Checked weekly; final report usually by 2–3 weeks, depending	**6405**
Gram Stain	Slide, culturette or sterile container	2-3 days	**6409**
Mycoplasma spp. Culture	Mucus in Amies transport media without charcoal (preferred); semen or respiratory samples in sterile container (preferred) or by culturette; specify site	5-7 days	**6411**
Urine Culture and Susceptibility	1 mL urine in a sterile container (WTT and collection by cystocentesis preferred)	1–3 working days for negative results, longer depending on growth	**6403**

IDEXX Core Lab Testing Services

Microbiology Sampling Preparation and Handling Guide

IDEXX BioAnalytics recognizes that sample quality is directly correlated to receiving quality results. We recommend the following guidelines. Please specify source for all cultures. IDEXX BioAnalytics provides collection supplies at no charge.

Type of Source	Collection Supply Type	Specimen Preparation and Collection	Test to Request
Abscess or Wound	Culturette or sterile tube† Keep at room temperature	Aseptically prepare collection site. Aspirate fluid or pus from pustules or vesicular wounds and abscesses.	Aerobic and/or anaerobic culture
Blood	One blood culture bottle per time point. Do not submit swabs, serum or whole blood in LTT or RTT • For animals >5 lbs., use an 80-mL. Oxiod blood culture • For animals <5 lbs., (and all blood fungal cultures), use a yellow-top • Wampole™ ISOLATOR™ pediatric bottle Keep at room temperature	Collection using sterile technique is critical for accurate results. Aseptically prepare venipuncture site. Disinfect the top of the culture bottle with alcohol and let dry. Ideally two samples drawn approximately one hour apart from different venous sites should be submitted. (Do not refrigerate.) • >40 lbs., place 10-mL blood in one 80 mL bottle • 20–40 lbs., place 7.5-mL blood in one 80 mL bottle • 5–20 lbs., place 5-mL blood in one 80 mL bottle • <5 lbs., place 1.5-mL blood in one ISOLATOR™ pediatric bottle	Blood culture If ruling out brucella canis-blood culture should be ordered Fungal culture if ruling out fungus from blood
Bone Marrow	Sterile tube†	Aseptically prepare collection site.	Aerobic and/or anaerobic culture
Central Nervous System	Sterile tube† Keep at room temperature	Collect CSF (Cerebrospinal Fluid) by an ascetic subdural tap, ventricular aspiration or lumbar puncture.	Aerobic and/or anaerobic culture
Ears	Culturette	Posterior pharyngeal cultures may also reveal organisms causing otitis media. Note: Topical treatments may inhibit bacterial	Aerobic and/or anaerobic culture
Eyes	Culturette	Use swab to collect suppurative material from cul-de-sac or media canthus. Note: Topical anesthetic may inhibit bacterial	Aerobic and/or anaerobic culture

Type of Source	Collection Supply Type	Specimen Preparation and Collection	Test to Request
Feces	Fecal culture transport media (preferred) or sterile tube†	Avoid contamination with urine and soil. If Clostridium perfringens and Clostridium difficile enterotoxin testing will be performed, include 3–5 fresh feces in a sterile container.	Fecal culture
Joint Fluid	Sterile tube† , or blood culture bottle. Keep at room temperature	Aseptically inject fluid into a sterile tube or blood culture bottle. Specimens >48 hours old are not suitable for culture.	Aerobic and/or anaerobic culture
Nail, Skin or Hair Culture (Fungal)	Sterile tube† , envelope preferred for hair	Use a sterile blade or swab to collect material from infected nail. Scrape or swab active border of skin lesions. Hair should be plucked (not cut) in order to include roots	Aerobic and/or fungal culture
Sinus	Culturette or sterile tube†	Aspirate from maxillary, frontal or other sinuses. Note: Chronic sinusitis often involves anaerobic bacteria	Aerobic and/or fungal culture
Tissue	Sterile tube†	Place tissue in sterile tube with a small amount of saline or sterile Lactated Ringers solution to keep specimen hydrated. Do not submit in formalin or ethanol	Aerobic and/or fungal culture
Tracheal wash/ Bronchoalveolar lavage (BAL)	Sterile tube†	Place wash fluid in sterile tube. Best results can be expected when a buffered solution, such as Lactated Ringers Solution (LRS), is used, rather than acidic isotonic saline solutions	Aerobic and/or fungal culture
Urine	Sterile tube†	Indicate collection method. Cystocentesis is strongly recommended in most species. Avoid contamination with feces.	Urine culture (aerobic organism ID and susceptibility), Aerobic and/or anaerobic culture

† Use a sterile plastic or plain non-additive tube without clot activator. Plastic RTT with clot activator (serum tubes) or Lavender Top Tube (LTT) are not recommended for cultures as these may inhibit bacterial growth.

IDEXX Core Lab Testing Services

Parasitology & Immunology

Test name	Specimen requirements	Turnaround time	Test code
Antinuclear Antibody (ANA) by IFA	1 mL serum	2-4 days	**6700**
Cardiopet® proBNP Test–Canine	1 mL EDTA plasma (preferred; spin and separate plasma into an RTT or a WTT [plain plastic tube])	1-3 days	**62665**
Cardiopet® proBNP Test–Feline	1 mL EDTA plasma (preferred; spin and separate plasma into an RTT or a WTT [plain plastic tube])	1-3 days	**62666**
Cryptosporidium Antigen by ELISA–Mammals	3–5 g fresh feces in a clean, plastic container or formalin	1-3 days	**6514**
Fecal Ova and Parasites by Zinc Sulfate Centrifugation	3–5 g fresh feces in a clean, plastic container	1-3 days	**6501**
Ova and Parasites–NHP	3–5 g fresh feces in a clean, plastic container	5-7 days	**6501**
Ova and Parasites with Giardia spp. ELISA–non-NHP samples	3–5g fresh feces in a clean plastic container, please also include SAF feces	1-3 days	**2463**
Ova and Parasites with Giardia spp. PCR–NHP	3–5g fresh feces in a clean plastic container, please also include SAF feces	5-7 days	**2463**
Parasite Stain–Trichrome Stain	Fecal sample in SAF only	10-14 days	**6505**
Fecal Occult Blood	3–5 g fresh feces in a clean, plastic container	1-3 days	**6907**
FeLV Antigen and FIV Antibody by ELISA	1 mL plasma (preferred) or serum	1-3 days	**60687**
FeLV Antigen by ELISA	1 mL plasma (preferred) or serum	1-3 days	**6709**
FIV Antibody by ELISA	1 mL serum or plasma	1-3 days	**61039**

Test name	Specimen requirements	Turnaround time	Test code
Giardia Antigen by ELISA–Mammals	3–5 g (0.2 g minimum) fresh feces in a clean plastic container	1-3 days	**6513**
Heartworm Antigen by ELISA–Canine	1 mL serum	1-3 days	**6723**
Heartworm Panel–Canine Canine heartworm antigen by ELISA, microfilariae by filter	1 mL serum, 2 mL LTT	1-3 days	**6721**
Lyme Quant C6® Antibody by ELISA	1 mL serum	2-4 days	**67246**
Spec fPL® Test–Feline	1 mL serum (fasted preferred)	1-3 days	**62493**
Spec fPL® Test–Canine	1 mL serum (fasted preferred)	1-3 days	**61849**

IDEXX Core Lab Testing Services

Endocrinology

Test name	Specimen requirements	Turnaround time	Test code
ACTH Stimulation (One Pre, One Post)– Canine/Feline	1 mL serum per specimen; label tubes as "pre" and "post"	1-3 days	**119**
ACTH, Endogenous–Canine	1 mL EDTA plasma, frozen, Collect after overnight fast	3-5 days	**808**
Cortisol–Canine and Feline Only	1 mL serum	1-3 days	**6800**
Cortisol by RIA	1 mL serum	3-5 days	**8000**
Insulin by RIA–Canine and Equine Only	1 mL serum	3-5 days	**6805**
Progesterone by RIA	1 mL serum (RTT only, no SST; spun and separated into another RTT or WTT) per specimen	2-4 days	**68060**
TSH, Endogenous–Canine Only	1 mL serum	2-3 days	**6853**
T3, Total by RIA	1 mL serum	3-6 days	**6803**
T4, Free by Equilibrium Dialysis	1 mL serum	3-6 days	**6849**
T4, Total by RIA	Mammal: 1 mL serum; Avian: 0.3 mL serum, heparinized plasma (GNTT), or EDTA plasma (LTT)	2-3 days	**6814**

Core Clinical Chemistry

Test name	Specimen requirements	Turnaround time	Test code
Bromide	1 mL serum	2-5 days	**839**
Cholinesterase	1 mL serum	3-5 days	**6230**
Cobalamin (Vitamin B12) and Folate	1 mL serum	1-3 days	**2014**

IDEXX Core Lab Testing Services

RealPCR Molecular Diagnostics

Test name	Specimen requirements	Turnaround time	Test code
Diarrhea RealPCR Panel (Comprehensive)–Canine Campylobacter coli, Campylobacter jejuni, canine circovirus, canine distemper virus (CDV), canine enteric coronavirus (CECoV), canine parvovirus 2 (CPV-2), Clostridium difficile toxin A/B gene, Clostridium perfringens alpha toxin (CPA) gene quant, Clostridium perfringens CPnetE/F toxin gene quant, Crytospordium spp., Giardia spp., and Salmonella spp	5 g (1 g minimum) fresh feces in a sterile container; keep refrigerated. Collect specimen prior to antibiotic administration.	1-4 days	**2625**
Diarrhea RealPCR Panel (Comprehensive)–Feline Campylobacter coli, Campylobacter jejuni, Clostridium perfringens alpha toxin (CPA) gene Quant, Clostridium perfringens enterotoxin (CPE) gene Quant, Cryptosporidium spp., feline coronavirus (FeCoV), feline panleukopenia virus, Giardia spp., Salmonella spp., Toxoplasma gondii, and Tritrichomonas blagburni (formerly foetus) RealPCR™ tests. Includes quantification of Clostridium perfringens enterotoxin (CPA and CPE) genes if PCR positive	5 g (1 g minimum) fresh feces in a sterile container; keep refrigerated. Collect specimen prior to antibiotic administration.	1-4 days	**2627**
Giardia spp. RealPCR™ Test–Mammals	5 g fresh feces (1 g minimum) in a sterile container	1-4 days	**2631**
Respiratory Disease (CRD) RealPCR™ Panel (Comprehensive)–Canine Bordetella bronchiseptica, canine adenovirus type 2, canine distemper virus (CDV) Quant, canine herpesvirus (CHV-1), canine parainfluenza virus, canine pneumovirus, canine respiratory coronavirus (CRCoV), H3N2 canine influenza virus, influenza A virus (includes H1N1, H3N2, H3N8, H7N2), Mycoplasma cynos and Streptococcus equi subsp. zooepidemicus RealPCR™ tests. Includes quantification of distemper viral particles if PCR positive. Includes strain identification of influenza A if PCR positive	Deep pharyngeal swab (with visible organic material on swab; please rub firmly) and a conjunctival swab (wipe eye clean, swab inside of eyelid), in the same tube. Please submit dry plastic-stemmed swabs, without transport media, in an RTT or an empty, sterile tube; keep refrigerated. Collect specimens prior to antibiotic administration	1-4 days	**2624**
Tick/Vector Comprehensive RealPCR™ Panel–Canine Anaplasma spp., Babesia spp., Bartonella spp., Canine Hemotropic Mycoplasma, Ehrlichia spp., Hepatozoon spp., Leishmania spp. Quant, Neorickettsia risticii, and Rocky Mountain spotted fever (Rickettsia rickettsii) RealPCR™ tests. Includes quantification of Leishmania if PCR positive	2 mL EDTA whole blood (LTT); keep refrigerated. Collect specimen prior to antibiotic administration	1-4 days	**2870**

Additional RealPCR Tests

Anaplasma spp.	Coccidioides spp.	Haemobartonella
Babesia spp	Cryptococcus spp	Hepatozoon spp.
Bartonella spp	Cryptosporidium spp	Histoplasma capsulatum
Bordetella bronchiseptica	Cytauxzoon felis	Lawsonia intracellularis
Borrelia spp. (Lyme disease)	Distemper Virus (CDV)—Canine	Leishmania spp
Blastomyces dematitidis	Echinococcus spp.	Leptospira spp
Brucella canis	Ehrlichia spp.	Mycoplasma cynos
Campylobacter coli	Equine Protozoal Myeloencephalitis (EPM)	Mycoplasma felis
Campylobacter jejuni	Equine Arteritis Virus (EAV)	Neorickettsia risticii
Canine Adenovirus Type 2	Equine Coronavirus	Neospora spp.
Canine Enteric Coronavirus (CECoV)	Equine Herpesvirus	Parvovirus 2 (CPV-2)–Canine
Canine Hemotropic Mycoplasma	Equine Influenza Virus (EIV/H3N8)	Rhodococcus equi
Canine Herpesvirus Type 1 (CHV-1)	Equine Rotavirus	Rickettsia rickettsii
Canine Influenza Virus (H3N8)	Feline Calicivirus	Rotavirus
Canine Parainfluenza Virus	Feline Coronavirus (FCoV)	Salmonella spp
Canine Respiratory Coronavirus (CRCoV)	Feline Hemotropic Mycoplasma	Streptococcus equi
Chlamydophila felis	Feline Herpesvirus Type 1 (FHV-1)	Streptococcus equi subsp. zooepidemicus
Clostridium difficile Toxin A Gene	Feline Panleukopenia Virus	Toxoplasma gondii
Clostridium difficile Toxin B Gene	FeLV	Tritrichomonas foetus
Clostridium perfringens Enterotoxin A (CPEA)	FIV	West Nile Virus
Clostridium perfringens Enterotoxin (CPE)	Giardia spp	

We offer additional PCR tests not listed. Please contact the Client Support Services team if you do not see a specific test listed.

Send-out Testing with Third-Party Reference Laboratory

To achieve the IDEXX BioAnalytics' goal of supplying the best results possible, we contract some additional testing out to other external laboratory resources. IDEXX BioAnalytics will continue to support any in-house testing, while managing the send-out tests needed for your research work, by providing a single contact to simplify your lab testing needs.

Coagulation

Test name	Specimen requirements	Test code
D-dimer–Non-rodent	0.5 mL frozen citrated plasma	**62235**
D-dimer–Rodent	0.5 mL frozen citrated plasma	**62236**
Factor VII Activity	2 mL citrated plasma	**62889**
Factor V Activity	2 mL citrated plasma	**62385**
Factor X Activity	2 mL citrated plasma	**62382**
Factor VIII Activity	2 mL citrated plasma	**63308**
Factor XII Activity	2 mL citrated plasma	**63273**
Factor XIII Activity	2 mL citrated plasma	**Call**
Thrombin	0.5 mL frozen citrated plasma	**62951**
von Willebrand Factor (vWF;Ag)–Canine, Feline, Equine	1 mL frozen citrated plasma or EDTA plasma	**62885**
von Willebrand Factor (vWF;Ag)–Large animals, Exotics, Rodents	1 mL frozen citrated plasma or EDTA plasma	**62886**
Antithrombin	NHP–1 mL frozen citrated plasma (ship on dry ice)	**63131**
Antithrombin-Thrombin Complex	NHP–1.5 mL frozen citrated plasma (ship on dry ice). Minimum 15 samples	**63614**

Endocrinology

Test name	Specimen requirements	Test code
IGF-1	1 mL serum	**60731**
Insulin	1 mL frozen serum	**62230**
Troponin I	0.5 mL serum or plasma	**62714**
Cortisol- NHP, Rodents, Cattle, FBS accepted	1 mL serum or plasma	**62231**
Testosterone by RIA	150 µL serum	**62233**

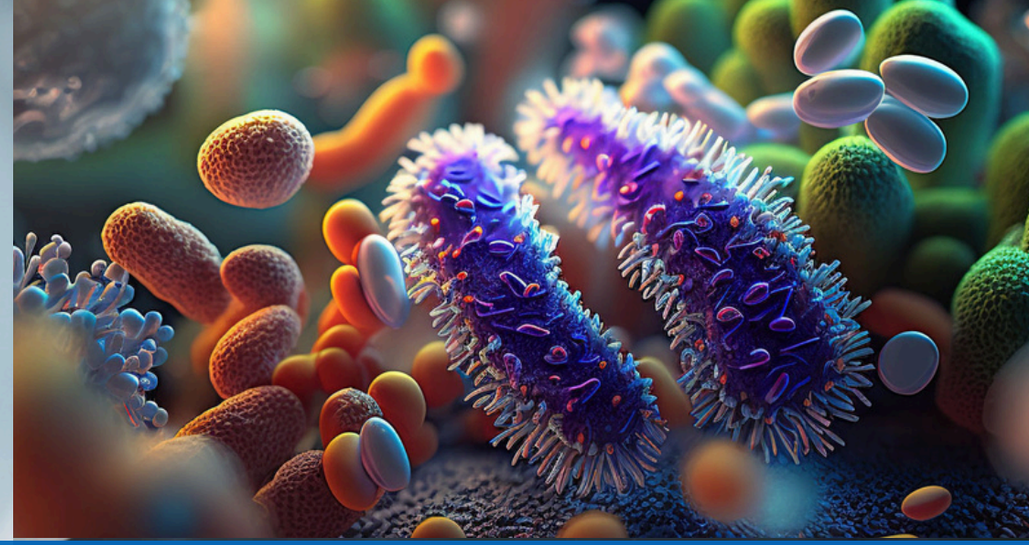
Other

Test name	Specimen requirements	Test code
Iron Panel - iron, total iron binding capacity (TIBC), and % saturation	2 mL frozen serum	**62229**
Immunoglobulins, Quantitative IgG, IgM, IgA–Canine	1 mL serum	**62298**
Minerals, fixed tissue	50 mg liver or tissue	**62632**
Tacrolimus	3 mL EDTA whole blood	**62772**

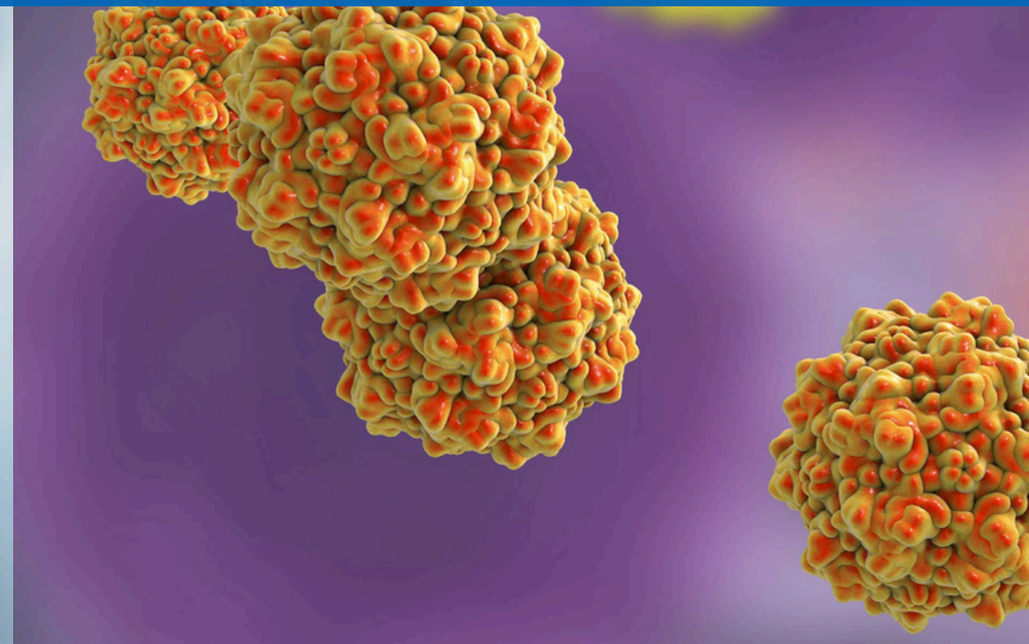
Veterinary Clinical Trials

Expect the highest quality research-focused support from the world's leader in veterinary diagnostics.

+ **Testing Capabilities**
+ **Study Management**
+ **Data-Driven Enrollment**
+ **Regulatory Compliance**
+ **Scientific Support**



Health Monitoring



Animal Health Monitoring and Quarantine Screening

Science and Support to Ensure Animal Health and Research Integrity

With IDEXX BioAnalytics health monitoring solutions, expect exceptional customer support and prompt turnaround times to keep your research on track.

You gain direct access to ACLAM board-certified scientists for expert guidance and quick, accurate results.

You benefit from a broad portfolio of tests and services, rigorous quality procedures, and superior rodents and aquatic expertise, ensuring reliable and comprehensive solutions for your needs.

Our flexibility caters to a wide range of species, with specialized environmental health screening solutions for rodents: Our REPLACE™ technology is superior to other market options, providing efficient, ethical, and precise data.

