

Table S1. Amino acid composition of protein extracts generated from hempseed cake using different combinations of high-pressure processing (HPP) pre-treatments (time and pressure) and extraction methods (conventional extraction (CE), and ultrasound-assisted extraction (UAE)). Results are expressed as average \pm standard error of the mean (SEM) (n=4).

HPP pre-treatments														
Control (no HPP pre-treatment)			200 MPa				400 MPa				600 MPa			
AA	Extraction		HPP (min)	AA	Extraction		HPP (min)	AA	Extraction		HPP (min)	AA	Extraction	
	CE	UAE			CE	UAE			CE	UAE			CE	UAE
Ala	29.63±0.35	37.99±0.41	4	Ala	29.02±0.30	35.82±0.23	4	Ala	29.87±0.40	34.10±0.61	4	Ala	28.62±1.07	37.53±1.47
Arg	73.42±2.08	85.42±1.15		Arg	71.23±2.27	80.75±0.29		Arg	68.31±3.19	68.68±2.04		Arg	68.56±3.75	81.43±3.02
Asx	77.63±2.67	96.46±0.63		Asx	76.96±1.63	86.19±0.50		Asx	72.66±0.98	82.09±4.64		Asx	70.25±3.74	92.72±3.37
Glx	129.40±3.50	154.16±1.02		Glx	124.44±2.67	146.26±0.57		Glx	122.32±5.98	132.46±4.64		Glx	119.07±7.23	154.03±10.22
Gly	29.04±0.47	36.53±0.43		Gly	28.27±0.50	35.03±0.28		Gly	29.21±0.60	33.07±0.61		Gly	28.44±1.15	35.43±1.26
His	16.08±0.59	20.73±0.46		His	15.97±0.27	18.82±0.06		His	15.22±0.22	17.67±0.69		His	14.60±0.76	19.69±0.84
Ile	22.71±0.62	28.68±0.82		Ile	23.06±0.42	26.35±0.38		Ile	22.07±0.40	26.03±0.75		Ile	21.35±1.07	28.99±1.41
Leu	45.72±0.61	57.16±0.56		Leu	44.62±0.32	54.98±0.26		Leu	45.74±0.53	52.33±1.04		Leu	43.86±1.78	56.61±2.42
Lys	13.84±0.19	19.59±0.29		Lys	13.34±0.14	19.85±0.19		Lys	14.11±0.30	18.15±0.05		Lys	13.56±0.57	19.56±0.60
Met	2.84±0.06	5±1.19		Met	3.25±0.25	6.87±0.29		Met	3.63±0.15	6.08±0.98		Met	2.62±0.12	6.07±0.32
Phe	31.37±0.69	38.85±0.41		Phe	31.01±0.38	36.15±0.10		Phe	30.11±0.54	34.47±1.06		Phe	28.75±1.60	38.51±1.66
Pro	22.16±3.65	32.36±2.11		Pro	21.44±3.92	31.01±1.64		Pro	26.15±0.85	30.66±1.30		Pro	22.84±5.10	28.68±3.63
Ser	33.93±0.68	42.11±0.39		Ser	32.92±0.68	40.02±0.27		Ser	32.68±1.09	35.16±0.90		Ser	32.03±1.42	40.35±1.39
Thr	19.94±0.64	24.72±0.52		Thr	19.66±0.40	22.90±0.17		Thr	19.07±0.41	19.84±0.56		Thr	18.40±0.91	23.69±0.85
Trp	1.39±0.08	2.44±0.19		Trp	1.15±0.26	2.13±0.06		Trp	1.41±0.20	1.75±0.15		Trp	0.96±0.14	1.79±0.42
Tyr	25.41±0.56	31.80±0.31		Tyr	24.69±0.20	29.63±0.05		Tyr	24.49±0.51	28.18±0.74		Tyr	23.43±1.23	31.29±1.42
Val	30.71±0.84	38.52±0.80		Val	30.62±0.30	35.00±0.34		Val	29.78±0.58	35.24±1.24		Val	28.57±1.46	39.09±1.82
EAA	184.61±4.02 b	235.70±2.11 a		EAA	182.68±2.41 b	223.03±0.30 a		EAA	181.14±2.42 b	211.56±6.44 a		EAA	172.68±7.87 b	234.00±10.23 a
CEAA	150.03±4.22 b	186.11±2.39 a		CEAA	145.62±6.17 b	176.43±1.96 a		CEAA	148.15±3.69 b	160.59±3.36 a		CEAA	143.28±9.56 b	176.82±8.72 a
NEAA	270.58±6.52 b	330.71±1.86 a		NEAA	263.35±3.90 b	308.28±1.43 a		NEAA	257.53±8.19 a	283.80±9.44 a		NEAA	249.97±13.11 b	324.63±16.43 a
TAA	605.22±11.34 b	752.52±5.38 a		TAA	591.65±9.61 b	707.74±2.78 a		TAA	586.82±13.20 b	655.95±19.04 a		TAA	565.93±29.11 b	735.46±35.09 a
EAA/TAA (%)	30.50±0.29 a	31.32±0.20 a		EAA/TAA (%)				EAA/TAA (%)				EAA/TAA (%)		
	30.50±0.29 a	a			30.89 ± 0.53 a	31.51±0.14 a			30.90±0.53 a	32.25±0.12 a			30.55±0.53 a	31.84±0.21 a
Arg/Lys	5.30±0.10 a	4.36±0.08 b	Arg/Lys	5.34±0.21 a	4.07±0.03 b	Arg/Lys	4.84±0.19 a	3.78±0.11 b	Arg/Lys	5.06±0.17 a	4.16±0.09 b			

