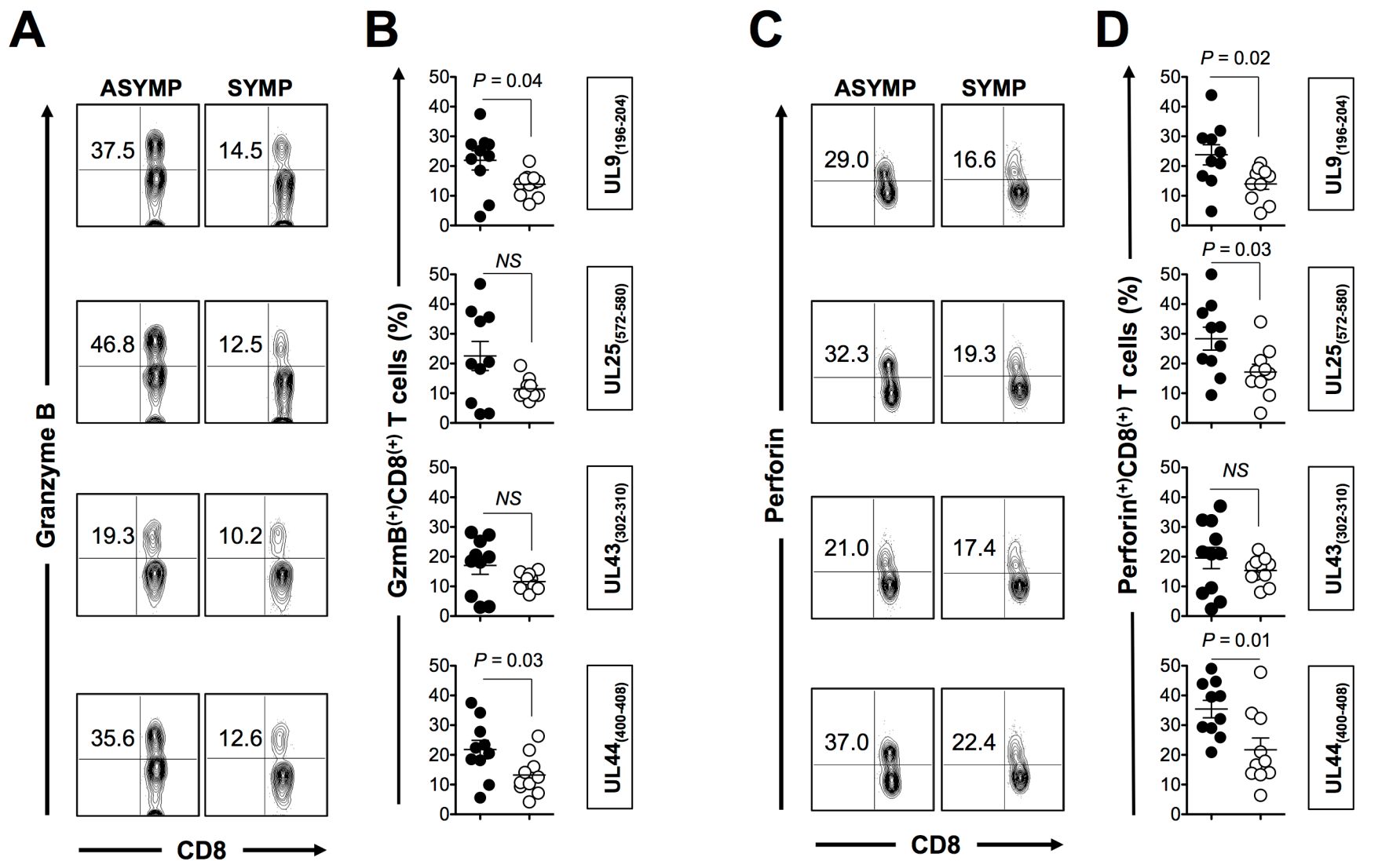


**Suppl. Figure S1: Frequencies of HSV-1 epitopes-specific proliferative CFSE<sup>low</sup>CD8<sup>+</sup> T cells detected in HSV-seropositive HLA-A\*0201 positive and HLA-A\*0201 negative individuals.** Proliferative response of CD8<sup>+</sup> T cells isolated from HLA-A\*0201 positive and negative HSV-1 seropositive individuals by CFSE dilution method after *in vitro* stimulation with individual peptides. Top two rows show contour plots of individual tetramer specific CFSE<sup>low</sup>CD8<sup>+</sup> T cells in HLA-A\*0201-positive, HSV-1-seropositive individuals. Bottom two rows show contour plots of individual tetramer specific CFSE<sup>low</sup>CD8<sup>+</sup> T cells in HLA-A\*0201-negative controls. The small contour plots in top right corner of each row show negative controls (no peptide) and positive controls (PHA).



**Suppl. Figure S2: Frequencies of HSV-1 epitopes-specific cytotoxic CD8<sup>+</sup> T cells detected in HSV-seropositive ASYMP and SYMP individuals.** PBMCs ( $\sim 10 \times 10^6$ ) derived from 10 HSV-1 seropositive HLA-A\*0201<sup>(+)</sup> ASYMP individuals vs. 10 HSV-1 seropositive HLA-A\*0201<sup>(+)</sup> SYMP individuals were stimulated *in vitro* for 72 hrs with each of four peptides (UL9<sub>196-204</sub>, UL25<sub>572-580</sub>, UL43<sub>302-310</sub> and UL44<sub>400-408</sub> epitopes). Granzyme B and Perforin were then measured by intracellular staining as outlined in *Materials and Methods*. **(A)** Representative contour plots of percentage of Granzyme B<sup>+</sup>CD8<sup>+</sup> T cells *in vitro* stimulated with UL9<sub>196-204</sub>, UL25<sub>572-580</sub>, UL43<sub>302-310</sub> and UL44<sub>400-408</sub> epitopes in ASYMP (left side panel) and SYMP (right side panel) HSV-seropositive individuals. **(B)** Average frequencies of Granzyme B<sup>+</sup>CD8<sup>+</sup> T cells after *in vitro* stimulation with UL9<sub>196-204</sub>, UL25<sub>572-580</sub>, UL43<sub>302-310</sub> and UL44<sub>400-408</sub> epitopes in PBMCs isolated from ASYMP (closed circle) and SYMP (open circle) HSV-seropositive individuals. Significantly higher frequency of Granzyme B<sup>+</sup>CD8<sup>+</sup> T were detected in ASYMP individuals as compared to SYMP individuals when cells were *in vitro* stimulated with UL9<sub>196-204</sub>, UL25<sub>572-580</sub> and UL44<sub>400-408</sub> epitopes. We did not observe significant difference in average frequency of Granzyme B<sup>+</sup>CD8<sup>+</sup> T in ASYMP and SYMP individuals when cells were *in vitro* stimulated with UL43<sub>302-310</sub>. **(C)** Representative contour plots of percentage of Perforin<sup>+</sup>CD8<sup>+</sup> T cells *in vitro* stimulated with UL9<sub>196-204</sub>, UL25<sub>572-580</sub>, UL43<sub>302-310</sub> and UL44<sub>400-408</sub> epitopes in ASYMP (left side panel) and SYMP (right side panel) HSV-seropositive individuals. **(D)** Average frequencies of Perforin<sup>+</sup>CD8<sup>+</sup> T cells after *in vitro* stimulation with UL9<sub>196-204</sub>, UL25<sub>572-580</sub>, UL43<sub>302-310</sub> and UL44<sub>400-408</sub> epitopes in PBMCs isolated from ASYMP (closed circle) and SYMP (open circle) HSV-seropositive individuals. Significantly higher frequency of Perforin<sup>+</sup>CD8<sup>+</sup> T were detected in ASYMP individuals as compared to SYMP individuals when cells were *in vitro* stimulated with UL9<sub>196-204</sub>, UL25<sub>572-580</sub> and UL44<sub>400-408</sub> epitopes. We did not observe significant difference in average frequency of Perforin<sup>+</sup>CD8<sup>+</sup> T in ASYMP and SYMP individuals when cells were *in vitro* stimulated with UL43<sub>302-310</sub>.