Health Monitoring

2025 Directory of Tests and Services

Environmental Health Monitoring

- Mouse EDx-Panels
- Rat EDx-Panels

Sentinel Health Monitoring

- Mouse Advantage HM-Panels
- Rat Advantage HM-Panels

Quarantine Testing

- Mouse Advantage Q-Panels
- Rat Advantage Q-Panels

Other Rodents Health Monitoring

- Guinea Pig HM-Panels
- Hamster HM-Panels
- Rabbit HM-Panels
- Chinchilla HM-Panels

Real-Time PCR

- Additional Mouse/Rat PCR Panels
- Additional Guinea Pig/Hamster PCR Panels
- Rodent & Rabbit Individual PCR Assays

Serology

- Serology Panels
- Rodent & Rabbit Individual Serology Assays

Histology & Pathology

- Rodent Diagnostic Histopathology
- Aquatics Diagnostic Histopathology
- NHP Diagnostic Histopathology

Microbiology

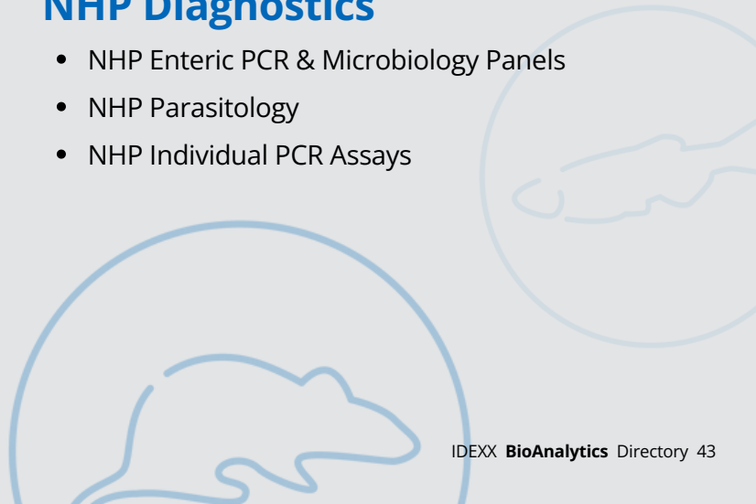
Microbiome & Germ-Free

Aquatics Health Monitoring

- Zebrafish PCR & Microbiology Panels
- Axolotl PCR & Microbiology Panels
- Xenopus PCR & Microbiology Panels
- Aquatics Individual PCR Assays

NHP Diagnostics

- NHP Enteric PCR & Microbiology Panels
- NHP Parasitology
- NHP Individual PCR Assays



Superior rodent colony environmental health monitoring

+ Eliminates the need for soiled bedding sentinels
+ Improved pathogen detection
+ Easy to use
+ No additional equipment or supply costs
+ Rigorous quality control

Health Monitoring & Quarantine Solutions

Flexible approaches for different needs

Performing **microbial screening of rodent colonies** can be optimally achieved either with a **combination of serology and PCR** (ideal for all housing system or to incorporate environmental monitoring in the program) or with a **PCR only** approach (ideal for quarantine screening, when testing immunodeficient animals without sentinels and when performing just environmental monitoring).
In quarantine, PCR panels can also be combined with serological panels for more insights about past, not active infections when importing animals in your institution.

Our health monitoring methods can play a key role in allowing you to **Replace** the use of animals with alternative testing techniques, **Reduce** the number of animals used to a minimum, and **Refine** the way health monitoring is done.

- **Soiled Bedding Sentinels (SBS)** = traditional rodent health monitoring that involves transferring soiled bedding to a cage with live rodents which are periodically sampled to determine colony health status. (Sometimes referred to as “sentinels").
- **Environmental Health Monitoring (EHM)** = any type of health monitoring that does not require use of live animal sentinels.
- **Exhaust Dust Testing (EDT)** = EHM via swabbing plenums or using in-line media for cages that filter at the rack level.
- **Sentinel-Free Soiled Bedding (SFSB)** = EHM via transferring soiled bedding & testing without live sentinel animals. This includes single event exposure or indwelling media/swabs.

Health Monitoring Solutions	Sample Type	Methodology	Recommended test panel
Routine health monitoring in IVC rack with filtration at rack level (e.g. Tecniplast, Allentown)	Samples from animal: Opti-Spots™, Feces, Pelt swabs	Serology + PCR	Advantage Health Monitoring Panels (SBS, DCS)
	Environmental samples collected with REPLACE™	PCR	EDx Panels (EDT, SFSB)
	Environmental samples collected at rack level (e.g., Interceptor™, Sentinel™)	PCR	EDx Panels (EDT)
Routine health monitoring in IVC rack with filtration at cage level (e.g. Thoren, Animal Care System, Innovive), **open filter top cages**	Samples from animal: Opti-Spots™, Feces, Pelt swabs	Serology + PCR	Advantage Health Monitoring Panels (SBS, DCS)
	Environmental samples collected with REPLACE™	PCR	EDx Panels (SFSB)

Quarantine Solutions	Sample Type	Methodology	Recommended test panel
Checking if animals are contagious	Samples from animal: Opti-Spots™, Feces, Pelt swabs, Oral swabs	PCR	Advantage Quarantine Panels (SBS, DCS)
Checking if animals are contagious and/or have been previously exposed to a pathogen	Samples from animal: Opti-Spots™, Feces, Pelt swabs, Oral swabs	PCR (viruses, bacteria and parasites) + Serology (virsues)	Advantage Quarantine Panels (SBS, DCS)

Environmental Health Monitoring and PCR based Quarantine

Mouse EDx Panels (EDT, SFSB) / Opti-XXpress Panels (DCS)

	Preferred Sample Type(s)	EDx / Opti-XXpress Prevalent	EDx / Opti-XXpress Basic	EDx / Opti-XXpress Comprehensive	EDx / Opti-XXpress Global
Turnaround time		3 days	3 days	3 days	3 days
Test code		**21-00273**	**21-00274**	**21-00275**	**21-00276**
Bacteria - Respiratory					
Rodentibacter heylii	E / DOS / F	•	•	•	•
Rodentibacter pneumotropicus	E / DOS / F	•	•	•	•
Mycoplasma pulmonis	E / DOS / F		•	•	•
Staphylococcus aureus	E / DOS / F			•	•
Streptococcus ß-hemolytic Group A, B, C, G	E / DOS / F			•	•
Bordetella bronchiseptica	E / DOS / F				•
Bordetella hinzii / pseudohinzii	E / DOS / F				•
Corynebacterium kutscheri	E / DOS / F				•
Streptobacillus moniliformis	E / DOS / F				•
Streptococcus pneumoniae	E / DOS / F				•
Filobacteriuum rodentium	E / DOS / F				•
Bacteria - Enteric					
Helicobacter spp. H.bilis, H.ganmani, H.hepaticus, H.mastomyrinus, H.rodentium, H.typhlonius	E / F	•	•	•	•
Klebsiella pneumoniae	E / F		•	•	•
Klebsiella oxytoca	E / F		•	•	•
Salmonella spp.	E / F		•	•	•
Citrobacter rodentium	E / F			•	•
Clostridium piliforme	E / F			•	•
Pseudomonas aeruginosa	E / F			•	•
Campylobacter coli	E / F				•
Campylobacter jejuni	E / F				•
Proteus mirabilis	E / F				•
Bacteria - Skin					
Corynebacterium bovis	E / PS				•
Corynebacterium spp. (HAC2)	E / PS				•
Staphylococcus xylosus	E / PS				•

continued	Preferred Sample Type(s)	EDx / Opti-XXpress Prevalent	EDx / Opti-XXpress Basic	EDx / Opti-XXpress Comprehensive	EDx / Opti-XXpress Global
Fungi					
Pneumocystis spp.	E / DOS				•
Viruses					
Mouse parvovirus (MPV1-5)	E / F	•	•	•	•
Minute virus of mice (MVM)	E / F	•	•	•	•
Mouse hepatitis virus (MHV)	E / F	•	•	•	•
Murine norovirus (MNV)	E / F	•	•	•	•
Theiler's murine encephalomyelitis virus (TMEV)	E / F	•	•	•	•
Mouse rotavirus (EDIM)	E / F	•	•	•	•
Mouse adenovirus (MAV1)	E / F			•	•
Mouse adenovirus (MAV2)	E / F			•	•
Reovirus type 3 (REO3)	E / F				•
Pneumonia virus of mice (PVM)	E / F				•
Sendai virus (SEND)	E / F				•
Ectromelia virus (ECTRO)	E / F				•
Hantaan virus (HANT)	E / F				•
Lymphocytic choriomeningitis virus (LCMV)	E / F				•
Parasites					
Pinworms (S.muris, S.obvelata, A.tetraptera)	E / F	•	•	•	•
Fur mites (Myocoptes, Myobia, Radfordia spp.)	E / PS	•	•	•	•
Spironucleus muris	E / F	•	•	•	•
Entamoeba muris	E / F	•	•	•	•
Tritrichomonas muris	E / F			•	•
Cryptosporidium spp.	E / F				•
Giardia muris	E / F				•
Demodex muris	E / F				•
Ornithonyssus	E / PS / F				•

Sample Type Legend
DOS = Dry oral swab, E = Environmental sample, F = Feces, PS = Pelt swab

Environmental Health Monitoring and PCR based Quarantine

Rat EDx Panels (EDT, SFSB) / Opti-XXpress Panels (DCS)

	Preferred Sample Type(s)	EDx / Opti-XXpress Prevalent	EDx / Opti-XXpress Basic	EDx / Opti-XXpress Comprehensive	EDx / Opti-XXpress Global
Turnaround time		3 days	3 days	3 days	3 days
Test code		**21-00277**	**21-00278**	**21-00279**	**21-00280**
Bacteria - Respiratory					
Rodentibacter heylii	E / DOS / F	•	•	•	•
Rodentibacter pneumotropicus	E / DOS / F	•	•	•	•
Mycoplasma pulmonis	E / DOS / F		•	•	•
Staphylococcus aureus	E / DOS / F			•	•
Streptococcus ß-hemolytic Group A, B, C, G	E / DOS / F			•	•
Bordetella bronchiseptica	E / DOS / F				•
Corynebacterium kutscheri	E / DOS / F				•
Streptobacillus moniliformis	E / DOS / F				•
Streptococcus pneumoniae	E / DOS / F				•
Filobacteriuum rodentium	E / DOS / F				•
Bacteria - Enteric					
Helicobacter spp. H.bilis, H.ganmani, H.hepaticus, H.mastomyrinus, H.rodentium, H.typhlonius	E / F	•	•	•	•
Klebsiella pneumoniae	E / F		•	•	•
Klebsiella oxytoca	E / F		•	•	•
Salmonella spp.	E / F		•	•	•
Clostridium piliforme	E / F			•	•
Pseudomonas aeruginosa	E / F			•	•
Campylobacter coli	E / F				•
Campylobacter jejuni	E / F				•
Proteus mirabilis	E / F				•
Bacteria - Skin					
Staphylococcus xylosus	E / PS				•

continued	Preferred Sample Type(s)	EDx / Opti-XXpress Prevalent	EDx / Opti-XXpress Basic	EDx / Opti-XXpress Comprehensive	EDx / Opti-XXpress Global
Fungi					
Pneumocystis spp.	E / DOS				•
Viruses					
Rat coronavirus/Sialodacryoadenitis virus (RCV/SDAV)	E / F	•	•	•	•
Rat parvovirus (RPV)	E / F	•	•	•	•
Rat minute virus (RMV)	E / F	•	•	•	•
Kilham's rat virus (KRV)	E / F	•	•	•	•
Toolan's H-1 virus (H-1)	E / F	•	•	•	•
Rat theilovirus (RTV)	E / F	•	•	•	•
Boone cardiovirus (BCV)	E / F			•	•
Mouse adenovirus (MAV1)	E / F			•	•
Mouse adenovirus (MAV2)	E / F			•	•
Reovirus type 3 (REO3)	E / F				•
Pneumonia virus of mice (PVM)	E / F				•
Sendai virus (SEND)	E / F				•
Seoul virus (SEOV)	E / F				•
Rat polyomavirus 2 (RpyV2)	E / F				•
Parasites					
Pinworms (S.muris, S.obvelata, A.tetraptera)	E / F	•	•	•	•
Fur mites (Myocoptes, Myobia, Radfordia spp.)	E / PS	•	•	•	•
Spironucleus muris	E / F	•	•	•	•
Entamoeba muris	E / F	•	•	•	•
Tritrichomonas muris	E / F			•	•
Cryptosporidium spp.	E / F				•
Giardia muris	E / F				•
Demodex muris	E / F				•
Ornithonyssus	E / PS / F				•

Sample Type Legend
DOS = Dry oral swab, E = Environmental sample, F = Feces, PS = Pelt swab

Non terminal Sentinel Health Monitoring

Mouse Advantage HM Serology Panels

	Preferred Sample Type(s)	Prevalent	Basic	Comprehensive	Comprehensive Plus	Global	FELASA quarterly	FELASA annual
Turnaround time		3 days	3 days	3 days	3 days	3 days	3 days	3 days
Serology - Test code		**23-00032**	**23-00033**	**23-00034**	**23-00035**	**23-00036**	**23-00037**	**23-00038**
Mouse parvovirus (MPV1-5)	Opti-Spot®	•	•	•	•	•	•	•
Minute virus of mice (MVM)	Opti-Spot®	•	•	•	•	•	•	•
Mouse hepatitis virus (MHV)	Opti-Spot®	•	•	•	•	•	•	•
Murine norovirus (MNV)	Opti-Spot®	•	•	•	•	•	•	•
Theiler's murine encephalomyelitis virus (TMEV)	Opti-Spot®	•	•	•	•	•	•	•
Mouse rotavirus (EDIM)	Opti-Spot®	•	•	•	•	•	•	•
Sendai virus (SEND)	Opti-Spot®		•	•	•	•		•
Mycoplasma pulmonis	Opti-Spot®		•	•	•	•		•
Pneumonia virus of mice (PVM)	Opti-Spot®		•	•	•	•		•
Reovirus 3 (REO3)	Opti-Spot®		•	•	•	•		•
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®		•	•	•	•		•
Ectromelia virus (ECTRO)	Opti-Spot®		•	•	•	•		•
Mouse adenovirus (MAV1)	Opti-Spot®			•	•	•		•
Mouse adenovirus (MAV2)	Opti-Spot®			•	•	•		•
Mouse polyomavirus (MPyV)	Opti-Spot®			•	•	•		
Encephalitozoon cuniculi (ECUN)	Opti-Spot®				•	•		
Filobacterium rodentium	Opti-Spot®				•	•		
Clostridium piliforme	Opti-Spot®				•	•		•
Mouse cytomegalovirus (MCMV)	Opti-Spot®				•	•		
K virus (K)	Opti-Spot®					•		
Hantaviruses (Hantaan & Seoul)	Opti-Spot®					•		
Lactate dehydrogenase-elevating virus (LDV)	Opti-Spot®					•		
Mouse thymic virus (MTV)	Opti-Spot®					•		

Non terminal Sentinel Health Monitoring

Mouse Advantage HM PCR Panels - Feces, Pelt Swab, Dry Oral Swab

	Preferred Sample Type(s)	Prevalent	Basic	Comprehensive	Comprehensive Plus	Global	FELASA quarterly	FELASA annual
Turnaround time		3 days	3 days	3 days	3 days	3 days	3 days	3 days
Feces - Test code		**21-00076**	**21-00078**	**21-00081**	**21-00084**	**21-00087**	**21-00090**	**21-00093**
Pinworms (Syphacia muris, Syphacia obvelata, Aspiculuris tetraptera)	F	•	•	•	•	•	•	•
Helicobacter spp. H.bilis, H.ganmani, H.hepaticus, H.mastomyrinus, H.rodentium, H.typhlonius	F		•	•	•	•	•	•
Tritrichomonas muris	F			•	•	•	•	•
Giardia muris	F			•	•	•	•	•
Spironucleus muris	F			•	•	•	•	•
Entamoeba muris	F			•	•	•	•	•
Salmonella spp.	F			•	•	•		•
Pseudomonas aeruginosa	F			•	•	•		
Citrobacter rodentium	F			•	•	•		•
Rodentolepis nana	F				•	•	•	•
Klebsiella pneumoniae	F				•	•		
Klebsiella oxytoca	F				•	•		
Proteus mirabilis	F				•	•		
Cryptosporidium spp.	F					•		
Campylobacter coli	F					•		
Campylobacter jejuni	F					•		
Mouse kidney parvovirus (MKPV)	F					•		
Pelt swab - Test code		**21-00077**	**21-00079**	**21-00082**	**21-00085**	**21-00088**	**21-00091**	**21-00094**
Fur mites (Myocoptes, Myobia, Radfordia spp.)	PS		•	•	•	•	•	•
Oral swab - Test code		**-**	**21-00080**	**21-00083**	**21-00086**	**21-00089**	**21-00092**	**21-00095**
Rodentibacter heylii	DOS		•	•	•	•	•	•
Rodentibacter pneumotropicus	DOS		•	•	•	•	•	•
Staphylococcus aureus	DOS			•	•	•		
Streptococcus ß-hemolytic Group A, B, C, G	DOS			•	•	•	•	•
Streptococcus pneumoniae	DOS				•	•	•	•
Bordetella hinzii / pseudohinzii	DOS				•	•		
Streptobacillus moniliformis	DOS				•	•		•
Bordetella bronchiseptica	DOS					•		
Corynebacterium kutscheri	DOS					•		•
Pasteurella multocida	DOS					•		

Sample Type Legend
F = Feces, PS = Pelt swab, DOS - Dry Oral Swab

Non terminal Sentinel Health Monitoring

Rat Advantage HM Serology Panels

	Preferred Sample Type(s)	Prevalent	Basic	Comprehensive	Global	FELASA quarterly	FELASA annual
Turnaround time		3 days	3 days	3 days	3 days	3 days	3 days
Serology - Test code		**23-00052**	**23-00047**	**23-00048**	**23-00049**	**23-00050**	**23-00051**
Rat coronavirus/Sialodacryoadenitis virus (RCV/SDAV)	Opti-Spot®	•	•	•	•	•	•
Rat parvovirus (RPV)	Opti-Spot®	•	•	•	•	•	•
Rat minute virus (RMV)	Opti-Spot®	•	•	•	•	•	•
Kilham's rat virus (KRV)	Opti-Spot®	•	•	•	•	•	•
Toolan's H-1 virus (H-1)	Opti-Spot®	•	•	•	•	•	•
Rat theilovirus (RTV)	Opti-Spot®	•	•	•	•	•	•
Pneumocystis carinii	Opti-Spot®	•	•	•	•		•
Sendai virus (SEND)	Opti-Spot®		•	•	•		•
Pneumonia virus of mice (PVM)	Opti-Spot®		•	•	•	•	•
Mycoplasma pulmonis	Opti-Spot®		•	•	•	•	•
Reovirus type 3 (REO3)	Opti-Spot®		•	•	•		•
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®		•	•	•		
Filobacterium rodentium	Opti-Spot®			•	•		•
Hantaviruses (Hantaan & Seoul)	Opti-Spot®			•	•		•
Clostridium piliforme	Opti-Spot®			•	•	•	•
Mouse adenovirus (MAV1)	Opti-Spot®			•	•		•
Mouse adenovirus (MAV2)	Opti-Spot®			•	•		•
Encephalitozoon cuniculi (ECUN)	Opti-Spot®				•		
Infectious diarrhea of infant mice (IDIR)	Opti-Spot®				•		
Rat polyomavirus 2 (RPyV2)	Opti-Spot®				•		

Non terminal Sentinel Health Monitoring

Rat Advantage HM PCR Panels - Feces, Pelt Swab, Dry Oral Swab

	Preferred Sample Type(s)	Prevalent	Basic	Comprehensive	Global	FELASA quarterly	FELASA annual
Turnaround time		3 days	3 days	3 days	3 days	3 days	3 days
Feces - Test code		**21-00133**	**21-00118**	**21-00121**	**21-00124**	**21-00127**	**21-00130**
Pinworms (Syphacia muris, Syphacia obvelata, Aspiculuris tetraptera)	F	•	•	•	•	•	•
Helicobacter spp. H.bilis, H.ganmani, H.hepaticus, H.mastomyrinus, H.rodentium, H.typhlonius	F		•	•	•	•	•
Tritrichomonas muris	F			•	•	•	•
Giardia muris	F			•	•	•	•
Spironucleus muris	F			•	•	•	•
Entamoeba muris	F			•	•	•	•
Salmonella spp.	F			•	•		•
Pseudomonas aeruginosa	F			•	•		
Klebsiella pneumoniae	F			•	•		
Klebsiella oxytoca	F			•	•		
Proteus mirabilis	F				•		
Campylobacter coli	F				•		
Campylobacter jejuni	F				•		
Boone carciovirus (BCV)	F				•		
Cryptosporidium spp.	F				•		
Hymenolepis diminuta	F				•	•	•
Rodentolepis nana	F				•	•	•
Pelt swab - Test code		**21-00134**	**21-00119**	**21-00122**	**21-00125**	**21-00128**	**21-00131**
Fur mites (Myocoptes, Myobia, Radfordia spp.)	PS	•	•	•	•	•	•
Oral swab - Test code		**-**	**21-00120**	**21-00123**	**21-00126**	**21-00129**	**21-00132**
Rodentibacter heylii	DOS		•	•	•	•	•
Rodentibacter pneumotropicus	DOS		•	•	•	•	•
Staphylococcus aureus	DOS			•	•		
Streptococcus ß-hemolytic Group A, B, C, G	DOS			•	•	•	•
Streptococcus pneumoniae	DOS			•	•	•	•
Streptobacillus moniliformis	DOS			•	•		•
Bordetella bronchiseptica	DOS				•		
Corynebacterium kutscheri	DOS				•		
Pasteurella multocida	DOS				•		

