

Peptide Array, Human Coronavirus 229E Spike (S) Glycoprotein

Catalog No. NR-53727

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Product Description:

The 195-peptide array spans the spike (S) glycoprotein of the 229E strain of human coronavirus (HCoV-229E; GenPept: [NP_073551](#)). Peptides are 17-mers, with 11 or 12 amino acid overlaps.

Lot: A4633-1 to A4633-195

Manufacturing Date: 06JUL2020

The following information applies to all peptides:

- Appearance White lyophilized powder
- Mass spectral analysis Correct MW by MALDI
- Counter Ion Trifluoroacetate
- Solubility 1 mg/mL in 70% acetonitrile in water

Peptide-specific information is shown in the tables and figures below.

Table 1: Peptide Analysis

Peptide	Length	Sequence	Molecular Weight (amu)	Hydrophobicity	Purity by HPLC ¹	Peptide Content ²
1 of 195	17	1-MFVLLVAYALLHIAGCQ-17	1862.34	82.35	88.66%	87.6
2 of 195	17	7-AYALLHIAGCQTTNGLN-23	1760.01	52.94	89.82%	87.0
3 of 195	17	13-IAGCQTTNGLNTSYSVC-29	1731.92	41.18	94.67%	92.9
4 of 195	17	19-TNGLNTSYSVCNGCVGY-35	1751.91	41.18	87.93%	93.0
5 of 195	17	25-SYSVCNGCVGYSENVFA-41	1798.97	52.94	91.63%	93.2
6 of 195	17	31-GCVGYSENVFAVESGGY-47	1737.86	47.06	91.26%	93.0
7 of 195	17	37-ENFVAVESGGYIPSDFA-53	1801.93	47.06	80.33%	93.2
8 of 195	17	43-ESGGYIPSDFAFNNWFL-59	1964.12	47.06	88.05%	93.7
9 of 195	17	49-PSDFAFNNWFLNTSS-65	1961.13	41.18	80.43%	93.7
10 of 195	17	55-NNWFLNTSSVVDGVV-71	1865.08	47.06	96.11%	93.5
11 of 195	17	61-TNTSSVVDGVVRSFQPL-77	1806.01	35.29	82.42%	87.3
12 of 195	17	67-VDGVVRSFQPLLNCLW-83	1959.35	58.82	80.31%	88.2
13 of 195	17	73-SFQPLLNCLWSVGLR-89	1933.31	52.94	86.51%	88.0
14 of 195	17	79-LNCLWSVGLRFTTGFV-95	1900.24	52.94	81.12%	87.9
15 of 195	17	85-VSGLRFTTGFVYFNGTG-101	1823.04	41.18	93.83%	87.4
16 of 195	17	91-TTGFVYFNGTGRGDCKG-107	1779.95	29.41	87.13%	81.9
17 of 195	17	97-FNGTGRGDCKGFSSDVL-113	1759.92	29.41	84.97%	81.8
18 of 195	17	103-GDCKGFSSDVLSDVIRY-119	1861.06	41.18	83.49%	82.6
19 of 195	17	109-SSDVLSDVIRYNLNFE-125	2000.15	41.18	85.05%	88.4
20 of 195	17	115-DVIRYNLNFEENLRRGT-131	2109.33	35.29	90.60%	80.1
21 of 195	17	121-LNFEENLRRGTILFKTS-137	2038.34	35.29	83.45%	79.6
22 of 195	17	127-LRRGTILFKTSYGVVVF-143	1956.37	52.94	89.21%	78.9
23 of 195	17	133-LFKTSYGVVVFYCTNNT-149	1956.24	52.94	89.82%	88.2
24 of 195	17	139-GVVVFYCTNNTLVSGDA-155	1758.97	52.94	95.66%	93.1
25 of 195	17	145-CTNNTLVSGDAHIFPGT-161	1746.93	35.29	80.20%	87.0
26 of 195	17	151-VSGDAHIFPGTVLGNFY-167	1794.00	47.06	81.54%	87.3

Table 1: Peptide Analysis (continued)

Peptide	Length	Sequence	Molecular Weight (amu)	Hydrophobicity	Purity by HPLC ¹	Peptide Content ²
27 of 195	17	157-IPFGTVLGNFYCFVNTT-173	1893.20	52.94	94.93%	93.5
28 of 195	17	163-LGNFYCFVNTTIGNETT-179	1894.09	41.18	89.66%	93.5
29 of 195	17	169-FVNTTIGNETTSAFVGA-185	1728.88	41.18	86.71%	92.9
30 of 195	17	175-GNETTSAFVGALPKTVR-191	1747.98	35.29	84.38%	81.6
31 of 195	17	181-AFVGALPKTVREFVISR-197	1890.27	52.94	94.29%	78.3
32 of 195	17	187-PKTVREFVISRTGHFYI-203	2050.40	41.18	95.27%	75.8
33 of 195	17	193-FVISRTGHFYINGYRYF-209	2140.42	52.94	92.53%	80.3
34 of 195	17	199-GHFYINGYRYFTLGNVE-215	2050.25	47.06	94.76%	83.9
35 of 195	17	205-GYRYFTLGNVEAVNFNV-221	1963.18	52.94	93.16%	88.3
36 of 195	17	211-LGNVEAVNFNVTTAETT-227	1779.93	41.18	81.09%	93.1
37 of 195	17	217-VNFNVTTAETTDFACTVA-233	1833.01	47.06	98.64%	93.4
38 of 195	17	223-TAETTDFACTVALASYAD-239	1778.91	52.94	83.55%	93.1
39 of 195	17	229-FCTVALASYADVLVNVS-245	1772.05	70.59	80.00%	93.1
40 of 195	17	235-ASYADVLVNVSQTSIAN-251	1751.91	52.94	82.30%	93.0
41 of 195	17	241-LVNVSQTSIANIYCNS-257	1839.10	52.94	90.58%	93.4
42 of 195	17	247-TSIANIYCNSVINRLR-263	1950.30	52.94	89.40%	83.2
43 of 195	17	253-IYCNSVINRLRCDQLSF-269	2044.39	52.94	89.91%	83.9
44 of 195	17	259-INRLRCDQLSFDVDPGF-275	1995.26	41.18	91.53%	83.5
45 of 195	17	265-DQLSFDVDPGFYSTSPI-281	1888.02	35.29	91.45%	93.5
46 of 195	17	271-VPDGFYSTSPIQSVELP-287	1836.03	35.29	85.82%	93.4
47 of 195	17	277-STSPIQSVELPVSIIVSL-293	1756.04	41.18	80.13%	93.0
48 of 195	17	283-SVELPVSIIVSLPVYHKH-299	1904.24	47.06	85.91%	78.4
49 of 195	17	289-SIVSLPVYHKHTFIVLY-305	2016.41	58.82	81.42%	79.4
50 of 195	17	295-VYHKHTFIVLYVDFKQP-311	2134.51	52.94	92.48%	76.5
51 of 195	17	301-FIVLYVDFKQPQSGGKC-317	1858.19	47.06	91.12%	82.6
52 of 195	17	307-DFKQPQSGGKCFNCYPA-323	1819.05	35.29	84.19%	82.2
53 of 195	17	313-GGKCFNCYPAGVNITL-329	1714.00	47.06	85.83%	86.7
54 of 195	17	319-NCYPAGVNITLANFNET-335	1841.03	47.06	86.99%	93.4
55 of 195	17	325-VNITLANFNETKGPLCV-341	1833.15	47.06	83.33%	87.5
56 of 195	17	331-NFNETKGPLCVDTSHFT-347	1910.10	29.41	80.03%	82.9
57 of 195	17	337-GPLCVDTSHFTTKYVAV-353	1838.12	47.06	82.90%	82.4
58 of 195	17	343-TSHFTTKYVAVYANVGR-359	1914.15	47.06	89.90%	78.5
59 of 195	17	349-KYVAVYANVGRWSASIN-365	1898.15	58.82	81.59%	82.9
60 of 195	17	355-ANVGRWSASINTGNCPF-371	1793.99	41.18	91.37%	87.3
61 of 195	17	361-SASINTGNCPFSFGKVN-377	1742.94	35.29	81.84%	87.0
62 of 195	17	367-GNCPFSFGKVNNFVKFG-383	1862.15	41.18	81.36%	82.6
63 of 195	17	373-FGKVNNFVKFGSVCFSL-389	1893.25	52.94	81.32%	82.8
64 of 195	17	379-FVKFGSVCFSLKDIPGG-395	1801.15	47.06	81.61%	82.1
65 of 195	17	385-VCFSLKDIPGGCAMP-401	1750.19	58.82	83.46%	87.0
66 of 195	17	391-DIPGGCAMP-407	1765.04	58.82	80.03%	93.1
67 of 195	17	397-AMPIVANWAYS-413	1948.26	64.71	91.29%	88.2
68 of 195	17	403-NWAYS-419	2101.33	58.82	84.46%	88.9
69 of 195	17	409-YYTIGSLYVSWSDGDI-425	1896.03	47.06	93.67%	93.5
70 of 195	17	415-LYVSWSDGDI-431	1790.95	35.29	92.81%	93.2
71 of 195	17	421-DGDGITGVP-437	1613.71	23.53	85.93%	92.5

