

Client: Example Client ABC123  
123 Test Drive  
Salt Lake City, UT 84108  
UNITED STATES

Physician: Doctor, Example

**Patient: Patient, Example**

**DOB:** 7/23/1973  
**Gender:** Female  
**Patient Identifiers:** 01234567890ABCD, 012345  
**Visit Number (FIN):** 01234567890ABCD  
**Collection Date:** 00/00/0000 00:00

**Cytomegalovirus Drug Resistance by Next Generation Sequencing, Ganciclovir, Foscarnet, Cidofovir, Maribavir, and Letermovir**

ARUP test code 3004615

CMV Drug Resistance by NGS, 5 Drugs

See Note

|                  |           |
|------------------|-----------|
| Ganciclovir, GCV | Resistant |
| Foscarnet, FOS   | Sensitive |
| Cidofovir, CDV   | Sensitive |
| Maribavir, MBV   | Sensitive |
| Letermovir, LTV  | Sensitive |

UL97 drug resistance mutations identified: E596G  
UL97 additional mutations identified: T75A, Q126L  
UL97 uncalled mutation sites: C518

UL54 drug resistance mutations identified: None  
UL54 additional mutations identified: S655L, N685S, L897S, A1108T, N1116H  
UL54 uncalled mutation sites: None

UL27 drug resistance mutations identified: None  
UL27 additional mutations identified: N294D, Y297H, P307L, V310A, D351N, V367I, A519T, V520A, H557Q  
UL27 uncalled mutation sites: None

UL56 drug resistance mutations identified: None  
UL56 additional mutations identified: V425A, N586D  
UL56 uncalled mutation sites: None

CMVResistanceCaller software version: 2.0.0.1

CMV\_resistance\_mutations\_20220321.db

**H=High, L=Low, \*=Abnormal, C=Critical**

Unless otherwise indicated, testing performed at:

**INTERPRETIVE INFORMATION: CMV Drug Resistance by NGS,  
5 Drugs**

This assay assesses resistance to ganciclovir, foscarnet, cidofovir, maribavir, and letermovir. Resistance-associated mutations in the UL97, UL54, UL27, and UL56 genes are sequenced using next generation sequencing. Drug resistance is assigned using an ARUP-developed database of published resistance mutations. For a list of resistance mutations refer to <https://ltd.aruplab.com/Tests/Pub/3004615>.

This test detects populations down to 10% of the total population which may account for resistance interpretation differences between methods. Some insertions or deletions may be difficult to detect using this software.

Result interpretations are as follows:

- Sensitive indicates no evidence of drug resistance compared with a wild-type virus.
- Possible resistance indicates mutations were detected with borderline-level drug resistance or conflicting resistance status reported in the literature.
- Resistant indicates evidence of drug resistance compared with a wild-type virus.
- Not determined indicates incomplete sequence coverage across a given gene or genes.
- Additional mutations include variants that have not been associated with drug resistance.
- Uncalled mutation sites include drug resistance mutation positions with an inadequate number of sequencing reads.
- Inadequate sequence coverage indicates a low number of sequence reads at a given drug resistance site.

Drugs associated with each gene are as follows:

- UL97: ganciclovir, maribavir
- UL54: ganciclovir, foscarnet, cidofovir
- UL27: maribavir
- UL56: letermovir

This test was developed, and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

**VERIFIED/REPORTED DATES**

| Procedure                           | Accession     | Collected        | Received         | Verified/Reported |
|-------------------------------------|---------------|------------------|------------------|-------------------|
| CMV Drug Resistance by NGS, 5 Drugs | 23-300-125266 | 00/00/0000 00:00 | 00/00/0000 00:00 | 00/00/0000 00:00  |

**END OF CHART**

**H=High, L=Low, \*=Abnormal, C=Critical**

Unless otherwise indicated, testing performed at: