

# Cytomegalovirus (CMV) Viral Load by Real-Time PCR

## Clinical Indication and Relevance

The test is used to assist in identification and monitoring of plasma levels of CMV, primarily in transplant recipients and in AIDS patients. Common circumstances where elevated levels of CMV may be found include: CMV gastroenteritis in transplant recipients, hepatitis in liver transplant recipients, CMV pneumonia in bone marrow or lung transplant recipients, and CMV retinitis in AIDS patients.

## Methodology

Viral DNA is isolated from plasma and amplified with specific primers and a TaqMan probe targeting the CMV Polymerase I gene using a quantitative real-time PCR assay. Results are reported as CMV copies per ml.

## Sensitivity

This assay can detect CMV load to a sensitivity of 300 copies per ml of plasma.

## Turn-around Time

Three working days

## Sample Requirements

### Collect

- Peripheral blood (PB): 3 mL, in purple top (sodium EDTA) tube; yellow top (ACD) tube acceptable.
- Frozen plasma: 1-2 mL, prepared by centrifuging anticoagulated blood at 1500g for 10 minutes, and carefully transferring the plasma supernatant to a new tube without disturbing the buffy coat layer.

### Transport

Deliver PB immediately at 2-8°C (wet ice or cold packs). Do not freeze PB, but plasma samples may be frozen.

### Stability

Refrigerated - 24 hours; frozen plasma is acceptable.

Note: do not leave PB or plasma samples at room temperature.

### Unacceptable Samples

Frozen peripheral blood; clotted blood; severely hemolyzed samples.

### CPT Code(s)

87799: Quantification, each organism

### References

1. Ghisetti V et al. J Med Virol. 73:223, 2004
2. Howden BP et al. Bone Marrow Transplantation. 32:795, 2003
3. Ljungman P et al. Bone Marrow Transplantation. 33:1075, 2004
4. Lautenschlager I. Transpl Int. 22:1031, 2009