Sample Type Legend
F = Feces, PS = Pelt swab, DOS - Dry Oral Swab

Quarantine Testing

Mouse Advantage Quarantine Serology Panels

	Preferred Sample Type(s)	Q-Prevalent	Q-Basic	Q-Comprehensive	Q-Global
Turnaround time		3 days	3 days	3 days	3 days
Serology - Test code		**23-00039**	**23-00040**	**23-00041**	**23-00042**
Mouse parvovirus (MPV1-5)	Opti-Spot®	•	•	•	•
Minute virus of mice (MVM)	Opti-Spot®	•	•	•	•
Mouse hepatitis virus (MHV)	Opti-Spot®	•	•	•	•
Murine norovirus (MNV)	Opti-Spot®	•	•	•	•
Theiler's murine encephalomyelitis virus (TMEV)	Opti-Spot®	•	•	•	•
Mouse rotavirus (EDIM)	Opti-Spot®	•	•	•	•
Sendai virus (SEND)	Opti-Spot®		•	•	•
Mycoplasma pulmonis	Opti-Spot®		•	•	•
Pneumonia virus of mice (PVM)	Opti-Spot®		•	•	•
Reovirus 3 (REO3)	Opti-Spot®		•	•	•
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®		•	•	•
Ectromelia virus (ECTRO)	Opti-Spot®		•	•	•
Mouse adenovirus (MAV1)	Opti-Spot®		•	•	•
Mouse adenovirus (MAV2)	Opti-Spot®		•	•	•
Mouse polyomavirus (MPyV)	Opti-Spot®			•	•
Encephalitozoon cuniculi (ECUN)	Opti-Spot®			•	•
Filobacterium rodentium	Opti-Spot®			•	•
Clostridium piliforme	Opti-Spot®			•	•
Mouse cytomegalovirus (MCMV)	Opti-Spot®			•	•
K virus (K)	Opti-Spot®				•
Hantaviruses (Hantaan & Seoul)	Opti-Spot®				•
Lactate dehydrogenase-elevating virus (LDV)	Opti-Spot®				•
Mouse thymic virus (MTV)	Opti-Spot®				•

PCR based Quarantine Testing see **here**

Quarantine Testing

Mouse Advantage Quarantine PCR Panels - Feces, Pelt Swab, Dry Oral Swab

	Preferred Sample Type(s)	Q-Prevalent	Q-Basic	Q-Comprehensive	Q-Global
Turnaround time		3 days	3 days	3 days	3 days
Feces - Test code		**21-00096**	**21-00098**	**21-00101**	**21-00104**
Mouse parvovirus (MPV1-5)	F	•	•	•	•
Minute virus of mice (MVM)	F	•	•	•	•
Mouse hepatitis virus (MHV)	F	•	•	•	•
Murine norovirus (MNV)	F	•	•	•	•
Theiler's murine encephalomyelitis virus (TMEV)	F	•	•	•	•
Mouse rotavirus (EDIM)	F	•	•	•	•
Pinworms (Syphacia muris, Syphacia obvelata, Aspiculuris tetraptera)	F	•	•	•	•
Helicobacter spp. H.bilis, H.ganmani, H.hepaticus, H.mastomyrinus, H.rodentium, H.typhlonius	F	•	•	•	•
Klebsiella pneumoniae	F		•	•	•
Klebsiella oxytoca	F		•	•	•
Tritrichomonas muris	F			•	•
Giardia muris	F			•	•
Spironucleus muris	F			•	•
Entamoeba muris	F			•	•
Salmonella spp.	F			•	•
Pseudomonas aeruginosa	F			•	•
Citrobacter rodentium	F			•	•
Rodentolepis nana	F				•
Proteus mirabilis	F				•
Cryptosporidium spp.	F				•
Campylobacter coli	F				•
Campylobacter jejuni	F				•

continued	Preferred Sample Type(s)	Q-Prevalent	Q-Basic	Q-Comprehensive	Q-Global
Turnaround time		3 days	3 days	3 days	3 days
Pelt swab - Test code		**21-00097**	**21-00099**	**21-00102**	**21-00105**
Fur mites (Myocoptes, Myobia, Radfordia spp.)	PS	•	•	•	•
Oral swab - Test code		**-**	**21-00100**	**21-00103**	**21-00106**
Rodentibacter heylii	DOS		•	•	•
Rodentibacter pneumotropicus	DOS		•	•	•
Bordetella bronchiseptica	DOS			•	•
Corynebacterium kutscheri	DOS			•	•
Streptococcus ß-hemolytic Group A, B, C, G	DOS			•	•
Streptobacillus moniliformis	DOS			•	•
Mycoplasma pulmonis	DOS				•
Streptococcus pneumoniae	DOS				•
Staphylococcus aureus	DOS				•
Bordetella hinzii / pseudohinzii	DOS				•
Pasteurella multocida	DOS				•

PCR based Quarantine Testing see **here**

Sample Type Legend
F = Feces, PS = Pelt swab, DOS - Dry Oral Swab

Quarantine Testing

Rat Advantage Quarantine Serology Panels

	Preferred Sample Type(s)	Q-Prevalent	Q-Basic	Q-Comprehensive	Q-Global
Turnaround time		3 days	3 days	3 days	3 days
Serology - Test code		**23-00043**	**23-00044**	**23-00045**	**23-00046**
Rat coronavirus/Sialodacryoadenitis virus (RCV/SDAV)	Opti-Spot®	•	•	•	•
Rat parvovirus (RPV)	Opti-Spot®	•	•	•	•
Rat minute virus (RMV)	Opti-Spot®	•	•	•	•
Kilham's rat virus (KRV)	Opti-Spot®	•	•	•	•
Toolan's H-1 virus (H-1)	Opti-Spot®	•	•	•	•
Rat theilovirus (RTV)	Opti-Spot®	•	•	•	•
Pneumocystis carinii	Opti-Spot®	•	•	•	•
Sendai virus (SEND)	Opti-Spot®		•	•	•
Pneumonia virus of mice (PVM)	Opti-Spot®		•	•	•
Mycoplasma pulmonis	Opti-Spot®		•	•	•
Reovirus type 3 (REO3)	Opti-Spot®		•	•	•
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®		•	•	•
Filobacterium rodentium	Opti-Spot®			•	•
Hantaviruses (Hantaan & Seoul)	Opti-Spot®			•	•
Clostridium piliforme	Opti-Spot®			•	•
Mouse adenovirus (MAV1)	Opti-Spot®			•	•
Mouse adenovirus (MAV2)	Opti-Spot®			•	•
Encephalitozoon cuniculi (ECUN)	Opti-Spot®				•
Infectious diarrhea of infant mice (IDIR)	Opti-Spot®				•

PCR based Quarantine Testing see **here**

Quarantine Testing

Rat Advantage Quarantine PCR Panels - Feces, Pelt Swab, Dry Oral Swab

	Preferred Sample Type(s)	Q-Prevalent	Q-Basic	Q-Comprehensive	Q-Global
Turnaround time		3 days	3 days	3 days	3 days
Feces - Test code		**21-00107**	**21-00109**	**21-00112**	**21-00115**
Rat coronavirus/Sialodacryoadenitis virus (RCV/SDAV)	F	•	•	•	•
Rat parvovirus (RPV)	F	•	•	•	•
Rat minute virus (RMV)	F	•	•	•	•
Kilham's rat virus (KRV)	F	•	•	•	•
Toolan's H-1 virus (H-1)	F	•	•	•	•
Rat theilovirus (RTV)	F	•	•	•	•
Pinworms (Syphacia muris, Syphacia obvelata, Aspiculuris tetraptera)	F	•	•	•	•
Helicobacter spp. H.bilis, H.ganmani, H.hepaticus, H.mastomyrinus, H.rodentium, H.typhlonius	F	•	•	•	•
Spironucleus muris	F			•	•
Klebsiella pneumoniae	F			•	•
Klebsiella oxytoca	F			•	•
Clostridium piliforme	F			•	•
Pseudomonas aeruginosa	F			•	•
Salmonella spp.	F			•	•
Tritrichomonas muris	F				•
Giardia muris	F				•
Entamoeba muris	F				•
Cryptosporidium spp.	F				•
Hymenolepis diminuta	F				•
Proteus mirabilis	F				•
Rodentolepis nana	F				•
Campylobacter coli	F				•
Campylobacter jejuni	F				•
Boone carciovirus (BCV)	F				•

continued	Preferred Sample Type(s)	Q-Prevalent	Q-Basic	Q-Comprehensive	Q-Global
Turnaround time		3 days	3 days	3 days	3 days
Pelt swab - Test code		**21-00108**	**21-00110**	**21-00113**	**21-00116**
Fur mites (Myocoptes, Myobia, Radfordia spp.)	PS	•	•	•	•
Oral swab - Test code		**-**	**21-00111**	**21-00114**	**21-00117**
Rodentibacter heylii	DOS		•	•	•
Rodentibacter pneumotropicus	DOS		•	•	•
Staphylococcus aureus	DOS			•	•
Bordetella bronchiseptica	DOS			•	•
Corynebacterium kutscheri	DOS			•	•
Streptococcus ß-hemolytic Group A, B, C, G	DOS			•	•
Streptococcus pneumoniae	DOS			•	•
Streptobacillus moniliformis	DOS			•	•
Mycoplasma pulmonis	DOS				•
Filobacterium rodentium	DOS				

PCR based Quarantine Testing see **here**

Sample Type Legend
F = Feces, PS = Pelt swab, DOS - Dry Oral Swab

Mouse and Rat PCR Panels

Additional PCR Panels

Test name and components	Preferred sample type(s)	Turnaround time	Test Code
Parvovirus Mouse PCR PCR MPV 1-5, MVM	F, E	3 days	**21-00002**
Parvovirus Plus Mouse PCR MPV 1-5, MVM, MKPV	F, E	3 days	**21-00272**
Fecal A Mouse PCR MPV 1-5, MVM, MHV, MNV, Helicobacter spp., Pinworms	F	3 days	**21-00025**
Fecal B Mouse PCR MPV 1-5, MVM, MHV, MNV, TMEV, EDIM, Helicobacter spp., Pinworms	F	3 days	**21-00026**
Fecal C Mouse PCR MPV 1-5, MVM, MHV, MNV, TMEV, EDIM, Helicobacter spp., Pinworms, Citrobacter rodentium, Clostridium piliforme, Salmonella spp, Klebsiella oxytoca, Klebsiella pneumoniae, Pseudomonas aeruginosa, Entamoeba muris, Giardia muris, Spironucleus muris, Tritrichomonas muris, Chilomastix spp.	F	3 days	**21-00027**
Parvovirus Rat PCR RPV, RMV, KRV, H-1	F, E	3 days	**21-00003**
Fecal Rat PCR RPV, RMV, KRV, H-1, RTV, Helicobacter spp., Pinworms	F	3 days	**21-00028**
EDX Parasite PCR Fur mites, Pinworms, Spironucleus muris, Entamoeba muris, Tritrichomonas muris, Giardia spp., Ornithonyssus sp., Demodex musculi	E	3 days	**21-00153**
EDx Primary PCR Fur mites, Pinworms, Spironucleus muris, Entamoeba muris, Tritrichomonas muris, Giardia spp, Helicobacter spp., H.bilis, H.hepaticus, H.rodentium, H.typhlonius, H.ganmani, H.mastomyrinus, Rodentibacter heylii, Rodentibacter pneumotropicus	E	3 days	**21-00155**
Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) Panel	F, DOS	3 days	**20-00417**

Test name and components	Preferred sample type(s)	Turnaround time	Test Code
Helicobacter PCR Helicobacter spp., H.bilis, H.hepaticus, H.rodentium, H.typhlonius, H.ganmani, H.mastomyrinus	F, E	3 days	**21-00001**
Pinworm / Fur Mite PCR Syphacia obvelata, Syphacia muris, Aspiculuris tetraptera, Myocoptes, Myobia and Radfordia spp.	F, E	3 days	**21-00029**
Pinworm / Fur Mite / Helicobacter spp. PCR Syphacia obvelata, Syphacia muris, Aspiculuris tetraptera, Myocoptes, Myobia and Radfordia spp., Helicobacter spp., H.bilis, H.hepaticus, H.rodentium, H.typhlonius, H.ganmani, H.mastomyrinus	F, E	3 days	**21-00219**
Protozoa PCR Entamoeba muris, Giardia muris, Spironucleus muris, Tritrichomonas muris, Chilomastix spp.	F, E	3 days	**21-00021**
Skin PCR Fur mites, Dermatophytes, Demodex musculi, Ornithonyssus spp., Staphylococcus aureus, Staphylococcus xylosus, Corynebacterium bovis, Corynebacterium spp. (HAC2)	PS	3 days	**21-00270**
Dermatophytes PCR Microsporum spp., Trichophyton spp.	Skin brush	3 days	**20-00314**
Opportunistic Bacteria Mouse PCR Klebsiella oxytoca, Klebsiella pneumoniae, Pseudomonas aeruginosa, Proteus mirabilis, Staphylococcus aureus, Bordetella bronchiseptica, Filobacterium rodentium	F, DOS, E	3 days	**21-00343**
Opportunistic Bacteria Rat PCR Klebsiella oxytoca, Klebsiella pneumoniae, Pseudomonas aeruginosa, Proteus mirabilis, Staphylococcus aureus, Bordetella bronchiseptica, Corynebacterium kutscheri	F, DOS, E	3 days	**21-00344**

Sample Type Legend
DOS = Dry oral swab, E = Environmental sample, F = Feces, PS = Pelt swab

Other Rodents and Rabbit Health Monitoring

IDEXX BioAnalytics has designed specific health monitoring testing panels for **guinea pigs, hamsters, rabbits, and chinchilla**, utilizing serology, PCR and parasitology. These species carry their own unique list of potential pathogens, including those typically excluded from high health mouse and rat colonies. Routine mouse and/or rat panels may be performed on these species to screen for potential agents that could be brought in a facility housing mice and rats.

Guinea Pig Serology Panels

	Preferred Sample Type(s)	Basic	Comprehensive	Global
Turnaround time		3 days	3 days	3 days
Test code		**23-00003**	**23-00010**	**23-00077**
Guinea pig adenovirus (GpAV)	Opti-Spot®		•	•
Parainfluenza virus 3 (PI3)	Opti-Spot®	•	•	•
Sendai virus (SEND)	Opti-Spot®	•	•	•
Guinea pig cytomegalovirus (GpCMV)	Opti-Spot®		•	•
Encephalitozoon cuniculi (ECUN)	Opti-Spot®	•	•	•
Clostridium piliforme	Opti-Spot®	•	•	•
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®	•	•	•
Pneumonia virus of mice (PVM)	Opti-Spot®	•	•	•
Simian virus 5 (SV5)	Opti-Spot®		•	•
Poliovirus (GDVII)	Opti-Spot®			•
Reovirus type 3 (REO3)	Opti-Spot®			•
Toxoplasma gondii	Opti-Spot®			•
Mycoplasma pulmonis				•

Guinea PigParasitology to be combined with Serology and PCR

	Preferred Sample Type(s)	Turnaround time	Test code
Other Endoparasites Guinea Pig - Fecal Flotation	F	1-2 days	**25-00282**
Ectoparasites Guinea Pig - Microscopic Examination	Skin Scrape	1-2 days	**25-00283**
Ectoparasites Guinea Pig - Microscopic Examination	Fur Pluck	1-2 days	**25-00284**

Guinea Pig PCR Panels to be combined with Serology

	Preferred Sample Type(s)	Basic	Comprehensive	Global
Turnaround time		3 days	3 days	3 days
Test code		**21-00333**	**21-00334**	**21-00335**
Bordetella bronchiseptica	DOS	•	•	•
ß-hemolytic Streptococci Group A, B, C, G	DOS		•	•
Corynebacterium kutscheri	DOS			•
Streptococcus pneumoniae	DOS	•	•	•
Streptobacillus moniliformis	DOS			•
Rodentibacter heylii	DOS			•
Rodentibacter pneumotropicus	DOS			•
Chlamydia spp.	F			•
Salmonella spp.	F	•	•	•
Campylobacter coli	F			•
Campylobacter jejuni	F			•
Cryptosporidium spp.	F			•
Helicobacter spp., H. bilis, H. hepaticus	F			•
Lawsonia intracellularis	F			•
Pasteurella multocida	DOS			•
Dermatophytes	Skin Brush			•

Sample Type Legend
DOS = Dry oral swab, F = Feces

Other Rodents and Rabbit Health Monitoring

Hamster Serology Panels

	Preferred Sample Type(s)	Clinical	Comprehensive	Global
Turnaround time		3 days	3 days	3 days
Test code		**23-00007**	**23-00011**	**23-00076**
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®	•	•	•
Sendai virus (SEND)	Opti-Spot®	•	•	•
Clostridium piliforme	Opti-Spot®	•	•	•
Pneumonia virus of mice (PVM)	Opti-Spot®		•	•
Simian virus 5 (SV5)	Opti-Spot®		•	•
Encephalitozoon cuniculi (ECUN)	Opti-Spot®		•	•
Reovirus type 3 (REO3)	Opti-Spot®		•	•
Hamster parvovirus (HaPV)	Opti-Spot®			•
Hamster polyomavirus (HaPyV)	Opti-Spot®			•
Group A rotavirus (MRV, EDIM)	Opti-Spot®			•
Mouse adenovirus 1 (MAV1)	Opti-Spot®			•
Mouse adenovirus 2 (MAV2)	Opti-Spot®			•

Hamster Parasitology to be combined with Serology and PCR

	Preferred Sample Type(s)	Turnaround time	Test code
Other Endoparasites Hamster - Fecal Flotation	F	1-2 days	**25-00279**
Ectoparasites Hamster - Microscopic Examination	Skin Scrape	1-2 days	**25-00280**
Ectoparasites Hamster - Microscopic Examination	Fur Pluck	1-2 days	**25-00281**

Hamster PCR Panels to be combined with Serology

	Preferred Sample Type(s)	Clinical	Comprehensive	Global
Turnaround time		3 days	3 days	3 days
Test code		**21-00327**	**21-00328**	**21-00329**
Rodentibacter heylii	DOS	•	•	•
Rodentibacter pneumotropicus	DOS		•	•
Corynebacterium kutscheri	DOS			•
ß-hemolytic Streptococci Group A, B, C, G	DOS			•
Filobacter rodentium	DOS			•
Streptococcus pneumoniae	DOS			•
Pasteurella multocida	DOS			•
Helicobacter spp., H. bilis, H. hepaticus	F		•	•
Salmonella spp.	F		•	•
Campylobacter coli	F			•
Campylobacter jejuni	F			•
Lawsonia intracellularis	F			•
Cryptosporidium spp.	F	•	•	•
Entamoeba muris	F	•	•	•
Giardia muris	F	•	•	•
Spironucelus muris	F	•	•	•
Dermatophytes	Skin Brush	•	•	•

Sample Type Legend
DOS = Dry oral swab, F = Feces

Other Rodents and Rabbit Health Monitoring

Rabbit Serology Panels

	Preferred Sample Type(s)	Comprehensive
Turnaround time		3 days
Test code		**23-00012**
Rotavirus group A (ROTA)	Opti-Spot®	•
Encephalitozoon cuniculi (ECUN)	Opti-Spot®	•
Clostridium piliforme	Opti-Spot®	•
Cilia-associated respiratory bacillus (CARB)	Opti-Spot®	•
Treponema paraluiscuniculi	Opti-Spot®	•

Rabbit Parasitology to be combined with Serology and PCR

	Preferred Sample Type(s)	Turnaround time	Test code
Other Endoparasites Rabbit - Fecal Flotation	F	1-2 days	**25-00275**
Ectoparasites Rabbit - Microscopic Examination	Skin Scrape	1-2 days	**25-00276**
Ectoparasites Rabbit - Microscopic Examination	Fur Pluck	1-2 days	**25-00277**
Ectoparasites Rabbit - Microscopic Examination	Ear Swab	1-2 days	**25-00278**

