

Peptide Array West Nile Virus Protein NS5

Catalog No. NR-442

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

Product Description: A 122-peptide array spanning the NS5 protein of the NY99-flamingo382-99 strain of West Nile Virus. Peptides are 15- to 20-mers, with 10 or 11 amino acid overlaps. Each vial contains 1 mg of lyophilized NR-442.

Lot: 3745097

The following information applies to all 122 peptides:

- Appearance White lyophilized powder
- Mass spectral analysis Electrospray “Exhibits correct MW”
- Counter Ion Acetate (Peptides 60 and 110)
Trifluoroacetate (all other Peptides)

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	7/8/04	16	GGAKGRTLGEVWKERL	1757.0	90.26%	74%
2	7/13/04	18	TLGEVWKERLNQMTKEEF	2238.6	92.00%	82%
3	7/19/04	18	RLNQMTKEEFTRYRKEAI	2313.7	95.12%	75%
4	8/11/04	18	EFTRYRKEAIIIEVDRSAA	2154.4	32.63%	78%
5	7/8/04	15	AIIIEVDRSAAKHARK	1664.9	97.03%	69%
6	7/19/04	18	DRSAAKHARKEGNVTGGH	1891.0	96.53%	85%
7	7/16/04	18	RKEGNVTGGHPVSRGTAK	1851.0	93.29%	89%
8	7/19/04	18	GHPVSRGTAKLRWLVERR	2118.5	93.48%	71%
9	7/8/04	18	AKLRWLVERRFLEPVGKV	2196.7	93.79%	74%
10	7/21/04	17	RRFLEPVGKVIDLGCGR	1915.3	94.01%	76%
11	8/10/04	18	GKVIDLGCGRGGWCYYMA	1949.3	75.43%	84%
12	8/11/04	18	GRGGWCYYMATQKRQVEV	2132.4	63.26%	82%
13	7/8/04	15	MATQKRQVEVRGYTK	1795.1	92.55%	75%
14	7/8/04	15	RVQVEVRGYTKGGPGH	1640.8	94.09%	73%
15	7/7/04	16	RGYTKGGPGHEEPQLV	1724.9	98.03%	78%
16	7/6/04	18	GPGHEEPQLVQSYGWNIV	2010.2	92.68%	90%
17	8/9/04	18	LVQSYGWNIVTMKSGVDV	1996.3	58.62%	86%
18	8/9/04	18	IVTMKSGVDVFYRPSECC	2034.4	55.12%	86%
19	8/11/04	17	DVFYRPSECCDTLLCDI	1992.3	48.84%	89%
20	8/11/04	17	ECCDTLLCDIGESSSSA	1732.9	16.97%	88%

Table 1 (continued)

Peptide	Date of Mfg.	Length	Sequence	Molecular Weight (amu)	Purity by HPLC ^a	Peptide Content ^b
21	8/10/04	18	CDIGESSSSAEVEEHRTI	1949.0	90.15%	85%
22	8/9/04	16	SAEVEEHRTIRVLEMV	1898.2	93.76%	81%
23	7/30/04	16	HRTIRVLEMVEDWLHR	2090.4	97.81%	74%
24	7/8/04	18	LEMVEDWLHRGPREFCVK	2244.6	95.73%	77%
25	7/7/04	18	HRGPREFCVKVLCPYMPK	2160.7	91.09%	74%
26	7/29/04	18	VKVLCPYMPKVIKMELL	2133.8	94.34%	81%
27	8/2/04	18	PKVIEKMELLQRRYGGGL	2087.5	97.19%	77%
28	7/29/04	17	LLQRRYGGGLVRNPLSR	1955.3	97.66%	76%
29	7/6/04	18	GGLVRNPLSRNSTHEMYW	2117.4	96.04%	81%
30	8/2/04	18	SRNSTHEMYWVSRASGNV	2081.2	94.85%	77%
31	8/10/04	16	YWVSRASGNVVHVSVM	1806.0	90.01%	85%
32	7/30/04	18	SGNVVHVSVMNMQVLLGR	1898.2	91.44%	85%
33	7/13/04	17	NMQVLLGRMEKRTWK	2078.5	97.12%	77%
34	7/7/04	18	LGRMEKRTWKGPQYEEDV	2222.5	90.20%	82%
35	7/8/04	18	WKGPQYEEDVNLGSGTRA	2007.1	90.41%	86%
36	7/13/04	16	DVNLGSGTRAVGKPLL	1596.8	96.02%	83%
37	7/7/04	18	GTRAVGKPLLNSDTSKIK	1885.2	93.56%	76%
38	7/6/04	18	LLNSDTSKIKNRIERLRR	2212.6	93.41%	71%
39	7/7/04	18	IKNRIERLRREYSSTWHH	2381.7	90.29%	70%
40	7/19/04	17	RREYSSTWHHDEHPYR	2270.4	96.58%	72%
41	7/19/04	18	WHHDEHPYRWNHGSY	2399.5	90.55%	76%
42	7/19/04	18	YRTWNHGSYDVKPTGSA	2102.2	90.04%	81%
43	7/19/04	18	SYDVKPTGSASSLVNGVV	1780.0	90.18%	85%
44	8/5/04	17	SASSLVNGVVRLLSKPW	1813.1	92.93%	85%
45	7/19/04	16	GVVRLSKPWDTITNV	1798.1	94.16%	85%
46	7/13/04	15	SKPWDTITNVTTMAM	1696.0	91.45%	83%
47	8/11/04	16	TITNVTTMAMDTTPF	1745.0	20.96%	88%
48	7/19/04	17	TMAMDTTPFGQQRVFK	1959.3	96.33%	85%
49	7/29/04	17	TPFGQQRVFKEKVDTKA	1979.3	92.29%	76%
50	7/19/04	18	VFKEKVDTKAPEPPEGVK	1998.3	96.14%	76%
51	7/19/04	19	KAPEPPEGVKYVLNETTNW	2172.4	90.16%	86%
52	8/5/04	17	KYVLNETTNWLWAFAR	2125.4	91.46%	86%
53	7/13/04	16	TNWLWAFARERPRM	2075.5	96.89%	77%
54	7/19/04	18	FLAREKRPRMCSREEFIR	2324.8	94.21%	72%
55	7/19/04	18	RMCSREEFIRKVNNAAL	2124.5	91.33%	77%
56	7/16/04	20	IRKVNNAALGAMFEEQNQW	2306.6	91.71%	86%
57	7/13/04	17	GAMFEEQNQWRSAREAV	2009.2	91.73%	85%
58	7/19/04	18	NQWRSAREAVEDPKFWEM	2279.5	90.17%	82%
59	7/13/04	18	AVEDPKFWEMVDEEREAH	2217.4	91.64%	82%
60	7/23/04	16	EMVDEEREAHLRGECH	1940.1	90.64%	76%
61	7/19/04	17	REHLRGECHTCIYNMM	2064.4	94.93%	77%
62	7/19/04	16	ECHTCIYNMMGKREKK	1971.4	90.76%	73%
63	7/21/04	18	YNMMGKREKKPGEFGKAK	2099.5	93.67%	70%
64	7/19/04	18	KKPGEFGKAKGSRAIWM	2038.4	98.76%	73%
65	7/19/04	17	AKGSRAIWMWLGARFL	2010.4	93.15%	80%

