

Peptide Array, Hepatitis C Virus, H77, E2 Protein

Catalog No. NR-3749

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Product Description: The 56-peptide array spans the E2 protein of hepatitis C virus, H77 (genotype 1a; GenPept: AAB67036). Peptides are 13- to 19-mers, with 11 amino acid overlaps.

Lot: T5268-1 to T5268-56

The following information applies to all peptides:

- Appearance
- Mass spectral analysis
- Counter Ion

White lyophilized powder
Correct MW by MALDI-TOF
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 ^a	Peptide Content ^b
1 of 56	4/14/2011	17	1 ETHVTGGNAGRTTAGLV 17	1640.79	-0.19	100.0%	82.5%
2 of 56	4/14/2011	18	7 GNAGRTTAGLVGLTPGA 24	1625.86	0.41	98.8%	87.7%
3 of 56	4/14/2011	18	14 AGLVGLLTPGAKQNIQLI 31	1806.20	0.78	89.7%	88.5%
4 of 56	4/14/2011	18	21 TPGAKQNIQLINTNGSWH 38	1979.20	-0.86	98.6%	85.5%
5 of 56	4/14/2011	17	28 IQLINTNGSWHINSTAL 44	1882.12	0.08	82.3%	89.0%
6 of 56	4/14/2011	17	34 NGSWHINSTALNCNESL 50	1860.01	-0.51	88.7%	89.1%
7 of 56	4/14/2011	17	40 NSTALNCNESLNTGWLA 56	1807.97	-0.25	92.8%	88.2%
8 of 56	4/14/2011	18	46 CNESLNTGWLAGLFYQHK 63	2081.36	-0.39	91.2%	85.9%
9 of 56	4/14/2011	18	53 GWLAGLFYQHKFNSSGCP 70	2012.29	-0.18	98.1%	85.5%
10 of 56	4/14/2011	18	60 YQHKFNSSGCPERLASCR 77	2083.35	-1.05	96.2%	78.6%
11 of 56	4/14/2011	17	67 SGCPERLASCRRLTDF 83	1882.17	-0.34	96.1%	80.5%
12 of 56	4/14/2011	17	73 LASCRRRLTDFAQGWGPI 89	1891.20	0.01	81.0%	84.7%
13 of 56	4/14/2011	19	79 LTDFAQGWGPISYANGSGL 97	1954.14	0.02	98.9%	89.5%
14 of 56	4/14/2011	18	87 GPISYANGSGLDERPYCW 104	1985.18	-0.66	95.6%	89.7%
15 of 56	4/14/2011	16	94 GSGLDERPYCWHYPPR 109	1933.15	-1.43	93.8%	80.9%
16 of 56	4/14/2011	18	99 ERPYCWHYPPRPCGIVPA 116	2141.52	-0.67	97.3%	83.4%
17 of 56	4/14/2011	18	106 YPPRPCGIVPAKSVCGPV 123	1840.26	0.26	97.8%	84.3%
18 of 56	4/14/2011	19	113 IVPKSVCGPVYCFPTSPV 131	1964.39	0.87	93.4%	89.6%
19 of 56	4/14/2011	18	121 GPVYCFPTSPVVVGTTDR 138	1895.18	0.24	81.6%	89.5%
20 of 56	4/14/2011	17	128 PSPVVVGTTDRSGAPT 144	1703.88	-0.25	83.1%	88.0%
21 of 56	4/14/2011	15	134 GTTDRSGAPTYSWGA 148	1526.59	-0.87	88.9%	87.0%
22 of 56	4/14/2011	18	138 RSGAPTYSWGANDTDV 155	1943.08	-0.43	90.4%	89.5%
23 of 56	4/14/2011	16	145 SWGANDTDVFLNNT 160	1808.94	-0.54	91.3%	88.6%
24 of 56	4/14/2011	18	150 DTDVFLNNTPLGNWF 167	2105.36	-0.35	82.4%	90.2%
25 of 56	4/14/2011	16	157 NNTRPLGNWFGCTWM 172	1894.18	-0.7	95.1%	89.2%
26 of 56	4/14/2011	18	162 PLGNWFGCTWMNSTGFTK 179	2047.36	-0.26	82.3%	90.0%
27 of 56	4/14/2011	15	169 CTWMNSTGFTKVCGA 183	1605.89	0.25	Crude	86.9%
28 of 56	4/14/2011	16	173 NSTGFTKVCGAPPCVI 188	1593.90	0.56	82.0%	87.5%