Table 1: Peptide Analysis (continued)

Peptide	Length	Sequence	Molecular Weight (amu)	Hydrophobicity	Purity by HPLC ¹	Peptide Content ²
72 of 195	17	427-GVPQPVEGVSSFMNVTL-443	1761.04	41.18	89.00%	93.1
73 of 195	17	433-EGVSSFMNVTLDKCTKY-449	1922.21	41.18	95.68%	83.1
74 of 195	17	439-MNVTLDKCTKYNIYDVS-455	2007.31	47.06	80.10%	83.6
75 of 195	17	445-KCTKYNIYDVSGVGVIR-461	1915.24	47.06	88.86%	78.5
76 of 195	17	451-IYDVSGVGVIRVSNDF-467	1841.05	47.06	80.35%	87.6
77 of 195	17	457-VGVIRVSNDFLNGITY-473	1868.12	47.06	83.89%	87.7
78 of 195	17	463-SNDFLNGITYTSTSGN-479	1791.85	23.53	93.32%	93.2
79 of 195	17	469-NGITYTSTSGNLLGFKD-485	1787.95	29.41	83.60%	87.2
80 of 195	17	475-STSGNLLGFKDVTKGTI-491	1737.98	29.41	84.90%	81.6
81 of 195	17	481-LGFKDVTKGTIYSITPC-497	1843.18	41.18	80.06%	82.4
82 of 195	17	487-TKGTIYSITPCNPPDQL-503	1848.11	29.41	80.39%	87.6
83 of 195	17	493-SITPCNPPDQLVVYQQA-509	1873.12	41.18	93.87%	93.5
84 of 195	17	499-PPDQLVVYQQA VVGAML-515	1828.17	58.82	91.17%	93.3
85 of 195	17	505-VYQQA VVGAMLSNFST-521	1844.08	52.94	80.04%	93.4
86 of 195	17	511-VGAMLSNFSTYGFNSV-527	1823.01	47.06	83.84%	93.3
87 of 195	17	517-ENFSTYGFNSVVELPKF-533	1978.19	41.18	83.83%	88.3
88 of 195	17	523-GFNSVVELPKFFYASNG-539	1876.10	47.06	81.15%	87.7
89 of 195	17	529-ELPKFFYASNGTYNCTD-545	1970.14	41.18	84.41%	88.3
90 of 195	17	535-YASNGTYNCTDAVLTYS-551	1842.95	47.06	89.59%	93.4
91 of 195	17	541-YNCTDAVLTYS SFGVCA-557	1814.02	58.82	86.82%	93.3
92 of 195	17	547-VLTYS SFGVCADGSIIA-563	1702.95	58.82	95.90%	92.9
93 of 195	17	553-FGVCADGSIIAVQPRNV-569	1746.03	52.94	80.65%	87.0
94 of 195	17	559-GSIIAVQPRNVSYDSVS-575	1791.98	41.18	94.16%	87.3
95 of 195	17	564-VQPRNVSYDSVSAIVTA-580	1806.01	47.06	90.03%	87.3
96 of 195	17	570-SYDSVSAIVTANLSIPS-586	1723.90	47.06	80.14%	92.9
97 of 195	17	576-AIVTANLSIPSNWTTSV-592	1774.01	47.06	80.35%	93.1
98 of 195	17	582-LSIPSNWTTSVQVEYLQ-598	1965.19	41.18	97.71%	93.7
99 of 195	17	588-WTTSVQVEYLQITSTPI-604	1966.22	41.18	97.84%	93.7
100 of 195	17	594-VEYLQITSTPIVDCST-610	1868.14	47.06	80.08%	93.5
101 of 195	17	600-TSTPIVDCSTYVCNGN-616	1772.97	41.18	81.79%	93.1
102 of 195	17	606-VDCSTYVCNGNVRCVEL-622	1874.15	52.94	80.42%	87.7
103 of 195	17	612-VCNGNVRCVELLKQYTS-628	1926.25	47.06	98.03%	83.1
104 of 195	17	618-RCVELLKQYTSACKTIE-634	1985.36	47.06	93.57%	79.1
105 of 195	17	624-KQYTSACKTIEDALRNS-640	1928.15	35.29	94.39%	78.6
106 of 195	17	630-CKTIEDALRNSARLESA-646	1877.12	41.18	89.06%	78.2
107 of 195	17	636-ALRNSARLESADVSEML-652	1862.10	47.06	92.89%	82.6
108 of 195	17	642-RLESADVSEMLTFDKKA-658	1940.21	41.18	92.70%	78.7
109 of 195	17	648-VSEMLTFDKKAFTLANV-664	1914.26	52.94	90.45%	83.0
110 of 195	17	654-FDKKAFTLANVSSFGDY-670	1910.12	47.06	84.31%	82.9
111 of 195	17	660-TLANVSSFGDYNLSSVI-676	1786.96	47.06	94.22%	93.2
112 of 195	17	666-SFGDYNLSSVIPSLPTS-682	1783.95	35.29	89.07%	93.2
113 of 195	17	672-LSSVIPSLPTSGSRVAG-688	1627.87	35.29	87.78%	86.1
114 of 195	17	678-SLPTSGSRVAGRSAIED-694	1702.85	29.41	80.06%	81.2
115 of 195	17	684-SRVAGRSAIEDILFSKL-700	1862.17	47.06	87.53%	78.1
116 of 195	17	690-SAIEDILFSKLVTSGLG-706	1750.03	47.06	90.33%	87.0

Table 1: Peptide Analysis (continued)

Peptide	Length	Sequence	Molecular Weight (amu)	Hydrophobicity	Purity by HPLC ¹	Peptide Content ²
117 of 195	17	696-LFSKLVTSGLGTVDADY-712	1786.01	47.06	80.04%	87.2
118 of 195	17	702-TSGLGTVDADYKKCTKG-718	1743.96	29.41	92.72%	76.9
119 of 195	17	708-VDADYKKCTKGLSIADL-724	1840.13	47.06	98.23%	77.8
120 of 195	17	714-KCTKGLSIADLACAQYY-730	1848.17	58.82	80.44%	82.4
121 of 195	17	720-SIADLACAQYYNGIMVL-736	1845.17	70.59	82.89%	93.4
122 of 195	17	726-CAQYYNGIMVLPGVADA-742	1785.07	64.71	85.43%	93.2
123 of 195	17	732-GIMVLPGVADAERMAMY-748	1824.22	64.71	90.43%	87.4
124 of 195	17	738-GVADAERMAMYGSLIG-754	1742.01	52.94	88.24%	87.0
125 of 195	17	744-RMAMYGSLIGGIALGG-760	1668.02	52.94	91.56%	86.4
126 of 195	17	750-GSLIGGIALGGLTSAVS-766	1472.71	47.06	90.25%	91.8
127 of 195	17	756-IALGGLTSAVSIPFLA-772	1616.93	58.82	93.28%	92.5
128 of 195	17	762-TSAVSIPFLAIQARLN-778	1788.09	52.94	94.01%	87.2
129 of 195	17	768-PFLAIQARLNLYVALQT-784	1905.23	58.82	92.83%	87.9
130 of 195	17	773-IQARLNLYVALQTDVLQE-789	1974.25	52.94	92.74%	88.3
131 of 195	17	779-YVALQTDVLQENQKILA-795	1946.24	52.94	95.69%	88.1
132 of 195	17	785-DVLQENQKILAASFNKA-801	1889.15	47.06	88.96%	82.8
133 of 195	17	790-NQKILAASFNKAMTNIV-806	1863.22	52.94	84.28%	82.6
134 of 195	17	796-ASFNKAMTNIVDAFTGV-812	1786.05	52.94	84.74%	87.2
135 of 195	17	802-MTNIVDAFTGVNDAITQ-818	1810.02	47.06	84.93%	93.3
136 of 195	17	808-AFTGVNDAITQTSQALQ-824	1764.92	41.18	95.43%	93.1
137 of 195	17	814-DAITQTSQALQTVATAL-830	1731.93	47.06	93.87%	92.9
138 of 195	17	820-SQALQTVATALNKIQDV-836	1800.05	47.06	97.38%	87.3
139 of 195	17	826-VATALNKIQDVVNQQGN-842	1812.02	41.18	80.26%	87.3
140 of 195	17	832-KIQDVVNQQGNSLNHLT-848	1908.11	29.41	80.11%	82.9
141 of 195	17	838-NQQGNSLNHLTSQLRQN-854	1952.08	17.65	92.11%	83.3
142 of 195	17	844-LNHLTSQLRQNFQAISS-860	1957.19	35.29	90.06%	83.3
143 of 195	17	849-SQLRQNFQAISSSIQAI-865	1891.12	41.18	82.48%	87.8
144 of 195	17	855-FQAISSSIQAIYDRLDT-871	1928.13	47.06	95.36%	88.0
145 of 195	17	861-SIQAIYDRLDTIQADQQ-877	1978.15	41.18	95.78%	88.3
146 of 195	17	867-DRLDTIQADQQVDRLIT-883	2000.21	35.29	89.83%	83.6
147 of 195	17	872-IQADQQVDRLITGRLLA-888	1868.13	47.06	94.89%	82.6
148 of 195	17	878-VDRLITGRLLAALNVFVS-894	1844.20	58.82	83.35%	82.4
149 of 195	17	884-GRLAALNVFVSHTLTKY-900	1890.22	52.94	82.71%	78.3
150 of 195	17	890-NVFVSHTLTKYTEVRAS-906	1952.20	41.18	83.75%	78.9
151 of 195	17	896-TLTKYTEVRASRQLAQQ-912	1993.25	35.29	92.11%	79.2
152 of 195	17	902-EVRASRQLAQQKVNECV-918	1958.24	41.18	90.24%	78.9
153 of 195	17	907-RQLAQQKVNECVKSQSK-923	1974.28	29.41	92.29%	75.1
154 of 195	17	913-KVNECVKSQSKRYGFCG-929	1933.24	35.29	97.13%	74.7
155 of 195	17	919-KSQSKRYGFCGNGTHIF-935	1930.18	29.41	92.47%	74.7
156 of 195	17	925-YGFCGNGTHIFSIVNAA-941	1770.99	52.94	97.13%	87.1
157 of 195	17	931-GTHIFSIVNAPEGLVF-947	1772.04	52.94	90.31%	87.1
158 of 195	17	937-IVNAPEGLVFLHTVLL-953	1806.19	64.71	86.41%	87.3
159 of 195	17	943-EGLVFLHTVLLPTQYKD-959	1973.30	47.06	96.12%	83.4
160 of 195	17	949-HTVLLPTQYKDVEAWSG-965	1944.18	41.18	82.38%	83.2
161 of 195	17	955-TQYKDVEAWSGLCVDGT-971	1872.04	41.18	91.16%	87.7

