### EBV

**Epstein-Barr Virus by PCR – Quantitative**

**GA Test Code:** 6111

**Method:** Quantitative Real-Time Polymerase Chain Reaction (qPCR)

**Specimens:**
- **Whole Blood (EDTA or ACD):** 5.0 mL (3.0 mL), ambient (4 days), refrigerated (7 days).
- **CSF:** 1.0 mL (0.2 mL), refrigerated (7 days) or frozen (indefinite).
- **Plasma (EDTA, ACD, 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.
- **Serum:** 2.0 mL (1.0 mL), refrigerated (7 days) or frozen (indefinite).
- **Bone Marrow:** 3.0 mL (2.0 mL), refrigerated (up to 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:** Not Detected (< 200 copies/mL)

**Quantitative Range:** 200 to 5,000,000 EBV DNA copies/mL

**Turnaround Time:** Same or Next Day

**CPT Code:** 87799

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**Description**

Epstein-Barr Virus (EBV) DNA quantification is based upon the real-time PCR amplification and detection of EBV genomic DNA. A patient value of less than 200 EBV DNA copies/mL indicates that the viral load is below the quantitative limit of this assay, but does not indicate that the patient is not infected with EBV.

**Clinical Utility**

EBV is a herpes virus that has been implicated in the development of lymphoid malignancies such as Burkitt’s lymphoma and Hodgkin’s disease. Clinical results suggest that whole blood EBV viral loads may represent an important functional measure of immunosuppression in solid-organ transplant patients. Recent studies have also demonstrated a direct relationship between EBV viral load and the risk of developing post transplant lymphoproliferative disorder (PTLD). EBV DNA has been detected in cell-free fractions (plasma or serum) of patients with PTLD, Hodgkin’s, and AIDS-related lymphomas. Conventional PCR-based tests allow only semi-quantitative measures of viral DNA. Real-time PCR provides the highly sensitive, specific and quantitative determination of EBV DNA, which can be an important tool for early diagnosis of disease as well as a method to monitor response to treatment. Real-time PCR has a greater dynamic range in which samples can be analyzed quantitatively without subsequent dilution. Furthermore, clinical cancer research has found that most nasopharyngeal cancer patients have the EBV genome in their tumor tissues. The use of PCR makes it possible to detect small amounts of EBV DNA in a wide array of tissues, thus making it a non-invasive form of tumor detection that results in higher patient survival rates.

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