

Peptide Arrays, Peptides for Expected Conserved MHC Class I Epitopes of Influenza Virus A Proteins

Catalog No. NR-2667

This reagent is the tangible property of the U.S. Government.

Product Description: NR-2667 contains eight peptide arrays which consist of expected conserved Major Histocompatibility Complex (MHC) Class I epitopes of influenza A virus proteins M1 (NRC-248; 21 peptides), M2 (NRC-249; 5 peptides), NA (NRC-250; 3 peptides), NP (NRC-251; 19 peptides), NS2 (NRC-252; 2 peptides), PA (NRC-253; 28 peptides), PB1 (NRC-254; 51 peptides) and PB2 (NRC-255; 30 peptides). Peptides are 9-mers.

Lot: P525217A

The following information applies to all peptides:

- Appearance: Clear gel (NRC-248: 8; NRC-253: 15; NRC-254: 4, 11, 12, 18, 19, 20, 23; NRC-255: , 25); White lyophilized powder (all other Peptides)
- Mass spectral analysis: Correct MW by MALDI-TOF
- Counter Ion: Trifluoroacetate

Peptide-specific information is shown in the two tables below.

Table 1							
Peptide	Date of Mfg.	Length	Sequence	Hydrophilicity	Molecular Weight (amu)	Purity by HPLC ^a	Peptide Content ^b
NRC-248: Influenza Virus A, M1 Peptides							
1 of 21	3/10/2008	9	29-EDVFAGKNT-37	0.5	980	95	75.94
2 of 21	3/10/2008	9	31-VFAGKNTDL-39	-0.1	964	99	72.73
3 of 21	3/12/2008	9	37-TDLEALMEW-45	0.0	1107	96	84.15
4 of 21	3/11/2008	9	49-RPILSPLTK-57	0.1	1024	99	71.20
5 of 21	3/11/2008	9	51-ILSPLTKGI-59	-0.5	941	95	72.44
6 of 21	3/7/2008	9	56-TKGILGFVF-64	-0.8	981	97	77.43
7 of 21	4/21/2008	9	58-GILGFVFTL-66	-1.4	966	95	81.11
8 of 21	4/25/2008	9	60-LGFVFTLTV-68	-1.4	996	95	80.64
9 of 21	3/7/2008	9	66-LTVPSEGL-74	0.1	971	95	66.52
10 of 21	3/10/2008	9	68-VPSEGLQR-76	0.7	1041	97	52.62
11 of 21	3/19/2008	9	71-ERGLQRRRF-79	1.2	1217	95	61.46
12 of 21	4/21/2008	9	75-QRRRFVQNA-83	0.6	1174	95	73.86
13 of 21	3/17/2008	9	76-RRRFVQNAL-84	0.3	1159	96	71.86
14 of 21	4/11/2008	9	122-GALASCMGL-130	-0.7	822	95	79.15
15 of 21	3/18/2008	9	123-ALASCMGLI-131	-0.9	878	95	84.39
16 of 21	3/18/2008	9	124-LASCMGLIY-132	-1.1	970	95	76.02
17 of 21	3/25/2008	9	126-SCMGLIYNR-134	-0.5	1056	95	79.81
18 of 21	4/8/2008	9	177-NRMVLA STT-185	-0.3	992	95	72.00
19 of 21	4/2/2008	9	179-MVLA STTAK-187	-0.3	921	95	76.38
20 of 21	3/10/2008	9	180-VLA STTAKA-188	-0.3	861	95	79.14
21 of 21	4/3/2008	9	181-LA STTAKAM-189	-0.2	893	95	65.32

Table 1							
Peptide	Date of Mfg.	Length	Sequence	Hydrophilicity	Molecular Weight (amu)	Purity by HPLC ^a	Peptide Content ^b
NRC-249: Influenza Virus A, M2 Peptides							
1 of 5	4/8/2008	9	30-ASIIIGILHL-38	-1.1	936	95	80.15
2 of 5	4/9/2008	9	31-SIIGILHLI-39	-1.2	978	98	75.82
3 of 5	4/21/2008	9	34-GILHLILWI-42	-1.6	1077	95	73.32
4 of 5	3/28/2008	9	40-LWILDRLFF-48	-1.1	1222	97	86.07
5 of 5	3/13/2008	9	41-WILDRLFFK-49	-0.5	1238	95	74.00
NRC-250: Influenza Virus A, NA Peptides							
1 of 3	3/28/2008	9	100-FSKDNSIRL-108	0.4	1079	95	71.68
2 of 3	3/28/2008	9	106-IRLSAGGDI-114	0.0	901	95	84.07
3 of 3	3/20/2008	9	107-RLSAGGDIW-115	-0.1	974	95	68.31
NRC-251: Influenza Virus A, NP Peptides							
1 of 19	3/21/2008	9	88-DPKKTGGPI-96	0.8	912	95	59.86
2 of 19	4/21/2008	9	89-PKKTGGPIY-97	0.2	960	95	72.71
3 of 19	3/17/2008	9	147-TYQRTRALV-155	-0.1	1107	95	72.57
4 of 19	3/19/2008	9	149-QRTRALVRT-157	0.5	1100	95	60.79
5 of 19	3/18/2008	9	158-GMDPRMCSL-166	0.1	1009	96	71.22
6 of 19	4/8/2008	9	164-CSLMQGSTL-172	-0.6	939	99	86.06
7 of 19	3/18/2008	9	166-LMQGSTLPR-174	-0.2	1002	98	76.07
8 of 19	3/17/2008	9	218-AYERMCNIL-226	-0.3	1112	97	82.19
9 of 19	3/27/2008	9	225-ILKGKFQTA-233	-0.1	1005	95	76.58
10 of 19	3/13/2008	9	226-LKGKFQTA-234	0.1	963	98	67.09
11 of 19	3/21/2008	9	245-SRNPNGAEI-253	0.5	957	95	66.92
12 of 19	4/15/2008	9	250-NAEIEDLIF-258	0.1	1063	95	81.68
13 of 19	3/21/2008	9	256-LIFLARSAL-264	-0.8	1003	95	75.51
14 of 19	3/20/2008	9	257-IFLARSALI-265	-0.8	1003	95	68.49
15 of 19	4/28/2008	9	258-FLARSALIL-266	-0.8	1003	95	74.05
16 of 19	3/10/2008	9	296-YSLVGIDPF-304	-0.7	1010	95	78.71
17 of 19	3/12/2008	9	462-GVFELSDEK-470	0.7	1023	98	82.84
18 of 19	3/13/2008	9	463-VFELSDEKA-471	0.7	1037	95	81.42
19 of 19	3/25/2008	9	464-FELSDEKAT-472	0.8	1039	95	74.54
NRC-252: Influenza Virus A, NS2 Peptides							
1 of 2	3/21/2008	9	4-NTVSSFQDI-12	-0.2	1010	95	82.10
2 of 2	3/21/2008	9	72-KFEEIRWLI-80	0.1	1233	98	72.04
NRC-253: Influenza Virus A, PA Peptides							
1 of 28	3/18/2008	9	71-LLKHRFEII-79	-0.1	1168	95	79.91
2 of 28	4/8/2008	9	74-HRFEIIEGR-82	0.6	1156	95	67.99
3 of 28	3/13/2008	9	130-YYLEKANKI-138	0.1	1141	96	72.89
4 of 28	3/13/2008	9	131-YLEKANKIK-139	0.6	1106	95	82.99
5 of 28	3/28/2008	9	162-TLDEESRAR-170	1.4	1076	95	74.06
6 of 28	3/17/2008	9	163-LDEESRARI-171	1.2	1088	95	66.36
7 of 28	3/18/2008	9	164-DEESRARIK-172	1.8	1103	95	68.83
8 of 28	3/17/2008	9	166-ESRARIKTR-174	1.4	1116	95	66.77
9 of 28	3/17/2008	9	167-SRARIKTRL-175	0.9	1100	95	67.36
10 of 28	3/26/2008	9	245-KLSQMSKEV-253	0.6	1049	95	75.20
11 of 28	4/8/2008	9	294-DPSHEGEGI-302	0.8	940	99	63.87
12 of 28	3/18/2008	9	296-SHEGEGIPL-304	0.2	938	95	78.40

Peptide	Date of Mfg.	Length	Sequence	Hydrophilicity	Molecular Weight (amu)	Purity by HPLC ^a	Peptide Content ^b
13 of 28	3/17/2008	9	483-IPMISKCRT-491	0.0	1048	95	70.82
14 of 28	3/19/2008	9	484-PMISKCR TK-492	0.5	1063	95	57.44
15 of 28	3/28/2008	9	507-GRSHLRNDT-515	0.8	1055	95	57.14
16 of 28	3/18/2008	9	510-HLRNDTDVV-518	0.4	1068	95	49.97
17 of 28	3/18/2008	9	632-SIGKVCRTL-640	0.0	976	95	75.47
18 of 28	3/12/2008	9	635-KVCRTLLAK-643	0.2	1031	95	70.93
19 of 28	4/3/2008	9	637-CRTLLAKSV-645	-0.1	990	95	65.31
20 of 28	3/18/2008	9	641-LAKSVFNSL-649	-0.5	978	95	73.12
21 of 28	3/19/2008	9	642-AKSVFNSLY-650	-0.5	1028	95	79.37
22 of 28	3/12/2008	9	652-SPQLEGFSA-660	-0.1	935	95	85.18
23 of 28	3/26/2008	9	656-EGFSAESRK-664	1.1	1010	95	72.32
24 of 28	3/19/2008	9	657-GFSAESRKL-665	0.5	994	95	71.85
25 of 28	3/18/2008	9	658-FSAESRKL-666	0.3	1050	95	66.64
26 of 28	3/26/2008	9	659-SAESRKL-667	0.4	1016	97	68.00
27 of 28	3/18/2008	9	691-EECLINDPW-699	0.1	1118	95	81.04
28 of 28	3/17/2008	9	694-LINDPWVLL-702	-1.0	1082	95	80.96
NRC-254: Influenza Virus A, PB1 Peptides							
1 of 51	4/15/2008	9	4-NPTLLFLKV-12	-0.7	1044	95	70.11
2 of 51	4/2/2008	9	16-NAISTTFPY-24	-0.8	1013	97	87.36
3 of 51	3/28/2008	9	22-FPYTGDPY-30	-0.5	1056	95	81.47
4 of 51	4/10/2008	9	30-YSHGTGTGY-38	-0.6	942	95	61.32
5 of 51	4/8/2008	9	77-NEPSGYAQT-85	0.1	966	95	79.74
6 of 51	4/21/2008	9	81-GYAQTDCVL-89	-0.5	969	95	84.12
7 of 51	3/11/2008	9	83-AQTDCVLEA-91	0.1	949	95	84.13
8 of 51	3/31/2008	9	123-TQGRQTYDW-131	0.0	1154	96	82.82
9 of 51	4/3/2008	9	127-QTYDWT LNR-135	-0.2	1196	94	86.23
10 of 51	3/19/2008	9	221-ALTLNMTK-229	-0.4	992	95	71.65
11 of 51	3/20/2008	9	228-TKDAERGKL-236	1.4	1017	95	55.15
12 of 51	3/20/2008	9	230-DAERGKLR-238	1.7	1072	95	41.59
13 of 51	4/1/2008	9	233-RGKLRRAI-241	1.2	1097	95	41.46
14 of 51	3/27/2008	9	235-KLKRRAIAT-243	0.8	1056	95	59.99
15 of 51	3/28/2008	9	238-RAIATPGM-246	0.2	972	95	65.82
16 of 51	3/21/2008	9	240-AIATPGMQI-248	-0.7	901	95	74.13
17 of 51	4/21/2008	9	243-TPGMQIRGF-251	-0.3	1006	95	82.99
18 of 51	3/26/2008	9	271-LPVGGNEKK-279	0.7	941	95	48.63
19 of 51	3/27/2008	9	274-GGNEKKAKL-282	1.1	944	95	69.24
20 of 51	3/26/2008	9	275-GNEKKAKLA-283	1.0	958	95	48.97
21 of 51	4/21/2008	9	277-EKKAKLANV-285	0.9	1000	95	69.54
22 of 51	3/12/2008	9	280-AKLANVVRK-288	0.4	998	95	59.86
23 of 51	4/21/2008	9	281-KLANVVRKM-289	0.3	1058	95	70.20
24 of 51	4/21/2008	9	340-APIMFSNKM-348	-0.4	1038	95	91.66
25 of 51	3/26/2008	9	342-IMFSNKMAR-350	-0.1	1097	95	66.36
26 of 51	4/2/2008	9	343-MFSNKMARL-351	-0.1	1097	95	79.33
27 of 51	3/27/2008	9	347-KMARLGKGY-355	0.3	1023	95	66.48
28 of 51	3/26/2008	9	349-ARLGKGYMF-357	-0.3	1042	95	68.68

Table 1							
Peptide	Date of Mfg.	Length	Sequence	Hydrophilicity	Molecular Weight (amu)	Purity by HPLC ^a	Peptide Content ^b
29 of 51	4/21/2008	9	403-LSPGMMMGM-411	-0.7	954	95	79.52
30 of 51	4/15/2008	9	404-SPGMMMGMF-412	-0.8	988	95	80.96
31 of 51	4/8/2008	9	407-MMMGMFNML-415	-1.2	1106	95	86.50
32 of 51	3/26/2008	9	410-GMFNMLSTV-418	-0.9	999	95	87.30
33 of 51	4/8/2008	9	411-MFNMLSTVL-419	-1.1	1055	99	79.93
34 of 51	4/15/2008	9	413-NMLSTVLGV-421	-0.9	933	99	71.56
35 of 51	4/8/2008	9	439-DGLQSSDDF-447	0.6	983	99	76.89
36 of 51	4/15/2008	9	441-LQSSDDFAL-449	0.0	995	95	87.95
37 of 51	4/8/2008	9	443-SSDDFALIV-451	-0.2	966	95	78.09
38 of 51	3/28/2008	9	475-INMSKKKSY-483	0.5	1098	95	64.27
39 of 51	4/8/2008	9	487-TGTFEFTSF-495	-0.6	1036	95	81.77
40 of 51	4/15/2008	9	489-TFEFTSFFY-497	-1.1	1188	95	75.05
41 of 51	3/28/2008	9	491-EFTSFFYRY-499	-0.7	1259	95	74.70
42 of 51	3/11/2008	9	497-YRYGFVANF-505	-0.9	1136	95	70.39
43 of 51	4/25/2008	9	501-FVANFSMEL-509	-0.7	1057	95	83.82
44 of 51	3/28/2008	9	504-NFSMELPSF-512	-0.5	1071	95	87.48
45 of 51	3/28/2008	9	598-LYNIRNLHI-606	-0.7	1155	95	73.12
46 of 51	4/8/2008	9	658-DAVATTHSW-666	-0.4	987	95	78.72
47 of 51	3/31/2008	9	669-KRNRSILNT-677	0.6	1101	95	74.48
48 of 51	3/28/2008	9	697-EKFFPSSSY-705	0.0	1091	96	80.17
49 of 51	3/28/2008	9	698-KFFPSSSYR-706	0.0	1118	95	71.87
50 of 51	3/28/2008	9	699-FFPSSSYRR-707	0.0	1146	95	70.75
51 of 51	4/8/2008	9	716-EAMVSRARI-724	0.4	1032	95	72.00
NRC-255: Influenza Virus A, PB2 Peptides							
1 of 30	3/28/2008	9	23-TTVDHMAII-31	-0.6	1000	95	74.86
2 of 30	4/25/2008	9	24-TVDHMAIIK-32	-0.2	1027	95	58.01
3 of 30	4/25/2008	9	26-DHMAIIKKY-34	0.1	1118	95	65.17
4 of 30	4/2/2008	9	30-IIKKYTSGR-38	0.3	1065	95	60.10
5 of 30	3/12/2008	9	33-KYTSGRQEK-41	1.1	1096	99	81.64
6 of 30	3/28/2008	9	45-LRMKWMAM-53	-0.5	1198	95	79.06
7 of 30	3/28/2008	9	47-MKWMAMKY-55	-0.6	1220	95	66.92
8 of 30	3/12/2008	9	49-WMMAMKYPI-57	-1.0	1171	95	88.23
9 of 30	4/8/2008	9	158-EAQDVIMEV-166	0.3	1033	95	78.62
10 of 30	4/29/2008	9	160-QDVIMEVVF-168	-0.4	1079	80	67.12
11 of 30	3/28/2008	9	204-AYMLERELV-212	0.0	1123	95	88.52
12 of 30	3/17/2008	9	205-YMLERELVR-213	0.4	1208	98	86.00
13 of 30	3/18/2008	9	206-MLERELVRK-214	1.0	1173	95	66.07
14 of 30	4/2/2008	9	208-ERELVRKTR-216	1.6	1186	95	68.77
15 of 30	3/26/2008	9	209-RELVKTRF-217	1.0	1204	95	62.83
16 of 30	3/25/2008	9	210-ELVRKTRFL-218	0.4	1161	95	59.94
17 of 30	3/11/2008	9	212-VRKTRFLPV-220	0.1	1115	95	64.06
18 of 30	3/26/2008	9	232-LHLTQGTWCW-240	-1.0	1058	95	70.11
19 of 30	4/8/2008	9	279-SLLEMCHST-287	-0.4	1020	95	82.08
20 of 30	4/9/2008	9	320-SSSFSFGGF-328	-0.7	922	96	83.37

Peptide	Date of Mfg.	Length	Sequence	Hydrophilicity	Molecular Weight (amu)	Purity by HPLC ^a	Peptide Content ^b
21 of 30	4/8/2008	9	322-SFSFGGFTF-330	-1.1	996	96	75.13
22 of 30	4/9/2008	9	412-KAVRGDLNF-420	0.3	1019	99	80.47
23 of 30	4/3/2008	9	420-FVNRANQRL-428	0.0	1117	97	64.00
24 of 30	3/31/2008	9	423-RANQRLNPM-431	0.3	1099	95	78.36
25 of 30	4/8/2008	9	426-QRLNPMHQL-434	-0.2	1136	95	77.56
26 of 30	3/28/2008	9	427-RLNPMHQLL-435	-0.4	1121	95	70.66
27 of 30	3/17/2008	9	686-VESAVLRGF-694	-0.2	977	99	87.07
28 of 30	3/12/2008	9	742-SILTDSQTA-750	-0.1	935	95	72.02
29 of 30	4/3/2008	9	743-ILTDSQTAT-751	-0.2	949	95	84.87
30 of 30	3/17/2008	9	744-LTDSQTATK-752	0.3	964	95	70.08

^a% full-length
^bRemainder is salt and water

Peptide		Ala (A)	Arg (R)	Asx (N,D)	Cys (C)	Glx (Q,E)	Gly (G)	His (H)	Ile (I)	Leu (L)	Lys (K)	Met (M)	Phe (F)	Pro (P)	Ser (S)	Thr (T)	Trp (W)	Tyr (Y)	Val (V)
NRC-248: Influenza Virus A, M1 Peptides																			
1 of 21	Expected	1.00		2.00		1.00	1.00				1.00		1.00			1.00			1.00
	Actual	1.00		2.00		0.94	1.01				1.01		1.05			0.87			1.00
2 of 21	Expected	1.00		2.00			1.00			1.00	1.00		1.00			1.00			1.00
	Actual	1.00		2.05			1.02			1.03	1.01		1.04			0.91			0.99
3 of 21	Expected	1.00		1.00		2.00				2.00		1.00				1.00	1.00		
	Actual	1.04		0.98		1.97				2.10		1.04				0.95	0.00 ^b		
4 of 21	Expected		1.00						1.00	2.00	1.00			2.00	1.00	1.00			
	Actual		1.03						1.00	2.05	1.04			2.09	1.00	0.91			
5 of 21	Expected						1.00		2.00	2.00	1.00			1.00	1.00	1.00			
	Actual						1.01		1.99	2.06	1.03			1.07	1.01	0.91			
6 of 21	Expected						2.00		1.00	1.00	1.00		2.00			1.00			1.00
	Actual						2.01		1.00	1.03	1.03		2.05			0.94			1.00
7 of 21	Expected						2.00		1.00	2.00			2.00			1.00			1.00
	Actual						2.01		0.98	2.07			2.13			0.98			1.02
8 of 21	Expected						1.00			2.00			2.00			2.00			2.00
	Actual						1.02			2.06			2.09			1.93			2.05
9 of 21	Expected		1.00			1.00	1.00			2.00				1.00	1.00	1.00			1.00
	Actual		1.03			1.00	1.04			2.06				0.98	0.95	0.95			1.02
10 of 21	Expected		2.00			2.00	1.00			1.00				1.00	1.00				1.00
	Actual		1.98			1.95	1.06			1.03				0.96	0.99				0.99
11 of 21	Expected		4.00			2.00	1.00			1.00			1.00						
	Actual		3.85			1.88	1.01			1.00			1.09						
12 of 21	Expected	1.00	3.00	1.00		2.00							1.00						1.00
	Actual	0.95	3.09	0.96		1.96							1.08						1.00

Table 2 - Amino Acid Analysis

Peptide		Ala (A)	Arg (R)	Asx (N,D)	Cys (C)	Glx (Q,E)	Gly (G)	His (H)	Ile (I)	Leu (L)	Lys (K)	Met (M)	Phe (F)	Pro (P)	Ser (S)	Thr (T)	Trp (W)	Tyr (Y)	Val (V)
13 of 21	Expected	1.00	3.00	1.00		1.00				1.00			1.00						1.00
	Actual	0.98	3.00	0.99		0.97				1.01			1.06						1.00
14 of 21	Expected	2.00			1.00		2.00			2.00		1.00			1.00				
	Actual	1.99			0.0 ^a		1.95			2.04		1.01			0.96				
15 of 21	Expected	2.00			1.00		1.00		1.00	2.00		1.00			1.00				
	Actual	1.96			0.0 ^a		1.01		1.00	2.01		1.00			0.96				
16 of 21	Expected	1.00			1.00		1.00		1.00	2.00		1.00			1.00				1.00
	Actual	1.01			0.0 ^a		1.01		0.99	1.96		0.98			0.99				1.01
17 of 21	Expected		1.00	1.00	1.00		1.00		1.00	1.00		1.00			1.00				1.00
	Actual		1.06	0.98	0.0 ^a		1.03		1.01	1.03		1.02			0.94				1.01
18 of 21	Expected	1.00	1.00	1.00						1.00		1.00			1.00	2.00			1.00
	Actual	1.04	0.98	0.93						1.07		1.02			1.02	2.03			1.06
19 of 21	Expected	2.00								1.00	1.00	1.00			1.00	2.00			1.00
	Actual	2.03								1.05	1.04	1.00			0.94	1.90			1.03
20 of 21	Expected	3.00								1.00	1.00				1.00	2.00			1.00
	Actual	2.91								1.06	1.02				0.98	2.00			1.03
21 of 21	Expected	3.00								1.00	1.00	1.00			1.00	2.00			
	Actual	3.09								1.07	1.02	1.02			0.91	1.81			
NRC-249: Influenza Virus A, M2 Peptides																			
1 of 5	Expected	1.00					1.00	1.00	3.00	2.00					1.00				
	Actual	1.00					1.05	1.07	2.72	2.10					1.02				
2 of 5	Expected						1.00	1.00	4.00	2.00					1.00				
	Actual						1.05	1.07	3.82	2.07					0.98				
3 of 5	Expected						1.00	1.00	3.00	3.00								1.00	
	Actual						1.02	1.02	2.88	3.00								0.00 ^b	
4 of 5	Expected		1.00	1.00					1.00	3.00			2.00						1.00
	Actual		1.01	0.99					0.98	3.01			2.02						0.00 ^b
5 of 5	Expected		1.00	1.00					1.00	2.00	1.00		2.00						1.00
	Actual		1.00	0.97					0.97	2.00	1.02		2.09						0.00 ^b
NRC-250: Influenza Virus A, NA Peptides																			
1 of 3	Expected		1.00	2.00					1.00	1.00	1.00		1.00		2.00				
	Actual		0.99	1.94					0.97	1.00	0.98		1.09		1.81				
2 of 3	Expected	1.00	1.00	1.00			2.00		2.00	1.00					1.00				
	Actual	1.04	0.98	1.01			2.06		1.99	1.06					0.97				
3 of 3	Expected	1.00	1.00	1.00			2.00		1.00	1.00					1.00		1.00		
	Actual	1.00	1.02	1.00			2.00		0.98	1.01					0.94		0.00 ^b		
NRC-251: Influenza Virus A, NP Peptides																			
1 of 19	Expected			1.00			2.00		1.00		2.00			2.00		1.00			
	Actual			0.99			2.07		1.03		2.07			2.09		0.96			
2 of 19	Expected						2.00		1.00		2.00			2.00		1.00		1.00	
	Actual						2.05		1.01		2.06			2.11		0.94		1.02	
3 of 19	Expected	1.00	2.00			1.00				1.00						2.00		1.00	1.00
	Actual	1.02	2.07			0.98				1.04						1.87		1.01	1.03
4 of 19	Expected	1.00	3.00			1.00				1.00						2.00			1.00
	Actual	1.02	3.06			0.99				1.05						1.98			1.02
5 of 19	Expected		1.00	1.00	1.00		1.00			1.00		2.00		1.00	1.00				
	Actual		0.99	0.98	0.0 ^a		1.02			1.09		2.01		0.91	0.98				
6 of 19	Expected				1.00	1.00				2.00		1.00			2.00	1.00			
	Actual				0.0 ^a	0.99	1.07			2.14		1.04			1.90	1.01			
7 of 19	Expected		1.00			1.00	1.00			2.00		1.00		1.00	1.00	1.00			
	Actual		1.04			1.00	1.03			2.08		1.00		1.01	0.91	0.97			
8 of 19	Expected	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00							1.00
	Actual	0.98	1.01	1.00	0.0 ^a	0.96			1.01	1.02		1.01							1.01

Table 2 - Amino Acid Analysis

Peptide		Ala (A)	Arg (R)	Asx (N,D)	Cys (C)	Glx (Q,E)	Gly (G)	His (H)	Ile (I)	Leu (L)	Lys (K)	Met (M)	Phe (F)	Pro (P)	Ser (S)	Thr (T)	Trp (W)	Tyr (Y)	Val (V)
9 of 19	Expected	1.00				1.00	1.00		1.00	1.00	2.00		1.00			1.00			
	Actual	0.99				0.98	1.00		0.99	1.00	2.02		1.04			1.05			
10 of 19	Expected	2.00				1.00	1.00			1.00	2.00		1.00			1.00			
	Actual	1.97				0.98	1.05			1.05	2.09		1.02			0.92			
11 of 19	Expected	1.00	1.00	2.00		1.00	1.00		1.00					1.00	1.00				
	Actual	1.01	1.01	1.99		0.97	1.02		1.00					0.99	0.91				
12 of 19	Expected	1.00		2.00		2.00			2.00	1.00			1.00						
	Actual	1.01		1.87		1.97			2.03	1.07			0.99						
13 of 19	Expected	2.00	1.00						1.00	3.00			1.00		1.00				
	Actual	1.93	0.99						0.98	2.96			1.08		0.94				
14 of 19	Expected	2.00	1.00						2.00	2.00			1.00		1.00				
	Actual	1.96	0.99						1.93	2.01			1.06		0.96				
15 of 19	Expected	2.00	1.00						1.00	3.00			1.00		1.00				
	Actual	1.97	1.00						1.01	3.02			1.00		0.92				
16 of 19	Expected			1.00			1.00		1.00	1.00			1.00	1.00	1.00			1.00	1.00
	Actual			1.00			1.02		1.01	1.02			1.01	0.98	0.87			0.94	1.02
17 of 19	Expected			1.00		2.00	1.00			1.00	1.00		1.00		1.00				1.00
	Actual			0.97		1.94	0.99			1.01	1.02		1.05		1.02				0.98
18 of 19	Expected	1.00		1.00		2.00				1.00	1.00		1.00		1.00				1.00
	Actual	0.98		1.00		1.93				1.02	1.02		1.02		0.93				0.99
19 of 19	Expected	1.00		1.00		2.00				1.00	1.00		1.00		1.00	1.00			
	Actual	0.99		1.02		1.98				1.03	1.04		1.06		0.97	0.97			
NRC-252: Influenza Virus A, NS2 Peptides																			
1 of 2	Expected					2.00			1.00				1.00		2.00	1.00			1.00
	Actual			2.08		1.04			1.02				1.03		2.01	1.01			1.03
2 of 2	Expected		1.00			2.00			2.00	1.00	1.00		1.00					1.00	
	Actual		1.00			1.89			1.95	1.01	1.01		1.05				0.00 ^b		
NRC-253: Influenza Virus A, PA Peptides																			
1 of 28	Expected		1.00			1.00		1.00	2.00	2.00	1.00		1.00						
	Actual		1.01			0.96		1.01	1.84	2.01	1.03		1.07						
2 of 28	Expected		2.00			2.00	1.00	1.00	2.00				1.00						
	Actual		2.05			1.87	1.00	1.04	1.85				1.07						
3 of 28	Expected	1.00		1.00		1.00			1.00	1.00	2.00							2.00	
	Actual	0.99		0.99		0.99			0.98	1.03	2.02							2.02	
4 of 28	Expected	1.00		1.00		1.00			1.00	1.00	3.00							1.00	
	Actual	0.99		0.99		0.96			1.00	1.02	3.06							1.02	
5 of 28	Expected	1.00	2.00	1.00		2.00				1.00					1.00	1.00			
	Actual	0.97	2.04	1.03		1.96				1.05					0.99	1.00			
6 of 28	Expected	1.00	2.00	1.00		2.00			1.00	1.00					1.00				
	Actual	1.05	2.09	0.95		1.92			1.03	0.96					0.86				
7 of 28	Expected	1.00	2.00	1.00		2.00			1.00		1.00				1.00				
	Actual	1.00	2.02	0.96		1.93			1.02		1.04				0.95				
8 of 28	Expected	1.00	3.00			1.00			1.00		1.00				1.00	1.00			
	Actual	1.01	3.09			1.04			1.01		1.06				0.93	0.93			
9 of 28	Expected	1.00	3.00						1.00	1.00	1.00				1.00	1.00			
	Actual	1.00	3.03						1.02	1.05	1.04				0.96	0.97			
10 of 28	Expected					2.00				1.00	2.00	1.00			2.00				1.00
	Actual					1.99				1.04	1.88	0.99			1.85				1.04
11 of 28	Expected			1.00		2.00	2.00	1.00	1.00					1.00	1.00				
	Actual			0.96		2.05	2.04	1.04	1.01					0.96	0.92				
12 of 28	Expected					2.00	2.00	1.00	1.00	1.00				1.00	1.00				
	Actual					1.93	2.02	1.00	1.01	1.03				0.99	0.92				
13 of 28	Expected		1.00		1.00				2.00		1.00	1.00		1.00	1.00	1.00			
	Actual		1.05		0.00 ^a				2.05		1.06	1.01		0.97	0.95	0.99			

Table 2 - Amino Acid Analysis

Peptide		Ala (A)	Arg (R)	Asx (N,D)	Cys (C)	Glx (Q,E)	Gly (G)	His (H)	Ile (I)	Leu (L)	Lys (K)	Met (M)	Phe (F)	Pro (P)	Ser (S)	Thr (T)	Trp (W)	Tyr (Y)	Val (V)
14 of 28	Expected		1.00		1.00				1.00		2.00	1.00		1.00	1.00	1.00			
	Actual		1.03		0.00 ^a				1.03		2.14	1.02		0.94	1.01	1.00			
15 of 28	Expected		2.00	2.00			1.00	1.00		1.00					1.00	1.00			
	Actual		2.08	2.02			1.00	1.01		1.06					0.94	0.99			
16 of 28	Expected		1.00	3.00				1.00		1.00						1.00			2.00
	Actual		1.02	3.16				1.00		1.03						0.97			2.03
17 of 28	Expected		1.00		1.00		1.00		1.00	1.00	1.00				1.00	1.00			1.00
	Actual		1.03		0.00 ^a		1.02		1.01	1.04	1.03				0.93	0.95			1.01
18 of 28	Expected	1.00	1.00		1.00					2.00	2.00					1.00			1.00
	Actual	0.97	1.04		0.00 ^a					2.02	2.03					1.01			1.00
19 of 28	Expected	1.00	1.00		1.00					2.00	1.00				1.00	1.00			1.00
	Actual	1.02	1.01		0.00 ^a					2.03	1.05				0.98	0.96			1.01
20 of 28	Expected	1.00		1.00						2.00	1.00		1.00		2.00				1.00
	Actual	0.98		0.97						1.97	0.99		1.09		1.88				0.99
21 of 28	Expected	1.00		1.00						1.00	1.00		1.00		2.00			1.00	1.00
	Actual	1.00		0.99						1.01	0.98		1.00		1.92			1.01	1.01
22 of 28	Expected	1.00				2.00	1.00			1.00			1.00	1.00	2.00				
	Actual	0.96				1.91	1.02			1.03			1.02	1.01	2.10				
23 of 28	Expected	1.00	1.00			2.00	1.00				1.00		1.00		2.00				
	Actual	0.98	1.01			1.93	0.99				1.00		1.06		1.82				
24 of 28	Expected	1.00	1.00			1.00	1.00			1.00	1.00		1.00		2.00				
	Actual	0.98	1.01			0.97	0.98			1.02	1.02		1.03		1.85				
25 of 28	Expected	1.00	1.00			1.00				2.00	1.00		1.00		2.00				
	Actual	0.99	0.98			0.95				2.04	1.00		1.05		1.90				
26 of 28	Expected	1.00	1.00			1.00				3.00	1.00				2.00				
	Actual	1.06	0.97			0.95				2.88	1.03				2.06				
27 of 28	Expected			2.00	1.00	2.00			1.00	1.00				1.00			1.00		
	Actual			2.03	0.00 ^a	1.93			1.02	1.03				0.96			0.00 ^b		
28 of 28	Expected			2.00					1.00	3.00				1.00			1.00		1.00
	Actual			1.99					0.99	3.02				1.02			0.00 ^b		1.00
NRC-254: Influenza Virus A, PB1 Peptides																			
1 of 51	Expected			1.00						3.00	1.00		1.00	1.00		1.00			1.00
	Actual			1.03						3.02	0.98		1.08	0.98		1.04			0.99
2 of 51	Expected	1.00		1.00					1.00				1.00	1.00	1.00	2.00		1.00	
	Actual	1.02		1.03					1.03				1.02	1.02	1.00	1.99		1.03	
3 of 51	Expected			1.00			1.00						1.00	3.00		1.00		2.00	
	Actual			0.98			1.00						1.02	3.14		0.98		2.05	
4 of 51	Expected						3.00	1.00							1.00	2.00		2.00	
	Actual						3.07	1.05							0.95	1.97		2.06	
5 of 51	Expected	1.00		1.00		2.00	1.00							1.00	1.00	1.00		1.00	
	Actual	1.04		1.01		1.86	1.05							0.98	0.95	0.97		1.07	
6 of 51	Expected	1.00		1.00	1.00	1.00	1.00			1.00						1.00		1.00	1.00
	Actual	1.01		1.02	0.00 ^a	0.98	1.02			1.05						0.93		1.01	1.04
7 of 51	Expected	2.00		1.00	1.00	2.00				1.00						1.00			1.00
	Actual	1.96		1.03	0.00 ^a	1.89				1.04						1.03			1.02
8 of 51	Expected		1.00	1.00		2.00	1.00									2.00	1.00	1.00	
	Actual		1.02	1.01		1.95	1.01									2.04	0.00 ^b	1.01	
9 of 51	Expected		1.00	2.00		1.00				1.00						2.00	1.00	1.00	
	Actual		1.03	1.97		0.99				1.01						2.02	0.00 ^b	1.03	
10 of 51	Expected	1.00		1.00						2.00	1.00	1.00				3.00			
	Actual	1.02		1.00						2.07	1.04	1.01				2.95			
11 of 51	Expected	1.00	1.00	1.00		1.00	1.00			1.00	2.00					1.00			
	Actual	1.00	1.02	1.00		1.00	1.04			1.04	2.05					0.97			

Table 2 - Amino Acid Analysis

Peptide		Ala (A)	Arg (R)	Asx (N,D)	Cys (C)	Glx (Q,E)	Gly (G)	His (H)	Ile (I)	Leu (L)	Lys (K)	Met (M)	Phe (F)	Pro (P)	Ser (S)	Thr (T)	Trp (W)	Tyr (Y)	Val (V)
12 of 51	Expected	1.00	2.00	1.00		1.00	1.00			1.00	2.00								
	Actual	0.99	1.98	0.91		1.03	1.03			1.03	2.03								
13 of 51	Expected	1.00	3.00				1.00		1.00	1.00	2.00								
	Actual	1.01	2.87				1.01		1.00	1.03	1.99								
14 of 51	Expected	2.00	2.00						1.00	1.00	2.00							1.00	
	Actual	2.03	2.04						1.03	1.07	1.98							0.93	
15 of 51	Expected	2.00	2.00				1.00		1.00			1.00		1.00		1.00			
	Actual	2.01	2.01				1.04		1.02			0.98		1.04		0.96			
16 of 51	Expected	2.00				1.00	1.00		2.00			1.00		1.00		1.00			
	Actual	1.99				0.97	1.04		2.01			1.02		1.01		1.06			
17 of 51	Expected		1.00			1.00	2.00		1.00			1.00	1.00	1.00		1.00			
	Actual		1.01			0.97	2.00		1.00			0.99	1.09	1.00		1.04			
18 of 51	Expected			1.00		1.00	2.00			1.00	2.00			1.00					1.00
	Actual			0.97		0.94	2.04			1.02	2.05			1.02					1.01
19 of 51	Expected	1.00		1.00		1.00	2.00			1.00	3.00								
	Actual	1.01		0.93		1.02	2.01			1.02	3.01								
20 of 51	Expected	2.00		1.00		1.00	1.00			1.00	3.00								
	Actual	1.98		1.01		0.97	1.07			0.99	2.93								
21 of 51	Expected	2.00		1.00		1.00				1.00	3.00								1.00
	Actual	1.98		0.98		0.97				1.02	3.08								1.01
22 of 51	Expected	2.00	1.00	1.00						1.00	2.00								2.00
	Actual	2.00	1.03	1.02						1.03	2.05								1.78
23 of 51	Expected	1.00	1.00	1.00						1.00	2.00	1.00							2.00
	Actual	1.00	1.01	1.00						1.02	2.00	1.00							1.93
24 of 51	Expected	1.00		1.00					1.00		1.00	2.00	1.00	1.00	1.00	1.00			
	Actual	0.99		0.98					0.99		0.97	1.95	1.04	1.05	0.96				
25 of 51	Expected	1.00	1.00	1.00					1.00		1.00	2.00	1.00		1.00				
	Actual	0.97	1.00	1.00					1.01		1.02	1.88	1.06		1.00				
26 of 51	Expected	1.00	1.00	1.00						1.00	1.00	2.00	1.00		1.00				
	Actual	1.01	1.04	1.01						1.04	0.99	1.98	1.05		0.96				
27 of 51	Expected	1.00	1.00				2.00			1.00	2.00	1.00							1.00
	Actual	1.04	1.07				1.97			1.04	1.88	0.98							0.94
28 of 51	Expected	1.00	1.00				2.00			1.00	1.00	1.00	1.00						1.00
	Actual	1.00	1.01				2.00			0.98	1.01	1.01	0.99						1.00
29 of 51	Expected						2.00			1.00		4.00		1.00	1.00				
	Actual						1.99			1.03		3.91		1.00	0.88				
30 of 51	Expected						2.00					4.00	1.00	1.00	1.00				
	Actual						2.03					3.95	1.03	0.97	0.93				
31 of 51	Expected			1.00			1.00			1.00		5.00	1.00						
	Actual			0.98			1.00			1.01		4.79	1.05						
32 of 51	Expected			1.00			1.00			1.00		2.00	1.00		1.00	1.00			1.00
	Actual			1.05			1.02			1.04		1.88	1.06		1.01	0.92			1.01
33 of 51	Expected	1.00		1.00						2.00		2.00	1.00		1.00	1.00			1.00
	Actual			1.03						2.05		1.98	1.07		0.96	0.95			1.03
34 of 51	Expected			1.00			1.00			2.00		1.00			1.00	1.00			2.00
	Actual			1.00			1.04			2.10		1.01			1.02	1.04			2.05
35 of 51	Expected			3.00		1.00	1.00			1.00			1.00		2.00				
	Actual			2.95		0.97	0.98			1.00			1.06		1.85				
36 of 51	Expected	1.00		2.00		1.00				2.00			1.00		2.00				
	Actual	1.00		2.02		0.99				2.03			0.98		1.83				
37 of 51	Expected	1.00		2.00					1.00	1.00			1.00		2.00				1.00
	Actual	0.99		1.99					0.98	1.04			0.99		1.77				1.00
38 of 51	Expected			1.00					1.00		3.00	1.00			2.00			1.00	
	Actual			0.99					1.00		2.79	1.03			1.85			1.05	

Table 2 - Amino Acid Analysis

Peptide		Ala (A)	Arg (R)	Asx (N,D)	Cys (C)	Glx (Q,E)	Gly (G)	His (H)	Ile (I)	Leu (L)	Lys (K)	Met (M)	Phe (F)	Pro (P)	Ser (S)	Thr (T)	Trp (W)	Tyr (Y)	Val (V)
39 of 51	Expected					1.00	1.00						3.00		1.00	3.00			
	Actual					1.03	1.03						3.15		0.94	2.78			
40 of 51	Expected					1.00							4.00		1.00	2.00		1.00	
	Actual					1.05							4.20		1.00	1.92		1.03	
41 of 51	Expected		1.00			1.00							3.00		1.00	1.00		2.00	
	Actual		1.07			1.01							3.12		0.96	1.01		2.09	
42 of 51	Expected	1.00	1.00	1.00			1.00						2.00					2.00	1.00
	Actual	1.00	1.01	0.99			1.02						2.01					1.94	1.01
43 of 51	Expected	1.00		1.00		1.00				1.00		1.00	2.00		1.00				1.00
	Actual	0.97		1.01		1.01				1.02		0.98	2.02		0.98				1.00
44 of 51	Expected			1.00		1.00				1.00		1.00	2.00	1.00	2.00				
	Actual			1.02		1.00				1.04		1.01	2.09	1.01	1.93				
45 of 51	Expected		1.00	2.00				1.00	2.00	2.00									1.00
	Actual		1.01	2.01				1.01	1.98	2.01									0.98
46 of 51	Expected	2.00		1.00				1.00							1.00	2.00	1.00		1.00
	Actual	2.03		1.02				1.04							0.98	1.94	0.00 ^b		1.04
47 of 51	Expected		2.00	2.00				1.00	1.00	1.00					1.00	1.00			
	Actual		2.04	2.00				1.02	1.07	0.98					0.98	0.95			
48 of 51	Expected					1.00					1.00		2.00	1.00	3.00				1.00
	Actual					1.04					1.01		2.09	0.92	2.69				0.99
49 of 51	Expected		1.00								1.00		2.00	1.00	3.00				1.00
	Actual		1.02								0.98		2.00	1.03	2.83				0.97
50 of 51	Expected		2.00										2.00	1.00	3.00				1.00
	Actual		2.00										1.98	1.04	2.89				0.97
51 of 51	Expected	2.00	2.00			1.00		1.00				1.00			1.00				1.00
	Actual	2.03	2.01			0.93		1.01				1.01			1.01				1.03
NRC-255: Influenza Virus A, PB2 Peptides																			
1 of 30	Expected	1.00		1.00				1.00	2.00			1.00				2.00			1.00
	Actual	1.00		1.01				1.03	1.96			1.01				2.00			1.02
2 of 30	Expected	1.00		1.00				1.00	2.00		1.00	1.00				1.00			1.00
	Actual	1.02		0.99				1.03	1.87		1.02	1.01				0.91			1.00
3 of 30	Expected	1.00		1.00				1.00	2.00		2.00	1.00							1.00
	Actual	1.07		0.97				1.00	1.95		2.02	0.99							1.00
4 of 30	Expected		1.00				1.00		2.00		2.00				1.00	1.00			1.00
	Actual		1.03				0.99		1.79		2.15				1.04	1.06			1.06
5 of 30	Expected		1.00			2.00	1.00				2.00				1.00	1.00			1.00
	Actual		1.04			2.04	1.05				2.09				0.92	0.90			0.99
6 of 30	Expected	1.00	1.00							1.00	1.00	4.00						1.00	
	Actual	0.98	1.01							1.01	1.02	3.90						0.00 ^b	
7 of 30	Expected	1.00									2.00	4.00						1.00	1.00
	Actual	0.99									1.99	3.95						0.00 ^b	1.03
8 of 30	Expected	1.00							1.00		1.00	3.00		1.00				1.00	1.00
	Actual	1.01							0.98		1.01	2.98		1.04				0.00 ^b	0.97
9 of 30	Expected	1.00		1.00		3.00			1.00			1.00							2.00
	Actual	1.03		1.04		2.83			0.97			1.02							2.00
10 of 30	Expected			1.00		2.00			1.00			1.00	1.00						3.00
	Actual			0.99		2.03			1.03			0.95	1.01						3.03
11 of 30	Expected	1.00	1.00			2.00				2.00		1.00						1.00	1.00
	Actual	0.99	1.01			1.95				2.01		1.03						0.98	1.01
12 of 30	Expected		2.00			2.00				2.00		1.00						1.00	1.00
	Actual		2.04			1.93				2.02		0.99						1.01	1.01
13 of 30	Expected		2.00			2.00				2.00	1.00	1.00							1.00
	Actual		2.02			1.91				2.01	1.04	0.98							1.01
14 of 30	Expected		3.00			2.00				1.00	1.00					1.00			1.00
	Actual		3.08			1.96				1.04	1.02					0.96			1.01

Table 2 - Amino Acid Analysis

Peptide		Ala (A)	Arg (R)	Asx (N,D)	Cys (C)	Glx (Q,E)	Gly (G)	His (H)	Ile (I)	Leu (L)	Lys (K)	Met (M)	Phe (F)	Pro (P)	Ser (S)	Thr (T)	Trp (W)	Tyr (Y)	Val (V)
15 of 30	Expected		3.00			1.00				1.00	1.00		1.00			1.00			1.00
	Actual		2.86			0.99				1.03	1.05		1.01			1.02			1.00
16 of 30	Expected		2.00			1.00				2.00	1.00		1.00			1.00			1.00
	Actual		2.02			0.98				2.03	1.04		1.00			1.02			0.99
17 of 30	Expected		2.00							1.00	1.00		1.00	1.00		1.00			2.00
	Actual		1.99							1.01	1.03		1.04	1.05		0.93			1.97
18 of 30	Expected				1.00	1.00	1.00	1.00		2.00						2.00	1.00		
	Actual				0.00 ^a	0.99	1.04	1.04		2.08						1.87	0.00 ^b		
19 of 30	Expected				1.00	1.00		1.00		2.00		1.00			2.00	1.00			
	Actual				0.00 ^a	0.99		1.09		2.04		1.05			1.94	0.93			
20 of 30	Expected						2.00						3.00		4.00				
	Actual						1.97						3.04		3.85				
21 of 30	Expected						2.00						4.00		2.00	1.00			
	Actual						2.10						4.01		1.90	0.99			
22 of 30	Expected	1.00	1.00	2.00			1.00			1.00	1.00		1.00						1.00
	Actual	0.99	1.00	2.04			1.02			1.01	0.93		1.04						0.99
23 of 30	Expected	1.00	2.00	2.00		1.00				1.00			1.00						1.00
	Actual	1.01	2.02	1.99		0.95				1.04			1.02						0.98
24 of 30	Expected	1.00	2.00	2.00		1.00				1.00		1.00		1.00					
	Actual	1.02	1.87	2.00		1.01				1.03		0.99		1.02					
25 of 30	Expected		1.00	1.00		2.00		1.00		2.00		1.00		1.00					
	Actual		1.04	0.98		1.95		1.04		2.06		1.01		0.93					
26 of 30	Expected		1.00	1.00		1.00		1.00		3.00		1.00		1.00					
	Actual		1.04	0.99		0.97		1.05		3.09		0.94		0.98					
27 of 30	Expected	1.00	1.00			1.00	1.00			1.00			1.00		1.00				2.00
	Actual	0.99	1.00			0.95	0.99			1.01			1.08		0.84				1.95
28 of 30	Expected	1.00		1.00		1.00			1.00	1.00					2.00	2.00			
	Actual	1.02		1.04		0.97			1.02	1.05					1.89	1.88			
29 of 30	Expected	1.00		1.00		1.00			1.00	1.00					1.00	3.00			
	Actual	1.03		1.02		1.02			1.04	1.05					0.96	3.07			
30 of 30	Expected	1.00		1.00		1.00				1.00	1.00				1.00	3.00			
	Actual	1.00		1.04		1.01				1.04	1.02				0.91	2.93			

^aCys was totally destroyed during hydrolysis
^bTrp was totally destroyed during hydrolysis

Date: 08 MAY 2008

Signature: Signature on File

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