Rabbit PCR Panels to be combined with Serology

	Preferred Sample Type(s)	Comprehensive	Global
Turnaround time		3 days	3 days
Test code		**21-00325**	**21-00326**
Bordetella bronchiseptica	DOS	•	•
Rodentibacter heylii	DOS		•
Rodentibacter pneumotropicus	DOS		•
Salmonella spp.	F	•	•
Clostridium difficile Toxin A&B	F		•
Helicobacter spp.	F		•
Lawsonia intracellularis	F		•
Cryptosporidium spp.	F		•
Giardia sp.	F		•
Dermatophytes	Skin Brush		•

Sample Type Legend
DOS = Dry oral swab, F = Feces

Other Rodents and Rabbit Health Monitoring

Chinchilla Serology Panels

	Preferred Sample Type(s)	Prevalent	Comprehensive
Turnaround time		3 days	3 days
Test code		**23-00078**	**23-00079**
Encephalitozoon cuniculi (ECUN)	Opti-Spot®	•	•
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®		•
Toxoplasma gondii	Opti-Spot®		•
Sendai virus (SEND)*	Opti-Spot®		

* Mouse-specific pathogens, such as those listed in the table above, can be included based on vivarium logistics

Chinchilla Parasitology to be combined with Serology and PCR

	Preferred Sample Type(s)	Turnaround time	Test code
Other Endoparasites Chinchilla - Fecal Floation	F	1-2 days	**25-00235**
Other Endoparasites Chinchilla - Tape Test	Tape test	1-2 days	**25-00226**

Chinchilla PCR Panels to be combined with Serology

	Preferred Sample Type(s)	Prevalent	Comprehensive	Global
Turnaround time		3 days	3 days	3 days
Test code		**21-00338**	**21-00339**	**21-00340**
Streptococcus pneumoniae	DOS	•	•	•
ß-hemolytic Streptococci Group A, B, C, G	DOS	•	•	•
Klebsiella pneumoniae	DOS		•	•
Rodentibacter heylii	DOS		•	•
Rodentibacter pneumotropicus	DOS		•	•
Pasteurella multocida	DOS		•	•
Bordetella bronchiseptica	DOS		•	•
Staphylococcus aureus	DOS		•	•
Bordetella pseudohinzii/hinzii	F		•	•
Salmonella spp.	F		•	•
Campylobacter coli	F		•	•
Campylobacter jejuni	F		•	•
Pseudomonas aeruginosa	F		•	•
Clostridium perfringens (enterotoxin)	F			•
Yersinia pseudotuberculosis	F			•
Yersinia enterocolitica	F			•
Listeria monocytogenes	F			•
Rodentolepis nana	F			•
Pinworms*	F			
Cryptosporidium spp.	F	•		•
Giardia spp. (assemblages A&B)	F	•		•
Eimeria spp.	F	•		•
Dermatophytes	PS	•		•
Fur mites*	PS			

* Mouse-specific pathogens, such as those listed in the table above, can be included based on vivarium logistics

Sample Type Legend
DOS = Dry oral swab, F = Feces, PS = Pelt swab

Other Rodents and Rabbit Health Monitoring

Hamster PCR Diagnostic Panels

Test name and components	Preferred sample type(s)	Turnaround time	Test Code
Diahrrea Hamster PCR Clostridium perfringens (alpha toxin), Clostridium perfringens (enterotoxin), Clostridium difficile (toxin A), Clostridium difficile (toxin B), Helicobacter spp., H. bilis, H. hepatics, Salmonella spp., Lawsonia intracellularis, Campylobacter coli, Campylobacter jejuni, Cryptosporidium spp.	F	3 days	**21-00331**
Respiratory Hamster PCR Rodentibacter heylii, Rodentibacter pneuomotropicus, ß-hemolytic Streptococci Group B, Mycoplasma pulmonis, Bordetella bronchiseptica, Sendai virus (SEND)	DOS	3 days	**21-00332**
Opportunistic Hamster PCR Klebsiella pneumoniae, Klebsiella oxytoca, Pseudomonas aeruginosa, Proteus mirabilis, Staphylococcus aureus	F, DOS or F	3 days	**21-00330**

Guinea Pig PCR Diagnostic Panels

Test name and components	Preferred sample type(s)	Turnaround time	Test Code
Acute Guinea Pig PCR Guinea pig adenovirus (GpAV), Bordetella bronchiseptica, Salmonella sp., ß-hemolytic Streptococci Group C	DOS	3 days	**21-00337**
Opportunistic Guinea Pig PCR Klebsiella pneumoniae, Klebsiella oxytoca, Pseudomonas aeruginosa, Proteus mirabilis, Staphylococcus aureus	F, DOS or F	3 days	**21-00336**

Sample Type Legend
DOS = Dry oral swab, F = Feces

Serology Testing Services

For the greatest ease, efficiency, and accuracy, our health monitoring serology diagnostics are spot on: Opti-Spot® Dried Blood Spot sampling technology

- Decrease sampling and prep time
- Reduce shipping costs
- Faster and more accurate results

Get the highest level of diagnostic accuracy from just a simple drop of blood, with results in 24–36 hours on par with the kind of expert analysis and exceptional service you would expect from the leader in health monitoring. Expect a more complete picture from just a drop of blood.

Mouse Serology Panels

	Preferred Sample Type(s)	Parvovirus	Primary	Clinical	Basic	Comprehensive	Comprehensive Plus	Global	FELASA quarterly	FELASA annual
Turnaround time		3 days	3 days	3 days	3 days	3 days	3 days	3 days	3 days	3 days
Test code		**23-00014**	**23-00018**	**23-00004**	**23-00001**	**23-00008**	**23-00013**	**23-00016**	**23-00020**	**23-00023**
Mouse parvovirus (MPV1-5)	Opti-Spot®	•	•	•	•	•	•	•	•	•
Minute virus of mice (MVM)	Opti-Spot®	•	•	•	•	•	•	•	•	•
Mouse hepatitis virus (MHV)	Opti-Spot®		•	•	•	•	•	•	•	•
Murine norovirus (MNV)	Opti-Spot®		•	•	•	•	•	•	•	•
Theiler's murine encephalomyelitis virus (TMEV)	Opti-Spot®		•	•	•	•	•	•	•	•
Mouse rotavirus (EDIM)	Opti-Spot®		•	•	•	•	•	•	•	•
Sendai virus (SEND)	Opti-Spot®			•	•	•	•	•		•
Mycoplasma pulmonis	Opti-Spot®			•	•	•	•	•		•
Pneumonia virus of mice (PVM)	Opti-Spot®				•	•	•	•		•
Reovirus 3 (REO3)	Opti-Spot®				•	•	•	•		•
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®				•	•	•	•		•
Ectromelia virus (ECTRO)	Opti-Spot®				•	•	•	•		•
Mouse adenovirus (MAV1)	Opti-Spot®					•	•	•		•
Mouse adenovirus (MAV2)	Opti-Spot®					•	•	•		•
Mouse polyomavirus (MPyV)	Opti-Spot®					•	•	•		
Encephalitozoon cuniculi (ECUN)	Opti-Spot®						•	•		
Filobacterium rodentium	Opti-Spot®						•	•		
Clostridium piliforme	Opti-Spot®						•	•		•
Mouse cytomegalovirus (MCMV)	Opti-Spot®						•	•		
K virus (K)	Opti-Spot®							•		
Hantaviruses (Hantaan & Seoul)	Opti-Spot®							•		
Lactate dehydrogenase-elevating virus (LDV)	Opti-Spot®							•		
Mouse thymic virus (MTV)	Opti-Spot®							•		

Serology Testing Services

Rat Serology Panels

	Preferred Sample Type(s)	Parvovirus	Primary	Clinical	Basic	Comprehensive	Global	FELASA quarterly	FELASA annual
Turnaround time		3 days	3 days	3 days	3 days	3 days	3 days	3 days	3 days
Test code		**23-00015**	**23-00019**	**23-00005**	**23-00002**	**23-00009**	**23-00017**	**23-00021**	**23-00024**
Rat parvovirus (RPV)	Opti-Spot®	•	•	•	•	•	•	•	•
Rat minute virus (RMV)	Opti-Spot®	•	•	•	•	•	•	•	•
Kilham's rat virus (KRV)	Opti-Spot®	•	•	•	•	•	•	•	•
Toolan's H-1 virus (H-1)	Opti-Spot®	•	•	•	•	•	•	•	•
Rat theilovirus (RTV)	Opti-Spot®		•	•	•	•	•	•	•
Rat coronavirus/Sialodacryoadenitis virus (RCV/SDAV)	Opti-Spot®		•	•	•	•	•	•	•
Pneumocystis carinii	Opti-Spot®		•	•	•	•	•		•
Sendai virus (SEND)	Opti-Spot®			•	•	•	•		•
Pneumonia virus of mice (PVM)	Opti-Spot®			•	•	•	•		•
Mycoplasma pulmonis	Opti-Spot®			•	•	•	•		•
Reovirus type 3 (REO3)	Opti-Spot®				•	•	•		•
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®				•	•	•		
Filobacterium rodentium	Opti-Spot®					•	•		•
Hantaviruses (Hantaan & Seoul)	Opti-Spot®					•	•		•
Clostridium piliforme	Opti-Spot®					•	•	•	•
Mouse adenovirus (MAV1)	Opti-Spot®					•	•		•
Mouse adenovirus (MAV2)	Opti-Spot®					•	•		•
Encephalitozoon cuniculi (ECUN)	Opti-Spot®						•		
Infectious diarrhea of infant mice (IDIR)	Opti-Spot®						•		
Rat polyomavirus 2 (RPyV2)	Opti-Spot®						•		

Serology Testing Services

Hamster Serology Panels

	Preferred Sample Type(s)	Clinical	Comprehensive	Global
Turnaround time		3 days	3 days	3 days
Test code		**23-00007**	**23-00011**	**23-00076**
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®	•	•	•
Sendai virus (SEND)	Opti-Spot®	•	•	•
Clostridium piliforme	Opti-Spot®	•	•	•
Pneumonia virus of mice (PVM)	Opti-Spot®		•	•
Simian virus 5 (SV5)	Opti-Spot®		•	•
Encephalitozoon cuniculi (ECUN)	Opti-Spot®		•	•
Reovirus 3 (REO3)	Opti-Spot®		•	•
Hamster parvovirus (HaPV)	Opti-Spot®			•
Hamster polyomavirus (HaPyV)	Opti-Spot®			•
Group A rotaviruses (MRV, EDIM)	Opti-Spot®			•
Mouse adenovirus (MAV1)	Opti-Spot®			•
Mouse adenovirus (MAV2)	Opti-Spot®			•

Guinea Pig Serology Panels

	Preferred Sample Type(s)	Basic	Comprehensive	Global
Turnaround time		3 days	3 days	3 days
Test code		**23-00003**	**23-00010**	**23-00077**
Parainfluenza virus 3 (PI3)	Opti-Spot®	•	•	•
Sendai virus (SEND)	Opti-Spot®	•	•	•
Encephalitozoon cuniculi (ECUN)	Opti-Spot®	•	•	•
Clostridium piliforme	Opti-Spot®	•	•	•
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®	•	•	•
Pneumonia virus of mice (PVM)	Opti-Spot®	•	•	•
Simian virus 5 (SV5)	Opti-Spot®		•	•
Guinea pig adenovirus (GpAV)	Opti-Spot®		•	•
Guinea pig cytomegalovirus (GpCMV)	Opti-Spot®		•	•
Poliovirus (GDVII)	Opti-Spot®			•
Reovirus 3 (REO3)	Opti-Spot®			•
Toxoplasma gondii	Opti-Spot®			•
Mycoplasma pulmonis	Opti-Spot®			•

Rabbit Serology Panels

	Preferred Sample Type(s)	Comprehensive
Turnaround time		3 days
Test code		**23-00012**
Rotavirus group A (ROTA)	Opti-Spot®	•
Encephalitozoon cuniculi (ECUN)	Opti-Spot®	•
Clostridium piliforme	Opti-Spot®	•
Cilia-associated respiratory bacillus (CARB)	Opti-Spot®	•
Treponema paraluiscuniculi	Opti-Spot®	•

Chinchilla Serology Panels

	Preferred Sample Type(s)	Prevalent	Comprehensive
Turnaround time		3 days	3 days
Test code		**23-00078**	**23-00079**
Encephalitozoon cuniculi (ECUN)	Opti-Spot®	•	•
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®		•
Toxoplasma gondii	Opti-Spot®		•

Rodent & Rabbit Individual Serology Assays

Test Name	Preferred Sample Type(s)	Species	Test Code
C			
Cilia-associated respiratory bacillus (CARB)	Opti-Spot®	Rb	**22-00118**
Clostridium piliforme	Opti-Spot®	M, R, Gp, Ha, Rb	**22-00040**
E			
Ectromelia virus (ECTRO)	Opti-Spot®	M	**22-00012**
Encephalitozoon cuniculi (ECUN)	Opti-Spot®	M, R, Gp, Ha, Rb, Ch	**22-00006**
F			
Filobacterium rodentium	Opti-Spot®	M, R, Gp, Ha	**22-00096**
G			
Guinea pig adenovirus (GpAV)	Opti-Spot®	Gp	**22-00163**
Guinea pig cytomegalovirus (GpCMV)	Opti-Spot®	Gp	**22-00187**
H			
Hamster parvovirus (HaPV)	Opti-Spot®	Ha	**22-00295**
Hantaviruses (Hantaan & Seoul)	Opti-Spot®	R, Gp	**22-00015**
I			
Infectious diarrhea of infants (IDIR)	Opti-Spot®	R	**22-00146**
K			
K virus (Mouse pneumotropic virus)	Opti-Spot®	M	**22-00002**
Kilham's virus (KRV)	Opti-Spot®	R	**22-00016**
L			
Lactate dehydrogenase-elevating virus (LDV)	Opti-Spot®	M	**22-00144**
Leptospira spp.	Opti-Spot®	M, R	**22-00248**
Lymphocytic choriomeningitis virus (LCMV)	Opti-Spot®	M, R, Gp, Ha, Rb, Ch	**22-00018**
M			
Minute virus of mice (MVM)	Opti-Spot®	M, Gp	**22-00028**
Mouse adenovirus type 1 (MAV1)	Opti-Spot®	M, R, Gp, Ha	**22-00022**
Mouse adenovirus type 2 (MAV2)	Opti-Spot®	M, Gp, Ha	**22-00024**
Mouse cytomegalovirus (MCMV)	Opti-Spot®	M	**22-00026**
Mouse hepatitis virus (MHV)	Opti-Spot®	M, Gp	**22-00027**
Mouse kidney parvovirus (MKPV)	Opti-Spot®	M	**22-00275**
Mouse parvovirus (MPV1-5)	Opti-Spot®	M	**22-00029**
Mouse polyomavirus (MPyV)	Opti-Spot®	M	**22-00030**
Mouse rotavirus (EDIM)	Opti-Spot®	M, Ha	**22-00013**
Mouse thymic virus (MTV)	Opti-Spot®	M	**22-00253**
Murine norovirus (MNV)	Opti-Spot®	M	**22-00001**
Mycoplasma pulmonis	Opti-Spot®	M, R	**22-00020**
Myxomatosis	Serum	Rb	**Call**

Test Name	Preferred Sample Type(s)	Species	Test Code
P			
Parainfluenza virus 3 (PI3)	Opti-Spot®	Gp	**22-00119**
Parvoviruses mouse (MPV1-5, MVM)	Opti-Spot®	M	**23-00014**
Parvoviruses rat (RPV, RMV, KRV, H-1)	Opti-Spot®	R	**23-00015**
Pneumocystis carinii	Opti-Spot®	R	**22-00188**
Pneumocystis murina	Opti-Spot®	M	**22-00255**
Pneumonia virus of mice (PVM)	Opti-Spot®	M, R, Gp, Ha	**22-00031**
R			
Rabbit hemorrhagic disease virus (RHDV)	Serum	Rb	**22-00293**
Rat coronavirus/Sialodacryoadenitis virus (RCV/SDAV)	Opti-Spot®	R	**22-00033**
Rat minute virus (RMV)	Opti-Spot®	R	**22-00036**
Rat parvovirus (RPV)	Opti-Spot®	R	**22-00037**
Rat polyomavirus 2 (RPyV2)	Opti-Spot®	R	**22-00260**
Rat theilovirus (RTV)	Opti-Spot®	R	**22-00038**
Reovirus 3 (REO3)	Opti-Spot®	M, R, Gp, Ha	**22-00034**
S			
Sendai virus (SEND)	Opti-Spot®	M, R, Gp, Ha, Rb, Ch	**22-00003**
Severe acute respiratory syndrome coronavirus 2 (SARS-CoV 2)	Serum	M	**84-00065**
Sin Nombre virus (SNV)	Opti-Spot®	M, R, Gp	**22-00199**
Simian virus 5 (SV5)	Opti-Spot®	Gp, Ha, Rb	**22-00131**
T			
Theiler's murine encephalomyelitis virus (TMEV, GDVII)	Opti-Spot®	M	**22-00039**
Toolan's H-1 virus (H-1)	Opti-Spot®	R	**22-00014**
Toxoplasma gondii	Opti-Spot®	M, R, Gp, Ch	**22-00196**
Treponema paraluiscuniculi	Opti-Spot®	Rb	**22-00279**

We offer additional Serology tests not listed. Please contact the Client Support Services team if you do not see a specific test listed.

Species Legend
M = Mouse, R = Rat, Gp = Guinea Pig, Ha = Hamster, Rb = Rabbit, Ch = Chinchilla

Rodent & Rabbit Individual Serology Assays

Additional Sample Information

Opti-Spot® provides the following benefits

- Small sample size – only one drop of blood is required; more feasible for ante-mortem sampling
- Saves technician time – no clotting or centrifugation required; no transfer of serum
- Reduced sample preparation time – only an hour or two of drying time required
- Cost savings in supplies – no serum tubes or pipettes; may be shipped at ambient temperature, no ice or insulation necessary

Opti-Spot® Dry Blood Spot

- Materials required: Opti-Spot® card (available from IDEXX BioAnalytics for no charge), lancet or needle

- Sample Collection: The Opti-Spot® cards are constructed with 5 individual strips separated by perforations. The strips can easily be separated along the perforation lines for individual use if needed. On each strip, a 1 cm^2 circle is printed on the face of the Opti-Spot® membrane as a guide. It is not necessary that the blood spot be centered within the circle. Label one Opti-Spot® card with a unique identification number for each sample strip. Ante-mortem blood samples may be obtained by lancing the lateral saphenous, facial or the temporal vein. Touch the Opti-Spot® membrane to blood drop as it forms on the surface of the skin. If the blood sample is taken by cardiocentesis, quickly dispense one drop of whole blood onto the Opti-Spot® strip. The blood spot should be of sufficient size (approximately 1 cm^2) to nearly fill the printed circle and be of sufficient volume to saturate the membrane. The blood spot will appear similar on both sides of the membrane. Allow the blood spot to dry for a minimum of one hour. Once dried, fold the protective upper tab over the blood spot and tuck under the lower tab.

- Sample Handling & Storage: It is important that the Opti-Spot® strip is protected from moisture.

- Sample Shipment: Once dry, place Opti-Spot® samples in a water-tight plastic bag containing the provided silica gel desiccant pack, and ship samples in a standard overnight envelope shipped at ambient temperature.

Refrain from pooling serum samples on Opti-Spot® strips, a practice that can yield false negative results by dilution effect.

Serum

- Sample Collection: MFI2 requires only 0.2 µl of undiluted serum (1.0 µl of 1:5 diluted serum) regardless of the number of tests requested. To allow for potential secondary and tertiary confirmatory testing, we recommend that a minimum of 20 µl of undiluted (100 µl of 1:5 diluted serum) be submitted for each sample. You may achieve an approximate 1:5 dilution of serum by adding 1 part of whole blood to 4 parts of ambient temperature saline. Refrigerate the diluted blood for 6 to 12 hours, centrifuge at low speed for 5–10 minutes, and recover the 1:5 diluted serum for submission. Undiluted serum is preferred.

- Sample Handling & Storage: Serum and plasma should be stored in tubes with the lids secured to prevent leakage. The use of Parafilm™ over tube lids is recommended to prevent leakage.

- Sample Shipment: Serum samples should be shipped frozen using an overnight service. One or two ice packs are generally adequate depending on the type of container, the number of samples and the ambient temperature. Optimal shipping conditions are achieved when the entire package with its lid open is frozen overnight at or below -20˚C. Close tubes when shipping samples. The use of dry ice is not required.

Note:

- Do not submit whole blood; hemolysis will occur during freezing or shipping and may interfere with serologic test performance.
- Refrain from pooling serum samples, a practice that can yield false negative results by dilution effect.
- Please include a completed serology submission form specifying the species, serum dilution, and the serology profile or individual test(s) requested.
- Describe any potential biohazards associated with the samples. Please use a separate serology accession form for each species and serologic profile or group of test(s) requested.

