

**Peptide Array, Influenza Virus A/Shanghai/1/2013 (H7N9) Hemagglutinin Protein Diverse Peptides**

**Catalog No. NR-44012**

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**Product Description:** NR-44012 is a peptide array that represents regions of amino acid sequence diversity in the hemagglutinin protein (HA) of influenza virus A/Shanghai/1/2013 (H7N9) (EPI439486) compared to the HA of influenza virus A/Anhui/1/2013 (H7N9) (EPI439507). Peptides are 17-mers, with 12 amino acid overlaps. The HA of influenza virus A/Shanghai/1/2013 (H7N9) is identical to that of the HA of A/Anhui/1/2013 (H7N9) with the exception of 9 amino acids. **Note: NR-44012 contains diverse peptides for 8 of these 9 amino acid differences.** It does not include diverse peptides for the H292Y variant of A/Shanghai/1/2013 (H7N9) relative to A/Anhui/1/2013. NR-44012 can be used with BEI Resources NR-44011 [Peptide Array, Influenza Virus A/Anhui/1/2013 (H7N9 Hemagglutinin Protein)] to construct a peptide array covering the HA protein of A/Shanghai/1/2013 (H7N9), excluding the H292Y amino acid change. **Note: The strain designation on the individual vials is incorrect. The vials should be labeled influenza A virus, A/Shanghai/1/2013 rather than influenza A virus, A/Shanghai/2/2013. The vials are being provided in boxes that are correctly labeled.**

**Lot: T7632-1 to T7632-23**

The following information applies to all peptides:

- Appearance White lyophilized powder
- 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	Molecular Weight (amu)	Hydrophilicity	Purity by HPLC <sup>a</sup>	Peptide Content <sup>b</sup>	
1 of 23	5/8/2013	17	131 MGFTYSGIRTNGATSSC 147	1752.96	0.46	90.0%	88.5%	
2 of 23	5/8/2013	17	136 SGIRTNGATSSCRRSGS 152	1696.83	0.09	95.0%	78.8%	
3 of 23	5/8/2013	17	141 NGATSSCRRSGSSFYAE 157	1779.89	0.17	99.3%	83.9%	
4 of 23	5/8/2013	17	146 SCRRSGSSFYAEWKWLL 162	2021.38	0.45	99.6%	81.6%	
5 of 23	5/8/2013	17	171 PQMTKSYKNTKRNPALI 187	1990.39	0.29	96.8%	77.7%	
6 of 23	5/8/2013	17	176 SYKNTKRNPALIVWGIH 192	1997.35	0.55	91.4%	77.8%	
7 of 23	5/8/2013	17	181 RKNPALIVWGIHHSGST 197	1873.16	0.52	98.2%	76.7%	
8 of 23	5/8/2013	17	186 LIVWGIHHSGSTAEQTK 202	1864.11	0.47	92.8%	80.3%	
9 of 23	5/8/2013	17	191 IHHSGSTAEQTKLYGSG 207	1772.91	0.21	92.8%	79.5%	
10 of 23	5/8/2013	17	216 SNYQQSFVPSPGARTQV 232	1866.03	0.35	98.8%	89.1%	
11 of 23	5/8/2013	17	221 SFVPSGARTQVNGQSG 237	1688.82	0.31	97.9%	88.1%	
12 of 23	5/8/2013	17	226 PGARTQVNGQSGRIDFH 242	1839.99	0.21	99.6%	80.1%	
13 of 23	5/8/2013	17	231 QVNGQSGRIDFHMLLN 247	2015.27	0.63	98.1%	85.5%	
14 of 23	5/8/2013	17	271 GKSMGIQSGVQVDADCE 287	1723.90	0.21	81.6%	88.3%	
15 of 23	5/8/2013	17	276 IQSGVQVDADCEGDCYH 292	1838.94	0.31	94.3%	89.0%	
16 of 23	5/8/2013	17	281 QVDADCEGDCYHSGGTI 297	1769.84	0.27	95.5%	88.6%	
17 of 23	5/8/2013	17	396 EKTNQQFELIDNEFTEV 412	2084.24	0.31	99.0%	90.1%	
18 of 23	5/8/2013	17	401 QFELIDNEFTEVEKQIG 417	2039.24	0.36	99.2%	89.9%	
19 of 23	5/8/2013	17	406 DNEFTEVEKQIGNVINW 422	2035.20	0.48	97.3%	89.9%	
20 of 23	5/8/2013	17	526 LWFSFGASCFILLAIAM 542	1890.38	1.17	93.9%	89.2%	
21 of 23	5/8/2013	17	531 GASCFILLAIAMGLVFI 547	1739.24	1.12	83.4%	88.4%	
22 of 23	5/8/2013	17	536 ILLAIAMGLVFICVKNG 552	1775.30	1.04	98.8%	88.6%	
23 of 23	5/8/2013	17	541 AMGLVFICVKNGNMRCT 557	1857.31	0.77	90.9%	84.4%	

