Certificate of Analysis for NR-50710

Peptide Array, Dengue Virus Type 1, Singapore/S275/1990 Envelope Protein

Catalog No. NR-50710

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

Product Description: The 84-peptide array spans the envelope (E) protein of the Singapore/S275/1990 strain of dengue virus type 1 (DEN-1) (GenPept: P33478). Peptides are 13- to 18-mers, with 11 or 12 amino acid overlaps.

Lot: P50710-1 to P50710-84

The following information applies to all peptides:

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

Peptide-specific information is shown in the tables below.

Table 1

Peptide	Date of Mfg.	Length	Sequence	Molecular Weight (amu)	Purity by HPLC[a]	Peptide Content[b]
1 of 84	4/18/2017	17	1-MRCVGIGSRDFVEGLSG-17	1783	80%	71.7%
2 of 84	4/13/2017	17	7-GSRDFVEGLSGATWVDV-23	1795	92.7%	94.4%
3 of 84	4/18/2017	17	12-VEGLSGATWVDVVLEHG-28	1768	95.1%	74.5%
4 of 84	4/17/2017	17	18-ATWVDVVLEHGSCVTTM-34	1848	80%	99.4%
5 of 84	4/17/2017	17	24-VLEHGSCVTTMAKDKPT-40	1817	80%	58.2%
6 of 84	4/11/2017	17	30-CVTTMAKDKPTLDIELL-46	1891	80%	70.3%
7 of 84	4/12/2017	17	36-KDKPTLDIELLKTEVTN-52	1957	80%	78.6%
8 of 84	4/17/2017	17	42-DIELLKTEVTNPAVLRK-58	1939	97.2%	75.3%
9 of 84	4/17/2017	17	48-TEVTNPAVLRKLCIEAK-64	1885	95.9%	64.3%
10 of 84	4/17/2017	17	54-AVLRKLCIEAKISNTTT-70	1861	93.2%	64.7%
11 of 84	4/11/2017	17	60-CIEAKISNTTTDSRCPT-76	1840	80%	53.0%
12 of 84	4/11/2017	17	66-SNTTTDSRCPTQGEATL-82	1782	84.7%	62.9%
13 of 84	4/12/2017	17	72-SRCPTQGEATLVEEQDA-88	1834	99%	87.8%
14 of 84	4/11/2017	17	78-GEATLVEEQDANFVCRR-94	1937	80%	84.9%
15 of 84	4/12/2017	17	83-VEEQDANFVCRRTFVDR-99	2084	90.7%	69.4%
16 of 84	4/19/2017	16	89-NFVCRRTFVDRGWGNG-104	1884	83%	53.3%
17 of 84	4/17/2017	17	94-RTFVDRGWGNGCGLFGK-110	1870	97.9%	57.7%
18 of 84	4/11/2017	16	100-GWGNGCGLFGKGSLLT-115	1567	99%	66.0%
19 of 84	4/11/2017	16	105-CGLFGKGSLLTCAKFK-120	1673	80%	60.9%
20 of 84	4/18/2017	17	110-KGSLLTCAKFKCVTKLE-126	1869	80%	55.4%
21 of 84	4/19/2017	17	116-CAKFKCVTKLEGKIVQY-132	1958	88.3%	77.1%
22 of 84	4/12/2017	16	122-VTKLEGKIVQYENLKY-137	1925	80%	70.5%
23 of 84	4/18/2017	17	127-GKIVQYENLKYSVIVTV-143	1953	87.6%	65.4%
24 of 84	4/11/2017	17	132-YENLKYSVIVTVHTGDQ-148	1966	83.4%	62.7%
25 of 84	4/7/2017	17	138-SVIVTVHTGDQHQVGNE-154	1820	80%	70.1%

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Table 1 (continued)						
Peptide	**Date of Mfg.**	**Length**	**Sequence**	**Molecular Weight (amu)**	**Purity by HPLC[a]**	**Peptide Content[b]**
26 of 84	4/12/2017	17	144-HTGDQHQVGNETTEHGT-160	1848	80%	57.9%
27 of 84	4/24/2017	17	149-HQVGNETTEHGTIATIT-165	1809	80%	70.8%
28 of 84	4/18/2017	16	155-TTEHGTIATITPQAPT-170	1639	94%	52.0%
29 of 84	4/11/2017	17	160-TIATITPQAPTSEIQLT-176	1785	92.3%	82.9%
30 of 84	4/7/2017	17	166-PQAPTSEIQLTDYGALT-182	1805	80%	73.2%
31 of 84	4/21/2017	18	171-SEIQLTDYGALTLDCSPR-188	1982	80%	59.7%
32 of 84	4/19/2017	17	178-YGALTLDCSPRTGLDFN-194	1843	80%	59.4%
33 of 84	4/18/2017	17	184-DCSPRTGLDFNEMVLLT-200	1911	89.5%	62.0%
34 of 84	4/12/2017	17	190-GLDFNEMVLLTMKEKSW-206	2041	93.6%	56.1%
35 of 84	4/18/2017	17	196-MVLLTMKEKSWLVHKQW-212	2158	80%	92.5%
36 of 84	4/12/2017	17	202-KEKSWLVHKQWFLDLPL-218	2168	99.5%	65.8%
37 of 84	4/11/2017	17	208-VHKQWFLDLPLPWTSGA-224	1995	80%	73.3%
38 of 84	4/18/2017	17	214-LDLPLPWTSGASTSQET-230	1803	80%	72.5%
39 of 84	4/11/2017	17	220-WTSGASTSQETWNRQDL-236	1967	80%	65.4%
40 of 84	4/11/2017	17	226-TSQETWNRQDLLVTFKT-242	2067	97.9%	79.4%
41 of 84	4/11/2017	17	232-NRQDLLVTFKTAHAKKQ-248	1998	80%	60.5%
42 of 84	4/18/2017	17	238-VTFKTAHAKKQEVVVLG-254	1855	80.2%	56.4%
43 of 84	4/19/2017	17	244-HAKKQEVVVLGSQEGAM-260	1811	80%	47.5%
44 of 84	4/18/2017	17	250-VVVLGSQEGAMHTALTG-266	1670	80%	63.6%
45 of 84	4/25/2017	17	255-SQEGAMHTALTGATEIQ-271	1745	80%	70.9%
46 of 84	4/18/2017	17	261-HTALTGATEIQTSGTTT-277	1690	80%	64.9%
47 of 84	4/11/2017	17	267-ATEIQTSGTTTIFAGHL-283	1748	80%	55.2%
48 of 84	4/13/2017	17	273-SGTTTIFAGHLKCRLKM-289	1864	99.4%	74.2%
49 of 84	4/17/2017	17	279-FAGHLKCRLKMDKLTLK-295	2003	80%	57.1%
50 of 84	4/17/2017	17	285-CRLKMDKLTLKGMSYVM-301	2018	87.6%	70.1%
51 of 84	4/18/2017	17	291-KLTLKGMSYVMCTGSFK-307	1894	80%	70.6%
52 of 84	4/20/2017	17	297-MSYVMCTGSFKLEKEVA-313	1923	91.4%	87.1%
53 of 84	4/7/2017	17	303-TGSFKLEKEVAETQHGT-319	1862	80%	80.6%
54 of 84	4/18/2017	17	308-LEKEVAETQHGTVLVQV-324	1880	80%	72.9%
55 of 84	4/11/2017	17	313-AETQHGTVLVQVKYEGT-329	1860	80%	76.7%
56 of 84	4/17/2017	17	319-TVLVQVKYEGTDAPCKI-335	1864	96.8%	61.6%
57 of 84	4/12/2017	17	325-KYEGTDAPCKIPFSTQD-341	1900	86.7%	68.5%
58 of 84	4/7/2017	17	331-APCKIPFSTQDEKGVTQ-347	1849	80%	86.5%
59 of 84	4/11/2017	17	337-FSTQDEKGVTQNRLITA-353	1908	81.7%	67.8%
60 of 84	4/7/2017	17	343-KGVTQNRLITANPIVTD-359	1840	97.4%	82.3%
61 of 84	4/7/2017	17	349-RLITANPIVTDKEKPVN-365	1908	90.5%	79.6%
62 of 84	4/12/2017	15	355-PIVTDKEKPVNIETE-369	1712	80%	71.8%
63 of 84	4/13/2017	16	359-DKEKPVNIETEPPFGE-374	1829	99%	58.9%
64 of 84	4/12/2017	17	364-VNIETEPPFGESYIVVG-380	1850	80%	72.7%
65 of 84	4/7/2017	17	370-PPFGESYIVVGAGEKAL-386	1734	80%	83.6%
66 of 84	4/19/2017	17	376-YIVVGAGEKALKQCWFK-392	1940	80%	61.7%
67 of 84	4/14/2017	17	382-GEKALKQCWFKKGSSIG-398	1867	84.5%	75.3%
68 of 84	4/12/2017	17	387-KQCWFKKGSSIGKMFEA-403	1975	91.7%	51.1%

Table 1 (continued)						
Peptide	**Date of Mfg.**	**Length**	**Sequence**	**Molecular Weight (amu)**	**Purity by HPLC[a]**	**Peptide Content[b]**
69 of 84	4/12/2017	17	393-KGSSIGKMFEATARGAR-409	1767	80%	51.2%
70 of 84	4/12/2017	17	399-KMFEATARGARRMAILG-415	1879	80%	56.9%
71 of 84	4/19/2017	17	405-ARGARRMAILGDTAWDF-421	1907	80%	63.5%
72 of 84	4/18/2017	17	411-MAILGDTAWDFGSIGGV-427	1710	92.9%	61.3%
73 of 84	4/17/2017	17	417-TAWDFGSIGGVFTSVGK-433	1729	92.2%	55.1%
74 of 84	4/12/2017	17	423-SIGGVFTSVGKLVHQVF-439	1775	80%	57.2%
75 of 84	4/17/2017	17	429-TSVGKLVHQVFGTAYGV-445	1763	80.6%	67.1%
76 of 84	4/17/2017	16	435-VHQVFGTAYGVLFSGV-450	1681	96%	67.5%
77 of 84	4/24/2017	17	440-GTAYGVLFSGVSWTMKI-456	1817	80%	57.3%
78 of 84	4/21/2017	17	446-LFSGVSWTMKIGIGILL-462	1835	80%[c]	82.3%
79 of 84	4/21/2017	17	452-WTMKIGIGILLTWLGLN-468	1929	80%[c]	80.9%
80 of 84	4/12/2017	17	458-IGILLTWLGLNSRSTSL-474	1844	80%	59.1%
81 of 84	4/21/2017	17	464-WLGLNSRSTSLSMTCIA-480	1840	80%[c]	49.0%
82 of 84	4/21/2017	17	470-RSTSLSMTCIAVGMVTL-486	1770	80%[c]	85.7%
83 of 84	4/26/2017	17	476-MTCIAVGMVTLYLGVMV-492	1801	80%[c]	74.7%
84 of 84	4/21/2017	13	482-GMVTLYLGVMVQA-494	1382	80%[c]	64.5%

[a]% full-length
[b]Remainder is salt and water
[c]HPLC analysis was inconclusive due to the hydrophobic nature of the sequence. Purity is based on mass spectral analysis.

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 84	Expected		2.00	1.00	1.00	1.00	4.00		1.00	1.00		1.00	1.00		2.00				2.00
	Actual		2.08	1.01	0.00[a]	1.01	4.08		0.99	1.02		0.00[a]	1.10		1.92				1.98
2 of 84	Expected	1.00	1.00	2.00		1.00	3.00			1.00			1.00		2.00	1.00	1.00		3.00
	Actual	0.99	1.10	2.04		1.00	3.02			1.02			0.98		1.89	0.96	0.00[a]		3.33
3 of 84	Expected	1.00		1.00		2.00	3.00	1.00		2.00					1.00	1.00	1.00		4.00
	Actual	0.99		0.99		1.95	3.00	1.02		2.01					0.61[b]	0.78[b]	0.00[a]		4.07
4 of 84	Expected	1.00		1.00	1.00	1.00	1.00	1.00		1.00		1.00			1.00	3.00	1.00		4.00
	Actual	0.95		0.96	0.00[a]	1.01	1.04	1.02		1.05		0.00[a]			0.59[b]	2.02[b]	0.00[a]		3.87
5 of 84	Expected	1.00		1.00	1.00	1.00	1.00	1.00		1.00	2.00	1.00		1.00	1.00	3.00			2.00
	Actual	0.98		0.98	0.00[a]	0.96	1.00	1.04		1.04	2.00	0.00[a]		1.00	0.59[b]	2.25[b]			1.97
6 of 84	Expected	1.00		2.00	1.00	1.00			1.00	3.00	2.00	1.00		1.00		3.00			1.00
	Actual	0.98		2.06	0.00[a]	1.00			1.00	3.07	2.04	0.00[a]		0.98		2.22[b]			0.97
7 of 84	Expected			3.00		2.00			1.00	3.00	3.00			1.00		3.00			1.00
	Actual			2.92		1.95			1.00	3.17	3.08			1.05		2.29[b]			0.92
8 of 84	Expected	1.00	1.00	2.00		2.00			1.00	3.00	2.00			1.00		2.00			2.00
	Actual	1.00	1.10	2.01		1.97			0.99	3.01	2.03			1.01		1.57[b]			1.99
9 of 84	Expected	2.00	1.00	1.00	1.00	2.00			1.00	2.00	2.00			1.00		2.00			2.00
	Actual	1.96	1.08	1.02	0.00[a]	1.99			0.98	2.05	2.02			1.01		1.56[b]			1.98
10 of 84	Expected	2.00	1.00	1.00	1.00	1.00			2.00	2.00	2.00				1.00	3.00			1.00
	Actual	1.97	1.08	1.01	0.00[a]	1.00			1.99	2.05	2.02				0.57[b]	2.11[b]			0.99
11 of 84	Expected	1.00	1.00	2.00	2.00	1.00			2.00		1.00			1.00	2.00	4.00			
	Actual	1.03	1.13	1.83	0.00[a]	0.99			1.96		1.03			1.02	1.35[b]	3.05[b]			

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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)
12 of 84	Expected	1.00	1.00	2.00	1.00	2.00	1.00			1.00				1.00	2.00	5.00			
	Actual	1.03	1.04	1.93	0.00[a]	1.99	1.05			1.04				0.98	1.19[b]	3.71[b]			
13 of 84	Expected	2.00	1.00	1.00	1.00	5.00	1.00			1.00				1.00	1.00	2.00			1.00
	Actual	1.97	1.12	1.00	0.00[a]	5.11	1.05			0.99				1.04	0.96	1.94			1.02
14 of 84	Expected	2.00	2.00	2.00	1.00	4.00	1.00			1.00			1.00			1.00			2.00
	Actual	1.95	2.21	2.09	0.00[a]	4.08	1.02			1.00			1.01			0.98			1.90
15 of 84	Expected	1.00	3.00	3.00	1.00	3.00							2.00			1.00			3.00
	Actual	1.01	3.33	3.09	0.00[a]	3.02							2.03			0.97[b]			2.90
16 of 84	Expected		3.00	3.00	1.00		3.00						2.00			1.00	1.00		2.00
	Actual		3.38	3.02	0.00[a]		3.01						1.99			0.99	0.00[a]		1.96
17 of 84	Expected		2.00	2.00	1.00		5.00			1.00	1.00		2.00			1.00	1.00		1.00
	Actual		2.20	1.97	0.00[a]		5.13			1.04	1.00		2.05			0.95	0.00[a]		0.98
18 of 84	Expected			1.00	1.00		6.00			3.00	1.00		1.00		1.00	1.00	1.00		
	Actual			0.94	0.00[a]		5.95			3.07	1.02		1.02		0.66[b]	0.82[b]	0.00[a]		
19 of 84	Expected	1.00			2.00		3.00			3.00	3.00		2.00		1.00	1.00			
	Actual	0.97			0.00[a]		3.01			3.10	2.97		2.01		0.65[b]	0.79[b]			
20 of 84	Expected	1.00			2.00	1.00	1.00			3.00	4.00		1.00		1.00	2.00			1.00
	Actual	1.02			0.00[a]	0.92	1.02			3.02	3.95		1.05		0.64[b]	1.59[b]			1.00
21 of 84	Expected	1.00			2.00	2.00	1.00		1.00	1.00	4.00		1.00			1.00		1.00	2.00
	Actual	1.04			0.00[a]	2.06	1.15		0.99	1.04	4.04		0.97			0.86[b]		0.65	2.12
22 of 84	Expected			1.00		3.00	1.00		1.00	2.00	3.00					1.00		2.00	2.00
	Actual			1.04		2.94	1.04		0.98	2.02	3.08					0.74[b]		1.89	1.95
23 of 84	Expected			1.00		2.00	1.00		2.00	1.00	2.00				1.00	1.00		2.00	4.00
	Actual			0.99		1.97	1.01		1.98	1.07	2.04				0.68[b]	0.80[b]		1.81	4.09
24 of 84	Expected			2.00		2.00	1.00	1.00	1.00	1.00	1.00				1.00	2.00		2.00	3.00
	Actual			1.90		1.84	1.05	1.09	0.99	1.04	1.04				0.66[b]	1.62[b]		1.82	3.06
25 of 84	Expected			2.00		3.00	2.00	2.00	1.00						1.00	2.00			4.00
	Actual			1.93		2.91	2.09	2.11	0.97						0.61[b]	1.60[b]			3.98
26 of 84	Expected			2.00		4.00	3.00	3.00								4.00			1.00
	Actual			2.01		3.91	3.04	3.01								3.03[b]			1.00
27 of 84	Expected	1.00		1.00		3.00	2.00	2.00	2.00							5.00			1.00
	Actual	1.14		0.77		2.60	2.12	2.01	2.24							3.87[b]			0.95
28 of 84	Expected	2.00				2.00	1.00	1.00	2.00					2.00		6.00			
	Actual	1.97				1.90	1.02	1.05	2.00					2.00		4.51[b]			
29 of 84	Expected	2.00				3.00			3.00	1.00				2.00	1.00	5.00			
	Actual	1.98				3.03			2.85	1.03				2.04	0.57[b]	3.80[b]			
30 of 84	Expected	2.00		1.00		3.00	1.00		1.00	2.00				2.00	1.00	3.00		1.00	
	Actual	1.99		1.05		2.87	1.10		1.01	2.07				2.01	0.96	2.85		0.98	
31 of 84	Expected	1.00	1.00	2.00	1.00	2.00	1.00		1.00	3.00				1.00	2.00	2.00		1.00	
	Actual	1.03	1.09	2.04	0.00[a]	1.87	1.09		0.99	3.16				1.01	1.66	1.96		0.90	
32 of 84	Expected	1.00	1.00	3.00	1.00		2.00			3.00			1.00	1.00	1.00	2.00		1.00	
	Actual	1.03	1.12	2.93	0.00[a]		2.09			3.12			0.95	1.03	0.67[b]	1.69[b]		0.92	
33 of 84	Expected		1.00	3.00	1.00	1.00	1.00			3.00		1.00	1.00	1.00	1.00	2.00			1.00
	Actual		1.02	3.00	0.00[a]	1.01	1.03			3.08		0.00[a]	1.02	1.00	0.63[b]	1.56[b]			0.98
34 of 84	Expected			2.00		2.00	1.00			3.00	2.00	2.00	1.00		1.00	1.00	1.00		1.00
	Actual			2.01		2.01	0.95			3.13	1.95	0.00[a]	1.02		0.59[b]	0.83[b]	0.00[a]		1.01

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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)
35 of 84	Expected					2.00		1.00		3.00	3.00	2.00			1.00	1.00	2.00		2.00
	Actual					1.90		1.04		3.06	2.96	0.00[a]			0.70	0.84	0.00[a]		2.44
36 of 84	Expected			1.00		2.00		1.00		4.00	3.00		1.00	1.00	1.00		2.00		1.00
	Actual			1.03		2.02		0.99		4.05	3.05		0.99	1.01	0.99		0.00[a]		1.01
37 of 84	Expected	1.00		1.00		1.00	1.00	1.00		3.00	1.00		1.00	2.00	1.00	1.00	2.00		1.00
	Actual	0.76		1.04		1.04	0.78	0.95		3.10	1.04		1.02	2.05	0.93	0.97	0.00[a]		1.28
38 of 84	Expected	1.00		1.00		2.00	1.00			3.00				2.00	3.00	3.00	1.00		
	Actual	1.01		1.01		2.04	1.06			3.08				2.05	2.80	2.88	0.00[a]		
39 of 84	Expected	1.00	1.00	2.00		3.00	1.00			1.00					3.00	3.00	2.00		
	Actual	1.02	1.14	2.05		3.12	1.05			1.03					2.77	2.78	0.00[a]		
40 of 84	Expected		1.00	2.00		3.00				2.00	1.00		1.00		1.00	4.00	1.00		1.00
	Actual		1.09	2.00		2.90				2.02	1.03		1.00		0.52[b]	2.96[b]	0.00[a]		1.25
41 of 84	Expected	2.00	1.00	2.00		2.00		1.00		2.00	3.00		1.00			2.00			1.00
	Actual	1.95	1.07	2.11		1.88		1.03		2.00	3.11		1.00			1.53[b]			0.99
42 of 84	Expected	2.00				2.00	1.00	1.00		1.00	3.00		1.00			2.00			4.00
	Actual	1.95				2.00	1.01	1.06		0.99	3.04		0.96			1.52[b]			3.94
43 of 84	Expected	2.00				4.00	2.00	1.00		1.00	2.00	1.00			1.00				3.00
	Actual	1.97				3.91	2.02	1.02		1.03	2.03	0.00[a]			0.63[b]				2.90
44 of 84	Expected	2.00				2.00	3.00	1.00		2.00		1.00			1.00	2.00			3.00
	Actual	1.98				2.00	3.00	1.03		2.05		0.00[a]			0.52[b]	2.96[b]			2.86
45 of 84	Expected	3.00				4.00	2.00	1.00	1.00	1.00		1.00			1.00	3.00			
	Actual	3.01				3.94	2.10	0.99	1.01	1.06		0.00[a]			0.95	2.99			
46 of 84	Expected	2.00				2.00	2.00	1.00	1.00	1.00					1.00	7.00			
	Actual	1.90				2.03	2.09	1.00	1.03	0.97					0.63[b]	5.63[b]			
47 of 84	Expected	2.00				2.00	2.00	1.00	2.00	1.00			1.00		1.00	5.00			
	Actual	1.98				1.90	2.07	1.01	2.02	0.97			1.03		0.62[b]	3.69[b]			
48 of 84	Expected	1.00	1.00		1.00		2.00	1.00	1.00	2.00	2.00	1.00	1.00		1.00	3.00			
	Actual	0.99	1.06		0.00[a]		1.99	1.04	0.98	2.04	2.03	0.00[a]	1.00		0.65[b]	2.15[b]			
49 of 84	Expected	1.00	1.00	1.00	1.00		1.00	1.00		4.00	4.00	1.00	1.00			1.00			
	Actual	1.01	1.08	1.01	0.00[a]		1.04	1.03		4.08	3.99	0.00[a]	1.01			0.89			
50 of 84	Expected		1.00	1.00	1.00		1.00			3.00	3.00	3.00			1.00	1.00		1.00	1.00
	Actual		1.08	0.93	0.00[a]		1.07			3.25	3.08	0.00[a]			0.96	0.99		0.68	1.00
51 of 84	Expected				1.00		2.00			2.00	3.00	2.00	1.00		2.00	2.00		1.00	1.00
	Actual				0.00[a]		2.05			2.14	3.03	0.00[a]	1.02		1.89	1.94		0.96	1.05
52 of 84	Expected	1.00			1.00	2.00	1.00			1.00	2.00	2.00	1.00		2.00	1.00		1.00	2.00
	Actual	0.99			0.00[a]	2.01	1.04			1.07	2.03	0.00[a]	1.05		1.87	0.96		0.68	1.97
53 of 84	Expected	1.00				4.00	2.00	1.00		1.00	2.00		1.00		1.00	3.00			1.00
	Actual	1.03				4.13	1.92	1.09		1.02	2.09		0.98		0.92	2.74			1.05
54 of 84	Expected	1.00				5.00	1.00	1.00		2.00	1.00					2.00			4.00
	Actual	0.99				4.93	1.01	1.04		1.98	0.99					1.55[b]			3.97
55 of 84	Expected	1.00				4.00	2.00	1.00		1.00	1.00					3.00		1.00	3.00
	Actual	0.87				3.92	2.04	0.95		1.07	1.07					2.25[b]		0.98	3.15
56 of 84	Expected	1.00		1.00	1.00	2.00	1.00		1.00	1.00	2.00			1.00		2.00		1.00	3.00
	Actual	1.01		1.01	0.00[a]	2.01	1.02		0.99	1.03	2.02			1.01		1.57[b]		0.93	2.99
57 of 84	Expected	1.00		2.00	1.00	2.00	1.00		1.00		2.00		1.00	2.00	1.00	2.00		1.00	
	Actual	1.04		1.99	0.00[a]	1.99	1.04		1.02		2.09		1.06	2.07	0.95	1.90		0.91	