Rodent & Rabbit Individual PCR Assays

Test Name	Screening Sample Type	Diagnostic Sample Type	Species	Test Code
A				
Aspiculuris tetraptera (Pinworms)	F, E		M, R, Ch	**20-00115**
B				
Boone cardiovirus (BCV)	F, E		R	**20-00148**
Bordetella bronchiseptica	F, E, DOS	trachea	M, R, Gp, Ha, Rb, Ch	**20-00120**
Bordetella pseudohinzii/hinzii	F, E	trachea	M, Ch	**20-00176**
Burkholderia gladioli	F, E, DOS	liver, spleen	M, R	**20-00456**
C				
Campylobacter coli	F, E		M, R, Gp, Ha, Ch	**20-00116**
Campylobacter jejuni	F, E		M, R, Gp, Ha, Ch	**20-00091**
Chilomastix spp.	F, E		M, R	**20-00341**
Chlamydia muridarum	F, E		M	**20-00470**
Chlamydia spp.	F, E		Gp	**20-00464**
Cilia-associated respiratory bacillus (CARB)	F, E, DOS	trachea	Rb	**20-00043**
Citrobacter rodentium	F, E	colon	M, Rb	**20-00005**
Clostridium difficile Toxin A	F, E		Rb	**20-00098**
Clostridium difficile Toxin B	F, E		Rb	**20-00101**
Clostridium perfringens alpha toxin	F, E		Ch	**20-00107**
Clostridium perfringens enterotoxin	F, E		Ch	**20-00340**
Clostridium piliforme (Tyzzer's disease)	F, E		M, R, Rb	**20-00007**
Corynebacterium bovis	F, E, PS		M, R	**20-00096**
Corynebacterium kutscheri	F, E, DOS		M, R, Ha	**20-00042**
Corynebacterium spp. (HAC2)	F, E		M	**20-00332**
Cryptosporidium muris	F, E		M	**20-00474**
Cryptosporidium parvum/tyzzeri	F, E		M	**20-00475**
Cryptosporidium spp.	F, E		M, R, Gp, Ha, Rb, Ch	**20-00350**
D				
Demodex musculi	PS, E, F		M, R	**20-00318**
Dermatophytes (Microsporum sp., Trichophyton sp.)	PS, E, F		M, R, Gp, Ha, Rb, Ch	**20-00314**
E				
Ectromelia virus (ECTRO)	F, E	skin lesion	M	**20-00004**
Eimeria spp.	F, E		M, R, Rb, Ch	**20-00409**
Encephalitozoon cuniculi	F	kidney	M, R, Gp, Ha, Rb	**20-00051**
Entamoeba muris	F, E		M, R, Ha	**20-00142**
F				
Filobacterium rodentium	F, E, DOS	trachea	M, R, Ha	**20-00006**
Fur mites (Myocoptes, Myobia, Radfordia)	PS, E, F		M, R, Ch	**20-00124**

Test Name	Screening Sample Type	Diagnostic Sample Type	Species	Test Code
G				
Giardia muris	F, E		M, R, Ha, Ch	**20-00090**
Giardia spp.	F, E		Rb	**20-00354**
Guinea pig adenovirus (GPAV)	F, E, DOS	lung	Gp	**20-00013**
Guinea pig cytomegalovirus (GPCMV)	F	spleen, salivary gland	Gp	**20-00015**
H				
Hamster parvovirus (HaPV)	F	MLN	Ha	**20-00012**
Hamster poylomavirus (HaPyV)	F, E	lesioned organs	Ha	**20-00186**
Hantaan virus (HANT)	F, E	kidney	M, R, Gp, Ha	**20-00011**
Helicobacter bilis	F, E		M, R, Gp, Ha	**21-00001**
Helicobacter ganmani	F, E		M, R	**21-00001**
Helicobacter hepaticus	F, E		M, R, Gp, Ha	**21-00001**
Helicobacter mastomyrinus	F, E		M, R	**21-00001**
Helicobacter rodentium	F, E		M, R	**21-00001**
Helicobacter spp.	F, E		M, R, Gp, Ha, Rb	**21-00001**
Helicobacter typhlonius	F, E		M, R	**21-00001**
Hymenolepis diminuta	F, E		M, R	**20-00169**
K				
K virus (Mouse pneumotropic virus)	F, E	MLN	M	**20-00016**
Kilham's rat virus (KRV)	F, E	MLN	R	**20-00017**
Klebsiella oxytoca	F, E		M, R	**20-00041**
Klebsiella pneumoniae	F, E		M, R	**20-00040**
L				
Lactate dehydrogenase-elevating virus (LDEV)	S, F, E	spleen	M	**20-00020**
Lawsonia intracellularis	F, E		M, R, Gp, Ha, Rb	**20-00082**
Leptospira spp.	F, E		M, R	**20-00455**
Lymphocytic choriomeningitis virus (LCMV)	F, E		M, R	**20-00018**
M				
Minute virus of mice (MVM)	F, E	MLN	M	**20-00025**
Mouse adenovirus 1 (MAV1)	F, E	MLN	M, R	**20-00402**
Mouse adenovirus 2 (MAV2)	F, E	intestine	M, R	**20-00404**
Mouse cytomegalovirus (MCMV)	F, E	spleen, salivary gland	M	**20-00021**
Mouse hepatitis virus (MHV)	F, E	MLN	M	**20-00086**
Mouse kidney parvorvirus (MKPV)	F	kidney	M	**20-00388**

Sample Type Legend
DOS =Dry oral swab, E = Environmental sample, F = Feces, PS = Pelt swab

Species Legend
M = Mouse, R = Rat, Gp = Guinea Pig, Ha = Hamster, Rb = Rabbit, Ch = Chinchilla

Rodent & Rabbit Individual PCR Assays

Test Name	Screening Sample Type	Diagnostic Sample Type	Species	Test Code
Mousse parvovirus (MPV1-5)	F, E	MLN, spleen	M	**20-00001**
Mouse rotavirus (EDIM)	F, E		M	**20-00008**
Mouse thymic virus (MTV)	F, E, DOS	salivary gland	M	**20-00024**
Murine astrovirus 1 (MuAstV1)	F, E		M	**20-00170**
Murine norovirus (MNV)	F, E		M	**20-00023**
Murine polyomavirus (MPyV)	F, E	skin	M	**20-00026**
Mycoplasma pulmonis	F, E, DOS		M, R	**20-00095**
Myocoptes musculinus	PS, E, F		M, R, Ch	**20-00124**
Myxomatosis (MYXO)	F		Rb	**Call**
O				
Ornithonyssus spp.	PS, E, F		M, R	**20-00307**
P				
Parvoviruses mouse (MPV1-5, MVM)	F, E	MLN, spleen	M	**21-00002**
Parvoviruses rat (RPV, RMV, KRV, H-1)	F, E	MLN, spleen	Rat	**21-00003**
Pasteurella multocida	F, E, DOS		R, Gp, Ha, Rb, Ch	**20-00172**
Pinworms (Aspiculuris tetraptera, Syphacia muris, Syphacia obvelata)	F, E		M, R, Ch	**20-00115**
Pneumocystis spp.	F, E, DOS	lung	M, R	**20-00345**
Pneumonia virus of mice (PVM)	F, E, DOS	lung	M, R	**20-00027**
Proteus mirabilis	F, E		M, R, Gp, Ha, Rb	**20-00369**
Pseudomonas aeruginsa	F, E		M, R, Ch	**20-00371**
R				
Rat coronavirus/Sialodacryoadenitis virus (RCV/SDAV)	F, E, DOS	harderian gland	Rat	**20-00029**
Rat cytomegalovirus (RCMV)	F, E, DOS		Rat	**20-00028**
Rat minute virus (RMV)	F, E		Rat	**20-00031**
Rat parvovirus (RPV)	F, E		Rat	**20-00032**
Rat polyomavirus 2 (RPyV2)	F, E, DOS		Rat	**20-00315**
Rat rotavirus (IDIR)	F, E		Rat	**20-00184**
Rat theilovirus (RTV)	F, E	intestine	Rat	**20-00037**
Reovirus type 3 (REO3)	F, E	intestine	M, R, Gp, Ha	**20-00030**
Rodentibacter heylii	F, E, DOS		M, R, Gp, Ha, Rb, Ch	**20-00171**
Rodentibacter pneumotropicus	F, E, DOS		M, R, Gp, Ha, Rb, Ch	**20-00171**
Rodentolepis nana	F, E		M, R, Ch	**20-00163**

Test Name	Screening Sample Type	Diagnostic Sample Type	Species	Test Code
S				
Salmonella spp.	F, E		M, R, Gp, Ha, Rb, Ch	**20-00033**
Segmented filamentous bacterium (SFB)	F, E		M	**20-00144**
Sendai virus (SEND)	F, E, DOS	lung	M, R, Gp, Ha	**20-00014**
Seoul virus (SEOV)	F, E	kidney	M, R	**20-00495**
Severe acute respiratory syndrome coronavirus 2 (SARS-CoV 2)	F, E		M	**20-00417**
Sin nombre virus (SNV)	F, E	kidney	M	**20-00394**
Spironucleus muris	F, E		M, R, Ha	**20-00092**
Staphylococcus aureus	F, E, DOS, PS		M, R, Ch	**20-00034**
Staphylococcus xylosus	F, E, DOS, PS		M, R	**20-00378**
Streptobacillus moniliformis	F, E, DOS		M, R, Gp	**20-00035**
Streptococcus agalactiae (ß-hemolytic group B)	F, E, DOS		M, R, Gp, Ha, Ch	**20-00410**
Streptococcus canis (ß-hemolytic group G)	F, E, DOS		M, R, Gp, Ha, Ch	**20-00489**
Streptococcus equi subsp. zooepidemicus (ß-hemolytic group C)	F, E, DOS		M, R, Gp, Ha, Ch	**20-00457**
Streptococcus pneumoniae	F, E, DOS		M, R, Gp, Ha, Ch	**20-00134**
Streptococcus pyogenes (ß-hemolytic group A)	F, E, DOS		M, R, Gp, Ha, Ch	**20-00493**
Syphacia muris (Pinworms)	F, E		M, R, Ch	**20-00115**
Syphacia obvelata (Pinworms)	F, E		M, R, Ch	**20-00115**
T				
Theiler's murine encephalomyelitis virus (TMEV)	F, E		M	**20-00038**
Toolan's H-1 virus (H-1)	F, E	MLN, spleen	R	**20-00010**
Treponema paraluiscuniculi	Genital swab, F, E		Rb	**20-00461**
Tritrichomonas muris	F, E		M, R	**20-00154**
Y				
Yersinia enterocolitica	F, E		Ch	**20-00165**
Yersinia pseudotuberculosis	F, E		Ch	**20-00136**

We offer additional PCR tests not listed. Please contact the Client Support Services team if you do not see a specific test listed.

Sample Type Legend
DOS =Dry oral swab, E = Environmental sample, F = Feces, PS = Pelt swab

Species Legend
M = Mouse, R = Rat, Gp = Guinea Pig, Ha = Hamster, Rb = Rabbit, Ch = Chinchilla

Rodent & Rabbit Individual PCR Assays

Additional Sample Information

Feces (F) Collection (for PCR Testing)

- Sample Collection: Fecal pellets for PCR evaluation should be collected with clean gloves or sterile forceps and placed in individually labeled sterile tubes. If testing individual mice/rats, submit fecal pellets from each animal. Two to three pellets per animal are adequate.
- Pooling Information: If multiple animals of the same microbiologic unit are being evaluated, up to 10 fecal pellets can be pooled and tested as one sample. If collecting fecal pellets from multiple animals, gloves should be changed, and forceps replaced between animals to prevent cross-contamination. Alternatively, forceps can be wiped clean and immersed in diluted bleach (10%) solution for 10 minutes prior to reuse.
- Sample Handling & Storage: Fecal samples are stable and can be held at room temperature if packaged the same day for shipping or stored in the refrigerator until ready to send. For long-term storage, samples can be frozen.
- Sample Shipment: Place labeled sample tubes in a padded mailer or box and ship overnight to our laboratory. Samples can be shipped at ambient temperature or on ice packs.

Pelt swab (PS) Collection (for PCR Testing)

- Sample Collection: Using a sterile, dry flocked swab (such as Puritan model #25-3406-U), thoroughly swab the fur against the direction of the hair coat of the animal. It is important to swab around the face, back, tail base, and belly for the best results. Insert the swab halfway into a labeled sterile tube, close the tube lid against the swab shaft, and pull down on the swab shaft to break the shaft. The tip end will fall into the tube, and the tube can be capped.
- Pooling Instruction: If multiple animals of the same microbiologic status are being evaluated, up to 10 pelt swabs can be pooled and tested as one sample.
- Sample Handling & Storage: Pelt swab samples are stable and can be held at room temperature if packaged the same day for shipping or stored in the refrigerator until ready to send. For long-term storage, samples can be frozen.
- Sample Shipment: Place labeled sample tubes in a padded mailer or box and ship overnight to our laboratory. Samples can be shipped at ambient temperature or on ice packs.

Dry Oral Swab (DOS) Collection (for PCR Testing)

- Sample Collection: Using a sterile, dry flocked swab (such as Puritan model #25-3316-U), restrain the mouse/rat with one hand so that the head is not able to move from side to side. Insert the oral swab starting at the corner of the mouth to encourage the animal to open its mouth. Slowly twirl the swab to collect the sample. Insert the swab halfway into a labeled sterile tube, close the tube lid against the swab shaft, and pull down on the swab shaft to break the shaft. The tip end will fall into the tube, and the tube can be capped.
- Sample Handling & Storage: Oral swab samples are stable and can be held at room temperature if packaged the same day for shipping or stored in the refrigerator until ready to send. For long-term storage, samples can be frozen.
- Sample Shipment: Place labeled sample tubes in a padded mailer or box and ship overnight to our laboratory. Samples can be shipped at ambient temperature or on ice packs.

Rodent & Rabbit Individual PCR Assays

Additional Sample Information

Environmental Monitoring Sample (E) Collection (for PCR Testing)
In an effort to decrease the use of sentinel animals and increase the diagnostic sensitivity of monitoring rodent colonies for infectious agents, centralized whole rack level monitoring is being used as an adjunct to or a replacement for the use of soiled bedding sentinels. IDEXX BioAnalytics has a full suite of diagnostic real-time PCR assays based on the proprietary IDEXX BioAnalytics platform to provide testing for all of your environmental samples.

Sample Types & Collection:

- REPLACETM and other exhaust air debris collection filters, membranes, or matrices measuring up to 6 cm x 9.5 cm can be placed lengthwise in a 50 ml conical tube. For matrices suspended in the exhaust air stream, the upward facing side of the matrix should face the center of the collection tube. For thin filters placed perpendicular to the air stream, the side of the filter facing the airflow should face the center of the collection tube.

- A sample of exhaust air dust may be collected and placed directly in a 2 ml microcentrifuge tube for testing.

- Swabs of plenums, prefilters, dust, or other surfaces can be placed in a 2 ml microcentrifuge tube and the swab head either snapped or cut so that only the swab head is in the tube. Collect as much debris/dust as the swab will hold from the dirtiest portion of the surfaces being swabbed.

- Cage Swab: Using a sterile, dry flocked swab, thoroughly swab the inside perimeter at the level of the bedding of the empty, soiled cage. Up to 10 cages can be swabbed using the same swab. Insert the swab halfway into a labeled sterile tube, close the tube lid against the swab shaft, and pull down on the swab shaft to break the shaft. The tip end will fall into the tube and the tube can be capped.

- Sample Handling & Storage: Environmental samples are stable and can be held at room temperature if packaged the same day for shipping or stored in the refrigerator until ready to send. For long-term storage, samples can be frozen.

- Sample Shipment: Place labeled sample tubes in a padded mailer or box and ship overnight to our laboratory. Samples can be shipped at ambient temperature or on ice packs.

Live Animal Submission

Experienced staff backed by world-class experts in health monitoring. IDEXX BioAnalytics provides a series of species-specific health monitoring and diagnostic necropsy profiles as part of a comprehensive program designed to identify microbial infections. Results turnaround is 5 business days after receipt of samples, not including the addition of histology service add-ons.

Terminal Health Monitoring Standard profiles include complete necropsy with serology and parasitology. Additional histopathology, microbiology, and PCR testing are available.

We offer Necropsy and Histopathology Services to rodents, rabbits, aquatic and other species. Please contact CSS for more information.

Microbiology Services

Expect today's fastest and most accurate identification of microbes, with MALDI-TOF mass spectrometry (MS)

- Faster turnaround time
- Extensive and still-expanding database of agents
- Expanded offerings for bacterial and fungal agents

The identification and analysis of microorganisms have long been an integral part of IDEXX BioAnalytics' comprehensive diagnostic services offering. Using MALDI-TOF MS, we deliver faster and more accurate identification.

General

Test name			
Individual Aerobic Culture for 1 Species			
Individual Anaerobic Culture for 1 Species			
Aerobic Culture and ID-Bacteria Only			
Aerobic Culture and ID-Fungi Only			
Aerobic Culture and ID-Bacteria and Fungi			
Anaerobic Culture and ID-Bacteria Only			
Aerobic and Anaerobic Culture, ID-Bacteria Only			
Aerobic and Anaerobic Culture, ID-Bacteria and Fungi			
ID of Bacterial isolate in pure culture by MALDI-TOF			
ID of Fungal isolate in pure culture by MALDI-TOF			
Antibiotic Sensitivity			

Water (drinking water, aquatic animal water, floodwater)

Test name		
Individual Aerobic Culture for 1 Species		
Individual Anaerobic Culture for 1 Species		
Aerobic Culture and ID-Bacteria Only		
Aerobic Culture, ID and Colony Count by Species-Bacteria Only		
Aerobic Culture, ID and Colony Count by Species-Total Coliforms		
Aerobic Culture and ID-Bacteria and Fungi		
Aerobic Culture, ID and Colony Counts-Bacteria and Fungi		
Aerobic Culture, ID and Colony Count by Species-Bacteria and Fungi		
Aerobic and Anaerobic Culture, ID and Colony Count by Species-Bacteria and Fungi		

Microbiology Services

Environmental

Test name			
Individual Aerobic Culture for 1 Species			
Individual Anaerobic Culture for 1 Species			
RODAC plate count			
RODAC plate count with ID of Bacterial			
Aerobic Culture and ID-Bacteria Only			
Anaerobic Culture and ID-Bacteria Only			
Aerobic Culture and ID-Bacteria and Fungi			
Aerobic and Anaerobic Culture, ID-Bacteria Only			
Aerobic and Anaerobic Culture, ID-Bacteria and Fungi			

Additional Sample Information

Oral Swab Collection (for Microbiology Testing)

- Sample Collection: Obtain a small wire shaft culture swab with Aimies gel transport medium without charcoal (e.g. Becton Dickenson BBL CultureSwab Plus with Amies Gel medium without charcoal for aerobic organisms. BBL cat. # 220118; Fisher Scientific cat. # L4320118). Manually restrain the animal and swab the oral cavity. Pooling culture swabs or feces for Microbiology is not recommended. Pooling of these sample types may dilute samples below the level of detection.

- Sample Handling & Storage: Please always keep sample refrigerated and only for a limited time before shipment.

- Sample Shipment: Securely place the swab in the transport medium. Send the culture swabs in transport medium by overnight courier in an insulated container on ice packs, making sure that there is insulation (e.g. bubble pack) between the ice packs and the culture swabs so the swabs do not freeze.

Anaerobic and Fastidious Bacterial Swab (for Microbiology Testing)

- Sample Collection: Obtain a culture swab designed for the collection and transport of anaerobic and fastidious organisms (e.g Becton Dickenson BBL ESwab Collection Kit. BBL cat.# 220245; Fisher Scientific cat.#22-349-700). Collect the specimen with the swab. Aseptically unscrew and remove the cap from the transport tube. Insert the swab into the transport tube and break the swab shaft at the indicated breakpoint. Replace the cap and screw the cap on tightly.

- Sample Handling & Storage: Please always keep sample refrigerated and only for a limited time before shipment.

- Sample Shipment: Send the culture swabs by overnight courier in an insulated container on ice packs, making sure that there is insulation (e.g. bubble pack) between the ice packs and the culture swabs so the swabs do not freeze.

Feces Collection (for Microbiology Testing)

- Sample Collection: Fecal pellets should be collected aseptically and placed in individually labeled sterile tubes. If testing individual animals, submit fecal pellets from each animal. Two to three pellets per animal is adequate. If collecting fecal pellets from multiple animals, gloves should be changed, and forceps replaced between animals to prevent cross-contamination. Alternatively, forceps can be wiped clean and immersed in diluted bleach (10%) solution for 10 minutes prior to reuse.

- Sample Handling: Fecal samples should be stored in the refrigerator until ready to send.

- Sample Shipment: Send the tubes by overnight courier in an insulated container on ice packs, making sure that there is insulation (e.g. bubble pack) between the ice packs and the culture swabs so the feces do not freeze.

Diagnostic Pathology Services

Your source for accurate and timely reports on diagnostic investigations involving intervention and disease management. Our team of experienced comparative pathologists is knowledgeable in normative biology and diseases of a wide variety of research models, giving us a base of information from which to evaluate the cause(s) of clinical disease as well as unexpected research results. For submissions that qualify for diagnostic-only analysis include non study-related moribund animal tissue processing/ evaluation and biopsies.