Table 1: Peptide Analysis (continued)

Peptide	Length	Sequence	Molecular Weight (amu)	Hydrophobicity	Purity by HPLC ¹	Peptide Content ²
162 of 195	17	961-EAWSGLCVDGTNGYVLR-977	1840.05	47.06	86.44%	87.6
163 of 195	17	967-CVDGTNGYVLRQPNLAL-983	1833.10	47.06	87.33%	87.5
164 of 195	17	973-GYVLRQPNLALYKEGNY-989	1998.26	47.06	80.12%	83.5
165 of 195	17	979-PNLALYKEGNYRITSR-995	2058.32	41.18	92.23%	79.7
166 of 195	17	985-KEGNYRITSRIMFEP-1001	2160.48	35.29	89.22%	76.7
167 of 195	17	991-RITSRIMFEPRIPTMAD-1007	2034.44	41.18	90.47%	79.5
168 of 195	17	997-MFEPRIPTMADFVQIEN-1013	2038.39	47.06	92.82%	88.6
169 of 195	17	1003-PTMADFVQIENCNVTFV-1019	1928.23	52.94	97.24%	93.6
170 of 195	17	1009-VQIENCNVTFVNISRSE-1025	1952.18	41.18	90.48%	88.2
171 of 195	17	1015-NVTFVNISRSELQTI-1031	1917.20	41.18	92.52%	88.0
172 of 195	17	1021-ISRSELQTI-1037	1976.22	41.18	84.51%	88.3
173 of 195	17	1026-LQTIVPEYIDV-1042	2003.28	41.18	86.45%	88.4
174 of 195	17	1032-EYIDV-1048	2053.34	41.18	84.70%	84.0
175 of 195	17	1038-KTLQELSYKLP-1054	2009.28	35.29	83.56%	83.6
176 of 195	17	1044-SYKLP-1060	2028.28	47.06	92.21%	88.6
177 of 195	17	1050-YTVPDLVVEQYNQ-1066	2009.24	47.06	90.42%	93.9
178 of 195	17	1056-VVEQYNQ-1072	1951.16	41.18	81.39%	93.7
179 of 195	17	1061-NQTILNLTSEI-1077	1918.14	29.41	93.93%	88.0
180 of 195	17	1067-LTSEISTLENK-1083	1912.08	35.29	90.56%	88.0
181 of 195	17	1073-TLENKSAELNY-1089	1979.22	35.29	91.09%	83.4
182 of 195	17	1079-AELNYTVQKLQ-1095	1976.26	47.06	93.80%	88.3
183 of 195	17	1085-VQKLQTLIDNIN-1101	1914.20	41.18	95.11%	88.0
184 of 195	17	1091-LIDNIN-1107	2027.36	47.06	93.22%	83.8
185 of 195	17	1097-STLVDLKWLNR-1113	2078.44	47.06	96.92%	79.9
186 of 195	17	1103-KWLNRVETIK-1119	2390.82	58.82	92.21%	82.0
187 of 195	17	1109-ETYIKWPWWWL-1125	2208.66	70.59	85.68%	89.4
188 of 195	17	1115-PWWWL-1131	2046.56	82.35	96.61%	94.0
189 of 195	17	1121-CISVVLIFV-1137	1855.48	88.24	96.62%	93.4
190 of 195	17	1127-IFVSM-1143	1795.33	76.47	80.37%	93.2
191 of 195	17	1133-LLCCSTGCC-1149	1807.26	70.59	95.42%	93.3
192 of 195	17	1139-STGCC-1155	1729.98	47.06	91.30%	86.9
193 of 195	17	1145-FFSC-1161	1873.17	47.06	85.56%	82.6
194 of 195	17	1151-SSIRG-1167	1921.18	41.18	80.23%	83.0
195 of 195	17	1157-CESTK-1173	2066.36	41.18	88.88%	79.7

¹Percent full length

²Remainder is salt and water

Figure 1: Amino Acid Analysis^{3,4}

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 195	Expected	3.0			1.0	1.0	1.0	1.0	1.0	4.0		1.0	1.0					1.0	2.0
	Actual	3.1			0.0	1.1	1.1	1.1	1.1	4.0		0.8	1.0					0.9	2.0
2 of 195	Expected	3.0		2.0	1.0	1.0	2.0	1.0	1.0	3.0						2.0		1.0	
	Actual	3.1		2.0	0.0	1.1	1.9	1.0	1.0	2.8						2.2		0.9	
3 of 195	Expected	1.0		2.0	2.0	1.0	2.0		1.0	1.0					2.0	3.0		1.0	1.0
	Actual	1.0		2.2	0.0	0.9	2.0		1.1	1.0					1.8	2.9		1.1	1.0
4 of 195	Expected			3.0	2.0		3.0			1.0					2.0	2.0		2.0	2.0
	Actual			3.2	0.0		3.1			1.1					2.1	1.9		1.8	2.0

