

Figures_Supplementary Material

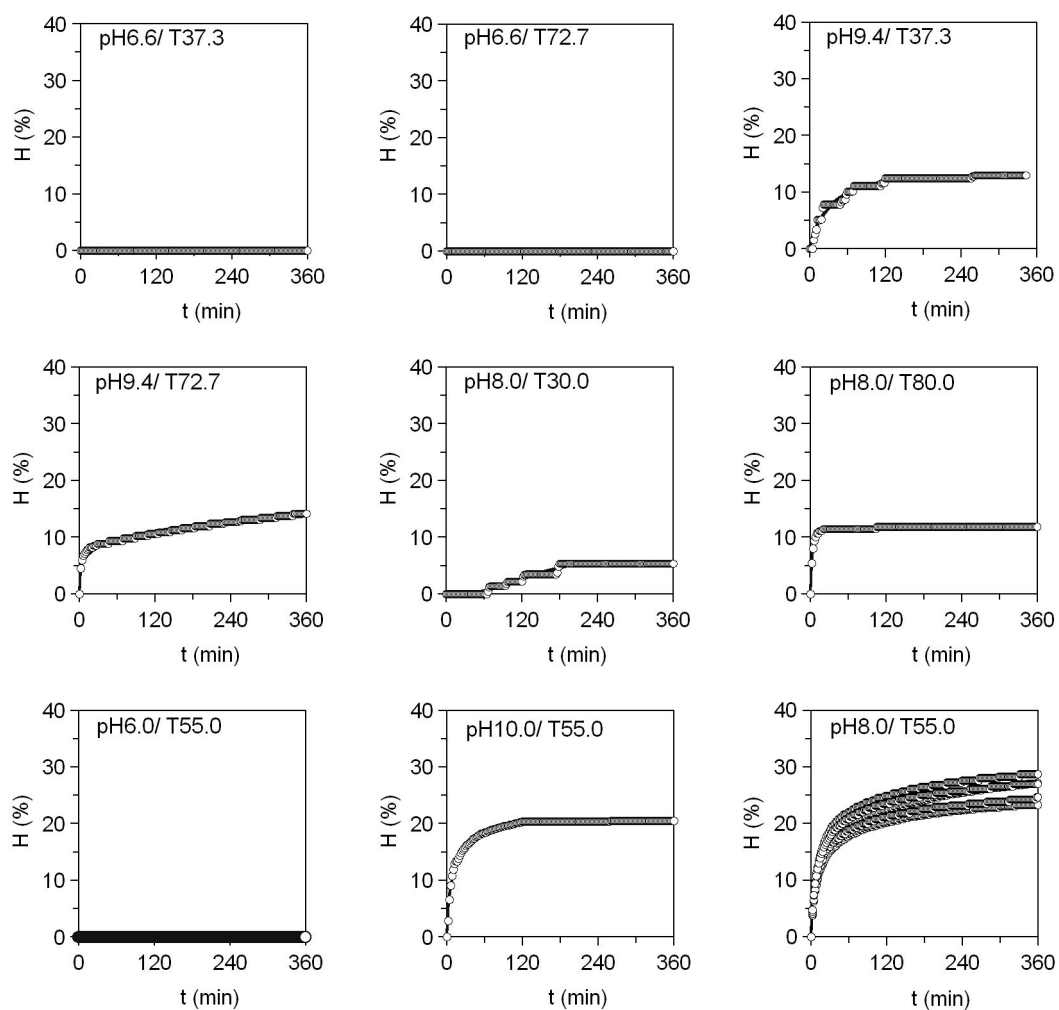


Figure S1. Proteolysis kinetics of *S. canicula* muscle wastes mediated by Esperase under the experimental conditions specified in the factorial design summarized in Table S1 (Supplementary Material) (T in $^{\circ}\text{C}$). Experimental data (symbols) were fitted to Weibull equation [1] (lines).