A diagnostic pathology report will be available within 10 working days from receipt of specimen. Providing a complete history including but not limited to: clinical signs, clinical diagnosis, strain/model, and experimental manipulations will expedite reporting. Turnaround times may be delayed if a complete history is not provided.

Test name	Test codes
Diagnostic Pathology – Rodent Species Mouse, rat, gerbil, hamster, other (smaller than guinea pig)	**86-00065**
Pathology Evaluation of Digital Slides – Rodent Species Mouse, rat, gerbil, hamster, other (smaller than guinea pig)	**86-00070**
Whole Carcass Necropsy – Fresh, fixed or unfixed carcass Mouse, rat, guinea pig, rabbit, and other limited species. Please call for more details	**86-00074**
Diagnostic Pathology – NHP African Green Monkey, Baboon, Cynomolgus Macaque, Marmoset, Non-Human Primate, Rhesus Macaque, Squirrel Monkey	**86-00082**
Pathology Evaluation of Digital Slides – NHP African Green Monkey, Baboon, Cynomolgus Macaque, Marmoset, Non-Human Primate, Rhesus Macaque, Squirrel Monkey	**86-00072**
Biopsy with Microscopic Description – 1 site Any (including non NHP-species)	**86-00084**
Biopsy with Microscopic Description – 2 sites Any (including non NHP-species)	**86-00085**
Bone Marrow Histopathology Evaluation – 1 site In-life collection of bone marrow (core) biopsies from non-human primates, dogs, cats, ruminants, horses in colonies or on-study that have clinicopathologic evidence of hematologic pathology or hematotoxicity. Submission of contemporaneous CBC and bone marrow cytology recommended)	**86-00094**
Diagnostic Pathology – Medium/Large Species Guinea pig, rabbit, ferret, chinchilla, porcine, ovine, equine, canine, bovine, caprine or other species	**86-00089**
Diagnostic Pathology – Avian/Reptile Species Bird, other	**86-00091**

*We do not accept non-human primate carcasses for dissection

Test name	Test codes
Zebrafish Pathology	**86-00022**
Small Fish Pathology Fish (non zebrafish), medaka (0-6cm)	**86-00048**
Medium Fish Pathology Bettas, cavefish, goldfish, killifish (7-13cm)	**86-00049**
Large Fish Pathology Carp, large goldfish, other (over 13cm)	**86-00061**
Diagnostic Pathology – Aquatic Species Xenopus, frog, axolotl, other (includes newts, salamanders)	**86-00087**

Additional Sample Information

Consult with us to help determine the best collection and shipping protocol.

- Sample Collection: Place tissues in formalin for at least 24 hours before shipment. Tissue to formalin ratio should be 1 to 20 for proper fixation. Tissues such as lung, brain, bone marrow and spinal cord have specialized collection protocols.
- Sample Handling & Storage: Make sure tissues are not tightly packed in jars or cassettes. Smaller tissues can be placed in a cassette or submitted attached to surrounding organs. Label cassettes with a pencil. Even indelible ink will fade during processing. To preserve sample integrity and prevent leakage samples should be triple-bagged with each layer tied, knotted or secured individually. Ship in rigid container in an upright position with bubble wrap.
- Sample Shipment: Tissues can be shipped in 70% alcohol or formalin. Store fixed samples at room temperature.

Altered Schaedler Flora Bacteria Detection

Test name	Specimen requirements	Turnaround time	Test Code
Altered Schaedler Flora Profile • Clostridium sp. ASF 356 / ASF 502 • Lactobacillus intestinalis ASF 360 • Lactobacillus murinus ASF 361 • Mucispirillum schaedleri ASF 457 • Eubacterium plexicaudatum ASF 492 • Pseudoflavorifactor sp. ASF 500 • Parabacteroides goldsteinii ASF 519	2-3 fecal pellets per animal	13-15 days	**21-00149**

Additional Sample Information

Feces (F) Collection (for PCR Testing)

- Sample Collection: Fecal pellets for PCR evaluation should be collected with clean gloves or sterile forceps and placed in individually labeled sterile tubes. If testing individual mice/rats, submit fecal pellets from each animal. Two to three pellets per animal are adequate.

- Pooling Information: If multiple animals of the same microbiologic status are being evaluated, up to 10 fecal pellets can be pooled and tested as one sample. If collecting fecal pellets from multiple animals, gloves should be changed, and forceps replaced between animals to prevent cross-contamination. Alternatively, forceps can be wiped clean and immersed in diluted bleach (10%) solution for 10 minutes prior to reuse.

- Sample Handling & Storage: Fecal samples are stable and can be held at room temperature if packaged the same day for shipping or stored in the refrigerator until ready to send. For long-term storage, samples can be frozen.

- Sample Shipment: Place labeled sample tubes in a padded mailer or box and ship overnight to our laboratory. Samples can be shipped at ambient temperature or on ice packs.

Germ-Free Animal Monitoring

Easy one-sample submission. Customized germ-free profiles are also available

Service includes:

- Generic bacterial 16S rDNA PCR assay paired with sterility testing with anaerobic culture
- Detects both non-cultivable and cultivable bacteria
- Detects fungi
- Provides IDs for bacteria found by MALDI-TOF MS

Test name	Specimen requirements	Turnaround time	Test Code
Germ-Free Complete Profile	2-3 fecal pellets per animal	13-15 days	**24-00243**

Additional Sample Information

Feces (F) Collection

- Sample Collection: Fecal pellets should be collected aseptically and placed in individually labeled sterile tubes. If testing individual mice/rats, submit fecal pellets from each animal. Two to three pellets per animal is adequate. If collecting fecal pellets from multiple animals, gloves should be changed and forceps replaced between animals to prevent cross-contamination. Alternatively, forceps can be wiped clean and immersed in diluted bleach (10%) solution for 10 minutes prior to reuse.

- Sample Handling: Fecal samples should be stored in the refrigerator until ready to send.

- Sample Shipment: Place labeled sample tubes in a polystyrene box and ship overnight to our laboratory. Samples should be shipped on ice packs.

Microbiome Analysis

Reduce research variables by gaining a deeper insight into your animal's Microbiome with state-of-the-art analysis and data comparison.

Service includes:

- DNA isolation–from all bacteria in the sample
- Deep sequencing–generates 200–500 megabases of sequence
- Data comparison and analysis–our bioinformatics produces a comparative analysis to known bacterial sequences
- Bacterial Identification–identifies all bacteria present and their relative abundance

Test name	Specimen requirements	Turnaround time	Test Code
Microbiome Analysis	2 fresh fecal pellets	4 weeks	**25-00193**

Additional Sample Information

Mouse/Rat Fecal Sample Collection

- Sample Collection: Use sterile toothpicks, autoclaved microisolator cages (completely empty), sterile 5 mL tubes. Pre-label tube (one per mouse/rat) with Sample ID (minimum) and treatment group, if applicable; any other metadata you would like associated with the sample. Place individual animal in empty autoclaved cage (no bedding). Allow mouse/rat to defecate normally and collect the first two fecal pellets per animal into an empty 5 mL tube using a sterile toothpick. Close tube securely. Discard toothpick after each animal. **Place tube containing fecal pellets in -80°C freezer IMMEDIATELY.**

- Sample Storage: Maintain samples at -80°C until ready to ship. Samples may remain at -80°C for extended periods.

- Sample Shipment: Ship samples overnight with sufficient dry ice (minimum of 5kg for 2-3-day transport time) to ensure the samples stay frozen

Note: We recommend collection of all samples at the same time of day, preferably in the morning, as the microbiome content varies over the course of the day.

Analysis is also available for other species including non-human primate, dog, cat, pig, zebrafish, etc. Please contact for more details.

Results available via cloud service.

Aquatics Health Monitoring

IDEXX BioAnalytics, as a recognized leader and industry expert for aquatic diagnostics, has developed a comprehensive array of diagnostic products and services expressly for research zebrafish and other aquatic species.

Zebrafish PCR Panels

	Preferred Sample Type(s)	Mycobacterium	Essential	Comprehensive	FELASA/AALAS Quarterly	FELASA/AALAS Annual
Turnaround time		3 days	3 days	3 days	3 days	3 days
Test code		**80-00022**	**80-00004**	**80-00005**	**80-00222**	**80-00223**
Mycobacterium abscessus	E, WF	•	•	•	•	•
Mycobacterium chelonae	E, WF	•	•	•	•	•
Mycobacterium fortuitum	E, WF	•	•	•	•	•
Mycobacterium haemophilum	E, WF	•	•	•	•	•
Mycobacterium marinum	E, WF	•	•	•	•	•
Mycobacterium peregrinum	E, WF	•	•	•	•	•
Mycobacterium saopaulense	E, WF	•	•	•	•	•
Mycobacterium gordonae	E, WF	•	•	•	•	•
Edwardsiella ictaluri	E, WF		•	•		•
Pseudocapillaria tomentosa	E, WF		•	•	•	•
Pseudoloma neurophilia	WF		•	•	•	•
Flavobacterium columnare	E, WF			•		•
Ichthyophthirius multifiliis	WF			•		•
Infectious spleen and kidney necrosis virus (ISKNV)	WF			•		•
Piscinoodinium pillulare	WF			•		•
Pleistophora hyphessobryconis	WF			•		•
Myxidium streisingeri	E, WF		•	•		•
Zebrafish picornavirus (ZfPV1)	F, WF		•	•		•
Red spotted grouper nervous necrosis virus (RGNNV)	WF			•		•
Saprolegnia brachydanis	WF			•		
Aeromonas hydrophila	E, WF			•		

Zebrafish Microbiology Panel

	Preferred Sample Type(s)	Zebrafish Microbiology
Turnaround time		10-14 days
Test code		**80-00097**
Aeromonas dhakensis	AS, E, T, WF	•
Aeromonas hydrophilia	AS, E, T, WF	•
Edwardsiella ictaluri	AS, T, WF	•
Flavobacterium columnare	SS, T, WF	•
Plesiomonas shigelloides	AS, E, T, WF	•
Pseudomonas aeruginosa	AS, E, T, WF	•
Pseudomonas fluorescens	AS, E, T, WF	•
Saprolegnia spp.	E, SS, T, WF	•

Additional fish species (Medaka, Killifish and more) can bet tested. For more information please contact CSS

Sample Type Legend
AS = Aseptic swab or aseptic stab, E = Environmental sample (biofilm, sediment, detritus), F = Feces, SS = Skin swab, T = Tissue, WF = Whole fish

Aquatics Health Monitoring

Axolotl PCR Panels

	Preferred Sample Type(s)	Essential	Comprehensive
Turnaround time		3 days	3 days
Test code		**80-00098**	**80-00099**
Batrachochytrium dendrobatidis	E, SS	•	•
Mycobacterium chelonae	E, T	•	•
Mycobacterium marinum	E, T	•	•
Ranavirus spp.	E, T	•	•
Salmonella spp.	F	•	•
Batrachochytrium salamandrivorans	E, SS		•
Chilomastix spp.	F		•
Flavobacterium columnare	E, SS		•
Piscinoodinium pillulare	SS		•

Axolotl Microbiology Panel

	Preferred Sample Type(s)	Axolotl Microbiology
Turnaround time		10-14 days
Test code		**80-00117**
Aeromonas dhakensis	F, AS, SS, T, E	•
Aeromonas hydrophilia	F, AS, SS, T, E	•
Flavobacterium columnare	SS, T, E	•
Pseudomonas aeruginosa	F, E	•
Salmonella enterica	F	•
Saprolegnia spp.	F, SS, T, E	•
Serratia marcescens	F, AS, T, E	•

Xenopus PCR Panel

	Preferred Sample Type(s)	Essential	Comprehensive
Turnaround time		3 days	3 days
Test code		**80-00114**	**80-00115**
Batrachochytrium dendrobatidis	VSS	•	•
Mycobacterium chelonae	E, K, L, LS	•	•
Mycobacterium gordonae	E, K, L, LS	•	•
Mycobacterium marinum	E, K, L, LS	•	•
Mycobacterium ulcerans/liflandii	E, K, L, LS	•	•
Pseudocapillaroides xenopi	DSS		•
Ranavirus spp.	F, T		•
Cryptosporidium spp.	F		•
Pseudomonas aeruginosa	F. LS		•
Salmonella spp.	F		•

Xenopus Microbiology Panel

	Preferred Sample Type(s)	Xenopus Microbiology
Turnaround time		10-14 days
Test code		**80-00016**
Aeromonas dhakensis	F, AS, SS, T, E	•
Aeromonas hydrophilia	F, AS, SS, T, E	•
Elisabethkingia meningoseptica	F, AS, SS, T, E	•
Pseudomonas aeruginosa	F, AS, SS, T, E	•
Salmonella enterica	F	•
Saprolegnia spp.	F, SS, T, E	•

Sample Type Legend
AS = Aseptic swab or aseptic stab, DSS = Dorsal skin swab, E = Environmental sample, F = Feces, K = Kidney, L = Liver, LS = Lesion swab, SS = Skin swab, T = Tissue, VSS = Ventral skin swab

Aquatics Health Monitoring

Diagnostic Pathology Services

Service includes:

- Histologic slide preparation
- H&E and Acid-Fast stains
- Pathologist's evaluation and report

Test name	Preferred sample type(s)	Turnaround time	Test Code
Zebrafish Pathology	Fish in 10% buffered formalin	10 days	**86-00022**
Small Fish Pathology Fish (non zebrafish), medaka (0-6cm)	Fish in 10% buffered formalin	10 days	**86-00048**
Medium Fish Pathology Bettas, cavefish, goldfish, killifish (7-13cm)	Fish or tissue in 10% buffered formalin	10 days	**86-00049**
Large Fish Pathology Carp, large goldfish, other (over 13cm)	Fish or tissue in 10% buffered formalin	10 days	**86-00061**
Diagnostic Pathology – Aquatic Species Xenopus, frog, axolotl, other (includes newts, salamanders)	Tissue in 10% buffered formalin	10 days	**86-00087**

We offer Necropsy and Histopathology Services to rodents, rabbits, aquatic and other species. Please contact CSS for more information.

Agents that cause damage to Aquatic Systems

Bryozoans can become a nuisance in water pipes and holding tanks. They are prolific growers in the right conditions. Excessive growth can potentially cause pipe or filter blockages that may pose a risk to aquariums and research.

Test name	Preferred sample type(s)	Turnaround time	Test Code
Plumatellidae	E	3 days	**80-00224**

Sample Type Legend
E = Environmental sample

Aquatics Individual PCR Assays

Test Name	Preferred sample type(s)	Species	Test Code
A			
Aeromonas hydrophila	E, WF	Axolotl, xenopus, zebrafish	**80-00020**
B			
Batrachochytrium dendrobatidis	E, SS, VSS	Axolotl, xenopus	**80-00083**
Batrachochytrium salamandrivorans	E, SS	Axolotl	**80-00087**
C			
Chilomastix spp.	F	Axolotl	**80-00177**
Cryptosporidium spp.	F	Xenopus	**80-00057**
E			
Edwardsiella ictaluri	E, WF	Zebrafish	**80-00011**
F			
Flavobacterium columnare	E, SS, WF	Axolotl, zebrafish,	**80-00033**
I			
Ichthyophthirius multifiliis	WF	Zebrafish	**80-00014**
Infectious spleen and kidney necrosis virus (ISKNV)	WF	Zebrafish	**80-00015**
M			
Mycobacterium abscessus	E, WF	Zebrafish	**80-00017**
Mycobacterium chelonae	E, K, L , LS, T, WF	Axolotl, xenopus, zebrafish	**80-00006**
Mycobacterium fortuitum	E, WF	Zebrafish	**80-00037**
Mycobacterium gordonae	E, K, L , LS, WF	Xenoups, zebrafish	**80-00175**
Mycobacterium haemophilum	E, WF	Zebrafish	**80-00038**
Mycobacterium marinum	E, K, L , LS, T, WF	Axolotl, xenopus, zebrafish	**80-00008**
Mycobacterium peregrinum	E, WF	Zebrafish	**80-00019**
Mycobacterium saopaulense	E, WF	Zebrafish	**80-00089**
Mycobacterium ulcerans/liflandii	E, K, L, LS	Xenopus	**80-00225**
Mycobacterium xenopi		Xenopus	coming soon
Myxidium streisingeri	E, WF	Zebrafish	**80-00091**
P			
Piscinoodinium pillulare	SS, WF	Axolotl, zebrafish,	**80-00012**
Pleistophora hyphessobryconis	WF	Zebrafish	**80-00013**
Plumatellidae	E		**80-00224**
Pseudocapillaria tomentosa	E, WF	Zebrafish	**80-00010**
Pseudocapillaroides xenopi	DSS	Xenopus	**80-00158**
Pseudoloma neurophilia	WF	Zebrafish	**80-00044**

Test Name	Preferred sample type(s)	Species	Test Code
R			
Ranavirus spp.	F, T	Axolotl, xenopus	**80-00092**
Red spotted grouper nervous necrosis virus (RGNNV)	WF	Zebrafish	**80-00226**
S			
Salmonella spp.	F	Axolotl, xenopus	**80-00111**
Saprolegnia brachydanis	WF	Zebrafish	**80-00212**
Z			
Zebrafish picornavirus (ZfPV1)	F, WF	Zebrafish	**80-00167**

We offer additional PCR tests not listed. Please contact the Client Support Services team if you do not see a specific test listed.

Sample Type Legend
DSS = Dorsal skin swab, E = Environmental sample, F = Feces, K = Kidney, L = Liver, LS = Lesion swab, SS = Skin swab, T = tissue, VSS = Ventral skin swab, WF = Whole fish

Aquatics Health Monitoring

Additional Sample Information

Zebrafish and other laboratory fish

- For submission of live fish for necropsy: Please ship live fish in clearly labeled heavy-duty plastic bladders or in doubled plastic bags, secured so that they will not leak and containing approximately 1/3 system water and 2/3 air. Fish should be shipped in insulated containers by overnight courier.
- For submission of fish for PCR only: Please submit frozen fish in conical tube(s) with sufficient ice packs to ensure that fish remain frozen during transit. Dry ice is not required. You can pool up to 5 adult fish in the same tube to be tested as one sample. We do not recommend pooling fish of different health statuses or across different systems, like quarantine and a main system for example.
- For submission of fish embryos or larvae for PCR: Please euthanize embryos and submit 2 mL frozen on ice packs. Dry ice is not required.
- For submission of fish for histopathology only: Please either submit fish fixed in 10% buffered formalin or another formalin-based fixative such as Dietrich's, Davidson's, or Bouin's fixative (please indicate). To ensure proper fixation, open up the coelom (abdomen). This can be accomplished by making a lengthwise incision through the body wall or by removing a small piece of the body wall. Fish cannot be pooled for histopathology. Samples may be shipped at ambient temperature by overnight courier.
- For submission of fish for both histopathology and PCR, please submit separate fish for each service per above recommendations.

Environmental samples and feeds

- For submission of detritus (biofilm or sediment) for PCR: Please collect 2 mL of detritus into a tube and submit with cold packs. Dry ice is not required. Collection of detritus is recommended over environmental swabs.
- For submission of fish feces for PCR: Please collect a pool of fish feces into a microcentrifuge tube and submit frozen with cold packs. Dry ice is not required.
- For submission of live feed cultures for PCR: Please submit at least 1 mL of live feed cultures (e.g. Artemia, Rotifer, or Paramecium) frozen with cold packs. Dry ice is not required.

Samples for bacterial or fungal culture

- For submission of culture swabs: Please submit culture swabs collected from skin, gills, or lesioned organs in a culturette containing a suitable transport medium, such as Amies Medium. Swabs should be shipped with cold packs in an insulated container by overnight courier. Please make sure to provide adequate insulation (e.g. bubble wrap, toweling, etc.) between ice packs and samples to prevent freezing.
- For identification of bacterial and fungal cultures by MALDI-TOF mass spectrometry: Please submit pure cultures on agar plates wrapped in ParafilmTM. Swabs and plates should be shipped with cold packs making sure to provide adequate insulation (e.g. bubble wrap, toweling, etc.) between ice packs and samples to prevent freezing, in an insulated container by overnight courier.
- For culture of water samples: Please submit 50 mL of water in a plastic container with a tight-fitting lid that will not leak in transit. Water samples should be shipped with cold packs in an insulated container by overnight courier.

Non-Human Primates Diagnostics

The IDEXX BioAnalytics NHP portfolio provides you with deeper insight that can be helpful in determining the most effective course of treatment as well as helping to identify possible sources of infection, with a comprehensive array of PCR, microbiology and parasitology panels to meet your NHP diagnostic needs.