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Table 1

Peptide	Date of Mfg.	Length	Sequence	Molecular Weight (amu)	Hydrophilicity	Purity by HPLC ^a	Peptide Content ^b
29 of 56	4/14/2011	19	178 TKVCGAPPCVIGGVGNNTL 196	1800.14	0.56	86.6%	88.5%
30 of 56	4/14/2011	18	186 CVIGGVGNNTLLCPTDCF 203	1826.16	0.89	87.7%	88.9%
31 of 56	4/14/2011	17	193 NNTLLCPTDCFRKHPEA 209	1959.25	-0.76	88.5%	81.0%
32 of 56	4/14/2011	15	199 PTDCFRKHPEATYSR 213	1808.02	-1.51	90.6%	76.3%
33 of 56	4/14/2011	18	203 FRKHPEATYSRCGSGPW 220	2092.38	-0.92	93.4%	78.6%
34 of 56	4/14/2011	17	210 TYSRCGSGPWITPRCMV 226	1914.27	-0.15	90.7%	84.8%
35 of 56	4/14/2011	18	216 SGPWITPRCMVDYPYRLW 233	2240.65	-0.37	91.7%	86.0%
36 of 56	4/14/2011	17	223 RCMVDYPYRLWHYPCTI 239	2216.65	-0.29	95.3%	82.9%
37 of 56	4/14/2011	18	229 PYRLWHYPCTINYTIFKV 246	2314.76	-0.12	97.1%	82.7%
38 of 56	4/14/2011	18	236 PCTINYTIFKVRMYVGGV 253	2061.51	0.58	93.4%	85.8%
39 of 56	4/14/2011	18	243 IFKVRMYVGGVEHRLEAA 260	2075.48	0.22	90.2%	78.5%
40 of 56	4/14/2011	16	250 VGGVEHRLEAACNWTR 265	1798.03	-0.42	96.8%	79.5%
41 of 56	4/14/2011	17	255 HRLEAACNWTRGERCDL 271	2030.29	-0.97	95.5%	78.1%
42 of 56	4/14/2011	16	261 CNWTRGERCDLED RDR 276	2024.2	-2.01	94.0%	78.0%
43 of 56	4/14/2011	18	266 GERCDLED RDRSELSPLL 283	2103.31	-1.13	95.4%	82.4%
44 of 56	4/14/2011	17	273 DRDRSELSPLLSTTQW 289	2017.24	-0.83	86.2%	85.5%
45 of 56	4/14/2011	18	279 LSPLLLSTTQWQVLP CSF 296	2033.44	0.76	85.7%	89.9%
46 of 56	4/14/2011	17	286 TTQWQVLP CSFTTLPAL 302	1906.25	0.47	89.0%	89.0%
47 of 56	4/14/2011	18	292 LPCSFTTLPALSTGLIHL 309	1884.29	1.12	81.0%	89.2%
48 of 56	4/14/2011	18	299 LPALSTGLIHLHQNIVDV 316	1940.29	0.78	94.4%	85.2%
49 of 56	4/14/2011	17	306 LIHLHQNIVDVQYLYGV 322	2024.37	0.56	82.5%	85.5%
50 of 56	4/14/2011	18	312 NIVDVQYLYGVGSSIASW 329	1971.21	0.56	85.7%	89.6%
51 of 56	4/14/2011	18	319 LYGVGSSIASWAIKWEYV 336	2029.34	0.54	87.1%	89.4%
52 of 56	4/14/2011	18	326 IASWAIKWEYVLLFLL 343	2177.72	1.75	92.7%	90.5%
53 of 56	4/14/2011	16	333 WEYVLLFLLADARV 348	1920.34	1.52	83.8%	89.0%
54 of 56	4/14/2011	18	338 LLFLLADARVCSCLWMM 355	2098.7	1.81	Crude	90.2%
55 of 56	4/14/2011	17	345 DARVCSCLWMMLLISQA 361	1940.41	1.09	80.6%	89.3%
56 of 56	4/14/2011	13	351 CLWMMLLISQAEA 363	1508.9	1.32	90.9%	85.9%