Table 1 (continued)						
Peptide	Date of Mfg.	Length	Sequence	Molecular Weight (amu)	Purity by HPLC ^a	Peptide Content ^b
66	8/11/04	18	WFMWLGARFLEFEALGFL	2233.7	23.50%	89%
67	7/19/04	18	FLEFEALGFLNEDHWLGR	2193.4	90.68%	86%
68	7/13/04	17	FLNEDHWLGRKNSGGGV	1886.0	91.26%	80%
69	7/21/04	18	LGRKNSGGGVEGLGLQKL	1783.1	96.11%	79%
70	7/29/04	17	GVEGLGLQKLGYLREV	1844.2	96.55%	85%
71	7/29/04	18	LQKLGYLREVGTTPGGK	1985.4	92.02%	76%
72	7/19/04	17	REVGTRPGGKIYADDTA	1806.0	91.62%	79%
73	7/21/04	18	GGKIYADDTAGWDTRITR	1996.2	90.92%	81%
74	7/19/04	18	TAGWDTRITRADLENEAK	2047.2	92.39%	82%
75	7/19/04	15	TRADLENEAKVLELL	1713.9	93.33%	85%
76	7/19/04	18	ENEAKVLELLDGEHRRLA	2092.3	90.49%	82%
77	7/30/04	18	LLDGEHRRLARAIIELTY	2139.5	91.10%	77%
78	7/23/04	18	LARAIELTYRHKVVVKVM	2140.7	93.88%	82%
79	8/25/04	17	TYRHKVVKVMRPAADGR	1984.4	94.62%	83%
80	7/21/04	18	KVMRPAADGRTVMDVISR	2002.4	96.89%	76%
81	7/19/04	19	GRTVMDVISREDQRGSGQV	2090.3	96.21%	81%
82	8/11/04	18	REDQRGSGQVVTYALNTF	2041.2	59.96%	82%
83	8/11/04	18	GQVVTYALNTFTNLAVQL	1952.2	31.80%	90%
84	7/30/04	19	NTFTNLAVQLVRMMEGEGV	2109.4	99.01%	90%
85	7/21/04	18	LVRMMEGEGVIGPDDVEK	1974.3	90.41%	86%
86	7/19/04	18	GVIGPDDVEKLTGKGP	1838.1	94.10%	75%
87	7/13/04	16	EKLTGKGPVVRTWLF	1888.3	97.19%	72%
88	7/13/04	17	KGPKVRTWLFENGEERL	2059.4	92.24%	77%
89	7/13/04	15	WLFENGEERLSRMAV	1837.1	93.93%	84%
90	7/21/04	18	GEERLSRMAVSGDDCVVK	1951.2	93.77%	81%
91	7/19/04	17	AVSGDDCVVKPLDDRFA	1807.0	95.94%	85%
92	7/19/04	18	VVKPLDDR FATSLHFLNA	2043.4	94.09%	81%
93	7/19/04	18	FATSLHFLNAMSKVRKDI	2078.5	97.01%	77%
94	7/19/04	19	NAMSKVRKDIQEWKWPSTGW	2261.6	90.10%	78%
95	7/19/04	18	IQEWKWPSTGWYDWQQVPF	2295.5	90.23%	90%
96	7/19/04	18	GWYDWQQVPFCSNHFTL	2257.5	90.58%	90%
97	7/27/04	18	PFCSNHFTLIMKDGRTL	2109.4	92.09%	81%
98	7/19/04	15	ELIMKDGRTLVPCR	1730.1	91.72%	78%
99	7/27/04	18	DGRTLVPCRQDELVGR	1970.2	90.64%	81%
100	7/29/04	17	CRGQDELVGRARISPGA	1785.0	90.13%	79%
101	7/19/04	18	VGRARISPGAGWNVDRDA	1883.1	90.82%	80%
102	7/21/04	17	GAGWNVDRDA CLA KSYA	1783.0	95.87%	85%
103	8/11/04	18	DTACLAKSYAQM WLLLYF	2137.6	27.56%	90%
104	8/3/04	18	YAQM WLLLYFHRRDLRLM	2426.0	90.59%	79%
105	8/9/04	18	YFHRRDLRLMANAICSAV	2136.5	85.43%	77%
106	8/2/04	15	LMANAICSAVPVNWV	1587.9	93.14%	88%
107	7/29/04	17	ICSAVPVNWVPTGRRTW	1887.2	94.84%	89%
108	8/3/04	18	NWVPTGRRTWSIHAGGEW	2055.2	90.74%	85%
109	8/9/04	17	TWSIHAGGEWMTTEDML	1965.2	53.21%	89%
110	8/2/04	18	GEWMTTEDMLEVWNRVWI	2295.6	90.57%	90%

