

500 Chipeta Way, Salt Lake City, Utah 84108-1221

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Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Patient Age/Sex: 7 hours Unknown

Specimen Collected: 07-Nov-22 07:55

CMV Drug Resistance by NGS, 5 | Received: 07-Nov-22 07:55 Report/Verified: 07-Nov-22 13:45  
Drugs

Procedure	Result	Units	Reference Interval
CMV Drug Resistance by NGS, 5 Drugs	See Note <sup>f1 i1</sup>		

**Result Footnote**

f1: CMV Drug Resistance by NGS, 5 Drugs

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

UL97 drug resistance mutations identified: None  
 UL97 additional mutations identified: T75A, K116E  
 UL97 uncalled mutation sites: None

UL54 drug resistance mutations identified: None  
 UL54 additional mutations identified: A29V, H75Y, S655L, N685S, L897S, A1108T  
 UL54 uncalled mutation sites: None

UL27 drug resistance mutations identified: None  
 UL27 additional mutations identified: P10L, P11L, L12P, R90K, N294G, Y297H, G300N, D351N, A519T,  
 V520A  
 UL27 uncalled mutation sites: None

UL56 drug resistance mutations identified: None  
 UL56 additional mutations identified: V425A, S447G, N586D  
 UL56 uncalled mutation sites: None

CMVResistanceCaller software version: 2.0.0.1

CMV\_resistance\_mutations\_20220321.db

**Test Information**

i1: CMV Drug Resistance by NGS, 5 Drugs

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:

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\*=Abnormal, #=Corrected, C=Critical, f=Result Footnote, H-High, i-Test Information, L-Low, t-Interpretive Text, @=Performing lab

**Unless otherwise indicated, testing performed at:****ARUP Laboratories**

500 Chipeta Way, Salt Lake City, UT 84108

Laboratory Director: Jonathan R. Genzen, MD, PhD

**ARUP Accession:** 22-311-100967**Report Request ID:** 16971650**Printed:** 08-Nov-22 14:45

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**Test Information**

- i1: CMV Drug Resistance by NGS, 5 Drugs
  - 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.

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