^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)
1 of 56	Expected	2.00	1.00	1.00		1.00	4.00	1.00		1.00						4.00			2.00
	Actual	1.86	1.05	1.00		0.91	3.70	1.16		1.00						3.85			1.78
2 of 56	Expected	3.00	1.00	1.00			5.00			3.00				1.00		3.00			1.00
	Actual	2.76	1.12	1.00			4.80			2.69				0.90		2.85			0.80
3 of 56	Expected	2.00		1.00		2.00	3.00		2.00	4.00	1.00			1.00		1.00			1.00
	Actual	1.89		0.98		1.71	3.00		1.78	3.62	0.85			0.99		1.04			0.95
4 of 56	Expected	1.00		3.00		2.00	2.00	1.00	2.00	1.00	1.00			1.00	1.00	2.00	1.00		
	Actual	0.94		2.79		1.70	2.00	1.12	1.64	0.93	0.88			1.03	0.96	1.88	0.00 ^a		
5 of 56	Expected	1.00		3.00		1.00	1.00	1.00	3.00	2.00					2.00	2.00	1.00		
	Actual	1.08		2.78		0.97	1.10	1.09	2.66	2.15					2.00	1.95	0.00 ^a		
6 of 56	Expected	1.00		4.00	1.00	1.00	1.00	1.00	1.00	2.00					3.00	1.00	1.00		
	Actual	1.04		3.73	0.48 ^b	1.04	1.07	1.00	0.91	2.00					2.85	0.99	0.00 ^a		

