Viracor | Eurofins Clinical Diagnostics

CMV Resistance Sequencing

TEST CODES: 5600, 30721, 30722

CPT CODE: 87910

CATEGORY
Infectious Disease

Reportable Mutations - UL54 (DNA Polymerase)[1]

Viral Phenotype Confirmed by Marker Transfer[2]				
Mutation	**Cidofovir**	**Foscarnet**	**Ganciclovir**	**REFERENCE**
D301N	R	S	R	19,33,56
E303D[4]	R	S	R	93
E303G[4]	R	S	R	93
N408D	R	S	R	9,12,23,31,33,35,56,72
N408K	R	S	R	13, 74
N408S	R	S	R	84, 88
N410K	R	S	R	19, 23
F412C	R	S	R	2,9,20,23,33,35,65,72
F412L	R	S	R	74
F412S	R	S	R	25,74,111
F412V	R	S	R	9,23,72
D413A	R	S	R	69,73
D413E	R	S	R	19,23,31,33,52,56,72,73
D413N	R	S	R	89
D413Y[4]	R	S	R	79
P488R	R	S	R	79,111
N495K	S	R	R	73, 76,103
K500N	R	S	R	79,111
L501I	R	S	R	2,9,12,23,33,64,72
T503I	R	S	R	12,19,33,35,72,73
K513N	R	S	R	23,33,35,56,72
K513E	R	S	R	9,23,33,34,35,72
K513R	R	S	R	35, 72, 89
D515E	S	S	R	90
D515Y	S	R	R	91
L516R	R	S	R	19, 33
I521T	R	S	R	66, 68, 72
P522A	R	S	R	9,19,25,33,37,68,72
P522S	R	S	R	68, 72
del524	R	S	R	88
V526L	R	S	R	82
C539G	R	S	R	89
C539R	R	S	R	79,111

[1] Most UL54 mutations also have UL97 mutations.
[2] R and S denote resistant and sensitive, respectively. ND indicates Not Determined.
[3] Low-grade or variable resistance.
[4] Also confers resistance to CMX001.

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Viral Phenotype Confirmed by Marker Transfer[2]				
Mutation	**Cidofovir**	**Foscarnet**	**Ganciclovir**	**REFERENCE**
D542E[4]	R	S	S	81
A543P	R	S	R	108
L545S	R	S	R	9,12,33,72
L545W	R	S	R	74,111
T552N	S	R	R	79,103,111
Q578H	R	R	R	24, 74,111
Q578L	S	R	S	83
S585A	S	R	S	79,111
D588E	S	R	S	9,12,23,35,72
D588N	S	R	R	12,23,27,33, 74
F595I	S	R	S	79,111
T700A	S	R	S	5,9,18,33,47,72
V715A	S	R	S	92
V715M	S	R	S	5,9,18,25,33,37,47,72
I726T	S	S	R	83
E756K	R or S[3]	R	R	12,19,23,33,36,74,82,110
E756D	S	R	S	12,19,31,33
E756Q	S	R	S	12,18,33,37
L773V	R	R	R	24,89
L776M	S	R	R	67,73
V781I	S	R	R[3]	9,23,74
V787A	S	R	R	91
V787L	S	R	R	18,37,48,73
L802M	S	R	R or S[3]	9,12,18,20,23,27,33,35,65,73
K805Q	R	S	S	9,18,28,35,72
A809V	S	R	R	18,19,25,28,33,47,72,103
V812L[4]	R	R	R	12,18,20,27,28,33,72,73,78,93
T813S	R	R	R	28,73
T821I	S	R	R	9,18,28,33,35,72,73
P829S	S	S	R	79,111
A834P	R	R	R	13,73
T838A	S	R	S	27,28,73
G841A	R	R	R	28,72,73
G841S	S	R	R	83
V946L	S	R	S	79,111
L957F	ND	ND	R	79,111
del981 to 982	R	R	R	11,19,33,63,72,73,108
A987G	R	S	R	1,9,22,23,25,43,72
S290R	S	R	S	103
N495K+Q783R	S	R	R	103
E951D	S	R	R	103

[1] Most UL54 mutations also have UL97 mutations.
[2] R and S denote resistant and sensitive, respectively. ND indicates Not Determined.
[3] Low-grade or variable resistance.
[4] Also confers resistance to CMX001.