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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)
58 of 84	Expected	1.00		1.00	1.00	3.00	1.00		1.00		2.00		1.00	2.00	1.00	2.00			1.00
	Actual	1.00		1.04	0.00[a]	2.94	1.05		0.99		2.04		1.02	2.01	0.58[b]	1.47[b]			0.89
59 of 84	Expected	1.00	1.00	2.00		3.00	1.00		1.00	1.00	1.00		1.00		1.00	3.00			1.00
	Actual	0.98	1.11	2.03		2.99	1.03		0.97	1.03	1.02		0.95		0.44[b]	2.28[b]			1.00
60 of 84	Expected	1.00	1.00	3.00		1.00	1.00		2.00	1.00	1.00			1.00		3.00			2.00
	Actual	1.02	1.09	2.94		1.00	1.07		1.85	1.01	1.03			1.02		2.16[b]			1.93
61 of 84	Expected	1.00	1.00	3.00		1.00			2.00	1.00	2.00			2.00		2.00			2.00
	Actual	1.10	1.10	3.07		0.96			1.56	0.98	2.16			2.00		1.47[b]			1.70
62 of 84	Expected			2.00		3.00			2.00		2.00			2.00		2.00			2.00
	Actual			2.07		2.96			1.91		2.08			2.03		1.60[b]			1.94
63 of 84	Expected			2.00		4.00	1.00		1.00		2.00		1.00	3.00		1.00			1.00
	Actual			2.02		3.97	1.00		1.00		2.01		1.00	3.06		0.97			1.00
64 of 84	Expected			1.00		3.00	2.00		2.00				1.00	2.00	1.00	1.00		1.00	3.00
	Actual			0.95		3.02	2.09		2.00				1.05	2.03	0.61[b]	0.79[b]		0.94	2.97
65 of 84	Expected	2.00				2.00	3.00		1.00	1.00	1.00		1.00	2.00	1.00			1.00	2.00
	Actual	2.06				1.89	3.21		0.82	1.01	1.01		1.12	2.10	0.57[b]			0.87	1.77
66 of 84	Expected	2.00			1.00	2.00	2.00		1.00	1.00	3.00		1.00				1.00	1.00	2.00
	Actual	2.04			0.00[a]	1.98	2.00		0.95	1.02	3.06		1.01				0.00[a]	0.90	2.18
67 of 84	Expected	1.00			1.00	2.00	3.00		1.00	1.00	4.00		1.00		2.00		1.00		
	Actual	1.02			0.00[a]	1.98	3.06		0.99	1.01	4.12		1.05		1.85		0.00[a]		
68 of 84	Expected	1.00			1.00	2.00	2.00		1.00		4.00	1.00	2.00		2.00		1.00		
	Actual	0.98			0.00[a]	1.78	2.14		1.04		4.11	0.00[a]	2.07		2.00		0.00[a]		
69 of 84	Expected	3.00	2.00			1.00	3.00		1.00		2.00	1.00	1.00		2.00	1.00			
	Actual	2.83	1.96			1.07	3.11		1.04		2.12	0.00[a]	1.03		1.96	1.00			
70 of 84	Expected	4.00	3.00			1.00	2.00		1.00	1.00	1.00	2.00	1.00			1.00			
	Actual	3.86	3.37			0.99	2.08		1.00	1.03	0.99	0.00[a]	1.01			0.96			
71 of 84	Expected	4.00	3.00	2.00			2.00		1.00	1.00		1.00	1.00			1.00	1.00		
	Actual	3.91	3.10	2.09			2.11		0.99	1.02		0.00[a]	0.97			1.00	0.00[a]		
72 of 84	Expected	2.00		2.00			4.00		2.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
	Actual	1.96		2.01			4.19		1.97	1.02			1.06		1.00	0.96	0.00[a]		0.99
73 of 84	Expected	1.00		1.00			4.00		1.00		1.00		2.00		2.00	2.00	1.00		2.00
	Actual	0.96		0.94			4.21		1.00		0.90		2.28		1.93	1.97	0.00[a]		2.20
74 of 84	Expected					1.00	3.00	1.00	1.00	1.00	1.00		2.00		2.00	1.00			4.00
	Actual					1.03	3.10	1.02	1.01	1.04	1.04		1.96		1.90	0.98			3.92
75 of 84	Expected	1.00				1.00	3.00	1.00		1.00	1.00		1.00		1.00	2.00		1.00	4.00
	Actual	1.24				1.28	3.26	0.99		1.09	0.97		1.00		1.07	1.96		0.94	3.70
76 of 84	Expected	1.00				1.00	3.00	1.00		1.00			2.00		1.00	1.00		1.00	4.00
	Actual	1.04				1.02	3.10	0.99		1.03			2.03		0.96	0.98		1.01	3.91
77 of 84	Expected	1.00					3.00		1.00	1.00	1.00	1.00	1.00		2.00	2.00	1.00	1.00	2.00
	Actual	0.94					3.06		0.95	1.14	0.99	0.00[a]	1.10		2.03	1.88	0.00[a]	0.63	2.19
78 of 84	Expected						3.00		3.00	3.00	1.00	1.00	1.00		2.00	1.00	1.00		1.00
	Actual						3.02		2.97	2.99	0.99	0.00[a]	0.97		1.14[b]	0.76[b]	0.00[a]		1.05
79 of 84	Expected			1.00			3.00		3.00	4.00	1.00	1.00				2.00	2.00		
	Actual			0.92			3.12		3.08	4.01	1.01	0.00[a]				1.59[b]	0.00[a]		
80 of 84	Expected		1.00	1.00			2.00		2.00	5.00					3.00	2.00	1.00		
	Actual		1.08	1.01			2.05		1.97	5.01					1.83[b]	1.55[b]	0.00[a]		

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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)
81 of 84	Expected	1.00	1.00	1.00	1.00		1.00		1.00	3.00		1.00			4.00	2.00	1.00		
	Actual	0.99	1.04	0.95	0.00[a]		1.09		0.98	3.22		0.00[a]			3.94	2.06	0.00[a]		
82 of 84	Expected	1.00	1.00		1.00		1.00		1.00	2.00		2.00			3.00	3.00			2.00
	Actual	1.00	0.66		0.00[a]		1.03		0.99	1.98		0.00[a]			1.59[b]	2.14[b]			1.97
83 of 84	Expected	1.00			1.00		2.00		1.00	2.00		3.00				2.00		1.00	4.00
	Actual	0.98			0.00[a]		2.02		0.97	2.13		0.00[a]				1.46[b]		0.73	3.92
84 of 84	Expected	1.00				1.00	2.00			2.00		2.00				1.00		1.00	3.00
	Actual	0.97				1.00	2.14			2.22		0.00[a]				0.84[b]		0.72	3.03

[a]Cys, Met, and Trp are completely destroyed during hydrolysis.
[b]This peptide required extended hydrolysis, which degrades Ser and Thr.