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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)
7 of 56	Expected	2.00		4.00	1.00	1.00	1.00			3.00					2.00	2.00	1.00		
	Actual	2.00		3.75	0.54 ^b	1.09	1.13			2.74					1.97	1.96	0.00 ^a		
8 of 56	Expected	1.00		2.00	1.00	2.00	2.00	1.00		3.00	1.00		1.00		1.00	1.00	1.00	1.00	
	Actual	0.98		1.96	0.55 ^b	1.94	2.06	1.03		2.73	0.92		0.91		0.97	0.94	0.00 ^a	1.00	
9 of 56	Expected	1.00		1.00	1.00	1.00	3.00	1.00		2.00	1.00		2.00	1.00	2.00		1.00	1.00	
	Actual	1.00		1.03	0.51 ^b	0.96	2.86	0.97		1.76	0.88		1.77	1.03	1.89		0.00 ^a	1.02	
10 of 56	Expected	1.00	2.00	1.00	2.00	2.00	1.00	1.00		1.00	1.00		1.00	1.00	3.00			1.00	
	Actual	0.95	2.04	0.85	0.75 ^b	1.68	0.98	0.98		0.92	0.90		1.00	0.95	2.80			1.03	
11 of 56	Expected	2.00	3.00	1.00	2.00	1.00	1.00			2.00			1.00	1.00	2.00	1.00			
	Actual	1.80	2.88	1.01	0.95 ^b	0.98	1.01			1.90			0.96	1.00	1.76	0.98			
12 of 56	Expected	2.00	2.00	1.00	1.00	1.00	2.00		1.00	2.00			1.00	1.00	1.00	1.00	1.00		
	Actual	1.87	2.00	0.98	0.53 ^b	0.97	1.97		1.02	1.88			1.08	1.01	0.85	1.00	0.00 ^a		
13 of 56	Expected	2.00		2.00		1.00	4.00		1.00	2.00			1.00	1.00	2.00	1.00	1.00	1.00	
	Actual	1.92		1.82		1.04	4.00		1.07	1.97			1.13	1.13	1.95	0.96	0.00 ^a	1.10	
14 of 56	Expected	1.00	1.00	2.00	1.00	1.00	3.00		1.00	1.00				2.00	2.00		1.00	2.00	
	Actual	0.96	1.09	1.79	0.51 ^b	0.94	2.87		0.95	0.97				1.87	1.76		0.00 ^a	2.00	
15 of 56	Expected		2.00	1.00	1.00	1.00	2.00	1.00		1.00				3.00	1.00		1.00	2.00	
	Actual		2.09	0.92	0.51 ^b	0.95	2.00	1.02		0.97				2.70	0.95		0.00 ^a	1.95	
16 of 56	Expected	1.00	2.00		2.00	1.00	1.00	1.00	1.00					5.00			1.00	2.00	1.00
	Actual	0.88	2.16		0.93 ^b	0.93	1.00	1.10	0.74 ^c					4.70			0.00 ^a	1.99	0.62 ^c
17 of 56	Expected	1.00	1.00		2.00		2.00		1.00		1.00			5.00	1.00			1.00	3.00
	Actual	0.91	1.20		0.98 ^b		2.16		0.71 ^c		0.80			4.67	1.00			1.15	2.69 ^c
18 of 56	Expected	1.00			2.00		1.00		1.00		1.00		1.00	4.00	2.00	1.00		1.00	4.00
	Actual	0.97			0.94 ^b		1.14		0.68 ^c		1.00		1.09	3.68	1.86	0.96		0.79	3.42 ^c
19 of 56	Expected		1.00	1.00	1.00		2.00						1.00	3.00	1.00	3.00		1.00	4.00
	Actual		0.79	0.88	0.50 ^b		2.01						1.16	3.00	0.85	2.74		1.15	2.85 ^c
20 of 56	Expected	1.00	1.00	1.00			2.00							3.00	2.00	3.00		1.00	3.00
	Actual	1.00	1.11	0.91			2.03							2.77	1.86	2.71		1.04	1.68 ^c
21 of 56	Expected	2.00	1.00	1.00			3.00							1.00	2.00	3.00	1.00	1.00	
	Actual	1.67	1.09	0.86			2.86							1.00	1.91	2.83	0.00 ^a	1.04	
22 of 56	Expected	2.00	1.00	3.00			2.00						1.00	1.00	2.00	2.00	1.00	1.00	2.00
	Actual	1.81	1.03	2.76			2.00						0.81	1.03	1.75	1.81	0.00 ^a	1.03	1.82
23 of 56	Expected	1.00	1.00	5.00			1.00			1.00			1.00		1.00	2.00	1.00		2.00
	Actual	1.11	1.08	4.76			1.15			1.00			1.00		0.95	1.95	0.00 ^a		1.85
24 of 56	Expected		1.00	5.00			1.00			2.00			2.00	2.00		2.00	1.00		2.00
	Actual		1.13	4.78			1.17			1.96			1.84	2.01		2.00	0.00 ^a		1.78
25 of 56	Expected		1.00	3.00	1.00		2.00			1.00		1.00	1.00	2.00		2.00	2.00		
	Actual		1.08	2.63	0.52 ^b		2.00			1.03		1.02	1.09	1.99		1.80	0.00 ^a		
26 of 56	Expected			2.00	1.00		3.00			1.00	1.00	1.00	2.00	1.00	1.00	3.00	2.00		0.00
	Actual			1.77	0.48 ^b		2.94			0.99	0.92	0.90	2.03	1.00	0.84	2.86	0.00 ^a		0.00
27 of 56	Expected	1.00		1.00	2.00		2.00				1.00	1.00	1.00		1.00	3.00	1.00		1.00
	Actual	0.71		1.11	0.92 ^b		1.96				0.91	0.89	1.14		0.99	3.00	0.00 ^a		0.86
28 of 56	Expected	1.00		1.00	2.00		2.00		1.00		1.00		1.00	2.00	1.00	2.00			2.00
	Actual	1.14		1.00	0.99 ^b		2.08		0.56 ^c		1.00		1.06	2.07	0.90	1.80			1.64 ^c

