



# Animal Health Diagnostic Center

College of Veterinary Medicine, Cornell University  
In Partnership with the NYS Dept of Ag & Markets

US Postal Service Address:  
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## Laboratory Operations

Phone: 607-253-3900  
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## Transport Media for Diagnostic Sampling

### Amies Bacterial Transport Medium and swab, with charcoal

These transport tubes are ideal for maintaining survival during transport of most **aerobic bacterial and fungal** agents. Charcoal helps eliminate metabolic products of bacterial growth, which may be especially useful in the isolation of fastidious organisms. Fecal *Campylobacter* organisms survive well in Amies medium. This media is **not suitable for anaerobic transport**, despite some commercial labeling.

### Amies Bacterial Transport Medium and swab, without charcoal

These transport tubes and swabs are ideal for the isolation of *Mycoplasma* and *Ureaplasma* organisms. Laboratory personnel are not hindered in detection of the colonies by the presence of black charcoal residue. Most aerobic bacterial and fungal agents, including fecal *Campylobacter* organisms survive well in Amies medium. This media is **not suitable for anaerobic transport**, despite some commercial labeling.

### Anaerobic Bacterial Transport Medium, with swab or fluid (e.g. Anaerobic Systems ATM or BBL™ Port-a-cul™)

This transport medium tube or vial enhances the recovery of **anaerobic organisms** from fluids, swabs or small tissue specimens by protecting the bacteria from the deleterious effects of oxygen exposure. Use this medium for isolation of anaerobic organisms from the GI tract, tissues, abscesses, cavities/tracts, or wound sites. **Aerobic and fungal** cultures can also be performed from this medium. When using swabs or small pieces of tissue, quickly inoculate this media with the tube held vertically to avoid exposure to oxygen. Liquid specimens should be injected directly into the tube or vial through the rubber septum of the cap. Once inoculated, chilling of the tube or vial should be avoided, as this may negatively affect the viability of certain anaerobic organisms. These transport medium tubes and vials contain an indicator that changes color when exposed to air. Do not use if a color change is observed.

### Blood Culture Bottles for Aerobic and Anaerobic Culture (e.g. VersaTREK® Redox blood culture bottles)

These bottles are used to enhance recovery of **aerobic and anaerobic** organisms causing septicemia. To take full advantage of enhanced incubation techniques, VersaTREK® blood culture bottles are preferred and available for purchase in the AHDC supply department. Separate media bottles are used for aerobic and anaerobic isolations. The bottle can be inoculated with a sample volume between 0.1 and 5.0 ml, making these appropriate for both small animals and adult livestock species. A fact sheet on blood culture technique is provided when these bottles are purchased. This medium is also appropriate for **fungal** blood culture.

### Para-Pak® Fecal Transport Medium

This medium is used for fecal culture where isolation of *Salmonella*, *Shigella* and *Yersinia* are organisms of primary concern. The medium is buffered to prevent pH changes that can reduce survival of these organisms. The pH of bovine feces, especially, can reduce quickly after collection. It is important not to over fill the container, which would overwhelm its buffering capability. A convenient scoop is integrated into the cap. Use Amies medium for fecal *Campylobacter* isolation.

### BD Vacutainer® Plus Urine C&S Preservation Tubes (gray top)

These tubes are ideal for enhancing the recovery of potential pathogens in urine specimens. Tubes contain a lyophilized urine maintenance formula that can maintain the bacterial population in the urine specimen for a period of up to 48 hours at room temperature at levels comparable to those urine specimens without additive, held under refrigeration for the same period of time. The tubes must be adequately filled with a sample volume between 3 and 4 ml to maintain a proper preservative to urine ratio. These tubes are appropriate for **aerobic** bacterial cultures, and **fungal** cultures, but are **not appropriate for anaerobic culture**. Note that the BD Vacutainer Plus Urinalysis Preservative Tubes (yellow top) are not acceptable for bacterial/fungal culture. A fact sheet on urine collection procedures is provided when these tubes are purchased from our supply center.

