Table S1. Analysis of variance for response surface models for the microwave-assisted extraction and ultrasound-assisted extraction, showing linear, quadratic and interaction relations of each variable and coefficients.

Coefficients	EY	TPC	TFC	RMA	CARO	CARA	ABTS	DPPH
Microwave-assisted extraction								
Intercept, β_0	19.33	179.36	244.58	67.37	46.67	134.53	308.90	208.83
Linear								
β_1	-2.22***	20.01***	17.66***	5.37***	9.64***	77.30***	34.24***	24.28***
β_2	0.96	-0.14	2.54	0.69	-0.16	0.35	12.09*	2.37
β_3	0.65	-1.63	-6.39	-3.26**	-9.62***	-13.53*	-8.13	-3.33
β_4	2.27***	5.93*	-4.57	1.48	2.79	-0.92	-7.99	-3.79
Quadratic								
β_1^2	0.63	-9.42*	-0.43	0.01	-12.28**	15.80	-17.83*	-36.52***
β_2^2	2.20**	-1.20	2.72	2.27	-1.98	13.55	6.60	-3.00
β_3^2	1.57*	5.79	3.88	1.57	-5.30	8.11	-7.38	-17.76***
β_4^2	-0.30	-0.28	4.41	-0.17	-3.88	23.56**	-6.75	-4.78
Interaction								
β_{12}	-0.86	0.28	7.39	3.30*	-2.18	7.50	3.15	4.12
β_{13}	0.51	-5.13	-2.82	-1.00	-1.58	4.51	-6.93	-2.45
β_{14}	0.61	2.90	-0.68	1.55	1.72	-6.45	-2.90	-3.43
β_{23}	-0.25	-1.77	-6.08	0.80	-3.48	-11.26	-0.70	4.13
β_{24}	1.03	3.82	6.06	0.03	1.42	-0.30	5.62	-9.10
β_{34}	-0.12	-3.46	0.95	-0.18	-1.72	9.83	10.90	-8.40
Mean	21.15	177.09	249.28	69.00	36.26	161.65	297.63	253.25
