

Peptide Arrays, Influenza Virus A (H5N1) Hemagglutinin (HA) Diverse Peptides

Catalog No. NR-2609

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Product Description: NR-2609 contains seven peptide arrays that represent regions of amino acid sequence diversity in the hemagglutinin (HA) protein found in each of the following strains of influenza virus: A/Vietnam/1203/2004 (H5N1) (NRC-220), A/Thailand/2(SP-33)/2004 (H5N1) (NRC-221, NRC-224, and NRC-225), A/Thailand/1(KAN-1)/2004 (H5N1) (NRC-222), and A/Vietnam/3046/2004 (H5N1) (NRC-223 and NRC-237). The HA protein found in these strains of influenza A virus corresponds to and has diverged from the HA protein in the A/Thailand/4(SP-528)/2004 (H5N1) strain of influenza virus (GenPept: AAV34704). Peptides are 16- or 17-mers, with 11 to 12 amino acid overlaps.

Lot: 334186-334206-X

The following information applies to all peptides:

- Appearance White lyophilized powder
- Mass spectral analysis Correct MW by Electrospray
- Counter Ion Trifluoroacetate

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

Table 1						
Peptide	Date of Mfg.	Length	Sequence	Molecular Weight (amu)	Purity by HPLC ^a	Peptide Content ^b
NRC-220: Influenza Virus A/Vietnam/1203/2004(H5N1) HA Protein						
1 of 3	05/12/06	17	36 MEKNVTVTHAQDILEKK 52	1984.3	95.6%	78.4%
2 of 3	05/04/06	16	42 VTHAQDILEKKHNGKL 57	1831.1	92.9%	72.9%
3 of 3	05/04/06	17	47 DILEKKHNGKLCDLGV 63	1897.2	83.5%	75.3%
NRC-221: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein						
1 of 3	05/04/06	17	130 IQIIPKSSWSSHEVSLG 146	1868.1	89.2%	80.6%
2 of 3	05/09/06	17	136 SSWSSHEVSLGVSSACP 152	1719.8	87.3%	72.4%
3 of 3	05/04/06	17	142 EVSLGVSSACPYQGKSS 158	1698.9	88.9%	81.5%
NRC-222: Influenza Virus A/Thailand/1(KAN-1)/2004(H5N1) HA Protein						
1 of 3	05/04/06	17	145 EASLGVSSACPYQRKSS 161	1770.0	96.0%	76.5%
2 of 3	05/05/06	17	151 SSACPYQRKSSFFRNVV 167	1976.2	96.2%	83.1%
3 of 3	05/05/06	17	156 YQRKSSFFRNVVWLIKK 172	2199.6	81.4%	82.2%
NRC-237: Influenza Virus A/Vietnam/3046/2004(H5N1) HA Protein						
1 of 3	05/05/06	17	136 SSWSSHEASLGVSSVCP 152	1719.8	81.1%	85.0%
2 of 3	05/05/06	17	142 EASLGVSSVCPYQGKSS 158	1698.9	93.8%	87.6%
3 of 3	05/05/06	17	148 SSVCPYQGKSSFFRNVV 164	1905.2	87.9%	84.6%
NRC-223: Influenza Virus A/Vietnam/3046/2004(H5N1) HA Protein						
1 of 3	05/05/06	17	201 AEQTKLYQNPTTYVSVG 217	1899.1	94.0%	81.7%
2 of 3	05/26/06	17	207 YQNPTTYVSVGTSTLNQ 223	1873.0	82.4%	77.7%
3 of 3	05/03/06	17	213 YVSVGTSTLNQRLVPRI 229	1903.2	83.4%	77.1%

Table 1						
Peptide	Date of Mfg.	Length	Sequence	Molecular Weight (amu)	Purity by HPLC ^a	Peptide Content ^b
NRC-224: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein						
1 of 3	05/05/06	17	369 GYHHSNEQGSYAAAKE 385	1805.8	90.3%	81.7%
2 of 3	05/05/06	17	375 EQGSGYAAAKESTQKAI 391	1738.9	80.2%	86.2%
3 of 3	05/18/06	17	381 AAAKESTQKAIDGVTNK 397	1731.9	80.6%	72.9%
NRC-225: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein						
1 of 3	05/03/06	17	459 SNVKNLYDKVRLQLKDN 475	2047.3	81.0%	71.8%
2 of 3	05/09/06	17	465 YDKVRLQLKDNAKELGN 481	2004.3	87.0%	73.1%
3 of 3	05/05/06	17	470 LQLKDNAKELGNGCFEF 486	1926.2	91.5%	82.5%