Enteric NHP PCR Panels

	Preferred Sample Type(s)	Helicobacter	Basic	Comprehensive
Turnaround time		3 days	3 days	3 days
Test code		**82-00019**	**82-00181**	**82-00184**
Helicobacter spp., H.cinaedi/canicola, H.macacae, H.pylori, H.suis	F	•	•	•
Campylobacter coli	F		•	•
Campylobacter jejuni	F		•	•
Salmonella spp.	F		•	•
Shigella spp.	F		•	•
Yersinia enterocolitica	F		•	•
Yersinia pseudotuberculosis	F		•	•
Clostridium difficile toxin A	F			•
Clostridium difficile toxin B	F			•
Clostridium perfringens alpha toxin	F			•
Clostridium perfringens enterotoxin	F			•
Clostridium piliforme	F			•
Cryptosporidium spp.	F			•
Entamoeba histolytica/nuttalli	F			•
Giardia spp.	F			•
Lawsonia intrecellularis	F			•

Enteric NHP Microbiology Panels

	Preferred Sample Type(s)	Primary	Basic	Comprehensive
Turnaround time		5 days	5 days	5 days
Test code		**82-00315**	**82-00316**	**82-00136**
Campylobacter coli	F	•	•	•
Campylobacter jejuni	F	•	•	•
Salmonella spp.	F	•	•	•
Shigella spp.	F	•	•	•
Yersinia enterocolitica	F	•	•	•
Yersinia pseudotuberculosis	F	•	•	•
Aeromonas hydrophilia	F		•	•
Edwardsiella tarda	F		•	•
Plesiomonas shigelloides	F		•	•
Arcobacter butzleri	F			•
Clostridium perfringens	F			•
Clostridium difficile	F			•
Antibiotic senstivity testing†	F	•	•	•

† if positives detected

Parasitology Panels

Test name	Preferred sample type(s)	Turnaround time	Test Code
Fecal Ova and Parasite	SAF	5 days	**82-00317**
Fecal Ova and Parasite with Giardia spp. PCR	FF, SAF	5 days	**82-00336**

Sample Type Legend
F = Feces, FF = Fresh feces, SAF = Sodium acetate-acetic acid formalin fixative

NHP Individual PCR Assays

Test Name	Turnaround time	Test Code
C		
Campylobacter coli	3 days	**82-00008**
Campylobacter jejuni	3 days	**82-00009**
Clostridium difficile toxin A	3 days	**82-00143**
Clostridium difficile toxin B	3 days	**82-00146**
Clostridium perfringens alpha toxin	3 days	**82-00149**
Clostridium perfringens enterotoxin	3 days	**82-00152**
Clostridium piliforme	3 days	**82-00155**
Cryptosporidium spp.	3 days	**82-00158**
E		
Entamoeba histolytica/nuttalli	3 days	**82-00013**
G		
Giardia spp.	3 days	**82-00014**
H		
Helicobacter spp.	3 days	**82-00019**
H.cinaedi/canicola	3 days	**82-00019**
H.macacae	3 days	**82-00019**
H.pylori	3 days	**82-00019**
H.suis	3 days	**82-00019**
K		
Klebsiella oxytoca	3 days	**82-00359**
Klebsiella pneumoniae	3 days	**82-00366**
Klebsiella string test		**82-00475**
L		
Lawsonia intrecellularis	3 days	**82-00165**
S		
Salmonella spp.	3 days	**82-00004**
Shigella spp.	3 days	**82-00170**
Y		
Yersinia enterocolitica	3 days	**82-00173**
Yersinia pseudotuberculosis	3 days	**82-00176**

We offer additional PCR tests not listed. Please contact the Client Support Services team if you do not see a specific test listed.

Non-Human Primates Diagnostics

Diagnostic Histopathology

Test name	Test codes
Diagnostic Pathology – NHP African Green Monkey, Baboon, Cynomolgus Macaque, Marmoset, Non-Human Primate, Rhesus Macaque, Squirrel Monkey	**86-00082**
Pathology Evaluation of Digital Slides – NHP African Green Monkey, Baboon, Cynomolgus Macaque, Marmoset, Non-Human Primate, Rhesus Macaque, Squirrel Monkey	**86-00072**
Biopsy with Microscopic Description – 1 site Any (including non NHP-species)	**86-00084**
Biopsy with Microscopic Description – 2 sites Any (including non NHP-species)	**86-00085**
Bone Marrow Histopathology Evaluation – 1 site In-life collection of bone marrow (core) biopsies from non-human primates, dogs, cats, ruminants, horses in colonies or on-study that have clinicopathologic evidence of hematologic pathology or hematotoxicity. Submission of contemporaneous CBC and bone marrow cytology recommended)	**86-00094**

We offer Necropsy and Histopathology Services to rodents, rabbits, aquatic and other species. Please contact CSS for more information.

Non-Human Primates Diagnostics

Additional Sample Information

Sample Collection – PCR

- Sample Collection: 1 g or 1 mL of feces (approximate size of a marble); Fecal samples for PCR evaluation should be placed in individually labeled sterile polypropylene conical tubes. Alternatively, a Puritan fecal culture swab with liquid Cary-Blair media can be submitted. (Sample collection materials available from IDEXX BioAnalytics.)

- Sample Storage: Fecal samples are stable and can be held at room temperature if packaged the same day for shipping or stored in the refrigerator until ready to ship. For long-term storage, samples should be frozen.

- Sample Shipment: Place labeled sample tubes in insulated shipping box and ship overnight to our laboratory. Samples should be shipped on ice packs. Please include the submission paperwork inside the shipping box.

Sample Collection – Microbiology

- Sample collection: 1 g or 1 mL of feces (approximate size of a marble) or fecal culture swab; Fecal samples for Microbiology should be obtained using a Puritan fecal culture swab with liquid Cary-Blair media (available from IDEXX BioAnalytics). Collect fecal material on the swab and securely place the swab in the transport medium. Alternatively, fresh fecal samples in a conical tube may be submitted for culture.

- Sample Shipment: Please send culture swabs or feces by overnight courier in an insulated container on ice packs, making sure to provide adequate insulation (e.g. bubble wrap, toweling, etc.) between ice packs and samples to prevent freezing. Please include the submission paperwork inside the shipping box.

Sample Collection – PCR and Microbiology Combined Submission

- If submitting a sample for both PCR and microbiology services, follow the directions above for microbiology samples

Sample Collection – Parasitology

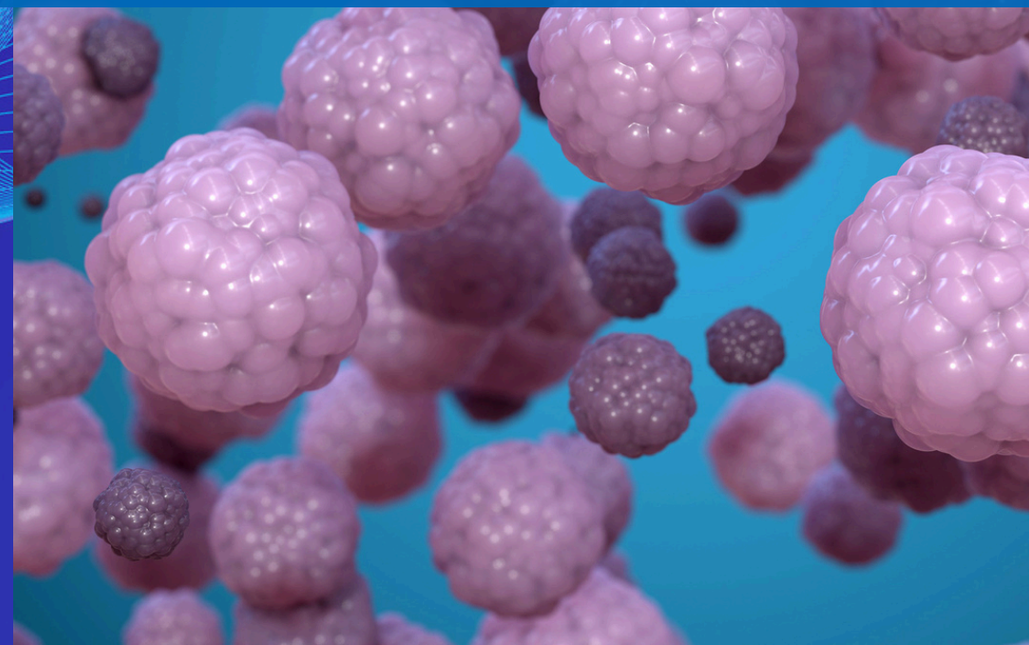
- Sample Collection: Feces for Ova & Parasite: (3–5 g or 3–5 mL of fecal material in SAF) A 5:1 ratio of fixative to feces in the SAF vial is recommended.

- Sample Shipment: Submit an additional, separate sample (e.g. one labeled for fecal PCR or Microbiology and one labeled for Parasitology). The sample for parasitology must be submitted in SAF vial. If submitting sample for Microbiology and Ova & Parasite, the SAF vial(s) must be packed in separate box.

Sample Collection - Histopathology

- We accept formalin fixed tissues

Biologics & Cell Health



Fast and accurate testing for all cell health applications

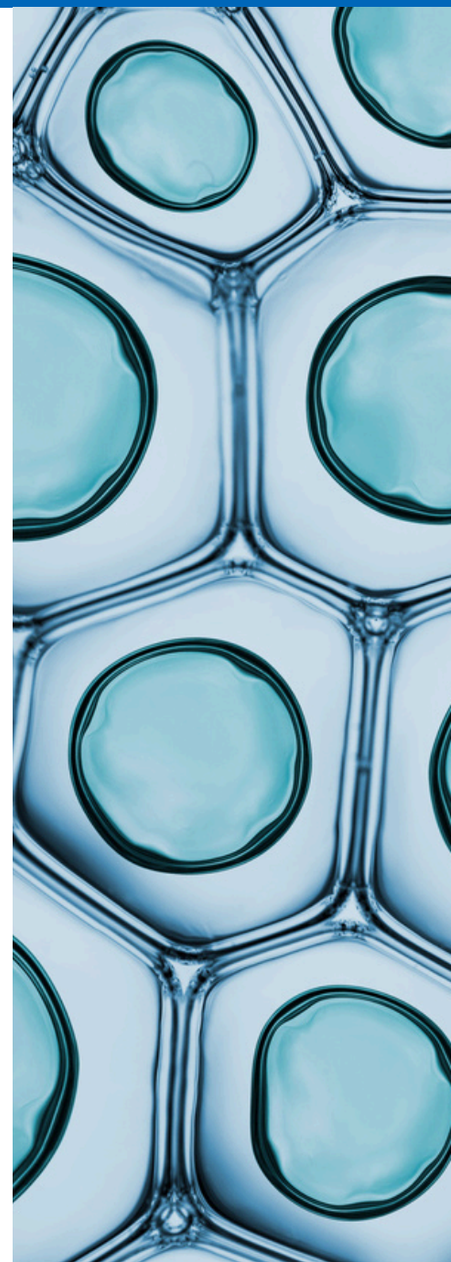
We know **Stem Cells**
Human pluripotent stem cells are essential for creating advanced models for drug screening, disease modeling and development of cell therapies. However, manipulation causes stress, and users should carefully monitor cells for genetic anomalies, track cell line identity, and screen for potential contaminants.

We know **Tumor Research**
Understanding tumor behavior and analysis of regression based on therapeutic intervention is paramount for therapy pipeline progression. Researchers need to characterize all aspects of their model systems to be confident in study conclusions.

We know **Mammalian Cell Culture**
Whether you are using classic immortalized lines, custom-made knockouts or knock-ins, or feeding a screening core, mammalian cells are the backbone of modern research – and IDEXX is the ideal partner to ensure your cells deliver accurate results.

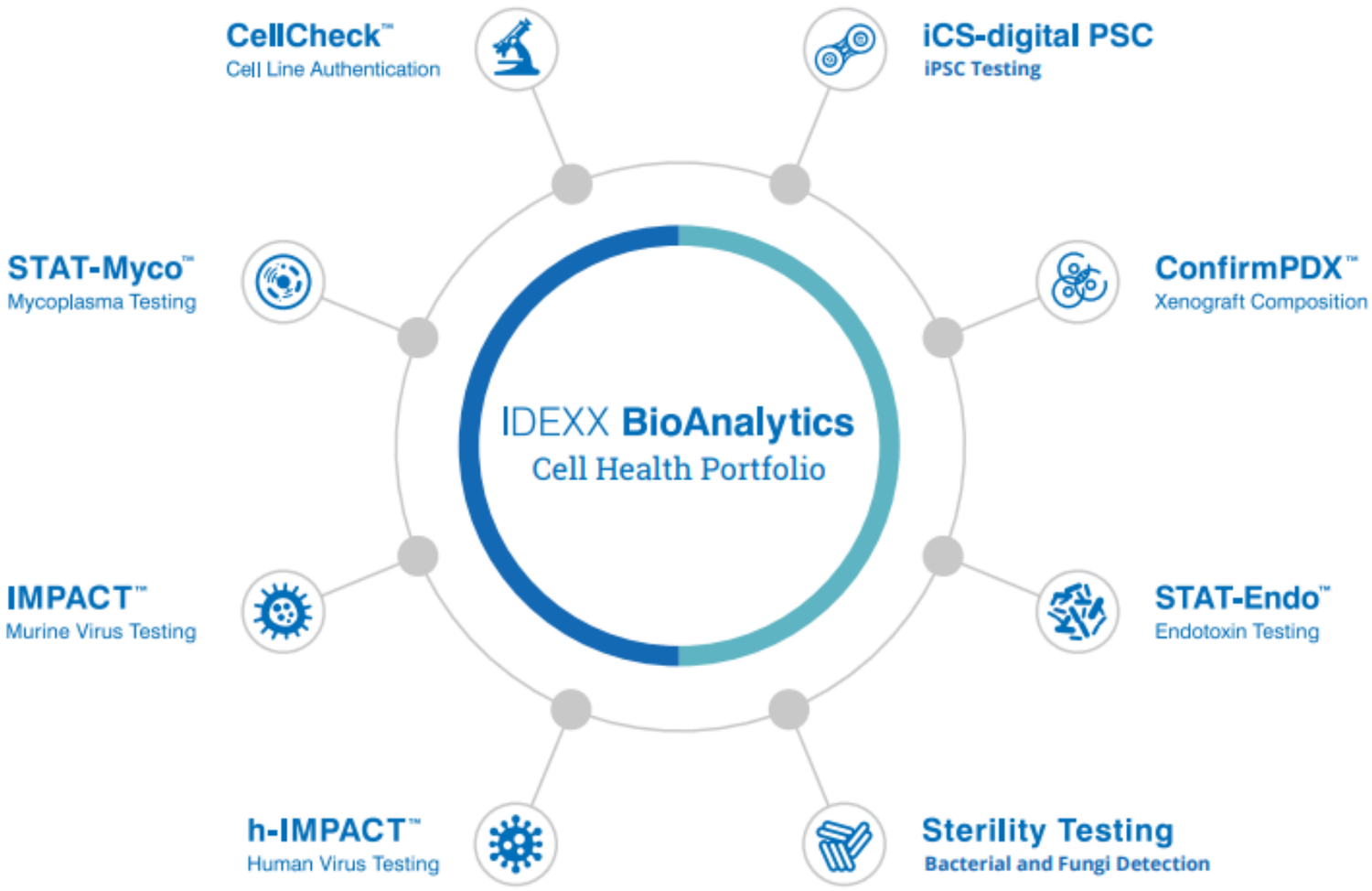
We know **Bioproduction**
Biological expression systems are essential for creating the next generation monoclonal antibody or peptide-based therapeutics. At any research-level scale, IDEXX can help you monitor your bioproduction systems for unwanted contaminants.

We know **Organoids**
Organoids, 3D culture, and organ-on-chip have rapidly become popular models for discovery, drug screening and toxicology work. Organoids are complex cellular models and IDEXX is ready to help with the advanced monitoring needed to deliver breakthrough data.



We’re on the journey with you

When it comes to third-party validation, nobody does it better than IDEXX BioAnalytics. We have the portfolio to take care of all your valuable research.



Biologics and Cell Health

2025 Directory of Tests and Services

Rodent Pathogen Testing

- IMPACT™ Panels
- Individual PCR Assays

Cell Line Authentication

- CellCheck™ Human Panels
- CellCheck™ Rodent Panels
- CellCheck™ Canine Panels
- Interspecies Contamination

Sterility Testing

- Aerobic Bacteria and Fungi
- Aerobic & Anaerobic Bacteria and Fungi

Human Pathogen Testing

- h-IMPACT™ Panels
- Individual PCR Assays

ConfirmPDX

Endotoxin Testing

- STAT-Endo™ LAL Testing

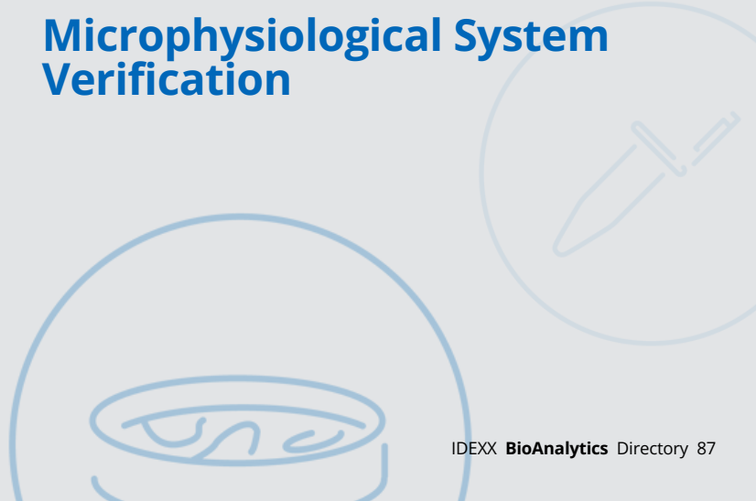
Mycoplasma Detection

- STAT-Myco™ Testing

Stem Cell Genomic Stability

- iCS-digital™ PSC Testing

Microphysiological System Verification



Rodent Pathogen Testing

IMPACT™ cell lines and biological testing for murine pathogens offers molecular diagnostic (PCR) assays to aid in the detection of viral agents and Mycoplasma in biologic specimens. Many types of biological material can be infected with murine or human pathogens that can pose a risk of disease outbreaks in animal facilities. Contaminated specimens can also introduce unwanted research variables.

IMPACT™ Mouse Profiles

Test name	IMPACT™ 1	IMPACT™ 2	IMPACT™ 3	IMPACT™ 4	IMPACT™ SC	IMPACT™ FEALSA
Turnaround time	3 days	3 days	3 days	3 days	3 days	3 days
Test code	**41-00021**	**41-00031**	**41-00041**	**41-00051**	**41-00108**	**41-00185**
Mycoplasma pulmonis (MPUL)	•	•	•	•	•	•
Mycoplasma spp. (MYCO)	•	•	•	•	•	•
Mouse hepatitis virus (MHV)	•	•	•	•	•	•
Minute virus of mice (MVM)	•	•	•	•	•	•
Mouse parvovirus (MPV1-5)	•	•	•	•	•	•
Theiler's murine encephalomyelitis virus (TMEV)	•	•	•	•	•	•
Sendai virus (SEND)	•	•	•	•		•
Pneumonia virus of mice (PVM)	•	•	•	•		•
Murine norovirus (MNV)	•	•	•			•
Reovirus 3 (REO3)	•	•	•			•
Mouse rotavirus (EDIM)	•	•	•			•
Ectromelia virus (ECTRO)	•	•	•			•
Lymphocytic choriomeningitis virus (LCMV)	•	•	•			•
Mouse polyomavirus (MPyV)	•	•	•			
Lactate dehydrogenase-elevating virus (LDEV)	•	•	•			
Mouse adenovirus (MAV1)	•	•				•
Mouse adenovirus (MAV2)	•	•				•
Mouse cytomegalovirus (MCMV)	•	•				
K virus (K)	•					
Mouse thymic virus (MTV)	•					
Hantaan virus (HANT)	•					
Corynebacterium bovis	•					•
Corynebacterium spp. (HAC2)	•					•
Mouse kidney parvovirus (MKPV)	•					

IMPACT™ Rat Profiles

Test name	IMPACT™ 5	IMPACT™ 6	IMPACT™ FEALSA
Turnaround time	3 days	3 days	3 days
Test code	**41-00060**	**41-00070**	**41-00186**
Mycoplasma pulmonis (MPUL)	•	•	•
Mycoplasma spp. (MYCO)	•	•	•
Pneumonia virus of mice (PVM)	•	•	•
Kilham's rat virus (KRV)	•	•	•
Toolan's H-1 virus (H-1)	•	•	•
Rat parvorvirus (RPV)	•	•	•
Rat minute virus (RMV)	•	•	•
Lymphocytic choriomeningitis virus (LCMV)	•	•	
Rat cytomegalovirus (RCMV)	•	•	
Sendai virus (SEND)	•	•	•
Rat coronavirus/Sialodacryoadenitis virus (RCV(SDAV)	•	•	•
Seoul virus (SEOV)	•		•
Mouse adenovirus (MAV1)	•		•
Mouse adenovirus (MAV2)	•		•
Reovirus 3 (REO3)	•		•
Rat theilovirus (RTV)	•		•
Corynebacterium bovis	•		•
Corynebacterium spp. (HAC2)	•		•

Rodent Pathogen Testing

IMPACT™ Hamster Profile

Test name	IMPACT™ 7
Turnaround time	3 days
Test code	**41-00079**
Mycoplasma pulmonis (MPUL)	•
Mycoplasma spp. (MYCO)	•
Pneumonia virus of mice (PVM)	•
Kilham's rat virus (KRV)	•
Toolan's H-1 virus (H-1)	•
Hamster parvovirus (HaPV)	•
Minute virus of mice (MVM)	•
Lymphocytic choriomeningitis virus (LCMV)	•
Theiler's murine encephalomyelitis virus (TMEV)	•
Sendai virus (SEND)	•
Reovirus 3 (REO3)	•
Hantaan virus (HANT)	•

IMPACT™ (Mouse / Rat) Comprehensive Profile

Test name	IMPACT™ 8
Turnaround time	3 days
Test code	**41-00090**
Mycoplasma pulmonis (MPUL)	•
Mycoplasma spp. (MYCO)	•
Sendai virus (SEND)	•
Pneumonia virus of mice (PVM)	•
Mouse hepatitis virus (MHV)	•
Minute virus of mice (MVM)	•
Mouse parvovirus (MPV1-5)	•
Murine norovirus (MNV)	•
Reovirus 3 (REO3)	•
Mouse rotavirus (EDIM)	•
Ectromelia virus (ECTRO)	•
Lymphocytic choriomeningitis virus (LCMV)	•
Mouse polyomavirus (MPyV)	•
K virus (K)	•
Mouse adenovirus (MAV1)	•
Mouse adenovirus (MAV2)	•
Mouse cytomegalovirus (MCMV)	•
Lactate dehydrogenase-elevating virus (LDEV)	•
Mouse thymic virus (MTV)	•
Hantaan virus (HANT)	•
Kilham's rat virus (KRV)	•
Toolan's H-1 virus (H-1)	•
Rat parvorvirus (RPV)	•
Rat minute virus (RMV)	•
Rat cytomegalovirus (RCMV)	•
Rat coronavirus/Sialodacryoadenitis virus (RCV(SDAV)	•
Rat theilovirus (RTV)	•
Seoul virus (SEOV)	•
Theiler's murine encephalomyelitis virus (TMEV)	•
Corynebacterium bovis	•
Mouse kidney parvovirus (MKPV)	•

Human Pathogen Testing

Contamination of cell lines and tumors with human pathogens poses significant health risks to personnel and can introduce unwanted variables to your research. Although human viruses have a low incidence rate in laboratory materials, they can be pernicious in their ability to infect and destroy the growth and performance of cell lines, obliterating data integrity.