C.V. (%)	7.69	5.09	4.70	4.36	20.61	10.88	5.18	3.44
R^2	0.85	0.87	0.76	0.85	0.83	0.96	0.88	0.95
R^2 (adj)	0.69	0.72	0.49	0.67	0.63	0.90	0.74	0.89
F-value (model)	5.05*	5.69**	2.75*	4.80**	4.20**	18.18***	6.34***	15.60***
F-value (Lack-of-fit)	2.73	10.88	14.29	2.23	15.52	2.19	5.38	3.37
Ultrasound-assisted extraction								
Intercept, β_0	20.93	177.90	235.71	72.35	43.59	78.95	321.63	293.66
Linear								
β_1	-1.62***	13.57***	11.80***	6.90***	14.24***	-11.61	31.82***	26.92***
β_2	1.19***	-1.54	1.07	3.92***	1.99*	3.44	3.21	0.38
β_3	0.83**	4.05*	5.64*	1.79*	-2.66**	4.97	13.03***	11.51***
β_4	0.41	-5.09**	-8.53**	1.48	-0.85	-12.71	-7.75*	-14.31***
Quadratic								
β_1^2	0.36	-19.05***	-24.14***	-0.52	-7.53***	13.37	-26.15***	-24.48***
β_2^2	1.12**	6.31*	16.18***	0.23	1.03	-12.58	25.11***	8.49**
β_3^2	0.36	-0.64	-0.57	-6.63***	-1.30	-10.75	3.09	-2.07
β_4^2	-0.25	0.93	4.08	-0.67	2.57*	8.90	4.30	-1.29
Interaction								
β_{12}	0.03	1.34	4.12	0.13	1.07	17.69	-4.50	-1.58
β_{13}	-0.20	-0.47	-3.02	1.59	-1.08	-13.81	-6.95	1.38
β_{14}	-0.33	-15.10***	-8.05	2.62	-0.94	-8.48	-20.10**	-22.27***
β_{23}	0.30	0.02	0.06	-2.71	-0.41	9.06	7.25	-2.30
β_{24}	0.30	-3.87	-2.07	0.45	0.70	-40.37*	-4.33	0.04
β_{34}	0.30	-8.74**	-10.15*	2.80	-0.37	13.13	-20.12**	-8.19*