Suppl. Table S1

Peptide #	Sequence	MW	Protein	Position	A*0201 binding capacity (IC <sub>50</sub> nM)		T2 Assay MFI			Group of Peptides
					Predicted	Measured	12μM	6μM	3μM	
1	ALMGAVTSL	862.1	Capsid Maturation Protease	480	11	2.1	70	48	28	Gr #1 (n=18)
2	VLFSGPSPL	916.1	Capsid Maturation Protease	385	17	0.40	0	0	0	
3	SLQQELAHM	1056.2	Capsid Scaffold Protein	181	681	71	0	0	0	
4	RLASLLTYA	1007.2	DNA Packaging Protein UL33	74	15	0.32	0	1	4	
5	SLLYAGPI	934.1	DNA Packaging Protein UL33	77	53	37	0	0	0	
6	YLSRTQRLA	1107.3	DNA Packaging Protein UL33	68	1373	110	1.6	116	190	
7	DMTPAELEV	1004.1	DNA Packaging Protein UL33	49	6576	669	440	267	105	
8	TLRDTIPDC	1033.2	DNA Packaging Protein UL33	12	19458	1391	36	21	2.3	
9	ALGMRGLVL	929.2	Small Capsid Protein	19	3514	491	120	66	37	
10	FLRGQAAAL	946.1	Small Capsid Protein	53	409	67	48	28	15	
11	GQAAALTDL	858.9	Small Capsid Protein	56	2082	2301	180	106	50	
12	VTTDSVRAL	961.1	Small Capsid Protein	12	12465	5353	0	0	0	
13	GMRGLVLAT	917.1	Small Capsid Protein	21	8731	3661	180	174	132	
14	KQLAAVARV	955.2	Membrane Protein UL45	100	17	40	102	119	87	
15	VIIAALVLV	910.2	Membrane Protein UL45	40	19	5.9	36	32	22	
16	SPGGFVQFV	937.1	Membrane Protein UL45	154	17905	450	213	164	171	
17	RLVDGVGGI	885.0	Membrane Protein UL45	129	271	217	105	75	40	
18	GVVIAALV	854.1	Membrane Protein UL45	38	1744	1079	42	26	15	
19	LLLRQWLHV	1177.5	Neurovirulence Protein ICP34.5	61	32	207	9	5.1	0	Gr #2 (n=20)
20	RLARRGSWA	1072.2	Neurovirulence Protein ICP34.5	197	6191	1409	62	44	18	
21	VVWASAARL	972.2	Neurovirulence Protein ICP34.5	190	308	878	28	18	11	
22	AVPTAQSQV	900.0	Neurovirulence Protein ICP34.5	21	6651	6173	14	26	7.6	
23	VTAEHLARL	1009.2	Neurovirulence Protein ICP34.5	138	236.8	178	4.1	10	0	

24	GLLRVGADT	901.0	Tegument Protein US11	62	12167	23928	6.3	0.2	0.4	
25	SQTQPPAPV	924.0	Tegument Protein US11	2	868	781	15	7.4	0	
26	TISKPSEAV	931.1	Tegument Protein US11	71	4845	4777	140	120	106	
27	GMHPRGVHA	961.1	Tegument Protein US11	26	4902	70000	148	127	87	
28	GPGDPDVYL	932.0	Tegument Protein US11	11	23742.2	30626	68	34	26	
29	LLPEIAPNA	937.1	TAP Transporter Inhibitor ICP47	57	106	30	59	60	53	
30	ALEMADTFL	1010.2	TAP Transporter Inhibitor ICP47	4	1869	778	9.7	6.9	6.9	
31	EMADTFLDT	1042.1	TAP Transporter Inhibitor ICP47	6	14178	1774	119	89	55	
32	IAPNASLGV	841.0	TAP Transporter Inhibitor ICP47	61	5246	110	155	120	78	
33	AVHDPERPL	1033.2	TAP Transporter Inhibitor ICP47	43	10444	3938	16	20	0.7	
34	LLLRQWLHV	1177.5	Neurovirulence Protein ICP34.5	61	32	171	5.6	6.1	0.1	
35	MLFDQGTLV	1023.2	Ubiquitin E3 Ligase ICP0	739	8	1.7	32	24	14	
36	KLVYLIVGV	1003.3	Ubiquitin E3 Ligase ICP0	159	11	0.63	12	5.2	0.4	
37	SVVALSPYV	934.1	Ubiquitin E3 Ligase ICP0	650	25	4.0	86	35	21	
38	YLTLGGHTV	960.1	Ubiquitin E3 Ligase ICP0	212	25.8	6.0	44	5.1	7.4	
39	FLRYHCPGL	1105.3	Envelope Glycoprotein L	71	49	188	10	5.3	4.5	Gr #3 (n=20)
40	FLEDLSYPA	1054.2	Envelope Glycoprotein L	103	10	0.64	15	10	6.6	
41	LLNNTTLTV	987.2	Uracil-DNA Glycosylase	234	16	2.9	211	202	0	
42	SISPIDWSV	1003.1	Uracil-DNA Glycosylase	326	23	3.2	5.3	7.6	9.9	
43	SLRNVLAHV	942.1	Uracil-DNA Glycosylase	202	94	5.4	43	40	41	
44	FMVSSIDEL	1040.2	Nuclear Protein UL3	101	11	1.1	100	66	40	
45	VTFDTLFMV	1072.3	Nuclear Protein UL3	95	10	8.7	26	7.2	5.3	
46	LLVEVLREI	1083.3	Nuclear Protein UL4	176	60	1.6	213	112	69	
47	FLQPTADLL	1017.2	Nuclear Protein UL4	169	43.4	26	246	212	229	
48	GILTVVWTA	959.2	Nuclear Protein UL4	120	57	2.1	209	170	166	
49	YMAKLHAYL	1109.4	Helicase-Primase Helicase Subunit	404	11	11	232	179	122	
50	FTLPVLTFFV	1036.3	Helicase-Primase Helicase Subunit	423	9	1.1	153	140	127	
51	FMSVVNTNI	1024.2	Helicase-Primase Helicase Subunit	772	24	60	93	88	61	
52	YVLNSQIAV	1006.2	Helicase-Primase Helicase Subunit	494	18	121	211	203	172	
53	RMGELTAEI	1019.2	Helicase-Primase Helicase Subunit	576	19	91	172	166	142	
54	ELFGEAFEV	1040.1	Helicase-Primase Helicase Subunit	682	36	90	165	117	66	
55	GLISFYNFL	1073.3	Helicase-Primase Helicase Subunit	552	19	1.5	183	59	30	