Figure 1: Amino Acid Analysis (continued)^{3,4}

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)
5 of 195	Expected	1.0		2.0	2.0	1.0	2.0						1.0		3.0			2.0	3.0
	Actual	1.1		2.1	0.0	1.0	1.9						1.0		2.9			1.8	3.2
6 of 195	Expected	1.0		1.0	1.0	2.0	4.0						1.0		2.0			2.0	3.0
	Actual	1.0		1.1	0.0	1.9	4.0						1.0		2.0			1.9	3.1
7 of 195	Expected	2.0		2.0		2.0	2.0		1.0				2.0	1.0	2.0			1.0	2.0
	Actual	1.8		2.0		2.0	2.1		0.9				2.2	1.0	1.9			1.1	2.0
8 of 195	Expected	1.0		3.0		1.0	2.0		1.0	1.0			3.0	1.0	2.0		1.0	1.0	
	Actual	1.0		2.8		0.9	2.0		1.0	1.1			3.0	1.1	2.0		0.0	1.0	
9 of 195	Expected	1.0		4.0						2.0			3.0	1.0	3.0	2.0	1.0		
	Actual	1.1		3.8						2.2			2.8	1.0	3.0	2.0	0.0		
10 of 195	Expected			4.0			1.0			2.0			1.0		2.0	2.0	1.0		4.0
	Actual			4.1			1.1			1.8			1.0		2.0	2.0	0.0		3.8
11 of 195	Expected		1.0	2.0		1.0	1.0			1.0			1.0	1.0	3.0	2.0			4.0
	Actual		1.0	1.8		1.0	1.0			1.1			1.0	1.1	3.1	2.0			3.5
12 of 195	Expected		1.0	2.0	1.0	1.0	1.0			4.0			1.0	1.0	1.0		1.0		3.0
	Actual		1.0	2.2	0.0	1.1	1.0			4.1			1.0	1.1	0.9		0.0		2.6
13 of 195	Expected		1.0	1.0	1.0	1.0	1.0			5.0			1.0	1.0	3.0		1.0		1.0
	Actual		1.1	0.8	0.0	0.8	1.1			4.9			1.0	1.0	3.1		0.0		1.2
14 of 195	Expected		1.0	1.0	1.0		2.0			3.0			2.0		2.0	2.0	1.0		2.0
	Actual		1.0	0.9	0.0		2.1			3.0			2.0		1.9	2.0	0.0		2.1
15 of 195	Expected		1.0	1.0			4.0			1.0			3.0		1.0	3.0		1.0	2.0
	Actual		1.0	1.0			3.9			1.0			3.1		1.0	2.9		1.0	2.0
16 of 195	Expected		1.0	2.0	1.0		5.0				1.0		2.0			3.0		1.0	1.0
	Actual		1.0	2.0	0.0		5.1				1.0		1.9			2.8		1.0	1.1
17 of 195	Expected		1.0	3.0	1.0		4.0			1.0	1.0		2.0		2.0	1.0			1.0
	Actual		1.0	3.2	0.0		4.0			1.0	1.1		2.0		1.9	0.9			1.1
18 of 195	Expected		1.0	3.0	1.0		2.0		1.0	1.0	1.0		1.0		3.0			1.0	2.0
	Actual		1.0	3.1	0.0		1.8		0.7	1.1	1.1		0.9		2.8			1.0	1.9
19 of 195	Expected		1.0	4.0		2.0			1.0	2.0			1.0		3.0			1.0	2.0
	Actual		1.0	4.1		2.0			1.1	1.9			1.0		3.0			1.0	1.9
20 of 195	Expected		3.0	4.0		2.0	1.0			1.0	2.0		1.0			1.0		1.0	1.0
	Actual		3.0	4.1		2.1	1.1		0.7	2.1			1.0			1.0		0.9	0.7
21 of 195	Expected		2.0	2.0		2.0	1.0		1.0	3.0	1.0		2.0		1.0	2.0			
	Actual		1.9	1.8		1.9	1.0		1.1	3.0	1.1		1.9		1.0	2.1			
22 of 195	Expected		2.0				2.0		1.0	2.0	1.0		2.0		1.0	2.0		1.0	3.0
	Actual		1.9				2.0		1.0	2.0	1.2		2.0		0.9	2.0		1.0	2.5
23 of 195	Expected			2.0	1.0		1.0			1.0	1.0		2.0		1.0	3.0		2.0	3.0
	Actual			2.0	0.0		1.0			1.0	1.1		1.8		1.1	2.9		1.9	2.8
24 of 195	Expected	1.0		3.0	1.0		2.0			1.0			1.0		1.0	2.0		1.0	4.0
	Actual	0.9		3.2	0.0		2.2			1.0			1.0		0.9	2.1		1.0	3.2
25 of 195	Expected	1.0		3.0	1.0		2.0	1.0	1.0	1.0			1.0	1.0	1.0	3.0			1.0
	Actual	1.1		3.1	0.0		2.0	1.0	1.0	1.0			1.0	1.1	0.9	2.9			1.1
26 of 195	Expected	1.0		2.0			3.0	1.0	1.0	1.0			2.0	1.0	1.0	1.0		1.0	2.0
	Actual	1.1		2.1			2.9	0.9	0.9	1.2			2.1	1.0	0.8	1.1		1.0	2.2
27 of 195	Expected			2.0	1.0		2.0		1.0	1.0			3.0	1.0		3.0		1.0	2.0
	Actual			2.1	0.0		2.2		0.9	1.1			2.8	0.8		3.2		1.1	2.0
28 of 195	Expected			3.0	1.0	1.0	2.0		1.0	1.0			2.0			4.0		1.0	1.0
	Actual			3.2	0.0	1.1	2.0		0.9	1.1			1.9			3.9		1.0	1.1
29 of 195	Expected	2.0		2.0		1.0	2.0		1.0				2.0		1.0	4.0			2.0
	Actual	1.9		2.1		1.1	1.9		1.0				2.0		0.9	4.1			2.0
30 of 195	Expected	2.0	1.0	1.0		1.0	2.0			1.0	1.0		1.0	1.0	1.0	3.0			2.0
	Actual	2.1	1.1	0.9		0.9	1.9			1.1	1.1		1.0	1.1	0.9	2.9			2.2
31 of 195	Expected	2.0	2.0			1.0	1.0		1.0	1.0	1.0		2.0	1.0	1.0	1.0			3.0
	Actual	2.0	1.9			0.9	1.0		0.7	1.0	1.2		1.9	1.0	1.0	1.0			2.7
32 of 195	Expected		2.0			1.0	1.0	1.0	2.0			1.0	2.0	1.0	1.0	2.0		1.0	2.0
	Actual		2.0			1.0	1.2	1.1	1.8			1.0	2.1	0.8	0.9	1.9		1.0	1.6
33 of 195	Expected		2.0	1.0			2.0	1.0	2.0				3.0		1.0	1.0		3.0	1.0
	Actual		2.1	1.1			2.2	1.0	1.7				2.9		0.8	1.0		2.9	0.6
34 of 195	Expected		1.0	2.0		1.0	3.0	1.0	1.0	1.0			2.0			1.0		3.0	1.0
	Actual		1.0	2.1		1.0	2.9	0.9	1.0	1.1			1.8			1.0		2.8	1.1