Peptide	Date of Mfg.	Length	Sequence	Molecular Weight (amu)	Purity by HPLC ^a	Peptide Content ^b
111	8/2/04	16	MLEVWNRVWIEENEWM	2164.5	93.07%	90%
112	7/21/04	18	RVWIEENEWMEDKTPVEK	2318.6	91.10%	82%
113	7/21/04	16	WMEDKTPVEKWSVDPY	2010.2	95.96%	86%
114	8/9/04	18	PVEKWSVDPYSGKREDIW	2191.4	90.05%	82%
115	7/30/04	18	PYSGKREDIWCGSLIGTR	2038.3	90.63%	82%
116	7/23/04	16	IWCGSLIGTRARATWA	1762.1	91.80%	85%
117	8/9/04	17	IGTRARATWAENIQVAI	1870.1	59.90%	84%
118	8/11/04	17	TWAENIQVAINQVRAII	1939.2	36.93%	89%
119	7/30/04	18	VAINQVRAIIGDEKYVDY	2066.3	90.03%	86%
120	7/21/04	17	IIGDEKYVDYMSSLKRY	2080.4	92.20%	81%
121	7/21/04	16	VDYMSSLKRYEDTTLV	1920.2	96.02%	86%
122	8/9/04	15	LKRYEDTTLVEDTVL	1795.0	97.66%	84%

^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)
1	Expected	1.00	2.00			2.00	4.00									1.00	1.00		1.00
	Actual	1.00	2.00			2.00	3.97			2.01	2.01					1.00	0.00 ^a		1.00
2	Expected		1.00	1.00		5.00	1.00			2.00	2.00	1.00	1.00			2.00	1.00		1.00
	Actual		1.02	0.99		5.02	0.98			2.00	1.99	0.98	0.97			1.99	0.00 ^a		1.02
3	Expected	1.00	3.00	1.00		4.00			1.00	1.00	2.00	1.00	1.00			2.00		1.00	
	Actual	1.01	3.00	1.00		4.01			0.99	0.99	2.01	1.00	1.00			2.01		1.00	
4	Expected	3.00	3.00	1.00		3.00			2.00		1.00		1.00		1.00	1.00		1.00	1.00
	Actual	3.02	3.01	1.00		2.96			1.48 ^b		1.01		0.98		1.00	1.00		0.99	0.99
5	Expected	4.00	2.00	1.00		1.00		1.00	2.00		2.00				1.00				1.00
	Actual	4.02	2.00	1.00		1.00		0.98	1.46 ^b		2.01				1.00				0.99
6	Expected	3.00	2.00	2.00		1.00	3.00	2.00							1.00	1.00			1.00
	Actual	3.02	2.01	1.98		1.00	2.97	2.00			1.99				1.00	1.00			0.99
7	Expected	1.00	2.00	1.00		1.00	4.00	1.00			2.00			1.00	1.00	2.00			2.00
	Actual	0.98	2.00	1.00		0.99	3.98	0.99			2.01			1.00	1.02	2.01			1.97
8	Expected	1.00	4.00			1.00	2.00	1.00		2.00	1.00			1.00	1.00	1.00	1.00		2.00
	Actual	1.01	4.02			0.99	1.98	1.00		2.01	0.98			1.00	1.00	1.00	0.00 ^a		1.99
9	Expected	1.00	3.00			2.00	1.00			3.00	2.00		1.00	1.00				1.00	3.00
	Actual	0.99	3.01			2.00	1.00			3.02	2.00		0.99	1.00				0.00 ^a	2.97
10	Expected		3.00	1.00	1.00	1.00	3.00		1.00	2.00	1.00		1.00	1.00					2.00
	Actual		2.99	1.00	0.53 ^c	1.01	3.01		1.00	2.00	1.00		1.00	0.99					2.01
11	Expected	1.00	1.00	1.00	2.00		5.00		1.00	1.00	1.00	1.00					1.00	2.00	1.00
	Actual	1.00	1.00	1.01	1.11 ^c		4.95		1.00	1.00	1.00	1.00					0.00 ^a	2.02	1.00
12	Expected	1.00	2.00		1.00	3.00	3.00				1.00	1.00				1.00	1.00	2.00	2.00
	Actual	1.00	2.00		0.53 ^c	3.02	2.98				1.00	1.00				0.99	0.00 ^a	1.98	2.01
13	Expected	1.00	2.00			3.00	1.00				2.00	1.00				2.00		1.00	2.00
	Actual	1.00	1.99			3.02	1.00				1.98	1.00				2.01		1.00	2.00
14	Expected		2.00			2.00	4.00	1.00			1.00			1.00		1.00		1.00	2.00
	Actual		1.98			2.00	4.03	1.00			1.00			1.00		1.00		0.99	1.98
15	Expected		1.00			3.00	4.00	1.00		1.00	1.00			2.00		1.00		1.00	1.00
	Actual		1.00			2.97	4.02	1.00		1.00	0.99			1.99		0.99		1.00	1.00
16	Expected			1.00		4.00	3.00	1.00	1.00	1.00				2.00	1.00		1.00	1.00	2.00
	Actual			1.01		3.98	3.02	1.01	0.98	0.99				2.00	1.00		0.00 ^a	1.00	1.99
17	Expected			2.00		1.00	2.00		1.00	1.00	1.00	1.00			2.00	1.00	1.00	1.00	4.00
	Actual			2.00		1.00	2.01		0.74 ^b	1.00	1.00	1.00			2.01	1.01	0.00 ^a	0.99	3.73 ^b
18	Expected		1.00	1.00	2.00	1.00	1.00		1.00		1.00	1.00	1.00	1.00	2.00	1.00		1.00	3.00
	Actual		1.00	1.00	1.05 ^c	1.00	1.00		0.73 ^b		1.01	0.99	1.01	1.00	2.01	1.00		1.00	2.79 ^b
19	Expected		1.00	3.00	3.00	1.00				1.00	2.00			1.00	1.00	1.00	1.00		1.00
	Actual		1.00	2.98	1.58 ^c	1.00				0.99	1.99			1.00	1.00	0.98	1.01		1.00
20	Expected	1.00		2.00	3.00	2.00	1.00			1.00	2.00				4.00	1.00			
	Actual	1.00		2.00	1.53 ^c	2.00	1.01			1.02	1.97				4.01	0.99			