<sup>a</sup>% full-length  
<sup>b</sup>Remainder 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)
1 of 23	Expected	1.00	1.00	1.00	1.00		3.00		1.00			1.00	1.00		3.00	3.00		1.00	
	Actual	1.12	0.97	1.00	0.21 <sup>a</sup>		3.16		0.94			0.97	0.97		2.99	2.94		0.92	
2 of 23	Expected	1.00	3.00	1.00	1.00		3.00		1.00						5.00	2.00			
	Actual	1.00	3.17	1.04	0.38 <sup>a</sup>		3.15		0.90						4.82	1.94			
3 of 23	Expected	2.00	2.00	1.00	1.00	1.00	2.00						1.00		5.00	1.00		1.00	
	Actual	2.00	2.02	0.97	0.36 <sup>a</sup>	1.08	1.98						0.94		4.88	0.94		0.92	
4 of 23	Expected	1.00	2.00		1.00	1.00	1.00			2.00	1.00	1.00	1.00		4.00		1.00	1.00	
	Actual	1.09	2.14		0.37 <sup>a</sup>	1.17	1.17			2.00	1.04	0.98	0.94		3.79		0.00 <sup>b</sup>	0.94	
5 of 23	Expected	1.00	1.00	2.00		1.00			1.00	1.00	3.00	1.00		2.00	1.00	2.00		1.00	
	Actual	1.04	1.03	2.17		1.15			0.86	0.90	3.09	0.78		2.00	1.02	1.73		0.89	
6 of 23	Expected	1.00	1.00	2.00			1.00	1.00	2.00	1.00	2.00			1.00	1.00	1.00	1.00	1.00	1.00
	Actual	0.94	0.85	2.07			1.01	0.95	0.62 <sup>c</sup>	0.87	2.00			0.93	1.01	0.85	0.00 <sup>b</sup>	0.85	0.32 <sup>c</sup>
7 of 23	Expected	1.00	1.00	1.00			2.00	2.00	2.00	1.00	1.00			1.00	2.00	1.00	1.00		1.00
	Actual	1.02	0.98	0.98			2.14	1.74	0.81 <sup>c</sup>	1.00	1.05			1.01	2.10	0.98	0.00 <sup>b</sup>		0.42 <sup>c</sup>
8 of 23	Expected	1.00				2.00	2.00	2.00	2.00	1.00	1.00				2.00	2.00	1.00		1.00
	Actual	0.99				2.00	2.13	2.00	0.66 <sup>c</sup>	1.00	0.83				2.09	2.07	0.00 <sup>b</sup>		0.44 <sup>c</sup>
9 of 23	Expected	1.00				2.00	3.00	2.00	1.00	1.00	1.00				3.00	2.00		1.00	0.00
	Actual	0.84				1.79	2.92	1.82	0.73	0.95	0.84				3.00	1.62		1.10	0.00
10 of 23	Expected	1.00	1.00	1.00		3.00	1.00						1.00	2.00	3.00	1.00		1.00	2.00
	Actual	0.98	1.16	0.82		2.82	0.87						1.04	2.00	2.76	0.86		0.89	1.78
11 of 23	Expected	1.00	1.00	1.00		2.00	3.00						1.00	2.00	3.00	1.00			2.00
	Actual	0.87	1.06	0.79		2.15	3.16						1.00	1.86	2.66	0.82			1.86
12 of 23	Expected	1.00	2.00	2.00		2.00	3.00	1.00	1.00				1.00	1.00	1.00	1.00			1.00
	Actual	1.02	1.92	1.93		2.00	2.89	1.05	0.95				1.00	0.84	0.75	0.96			0.91