Table 3

Peptide	Sequence	Solubility	Solvent
1 of 84	1-MRCVGIGSRDFVEGLSG-17	5 mg/mL	50% acetonitrile / 50% water
2 of 84	7-GSRDFVEGLSGATWVDV-23	5 mg/mL	50% acetonitrile / 50% water
3 of 84	12-VEGLSGATWVDVVLEHG-28	5 mg/mL	100% dimethylsulfoxide (DMSO)
4 of 84	18-ATWVDVVLEHGSCVTTM-34	5 mg/mL	100% DMSO
5 of 84	24-VLEHGSCVTTMAKDKPT-40	5 mg/mL	50% acetonitrile / 50% water
6 of 84	30-CVTTMAKDKPTLDIELL-46	5 mg/mL	100% DMSO
7 of 84	36-KDKPTLDIELLKTEVTN-52	5 mg/mL	50% acetonitrile / 50% water
8 of 84	42-DIELLKTEVTNPAVLRK-58	5 mg/mL	50% acetonitrile / 50% water
9 of 84	48-TEVTNPAVLRKLCIEAK-64	5 mg/mL	50% acetonitrile / 50% water
10 of 84	54-AVLRKLCIEAKISNTTT-70	5 mg/mL	50% acetonitrile / 50% water
11 of 84	60-CIEAKISNTTTDSRCPT-76	5 mg/mL	50% acetonitrile / 50% water
12 of 84	66-SNTTTDSRCPTQGEATL-82	5 mg/mL	50% acetonitrile / 50% water
13 of 84	72-SRCPTQGEATLVEEQDA-88	5 mg/mL	50% acetonitrile / 50% water
14 of 84	78-GEATLVEEQDANFVCRR-94	5 mg/mL	50% acetonitrile / 50% water
15 of 84	83-VEEQDANFVCRRTFVDR-99	5 mg/mL	50% acetonitrile / 50% water
16 of 84	89-NFVCRRTFVDRGWGNG-104	5 mg/mL	100% DMSO
17 of 84	94-RTFVDRGWGNGCGLFGK-110	5 mg/mL	50% acetonitrile / 50% water
18 of 84	100-GWGNGCGLFGKGSLLT-115	5 mg/mL	50% acetonitrile / 50% water
19 of 84	105-CGLFGKGSLLTCAKFK-120	5 mg/mL	50% acetonitrile / 50% water
20 of 84	110-KGSLLTCAKFKCVTKLE-126	5 mg/mL	50% acetonitrile / 50% water
21 of 84	116-CAKFKCVTKLEGKIVQY-132	5 mg/mL	50% acetonitrile / 50% water
22 of 84	122-VTKLEGKIVQYENLKY-137	5 mg/mL	50% acetonitrile / 50% water
23 of 84	127-GKIVQYENLKYSVIVTV-143	5 mg/mL	50% acetonitrile / 50% water
24 of 84	132-YENLKYSVIVTVHTGDQ-148	5 mg/mL	50% acetonitrile / 50% water
25 of 84	138-SVIVTVHTGDQHQVGNE-154	5 mg/mL	50% acetonitrile / 50% water
26 of 84	144-HTGDQHQVGNETTEHGT-160	5 mg/mL	50% acetonitrile / 50% water
27 of 84	149-HQVGNETTEHGTIATIT-165	5 mg/mL	50% acetonitrile / 50% water
28 of 84	155-TTEHGTIATITPQAPT-170	5 mg/mL	50% acetonitrile / 50% water
29 of 84	160-TIATITPQAPTSEIQLT-176	5 mg/mL	50% acetonitrile / 50% water
30 of 84	166-PQAPTSEIQLTDYGALT-182	5 mg/mL	50% acetonitrile / 50% water
31 of 84	171-SEIQLTDYGALTLDCSPR-188	5 mg/mL	100% DMSO
32 of 84	178-YGALTLDCSPRTGLDFN-194	5 mg/mL	50% acetonitrile / 50% water