Table 2 - Amino Acid Analysis (continued)

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)
21	Expected	1.00	1.00	1.00	1.00	4.00	1.00	1.00	2.00						4.00	1.00			1.00
	Actual	1.00	0.99	1.00	0.52 ^c	4.03	0.98	1.00	1.97						3.99	1.00			1.00
22	Expected	1.00	2.00			4.00		1.00	1.00	1.00		1.00			1.00	1.00			3.00
	Actual	1.00	2.01			3.97		1.00	1.01	1.00		1.00			0.99	1.00			3.01
23	Expected		3.00	1.00		2.00		2.00	1.00	2.00		1.00				1.00	1.00		2.00
	Actual		3.01	1.00		2.01		1.98	1.00	2.00		1.00				1.00	0.00 ^a		1.99
24	Expected		2.00	1.00	1.00	3.00	1.00	1.00		2.00	1.00	1.00	1.00	1.00			1.00		2.00
	Actual		1.99	1.00	0.53 ^c	3.02	1.00	1.00		2.01	1.00	0.99	0.99	0.99			0.00 ^a		2.01
25	Expected		2.00		2.00	1.00	1.00	1.00		1.00	2.00	1.00	1.00	3.00				1.00	2.00
	Actual		2.03		1.03 ^c	1.00	1.00	1.00		1.00	2.01	1.00	0.99	2.97				1.00	2.00
26	Expected				1.00	2.00			1.00	3.00	3.00	2.00		2.00				1.00	3.00
	Actual				0.53 ^c	1.98			0.78 ^b	3.01	2.99	2.00		2.00				1.00	2.77 ^b
27	Expected		2.00			3.00	3.00		1.00	3.00	2.00	1.00		1.00				1.00	1.00
	Actual		2.00			3.02	2.99		0.77 ^b	3.02	1.99	1.00		1.00				1.01	0.75 ^b
28	Expected		4.00	1.00		1.00	3.00			4.00				1.00	1.00			1.00	1.00
	Actual		3.98	1.00		1.00	3.03			4.03				1.00	0.98			1.00	1.01
29	Expected		2.00	2.00		1.00	2.00	1.00		2.00		1.00		1.00	2.00	1.00	1.00	1.00	1.00
	Actual		2.01	2.02		1.00	2.00	0.99		1.98		1.00		0.99	2.01	1.00	0.00 ^a	1.00	1.00
30	Expected	1.00	2.00	2.00		1.00	1.00	1.00				1.00			4.00	1.00	1.00	1.00	2.00
	Actual	1.00	2.00	2.00		1.00	1.00	1.00				1.01			4.03	1.01	0.00 ^a	0.97	2.00
31	Expected	1.00	1.00	2.00			1.00	1.00				1.00			3.00		1.00	1.00	4.00
	Actual	1.00	1.00	1.98			1.00	1.02				1.00			3.02		0.00 ^a	1.00	3.52 ^b
32	Expected		1.00	2.00		1.00	2.00	1.00		2.00		1.00			3.00	1.00			4.00
	Actual		1.01	2.01		1.00	1.98	1.00		2.02		0.99			3.01	1.00			3.61 ^b
33	Expected		2.00	1.00		2.00	1.00			2.00	2.00	2.00			1.00	2.00	1.00		1.00
	Actual		2.00	0.99		2.01	1.00			2.02	2.02	2.00			0.98	1.98	0.00 ^a		0.99
34	Expected		2.00	1.00		4.00	2.00			1.00	2.00	1.00		1.00		1.00	1.00	1.00	1.00
	Actual		1.99	1.00		4.02	2.01			1.00	1.98	0.99		1.00		1.01	0.00 ^a	0.99	1.00
35	Expected	1.00	1.00	2.00		3.00	3.00			1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00
	Actual	1.00	1.00	1.99		3.02	2.99			1.00	1.00			1.01	0.99	0.99	0.00 ^a	1.00	1.00
36	Expected	1.00	1.00	2.00			3.00			3.00	1.00			1.00	1.00	1.00			2.00