Figure 1: Amino Acid Analysis (continued)^{3,4}

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 195	Expected	1.0	1.0	3.0		1.0	2.0			1.0			2.0			1.0		2.0	3.0
	Actual	1.1	1.0	3.1		1.0	1.8			1.0			2.0			1.0		2.0	3.2
36 of 195	Expected	2.0		3.0		2.0	1.0			1.0			1.0			4.0			3.0
	Actual	2.1		3.1		2.0	1.0			1.0			0.9			3.8			3.0
37 of 195	Expected	2.0		3.0	1.0	1.0							2.0			5.0			3.0
	Actual	2.0		3.0	0.0	1.0							2.0			4.8			3.0
38 of 195	Expected	4.0		2.0	1.0	1.0				1.0			1.0		1.0	4.0		1.0	1.0
	Actual	3.9		1.8	0.0	1.0				1.0			0.9		1.0	4.1		1.0	1.2
39 of 195	Expected	3.0		2.0	1.0					2.0			1.0		2.0	1.0		1.0	4.0
	Actual	3.1		2.0	0.0					2.1			1.0		1.8	1.0		1.1	4.0
40 of 195	Expected	3.0		3.0		1.0			1.0	1.0					3.0	1.0		1.0	3.0
	Actual	2.9		3.1		1.1			1.1	1.0					2.9	0.9		1.0	2.9
41 of 195	Expected	1.0		3.0	1.0	1.0			3.0	1.0					3.0	1.0		1.0	2.0
	Actual	1.0		3.1	0.0	1.0			2.3	1.0					3.0	1.0		1.1	1.9
42 of 195	Expected	1.0	2.0	3.0	1.0				4.0	1.0					2.0	1.0		1.0	1.0
	Actual	1.2	2.1	3.0	0.0				3.8	0.9					2.0	0.9		1.0	1.0
43 of 195	Expected		2.0	3.0	2.0	1.0			2.0	2.0			1.0		2.0			1.0	1.0
	Actual		1.9	3.1	0.0	1.1			1.6	2.0			1.1		1.8			1.0	0.9
44 of 195	Expected		2.0	4.0	1.0	1.0	1.0		1.0	2.0			2.0	1.0	1.0				1.0
	Actual		1.9	4.3	0.0	1.0	1.0		1.0	2.1			1.9	1.0	0.9				1.1
45 of 195	Expected			3.0		1.0	1.0		1.0	1.0			2.0	2.0	3.0	1.0		1.0	1.0
	Actual			2.9		0.9	1.0		1.0	0.9			2.1	2.1	2.9	1.0		1.1	1.1
46 of 195	Expected			1.0		2.0	1.0		1.0	1.0			1.0	3.0	3.0	1.0		1.0	2.0
	Actual			1.0		1.9	1.0		1.0	1.1			1.0	3.1	3.0	1.0		1.0	2.1
47 of 195	Expected					2.0			2.0	2.0				2.0	5.0	1.0			3.0
	Actual					2.1			2.0	1.8				2.1	4.9	1.0			3.1
48 of 195	Expected					1.0		2.0	1.0	2.0	1.0			2.0	3.0			1.0	4.0
	Actual					1.1		2.0	0.9	1.9	1.0			2.0	2.9			1.0	3.9
49 of 195	Expected							2.0	2.0	2.0	1.0		1.0	1.0	2.0	1.0		2.0	3.0
	Actual							2.0	1.7	2.1	1.1		1.0	1.0	1.8	1.0		1.9	2.8
50 of 195	Expected			1.0		1.0		2.0	1.0	1.0	2.0		2.0	1.0		1.0		2.0	3.0
	Actual			1.0		0.9		2.0	0.9	1.1	2.1		2.0	1.0		1.0		2.0	2.8
51 of 195	Expected			1.0	1.0	1.0	3.0		1.0	1.0	2.0		2.0	1.0	1.0			1.0	2.0
	Actual			1.1	0.0	1.1	2.9		0.8	0.9	2.1		1.8	1.1	0.9			0.9	1.8
52 of 195	Expected	1.0		2.0	2.0	1.0	3.0				2.0		2.0	2.0	1.0			1.0	
	Actual	0.9		2.0	0.0	0.9	3.0				2.2		2.0	2.1	0.9			1.2	
53 of 195	Expected	1.0		2.0	2.0		4.0		1.0	1.0	1.0		1.0	1.0		1.0		1.0	1.0
	Actual	1.1		2.0	0.0		3.8		1.1	1.1	1.1		0.9	1.0		0.9		1.0	1.1
54 of 195	Expected	2.0		4.0	1.0	1.0	1.0		1.0	1.0			1.0	1.0		2.0		1.0	1.0
	Actual	2.0		3.9	0.0	1.0	1.0		1.0	1.0			1.1	1.0		1.9		0.9	1.0
55 of 195	Expected	1.0		3.0	1.0	1.0	1.0		1.0	2.0	1.0		1.0	1.0		2.0			2.0
	Actual	1.0		2.9	0.0	1.0	1.1		1.0	2.0	1.0		1.1	1.0		1.8			2.0
56 of 195	Expected			3.0	1.0	1.0	1.0	1.0		1.0	1.0		2.0	1.0	1.0	3.0			1.0
	Actual			2.9	0.0	1.0	1.0	1.1		0.9	1.0		2.1	1.0	0.8	2.9			1.1
57 of 195	Expected	1.0		1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0	3.0		1.0	3.0
	Actual	1.0		1.0	0.0		1.0	1.0		1.0	1.0		1.1	1.0	0.8	2.8		1.1	3.2
58 of 195	Expected	2.0	1.0	1.0			1.0	1.0			1.0		1.0		1.0	3.0		2.0	3.0
	Actual	2.2	0.9	0.8			0.9	1.0			1.2		1.1		0.9	3.0		2.2	3.2
59 of 195	Expected	3.0	1.0	2.0			1.0		1.0		1.0				2.0		1.0	2.0	3.0
	Actual	2.8	0.9	2.2			1.1		1.1		1.0				1.9		0.0	1.9	2.8
60 of 195	Expected	2.0	1.0	3.0	1.0		2.0		1.0				1.0	1.0	2.0	1.0	1.0		1.0
	Actual	1.8	0.9	2.9	0.0		1.9		1.0				1.1	1.1	2.1	1.0	0.0		1.1
61 of 195	Expected	1.0		3.0	1.0		2.0		1.0		1.0		2.0	1.0	3.0	1.0			1.0
	Actual	0.9		3.0	0.0		2.0		0.9		1.1		2.1	1.0	2.9	0.9			1.2
62 of 195	Expected			3.0	1.0		3.0				2.0		4.0	1.0	1.0				2.0
	Actual			3.0	0.0		2.8				2.1		4.2	1.0	0.9				2.2
63 of 195	Expected			2.0	1.0		2.0			1.0	2.0		4.0		2.0				3.0
	Actual			1.9	0.0		1.9			1.1	1.9		4.2		2.0				3.0
64 of 195	Expected			1.0	1.0		3.0		1.0	1.0	2.0		3.0	1.0	2.0				2.0
	Actual			1.0	0.0		3.1		1.0	1.0	2.1		3.1	1.0	1.8				1.9

Figure 1: Amino Acid Analysis (continued)^{3,4}

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)
65 of 195	Expected	1.0		1.0	2.0		2.0		2.0	1.0	1.0	1.0	1.0	2.0	1.0				2.0
	Actual	1.0		0.9	0.0		2.0		1.6	1.0	1.1	1.0	1.1	2.0	0.9				1.7
66 of 195	Expected	3.0		2.0	1.0		2.0		2.0			1.0		2.0	1.0		1.0	1.0	1.0
	Actual	3.1		2.0	0.0		1.8		1.5			1.0		2.0	0.9		0.0	1.1	0.9
67 of 195	Expected	3.0		1.0			1.0		2.0		1.0	1.0		1.0	1.0	1.0	1.0	3.0	1.0
	Actual	2.9		1.1			1.0		1.6		1.1	1.0		1.0	1.0	0.9	0.0	3.2	0.8
68 of 195	Expected	1.0		1.0			1.0		1.0	1.0	1.0				3.0	1.0	2.0	4.0	1.0
	Actual	1.0		1.0			1.0		1.0	1.1	1.0				2.8	0.9	0.0	4.0	1.2
69 of 195	Expected			2.0			3.0		2.0	1.0					3.0	1.0	1.0	3.0	1.0
	Actual			2.1			3.2		1.9	1.0					2.9	1.0	0.0	3.1	1.0
70 of 195	Expected			2.0		1.0	3.0		1.0	1.0				2.0	2.0	1.0	1.0	1.0	2.0
	Actual			2.0		0.9	3.1		1.1	0.9				2.3	1.9	0.9	0.0	1.0	2.2
71 of 195	Expected			2.0		2.0	4.0		1.0					2.0	2.0	1.0			3.0
	Actual			2.2		1.8	4.0		1.2					2.0	1.9	0.9			3.1
72 of 195	Expected			1.0		2.0	2.0			1.0		1.0	1.0	2.0	2.0	1.0			4.0
	Actual			1.1		2.0	1.9			1.1		1.1	1.1	1.8	1.8	1.0			4.0
73 of 195	Expected			2.0	1.0	1.0	1.0			1.0	2.0	1.0	1.0		2.0	2.0		1.0	2.0
	Actual			2.2	0.0	0.9	0.9			1.1	2.0	1.0	1.0		1.9	2.0		1.0	2.1
74 of 195	Expected			4.0	1.0				1.0	1.0	2.0	1.0	1.0		1.0	2.0		2.0	2.0
	Actual			4.2	0.0				1.0	1.0	2.1	0.9			1.0	1.9		2.0	2.2
75 of 195	Expected		1.0	2.0	1.0		2.0		2.0		2.0				1.0	1.0		2.0	3.0
	Actual		1.1	2.1	0.0		2.1		1.5		2.0				1.0	0.9		1.9	3.0
76 of 195	Expected		1.0	3.0			2.0		2.0				1.0		2.0	1.0		1.0	4.0
	Actual		1.0	3.1			2.1		1.2				1.1		1.9	1.1		0.9	3.7
77 of 195	Expected		1.0	3.0			2.0		2.0	1.0			1.0		1.0	2.0		1.0	3.0
	Actual		1.0	3.2			2.0		1.7	1.1			1.1		0.9	1.9		1.0	2.7
78 of 195	Expected			4.0			2.0		1.0	1.0			1.0		3.0	4.0		1.0	
	Actual			4.2			2.0		1.1	0.9			1.0		2.8	3.8		1.0	
79 of 195	Expected			3.0			3.0		1.0	2.0	1.0		1.0		2.0	3.0		1.0	
	Actual			3.1			2.8		1.0	2.0	1.1		1.0		2.1	2.7		0.9	
80 of 195	Expected			2.0			3.0		1.0	2.0	2.0		1.0		2.0	3.0			1.0
	Actual			2.1			3.1		1.0	2.0	2.2		1.1		1.9	3.0			0.9
81 of 195	Expected			1.0	1.0		2.0		2.0	1.0	2.0		1.0	1.0	1.0	3.0		1.0	1.0
	Actual			0.9	0.0		2.0		2.3	0.9	1.8		0.9	1.1	1.1	3.1		1.1	1.1
82 of 195	Expected			2.0	1.0	1.0	1.0		2.0	1.0	1.0			3.0	1.0	3.0		1.0	
	Actual			2.2	0.0	1.1	0.9		1.8	1.1	1.0			3.1	1.0	2.9		0.9	
83 of 195	Expected	1.0		2.0	1.0	3.0			1.0	1.0				3.0	1.0	1.0		1.0	2.0
	Actual	1.1		2.1	0.0	3.2			1.1	1.0				2.9	0.9	0.9		1.1	1.8
84 of 195	Expected	2.0		1.0		3.0	1.0			2.0		1.0		2.0				1.0	4.0
	Actual	2.1		1.0		3.0	1.1			1.9		1.0		2.0				0.9	3.3
85 of 195	Expected	2.0		1.0		3.0	1.0			1.0		1.0	1.0		2.0	1.0		1.0	3.0
	Actual	1.8		1.1		3.2	0.9			1.0		1.0	1.0		2.1	0.9		1.0	2.4
86 of 195	Expected	1.0		2.0		1.0	2.0			1.0		1.0	2.0		3.0	1.0		1.0	2.0
	Actual	1.0		2.2		1.0	2.0			1.0		0.9	2.1		2.9	1.0		1.0	2.2
87 of 195	Expected			2.0		2.0	1.0			1.0	1.0		3.0	1.0	2.0	1.0		1.0	2.0
	Actual			1.9		1.9	1.0			1.0	1.1		3.0	1.0	2.0	1.0		1.0	1.3
88 of 195	Expected	1.0		2.0		1.0	2.0			1.0	1.0		3.0	1.0	2.0			1.0	2.0
	Actual	1.0		2.0		1.0	1.9			1.0	1.0		2.9	1.0	2.0			1.1	1.6
89 of 195	Expected	1.0		3.0	1.0	1.0	1.0			1.0	1.0		2.0	1.0	1.0	2.0			2.0
	Actual	1.0		3.0	0.0	1.0	1.1			0.9	1.1		2.0	1.0	0.9	2.1		2.1	
90 of 195	Expected	2.0		3.0	1.0		1.0			1.0					2.0	3.0		3.0	1.0
	Actual	1.9		3.1	0.0		1.0			1.1					2.0	2.8		2.9	1.0
91 of 195	Expected	2.0		2.0	2.0		1.0			1.0			1.0		2.0	2.0		2.0	2.0
	Actual	2.1		2.0	0.0		1.1			0.9			1.1		1.8	1.9		1.9	2.1
92 of 195	Expected	2.0		1.0	1.0		2.0		2.0	1.0			1.0		3.0	1.0		1.0	2.0
	Actual	2.0		1.1	0.0		2.0		1.8	0.9			1.1		2.9	0.9		1.0	2.1
93 of 195	Expected	2.0	1.0	2.0	1.0	1.0	2.0		2.0				1.0	1.0	1.0				3.0
	Actual	1.9	1.1	2.0	0.0	1.1	1.8		1.5				1.1	1.0	0.8				3.1
94 of 195	Expected	1.0	1.0	2.0		1.0	1.0		2.0					1.0	4.0			1.0	3.0
	Actual	1.0	1.0	2.2		1.0	0.9		1.4					1.0	3.9			1.0	3.2