8	Ala	28.55±0.24	34.58±0.19	8	Ala	28.30±0.70	34.85±0.64	8	Ala	27.97±0.62	35.34±1.36
	Arg	68.31±1.53	71.03±1.49		Arg	68.20±3.22	71.64±1.59		Arg	67.73±2.25	74.88±3.86
	Asx	71.08±0.96	81.74±1.03		Asx	70.61±2.25	83.10±3.22		Asx	70.36±2.55	88.02±4.54
	Glx	119.11±2.15	134.54±0.62		Glx	119.55±6.83	136.50±3.27		Glx	117.63±2.98	143.92±8.55
	Gly	27.77±0.25	33.84±0.25		Gly	28.29±0.61	33.23±0.36		Gly	27.24±0.66	34.41±1.04
	His	14.97±0.13	17.87±0.15		His	14.92±0.62	18.02±0.33		His	14.68±0.39	18.58±0.79
	Ile	21.98±0.23	25.65±0.13		Ile	21.34±0.58	26.44±0.49		Ile	21.55±0.52	26.58±1.52
	Leu	44.14±0.30	53.11±0.22		Leu	43.48±1.30	53.48±0.72		Leu	43.13±0.94	54.04±2.29
	Lys	13.68±0.14	18.78±0.43		Lys	13.55±0.30	18.41±0.44		Lys	13.58±0.20	19.26±0.83
	Met	2.81±0.12	4.95±0.14		Met	2.46±0.29	8.69±2.15		Met	2.72±0.14	6.98±1.85
	Phe	29.78±0.23	34.63±0.33		Phe	28.96±1.17	35.66±0.77		Phe	29.25±0.61	35.81±1.91
	Pro	21.33±3.50	30.64±1.90		Pro	25.31±1.35	24.02±3.70		Pro	22.94±0.67	31.80±1.83
	Ser	31.57±0.48	36.18±0.83		Ser	32.23±1.18	36.40±0.48		Ser	31.46±0.77	38.71±1.65
	Thr	18.48±0.25	20.02±0.72		Thr	18.75±0.64	20.71±0.40		Thr	18.36±0.54	22.29±1.29
	Trp	1.02±0.15	2.01±0.02		Trp	1.04±0.21	2.69±0.26		Trp	1.11±0.10	1.98±0.28
	Tyr	23.98±0.23	28.36±0.26		Tyr	23.33±0.95	28.80±0.67		Tyr	23.47±0.44	29.39±1.43
	Val	29.37±0.28	34.01±0.30		Val	28.63±0.71	35.45±0.61		Val	28.70±0.55	35.72±2.10
	EAA	176.23±1.24 b	211.03±1.97 a		EAA	173.14±5.41 b	219.56±3.66 a		EAA	173.08±3.65 b	221.24±12.76 a
	CEAA	141.39±4.44 b	163.87±2.81 a		CEAA	145.12±3.64 b	157.69±3.98 a		CEAA	141.38±4.00 b	170.47±7.08 a
	NEAA	250.31±3.67 b	287.04±2.12 a		NEAA	250.69±10.94 b	290.88±7.47 a		NEAA	247.42±6.50 b	305.99±16.06 a
8	TAA	567.94±7.25 b	661.94±6.48 a	8	TAA	568.96±19.64 b	668.13±9.60 a	8	TAA	561.88±14.07 b	697.70±35.80 a
	EAA/TAA (%)	31.04±0.32 a	31.88±0.13 a		EAA/TAA (%)	30.45±0.30 b	32.86±0.23 a		EAA/TAA (%)	30.81±0.14 b	31.68±0.21 a
	Arg/Lys	4.99±0.07 a	3.78±0.01 b		Arg/Lys	5.03±0.13 a	3.89±0.05 b		Arg/Lys	4.99±0.12 a	3.88±0.06 b

Different lower-case letters indicate statistical differences (P<0.05) amongst samples extracted following CE and UAE conditions within each pre-treatment condition used. Abberviations in the table are as follows: EAA (essential amino acids), CEAA (conditionally essential amino acids), NEAA (non-essential amino acids) and TAA (total amino acids).