	Actual	1.00	1.00	2.02			2.98			3.02	1.02			0.98	0.99	1.00			2.01
37	Expected	1.00	1.00	2.00			2.00		1.00	2.00	3.00			1.00	2.00	2.00			1.00
	Actual	0.99	1.00	2.00			2.01		1.00	2.00	3.02			0.99	2.00	1.98			0.98
38	Expected		4.00	3.00		1.00			2.00	3.00	2.00				2.00	1.00			
	Actual		4.03	3.00		0.98			1.99	3.02	2.01				2.00	1.00			
39	Expected		4.00	1.00		2.00		2.00	2.00	1.00	1.00				2.00	1.00	1.00	1.00	
	Actual		4.03	1.00		1.99		1.99	0.98	1.00	1.00				2.01	1.00	0.00 ^a	0.99	
40	Expected		3.00	2.00		2.00		3.00						1.00	2.00	1.00	1.00	2.00	
	Actual		3.01	2.00		2.00		3.01						0.99	2.01	1.00	0.00 ^a	2.00	
41	Expected		1.00	3.00		1.00	1.00	4.00						1.00	1.00	1.00	2.00	3.00	
	Actual		0.99	2.98		1.00	1.00	4.03						1.00	1.00	0.99	0.00 ^a	3.01	
42	Expected	1.00	1.00	2.00			2.00	1.00			1.00			1.00	2.00	2.00	1.00	3.00	1.00
	Actual	1.00	1.01	1.99			2.01	1.00			1.00			1.01	2.01	2.00	0.00 ^a	3.01	0.99
43	Expected	1.00		2.00			2.00			1.00	1.00			1.00	4.00	1.00		1.00	4.00
	Actual	1.00		1.98			2.00			1.00	1.01			1.00	4.04	1.00		0.99	3.53 ^b
44	Expected	1.00	1.00	1.00			1.00			3.00	1.00			1.00	4.00		1.00		3.00
	Actual	1.00	1.00	1.00			0.99			3.02	1.00			0.99	4.03		0.00 ^a		2.53 ^b
45	Expected		1.00	2.00			1.00		1.00	2.00	1.00			1.00	1.00	2.00	1.00		3.00
	Actual		1.00	1.99			1.00		1.00	2.01	1.00			1.01	1.00	1.99	0.00 ^a		2.54 ^b
46	Expected	1.00		2.00					1.00		1.00	2.00			1.00	1.00	4.00	1.00	1.00
	Actual	0.98		1.99					1.00		0.99	2.02			1.00	1.02	4.00	0.00 ^a	0.98
47	Expected	1.00		2.00					1.00			2.00	1.00	1.00		7.00			1.00
	Actual	1.00		2.01					0.98			2.01	1.00	1.00		7.04			0.98
48	Expected	1.00	1.00	1.00		2.00	1.00				1.00	2.00	2.00	1.00		4.00			1.00
	Actual	1.00	1.00	1.00		1.99	0.99				1.01	2.03	2.00	1.00		3.97			1.00
49	Expected	1.00	1.00	1.00		3.00	1.00				3.00		2.00	1.00		2.00			2.00
	Actual	0.98	1.02	1.00		3.03	1.00				3.01		1.97	1.00		2.01			1.99
50	Expected	1.00		1.00		3.00	1.00				4.00		1.00	3.00		1.00			3.00
	Actual	0.99		1.00		3.02	1.00				3.98		1.00	2.99		1.00			3.01
51	Expected	1.00		2.00		3.00	1.00			1.00	2.00			3.00		2.00	1.00	1.00	2.00
	Actual	1.00		1.99		3.02	1.00			0.97	2.01			2.99		2.01	0.00 ^a	1.00	2.00
52	Expected	2.00	1.00	2.00		1.00				3.00	1.00		1.00			2.00	2.00	1.00	1.00
	Actual	2.00	1.00	2.00		1.00				3.02	1.01		0.98			1.99	0.00 ^a	1.00	1.01

Table 2 - Amino Acid Analysis (continued)