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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)
29 of 56	Expected	1.00		2.00	2.00		4.00		1.00	1.00	1.00			2.00		2.00			3.00
	Actual	1.03		1.86	0.93 ^b		4.00		0.48 ^c	1.03	0.84			2.04		1.75			2.38 ^c
30 of 56	Expected			3.00	3.00		3.00		1.00	2.00			1.00	1.00		2.00			2.00
	Actual			2.67	1.44 ^b		3.00		0.66 ^c	1.94			1.06	1.09		1.79			1.66 ^c
31 of 56	Expected	1.00	1.00	3.00	2.00	1.00		1.00		2.00	1.00		1.00	2.00		2.00			
	Actual	1.00	0.89	3.15	0.95 ^b	0.91		1.05		2.23	0.94		1.00	2.08		2.00			
32 of 56	Expected	1.00	2.00	1.00	1.00	1.00		1.00			1.00		1.00	2.00	1.00	2.00		1.00	
	Actual	1.02	2.09	0.89	0.56 ^b	0.94		1.03			0.96		1.03	2.00	0.95	1.91		1.05	
33 of 56	Expected	1.00	2.00		1.00	1.00	2.00	1.00	1.00		1.00		1.00	2.00	2.00	1.00	1.00	1.00	
	Actual	1.00	2.05		0.53 ^b	0.91	2.06	1.09	0.89		1.01		0.98	1.89	1.90	1.07	0.00 ^a	1.10	
34 of 56	Expected		2.00		2.00		2.00		1.00			1.00		2.00	2.00	2.00	1.00	1.00	1.00
	Actual		2.06		0.92 ^b		2.13		0.85			0.94		1.91	2.00	1.80	0.00 ^a	1.05	0.91
35 of 56	Expected		2.00	1.00	1.00		1.00		1.00	1.00		1.00		3.00	1.00	1.00	2.00	2.00	1.00
	Actual		2.00	0.86	0.53 ^b		1.01		0.91	0.86		0.87		2.71	0.93	0.97	0.00 ^a	1.91	0.89
36 of 56	Expected		2.00	1.00	2.00			1.00	1.00	1.00		1.00		2.00		1.00	1.00	3.00	1.00
	Actual		2.11	1.02	0.95 ^b			1.00	0.88	1.06		0.94		1.86		0.90	0.00 ^a	2.76	0.96
37 of 56	Expected		1.00	1.00	1.00			1.00	2.00	1.00	1.00		1.00	2.00		2.00	1.00	3.00	1.00
	Actual		1.13	0.95	0.48 ^b			1.18	1.79	0.99	0.86		1.00	1.93		1.82	0.00 ^a	2.71	0.96
38 of 56	Expected		1.00	1.00	1.00		2.00		2.00		1.00	1.00	1.00	1.00		2.00		2.00	3.00
	Actual		0.79	1.03	0.51 ^b		1.93		1.83		1.08	1.07	0.81	1.00		1.80		1.75	2.80
39 of 56	Expected	2.00	2.00			2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00					1.00	3.00
	Actual	2.00	1.99			1.76	2.15	1.15	0.78	0.94	0.92	1.21	0.87					1.06	2.82
40 of 56	Expected	2.00	2.00	1.00	1.00	2.00	2.00	1.00		1.00						1.00	1.00		2.00
	Actual	1.85	2.11	0.82	0.54 ^b	1.71	2.00	1.16		1.00						0.97	0.00 ^a		1.78
41 of 56	Expected	2.00	3.00	2.00	2.00	2.00	1.00	1.00		2.00						1.00	1.00		
	Actual	2.00	3.16	1.76	1.14 ^b	1.88	1.07	1.00		1.95						0.99	0.00 ^a		
42 of 56	Expected		4.00	4.00	2.00	2.00	1.00			1.00						1.00	1.00		
	Actual		4.00	3.88	0.98 ^b	1.82	1.02			0.99						0.97	0.00 ^a		
43 of 56	Expected		3.00	3.00	1.00	3.00	1.00			4.00				1.00	2.00				
	Actual		3.11	3.00	0.50 ^b	2.96	1.11			3.65				1.12	1.94				
44 of 56	Expected		2.00	2.00		2.00				4.00				1.00	3.00	2.00	1.00		
	Actual		2.03	2.07		2.00				3.56				1.13	2.91	1.96	0.00 ^a		
45 of 56	Expected				1.00	2.00				5.00			1.00	2.00	3.00	2.00	1.00		1.00
	Actual				0.58 ^b	2.00				4.00			1.20	2.23	2.80	1.99	0.00 ^a		0.84
46 of 56	Expected	1.00			1.00	2.00				3.00			1.00	2.00	1.00	4.00	1.00		1.00
	Actual	1.00			0.53 ^b	1.91				2.59			1.16	2.10	0.96	3.71	0.00 ^a		0.94
47 of 56	Expected	1.00			1.00		1.00	1.00	1.00	5.00			1.00	2.00	2.00	3.00			
	Actual	1.10			0.48 ^b		1.13	0.82	0.87	4.60			1.13	1.99	2.00	2.90			
48 of 56	Expected	1.00		2.00		1.00	1.00	2.00	2.00	4.00				1.00	1.00	1.00			2.00
	Actual	1.01		1.89		0.99	1.08	1.79	1.25 ^c	3.99				1.00	0.96	0.99			1.87 ^c
49 of 56	Expected			2.00		2.00	1.00	2.00	2.00	3.00								2.00	3.00
	Actual			2.05		1.80	1.20	2.00	1.14 ^c	3.09								1.92	2.53 ^c
50 of 56	Expected	1.00		2.00		1.00	2.00		2.00	1.00					3.00		1.00	2.00	3.00
	Actual	1.00		1.81		0.78	2.03		1.39 ^c	1.16					2.75		0.00 ^a	2.05	2.47 ^c