### Viral Transport Medium

This transport medium is ideal for viral diagnostic swab submission, as well as *Mycoplasma* and *Ureaplasma* culture. Ocular, respiratory and tissue swabs can be submitted in this medium. Fluid samples, such as tracheal wash specimens or peritoneal fluid, should be submitted as is, in sterile vials which prevent desiccation. In the absence of viral transport medium, submit swabs in sterile, sealed vials with several drops of saline added to prevent desiccation. Bacterial transport media are not appropriate for virology. Dacron and other synthetic swabs with plastic handles are preferred. Cotton or wood-handled swabs may have bleach residues, so should be avoided when possible. Calcium alginate swabs should be avoided completely.

### Swabs for PCR

Do not place swabs in bacterial transport media. Swabs may be submitted in glass or plastic vials. Dacron and other synthetic swabs with plastic handles are preferred. Cotton or wood-handled swabs may have bleach residues, so should be avoided when possible. Calcium alginate swabs are not suitable for PCR testing. If virus isolation will/might also be requested on the same swab, prevent desiccation by sending in a sealed, sterile vial with several drops of saline.



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# Transport Media for Diagnostic Sampling

### *Campylobacter fetus* Transport

Lactated Ringer's solution is used to perform the flushing steps for *Campylobacter fetus* culturing from male and female bovine reproductive tracts. Special transport media is not required if the sample can be submitted to the laboratory within the same day of collection. Samples not in transport media must be placed in an insulated container under refrigerated conditions and protected from light during transport. If delayed delivery is anticipated, acceptable transport media including Clark's, Weybridge's, and Cary-Blair's, may be available from alternate sources. Submissions not fulfilling these requirements will not be tested. Testing for *Campylobacter fetus* of more than 5 animals at a time must be scheduled at least two weeks in advance to guarantee adequate testing supplies. Please call Regulatory Affairs (607-253-3938) to schedule.

### *Trichomonas* Transport Medium

The InPouch™ TF system is the recommended transport medium for the culture of *Trichomonas foetus* from reproductive tracts of adult cattle and feces of cats and kittens. Pouches should be inoculated with the sample and shipped promptly to the laboratory according to the applicable sampling fact sheet(s) provided at the time of purchase. Please indicate species to be tested when ordering these pouches. Additional sampling supplies may also be required, such as Lactated Ringer's solution, which is used to perform the flushing steps when culturing cattle for *T. foetus*.

### BVD ear notch medium tubes

These snap-top plastic vials contain phosphate buffered saline. It is more convenient to put ear notches in these than to use blood collection vials, they fit easily into our laboratory's rack systems, and having the pre-filled media omits one lab step after they arrive here. You can submit ear notch samples in dry blood tubes, or use these vials. This testing is performed on cattle samples only, and not camelid samples.

### Fresh Tissues and Fresh Feces

- Fresh tissues and feces are best for all testing when submitted within 24 hours of collection.
  - Prompt fixation after collection is necessary when submitting tissues for histopathology to minimize additional autolysis and maximize the ability to achieve a diagnosis.
- Sizable tissue specimens (approximately 1 inch cube) will allow for surface decontamination and culture sampling deep into the tissue, which will minimize contamination. This is especially important with tissue anaerobes, such as with suspect Clostridial myositis.
  - If an anaerobe culture is desired on GI tract samples and anaerobic transport media is not available, collect an intact loop of bowel, with both ends tied off to exclude air and maintain gut contents, and freeze promptly.
- All samples should be packaged individually, in labeled sealable bags or leak-proof containers, to prevent cross-contamination between specimens.
- If shipment of specimens will be delayed, freeze immediately to minimize bacterial overgrowth.
  - Frozen samples are not acceptable for **fecal virology and parasitology** procedures.
  - Freezing may eliminate the ability to isolate many **viruses**. Viral FA procedures, however, can be performed on previously frozen tissues.
  - Submit fresh, frozen fecal specimens for fecal **Clostridial toxin** testing.
- Submit all tissues with cold packs (add extra freezer packs with frozen samples or use dry ice) in an insulated container by overnight courier.

Please see the [Supply Request Form](#) for obtaining transport media and diagnostic supplies to assist you in collecting and maintaining quality diagnostic specimens.

Call 607-253-3900 for advice on special sample preparation, or when unusual conditions may impact diagnostic testing, such as long holiday weekends, delayed necropsies, multiple test requests on small samples, etc.