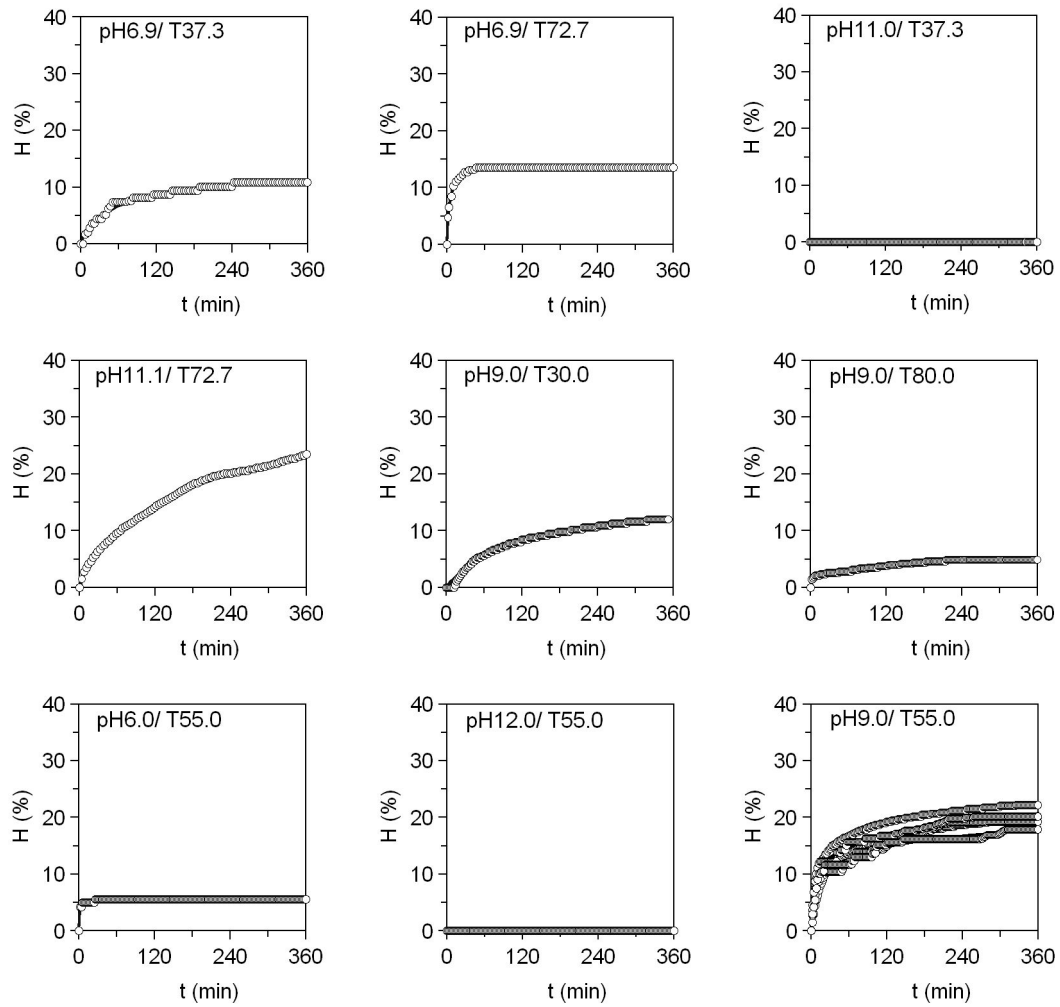


Figure S2. Proteolysis kinetics of *S. canicula* muscle wastes mediated by alcalase under the experimental conditions defined by the factorial design summarized in Table S1 (T in $^{\circ}\text{C}$). Experimental data (symbols) were fitted to Weibull equation [1] (lines).

TABLES supplementary material

Table S1. Experimental domain values and codification assignment of independent variables used for factorial rotatable design regarding commercial proteases catalysis.

Coded values	Natural values					
	Alcalase		Esperase		Protamex	
	pH	T (°C)	pH	T (°C)	pH	T (°C)
-1.41	6.0	30.0	6.0	30.0	4.0	30.0
-1	6.9	37.3	6.6	37.3	4.9	37.3
0	9.0	55.0	8.0	55.0	7.0	55.0
+1	11.1	72.7	9.4	72.7	9.1	72.7
+1.41	12.0	80.0	10.0	80.0	10.0	80.0
Codification: $V_c = (V_n - V_0) / \Delta V_n$ Decodification: $V_n = V_0 + (\Delta V_n \times V_c)$ V_0 = natural value in the centre of the domain V_n = natural value of the variable to codify ΔV_n = increment of V_n for unit of V_c						

Table S2. Summary of the experimental (IACE, IC₅₀, DPPH, ABTS, β -C and Cr) and expected values (IACE_p, IC_{50p}, DPPH_p, ABTS_p, β -C_p and Cr_p) for the antihypertensive and antioxidant activities produced in the *S. canicula* hydrolysates obtained by alcalase. X₁: Temperature (°C) and X₂: pH. Natural values of experimental conditions are in brackets.