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)
53	Expected	2.00	3.00	1.00		1.00				2.00	1.00	1.00	1.00	1.00		1.00	2.00		
	Actual	2.02	2.98	0.99		1.00				1.98	0.99	0.98	1.00	0.99		1.01	0.00 ^a		
54	Expected	1.00	5.00		1.00	3.00			1.00	1.00	1.00	1.00	2.00	1.00	1.00				
	Actual	1.01	5.04		0.53 ^c	2.98			0.99	1.00	1.00	1.00	1.98	1.00	1.01				
55	Expected	2.00	3.00	2.00	1.00	2.00			1.00	1.00	1.00	1.00	1.00		2.00				1.00
	Actual	2.00	3.00	2.00	0.57 ^c	2.01			1.00	0.99	1.01	1.00	1.00		1.97				1.01
56	Expected	3.00	1.00	3.00		4.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
	Actual	3.02	1.00	2.98		4.01	1.00		0.99	1.00	1.00	1.00	0.99		1.01		0.00 ^a		1.01
57	Expected	3.00	2.00	1.00		5.00	1.00					1.00	1.00		1.00		1.00		1.00
	Actual	3.02	2.01	0.99		5.03	0.98					1.02	0.99		0.98		0.00 ^a		1.00
58	Expected	2.00	2.00	2.00		4.00					1.00	1.00	1.00	1.00	1.00		2.00		1.00
	Actual	2.00	2.01	2.00		3.97				1.00	1.00	1.00	1.00	1.01	0.99		0.00 ^a		1.01
59	Expected	2.00	1.00	2.00		5.00		1.00			1.00	1.00	1.00	1.00			1.00		2.00
	Actual	2.02	1.00	1.97		5.03		0.98			0.97	1.02	1.00	0.99			0.00 ^a		2.03
60	Expected	1.00	2.00	1.00	1.00	5.00	1.00	2.00		1.00		1.00							1.00
	Actual	1.00	1.99	1.00	0.56 ^c	4.98	1.01	2.02		1.00		0.98							1.01
61	Expected	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00		2.00				1.00		1.00	
	Actual	1.00	2.00	1.00	1.07 ^c	1.99	1.00	2.02	1.01	0.99		2.01				0.98		1.01	
62	Expected		1.00	1.00	2.00	2.00	1.00	1.00	1.00		3.00	2.00				1.00		1.00	
	Actual		1.00	1.00	0.99 ^c	1.98	1.00	0.99	1.01		3.03	1.97				1.00		1.00	
63	Expected	1.00	1.00	1.00		2.00	3.00				5.00	2.00	1.00	1.00					1.00
	Actual	0.99	0.99	1.01		2.00	3.03				5.04	2.01	1.00	0.98				1.00	
64	Expected	2.00	1.00			1.00	3.00		1.00		4.00	1.00	2.00	1.00	1.00		1.00		
	Actual	2.01	1.00			1.00	2.97		1.00		4.03	1.00	1.98	1.00	1.01		0.00 ^a		
65	Expected	3.00	2.00				2.00		1.00	2.00	1.00	1.00	2.00		1.00		2.00		
	Actual	3.01	2.02				2.00		0.99	1.98	1.00	1.00	2.00		0.99		0.00 ^a		
66	Expected	2.00	1.00			2.00	2.00			4.00		1.00	4.00				2.00		
	Actual	2.01	1.00			1.99	2.00			3.97		1.00	4.02				0.00 ^a		
67	Expected	1.00	1.00	2.00		3.00	2.00	1.00		4.00			3.00				1.00		
	Actual	0.99	1.00	2.00		3.00	2.00	1.01		3.99			2.98				0.00 ^a		
68	Expected		1.00	3.00		1.00	4.00	1.00		2.00	1.00		1.00		1.00		1.00		1.00
	Actual		1.02	3.00		0.99	4.02	1.02		2.02	1.00		1.00		0.98		0.00 ^a		0.99
69	Expected		1.00	1.00		2.00	6.00			4.00	2.00				1.00				1.00
	Actual		1.00	1.00		1.99	6.02			4.01	1.98				1.01				0.98
70	Expected		1.00			3.00	4.00		1.00	4.00	1.00							1.00	2.00
	Actual		1.00			3.02	3.99		0.99	4.03	1.00							1.00	1.98
71	Expected		2.00			2.00	4.00		1.00	3.00	2.00			1.00		1.00		1.00	1.00
	Actual		2.01			1.99	4.00		1.00	2.97	2.01			1.00		0.99		0.99	1.00
72	Expected	2.00	2.00	2.00		1.00	3.00		1.00		1.00			1.00		2.00		1.00	1.00
	Actual	2.00	2.00	2.01		1.00	2.98		1.00		0.99			1.00		2.01		0.99	1.00
73	Expected	2.00	2.00	3.00			3.00		2.00		1.00					3.00	1.00	1.00	
	Actual	2.01	2.03	2.97			2.98		2.01		0.99					2.97	0.00 ^a	1.00	
74	Expected	3.00	2.00	3.00		2.00	1.00		1.00	1.00	1.00					3.00	1.00		
	Actual	3.01	2.00	2.98		2.03	1.01		0.99	0.98	1.02					2.99	0.00 ^a		
75	Expected	2.00	1.00	2.00						4.00	1.00					1.00			1.00
	Actual	2.00	1.00	2.03						3.95	1.01					1.00			1.00
76	Expected	2.00	2.00	2.00		4.00	1.00	1.00		4.00	1.00								1.00
	Actual	1.97	2.01	2.01		4.03	0.99	1.00		3.98	1.00								1.01
77	Expected	2.00	3.00	1.00		2.00	1.00	1.00	2.00	4.00						1.00		1.00	
	Actual	1.98	2.97	1.01		2.00	1.01	1.01	1.54 ^b	4.01						1.00		1.00	
78	Expected	2.00	2.00			1.00		1.00	2.00	2.00	2.00	1.00				1.00		1.00	3.00
	Actual	2.00	2.01			1.00		1.03	1.49 ^b	2.01	2.00	1.00				1.00		1.01	2.60 ^b
79	Expected	2.00	3.00	1.00		1.00		1.00			2.00	1.00		1.00		1.00		1.00	3.00
	Actual	2.00	2.86	0.98		1.01		1.06			1.99	1.11		0.96		0.96		1.14	2.94
80	Expected	2.00	3.00	2.00			1.00		1.00		1.00	2.00		1.00	1.00	1.00			3.00
	Actual	2.01	3.02	1.99			0.99		1.00		1.00	1.99		0.99	1.01	1.00			2.99
81	Expected		3.00	2.00		3.00	3.00		1.00			1.00			2.00	1.00			3.00
	Actual		3.00	2.00		3.00	3.02		0.77 ^b			1.00			2.01	1.00			2.74 ^b
82	Expected	1.00	2.00	2.00		3.00	2.00			1.00			1.00		1.00	2.00		1.00	2.00
	Actual	0.99	2.01	2.00		3.01	2.00			1.00			0.98		1.00	2.00		1.00	1.99
83	Expected	2.00		2.00		2.00	1.00			3.00			1.00			3.00		1.00	3.00
	Actual	2.01		1.99		2.00	1.00			2.97			1.01			3.01		1.00	2.47 ^b
84	Expected	1.00	1.00	2.00		3.00	2.00			2.00		2.00	1.00			2.00			3.00
	Actual	1.00	1.00	2.00		2.99	2.00			2.01		2.00	1.00			2.01			2.98