56	MQFVDRFVV	1140.4	Helicase-Primase Helicase Subunit	369	60	209	204	150	117	
57	ALQTDNYTL	1038.1	Helicase-Primase Helicase Subunit	720	31	29	169	135	98	
58	VLDCVVTGA	876.0	Helicase-Primase Helicase Subunit	113	69	973	228	199	157	
59	FVAPYFESV	1058.2	Capsid Portal Protein	565	10	8.7	178	140	125	Gr #4 (n=26)
60	TLLDFAHGL	986.1	Capsid Portal Protein	134	12	10	191	167	125	
61	SMDDDTYVA	1016.1	Capsid Portal Protein	502	17	546	49	33	4.4	
62	ALAFDSTRV	979.1	Capsid Portal Protein	216	31	649	93	0	56	
63	FVADVQHAA	957.1	Capsid Portal Protein	616	29	7752	61	73	57	
64	KSMDDDTYV	1073.1	Capsid Portal Protein	501	78	689	55	27	60	
65	RLQTYLTDI	1122.3	Capsid Portal Protein	604	67	827	15	61	7.6	
66	QLQAAIFHA	998.2	Capsid Portal Protein	68	48	697	32	67	26	
67	YLDEAGGHL	974.0	Capsid Portal Protein	364	95	23	0	0.1	0	
68	LQAAIFHAL	983.2	Capsid Portal Protein	69	76	154	38	0	0	
69	VLNTLMFMV	1067.4	Tegument Protein UL7	192	10	14	58	53	0	
70	LLANNPPPV	934.1	Tegument Protein UL7	220	10	24	55	11	0	
71	FLRSCHWVL	1160.4	Tegument Protein UL7	185	29	582	5.3	39	0	
72	TLLRLACEV	1017.3	Tegument Protein UL7	37	48	65	27	41	0	
73	FVLPHWYMA	1163.4	Tegument Protein UL7	209	16	12	164	173	139	
74	LLDFELACL	1036.3	Tegument Protein UL7	136	61	63	77	76	64	
75	FTATSIARV	965.1	Tegument Protein UL7	55	22	74	22	17	12	
76	ELACLLMYL	1068.4	Tegument Protein UL7	140	73	54	34	26	20	
77	NTLMFMYVY	1117.4	Tegument Protein UL7	194	61	69	66	52	36	
78	RLDAEYWSV	1138.2	Helicase Primase Subunit	640	9	44	117	97	71	
79	ALLGAWPAV	897.1	Helicase Primase Subunit	343	9	2.5	276	242	234	
80	ALYACVLAA	894.1	Helicase Primase Subunit	100	15	5.6	57	24	24	
81	ALAPVFAFL	948.2	Helicase Primase Subunit	288	16	2.2	216	147	123	
82	LLGGVMAAV	830.1	Helicase Primase Subunit	475	25	25	222	219	207	
83	QLLDPPAAV	923.1	Helicase Primase Subunit	392	16	186	164	115	65	
84	VMAAVCLQI	947.2	Helicase Primase Subunit	479	29	15	176	154	123	
85	LLLQWLHV	1177.5	Neurovirulence Protein ICP34.5	61	32	475	258	161	111	Gr #5 (n=12)
86	RLARRGSWA	1072.2	Neurovirulence Protein ICP34.5	197	6191	24328	33	28	26	
87	VVWASAARL	972.2	Neurovirulence Protein ICP34.5	190	308	14967	155	143	106	

88	AVPTAQSQV	900.0	Neurovirulence Protein ICP34.5	21	6651	14630	159	131	93	
89	VTAEHLARL	1009.2	Neurovirulence Protein ICP34.5	138	237	21097	150	116	91	
90	GLDEQQLDV	1016.1	Helicase-Primase Helicase Subunit	638	124	1179	106	73	45	
91	FLSRPINTI	1060.3	Helicase-Primase Helicase Subunit	137	45	528	160	130	97	
92	SLTAHDFDV	1004.1	Myristylated Tegument Protein	27	31	2727	199	184	141	
93	VLITDDGEV	960.1	Myristylated Tegument Protein	17	298	3515	127	109	61	
94	LITDDGEVV	960.1	Myristylated Tegument Protein	18	3181	13710	56	39	26	
95	YVPPDMRGV	1033.2	Myristylated Tegument Protein	47	1488	511	96	90	63	
96	SEEEGNFYV	1073.1	Myristylated Tegument Protein	40	9675	19233	221	201	145	
97	YFHALVYFV	1158.4	Helicase-Primase Subunit	30	40	133	169	141	116	Gr #6 (n=23)
98	GLARLDALV	927.1	Helicase-Primase Subunit	437	41	13	254	202	143	
99	RLDALVVAA	927.1	Helicase-Primase Subunit	440	40	44	147	126	85	
100	IIWGELFGV	1033.2	A Replication Origin Binding Helicase	734	8.5	2.3	236	184	112	
101	ALLEACL RV	987.24	A Replication Origin Binding Helicase	587	9.5	6.6	223	218	151	
102	LLNNYDVLV	1062.22	A Replication Origin Binding Helicase	164	14	10	194	184	147	
103	DLAEWVPRV	1084.24	A Replication Origin Binding Helicase	41	32	4.3	298	258	237	
104	LLLHSLTPL	1006.26	A Replication Origin Binding Helicase	325	13	6.9	186	152	138	
105	ALMLRLLRI	1098.47	A Replication Origin Binding Helicase	196	35	46	398	355	308	
106	YLALLEACL	1008.26	A Replication Origin Binding Helicase	585	32	7.5	169	138	116	
107	FIYLALLEA	1052.29	A Replication Origin Binding Helicase	583	30	11	96	67	41	
108	VLDEVMSTL	1006.19	A Replication Origin Binding Helicase	172	23	45	190	140	83	
109	QLVDFLCGL	1007.22	A Replication Origin Binding Helicase	218	27	1.1	139	132	113	
110	LLAVAVYAV	918.14	Envelope Glycoprotein M	102	10	5.8	145	164	146	
111	RTAWVWVCV	1206.43	Envelope Glycoprotein M	23	9.4	26	146	122	109	
112	SQLAHLVYV	1029.2	Envelope Glycoprotein M	162	9.4	62	302	284	271	
113	YVLHFACL V	1064.32	Envelope Glycoprotein M	169	15	7.6	188	184	161	
114	FLCTADAAV	910.07	Envelope Glycoprotein M	227	15	3.0	130	116	96	
115	ILVVSLLLV	968.28	Envelope Glycoprotein M	262	33	205	89	72	58	
116	SLLLVEGV	928.13	Envelope Glycoprotein M	266	24	8.8	190	160	175	
117	WLLQITVLL	1098.39	Envelope Glycoprotein M	148	20	130	169	153	159	
118	LLAVAVYA	932.17	Envelope Glycoprotein M	101	21	93	183	159	145	
119	GMLICLTVL	962.29	Envelope Glycoprotein M	251	37	548	83	57	39	



120	SLTAHDFDV	1004.07	Myristylated Tegument Protein	27	31	621	31	29	15	Gr #7 (n=17)
121	VLITDDGEV	960.05	Myristylated Tegument Protein	17	298	926	106	55	41	
122	ALVELNSGV	901.02	Deoxyribonuclease	450	35	9.3	143	118	99	
123	YLCSLAVVL	980.24	Deoxyribonuclease	172	55	17	163	134	118	
124	VLMDGHTGM	960.14	Deoxyribonuclease	326	58	136	70	61	50	
125	LMDGHTGMV	960.14	Deoxyribonuclease	327	72	184	85	74	54	
126	GLGRHLWRL	1107.32	Deoxyribonuclease	189	40	133	154	94	55	
127	TLLELVVSV	972.19	ument Serine/Threonine Protein Kin	389	7.8	1.8	240	221	182	
128	GLAVDLYAL	934.1	ument Serine/Threonine Protein Kin	378	22	12	174	120	98	
129	FIAPLGFSL	964.18	ument Serine/Threonine Protein Kin	210	16	6.5	79	64	50	
130	KLCSPVFAI	977.24	ument Serine/Threonine Protein Kin	131	19	9.3	113	75	53	
131	RMFGMPTAL	1023.3	ument Serine/Threonine Protein Kin	329	20	5.5	78	59	33	
132	ALLAYRCVL	1021.3	ument Serine/Threonine Protein Kin	427	61	350	78	69	33	
133	ALHQCFTL	1061.24	ument Serine/Threonine Protein Kin	252	41	831	133	109	89	
134	AVLADFSLV	934.1	ument Serine/Threonine Protein Kin	297	69	134	114	91	46	
135	FMAAKAAHL	959.18	Tegument Protein UL14	47	14	276	23	14	7	
136	ALGERLDAV	943.07	Tegument Protein UL14	101	41	25	100	78	76	
137	ILMHATYFL	1108.38	NA Packaging Terminase Subunit	208	7.1	1.2	176	147	113	Gr #8 (n=25)
138	FLMAPDLYV	1068.31	NA Packaging Terminase Subunit 1		6.4	6.4	164	157	118	
139	YLLEQLNNL	1119.28	NA Packaging Terminase Subunit	676	8.0	5.7	126	102	84	
140	FLAPELVRA	1015.23	NA Packaging Terminase Subunit	108	13	12	198	154	135	
141	LLFNSLYPA	1037.23	NA Packaging Terminase Subunit 1		8.3	1.5	181	160	136	
142	LLMVAVIMAI	1073.47	NA Packaging Terminase Subunit 1		29	9.0	77	61	39	
143	YILNKPVFI	1106.37	NA Packaging Terminase Subunit	433	20	52	178	147	88	
144	LMHATYFLA	1066.3	NA Packaging Terminase Subunit	209	31	96	120	115	95	
145	KTWFLVPLI	1116.41	NA Packaging Terminase Subunit	264	35	1.7	177	173	143	
146	FLNQANCKI	1050.24	NA Packaging Terminase Subunit	372	61	458	247	230	197	
147	KMAQCTLAV	964.22	Tegument Protein UL16	279	8.9	14	435	306	208	
148	RLPPNTFFA	1062.25	Tegument Protein UL16	106	34	16	154	130	89	
149	VLTEPLCQV	1001.22	Tegument Protein UL16	72	23	71	300	304	261	
150	AMSDDLGSL	908	Tegument Protein UL16	212	94	978	36	19	13	
151	KIFRCLTVL	1092.42	Tegument Protein UL16	65	56	159	198	156	108	

152	ILFSYDELV	1098.27	A Packaging Tegument Protein UL	146	8.9	5.6	359	339	302	
153	GLFVSLPVV	930.15	A Packaging Tegument Protein UL	109	13	4.7	359	302	255	
154	ILLENLMRA	1072.34	A Packaging Tegument Protein UL	529	18	19	234	215	161	
155	HLCRYVALL	1087.36	A Packaging Tegument Protein UL	173	61	200	181	106	75	
156	ALATALTEA	859.99	A Packaging Tegument Protein UL	421	28	10	220	190	136	
157	RLNNRPIAV	1052.24	A Packaging Tegument Protein UL	600	40	20	87	90	81	
158	AVGELLAPV	868.04	A Packaging Tegument Protein UL	85	28	84	161	167	145	
159	FTINIAAYL	1025.22	A Packaging Tegument Protein UL	669	30	123	72	63	44	
160	ALMRGRPGL	970.21	A Packaging Tegument Protein UL	42	77	1675	90	61	38	
161	FADSDGHYV	1010.03	A Packaging Tegument Protein UL	580	54	142	112	101	79	
162	TLIPRLFAL	1043.33	Capsid Triplex Subunit 2	222	12	35	97	92	76	Gr #9 (n=23)
163	RLPLYEALV	1073.31	Capsid Triplex Subunit 2	268	46	95	60	26	15	
164	ALVAWLTHA	981.16	Capsid Triplex Subunit 2	274	30	15	149	101	89	
165	SLLADVQQL	986.13	Capsid Triplex Subunit 2	187	32	28	168	146	128	
166	LVLNMVYSI	1051.31	Capsid Triplex Subunit 2	205	39	94	112	91	72	
167	IILTLIPRL	1051.39	Capsid Triplex Subunit 2	219	47	127	178	134	85	
168	RLDSLDTL	1045.21	Capsid Triplex Subunit 2	129	76	101	117	91	75	
169	RLFDFFSRV	1186.39	Major Capsid Protein	34	7.7	0.20	116	99	94	
170	ALMAGYFKI	1013.27	Major Capsid Protein	1023	8.6	49	191	200	179	
171	SLMNVDAAV	919.06	Major Capsid Protein	465	11	9.7	149	143	123	
172	VLLEKAPPL	979.23	Major Capsid Protein	187	13	24	171	161	151	
173	RLLQSFLKV	1103.37	Major Capsid Protein	287	22	82	116	113	87	
174	FMQPDNANL	1049.17	Major Capsid Protein	531	15	47	125	106	74	
175	SLYDVEFDA	1058.12	Major Capsid Protein	48	17	9.7	209	142	105	
176	HLMRDPALL	1065.31	Major Capsid Protein	724	31	37	220	201	171	
177	GLFQEAYPL	1037.19	Major Capsid Protein	1326	15	5.4	156	130	96	
178	LLYNGAYHL	1063.22	Major Capsid Protein	1255	16	7.6	74	50	33	
179	ILFLWSFLV	1137.43	Envelope Protein UL20	65	7.4	0.36	226	222	201	
180	TMRDDLPLV	1059.26	Envelope Protein UL20	2	28	61	199	177	125	
181	FLARFWTRA	1167.39	Envelope Protein UL20	206	19	48	96	73	46	
182	FAASANFFL	987.13	Envelope Protein UL20	199	19	142	269	258	248	
183	FLWSFLVLK	1152.44	Envelope Protein UL20	67	172	1418	59	44	33	

184	RLPPHTQPV	1044.23	Envelope Protein UL20	51	36	31	111	91	67	
185	CLAEYCTSL	1002.2	Tegument Protein UL21	118	15	186	179	153	111	Gr #10 (n=23)
186	FVYTPSPYV	1072.24	Tegument Protein UL21	161	8.4	129	154	109	84	
187	KLAVYYYII	1145.41	Tegument Protein UL21	347	16	31	211	139	80	
188	RLSPFPALV	999.23	Tegument Protein UL21	360	12	60	207	137	93	
189	YLGAFLSVL	982.19	Tegument Protein UL21	458	18	16	54	34	20	
190	VLADAINGL	885.02	Tegument Protein UL21	389	15	86	254	224	213	
191	RLTGVTSLV	945.13	Tegument Protein UL21	481	39	13	144	135	96	
192	ELWWVFYAA	1184.36	Tegument Protein UL21	286	61	288	54	37	10	
193	FLAASALGV	848.01	gH	805	8.2	7.4	193	173	132	
194	FLAGVPSAV	860.02	gH	530	8.6	5.9	168	138	112	
195	YLLGRPPNA	1000.17	gH	113	12	12	261	247	214	
196	LLAFDTQPV	1003.17	gH	790	16	9.3	266	233	217	
197	FILDALAQA	961.13	gH	602	17	2.6	208	182	140	
198	ALGYQLAFV	981.16	gH	471	21	12	192	173	155	
199	FVGVILGV	916.16	gH	7	42	5.9	159	140	129	
200	CLSDLLGFL	980.2	gH	104	75	88	199	126	65	
201	VLGCDAALV	860.04	gH	255	90	521	230	192	141	
202	RLQHLVAEI	1078.28	gH	452	38	142	110	82	60	
203	AMLAAIRRV	1000.28	Thymidine Kinase	230	21	63	140	106	67	
204	ITMGMPYAV	982.24	Thymidine Kinase	126	17	23	170	112	77	
205	LLANTVRYL	1062.28	Thymidine Kinase	241	64	75	237	118	87	
206	FVALIPPTL	970.23	Thymidine Kinase	190	62	704	170	84	36	
207	AVLAFVALI	916.17	Thymidine Kinase	186	50	107	151	93	79	
208	YLCPVLVfV	1052.35	Nuclear Protein UL24	144	7.8	9.5	354	318	331	Gr #11 (n=23)
209	SLSTYTVPI	980.14	Nuclear Protein UL24	183	11	13	489	486	431	
210	IVYLCPVLV	1018.33	Nuclear Protein UL24	142	38	137	389	193	162	
211	FVAQRTRLRV	1089.31	Nuclear Protein UL24	151	34	942	42	39	24	
212	FLWEDQTL	1164.33	A Packaging Tegument Protein UL	367	6.7	0.65	434	364	358	
213	FMTALVLSL	994.27	A Packaging Tegument Protein UL	208	10	0.80	425	380	363	
214	YLACLAIVI	936.19	A Packaging Tegument Protein UL	270	18	61	398	355	308	
215	FIPQYLSAV	1037.23	A Packaging Tegument Protein UL	572	17	15	291	293	248	

216	FWMSPVFNL	1140.37	A Packaging Tegument Protein UL	35	142	96	149	56	57	
217	AMQAAELPV	929.11	A Packaging Tegument Protein UL	70	21	32	323	242	186	
218	QLFPGLAAL	929.13	A Packaging Tegument Protein UL	462	21	16	72	57	47	
219	RLPRYLACL	1104.4	A Packaging Tegument Protein UL	266	62	76	245	249	163	
220	GLAVAMEV	788.96	A Packaging Tegument Protein UL	130		25	224	209	161	
221	LLANGNVYA	934.05	A Packaging Tegument Protein UL	391	25	132	167	148	138	
222	ALMGAVTSL	862.06	Capsid Maturation Protease (UL26)	480	11	4.2	374	275	237	
223	MMLRDRWSL	1207.49	Capsid Maturation Protease (UL26)	221	15	14	277	268	222	
224	LLYLITNYL	1125.38	Capsid Maturation Protease (UL26)	117	24	11	281	218	180	
225	LITNYLPSV	1019.21	Capsid Maturation Protease (UL26)	120	16	5.2	203	162	122	
226	VLFSGPSPL	916.09	Capsid Maturation Protease (UL26)	385	17	13	132	124	101	
227	MLRDRWSLV	1175.42	Capsid Maturation Protease (UL26)	222	61	311	41	55	18	
228	ALSPVLPPM	924.18	Capsid Maturation Protease (UL26)	299	20	30	315	298	278	
229	ALMGAVTSL	862.06	Capsid Maturation Protease (UL26)	480	11	22	128	93	92	
230	VLFSGPSPL	916.09	Capsid Maturation Protease (UL26)	385	17	7.9	94	79	73	
231	FLIAYQPLL	1077.34	gB	448	6.6	0.31	193	209	189	Gr #12 (n=27)
232	RMLGDVMAV	991.24	gB	562	9.6	1.7	167	155	145	
233	YLANGGFLI	967.13	gB	442	8.5	0.56	189	159	140	
234	ALLGLTLGV	856.07	gB	17	11	1.3	118	120	111	
235	TMLEDHEFV	1120.26	gB	676	16	118	189	170	152	
236	LLSNTLAEL	973.14	gB	455	32	5.1	123	108	96	
237	FAFRYVNRL	1185.4	gB	793	94	122	92	59	56	
238	EMIRYMALV	1125.43	gB	845	38	179	34	23	11	
239	FVWVALLGL	1017.27	gB	13	35	196	158	113	67	
240	KLLALLGQV	954.21	NA Packaging Terminase Subunit	14	16	33	103	84	71	
241	FLHDVENFL	1133.27	NA Packaging Terminase Subunit	142	11	12	159	160	138	
242	FLTPLSVTL	990.22	NA Packaging Terminase Subunit	72	17	4.7	243	241	247	
243	ALYYSVENV	1057.17	NA Packaging Terminase Subunit	626	14	38	233	205	180	
244	KQLNYCHLI	1131.36	NA Packaging Terminase Subunit	151	19	398	168	134	93	
245	ILYSVLQHL	1085.31	NA Packaging Terminase Subunit	764	24	55	284	211	148	
246	LLGQVQTYV	1020.19	NA Packaging Terminase Subunit	18	30	18	237	223	196	
247	VLPATFAAV	888.08	NA Packaging Terminase Subunit	538	33	11	162	94	69	

248	LLAKMLFYL	1111.46	Single Stranded DNA Binding Protein	461	8.2	5.6	157	133	99	
249	YLSEEMMEL	1144.35	Single Stranded DNA Binding Protein	1096	8.0	6.3	302	284	271	
250	FLSAKTLTV	979.19	Single Stranded DNA Binding Protein	723	8.6	11	196	176	130	
251	FLLKQFHAA	1074.29	Single Stranded DNA Binding Protein	817	16	53	53	39	21	
252	VMAARPMVV	973.27	Single Stranded DNA Binding Protein	972	29	266	274	251	238	
253	YLARAAGLV	933.12	Single Stranded DNA Binding Protein	364	51	210	78	107	89	
254	MLCGFSPAL	938.19	Single Stranded DNA Binding Protein	453	15	8.5	201	150	48	
255	FMPDFSRVI	1111.34	Single Stranded DNA Binding Protein	202	45	101	148	2.3	0	
256	SMFASCNLL	985.2	Single Stranded DNA Binding Protein	961	15	29	224	261	231	
257	FLVPGTHVA	940.11	Single Stranded DNA Binding Protein	408	27	45	111	113	75	
258	MLLAFMTLV	1038.39	DNA Polymerase Catalytic Subunit	446	7.0	5.7	189	234	196	Gr #13 (n=26)
259	MLIKGVDLV	987.26	DNA Polymerase Catalytic Subunit	950	12	16	243	226	159	
260	FLLAKLTDI	1033.28	DNA Polymerase Catalytic Subunit	474	12	10	259	199	95	
261	YLCDNFCPA	1045.22	DNA Polymerase Catalytic Subunit	281	13	27	362	278	204	
262	FILDNPGFV	1021.18	DNA Polymerase Catalytic Subunit	303	13	11	374	275	237	
263	MLLATREYV	1095.34	DNA Polymerase Catalytic Subunit	844	12	46	169	135	85	
264	KLMARRAQV	1072.34	DNA Polymerase Catalytic Subunit	1057	15	795	103	80	24	
265	LLYDLSTTA	996.14	DNA Polymerase Catalytic Subunit	397	17	43	146	122	101	
266	GLLPCLHVA	922.16	DNA Polymerase Catalytic Subunit	826	22	18	275	271	259	
267	QLLADFPEA	1003.13	DNA Polymerase Catalytic Subunit	861	32	133	134	87	74	
268	FLASLVVLA	932.17	Nuclear Egress Lamina Protein	157	10	1.7	212	186	179	
269	RLIDRMLTA	1088.35	Nuclear Egress Lamina Protein	229	25	8.6	93	81	68	
270	MLYVIFPGT	1040.3	Nuclear Egress Lamina Protein	214	45	317	38	23	13	
271	TLSGMGYYL	1004.18	Nuclear Egress Lamina Protein	108	27	148	34	23	8.2	
272	SLFDCIVPV	992.21	DNA Packaging Protein UL32	454	6.4	0.17	233	236	202	
273	LLLAGTPAV	854.06	DNA Packaging Protein UL32	343	7.9	17	177	176	152	
274	CLLCNLLL	1003.34	DNA Packaging Protein UL32	423	16	60	93	92	65	
275	LLLVRAYWL	1146.44	DNA Packaging Protein UL32	428	34	63	181	135	83	
276	LLDTGPFSA	920.04	DNA Packaging Protein UL32	108	23	93	172	108	51	
277	FALDRPCLV	1033.27	DNA Packaging Protein UL32	122	21	76	288	232	190	
278	FLCAKCLGA	925.19	DNA Packaging Protein UL32	153	51	137	151	105	76	
279	SLLSLEHTL	1012.18	DNA Packaging Protein UL32	584	28	55	135	122	104	

280	HMFCDPMCA	1054.32	DNA Packaging Protein UL32	495	94	796	230	207	184	
281	SLLALNEAL	943.11	DNA Packaging Protein UL32	38	27	54	223	203	177	
282	RLASLLTYA	1007.21	DNA Packaging Protein UL33	74	15	7.9	83	62	33	
283	SLLTYAGPI	934.11	DNA Packaging Protein UL33	77	53	113	33	17	8.5	
284	RLMNDWAEV	1133.29	Nuclear Egress Membrane Protein	71	8.5	24	228	190	161	Gr #14 (n=23)
285	VLGAIIWWV	1014.22	Nuclear Egress Membrane Protein	260	8.2	73	198	173	129	
286	FLRGQAAAL	946.12	Small Capsid Protein	53	409	589	77	53	33	
287	RMWAWIHGL	1169.41	Large Tegument Protein	2546	7.2	61	158	103	61	
288	ALPDTVAPV	882.03	Large Tegument Protein	2683	11	9.1	318	284	268	
289	AMDVLAAV	902.12	Large Tegument Protein	2315	16	4.4	206	139	108	
290	FLSDSEAEA	968	Large Tegument Protein	3034	16	2.6	214	191	166	
291	VLLGAPVVV	866.1	Large Tegument Protein	2323	22	14	215	180	197	
292	RLQFGPPP	1010.21	Large Tegument Protein	3072	16	11	134	104	94	
293	ALVACVAAL	830.06	Large Tegument Protein	1557	19	55	126	109	93	
294	QLFEAHPNV	1054.17	Large Tegument Protein	506	15	256	103	68	55	
295	YTFWRDLV	1212.42	Large Tegument Protein	2120	13	30	183	145	102	
296	VLA AVLGA	826.04	Large Tegument Protein	2319	36	52	141	109	74	
297	LLMNELLRV	1100.39	Tegument Protein UL37	1028	8.3	8.4	193	157	137	
298	FLSSSALAV	894.04	Tegument Protein UL37	360	10	2.5	163	148	135	
299	LLAENLPGL	939.12	Tegument Protein UL37	105	9.5	1.1	223	222	177	
300	FLALVSNRV	1018.22	Tegument Protein UL37	237	15	7.4	164	183	140	
301	FLLSGTAIA	892.07	Tegument Protein UL37	68	14	2.0	297	233	240	
302	LLAQFQHTV	1056.23	Tegument Protein UL37	290	13	1.2	255	214	175	
303	ALLQQTWTL	1073.26	Tegument Protein UL37	393	16	0.39	323	286	245	
304	ALAVFQPAV	915.1	Tegument Protein UL37	365	13	1.6	377	261	233	
305	LLLISMYAL	1036.35	Tegument Protein UL37	735	20	4.7	291	293	248	
306	FVPYVLALV	1020.28	Tegument Protein UL37	620	21	0.90	345	327	244	
307	GLVSFNFLV	995.18	Capsid Triplex Subunit 1	182	8.7	0.50	378	333	248	Gr #15 (n=23)
308	VILPACAFV	932.2	Capsid Triplex Subunit 1	285	21	6.2	318	305	273	
309	RLYRWQPD	1246.44	Capsid Triplex Subunit 1	399	42	916	78	22	14	
310	LLLALRHPA	1003.26	Capsid Triplex Subunit 1	129	52	600	40	21	15	
311	YLREYVTRL	1212.43	Ribonucleotide Reductase Subunit	401	14	115	303	215	160	

312	SLDAKQWSV	1033.14	Ribonucleotide Reductase Subunit	1025	9.0	7.5	319	267	236	
313	RLCLDVPPV	1011.26	Ribonucleotide Reductase Subunit	384	22	8.5	190	194	186	
314	RLLEVMSL	1075.3	Ribonucleotide Reductase Subunit	1018	16	144	113	83	70	
315	RLTEDDFGL	1065.16	Ribonucleotide Reductase Subunit	366	28	77	145	117	75	
316	ALDHYDCLI	1062.22	Ribonucleotide Reductase Subunit	474	43	180	171	118	67	
317	ILIEGIFFA	1022.26	Ribonucleotide Reductase Subunit	184	7.5	0.17	189	210	208	
318	FLFAFLSAA	986.19	Ribonucleotide Reductase Subunit	85	8.5	0.80	202	199	146	
319	FLSAADDLV	950.06	Ribonucleotide Reductase Subunit	89	13	6.1	228	202	152	
320	ILMILIEGI	1014.34	Ribonucleotide Reductase Subunit	181	23	12	184	182	140	
321	ALAAIENYV	963.1	Ribonucleotide Reductase Subunit	277	12	2.7	85	79	72	
322	WLETELVFV	1135.33	Ribonucleotide Reductase Subunit	58	42	85	167	123	79	
323	ALSPALTAL	856.04	Ribonucleotide Reductase Subunit	7	31	194	60	37	26	
324	RVYNIQLV	1117.35	Ribonucleotide Reductase Subunit	129	24	19691	2	0	3.4	
325	LLMGCDIVL	976.27	Tegument Host Shutoff Protein	217	17	2.3	312	334	290	
326	LLLMGCDIV	976.27	Tegument Host Shutoff Protein	216	137	94	228	233	143	
327	DLWNVMYTL	1154.35	Tegument Host Shutoff Protein	34	151	333	131	84	37	
328	KMSYPQFLA	1084.31	Tegument Host Shutoff Protein	45	30	1397	18	13	4.8	
329	FTQKSLFPI	1080.3	Tegument Host Shutoff Protein	70	26	84	130	86	59	
330	FLTTPVPSL	974.18	NA Polymerase Processivity Subunit	291	13	111	198	135	106	Gr #16 (n=22)
331	SLLDSSLVM	990.23	NA Polymerase Processivity Subunit	53	25	76	234	210	149	
332	VLADDVYPL	1004.15	Envelope Protein UL43	138	7.2	2.4	313	299	264	
333	LLAPGPLFV	926.17	Envelope Protein UL43	148	10	5.6	304	278	217	
334	FLGAGALAV	817.98	Envelope Protein UL43	272	16	80	393	295	287	
335	GLFFSVYAL	1016.21	Envelope Protein UL43	389	14	23	180	145	116	
336	FMHIWLQAA	1116.35	Envelope Protein UL43	36	24	81	261	260	219	
337	TLRGLFFSV	1039.25	Envelope Protein UL43	386	46	94	359	302	255	
338	FLGGHVAVA	870.01	Envelope Protein UL43	302	34	65	377	261	233	
339	SVYALGFGV	912.05	Envelope Protein UL43	393	20	1296	9.5	0.5	13	
340	AVWISLAQV	986.17	Envelope Protein UL43	357	51	259	97	69	51	
341	GLVFRFSEV	1053.23	Envelope Protein UL43	340	84	262	42	42	54	
342	GLAVVLWSL	957.17	Envelope Glycoprotein C	7	15	17	169	180	168	
343	VLAAGVLVV	840.06	Envelope Glycoprotein C	485	15	234	137	138	117	