Mean	21.64	172.37	233.73	68.98	41.26	78.48	324.46	285.06
C.V. (%)	3.81	3.04	3.34	4.04	6.04	8.07	3.13	2.17
R^2	0.89	0.95	0.94	0.93	0.98	0.95	0.96	0.98
R^2 (adj)	0.77	0.90	0.86	0.84	0.95	0.90	0.91	0.95
F-value (model)	7.34**	18.38***	12.39***	11.04***	35.50***	5.77**	20.50***	37.23***
F-value (Lack-of-fit)	8.52	2.39	3.72	1.82	4.34	8.70	3.05	2.50

Effects are statistically significant at p * ≤ 0.05 or p ** ≤ 0.01 or p *** ≤ 0.001. (Abbreviations: β_1, ethanol concentration; β_2, time extraction; β_3, temperature extraction; β_4, solvent-to-solid ratio; EY, extraction yield; TPC. total phenolic content (mg GAE/g); TFC. total flavonoid content (mg CATE/g); RMA. rosmarinic acid (mg/g); CARO. carnasol (mg/g); CARA. carnosic acid (mg/g); ABTS. ABTS radical scavenging activity (mg TE/g); DPPH. DPPH radical scavenging activity (mg TE/g)
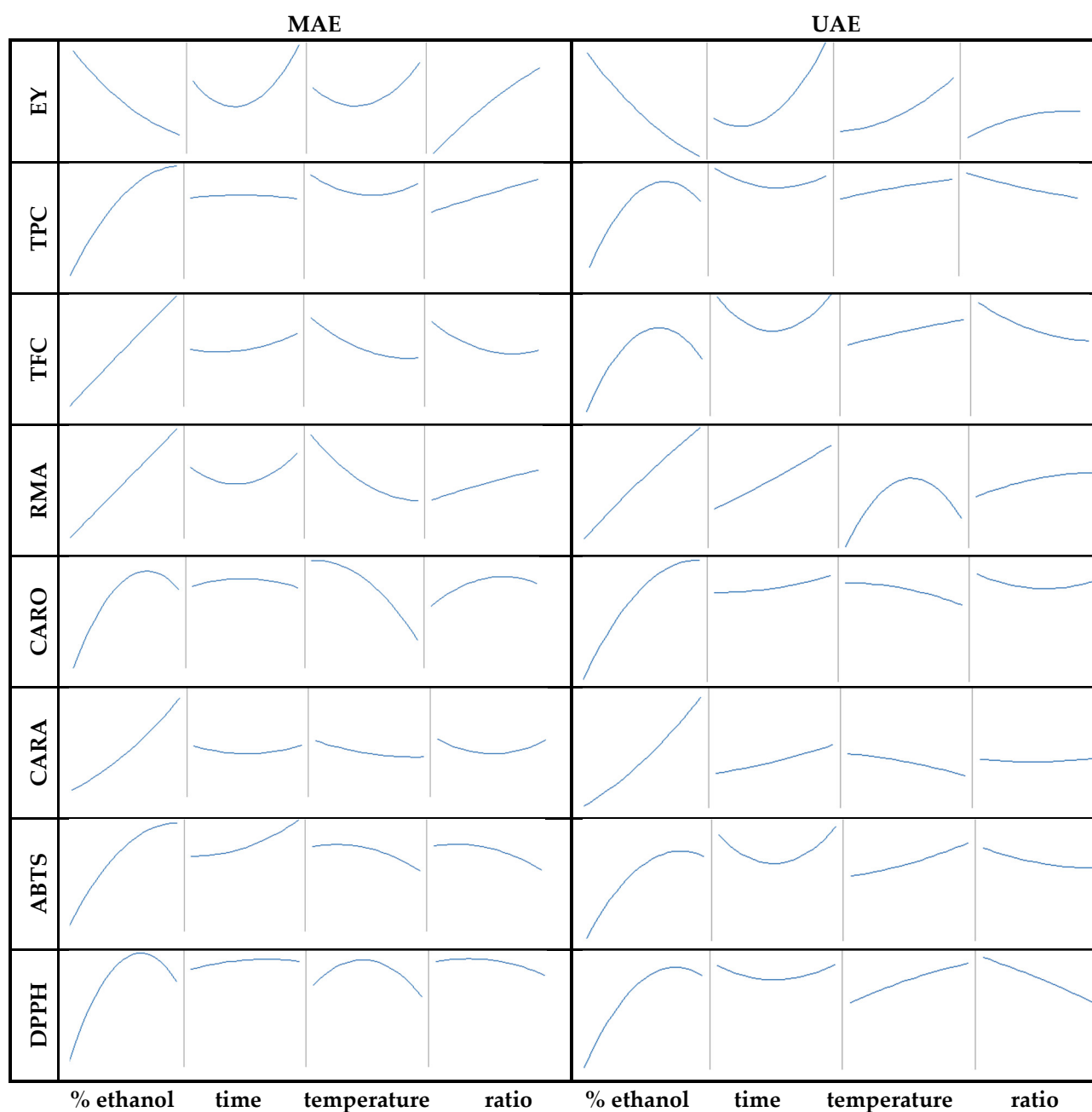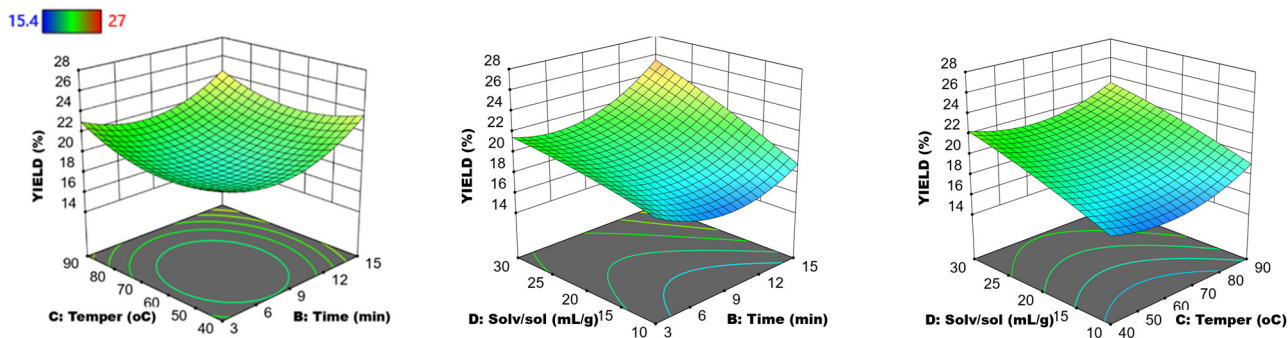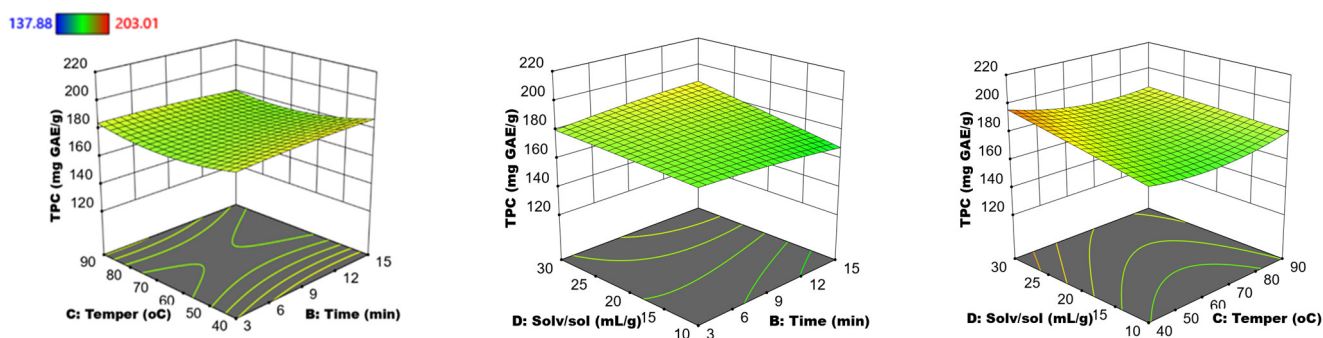
Figure S1. Main effects of the MAE and UAE parameters (% ethanol, time and temperature extraction as well as solvent/solid ratio) for extraction yield (EY), total phenolic content (TPC), total flavonoid content (TFC), rosmarinic acid (RMA), carnosol (CARO), carnosic acid (CARA), ABTS and DPPH radical scavenging activity.