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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)
51 of 56	Expected	2.00				1.00	2.00		2.00	1.00	1.00				3.00		2.00	2.00	2.00
	Actual	2.00				0.99	1.93		1.77	1.04	0.99				2.92		0.00 ^a	2.07	2.08
52 of 56	Expected	2.00				1.00			2.00	5.00	1.00		1.00		1.00		2.00	1.00	2.00
	Actual	2.15				0.86			2.00	4.65	0.82		0.95		0.84		0.00 ^a	0.80	0.95 ^c
53 of 56	Expected	2.00	1.00	1.00		1.00				5.00			1.00				1.00	1.00	3.00
	Actual	2.00	1.11	1.16		0.86				4.30			0.84				0.00 ^a	0.92	2.32 ^c
54 of 56	Expected	2.00	1.00	1.00	2.00					6.00		2.00	1.00		1.00		1.00		1.00
	Actual	1.79	1.11	1.00	0.95 ^b					3.70		2.16	0.78		0.87		0.00 ^a		0.97
55 of 56	Expected	2.00	1.00	1.00	2.00	1.00			1.00	3.00		2.00			2.00		1.00		1.00
	Actual	2.00	1.18	1.08	0.56 ^b	0.78			0.83	1.95		1.74			1.80		0.00 ^a		0.93
56 of 56	Expected	2.00			1.00	2.00			1.00	3.00		2.00			1.00		1.00		
	Actual	2.10			0.51 ^b	2.18			0.80	3.00		1.78			0.95		0.00 ^a		
^a Trp was completely destroyed during hydrolysis																			
^b Cys was partially destroyed during hydrolysis																			
^c Val-Ile, Val-Val, Ile-Ile and/or Ile-Val bonds were only partially destroyed during hydrolysis																			

Date: 23 AUG 2011

Signature: *Dorothy C. Young*

Title: Technical Manager, BEI Authentication or designee

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