Table S1. Experimental domain and coding of the independent variables in the factorial design executed to study the joint effect of pH and temperature on the Alcalase hydrolysis of seabream and seabass heads.

| Coded values	Natural values	
	pH	T (^{o}C)
-1.41	6.0	30.0
-1	6.6	37.3
0	8.0	55.0
+1	9.4	72.7
+1.41	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_n = natural value of the variable to codify
ΔV_n = increment of V_n for unit of V_c
V_0 = natural value in the centre of the domain
V_c = codified value of the variable

Constant conditions
Agitation= 200 rpm
r (S:L)= 1:1
[Alcalase]= 0.5% (v/w) or 12 AU/kg of heads
time of hydrolysis= 3 h

Table S2. Fatty acids content (as % of total fatty acids) in the fish oils recovered from Sb_He, Sb_FT, Sb_Vis, Sbass_He, Sbass_FT and Sbass_Vis, complementary to the production of FPHs. Errors are the confidence intervals for n=2 (samples from independent hydrolysates) and α= 0.05.

Formula	Fatty acids	Sb_He	Sb_FT	Sb_Vis	Sbass_He	Sbass_FT	Sbass_Vis
C8:0	Caprylic acid	0.07±0.04	0.08±0.03	0.08±0.02	0.07±0.05	0.17±0.06	0.08±0.02
C10:0	Capric acid	0.08±0.02	0.10±0.02	0.11±0.03	0.09±0.02	0.21±0.05	0.09±0.04
C11:0	Undecanoic acid	0.04±0.01	0.05±0.02	0.05±0.02	0.04±0.02	0.10±0.03	0.05±0.01
C12:0	Lauric acid	0.12±0.04	0.14±0.06	0.16±0.07	0.13±0.08	0.28±0.10	0.15±0.05
C13:0	Tridecanoic acid	0.06±0.02	0.07±0.02	0.08±0.03	0.07±0.01	0.13±0.06	0.07±0.02
C14:0	Myristic acid	2.42±0.42	2.51±0.28	2.62±0.19	2.76±0.63	2.58±0.57	2.60±0.70
C14:1	Myristoleic acid	0.11±0.02	0.10±0.01	0.14±0.05	0.09±0.06	0.20±0.08	0.12±0.05
C15:0	Pentadecanoic acid	0.32±0.06	0.34±0.05	0.33±0.07	0.34±0.08	0.31±0.02	0.26±0.07
C16:0	Palmitic acid	15.36±0.90	15.21±0.58	15.27±0.49	14.73±1.35	13.22±0.98	13.59±1.01
C16:1n7c	Palmitoleic acid	4.45±0.40	4.24±0.35	5.66±0.62	4.59±0.88	4.94±0.47	4.89±0.56
C17:0	Heptadecanoic acid	0.52±0.09	0.55±0.08	0.52±0.03	0.55±0.04	0.38±0.05	0.40±0.06
C18:0	Stearic acid	2.41±0.23	2.98±0.19	3.06±0.36	3.13±0.62	2.68±0.11	2.59±0.24
C18:1n9c	Oleic acid	28.59±0.69	28.68±0.93	37.73±1.25	31.65±2.69	33.60±0.98	34.69±0.85
C18:2n6c	Linoleic acid	21.28±0.41	21.90±0.50	15.74±0.60	23.50±0.95	22.22±1.14	21.34±0.59
C20:0	Arachidic acid	0.27±0.20	0.30±0.14	0.37±0.09	0.32±0.08	0.45±0.10	0.31±0.04
C18:3n6	-Linolenic acid	0.25±0.07	0.24±0.06	0.19±0.05	0.24±0.10	0.33±0.06	0.22±0.02
C18:3n3	Linolenic acid	3.08±0.09	3.14±0.19	2.75±0.34	3.04±0.86	3.85±0.50	4.11±0.80
C20:1n9	Eicosenoic acid	1.66±0.50	1.79±0.43	1.84±0.30	2.08±0.39	1.70±0.18	1.94±0.27
C21:0	Henicosanoic acid	0.06±0.01	0.06±0.03	0.08±0.04	0.06±0.03	0.13±0.07	0.07±0.02
C20:2n6	Eicosadienoic acid	0.91±0.09	0.94±0.09	0.55±0.05	1.01±0.18	0.84±0.08	0.84±0.07
C22:0	Docosanoic acid	0.14±0.02	0.17±0.03	0.22±0.03	0.17±0.07	0.30±0.09	0.18±0.03
C20:3n6	Dihomo-linolenic acid (DGLA)	0.16±0.05	0.17±0.03	0.22±0.06	0.17±0.07	0.32±0.08	0.26±0.05
C20:3n3	Eicosatrienoic acid	0.23±0.03	0.25±0.04	0.32±0.06	0.25±0.08	0.47±0.12	0.47±0.10
C22:1n9	Erucic acid	0.20±0.02	0.22±0.03	0.43±0.05	0.25±0.09	0.43±0.09	0.43±0.07
C20:4n6	Arachidonic acid	0.61±0.12	0.56±0.10	0.55±0.08	0.47±0.16	0.42±0.06	0.38±0.09
C23:0	Tricosanoic acid	0.04±0.01	0.05±0.03	0.06±0.02	0.05±0.03	0.09±0.02	0.05±0.03