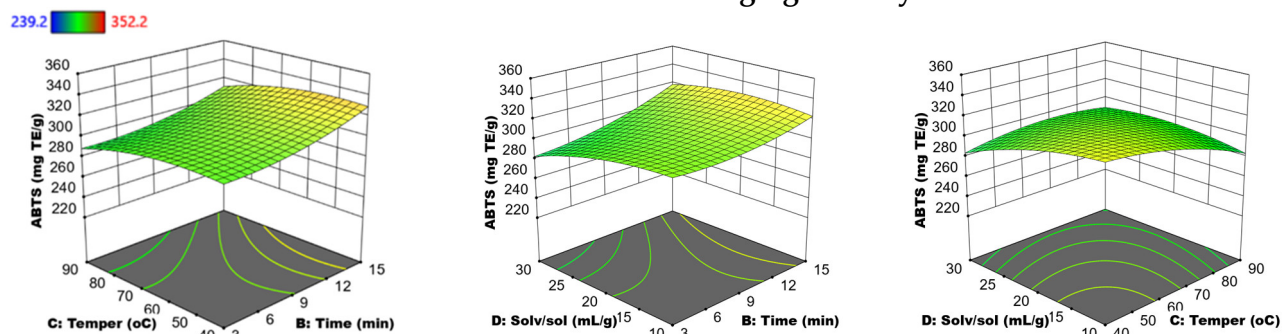
Extraction Yield

Total Phenolic Content

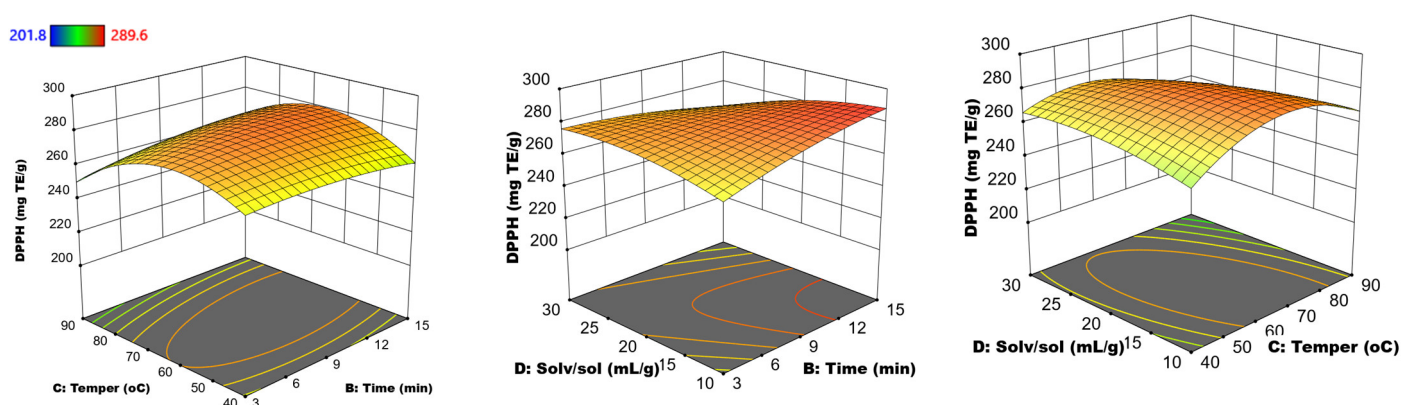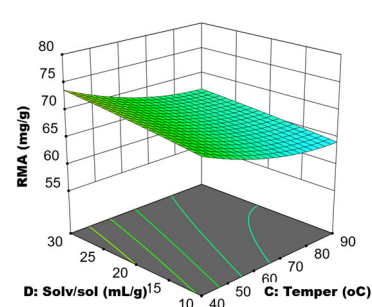# ABTS Radical Scavenging Activity
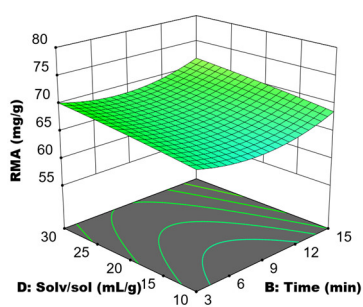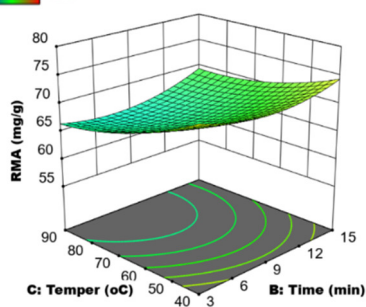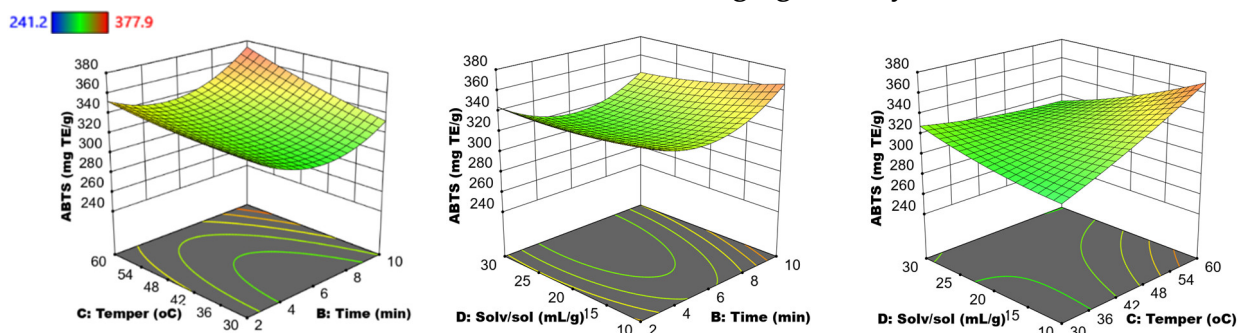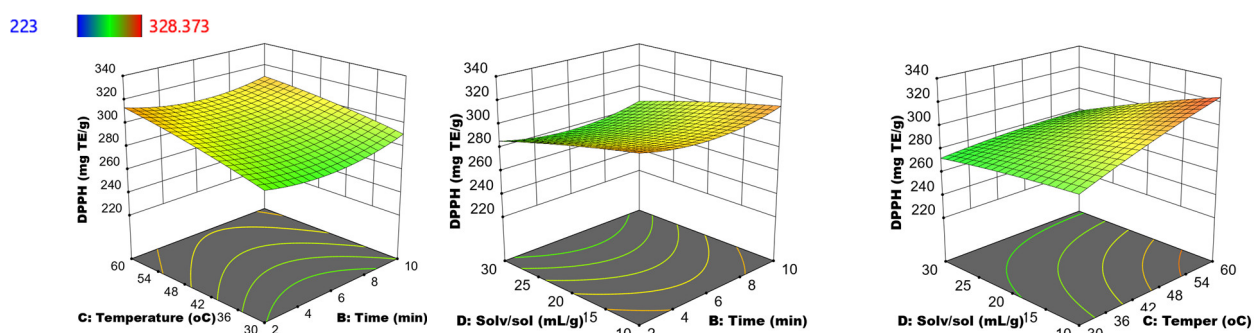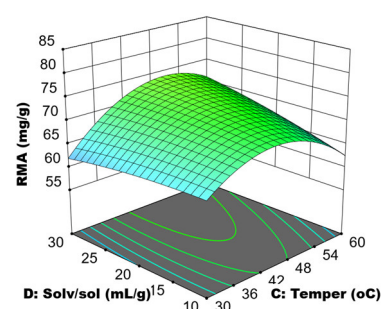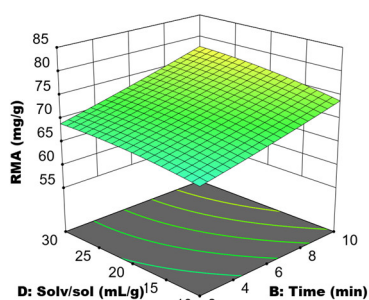

DPPH Radical Scavenging Activity

Figure S2. Response surface plots showing combined effects of the MAE parameters (time-temperature, time-solvent/solid, temperature-solvent/solid) for extraction yield (EY), total phenolic content (TPC), ABTS and DPPH radical scavenging activity, by keeping the two independent variables constant at medium levels.