Reportable Mutations - UL54 (DNA Polymerase)[1]

Viral Phenotype found in Clinical Isolates (Unconfirmed by Marker Transfer)[2]				
Mutation	**Cidofovir**	**Foscarnet**	**Ganciclovir**	**REFERENCE**
M393R	R	R	R	20, 72
M393K	R	R	R	20, 72
T419M	S	R	S	24
L501F	R	S	R	23,25,31,56,72
Y(I)722V	R	S	R	35, 72
H729Y	S	R	S	74
Y751H	R	S	R	35, 72
V787I	S	R	S	33

[1] Most UL54 mutations also have UL97 mutations.
[2] R and S denote resistant and sensitive, respectively. ND indicates Not Determined.
[3] Low-grade or variable resistance.
[4] Also confers resistance to CMX001.

Reportable Mutations - UL56 (Terminase)

Viral Phenotype Confirmed by Marker Transfer[1]		
Mutation	**Letermovir**	**REFERENCE**
S229F	R	101
V231A	R	99
V231L	R	95,99,101,108
N232Y	R	102
V236A	R	108
V236L	R	99
V236M	R	94,95,101,110
E237D	R	99,102
L241P	R	95,99,100,101
T244K	R	99,101
L254F	R	101
L257F	R	101
L257I	R	99,101
K258E	R	102
F261L	R	99,101,102
Y321C	R	99
C325F	R	99
C325W	R	108
C325R	R	99
C325Y	R	95,99
M329T	R	99,102
A365S	R	108
N368D	R	101
R369G	R	95
R369M	R	95,101
R369S	R	95,100
E237D, T244K, F261L	R	99
V236L, L257I	R	99
V236M, L257I, M329T	R	99
S229F, L254F, L257I	R	101

[1] R denotes resistance.

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Reportable Mutations - UL97 (Phosphotransferase)

Viral Phenotype Confirmed by Marker Transfer[1]		
Mutation	**Ganciclovir**	**REFERENCE**
F342S	R	105,106,107
V356G	R	106,107
L405P	R	75
M460I	R	3,5,6,7,8,10,12,23,25,33,109
M460T	R	75
M460V	R	6,7,8,10,11,17,24,33,43,50,109
V466G	R	73,77
C518Y	R	84,85
H520Q	R	6,7,10,25,33,43,109
del590 to 593	R	12,72
del591 to 594	R	8,10,33,34,35,72,104
del591 to 607	R	51,72
C592G	R[2]	6,8,10,11,20,23,27,33,51,103,104,109
A594E	R	73,75
A594G	R	84,86
A594P	R	6,25,59,72
A594T	R	10,25,33,36,50,51,54
A594V	R	5,6,8,10,11,17,25,27,33,50,104,109
L595F	R	10,33,41,72
L595S	R	5,6,8,10,11,12,17,23,25,33,109
L595W	R	6,8,10,25,33,51,72
del595	R	4,10,17,72,104
del595 to 603	R	14,33,48,72,104
E596G	R	10,20,33,35,36,51,72
E596Y	R	90
del597 to 599	R	92,104
G598S	R	33,58,72
K599T	R	60,72
del600	R	10,33,36,51,72,104
del601 to 603	R	69,104
C603R	R	73,77,109
C603W	R	6,8,10,20,23,25,33,35,72,109
C607F	R	8,50,51,72
C607Y	R	10,25,33,34,35,39,51,72
I610T	R	90
A613V	R	84, 87
A591V	R	104
del596	R	104
del597 to 598	R	104
del599	R	104
del600 to 601	R	104
del601	R	104
del601 to 602	R	104

[1] R denotes resistance. [2] Alone confers modest resistance. When found in conjunction with UL54 del 981 to 982, there is a much higher level of resistance.

Reportable Mutations - UL97 (Phosphotransferase)

Viral Phenotype found in Clinical Isolates (Unconfirmed by Marker Transfer)[1]		
Mutation	**Ganciclovir**	**REFERENCE**
M460L	R	49, 72
A590T	R	10,49,72
del590 to 600	R	17, 72
del590 to 603	R	56, 72
A591D	R	10,49,72
C592F	R	72
del594 to 601	R	unpublished clinical isolate
L595T	R	10,35,72
N597I	R	10,49,72
del597 to 603	R	25
G598V	R	10,49,72
K599M	R	10,49,72
C603Y	R	6,10,49,72
A606D	R	10,49,72

[1] R denotes resistance.
[2] Alone confers modest resistance. When found in conjunction with UL54 del 981 to 982, there is a much higher level of resistance.

For the most up to date list of assays, please visit our website at www.Viracor-Eurofins.com.com. This test was developed and its performance characteristics determined by Viracor Eurofins. It has not been cleared or approved by the U.S. Food and Drug Administration.

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