Table 2 - Amino Acid Analysis (continued)

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)
85	Expected		1.00	2.00		3.00	3.00			1.00	1.00	2.00							3.00
	Actual		1.01	2.00		2.98	2.99		0.77 ^b	1.00	1.01	2.00		1.00					2.74 ^b
86	Expected			2.00		1.00	4.00		1.00	1.00	4.00			2.00		1.00			2.00
	Actual			2.01		1.00	4.00		1.01	0.99	4.03			2.00		0.99			2.01
87	Expected		1.00			1.00	2.00			2.00	4.00		1.00	1.00		2.00	1.00		1.00
	Actual		1.02			0.99	2.02			2.01	4.03		0.98	0.99		2.00	0.00 ^a		1.02
88	Expected		2.00	1.00		3.00	2.00			2.00	2.00		1.00	1.00		1.00	1.00		1.00
	Actual		2.00	1.01		3.02	2.02			1.98	1.98		1.00	0.99		0.97	0.00 ^a		0.99
89	Expected	1.00	2.00	1.00		3.00	1.00			2.00		1.00	1.00		1.00		1.00		1.00
	Actual	1.02	2.02	1.00		3.00	0.99			2.01		0.99	1.00		1.00		0.00 ^a		0.99
90	Expected	1.00	2.00	2.00	1.00	2.00	2.00			1.00	1.00	1.00			2.00				3.00
	Actual	1.01	2.02	1.98	0.55 ^c	1.99	2.00			1.00	0.97	1.02			2.01				2.58 ^b
91	Expected	2.00	1.00	4.00	1.00		1.00			1.00	1.00		1.00	1.00	1.00				3.00
	Actual	1.99	1.00	4.03	0.52 ^c		1.00			1.00	0.99		1.01	1.00	1.00				2.47 ^b
92	Expected	2.00	1.00	3.00				1.00		3.00	1.00		2.00	1.00	1.00	1.00			2.00
	Actual	1.98	1.00	3.02				1.00		3.01	1.00		1.98	1.00	1.00	0.99			1.53 ^b
93	Expected	2.00	1.00	2.00				1.00	1.00	2.00	2.00	1.00	2.00		2.00	1.00			1.00
	Actual	1.99	1.01	2.01				1.00	1.00	2.01	2.00	1.00	1.98		2.00	1.00			1.00
94	Expected	1.00	1.00	2.00		2.00	1.00		1.00		3.00	1.00		1.00	2.00	1.00	2.00		1.00
	Actual	1.00	1.00	1.98		1.98	1.00		1.00		3.03	1.00		1.01	2.01	1.00	0.00 ^a		0.99
95	Expected			1.00		4.00	1.00		1.00		1.00		1.00	2.00	1.00	1.00	3.00	1.00	1.00
	Actual			1.00		4.03	1.00		0.98		1.00		1.00	1.98	1.01	1.00	0.00 ^a	1.00	0.99
96	Expected			2.00	1.00	3.00	1.00	1.00		1.00			2.00	1.00	1.00	1.00	2.00	1.00	1.00
	Actual			2.00	1.03 ^c	3.01	1.00	1.00		1.00			2.00	0.99	1.00	1.00	0.00 ^a	1.01	1.00
97	Expected		1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00			
	Actual		1.00	1.99	0.55 ^c	1.00	1.00	0.99	1.01	2.00	1.00	1.00	1.99	1.02	1.01	2.01			
98	Expected		2.00	1.00	1.00	1.00	1.00		1.00	2.00	1.00	1.00		1.00		1.00			2.00
	Actual		1.99	1.00	0.52 ^c	1.00	0.99		1.01	2.01	0.99	1.00		1.00		1.01			1.48 ^b
99	Expected		3.00	2.00	1.00	2.00	3.00			2.00				1.00		1.00			3.00
	Actual		3.02	2.01	0.57 ^c	1.99	3.00			2.01				0.98		1.00			2.49 ^b
100	Expected	2.00	3.00	1.00	1.00	2.00	3.00		1.00	1.00				1.00	1.00				1.00
	Actual	2.01	3.01	0.99	0.51 ^c	1.99	2.99		1.00	1.00				1.00	1.00				1.00
101	Expected	3.00	3.00	2.00			3.00		1.00					1.00	1.00	1.00	1.00		2.00
	Actual	2.98	3.01	2.00			3.01		1.00					1.01	0.99	1.00	0.00 ^a		2.01
102	Expected	4.00	1.00	2.00	1.00		2.00			1.00	1.00				1.00	1.00	1.00	1.00	1.00
	Actual	4.01	1.00	1.97	0.50 ^c		2.01			1.00	1.00				1.01	1.00	0.00 ^a	1.00	1.01
103	Expected	3.00		1.00	1.00	1.00				4.00	1.00	1.00	1.00		1.00	1.00	1.00	2.00	
	Actual	3.01		1.00	0.53 ^c	1.00				4.02	0.98	1.00	0.99		1.00	1.00	0.00 ^a	1.99	
104	Expected	1.00	3.00	1.00		1.00		1.00		5.00		2.00	1.00				1.00	2.00	
	Actual	1.00	3.00	1.00		1.03		1.01		4.96		2.01	1.00				0.00 ^a	2.02	
105	Expected	3.00	3.00	2.00	1.00			1.00	1.00	2.00		1.00	1.00		1.00			1.00	1.00
	Actual	3.01	2.97	2.02	0.53 ^c			1.00	1.01	1.99		1.00	1.00		1.00			1.00	1.00
106	Expected	3.00		2.00	1.00				1.00	1.00		1.00		1.00	1.00		1.00		3.00
	Actual	2.97		2.00	0.53 ^c				1.00	1.00		1.01		1.00	0.99		0.00 ^a		3.02
107	Expected	1.00	1.00	1.00	1.00		1.00		1.00					2.00	1.00	3.00	2.00		3.00
	Actual	1.01	1.00	1.00	0.56 ^c		0.99		1.00					2.03	1.00	2.98	0.00 ^a		2.99
108	Expected	1.00	1.00	1.00		1.00	3.00	1.00	1.00					1.00	1.00	3.00	3.00		1.00
	Actual	1.01	1.00	1.00		1.00	2.97	1.01	0.99					1.00	1.01	3.02	0.00 ^a		0.99
109	Expected	1.00		1.00		2.00	2.00	1.00	1.00	1.00		2.00			1.00	3.00	2.00		
	Actual	1.00		1.01		1.99	2.00	1.00	0.99	1.00		2.01			1.00	2.97	0.00 ^a		
110	Expected		1.00	2.00		3.00	1.00		1.00	1.00		2.00				2.00	3.00		2.00
	Actual		1.01	2.00		3.02	0.99		1.00	1.00		2.01				1.98	0.00 ^a		2.00
111	Expected		1.00	2.00		4.00			1.00	1.00		2.00					3.00		2.00
	Actual		1.00	2.01		4.03			1.00	0.98		1.99					0.00 ^a		1.98
112	Expected		1.00	2.00		5.00			1.00			2.00	1.00	1.00		1.00	2.00		2.00
	Actual		1.00	2.00		4.96			1.01			2.01	1.00	0.99		1.01	0.00 ^a		2.00
113	Expected			2.00		2.00						2.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00
	Actual			2.01		2.00						1.97	1.00	2.01	1.00	1.00	0.00 ^a	1.00	2.01
114	Expected		1.00	2.00		2.00	1.00		1.00			2.00		2.00	2.00		2.00	1.00	2.00
	Actual		1.00	1.99		1.99	1.00		1.00			2.02		2.01	2.00		0.00 ^a	1.00	1.99
115	Expected		2.00	1.00	1.00	1.00	3.00		2.00	1.00	1.00			1.00	2.00	1.00	1.00	1.00	
	Actual		2.00	1.00	0.55 ^c	1.00	2.98		2.03	1.00	1.00			1.00	2.00	1.00	0.00 ^a	1.01	