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Table 3 (continued)			
Peptide	**Sequence**	**Solubility**	**Solvent**
33 of 84	184-DCSPRTGLDFNEMVLLT-200	5 mg/mL	50% acetonitrile / 50% water
34 of 84	190-GLDFNEMVLLTMKEKSW-206	5 mg/mL	50% acetonitrile / 50% water
35 of 84	196-MVLLTMKEKSWLVHKQW-212	5 mg/mL	50% acetonitrile / 50% water
36 of 84	202-KEKSWLVHKQWFLDLPL-218	5 mg/mL	50% acetonitrile / 50% water
37 of 84	208-VHKQWFLDLPLPWTSGA-224	5 mg/mL	50% acetonitrile / 50% water
38 of 84	214-LDLPLPWTSGASTSQET-230	5 mg/mL	50% acetonitrile / 50% water
39 of 84	220-WTSGASTSQETWNRQDL-236	5 mg/mL	50% acetonitrile / 50% water
40 of 84	226-TSQETWNRQDLLVTFKT-242	5 mg/mL	50% acetonitrile / 50% water
41 of 84	232-NRQDLLVTFKTAHAKKQ-248	5 mg/mL	50% acetonitrile / 50% water
42 of 84	238-VTFKTAHAKKQEVVVLG-254	5 mg/mL	50% acetonitrile / 50% water
43 of 84	244-HAKKQEVVVLGSQEGAM-260	5 mg/mL	50% acetonitrile / 50% water
44 of 84	250-VVVLGSQEGAMHTALTG-266	5 mg/mL	50% acetonitrile / 50% water
45 of 84	255-SQEGAMHTALTGATEIQ-271	5 mg/mL	100% DMSO
46 of 84	261-HTALTGATEIQTSGTTT-277	5 mg/mL	100% DMSO
47 of 84	267-ATEIQTSGTTTIFAGHL-283	5 mg/mL	100% DMSO
48 of 84	273-SGTTTIFAGHLKCRLKM-289	5 mg/mL	50% acetonitrile / 50% water
49 of 84	279-FAGHLKCRLKMDKLTLK-295	5 mg/mL	50% acetonitrile / 50% water
50 of 84	285-CRLKMDKLTLKGMSYVM-301	5 mg/mL	50% acetonitrile / 50% water
51 of 84	291-KLTLKGMSYVMCTGSFK-307	5 mg/mL	50% acetonitrile / 50% water
52 of 84	297-MSYVMCTGSFKLEKEVA-313	5 mg/mL	100% DMSO
53 of 84	303-TGSFKLEKEVAETQHGT-319	5 mg/mL	50% acetonitrile / 50% water
54 of 84	308-LEKEVAETQHGTVLVQV-324	5 mg/mL	50% acetonitrile / 50% water
55 of 84	313-AETQHGTVLVQVKYEGT-329	5 mg/mL	50% acetonitrile / 50% water
56 of 84	319-TVLVQVKYEGTDAPCKI-335	5 mg/mL	50% acetonitrile / 50% water
57 of 84	325-KYEGTDAPCKIPFSTQD-341	5 mg/mL	50% acetonitrile / 50% water
58 of 84	331-APCKIPFSTQDEKGVTQ-347	5 mg/mL	50% acetonitrile / 50% water
59 of 84	337-FSTQDEKGVTQNRLITA-353	5 mg/mL	50% acetonitrile / 50% water
60 of 84	343-KGVTQNRLITANPIVTD-359	5 mg/mL	50% acetonitrile / 50% water
61 of 84	349-RLITANPIVTDKEKPVN-365	5 mg/mL	50% acetonitrile / 50% water
62 of 84	355-PIVTDKEKPVNIETE-369	5 mg/mL	50% acetonitrile / 50% water
63 of 84	359-DKEKPVNIETEPPFGE-374	5 mg/mL	50% acetonitrile / 50% water
64 of 84	364-VNIETEPPFGESYIVVG-380	5 mg/mL	50% acetonitrile / 50% water
65 of 84	370-PPFGESYIVVGAGEKAL-386	5 mg/mL	50% acetonitrile / 50% water
66 of 84	376-YIVVGAGEKALKQCWFK-392	5 mg/mL	50% acetonitrile / 50% water
67 of 84	382-GEKALKQCWFKKGSSIG-398	5 mg/mL	50% acetonitrile / 50% water
68 of 84	387-KQCWFKKGSSIGKMFEA-403	5 mg/mL	50% acetonitrile / 50% water
69 of 84	393-KGSSIGKMFEATARGAR-409	5 mg/mL	50% acetonitrile / 50% water
70 of 84	399-KMFEATARGARRMAILG-415	5 mg/mL	50% acetonitrile / 50% water
71 of 84	405-ARGARRMAILGDTAWDF-421	5 mg/mL	50% acetonitrile / 50% water
72 of 84	411-MAILGDTAWDFGSIGGV-427	5 mg/mL	50% acetonitrile / 50% water
73 of 84	417-TAWDFGSIGGVFTSVGK-433	5 mg/mL	50% acetonitrile / 50% water
74 of 84	423-SIGGVFTSVGKLVHQVF-439	5 mg/mL	50% acetonitrile / 50% water
75 of 84	429-TSVGKLVHQVFGTAYGV-445	5 mg/mL	50% acetonitrile / 50% water
76 of 84	435-VHQVFGTAYGVLFSGV-450	5 mg/mL	50% acetonitrile / 50% water
77 of 84	440-GTAYGVLFSGVSWTMKI-456	5 mg/mL	50% acetonitrile / 50% water
78 of 84	446-LFSGVSWTMKIGIGILL-462	5 mg/mL	100% DMSO

Table 3 (continued)			
Peptide	**Sequence**	**Solubility**	**Solvent**
79 of 84	452-WTMKIGIGILLTWLGLN-468	5 mg/mL	100% DMSO
80 of 84	458-IGILLTWLGLNSRSTSL-474	5 mg/mL	50% acetonitrile / 50% water
81 of 84	464-WLGLNSRSTSLSMTCIA-480	5 mg/mL	100% DMSO
82 of 84	470-RSTSLSMTCIAVGMVTL-486	5 mg/mL	100% DMSO
83 of 84	476-MTCIAVGMVTLYLGVMV-492	5 mg/mL	100% hexafluoroisopropanol
84 of 84	482-GMVTLYLGVMVQA-494	5 mg/mL	100% DMSO

Heather Couch

Digitally signed by Heather Couch
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23 FEB 2018

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