GENERAL SUBMISSION INSTRUCTIONS

Please be sure to include all necessary paperwork with each submission to ensure our staff can easily account for each sample submitted and that the testing expectations are clearly communicated.

1. Manual submission forms can be found here:
   Submit Samples | VRL Diagnostics (www.vrlsat.com/submit-samples)
2. Online submission can be made here: Log in - VRL Metasys System (vrlapps.azurewebsites.net)

Vials must be clearly labeled with specimen IDs and must match the IDs listed on the order form.

Bags containing vials must be leak proof and placed into a sturdy box or insulated shipper to ensure the integrity of the samples. Use padding to help secure samples in place within the box.

Be sure to ship samples at their appropriate shipping conditions according to the information provided in the following pages.

Ship overnight using your favorite courier.

Samples are received Monday through Saturday (be sure to select "Saturday delivery" for this option).

Non-Human Primate (NHP) samples are shipped to:

VRL-San Antonio, USA
7540 Louis Pasteur, Suite 200
San Antonio, Texas 78229
Phone: 877-615-7275

Rodent, Rabbit, Dog, Swine, Aquatic Animals (and other small animals) samples are shipped to:

VRL-Maryland, USA
401 Professional Drive, Suite 210
Gaithersburg, MD 20879
Phone: 800-804-3586

SEROLOGY SAMPLE PREPARATION AND SHIPPING INSTRUCTIONS

Heat inactivated serum samples may be shipped at ambient temperature.
Non-heat inactivated serum samples must be shipped chilled or frozen.
Collect blood in serum separator tubes and centrifuge at 2000 rpm for 10 minutes.
Draw off serum and transfer to a clean microcentrifuge tube.

Sample Type	Collection Volume	Sample Requirements
Mouse Serum	Undiluted: 0.05 ml needed per test Diluted: 0.25 ml needed per test	Dilute 1-part serum/plasma in 4-parts sterile Phosphate Buffer Saline (PBS) Heat Inactivate @ 56°C
Rodent Serum	Undiluted: 0.025 ml needed per test 0.20 ml needed per panel Diluted: 0.05 ml needed per test 1.0 ml needed per panel	Dilute 1-part serum/plasma in 4-parts sterile Phosphate Buffer Saline (PBS) Heat Inactivate @ 56°C
Rabbit Serum	Undiluted: 0.025 ml needed per test 0.20 ml needed per panel	Do not Heat Inactivate @ 56°C
Non-Human Primate Serum	Undiluted: 0.50 ml needed for basic testing 1.0 ml needed for extensive testing	Do not Heat Inactivate @ 56°C Ship on cold/ice packs
SeraSorb™	The SeraSorb™ will absorb up 30µl of blood	SeraSorbs™ can be shipped at ambient temperature

PCR SAMPLE PREPARATION AND SHIPPING INSTRUCTIONS

Health monitoring sample types for PCR include feces, fur swabs/plucks, tissue, environmental swabs, rack exhaust filters, and whole blood.

Biological material PCR types include cultured cells, pelleted cells, or culture media.

Sample Type	Amount Needed	Shipping Requirements
Fecal Pellets (Rodent)	2 - 10 fecal pellets per sample	Ambient temperature
Fecal Scoop (NHP)	Any amount in a sterile tube	Ambient temperature
Fur Swab/Pluck (Rodent)	1 fur swab or pluck per animal (up to 5 swabs/plucks per vial if pooling)	Ambient temperature
Tissue	100-500 mg of tissue per sample (about the size of a pea)	Overnight in insulated container with dry ice
Environmental Swabs	1 swab per environmental source (up to 5 swabs per vial if pooling)	Ambient temperature
Rack Exhaust Filters	1 filter per vial – pooling is not recommended	Ambient temperature
Blood (NHP Only)	1-3 ml whole blood (EDTA tube)	Chilled on cold packs
Cultured Cells or Cell Pellet	2 vials of 1 ml each of 1 x 10^6 cells/ml in culture media or equivalent amount of pelleted cells	Overnight in insulated container with dry ice
Culture Fluid	2 vials of culture fluid – 1 ml per vial	Overnight in insulated container with dry ice

MICROBIOLOGY SAMPLE PREPARATION AND SHIPPING INSTRUCTIONS

Samples for microbiology testing should be collected as close to the time of shipping as possible.

Never freeze samples for microbiology, ship chilled (separated from the cold source) or at ambient temperature.