C21:4n3	Heneicosatetraenoic acid	0.61±0.18	0.68±0.20	0.76±0.12	0.62±0.26	1.23±0.17	0.85±0.19
C22:2n6	Docosadienoic acid	0.09±0.03	0.10±0.02	0.13±0.04	0.09±0.02	0.23±0.06	0.16±0.02
C20:5n3	Eicosapentaenoic acid (EPA)	4.80±0.63	4.51±0.51	2.46±0.24	3.24±0.71	2.76±0.19	3.06±0.49
C24:0	Lignoceric acid	0.09±0.01	0.11±0.03	0.13±0.04	0.11±0.02	0.19±0.03	0.11±0.03
C24:1n9	Nervonic acid	0.24±0.20	0.26±0.19	0.50±0.34	0.28±0.19	0.41±0.22	0.37±0.17
C22:6n3	Docosahexaenoic acid (DHA)	10.72±0.56	9.50±0.38	6.88±0.50	5.78±0.63	4.82±0.14	5.26±0.29
	DHA+EPA (%)	15.51±0.69	14.00±0.53	9.34±0.72	9.02±1.08	7.57±0.30	8.31±0.82
	r: ω-3 / ω-6	0.83±0.08	0.76±0.09	0.76±0.07	0.51±0.09	0.54±0.05	0.59±0.09
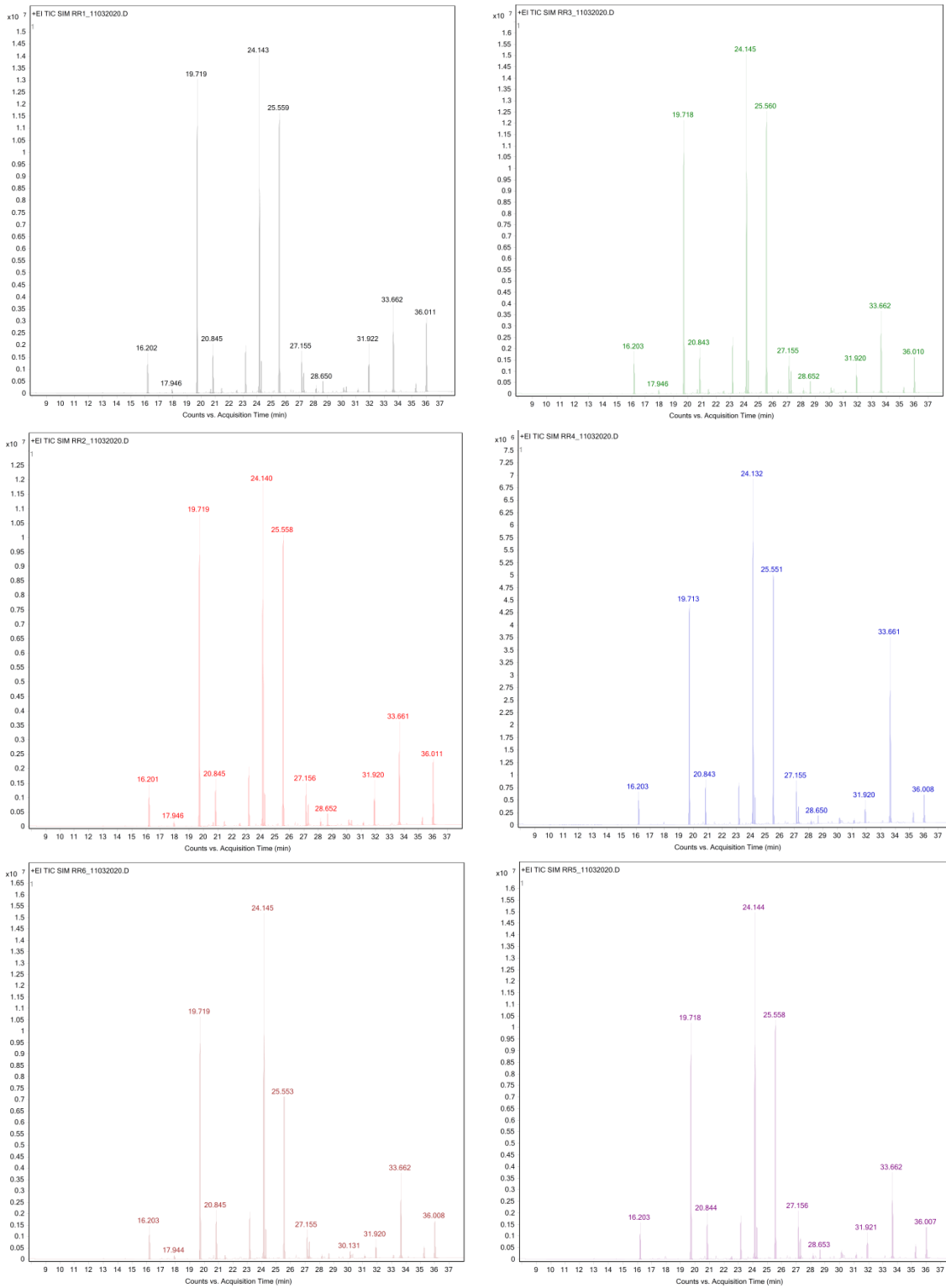
Figure S1. GC-MS chromatograms of oil extracted from Sb_He (top left), Sb_FT (middle left), Sb_Vis (bottom left), Sbass_He (top right), Sbass_FT (middle right) and Sbass_Vis (bottom right).