

**Reporting Title:** CMV CD8 T-Cell QN by Flow Cytometry  
**Performing Location:** Rochester

**Ordering Guidance:**  
Patient must be cytomegalovirus seropositive and have 1 or more of the 5 major histocompatibility complex alleles: HLA A1, A2, B7, B8, or B35 to utilize this assay.

**Additional Testing Requirements:**  
It is important to ascertain the patient's and the donor's cytomegalovirus serostatus, as well as the patient's major histocompatibility complex class I HLA haplotype, before ordering this assay; see 1DIS / Human Leukocyte Antigens (HLA) A-B-C Disease Association Typing Low Resolution, Blood.

**Shipping Instructions:**  
Testing is performed Monday through Friday. The test may be canceled if specimens are not received in the laboratory by Friday at 5 p.m. Central time.

Samples arriving on weekends and observed holidays may be canceled.

Collect and package specimen as close to shipping time as possible. Ship specimen overnight in an Ambient Shipping Box-Critical Specimens Only (T668) following the instructions in the box. It is recommended that specimens arrive within 24 hours of collection.

**Necessary Information:**  
Ordering healthcare professional name and phone number are required.

**Specimen Requirements:**  
**Supplies:** Ambient Shipping Box-Critical Specimens Only (T668)  
**Container/Tube:** Green top (sodium heparin)  
**Specimen Volume:** 20 mL  
**Collection Instructions:** Send whole blood specimen in original tube. **Do not aliquot.**  
**Additional Information:** For serial monitoring, it is recommended that specimens are collected at the same time of day.

**Forms:**  
[Quantitative CMV Immune Competence Assay Patient Information](#) (T592)

Specimen Type	Temperature	Time	Special Container
WB Sodium Heparin	Ambient	48 hours	GREEN TOP/HEP

**Result Codes:**

Result ID	Reporting Name	Type	Unit	LOINC®
28157	CMV CD8 T cells CD107 A1	Alphanumeric	cells	95191-3
28158	CMV CD8 T cells CD107 A2	Alphanumeric	cells	95190-5

Test Definition: CMVC8

Cytomegalovirus (CMV) CD8 T-Cell Immune  
Competence, Quantitative Assessment by Flow  
Cytometry, Blood

28159	CMV CD8 T cells CD107 B7	Alphanumeric	cells	95189-7
28160	CMV CD8 T cells CD107 B8	Alphanumeric	cells	95188-9
28161	CMV CD8 T cells CD107 B35	Alphanumeric	cells	95187-1
30694	CD107a/b expression	Alphanumeric	% CD8 T-Cells	95203-6
28155	CMV CD8 T cells IFN-g B35	Alphanumeric	cells	95193-9
28151	CMV CD8 T cells IFN-g A1	Alphanumeric	cells	95197-0
28152	CMV CD8 T cells IFN-g A2	Alphanumeric	cells	95196-2
28153	CMV CD8 T cells IFN-g B7	Alphanumeric	cells	95195-4
28154	CMV CD8 T cells IFN-g B8	Alphanumeric	cells	95194-7
30693	IFN-gamma expression	Alphanumeric	% CD8 T-Cells	95204-4
28162	Total CMV CD8 T cells CD107a/b	Alphanumeric	cells	95186-3
28156	Total CMV CD8 T cells IFN-g	Alphanumeric	cells	95192-1
28163	Interpretation	Alphanumeric		69052-9
28145	CMV CD8 T cells A1	Alphanumeric	cells	95185-5
28146	CMV CD8 T cells A2	Alphanumeric	cells	95202-8
28147	CMV CD8 T cells B7	Alphanumeric	cells	95201-0
28148	CMV CD8 T cells B8	Alphanumeric	cells	95200-2
28149	CMV CD8 T cells B35	Alphanumeric	cells	95199-6
28150	Total CMV CD8 T cells	Alphanumeric	cells	95198-8
28143	Total CD3 T cells	Alphanumeric	cells	8122-4
28144	Total CD8 T cells	Alphanumeric	cells	14135-8

LOINC® and CPT codes are provided by the performing laboratory.

Supplemental Report:

No

CPT Code Information:

- 86356 x 6
- 86359
- 86352

Reference Values:

- Total CD3 T cells: 884-5830 x 10(3)/mL
- Total CD8 T cells: 168-1847 x 10(3)/mL
- Total CMV CD8 T cells: 0-115 x 10(3)/mL

The adult reference values were determined for healthy adult controls ages 20 to 80 years (n=94), for HLA A1, A2, B7, B8, and B35 alleles.

Reference values for cytomegalovirus (CMV) specific T cells that are functional (interferon-gamma+, IFN-g+) and have

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cytotoxic activity (CD107a and CD107b expression, CD107 a/b+):  
Total CMV CD8 T-cells IFN-g: 0.028-52.200 x 10(3)/mL  
Total CMV CD8 T-cells CD107a/b: 0.252-50.760 x 10(3)/mL

The 95% confidence interval reference values were determined from 102 healthy adult donors:  
Interferon-gamma (IFN-gamma) expression (as % CD8 T cells): 10.3-56.0%  
CD107a/b expression (as % CD8 T cells): 8.5-49.1%

The reference values were developed for each of the following 4 major histocompatibility complex class I alleles: A1, A2, B7, and B8 (n=45). We were unable to develop ranges for the B35 allele due to a lack of matching donors. The data is expressed as the absolute number of CMV-specific CD8 T cells that are IFN-gamma+ or CD107a/b+.