13 of 23	Expected		1.00	3.00		2.00	2.00	1.00	1.00	2.00		1.00	1.00		1.00		1.00		1.00
	Actual		0.97	2.85		1.80	2.07	1.17	0.73	1.98		1.00	1.00		0.82		0.00 <sup>b</sup>		0.72
14 of 23	Expected	1.00		2.00	1.00	3.00	3.00		1.00		1.00	1.00			2.00				2.00
	Actual	1.00		1.86	0.35 <sup>a</sup>	2.85	3.14		0.79		0.96	1.12			2.04				1.75
15 of 23	Expected	1.00		3.00	2.00	3.00	2.00	1.00	1.00						1.00			1.00	2.00
	Actual	1.03		2.97	1.00 <sup>a</sup>	3.06	1.85	1.05	0.87						0.90			0.91	2.00
16 of 23	Expected	1.00		3.00	2.00	2.00	3.00	1.00	1.00						1.00	1.00		1.00	1.00
	Actual	0.95		2.87	0.77 <sup>a</sup>	1.92	2.99	1.05	1.03						0.96	0.72		1.08	1.00
17 of 23	Expected			3.00		6.00			1.00	1.00	1.00		2.00			2.00			1.00
	Actual			2.84		6.00			0.87	0.92	0.80		1.86			1.71			1.02
18 of 23	Expected			2.00		6.00	1.00		2.00	1.00	1.00		2.00			1.00			1.00
	Actual			1.76		6.00	1.26		1.96	0.99	0.98		1.98			0.86			0.86
19 of 23	Expected			4.00		4.00	1.00		2.00		1.00		1.00			1.00	1.00		2.00
	Actual			3.85		3.83	1.19		1.52 <sup>c</sup>		0.90		1.00			0.90	0.00 <sup>b</sup>		1.38 <sup>c</sup>
20 of 23	Expected	3.00			1.00		1.00		2.00	3.00		1.00	3.00		2.00		1.00		
	Actual	2.93			0.46 <sup>a</sup>		1.23		1.99	2.81		0.92	3.00		1.83		0.00 <sup>b</sup>		
21 of 23	Expected	3.00			1.00		2.00		3.00	3.00		1.00	2.00		1.00				1.00
	Actual	2.99			0.25 <sup>a</sup>		1.98		2.96	2.93		1.08	1.77		0.70				1.00
22 of 23	Expected	2.00		1.00	1.00		2.00		3.00	3.00	1.00	1.00	1.00						2.00
	Actual	1.97		1.00	0.42 <sup>a</sup>		2.02		2.86	3.01	0.85	0.66	0.79						1.78
23 of 23	Expected	1.00	1.00	2.00	2.00		2.00		1.00	1.00	1.00	2.00	1.00			1.00			2.00
	Actual	0.83	1.04	2.00	0.48 <sup>a</sup>		2.23		0.99	0.89	1.05	1.79	0.92			0.96			1.85

<sup>a</sup>Cys was partially destroyed during hydrolysis

<sup>b</sup>Trp was completely destroyed during hydrolysis

<sup>c</sup>Val-Ile, Val-Val, Ile-Ile and/or Ile-Val bonds were only partially destroyed during hydrolysis

**Date:** 28 OCT 2013

**Signature:** *Dorothy C. Young*

**Title:** Technical Manager, BEI Authentication or designee

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