Sample Type	Collection Material	Shipping Requirements
Aerobic Swab	• Bacti-Swab w/ Stuart's Transport Media • Cary Blair Transport Media • Aimes Transport Media	Submerse swab into media and/or break media capsule so that the swab is wet.
Anaerobic Swab	• Cary Blair Transport Media	Submerse swab into media so that the swab is wet.
Fecal Pellets (Rodent)	Sterile vial	May add PBS to keep moist
Fecal Scoop (NHP)	Sterile vial	May add PBS to keep moist
Tissue	Sterile vial	May add PBS to keep moist
Feed/Bedding	Sterile vial	May add PBS to keep moist
Blood Bottles	BD BACTEC Peds Plus/F Culture Vials	Sterilize plunger before injecting 1ml whole blood into bottle. Ship upright at ambient temperature
Environmental	RODAC Plate, Water, Swab	• Tape RODAC plates closed • Water samples should be three 50mL conical tubes per source • See Aerobic Swab details above

NHP VIRUS ISOLATION COLLECTION

	B-Virus	
Sample Type	Collection Instructions	Special Instructions
Swab	Buccal cavity, cornea, genital area	Send with cold packs in viral transport medium (ex. Eagle's)
Biopsy	One cubic centimeter of tissue	Collect with sterile instruments. Send with cold packs in viral transport medium (ex. Eagle's)
	SRV	
Sample Type	Collection Tubes	Special Instructions
Whole Blood	• Lithium heparin (green top Vacutainer) • Sodium heparin (blue top Vacutainer) • ACD (yellow top Vacutainer)	Do not freeze! Ship on cold packs to keep refrigerated

PARASITOLOGY SAMPLE PREPARATION AND SHIPPING INSTRUCTIONS

Parasitology samples can be shipped at ambient temperature. Ensure all liquids are in a sealable, leak-proof container with a secondary bag or container to contain potential leaks.

Testing Service	Sample Type	Collection
Wet mount or fecal sedimentation for Helminth ova, Protozoal cysts & oocysts	Feces	Fecal samples may be sent fresh in a sterile vial or cup. Ideally, 1-part feces to 3-parts 10% Neutral buffered Formalin
Perianal tape test for *Syphacia* spp ova (Rodents)	Clear Cellophane Tape & Microscope slide	Firmly press tape to anus. Stick tape to microscope slide. Ship slides in slide box or slide flat.
Tape test for fur mites (Rodents)	Clear Cellophane Tape & Microscope slide	Firmly press three separate pieces of tape to neck, rump, and abdomen. Stick tape to microscope slide. Ship slides in slide box or slide flat.

CLINICAL PATHOLOGY SAMPLE COLLECTION AND SHIPPING INSTRUCTIONS

Hematology			
Collection Material	Sample Volume	Sample Preperation	Shipping Conditions
EDTA Tubes – Lavender top 2mL (large animals) or 0.5mL (rodents)	Minimum of 175µL Whole Blood	Whole blood collection – invert tubes with blood about 7 times to mix EDTA with blood.	Never freeze! Ship with cold packs but don't let tubes come in contact with ice packs.
Chemistry			
Collection Material	Sample Volume	Sample Preperation	Shipping Conditions
Serum Separator Tubes – Red top 2mL (large animals) or 0.5mL (rodents)	Large Panels = 200µL Renal Panel = 125µL Hepatic Panel = 90µL Single Tests = 40µL	Allow blood to clot at room temp for 20-30min. Centrifuge 15 min at 2500 rpm. Draw off serum into transport tube.	If shipping same day of collection, ship on cold packs. If longer than 24 hours, ship frozen on dry ice.
Coagulation			
Collection Material	Sample Volume	Sample Preperation	Shipping Conditions
Sodium Citrate Tubes – Light blue top 2mL (large animals) or 0.5mL (rodents)	Add 1 part of 3.2% sodium citrate solution to 9 parts of whole blood. Mix thoroughly.	Centrifuge 15 min at 3000 rpm. Draw off plasma into transport tube. Freeze plasma within 4 hours of collection.	Ship frozen on dry ice.
Urinalysis			
Collection Material	Sample Volume	Sample Preperation	Shipping Conditions
Sterile Vial	250µL – 1,000µL	Collect urine as sterile as possible avoiding contact with the coat.	Ship on cold packs. Don't freeze.

HISTOPATHOLOGY SAMPLE COLLECTION AND SHIPPING INSTRUCTIONS

How to Collect	Fixation	Shipping
Place excised tissues in 10% Neutral Buffered Formalin (NBF) at a ratio of 30% tissue to 70% NBF. Large tissues should be scored to allow proper fixation.	Tissues should remain in fixative a minimum of 48 hours prior to processing. Keep at room temperature.	Make sure the formalin jar lids are tight and will not pop off during shipping. Place jars in sealable plastic bags with absorbent material to contain any potential leaks. Pad the jars for protection.

