



MOLECULAR TESTS REPLACING VIRAL CULTURES

Creighton Medical Laboratories is pleased to begin offering new tests to detect common viral infections using state-of-the-art molecular amplification methodology (PCR) as a replacement for viral cultures, which will be discontinued. These new tests have high overall accuracy (>95%) with both good sensitivity and specificity, and have a faster turnaround time than viral culture (24-48 hours versus several days to weeks). Specimens received in the morning on a weekday can generally be tested and result that same afternoon. These tests are more sensitive and faster alternatives to viral culture and more accurate alternatives to the rapid antigen test. Although rapid antigen testing for influenza A (IAV) and B (IBV) viruses and respiratory syncytial virus (RSV) will continue to be offered, these tests are not optimal because of poor sensitivity.

PCR tests for viruses that are available at CML include Herpes simplex virus (HSV) types 1 and 2, Cytomegalovirus (CMV), Varicella-Zoster virus (VZV), RSV, IAV, and IBV. Enteroviruses and adenoviruses (for stool and other specimens), as well as viral load testing for CMV will be added in the spring of 2009. Hepatitis C virus (HCV) viral loads and genotyping are already available.

Any request for viral culture will automatically be changed to the appropriate PCR test(s) (see table reverse side) unless you specifically request otherwise by stating "DO NOT DO PCR". In this case the test will be sent to our reference laboratory for viral culture. At this time we do not have molecular tests to replace the viral culture on stool so these requests will also be sent to our reference laboratory. We will replace viral culture on stool with molecular tests by spring 2009. Rotavirus antigen tests on stool will continue to be available at CML. When ordering a viral culture on a respiratory specimen, PCR tests for IAV, IBV, and RSV will be performed. PCR for other viruses can also be performed on this specimen type upon request (e.g. CMV). When ordering a viral or HSV culture on a genital or other lesion specimen, a PCR for HSV will be performed. PCR for other viruses on this specimen type can also be performed on request (e.g. VZV). Otherwise, we will perform a PCR for the specific virus that is ordered.

Effective Date: January 5, 2009

Specimen and Transport Requirements: Same as for Viral Culture or Rapid Antigen Detection. Respiratory - nasopharyngeal aspirate, wash or swab, or throat gargle or swab, BAL. Lesions - lesion scraping and vesicular

fluid. Body fluids – 2-3 mL in sterile tube. Blood – 5-10 mL green top tube. Tissue – 5 mm³ in sterile tube. Respiratory specimens, other swab specimens and tissue should be placed in viral transport media and stored on wet ice.

Test Order: Various

Availability: Performed on weekdays with results available afternoon if specimen received before 10AM.

Table. Molecular tests replacing viral cultures

Viral Culture Specimen Type	Viral PCR Automatically Performed¹
Respiratory	IAV, IBV, RSV
CSF	ENV, HSV (I & II)
Genital Lesion	HSV (I & II)
Blood	CMV
Chickenpox or Shingles Lesion	VZV
CMV (BAL, tissue, etc.)	CMV
Stool ²	ENV, ADV

- 1 Other viruses can be performed on request
- 2 Available Spring 2009; culture referred to reference lab until then

Key

ADV – Adenoviruses

CMV – Cytomegalovirus

ENV – Enteroviruses

HSV – Herpes simplex virus (types I and II)

IAV – Influenza A virus

IBV – Influenza B virus

RSV – Respiratory syncytial virus

VZV – Varicella-Zoster Virus

Please forward this to appropriate staff members within your facility. If you have any questions, please contact CML at (402) 280-4382.

Creighton Medical Laboratories is proud to be your partner in providing effective and timely health care.

DEC/2008