CMV Cytomegalovirus DNA by PCR - Quantitative

GA Test Code	**3702**
Method	Real-Time Polymerase Chain Reaction (PCR) – Viral Load Monitoring
Specimens	**Whole Blood (ACD or EDTA)**: 5.0 mL (3.0 mL), ambient (4 days), refrigerated (7 days). **Urine**: 10.0 mL (5.0 mL), refrigerated (7 days). **CSF, Body Fluids**: 2.0 mL (1.0 mL), refrigerated (7 days) or frozen. **Serum**: 2.0 mL (1.0 mL), refrigerated (7 days) or frozen. **Plasma (ACD, EDTA, or PPT)**: 3.0 mL (1.0 mL), separated/centrifuged within 6 hours, refrigerated or frozen *(do not freeze in PPT)*. If storing longer than 24 hours, store frozen. **Bone Marrow**: 3.0 mL (2.0 mL), refrigerated (7 days). **Bronchial Washings**: 3.0 mL (1.0 mL), refrigerated (7 days). **Other Samples**: Please contact GA for questions about other specimens.
Causes for Rejection	Quantity not sufficient (QNS) for analysis; time and/or temperature instructions not followed; blood in heparin; plasma frozen in PPT.
Reference Range	200 to 1.0 x 10^{10} CMV DNA copies/mL
Turnaround Time	24-48 hours
CPT Code	87497

Description

Cytomegalovirus (CMV) DNA is detected by a Real-time PCR assay utilizing PCR primers directed against viral sequences found in the US17 region of the CMV genome. A patient value of less than 200 CMV DNA copies/mL indicates that the patient's viral load is below the quantitative limit of this assay and does not indicate that the patient is not infected with CMV.

Clinical Utility

CMV is a commonly found virus that threatens immunocompromised patients including neonates, transplant recipients, oncology patients and patients with AIDS. CMV is the leading viral opportunistic infection in persons with AIDS and the most common cause of congenital infection in the developed world. Commonly seen manifestations of a CMV infection include: encephalitis, retinitis, colitis, hepatitis, adrenalitis, polyradiculopathy, and esophagitis.

CMV is the major viral pathogen that causes death after renal transplantation. The use of real-time PCR to detect CMV in immunosuppressed patients offers the advantage of rapid diagnosis that enables the physician to begin individualized antiviral therapies. The use of PCR has been found to detect CMV infection at a much higher rate in renal allograft cases, thus resulting in improved patient management.

Liapis, et al. CMV infection of the renal allograft is much more common than pathology indicates: a retrospective analysis of qualitative and quantitative buffy coat CMV-PCR, renal biopsy pathology and tissue CMV-PCR. *Nephrol Dial Transplant* 2003; 18:397-402.

Farrugia, et al. Management and prevention of cytomegalovirus infection after renal transplantation. *Mayo Clin Proc* 1992 Sep; 67(9):879-90.

Jones RN, Neale ML, Beattie B. Development and Application of a PCR-Based Method Including Internal Control for Diagnosis of Congenital Cytomegalovirus Infriction. *J Clin Microbiol* 2000 Jan;38(1):1-6.