ZEBRAFISH/AQUATIC ANIMAL SAMPLE COLLECTION AND SHIPPING INFORMATION

Samples for Microbiology (bacteria and/or fungal culture)		
Sample Type	Sample Preparation	Shipping Conditions
Culture Swabs w/ Transport Medium (Modified Stuart's, Aimes, etc.)	Swab affected area from animal such as gills, skin, orifices. Protect from UV light.	Overnight at ambient temperature
Water Samples	Three 50ml conical tubes. Protect from UV light.	Overnight at ambient temperature
Agar Plates for Culture Identification	Wrap agar plates in Parafilm. Protect from UV light.	Overnight at ambient temperature
Samples for PCR Analysis (Environmental & Feeds)		
Sample Type	Sample Preparation	Shipping Conditions
Environmental Swabs	1 swab per environmental source	Ambient temperature
Water + Detritus	1 Liter of tank water + 25 mL detritus (collected from bottom of tank) passed through a 0.2 µm filter (Corning Part No. 430186 or equivalent).	Send excised filter at Ambient Temperature
Live Feed	1.0ml of live feed	Ambient temperature
Whole Fish	Freeze fish & place into sterile vial	Frozen on ice pack (dry ice not required)
Zebrafish Pathology Services		
Sample Type	Sample Preparation	Shipping Conditions
Necropsy	Ship live fish in heavy duty bladders or doubled plastic bags. Bags should be 1/3 water 2/3 air	Overnight in insulated containers at ambient temperature
Histopathology	Open ventral cavity of euthanized fish. Place whole fish in 10%NBF, Davidsons, or Bouins fixative.	Overnight at ambient temperature
Histopathology & PCR	Flash freeze fish in liquid nitrogen. Flatten fish in foil wrap. Label foil.	Overnight on dry ice

Zebrafish Necropsy will include an external exam of the fish for malformities and lesions. The gills, heart, liver, kidney, intestines, swim bladder, gonads, and brain will be examined for lesions and parasites. Samples may be taken for bacterial cultures and/or PCR testing of infectious agents. Fish may be placed in 10% formalin, Davidson's fixative, or Bouins if histopathology is required.

Zebrafish Histopathology routine services include whole fish processing, embedding, and slide production. Slides will be stained with H&E stain and include all major organs of the fish including the surrounding connective tissue. An acid-fast stain may be requested if a bacterial infection is suspected. A pathologist evaluation of each fish will be presented in a report format. Annotated microphotographs are available at an additional cost.

INSTRUCTIONS FOR SUBMISSION OF SAMPLES FOR NECROPSY PANEL TESTING (IF ANIMAL NOT SENT LIVE)

1. Euthanize the animal(s) according to your facility's IACUC guidelines.
2. Draw whole blood and spin down in a centrifuge tube to separate and then collect the serum. Alternatively, a SeraSorb™ micro-sampling device can be used as a dried whole blood collection method for serological testing. The blood draw can be taken prior to euthanasia, or immediately afterward.
   NOTE: If serology work is being requested, the blood draw MUST be taken either prior to euthanasia, or immediately afterward. If the euthanized animal is sent without blood being drawn immediately, the blood will be coagulated and therefore useless for serology by the time it arrives at VRL.
3. Additional samples can be taken prior to necropsy, depending on services required:
   a. Bacteriological services: Take several fecal pellets and an oral swab.
   b. Parasitology services: Take several fecal pellets and use tape to perform a fur pluck.
   c. PCR services: Take fecal pellets and use tape to perform a fur pluck.
4. If histopathology services are required, perform an immediate necropsy. Open the abdominal cavity and the chest cavity, make observations and notes. Collect the organs in a methodical manner, usually starting with lungs, heart, liver, intestines, kidney, pancreas, lymph nodes, etc. These organs are often large, so you can trim them at necropsy with a sharp bladed instrument down to a size that will fit into a normal cassette. If using cassettes, label the cassettes with a permanent marker. Place organs/tissues (either in cassettes or not) in a jar of 10% neutral buffered formalin at 10 to 20 times the amount of tissue. Use the formalin liberally.
5. Allow the tissues to incubate in formalin for 48 – 72 hours, if being sent without trimming. If samples are trimmed thin enough to fit into a cassette, incubation for 24 – 48 hours is sufficient.
6. To ship:
   a. For either untrimmed organs/tissues or samples in cassettes, place the jar(s) in moisture-proof containers, such as a ziploc bag, and ship to VRL.
   b. If sending cassettes, as an alternative method to save on shipping costs, the cassettes can be placed in formalin-soaked gauze that will remain moist during shipment. Pour off excess formalin, until the gauze is wet and can keep the tissues wet. Place them in a moisture proof container and ship to VRL.