Independent variables		Antihypertensive activities				Antioxidant activities							
X ₁ : T	X ₂ : pH	IACE (%)	IACE _e (%)	IC ₅₀ (µg/mL)	IC _{50e} (µg/mL)	DPPH (%)	DPPH _e (%)	ABTS (%)	ABTS _e (%)	β -C (µg/mL)	β -C _e (µg/mL)	Cr (µg/mL)	Cr _e (µg/mL)
-1 (37.3)	-1 (6.9)	73.9	63.9	119.6	188.8	7.50	6.39	5.90	4.67	0.056	-0.025	0.97	0.07
1 (72.7)	-1 (6.9)	86.0	79.1	119.2	141.6	9.55	9.27	1.32	2.20	0.019	-0.025	0.33	1.22
-1 (37.3)	1 (11.1)	73.4	70.9	190.7	188.8	7.39	6.39	3.62	2.20	0.197	0.532	7.42	5.09
1 (72.7)	1 (11.1)	79.9	86.1	143.7	141.6	9.26	9.27	3.98	4.67	0.136	0.532	0.67	0.13
-1.41 (30)	0 (9)	44.2	51.8	279.6	245.8	5.68	6.93	1.69	3.41	0.052	-0.096	0.50	2.97
1.41 (80)	0 (9)	74.1	73.3	179.5	179.2	11.03	10.98	4.58	3.41	0.061	-0.096	0.34	0.28
0 (55)	-1.41 (6)	71.9	82.5	136.0	117.4	6.69	6.75	3.52	3.47	0.057	0.208	0.42	0.24
0 (55)	1.41 (12)	96.3	92.3	113.3	117.4	5.61	6.75	2.88	3.47	1.448	0.993	1.15	3.01
0 (55)	0 (9)	71.3	74.5	109.3	117.4	11.51	12.07	5.42	5.10	0.151	0.079	1.81	1.63
0 (55)	0 (9)	77.1	74.5	106.3	117.4	12.74	12.07	4.77	5.10	0.075	0.079	0.79	1.63
0 (55)	0 (9)	73.0	74.5	133.5	117.4	10.27	12.07	5.39	5.10	0.071	0.079	0.64	1.63
0 (55)	0 (9)	76.4	74.5	115.5	117.4	13.30	12.07	4.30	5.10	0.075	0.079	2.91	1.63
0 (55)	0 (9)	74.9	74.5	122.2	117.4	12.57	12.07	5.61	5.10	0.017	0.079	2.00	1.63

Table S3. Summary of the experimental (IACE, IC₅₀, DPPH, ABTS, β-C and Cr) and expected values (IACE_p, IC_{50p}, DPPH_p, ABTS_p, β-C_p and Cr_p) for the antihypertensive and antioxidant activities produced in the *S. canicula* hydrolysates obtained by esperase. X₁: Temperature (°C) and X₂: pH. Natural values of experimental conditions are in brackets.

Independent variables		Antihypertensive activities				Antioxidant activities							
X ₁ : T	X ₂ : pH	IACE (%)	IACE _e (%)	IC ₅₀ (μg/mL)	IC _{50e} (μg/mL)	DPPH (%)	DPPH _e (%)	ABTS (%)	ABTS _e (%)	β-C (μg/mL)	β-C _e (μg/mL)	Cr (μg/mL)	Cr _e (μg/mL)
-1 (37.3)	-1 (6.9)	75.2	77.9	98.9	97.2	10.04	8.97	5.81	4.22	0.035	0.034	2.02	1.00
1 (72.7)	-1 (6.9)	70.8	70.9	153.5	285.9	13.96	13.58	2.91	4.22	0.050	0.034	0.83	1.00
-1 (37.3)	1 (11.1)	68.9	77.9	181.5	97.2	13.25	13.58	4.50	4.22	0.038	0.034	0.53	1.00
1 (72.7)	1 (11.1)	73.5	70.9	153.3	285.9	7.94	8.97	4.24	4.22	0.042	0.034	0.45	1.00
-1.41 (30)	0 (9)	83.5	79.3	87.5	137.7	13.00	11.53	3.17	4.43	0.045	0.034	1.00	1.00
1.41 (80)	0 (9)	63.6	69.5	602.5	403.7	10.02	11.53	5.38	4.43	0.034	0.034	1.10	1.00
0 (55)	-1.41 (6)	70.6	74.4	237.7	111.4	10.20	11.07	4.21	4.04	0.057	0.034	1.07	1.02
0 (55)	1.41 (12)	71.2	74.4	249.4	111.4	11.89	11.07	3.57	4.04	0.003	0.034	1.07	1.02
0 (55)	0 (9)	73.8	74.4	180.0	111.4	14.50	16.02	7.42	7.30	0.037	0.034	2.17	2.23
0 (55)	0 (9)	74.2	74.4	134.3	111.4	16.26	16.02	6.77	7.30	0.036	0.034	3.00	2.23
0 (55)	0 (9)	73.9	74.4	90.2	111.4	17.26	16.02	8.39	7.30	0.013	0.034	2.45	2.23
0 (55)	0 (9)	77.5	74.4	101.3	111.4	15.85	16.02	6.30	7.30	0.055	0.034	1.55	2.23
0 (55)	0 (9)	72.7	74.4	49.6	111.4	16.22	16.02	7.61	7.30	0.029	0.034	2.00	2.23