Figure 1: Amino Acid Analysis (continued)^{3,4}

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)
95 of 195	Expected	2.0	1.0	2.0		1.0			1.0					1.0	3.0	1.0		1.0	4.0
	Actual	2.2	1.1	2.0		0.8			0.9					1.0	2.8	1.1		1.0	4.2
96 of 195	Expected	2.0		2.0					2.0	1.0				1.0	5.0	1.0		1.0	2.0
	Actual	2.0		1.9					1.8	1.1				1.1	4.8	1.0		0.8	1.9
97 of 195	Expected	2.0		2.0					2.0	1.0				1.0	3.0	3.0	1.0		2.0
	Actual	1.9		2.0					1.7	1.0				1.0	2.9	3.0	0.0		2.0
98 of 195	Expected			1.0		3.0			1.0	2.0				1.0	3.0	2.0	1.0	1.0	2.0
	Actual			1.1		3.0			1.0	2.0				0.9	3.0	2.1	0.0	1.0	2.2
99 of 195	Expected					3.0			2.0	1.0				1.0	2.0	4.0	1.0	1.0	2.0
	Actual					2.9			2.1	1.1				1.0	1.9	4.0	0.0	0.9	2.1
100 of 195	Expected			1.0	1.0	2.0			2.0	1.0				1.0	2.0	3.0		1.0	3.0
	Actual			1.1	0.0	2.0			1.6	1.0				1.0	1.8	2.9		1.1	2.5
101 of 195	Expected			3.0	2.0		1.0		1.0					1.0	2.0	3.0		1.0	3.0
	Actual			3.1	0.0		1.1		0.7					0.9	1.8	2.9		1.0	2.7
102 of 195	Expected		1.0	3.0	3.0	1.0	1.0			1.0					1.0	1.0		1.0	4.0
	Actual		1.1	2.8	0.0	0.9	1.1			1.2					0.8	1.0		1.0	3.9
103 of 195	Expected		1.0	2.0	2.0	2.0	1.0			2.0	1.0				1.0	1.0		1.0	3.0
	Actual		0.9	1.9	0.0	1.9	0.9			2.1	1.2				1.0	1.1		1.2	2.8
104 of 195	Expected	1.0	1.0		2.0	3.0			1.0	2.0	2.0				1.0	2.0		1.0	1.0
	Actual	1.0	0.8		0.0	3.1			0.9	2.0	2.1				1.0	2.1		1.1	1.1
105 of 195	Expected	2.0	1.0	2.0	1.0	2.0			1.0	1.0	2.0				2.0	2.0		1.0	
	Actual	1.9	1.1	2.1	0.0	1.8			1.0	1.1	1.9				1.8	1.9		1.1	
106 of 195	Expected	3.0	2.0	2.0	1.0	2.0			1.0	2.0	1.0				2.0	1.0			
	Actual	2.9	2.2	2.0	0.0	2.0			1.0	2.1	0.9				2.0	1.0			
107 of 195	Expected	3.0	2.0	2.0		2.0				3.0		1.0			3.0				1.0
	Actual	2.9	1.9	2.1		2.2				2.9		1.1			2.8				1.0
108 of 195	Expected	2.0	1.0	2.0		2.0				2.0	2.0	1.0	1.0		2.0	1.0			1.0
	Actual	2.1	1.1	2.1		2.0				1.9	2.1	1.1	1.0		1.8	1.0			1.0
109 of 195	Expected	2.0		2.0		1.0				2.0	2.0	1.0	2.0		1.0	2.0			2.0
	Actual	2.0		2.2		1.0				2.1	2.1	0.9	2.0		0.9	1.9			2.2
110 of 195	Expected	2.0		3.0			1.0			1.0	2.0		3.0		2.0	1.0		1.0	1.0
	Actual	1.8		2.8			1.1			1.0	1.9		2.9		1.9	1.1		1.0	1.1
111 of 195	Expected	1.0		3.0			1.0		1.0	2.0			1.0		4.0	1.0		1.0	2.0
	Actual	0.9		3.0			1.2		0.7	2.0			0.9		4.0	0.9		1.1	1.5
112 of 195	Expected			2.0			1.0		1.0	2.0			1.0	2.0	5.0	1.0		1.0	1.0
	Actual			1.9			0.9		0.9	2.1			1.0	2.1	5.0	1.1		1.0	0.9
113 of 195	Expected	1.0	1.0				2.0		1.0	2.0				2.0	5.0	1.0			2.0
	Actual	1.0	1.0				2.1		0.8	1.9				2.0	4.9	1.0			1.8
114 of 195	Expected	2.0	2.0	1.0		1.0	2.0		1.0	1.0				1.0	4.0	1.0			1.0
	Actual	1.9	2.1	1.1		1.1	2.1		1.1	0.8				0.9	4.0	0.8			1.1
115 of 195	Expected	2.0	2.0	1.0		1.0	1.0		2.0	2.0	1.0		1.0		3.0				1.0
	Actual	1.8	1.9	1.0		1.0	1.0		2.1	1.9	1.0		1.1		2.8				1.1
116 of 195	Expected	1.0		1.0		1.0	2.0		2.0	3.0	1.0		1.0		3.0	1.0			1.0
	Actual	1.0		1.0		1.0	2.1		2.1	2.8	1.0		1.1		2.8	1.0			1.1
117 of 195	Expected	1.0		2.0			2.0			3.0	1.0		1.0		2.0	2.0		1.0	2.0
	Actual	1.0		1.9			2.2			2.9	0.9		1.1		1.9	2.0		1.1	2.1
118 of 195	Expected	1.0		2.0	1.0		3.0			1.0	3.0				1.0	3.0		1.0	1.0
	Actual	1.0		2.0	0.0		3.1			0.9	3.2				0.9	2.8		1.1	1.1
119 of 195	Expected	2.0		3.0	1.0		1.0		1.0	2.0	3.0				1.0	1.0		1.0	1.0
	Actual	1.9		3.1	0.0		1.2		1.1	2.0	2.9				1.0	1.0		0.9	0.9
120 of 195	Expected	3.0		1.0	2.0	1.0	1.0		1.0	2.0	2.0				1.0	1.0		2.0	
	Actual	3.0		1.1	0.0	1.0	1.0		1.0	2.1	1.9				0.9	0.9		2.1	
121 of 195	Expected	3.0		2.0	1.0	1.0	1.0		2.0	2.0		1.0			1.0			2.0	1.0
	Actual	2.8		1.9	0.0	0.9	1.0		2.2	2.1		1.0			1.0			2.1	1.0
122 of 195	Expected	3.0		2.0	1.0	1.0	2.0		1.0	1.0		1.0		1.0				2.0	2.0
	Actual	2.8		1.8	0.0	1.0	2.2		1.0	1.0		1.0		1.0				2.1	2.1
123 of 195	Expected	3.0	1.0	1.0		1.0	2.0		1.0	1.0		3.0		1.0				1.0	2.0
	Actual	2.8	1.1	1.0		0.9	2.0		1.0	1.0		3.0		1.0				1.0	2.1
124 of 195	Expected	3.0	1.0	1.0		1.0	3.0		1.0	1.0		2.0			1.0	1.0		1.0	1.0
	Actual	3.0	1.0	1.0		1.0	3.1		1.0	1.0		2.0			0.8	1.0		1.0	1.1