344	SLLWLGAGV	915.09	Envelope Glycoprotein C	14	15	54	113	78	37	
345	FLGDDPSPA	917.98	Envelope Glycoprotein C	400	19	13	254	224	213	
346	RLTGYPAGI	947.11	Envelope Glycoprotein C	443	47	1099	241	228	206	
347	VLWSLLWLG	1086.33	Envelope Glycoprotein C	11	194	1.4	218	180	179	
348	LVVTAIVYV	976.22	Envelope Glycoprotein C	491	34	187	104	104	86	
349	VVTAIVYVV	962.19	Envelope Glycoprotein C	492	64	265	85	62	50	
350	VIIAALVLV	910.2	Membrane Protein UL45	40	19	212	184	146	139	
351	KQLAAVARV	955.16	Membrane Protein UL45	100	17	62	113	93	83	
352	RLNELLAYV	1090.29	Tegument Protein VP11/12	220	7.3	709	18	9.3	4.6	Gr #17 (n=14)
353	RLARCLTPA	1000.25	Tegument Protein VP11/12	12	25	23	143	152	157	
354	ALSALLTKL	929.17	Tegument Protein VP11/12	702	35	313	106	83	81	
355	MLWTTDKHV	1130.33	Tegument Protein VP11/12	238	38	1293	23	20	13	
356	FLTCTDRSV	1041.21	Tegument Protein VP11/12	66	84	83	183	184	138	
357	HMGEVPPRL	1035.24	Tegument Protein VP11/12	521	191	1739	106	71	29	
358	RIQQYMFFM	1263.56	Tegument Protein VP11/12	197	82	81	127	102	94	
359	FLADAVVRL	1003.21	Tegument Protein VP13/14	286	7.6	52	181	160	134	
360	YLATGALLA	892.07	Tegument Protein VP13/14	392	20	55	92	65	36	
361	ALLDRDCRV	1060.25	Tegument Protein VP13/14	344	18	5.6	192	229	218	
362	RLLGFADTV	991.16	Tegument Protein VP13/14	545	30	27	202	212	187	
363	VLGAAVYAL	876.06	Tegument Protein VP13/14	497	23	100	164	129	56	
364	ALHTALATV	896.06	Tegument Protein VP13/14	504	21	16	147	127	92	
365	FADTVVACV	924.09	Tegument Protein VP13/14	549	43	59	189	195	171	
366	FLHLYLFLT	1166.44	Transactivating Tegument Protein VP	227	21	564	103	105	88	Gr #18 (n=18)
367	GLFQPFMFV	1085.34	Transactivating Tegument Protein VP	268	12	37	154	137	100	
368	FLSTLPSDV	978.12	Transactivating Tegument Protein VP	204	28	76	241	228	206	
369	LLDDLGFSA	950.06	Transactivating Tegument Protein VP	65	18	46	158	122	92	
370	LMPSPMPV	968.26	Transactivating Tegument Protein VP	48	32	124	155	131	105	
371	FLTREILWA	1148.38	Transactivating Tegument Protein VP	233	33	4.2	205	181	123	
372	MLDTWNEDL	1136.25	Transactivating Tegument Protein VP	80	44	102	221	197	147	
373	VLANFCSAL	937.13	Transactivating Tegument Protein VP	171	43	14	217	214	200	
374	AMHARMAAV	957.19	Tegument Protein VP22	210	21	19	172	133	110	
375	LLQRANELV	1055.24	Tegument Protein VP22	251	95	635	132	104	63	



376	LLFVLLVAL	1000.33	Envelope Glycoprotein N	12	23	1132	28	23	15	
377	GLLFVLLVA	944.22	Envelope Glycoprotein N	11	133	1062	0	0.9	0	
378	FVYNYLTGV	1011.18	Deoxyuridine Triphosphatase	283	26	2.2	140	190	167	
379	SLNARGLLV	942.12	Deoxyuridine Triphosphatase	262	50	145	130	113	70	
380	RLQEALAVV	998.19	Tegument Protein UL51	34	13	6.6	131	138	118	
381	ALLPAPITL	908.16	Tegument Protein UL51	44	24	132	176	176	159	
382	ALGLSAFGV	833.98	Tegument Protein UL51	160	99	9.6	121	71	66	
383	ALAVVNALL	883.09	Tegument Protein UL51	38	53	18	140	115	91	
384	GLNGDSFRV	964.04	Helicase-Primase Primase Subunit	83	18	22	245	245	228	Gr #19 (n=25)
385	KMMGRLADA	992.23	Helicase-Primase Primase Subunit	459	22	182	103	69	54	
386	RLAEAVVSA	915.06	Helicase-Primase Primase Subunit	563	18	75	162	154	141	
387	YIFSydayT	1142.25	Helicase-Primase Primase Subunit	49	22	310	39	35	25	
388	RLATHLRAV	1036.25	Helicase-Primase Primase Subunit	367	43	159	122	97	74	
389	LLIDTGVYA	964.13	Helicase-Primase Primase Subunit	809	24	94	177	131	100	
390	MILALTVAI	944.25	Helicase-Primase Primase Subunit	158	27	45	160	149	121	
391	FLYLAFVAL	1056.32	Envelope Glycoprotein K	131	14	1966	38	41	35	
392	YLLNYAGRI	1082.27	Envelope Glycoprotein K	161	21	194	127	124	89	
393	GLVLVWYTV	1049.27	Envelope Glycoprotein K	20	31	66	120	107	73	
394	KMNQTLLFL	1107.38	Envelope Glycoprotein K	56	22	907	63	37	7.9	
395	CMFGVVSPA	910.13	Envelope Glycoprotein K	144	28	9.5	132	136	117	
396	RLVVVGWFL	1088.35	Envelope Glycoprotein K	124	54	865	26	12	3.3	
397	AMNRRIMNV	1104.36	Envelope Glycoprotein K	100	38	1190	80	45	20	
398	LVWYTVFGA	1055.24	Envelope Glycoprotein K	23	39	346	59	19	16	
399	GLIVGTAFI	890.09	Envelope Glycoprotein K	230	42	251	201	204	172	
400	KMHFYLPGA	1063.29	Multifunctional Expression Regulator	459	15	40	205	137	90	
401	FVYVILARL	1077.38	Multifunctional Expression Regulator	428	32	720	37	25	6	
402	MLIDLGLDL	1002.24	Multifunctional Expression Regulator	7	31	14	275	223	226	
403	ILDAARPAV	806.98	Multifunctional Expression Regulator	62	26	99	364	298	252	
404	TIHCFFFAV	1084.32	Nuclear Protein UL55	61	26	108	272	224	156	
405	GLLATPLFL	944.19	Membrane Protein UL56	106	19	27	285	207	188	
406	LLSGLPTYA	934.11	Membrane Protein UL56	129	47	177	261	142	96	
407	AVFGVVAIV	874.08	Membrane Protein UL56	216	32	250	184	144	121	