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

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)
NRC-220: Influenza Virus A/Vietnam/1203/2004(H5N1) HA Protein																			
1 of 3	Expected	1.00		2.00		3.00		1.00	1.00	1.00	3.00	1.00				2.00			2.00
	Actual	1.00		1.63		2.41		1.02	0.98	1.04	2.68	0.60 ^a				1.77			1.86
2 of 3	Expected	1.00		2.00		2.00	1.00	2.00	1.00	2.00	3.00					1.00			1.00
	Actual	1.07		2.00		1.87	1.11	2.12	1.01	2.15	3.20					0.83			1.07
3 of 3	Expected			4.00	1.00	1.00	2.00	1.00	1.00	3.00	3.00								1.00
	Actual			3.81	0.00 ^b	0.88	2.02	0.99	0.96	3.00	2.99								1.06
NRC-221: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein																			
1 of 3	Expected					2.00	1.00	1.00	3.00	1.00	1.00			1.00	5.00		1.00		1.00
	Actual					1.79	0.99	0.96	2.44 ^c	1.00	0.96			0.91	3.60 ^d		0.00 ^e		1.00
2 of 3	Expected	1.00			1.00	1.00	1.00	1.00		1.00				1.00	7.00		1.00		2.00
	Actual	1.15			0.00 ^b	1.00	1.17	1.03		1.14				1.03	5.46 ^d		0.00 ^e		2.21
3 of 3	Expected	1.00			1.00	2.00	2.00			1.00	1.00			1.00	5.00			1.00	2.00
	Actual	1.00			0.00 ^b	1.81	2.01			1.13	1.00			0.92	3.60 ^d			0.87	2.04
NRC-222: Influenza Virus A/Thailand/1(KAN-1)/2004(H5N1) HA Protein																			
1 of 3	Expected	2.00	1.00		1.00	2.00	1.00			1.00	1.00			1.00	5.00			1.00	1.00
	Actual	2.00	1.02		0.00 ^b	1.84	1.07			1.07	1.02			0.92	3.77 ^d			0.91	0.94
2 of 3	Expected	1.00	2.00	1.00	1.00	1.00					1.00		2.00	1.00	4.00			1.00	2.00
	Actual	1.00	2.11	1.01	0.00 ^b	0.97					1.03		2.10	0.92	3.06 ^d			0.91	1.79 ^c
3 of 3	Expected		2.00	1.00		1.00			1.00	1.00	3.00		2.00		2.00		1.00	1.00	2.00
	Actual		2.08	1.00		0.86			0.98	1.04	2.96		1.83		1.55 ^d		0.00 ^e	0.87	1.76 ^c
NRC-237: Influenza Virus A/Vietnam/3046/2004(H5N1) HA Protein																			
1 of 3	Expected	1.00			1.00	1.00	1.00	1.00		1.00				1.00	7.00		1.00		2.00
	Actual	1.10			0.00 ^b	1.00	1.21	0.89		1.21				1.12	6.50		0.00 ^e		2.06
2 of 3	Expected	1.00			1.00	2.00	2.00			1.00	1.00			1.00	5.00			1.00	2.00
	Actual	1.08			0.00 ^b	2.00	2.20			1.17	1.11			1.01	4.03			1.00	1.75
3 of 3	Expected		1.00	1.00	1.00	1.00	1.00				1.00		2.00	1.00	4.00			1.00	3.00
	Actual		1.05	1.00	0.00 ^b	0.94	1.00				1.02		1.96	0.88	3.01 ^d			0.90	2.33 ^c

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)
NRC-223: Influenza Virus A/Vietnam/3046/2004(H5N1) HA Protein																			
1 of 3	Expected	1.00		1.00		3.00	1.00			1.00	1.00			1.00	1.00	3.00		2.00	2.00
	Actual	0.98		0.96		2.72	1.04			1.00	1.00			0.98	0.84	2.60		1.92	2.14
2 of 3	Expected			2.00		2.00	1.00			1.00				1.00	2.00	4.00		2.00	2.00
	Actual			2.00		1.94	1.14			1.12				1.01	1.76	3.66		1.95	2.35
3 of 3	Expected		2.00	1.00		1.00	1.00		1.00	2.00				1.00	2.00	2.00		1.00	3.00
	Actual		2.05	0.95		0.93	0.96		0.96	2.00				0.93	1.42 ^d	1.68		0.86	3.02
NRC-224: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein																			
1 of 3	Expected	3.00		1.00		3.00	3.00	2.00			1.00				2.00				2.00
	Actual	3.19		0.91		2.72	3.00	1.78			1.08				1.38 ^d				1.83
2 of 3	Expected	4.00				4.00	2.00		1.00		2.00				2.00	1.00			1.00
	Actual	4.00				2.85	2.17		1.08		2.00				1.57 ^d	0.93			1.03
3 of 3	Expected	4.00		2.00		2.00	1.00		1.00		3.00				1.00	2.00			1.00
	Actual	4.30		1.80		2.00	1.10		1.07		3.30				0.80	1.94			1.13
NRC-225: Influenza Virus A/Thailand/2(SP-33)/2004(H5N1) HA Protein																			
1 of 3	Expected		1.00	5.00		1.00				3.00	3.00				1.00			1.00	2.00
	Actual		1.10	5.16		1.00				3.28	3.26				0.84			1.02	2.23
2 of 3	Expected	1.00	1.00	4.00		2.00	1.00			3.00	3.00							1.00	1.00
	Actual	1.00	1.01	4.06		1.79	1.01			3.02	3.01							0.94	1.00
3 of 3	Expected	1.00		3.00	1.00	3.00	2.00			3.00	2.00		2.00						
	Actual	1.00		2.87	0.00 ^b	2.67	2.05			3.00	2.01		2.02						

^aMet was partially destroyed during hydrolysis
^bCys was completely destroyed during hydrolysis
^cIle-Ile and/or Val-Val bonds were partially destroyed during hydrolysis
^dSer was partially destroyed during hydrolysis
^eTrp was completely destroyed during hydrolysis

Date: 07 MAY 2014

Signature: *Dorothy C. Young*

Title: Technical Manager, BEI Authentication or designee

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