Figure 1: Amino Acid Analysis (continued)^{3,4}

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)
125 of 195	Expected	2.0	1.0				5.0		2.0	2.0		2.0			1.0	1.0		1.0	
	Actual	1.9	1.1				4.8		1.9	1.8		2.0			1.1	1.0		1.1	
126 of 195	Expected	2.0					5.0		2.0	3.0					3.0	1.0			1.0
	Actual	1.8					5.0		2.0	3.0					2.9	1.0			1.1
127 of 195	Expected	3.0					2.0		2.0	3.0			1.0	1.0	3.0	1.0			1.0
	Actual	3.1					1.9		2.0	3.0			1.1	1.0	2.9	0.9			1.1
128 of 195	Expected	3.0	1.0	1.0		1.0			2.0	2.0			1.0	1.0	3.0	1.0			1.0
	Actual	2.8	1.0	1.2		1.0			2.0	2.1			1.1	0.9	2.9	0.9			1.0
129 of 195	Expected	3.0	1.0	1.0		2.0			1.0	3.0			1.0	1.0	1.0	1.0		1.0	1.0
	Actual	3.1	1.0	1.0		1.9			1.0	2.9			1.0	0.9	0.9	1.1		1.0	1.1
130 of 195	Expected	2.0	1.0	2.0		4.0			1.0	3.0						1.0		1.0	2.0
	Actual	1.9	1.0	1.9		4.0			1.0	2.9						1.0		1.1	2.0
131 of 195	Expected	2.0		2.0		4.0			1.0	3.0	1.0					1.0		1.0	2.0
	Actual	2.0		2.1		4.2			1.0	2.8	1.1					1.0		1.0	1.9
132 of 195	Expected	3.0		3.0		3.0			1.0	2.0	2.0		1.0		1.0				1.0
	Actual	3.0		2.9		2.8			1.0	2.1	2.0		1.0		1.0				1.0
133 of 195	Expected	3.0		3.0		1.0			2.0	1.0	2.0	1.0	1.0		1.0	1.0			1.0
	Actual	3.0		3.1		0.8			1.6	1.0	2.0	1.0	1.1		0.9	1.1			1.0
134 of 195	Expected	3.0		3.0			1.0		1.0		1.0	1.0	2.0		1.0	2.0			2.0
	Actual	2.9		2.8			1.0		0.9		1.0	1.1	2.1		0.9	2.1			2.1
135 of 195	Expected	2.0		4.0		1.0	1.0		2.0			1.0	1.0			3.0			2.0
	Actual	2.0		3.8		1.1	1.1		1.8			0.8	1.1			2.9			1.9
136 of 195	Expected	3.0		2.0		3.0	1.0		1.0	1.0			1.0		1.0	3.0			1.0
	Actual	3.1		2.1		3.2	1.0		0.9	0.9			1.0		1.0	3.1			1.0
137 of 195	Expected	4.0		1.0		3.0			1.0	2.0					1.0	4.0			1.0
	Actual	4.1		1.0		3.0			1.0	2.1					0.8	4.1			1.1
138 of 195	Expected	3.0		2.0		3.0			1.0	2.0	1.0				1.0	2.0			2.0
	Actual	2.8		2.2		2.9			1.1	2.1	1.1				0.8	1.9			2.2
139 of 195	Expected	2.0		4.0		3.0	1.0		1.0	1.0	1.0					1.0			3.0
	Actual	1.8		4.0		3.2	1.0		1.1	0.9	1.0					0.9			2.9
140 of 195	Expected			4.0		3.0	1.0	1.0	1.0	2.0	1.0				1.0	1.0			2.0
	Actual			4.0		3.0	1.0	1.1	1.0	2.1	0.9				0.9	1.1			1.7
141 of 195	Expected		1.0	4.0		4.0	1.0	1.0		3.0					2.0	1.0			
	Actual		1.1	4.2		4.1	1.0	1.0		3.0					1.8	1.0			
142 of 195	Expected	1.0	1.0	2.0		3.0		1.0	1.0	3.0			1.0		3.0	1.0			
	Actual	1.0	1.0	2.0		2.9		1.0	1.1	2.9			1.1		2.9	0.9			
143 of 195	Expected	2.0	1.0	1.0		4.0			3.0	1.0			1.0		4.0				
	Actual	2.1	0.9	1.0		4.0			3.1	1.0			1.0		4.1				
144 of 195	Expected	2.0	1.0	2.0		2.0			3.0	1.0			1.0		3.0	1.0		1.0	
	Actual	1.9	1.1	2.1		1.9			2.8	1.1			0.9		3.1	1.0		1.0	
145 of 195	Expected	2.0	1.0	3.0		4.0			3.0	1.0					1.0	1.0		1.0	
	Actual	2.0	1.1	3.1		4.2			3.2	1.0					0.8	1.0		1.1	
146 of 195	Expected	1.0	2.0	4.0		3.0			2.0	2.0						2.0			1.0
	Actual	1.0	2.0	4.0		3.1			2.0	2.0						1.8			1.1
147 of 195	Expected	3.0	2.0	2.0		3.0	1.0		2.0	2.0						1.0			1.0
	Actual	2.8	2.0	2.0		2.9	1.1		2.0	2.1						0.9			1.1
148 of 195	Expected	2.0	2.0	2.0			1.0		1.0	3.0			1.0		1.0	1.0			3.0
	Actual	1.9	1.9	1.9			1.0		1.0	3.0			1.1		1.0	0.9			3.2
149 of 195	Expected	2.0	1.0	1.0			1.0	1.0		3.0	1.0		1.0		1.0	2.0		1.0	2.0
	Actual	1.9	1.1	1.0			0.9	1.0		3.0	1.0		1.0		0.9	2.0		1.0	2.1
150 of 195	Expected	1.0	1.0	1.0		1.0		1.0		1.0	1.0		1.0		2.0	3.0		1.0	3.0
	Actual	0.9	1.0	1.2		0.9		1.0		1.0	1.0		1.1		1.9	2.8		1.0	3.2
151 of 195	Expected	2.0	2.0			4.0				2.0	1.0				1.0	3.0		1.0	1.0
	Actual	2.1	2.1			4.2				2.0	1.0				0.9	2.9		1.0	1.1
152 of 195	Expected	2.0	2.0	1.0	1.0	5.0				1.0	1.0				1.0				3.0
	Actual	1.8	2.0	1.1	0.0	4.9				1.0	1.1				0.9				3.2
153 of 195	Expected	1.0	1.0	1.0	1.0	5.0				1.0	3.0				2.0				2.0
	Actual	1.0	0.8	1.1	0.0	5.2				0.9	3.2				2.0				2.1
154 of 195	Expected		1.0	1.0	2.0	2.0	2.0				3.0		1.0		2.0			1.0	2.0
	Actual		1.1	1.0	0.0	1.9	2.1				2.9		1.1		2.0			1.0	1.9