408	AIVVVILV	938.25	Membrane Protein UL56	222	93	6912	12	6.8	6	
409	MLFDQGTLV	1023.22	ICP0	739	8.0	13	181	155	128	Gr #20 (n=18)
410	KLVYLIVGV	1003.28	ICP0	159	11	14	260	270	210	
411	YLTLGGHTV	960.1	ICP0	212	26	141	232	196	159	
412	SVVALSPYV	934.1	ICP0	650	25	268	152	95	49	
413	NIGAYVVLV	947.13	ICP0	676	64	282	135	80	24	
414	LLLQWLHV	1177.45	ICP34.5	61	32	130	343	251	181	
415	YLACELLPA	992.22	ICP4	1050	8.5	0.35	393	295	287	
416	RLYPDAPPL	1041.23	ICP4	1096	17	1.9	228	161	176	
417	ALDQACFRI	1036.23	ICP4	402	28	103	210	120	118	
418	FLLTSLRRA	1076.32	ICP4	465	41	6.1	280	243	211	
419	LLPAVQCAV	913.15	ICP4	1055	42	63	229	206	168	
420	GLSCLLAL	860.09	ICP4	960	34	136	149	114	89	
421	GLAHAAAV	779.89	ICP4	444	38	82	240	161	110	
422	RMAAWMRQI	1162.45	ICP4	914	44	193	211	176	121	
423	LLASMVEEA	962.14	ICP4	86	38	51	277	268	222	
424	LTDHPLFPV	1038.22	ICP4	844	27	221	331	311	300	
425	YMRQCINQL	1168.41	ICP22	193	90	1533	139	91	69	
426	RTWCRLLQV	1174.44	ICP22	238	37	337	175	146	113	
427	RLPHICYPV	1097.36	US2	280	13	17	251	239	219	Gr #21 (n=24)
428	RLAEPLMDL	1057.29	US2	58	39	104	227	137	94	
429	GLFAEDSPL	948.05	US2	88	50	68	313	262	250	
430	TLLDQNNAL	1001.1	US2	10	50	39	221	173	133	
431	YQADLYTYL	1149.28	US3	262	9.7	9.1	223	200	122	
432	KMDIDVEYL	1125.31	US3	446	20	148	211	145	80	
433	YLSRRLNPL	1131.35	US3	269	16	90	117	78	65	
434	QLLSAVDYI	1021.18	US3	288	34	127	165	161	107	
435	IIPFLLVLV	1026.37	Glycoprotein G	12	102	55	309	268	234	
436	AVVPIIPFL	968.25	Glycoprotein G	8	57	1031	191	149	90	
437	GLLGSLVGA	785.93	Glycoprotein J	10	44	3.7	187	161	145	
438	RLGAVILFV	987.25	Glycoprotein D	7	14	12	186	186	172	
439	ILFVVIVGL	972.27	Glycoprotein D	12	23	450	106	91	70	

440	SLPITVYYA	1026.21	Glycoprotein D	77	52	164	280	251	143	
441	FLGSCICFI	1002.28	Glycoprotein I	288	8.3	12	255	231	219	
442	GLWVCATSL	949.14	Glycoprotein I	13	26	36	190	158	115	
443	GLYLCVVYV	1028.28	Glycoprotein E	355	8.0	47	219	218	169	
444	KLLWAVEPL	1068.32	Glycoprotein E	52	9.9	12	165	108	95	
445	LLSALGLSV	872.07	Glycoprotein E	429	31	8.9	201	165	159	
446	ILSPTAPSV	884.05	Glycoprotein E	507	30	6.1	277	254	220	
447	GLAWQAASV	902.01	Glycoprotein E	334	30	96	112	90	77	
448	VLVVQPAPV	921.14	Glycoprotein E	158	77	112	234	211	171	
449	FVWQERAAV	1105.26	Glycoprotein E	114	40	261	229	200	96	
450	AVVGFLGIV	874.08	Glycoprotein E	5	57	10	239	233	233	
451	VLCGIAWYV	1023.26	Membrane Protein US8A	144	9.9	7.9	260	255	206	Gr #22 (n=17)
452	GIAWYVTSI	1009.17	Membrane Protein US8A	147	43	143	14	1.4	1.6	
453	GMVIACLLV	918.23	Membrane Transport US9	66	83	252	204	183	149	
454	VIACLLVAV	900.19	Membrane Transport US9	68	27	205	225	177	164	
455	MVIACLLVA	932.26	Membrane Transport US9	67	63	166	64	45	27	
456	LLMACAFWC	1057.38	US10	267	50	974	69	42	20	
457	FITTMAPRV	1035.29	US10	250	49	32	113	108	94	
458	YLACELLPA	992.22	Transcriptional Regulator ICP4	1050	8.5	4.7	124	127	112	
459	RLYPDAPPL	1041.23	Transcriptional Regulator ICP4	1096	17	23	64	62	45	
460	ALDQACFRI	1036.23	Transcriptional Regulator ICP4	402	28	84	76	59	45	
461	FLLTSLRRA	1076.32	Transcriptional Regulator ICP4	465	41	85	56	50	35	
462	GLSCLLAAL	860.09	Transcriptional Regulator ICP4	960	34	208	49	42	23	
463	GLAHAAAAV	779.89	Transcriptional Regulator ICP4	444	38	3472	0	3.4	0	
464	RMAAWMRQI	1162.45	Transcriptional Regulator ICP4	914	44	326	44	17	0.8	
465	LLASMVEEA	962.14	Transcriptional Regulator ICP4	86	38	69	91	65	54	
466	LTDHPLFPV	1038.22	Transcriptional Regulator ICP4	844	27	140	102	97	93	
467	LMFDPRALA	1033.27	Transcriptional Regulator ICP4	858	56	762	0	0	0	

**Suppl. Table S1: Binding affinity of 467 potential epitopes selected from HSV1 genome to HLA-A\*0201 molecules:** The list of 467 peptides and their proteins of origin is shown in top portion of the table. Predicted and measured binding affinity of genome-derived peptide epitopes to soluble HLA-A\*0201 molecule ( $IC_{50}$  nM) is shown in the bottom portion of the table. Quantitative assays to measure binding of each of 467 peptides to soluble HLA-A\*0201 molecules are based on inhibition of binding of a radiolabeled standard peptide, as recently described (41). 1-10nM of radiolabeled peptide was co-incubated with 1 $\mu$ M-1nM purified MHC and 1-3 $\mu$ M human  $\beta$ 2-microglobulin. After 2 days, binding of radiolabeled peptide to MHC class I molecules was determined by capturing MHC-peptide complexes on Greiner Lumitrac 600 micro plates coated with W6/32 antibody and measuring bond counts per minute using a Top count micro scintillation counter. Concentration of peptide yielding 50% inhibition of binding of radiolabeled probe peptide ( $IC_{50}$ ) was then calculated. To determine whether synthetic peptides could stabilize HLA-A\*0201 molecule expression on the T<sub>2</sub> cell surface, peptide-inducing HLA-A\*0201 up-regulation on T<sub>2</sub> cells was examined. Data presented here is percent increase in the expression of HLA-A\*0201 molecule on the T<sub>2</sub> cell surface which was calculated as “Percent of MFI increase = (MFI with the given peptide -MFI without peptide) / (MFI without peptide) x 100. The results are representative of 2 independent experiments.