The presence of biological materials in a laboratory presents a significant health risk to laboratory workers, putting the company at risk of health violations, monetary fines, or even criminal lawsuits.

Bottom line: the threat to human health is simply not worth the risk.

h-IMPACT™ Profiles

Test name	h-IMPACT™ 1	h-IMPACT™ 2	h-IMPACT™ 3	h-IMPACT™ Oncogenic	h-IMPACT™ Comprehensive
Turnaround time	3 days	3 days	3 days	3 days	3 days
Test code	**41-00095**	**41-00095**	**41-00010**	**41-00196**	**41-00159**
Mycoplasma spp. (MYCO)	•	•	•	•	•
Human immunodeficiency virus 1 (HIV1)	•	•	•		•
Human immunodeficiency virus 2 (HIV2)	•	•	•		•
Human T-lymphotropic virus 1 (HTLV1)	•	•		•	•
Human T-lymphotropic virus 2 (HTLV2)	•	•			•
Hepatitis virus A (HepA)	•	•	•		•
Hepatitis virus B (HepB)	•	•	•	•	•
Hepatitis virus C (HepC)	•	•	•	•	•
Hantaan virus (HANT)	•		•		•
Seoul virus (SEOV)	•		•		•
Sin nombre virus (SNV)	•		•		•
Corynebacterium bovis	•				•
Corynebacterium spp. (HAC2)	•				•
Herpes simplex 1 (HSV1)	•				•
Herpes simplex 2 (HSV2)	•				•
Human cytomegalovirus (HCMV)	•				•
Human herpes virus 6 (HHV6)	•				•
Human herpes virus 8 (HHV8)	•			•	•
Human adenovirus (HAdV)	•				•
Human papillomavirus 16 (HPV16)	•			•	•
Human papillomavirus 18 (HPV18)	•			•	•

continued	h-IMPACT™ 1	h-IMPACT™ 2	h-IMPACT™ 3	h-IMPACT™ Oncogenic	h-IMPACT™ Comprehensive
Lymphocytic choriomeningitis virus (LCMV)	•				•
Varicella virus (VZV)	•				•
Epstein-Barr virus (EBV)	•			•	•
Treponemapallidum (Syphilis)	•				•
Adeno-associated virus (AAV)				•	•
BK polyomavirus (BKPyV)				•	•
Human betaherpesvirus 7 (HHV-7)					•
Human foamy virus (HFV)					•
JC polyomavirus (JCPyV)				•	•
Merkel cell polyomavirus (MCPyV)				•	•
B19 parvovirus (B19)				•	•
SV40 polyomavirus (SV40)				•	•

Mycoplasma Detection

STAT-Myco™ is a highly sensitive real-time PCR assay that can detect over 100 different Mycoplasma species. Testing for this contaminant ensures the quality of your biological materials, preventing erroneous data obtained from in *in vitro* and *in vivo* studies. It can detect as few as 1–10 copies.

Test name	Specimen requirements	Turnaround time	Test Code
STAT-Myco™	1x10^6 cells/cryovial; 0.5 mL liquid sample	3 days	**40-00239**

Individual PCR Assays

Test name	Turnaround time	Test Code
A		
Adeno-associated virus (AAV)	3 days	**40-00276**
B		
B19 parvovirus (B19)	3 days	**40-00274**
BK polyomavirus (BKPyV)	3 days	**40-00279**
C		
Corynebacterium bovis	3 days	**40-00115**
Corynebacterium spp. (HAC2)	3 days	**40-00242**
E		
Ectromelia virus (ECTRO)	3 days	**40-00176**
Epstein-Barr virus (EBV)	3 days	**40-00197**
H		
Hamster parvovirus (HaPV)	3 days	**40-00216**
Hantaan virus (HANT)	3 days	**40-00005**
Helicobacter spp.	3 days	**40-00229**
Hepatitis virus A (HepA)	3 days	**40-00265**
Hepatitis virus B (HepB)	3 days	**40-00199**
Hepatitis virus C (HepC)	3 days	**40-00200**
Human adenovirus (HAdV)	3 days	**40-00238**
Human betaherpesvirus 7 (HHV-7)	3 days	**40-00280**
Human cytomegalovirus (HCMV)	3 days	**40-00203**
Human foamy virus (HFV)	3 days	**40-00281**
Human herpes simplex 1 (HSV1)	3 days	**40-00201**
Human herpes simplex 2 (HSV2)	3 days	**40-00089**
Human herpes virus 6 (HHV6)	3 days	**40-00030**
Human herpes virus 8 (HHV8)	3 days	**40-00031**
Human immunodeficiency virus 1 (HIV1)	3 days	**40-00139**
Human immunodeficiency virus 2 (HIV2)	3 days	**40-00086**
Human papillomavirus 16 (HPV16)	3 days	**40-00137**
Human papillomavirus 18 (HPV18)	3 days	**40-00087**
Human T-lymphotropic virus 1 (HTLV1)	3 days	**40-00090**
Human T-lymphotropic virus 2 (HTLV2)	3 days	**40-00138**
J		
JC polyomavirus (JCPyV)	3 days	**40-00275**
K		
K virus (K)	3 days	**40-00091**
Kilham's rat virus (KRV)	3 days	**40-00218**

Individual PCR Assays

Test name	Turnaround time	Test Code
L		
Lactate dehydrogenase-elevating virus (LDEV)	3 days	**40-00214**
Lymphocytic choriomeningitis virus (LCMV)	3 days	**40-00093**
M		
Merkel cell polyomavirus (MCPyV)	3 days	**40-00278**
Minute virus of mice (MVM	3 days	**40-00184**
Mouse adenovirus 1 (MAV1)	3 days	**40-00052**
Mouse adenovirus 2 (MAV2)	3 days	**40-00135**
Mouse cytomegalovirus (MCMV)	3 days	**40-00212**
Mouse hepatitis virus (MHV)	3 days	**40-00209**
Mouse kidney parvovirus (MKPV)	3 days	**40-00261**
Mouse parvovirus (MPV1-5)	3 days	**40-00183**
Mouse polyomavirus (MPyV)	3 days	**40-00018**
Mouse rotavirus (EDIM/MRV)	3 days	**40-00190**
Mouse thymic virus (MTV)	3 days	**40-00215**
Murine astrovirus1 (MuAstV1)	3 days	**40-00206**
Murine norovirus (MNV)	3 days	**40-00095**
Mycoplasma pulmonis (MPUL)	3 days	**40-00231**
Mycoplasma spp. (MYCO)	3 days	**40-00239**
P		
Pneumonia virus of mice (PVM)	3 days	**40-00221**
R		
Rat coronavirus/Sialodacryoadenitis virus (RCV(SDAV)	3 days	**40-00210**
Rat cytomegalovirus (RCMV)	3 days	**40-00213**
Rat minute virus (RMV)	3 days	**40-00219**
Rat parvovirus (RPV)	3 days	**40-00220**
Rat theilovirus (RTV)	3 days	**40-00222**
Reovirus type 3 (REO3)	3 days	**40-00223**
S		
Sendai virus (SEND)	3 days	**40-00225**
Seoul virus (SEOV)	3 days	**40-00310**
Severe acute respiratory syndrome coronavirus 2 (SARS-CoV2)	3 days	**40-00266**
Sin nombre virus (SNV)	3 days	**40-00308**
SV40 polyomavirus (SV40)	3 days	**40-00277**
T		
Theiler's murine encephalomyelitis virus (TMEV)	3 days	**40-00226**
Toolan's H-1 virus (H-1)	3 days	**40-00217**
Treponema pallidum (Syphilis)	3 days	**40-00141**
V		
Varicella virus (ZVZ)	3 days	**40-00103**

Additional Sample Information

- Collection of material should be performed aseptically to prevent contamination of samples.
- To submit cells, cell culture or a liquid sample: Submit one cryovial containing approximately 1x10^6 cells/vial of each biological or cultured cell sample. If limited amounts of samples are available or require evaluation, call for more information. Cells may be in the form of a pellet or in growth media, freeze media or phosphate buffered saline (PBS). For liquid samples, submit one cryovial of each sample with 0.5 mL of sample/vial.
- To submit tissue/solid tumor samples: Submit a 1.5 mL snap top or screw top tube of each sample with a minimum of 30 mg of tissue (2–3mm size fragment or larger).
- To submit antibody samples: Submit 0.5 mL antibody for testing. If optimal sample volume is not available, we recommend submission of at least the amount of antibody that will be injected into a single animal.
- Sample shipping: Ship samples by overnight courier with sufficient ice packs or dry ice so that samples remain frozen during shipment.

We offer additional PCR tests not listed. Please contact the Client Support Services team if you do not see a specific test listed.

Cell Line Authentication

CellCheck™ is much more than just an STR profile. It's a comprehensive cell line authentication service that utilizes STR-based DNA profiling and PCR to detect Both contamination and misidentification of your cell lines.

We will also provide data analysis and interpretation, along with a comparative analysis which can be run against a reference profile or in comparison to your own parental cells. We will even help you to develop a contamination recovery plan, if necessary. Cell line misidentification and contamination can put the integrity of your data at risk and can cause unnecessary use of animals.

All CellCheck™ services include:

- Interspecies contamination check for human, mouse, rat, African green monkey, and Chinese hamster
- Comparative analysis, if published profile available
- Data interpretation
- Expert consultation

CellCheck™ Human Profiles

Test name	Specimen requirements	Turnaround time	Test Code
CellCheck™ 9 Human Human 9 species specific STR marker profile	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00095**
CellCheck™ 9 Human PLUS incl. Mycoplasma spp. testing	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00096**
CellCheck™ 16 Human Establishes genetic profile using 16 human STR markers	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00097**
CellCheck™ 16 Human PLUS incl. Mycoplasma spp. testing	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00098**

We recommend a 16 STR marker CellCheck™ when a new human cell line is established or, in any case, at the beginning of the experiment.

CellCheck™ Rodent and Canine Profiles

Test name	Specimen requirements	Turnaround time	Test Code
CellCheck™ 19 Mouse Establishes genetic profile with 19 species specific STR markers Exceeding the published NIST 18 marker set for a higher power of discrimination.	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00108**
CellCheck™ 19 Mouse PLUS incl. Mycoplasma spp. testing	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00109**
CellCheck™ Rat Establishes genetic profile using 31 species specific STR markers	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00101**
CellCheck™ Rat PLUS incl. Mycoplasma spp. testing	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00102**
CellCheck™ Canine Establishes genetic profile using 14 species specific STR markers	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00068**
CellCheck™ Canine PLUS incl. Mycoplasma spp. testing	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00071**

Cell Line Authentication

Interspecies Contamination Testing

Test name	Specimen requirements	Turnaround time	Test Code
Interspecies Contamination Only Recommended as a standalone for African green monkey and Chinese hamster	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00056**
Interspecies Contamination Only PLUS incl. Mycoplasma spp. testing	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00086**
Interspecies Contamination Only, Add-on Species Canine, porcine and laboratory rabbit	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00111**
CO1 DNA Barcoding Confirms the cell line species of origin. Utilizes the sequence data for approximately 660 base pair region of the mitochondrial cytochrome C oxidase subunit 1 (CO1) gene. Compiles with American National Standards Institute (ANSI) guidelines for species identification of animal cell lines.	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00088**

ConfirmPDX

Precise quantification of tumor composition

As patient-derived xenograft (PDX), cell line-derived xenograft (CDX), and transplantable tumor models play strong roles in preclinical cancer research, identifying how much of a sample is of human origin vs. mouse can be key to revealing treatment-related results and choosing tumor fragments with the highest percentage of human tissue for cryopreservation and future passage.

Test name	Specimen requirements	Turnaround time	Test Code
ConfirmPDX	1x10^6 cells/cryovial; 30 mg tissue, solid tumor; 150 ng DNA	5 days	**42-00112**

Additional Sample Information

- To submit cells: Send one cryovial (or other screw-top tube) of each sample with approximately 1x10^6 cells/vial. Cells may be in the form of a pellet or in growth media, freeze media or phosphate-buffered saline. NOTE: cells are preferred, but if DNA is high quality, it may be submitted.
- To submit tissue/solid tumor samples: Send a 1.5 mL snap top or screw top tube of each sample with a minimum of 30 mg of tissue (2–3 mm size fragment or larger).
- To submit DNA: DNA must be submitted as high quality extracted DNA (crude lysate extractions are not suitable for STR analysis). DNA needs to be submitted with a minimum of 150 ng of DNA in a minimum volume of 15 µl. Optimal 260:280nm ratio of 1.8 for DNA purity accepted. Optimal concentrations submitted are preferred at >20 ng/µl. DNA concentration must be at least 10 ng/µl. NOTE: Frozen cell cultures or tissue are preferred. Submission of cells allows extraction of the DNA in our facility for optimal DNA quality and test results. Send DNA in a tube with screw top cap if available. If a snap top tube is used, secure the top with Parafilm™ before shipping. DNA samples can be shipped at room temperature. During hot weather, ship samples overnight with an ice pack to prevent exposure to excessive heat.
- Sample shipping: Ship samples by overnight courier with sufficient ice packs or dry ice so that samples remain frozen during shipment

iCS-digital™ PSC Testing

Detect over 90% of recurrent abnormalities in hPSCs in record-breaking time.

Human Pluripotent Stem Cells (hPSCs) are prone to developing abnormalities during their time in culture. The variants that appear in 5 passages or less can rapidly become predominant, compromising your research work.identifying how much of a sample is of human origin vs. mouse can be key to revealing treatment-related results and choosing tumor fragments with the highest percentage of human tissue for cryopreservation and future passage.

Our partners, STEM GENOMICS, have developed a fast, sensitive, ddPCR-based assay that we are pleased to perform in our North American lab.

Service includes:

- DNA extraction, identification of abnormalities
- Fully interpreted result report generation

Test name	Specimen requirements	Turnaround time	Test Code
iCS-digital PSC 24 Probe Test	250 µL cells, genomic DNA (gDNA); 1 mL if combined with other services	3-5 days	**42-00117**

Additional Sample Information

- To submit cells: Send cells in culture medium at room temperature. Send cell pellets on dry ice. Ship samples by overnight courier with sufficient ice packs or dry ice that samples remain frozen during shipment.

- To submit DNA: Submit genomic DNA (gDNA) at room temperature.

Sterility Testing

Sterility testing can identify contaminants that pose a risk to human and animal health. Our cell line sterility testing determines if microbial contamination is present in cell lines media and other biological materials; moreover, due to the extraordinary sensitivity and large spectrum of detection, it can often provide additional information on the source of an infection; be it animals, people or other.

All services includes:

- Direct inoculation on a battery of eight media, incubated for a period of 10 days
- Identification of Microbial Contaminants by MALDI-TOF Mass Spectrometry

Test name	Specimen requirements	Turnaround time	Test Code
Cell Line Sterility Profile: Direct Inoculation Protocol	1–1.5 mL tissue culture media and cellular material (if present)	14 days	**43-00008**
Cell Line Sterility Profile and Anaerobic Culture	1–1.5 mL tissue culture media and cellular material (if present)	14 days	**43-00036**
Cell Line Sterility Profile and Mycoplasma spp. PCR Assay	1–1.5 mL tissue culture media and cellular material (if present)	14 days	**43-00022**

Additional Sample Information

- The optimum sample will include both tissue culture media and cellular material (if present) because some micro-organisms are intracellular or highly cell associated. Any remaining material is held at 4°°C during incubation as a backup or possible confirmatory testing.
- Submitteubmit a sample volume of 1000–1500 µL (1-1.5 mL) so that repeat testing can be performed if deemed advisable (no additional charge). The inoculum size per medium is 100 µL.
- All samples should be shipped via overnight courier, packed with adequate ice packs to maintain cool temperature and adequate insulation to prevent freezing. Ship on dry ice when cells are bank frozen.

When combining biological material testing services that include sterility, microbial, and/or genetic contamination testing:

- Please submit 2 aliquots from each sample. A single vial of approximately 1 million cells is required for the microbial and/or genetic contamination testing. A separate vial of cells (approximately 1 million cells in 1mL of media) is required for sterility testing.

Endotoxin Testing

Endotoxin testing is an essential component of your holistic approach to cell health and biological materials testing. Endotoxin is derived from bacterial cell membranes, and due to its amphipathic nature, they stick to plastics and are an all-too-common laboratory contaminant. Our chromogenic assay can deliver precise endotoxin quantification on nearly any sample type.

The IDEXX LAL assay detects bacterial endotoxin by chromogenic, Limulus Amebocyte Lysate-based method. The assay is for the in vitro quantitative determination of various biological fluids (sera, plasma), devices (PBS wash), air (filters), and tissue culture medium. The assay is intended for research use only and is not for use in diagnostic or therapeutic procedures or applications.

Test name	Specimen requirements	Turnaround time	Test Code
STAT-Endo™ (LAL)	250 µL cell culture media, plasma, serum, medical device wash, filter wash; 1 mL if combined with other services	10 days	**44-00005**
STAT-Endo™ (LAL) – Consultative cases	Any material suitable for endotoxin testing that is not listed above.	10 days	**44-00006**

Additional Sample Information

- Ship samples by overnight courier with sufficient ice packs or dry ice that samples remain frozen during shipment.

Microphysiological System Verification

An innovate service tailored to 3-D cellular models

This service harness the specialized knowledge of our histopathology team, ensuring you have the highest level of confidence in your organoid and 3-D cell culture research. Our team has perfected techniques for embedding and slide preparation, followed by a thorough review of stained slides by our pathologists, who provide the insights into cell structure and development.

This service includes slide review. Histological preparation and staining charges may also be needed and additional charges apply.

Test name	Specimen requirements	Turnaround time	Test Code
Microphysiological system verification Slide review only	Stained slides	5 days	**86-00095**

Terms & Conditions

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Retention of Specimens. Unless otherwise agreed in writing, IDEXX shall retain non-histology specimens in our storage facilities for three weeks after analytical results are reported, after which time the specimens may be destroyed. All histology materials, including slides, blocks and wet tissues, are returned with our reports.

Hazardous Materials. We may return to you unused portions of specimens found or suspected to be hazardous or to contain hazardous materials according to state or federal guidelines upon completion of the analytical work. We may invoice you for the cost of returning the specimen.

Specimen Containers. IDEXX may provide specimen containers upon request. IDEXX reserves the right to charge a fee for specimen containers.

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Terms & Conditions (continued)

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