Figure 1: Amino Acid Analysis (continued)^{3,4}

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)
155 of 195	Expected		1.0	1.0	1.0	1.0	3.0	1.0	1.0		2.0		2.0		2.0	1.0		1.0	
	Actual		1.0	1.1	0.0	0.9	3.1	0.9	1.0		1.8		2.1		2.0	1.0		1.0	
156 of 195	Expected	2.0		2.0	1.0		3.0	1.0	2.0				2.0		1.0	1.0		1.0	1.0
	Actual	1.8		2.1	0.0		2.9	1.1	1.6				2.1		0.9	1.0		1.1	0.8
157 of 195	Expected	2.0		1.0		1.0	2.0	1.0	2.0	1.0			2.0	1.0	1.0	1.0			2.0
	Actual	2.0		1.1		1.1	2.0	1.0	1.7	1.1			2.0	1.1	0.8	0.9			1.9
158 of 195	Expected	2.0		1.0		1.0	1.0	1.0	1.0	4.0			1.0	1.0		1.0			3.0
	Actual	1.8		1.0		1.2	1.0	0.9	0.6	4.0			1.0	1.0		1.0			2.3
159 of 195	Expected			1.0		2.0	1.0	1.0		4.0	1.0		1.0	1.0		2.0		1.0	2.0
	Actual			1.1		1.9	1.0	1.0		3.9	1.1		0.9	1.1		1.9		1.1	1.8
160 of 195	Expected	1.0		1.0		2.0	1.0	1.0		2.0	1.0			1.0	1.0	2.0	1.0	1.0	2.0
	Actual	1.0		1.1		2.0	1.1	1.0		1.9	1.1			1.0	0.9	1.8	0.0	1.0	2.1
161 of 195	Expected	1.0		2.0	1.0	2.0	2.0			1.0	1.0				1.0	2.0	1.0	1.0	2.0
	Actual	1.0		2.1	0.0	2.0	1.9			1.1	0.9				0.9	1.9	0.0	1.0	2.2
162 of 195	Expected	1.0	1.0	2.0	1.0	1.0	3.0			2.0					1.0	1.0	1.0	1.0	2.0
	Actual	1.0	1.0	2.1	0.0	0.9	2.9			2.2					0.9	0.9	0.0	1.0	2.2
163 of 195	Expected	1.0	1.0	3.0	1.0	1.0	2.0			3.0				1.0		1.0		1.0	2.0
	Actual	1.0	1.1	3.1	0.0	1.0	2.0			2.9				1.1		0.9		1.0	1.9
164 of 195	Expected	1.0	1.0	2.0		2.0	2.0			3.0	1.0			1.0				3.0	1.0
	Actual	1.0	1.0	2.1		2.0	1.9			3.0	1.1			1.0				2.8	1.0
165 of 195	Expected	1.0	2.0	2.0		1.0	1.0		1.0	2.0	1.0			1.0	1.0	1.0		3.0	
	Actual	1.0	2.0	2.1		1.0	1.1		1.0	2.0	1.0			1.0	0.9	1.0		3.0	
166 of 195	Expected		3.0	1.0		2.0	1.0		2.0		1.0	1.0	1.0	1.0	1.0	1.0		2.0	
	Actual		3.1	1.1		2.0	1.0		2.0		1.0	0.9	1.1	1.1	0.9	0.9		2.0	
167 of 195	Expected	1.0	3.0	1.0		1.0			3.0			2.0	1.0	2.0	1.0	2.0			
	Actual	1.1	3.0	1.0		1.1			2.9			2.0	1.0	2.2	0.9	2.0			
168 of 195	Expected	1.0	1.0	2.0		3.0			2.0			2.0	2.0	2.0		1.0			1.0
	Actual	1.0	0.9	2.1		3.1			1.9			2.0	2.1	2.0		1.0			0.9
169 of 195	Expected	1.0		3.0	1.0	2.0			1.0			1.0	2.0	1.0		2.0			3.0
	Actual	0.9		3.1	0.0	2.0			1.0			0.8	2.0	1.0		1.8			3.9
170 of 195	Expected		1.0	3.0	1.0	3.0			2.0				1.0		2.0	1.0			3.0
	Actual		1.1	3.0	0.0	2.8			2.0				1.1		1.9	1.0			3.2
171 of 195	Expected		1.0	2.0		2.0			2.0	1.0			1.0	1.0	2.0	2.0			3.0
	Actual		1.1	1.9		2.0			1.9	0.8			1.0	1.2	2.0	1.9			2.8
172 of 195	Expected		1.0	2.0		3.0			3.0	1.0				1.0	2.0	1.0		1.0	2.0
	Actual		1.0	2.1		2.9			3.1	0.9				1.1	1.8	1.0		1.1	2.2
173 of 195	Expected			2.0		4.0			2.0	2.0	1.0			1.0		2.0		1.0	2.0
	Actual			2.1		3.9			1.9	1.9	1.0			1.0		2.1		1.0	2.0
174 of 195	Expected			2.0		3.0			1.0	3.0	2.0			1.0	1.0	1.0		2.0	1.0
	Actual			2.0		2.9			1.0	3.0	2.1			1.2	1.0	0.9		2.0	1.0
175 of 195	Expected			2.0		2.0				3.0	2.0			2.0	1.0	2.0		2.0	1.0
	Actual			2.0		1.9				2.8	2.0			2.1	1.0	2.0		1.9	1.1
176 of 195	Expected			2.0		2.0				2.0	1.0			2.0	1.0	1.0		3.0	3.0
	Actual			2.0		2.0				2.1	1.0			2.2	0.9	0.9		3.2	2.6
177 of 195	Expected			3.0		3.0			1.0	2.0				1.0		2.0		2.0	3.0
	Actual			2.9		2.8			1.1	2.1				1.1		1.8		2.0	2.2
178 of 195	Expected			2.0		4.0			2.0	2.0					2.0	2.0		1.0	2.0
	Actual			2.1		3.9			2.0	2.1					1.9	1.9		1.1	1.6
179 of 195	Expected			3.0		3.0			2.0	3.0	1.0				2.0	3.0			
	Actual			2.8		3.2			1.9	2.8	1.1				2.0	2.9			
180 of 195	Expected	1.0		2.0		3.0			1.0	3.0	1.0				3.0	2.0		1.0	
	Actual	1.1		1.9		2.8			1.0	3.0	1.1				2.9	1.9		1.1	
181 of 195	Expected	1.0		2.0		4.0				3.0	2.0				1.0	2.0		1.0	1.0
	Actual	1.1		1.8		3.9				2.9	2.1				0.9	1.9		1.0	1.1
182 of 195	Expected	1.0		3.0		3.0			2.0	3.0	1.0					2.0		1.0	1.0
	Actual	1.0		3.1		2.9			2.1	2.9	1.0					1.9		1.0	1.1
183 of 195	Expected			4.0		2.0			2.0	3.0	1.0				1.0	2.0			2.0
	Actual			3.9		1.9			2.0	3.1	1.0				1.0	2.0			2.2
184 of 195	Expected		1.0	5.0					2.0	4.0	1.0				1.0	1.0	1.0		1.0
	Actual		1.1	5.0					1.9	3.9	1.1				0.8	1.0	0.0		1.2

Figure 1: Amino Acid Analysis (continued)^{3,4}

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)
185 of 195	Expected		1.0	2.0		1.0			1.0	3.0	2.0				1.0	2.0	1.0	1.0	2.0
	Actual		1.0	2.0		1.0			1.1	3.0	2.0				0.9	2.0	0.0	1.0	2.1
186 of 195	Expected		1.0	1.0		1.0			1.0	1.0	2.0			1.0		1.0	5.0	1.0	2.0
	Actual		1.0	1.0		1.0			1.0	1.0	1.9			1.0		0.9	0.0	1.1	2.1
187 of 195	Expected				1.0	1.0			2.0	1.0	1.0			1.0	1.0	1.0	4.0	1.0	3.0
	Actual				0.0	1.0			2.1	1.1	1.1			1.0	0.9	1.0	0.0	1.0	2.7
188 of 195	Expected				1.0				2.0	2.0			1.0	1.0	2.0		3.0		5.0
	Actual				0.0				1.9	2.1			0.9	1.1	2.0		0.0		4.7
189 of 195	Expected				3.0				2.0	4.0		1.0	1.0		2.0				4.0
	Actual				0.0				2.1	3.8		1.0	1.0		2.0				2.3
190 of 195	Expected				5.0		1.0		1.0	3.0		1.0	1.0		2.0	1.0			2.0
	Actual				0.0		1.1		1.1	2.9		0.9	1.0		1.9	1.0			1.4
191 of 195	Expected				6.0		2.0			3.0			3.0		2.0	1.0			
	Actual				0.0		2.0			3.0			2.9		2.0	1.0			
192 of 195	Expected	1.0	1.0		3.0		3.0		1.0				3.0		4.0	1.0			
	Actual	1.0	1.1		0.0		2.8		1.1				3.0		3.7	0.9			
193 of 195	Expected	1.0	1.0		3.0	1.0	1.0		1.0		1.0		3.0		4.0	1.0			
	Actual	0.9	1.0		0.0	1.0	1.0		1.0		1.1		2.8		4.0	1.1			
194 of 195	Expected		1.0	1.0	2.0	1.0	1.0		1.0	1.0	1.0			1.0	3.0	1.0		2.0	1.0
	Actual		0.9	1.0	0.0	0.9	1.0		0.9	1.1	1.1			1.0	3.0	1.1		2.0	1.1
195 of 195	Expected			1.0	1.0	3.0		1.0	2.0	1.0	2.0			1.0	1.0	1.0		2.0	1.0
	Actual			1.1	0.0	3.1		1.0	2.2	0.9	2.0			0.9	1.0	0.9		2.0	1.1

³Cysteine (C) and tryptophan (W) were completely destroyed during hydrolysis.

⁴Val-Ile, Val-Val, Ile-Ile and/or Ile-Val bonds were only partially destroyed during hydrolysis.

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