

**Table 1s.** Total and free amino acid content in each protein hydrolyzate

Amino acid	Hydrolyzate																			
	A		B				C				D				E					
	Total <sup>a</sup>		Free <sup>b</sup>		Total		Free		Total		Free		Total		Free		Total		Free	
	mg/g	sd <sup>c</sup>	mg/g	sd	mg/g	sd	mg/g	sd	mg/g	sd	mg/g	sd	mg/g	sd	mg/g	sd	mg/g	sd	mg/g	sd
Glycine	51.15	0.65	4.81	0.13	49.30	1.65	7.52	0.99	49.87	1.55	5.33	0.36	52.26	13.83	7.28	1.06	58.32	0.08	6.96	0.11
Alanine	61.60	2.30	17.10	0.61	63.06	1.09	21.37	0.83	64.54	1.65	17.57	0.05	70.24	0.37	18.04	0.35	67.21	0.52	16.62	0.20
Serine	41.07	1.42	12.38	0.65	39.16	0.70	17.64	0.56	38.67	1.95	13.81	1.27	42.58	0.90	11.54	1.03	40.85	2.83	6.97	3.73
Threonine	27.48	0.40	6.73	0.15	27.64	0.47	10.51	0.20	27.48	0.43	9.23	0.50	28.47	0.26	9.54	0.08	28.36	0.52	9.75	0.26
Cysteine	4.98	0.76	0.29	0.04	9.11	1.29	0.86	0.02	8.22	2.77	0.83	0.17	7.02	0.64	1.04	0.18	6.58	1.89	0.85	0.10
Cystine			0.46	0.02			2.01	0.06			1.47	0.00			1.76	0.02			1.32	0.05
Methionine	8.90	0.22	10.10	0.28	10.99	3.16	13.60	0.23	10.47	3.58	10.76	0.08	9.93	0.45	11.72	0.76	10.76	1.18	11.99	0.09
Asparagine			13.85	0.38			19.78	0.12			16.48	0.26			13.98	0.94			10.14	0.15
Aspartic acid	112.87	0.47	19.04	0.31	103.61	0.95	24.72	0.10	108.94	0.49	22.46	1.13	110.04	2.01	22.33	0.85	110.86	3.09	17.66	0.23
Glutamine			16.58	0.11			22.32	0.02			16.97	0.25			14.69	0.75			10.10	0.09
Glutamic acid	125.92	2.61	22.83	0.34	118.65	3.10	29.77	0.45	119.42	0.16	21.96	0.19	123.86	2.49	21.00	0.25	123.68	0.66	16.47	0.02
Proline	45.75	0.41	8.08	0.41	48.78	0.81	11.71	0.91	49.70	0.31	9.00	0.02	50.05	0.65	8.81	0.25	50.66	0.55	7.48	0.26
Lysine	56.33	1.02	25.54	1.86	53.47	1.15	32.29	0.97	54.86	0.46	28.11	1.41	55.94	1.18	29.75	2.55	56.32	0.21	29.87	0.49
Arginine	49.72	1.65	14.28	1.10	48.19	0.46	22.72	1.17	49.65	0.55	15.66	0.09	49.66	2.69	13.03	1.82	51.46	0.54	1.25	0.91
Histidine	17.76	2.22	5.41	0.16	17.18	0.14	8.65	0.22	18.18	0.13	6.54	0.39	18.08	0.37	6.99	0.30	18.67	0.53	6.57	0.18
Valine	36.10	1.70	13.13	0.10	39.16	0.06	17.84	0.27	38.69	0.30	14.82	0.19	36.80	1.87	15.03	0.44	38.29	0.19	14.85	0.01
Isoleucine	37.87	2.10	17.03	0.26	39.25	0.31	21.16	0.75	39.27	0.40	17.93	0.61	38.63	0.76	19.45	1.95	38.94	0.13	19.30	0.06
Leucine	53.99	2.73	30.19	0.16	55.99	0.21	38.03	1.03	56.01	0.21	32.93	1.10	54.84	0.73	30.23	2.58	55.07	0.36	25.70	0.19
Tyrosine	17.29	0.13	8.35	0.07	17.09	0.10	14.24	0.34	16.60	0.27	11.07	0.40	18.86	0.52	12.69	0.10	16.86	0.34	10.23	0.28
Phenylalanine	28.32	0.47	13.83	0.49	29.32	0.20	17.80	0.27	28.29	0.19	15.14	0.59	27.21	0.58	14.62	0.09	27.81	0.45	12.91	0.13
Tryptophan	8.00	0.12	4.18	0.17	8.92	0.25	6.64	0.25	8.22	0.31	5.22	0.20	7.94	0.34	4.51	0.05	8.05	0.11	3.99	0.14

<sup>a</sup> Amino acid content after hydrolysis of the samples with 6 N HCl at 110 °C for 24 h (see experimental for details). Cysteine determined as cysteic acid, also including cystine; methionine determined as methionine sulfone; tryptophan determined spectrophotometrically.

<sup>b</sup> Amino acids present in the free form. <sup>c</sup> standard deviation.