Table 2 - Amino Acid Analysis (continued)

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)
116	Expected	3.00	2.00		1.00		2.00		2.00	1.00					1.00	2.00	2.00		
	Actual	3.03	2.02		0.52 ^c		1.97		1.99	1.00					1.00	2.00	0.00 ^a		
117	Expected	4.00	2.00	1.00		2.00	1.00		3.00							2.00	1.00		1.00
	Actual	4.02	2.00	1.00		1.99	1.01		2.98							1.98	0.00 ^a		1.00
118	Expected	3.00	1.00	2.00		3.00			4.00							1.00	1.00		2.00
	Actual	2.96	1.00	2.00		3.01			3.48							1.00	0.00 ^a		2.00
119	Expected	2.00	1.00	3.00		2.00	1.00		3.00		1.00							2.00	3.00
	Actual	2.01	1.00	3.03		1.97	1.00		2.48 ^b		1.00							2.00	3.00
120	Expected		1.00	2.00		1.00	1.00		2.00	1.00	2.00	1.00			2.00			3.00	1.00
	Actual		1.00	2.00		1.00	1.00		1.52 ^b	1.01	1.99	1.00			2.01			2.99	0.98
121	Expected		1.00	2.00		1.00				2.00	1.00	1.00			2.00	2.00		2.00	2.00
	Actual		1.00	1.99		1.00				2.03	1.01	1.00			2.00	2.00		2.00	1.99
122	Expected		1.00	2.00		2.00				3.00	1.00					3.00		1.00	2.00
	Actual		1.00	2.00		2.00				3.02	1.00					2.97		1.00	2.01

^aTrp was completely destroyed during hydrolysis

^bVal-Ile, Val-Val, Ile-Ile and/or Ile-Val bonds were only partially destroyed during hydrolysis

^cCys was partially destroyed during hydrolysis

Date: 24 JUL 2014

Signature: *Dorothy C. Young*

Title: Technical Manager, BEI Authentication

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