Certificate of Analysis for NR-433

Peptide Array, West Nile Virus Pre-M Protein

Catalog No. NR-433

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

Product Description: A 12-peptide array spans the Pre-M protein of the NY99-flamingo382-99 strain of West Nile Virus. Peptides are 14- to 18-mers, with 10 amino acid overlaps. Each vial contains 1 mg of lyophilized NR-433. Note: Three additional amino acids (VGA) have been added to the N-terminus of Peptide 1.

Lot: 3745088

The following information applies to all 12 peptides:

• Appearance	White lyophilized powder
• Mass spectral analysis	Electrospray "Exhibits correct MW"
• 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]
1	8/9/2004	17	VGAVTLSNFQGKVMMTV	1782.2	64.7%	89%
2	8/11/2004	18	NFQGKVMMTVNATDVTDV	1970.2	10.6%	88%
3	8/11/2004	17	TVNATDVTDVITIPTAA	1701.9	46.8%	89%
4	6/28/2004	18	TDVITIPTAAGKNLCIVR	1885.2	94.9%	84%
5	8/9/2004	17	AAGKNLCIVRAMDVGYM	1812.2	48.6%	85%
6	8/9/2004	17	IVRAMDVGYMCDDTITY	1966.3	35.6%	89%
7	8/10/2004	17	GYMCDDTITYECPVLSA	1881.1	67.2%	89%
8	6/28/2004	17	ITYECPVLSAGNDPEDI	1836.0	90.4%	89%
9	7/6/2004	18	LSAGNDPEDIDCWCTKSA	1925.1	90.4%	89%
10	8/9/2004	17	DIDCWCTKSAVYVRYGR	2035.3	53.7%	82%
11	6/28/2004	18	KSAVYVRYGRCTKTRHSR	2168.5	92.5%	68%
12	8/16/2004	14	GRCTKTRHSRRSRR	1757.0	97.5%	67%

[a]% full-length
[b]Remainder is salt and water

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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	Expected	1.00		1.00		1.00	2.00			1.00	1.00	2.00	1.00		1.00	2.00			4.00
	Actual	1.00		1.00		1.00	1.99			0.99	0.99	2.00	1.01		1.00	2.01			4.05
2	Expected	1.00		4.00		1.00	1.00				1.00	2.00	1.00			3.00			4.00
	Actual	1.00		4.03		1.00	1.00				0.98	1.98	0.98			2.99			4.01
3	Expected	3.00		3.00					2.00					1.00		5.00			3.00
	Actual	2.97		3.02					1.73[a]					1.00		5.02			2.73[a]
4	Expected	2.00	1.00	2.00	1.00		1.00		3.00	1.00	1.00			1.00		3.00			2.00
	Actual	1.99	1.00	1.99	0.56[b]		1.02		2.73[a]	1.00	1.00			0.99		3.01			1.77[a]
5	Expected	3.00	1.00	2.00	1.00		2.00		1.00	1.00	1.00	2.00						1.00	2.00
	Actual	2.98	1.00	2.01	0.53[b]		2.01		1.00	1.00	0.99	2.01						0.99	1.99
6	Expected	1.00	1.00	3.00	1.00		1.00		2.00			2.00				2.00		2.00	2.00
	Actual	1.00	1.00	3.02	0.50[b]		1.00		1.71			2.00				1.98		1.99	1.76[a]
7	Expected	1.00		2.00	2.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00	2.00		2.00	1.00
	Actual	1.00		1.98	1.07[b]	1.00	1.00		0.99	1.01		0.99		1.00	1.00	2.00		1.99	1.00
8	Expected	1.00		3.00	1.00	2.00	1.00		2.00	1.00				2.00	1.00	1.00		1.00	1.00
	Actual	1.01		2.98	0.55[b]	1.99	1.00		2.00	1.00				2.01	1.00	1.00		1.00	0.99
9	Expected	2.00		4.00	2.00	1.00	1.00		1.00	1.00	1.00			1.00	2.00	1.00	1.00		
	Actual	2.00		3.99	1.08[b]	1.00	1.01		0.99	0.99	1.01			1.00	2.02	1.00	0.00[b]		
10	Expected	1.00	2.00	2.00	2.00		1.00		1.00		1.00				1.00	1.00	1.00	2.00	2.00
	Actual	1.00	2.00	1.98	1.02[b]		1.01		1.00		0.99				1.00	1.00	0.00[b]	2.02	1.99
11	Expected	1.00	4.00		1.00		1.00	1.00			2.00				2.00	2.00		2.00	2.00
	Actual	1.00	3.99		0.57[b]		1.00	1.00			1.99				2.02	2.00		1.99	1.99
12	Expected		6.00		1.00		1.00	1.00			1.00				2.00	2.00			
	Actual		6.04		0.58[b]		1.00	1.00			1.00				2.01	1.97			

[a]Val-Ile and/or Ile-Val bonds were only partially destroyed during hydrolysis
[b]Cys and/or Trp were completely or partially destroyed during hydrolysis

Date: 31 JUL 2009

Signature: Signature on File

Title: Technical Manager, BEI Authentication or designee

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