

Virology Specimen Collection Guide

Rapid specimen transport to the laboratory is key for optimal virus recovery. Ideally, specimen transport time should not exceed two hours. With the exception of blood specimens, the preferred transport temperature of all other specimens is 4 °C (range 2 to 8°C). This temperature can be attained by using cold packs or wet ice. Room temperature (range 15 to 25°C) is recommended for transport of blood specimens.

If extended transport times cannot be avoided, chilled transport (range 2 to 8°C) should be used for specimens that will be received by the laboratory within two to three days of collection. Specimens should be frozen at -70°C or below if the transport time is expected to exceed two to three days, however, it should be noted that freezing may be detrimental to the viability of cytomegalovirus and RSV. Freeze-thaw cycles should also be avoided. Freeze-thaw cycles and frozen storage above -70°C (e.g. -20°C) is particularly detrimental to CMV.

If the goal is to detect the presence of CMV in whole blood, other methods (e.g., antigenemia, molecular methods) should be considered in lieu of culture. Whole blood specimens for CMV testing should be transported at room temperature and must not be frozen. Specimens are stable at room temperature for 48 hours or refrigerated for 8 days. Specimens received outside of these limits may be subject to rejection and recollection following general lab procedures.

Suboptimal specimens that are received by the lab beyond the time frame for optimal testing, or those samples with low cellularity, may be rejected and recollection requested. If recollection is not possible, a statement noting the potential reduction in test reliability due to inappropriate transport and/or storage will be placed in the final report.

Swabs-The use of rayon or synthetic polyester fiber-tipped swabs is recommended. Do not use calcium alginate or cotton swabs. Use swabs with fine flexible wire shafts for collecting nasopharyngeal, conjunctival, and urethral specimens. Use swabs with plastic shafts for collecting other swab specimens. Wooden-shafted swabs are not recommended because they may contain toxic or inhibitory materials and may absorb specimen volume.

Virology Collection Guide

Specimen Source	Cultureable Viruses	Collection Guidelines
GENITAL		
Cervical, Vaginal	Herpes simplex virus (HSV)	<ol style="list-style-type: none"> 1. If lesions are present, swab vigorously. Place swab in VTM. 2. If lesions are not present, remove mucus from the cervix with a large swab and discard the swab. Firmly sample the endocervix (~1

		<p>cm into cervical canal) with a fresh swab by rotating the swab for 5 seconds. Immediately place swab into VTM.</p> <p>NOTE: Drying will result in loss of viral viability.</p> <p>NOTE: Recovery of HSV may be increased by also sampling the vulva. Sample the vulva using a second swab; put both swabs in the same transport tube.</p>
Stool	<p>Enteroviruses</p> <p>adenoviruses</p>	<p>(Bulk sample) Place approximately 1 to 2 g of stool into a clean, dry container and add sufficient VTM (approximately 10 to 15 mL) to prevent drying. Alternatively, omit VTM and transport immediately to the laboratory.</p> <p>NOTE: Rectal swabs rarely contain sufficient stool for adequate processing and their utility is proportional to the amount of stool collected.</p>
BODY FLUIDS		
Blood	<p>Cytomegalovirus (CMV),</p> <p>Enteroviruses</p> <p>NOTE: Molecular methods and antigenemia assay have largely replaced cell culture for detection of CMV in blood.</p>	<p>Collect specimen in EDTA</p> <p>Antigenemia and PCR assays done at reference lab.</p>
Bone Marrow	CMV	2-3 mL in EDTA. Antigenemia/PCR assay done at reference lab.
CSF	Enteroviruses, HSV	Place 2-5mL in a sterile leak-proof tube.
Saliva/Oral	Mumps, CMV	2 mL in sterile leak-proof container or place swab in VTM.
Urine	Adenovirus, mumps, CMV	5 mL of clean, midstream voided urine in sterile leak-proof container
Other (i.e. amniotic, pleural)	Enteroviruses, CMV	2-5 mL in sterile leak-proof container
OCULAR		
Conjunctiva/eye	HSV, adenovirus, enteroviruses	<p>Place swab in VTM.</p> <p>NOTE: Drying will result in loss of viral viability.</p>

RESPIRATORY		
Nasal swab	Not preferred for most respiratory viruses	Place swab in VTM.
Nasopharyngeal Aspirate	Influenza viruses, parainfluenza viruses, RSV, adenovirus, mumps Upon request: enteroviruses, CMV, HSV	2-3 mL aspirate collected in sterile leak-proof container.
Throat NOTE: less sensitive than Nasopharyngeal samples	Same as above	Place swab in VTM
BAL (Bronchial Alveolar Lavage)	Same as above	5-8 mL in sterile leak-proof container
TISSUE		
Autopsy/biopsy Material	Various agents	At least 1g of tissue or a 3-4 mm in diameter biopsy. Place in VTM.
LESIONS		
Vesicle Fluid	HSV, varicella-zoster virus (VZV), enteroviruses	Using swab, collect fluid and cellular material by vigorously sampling the base of the lesion. Immediately place in VTM. NOTE: Drying will result in loss of viral viability. 1-2 mL of fluid may be submitted in a syringe. DO NOT submit syringe with needle attached.
Ulcerative lesion	Same as above	Same as above.