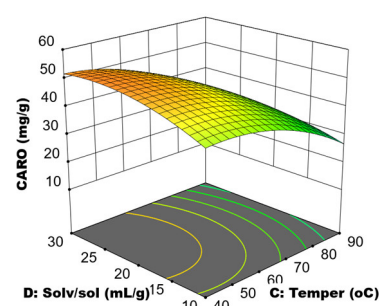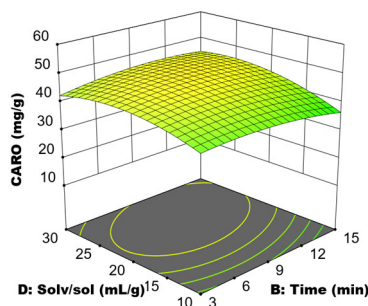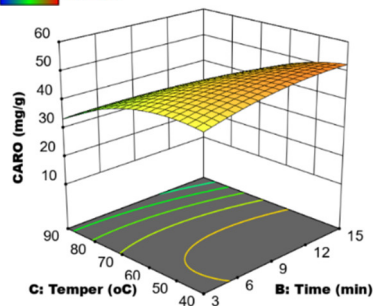
Rosmarinic Acid

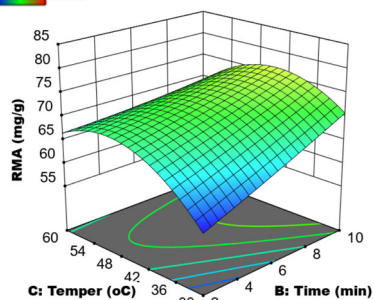# Carnosol
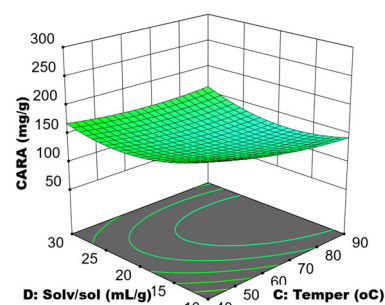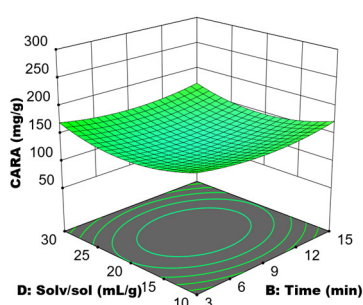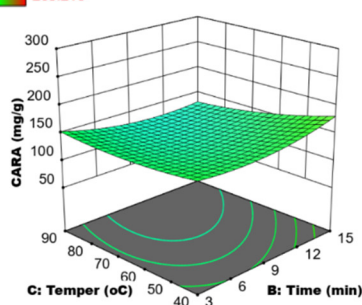
Carnosic Acid

Figure S3. Response surface plots showing combined effects of the MAE parameters time-temperature, time-solvent/solid, temperature-solvent/solid) for rosmarinic acid (RMA), carnosol (CARO) and carnosic acid (CARA), by keeping the two independent variables constant at medium levels.

Extraction Yield
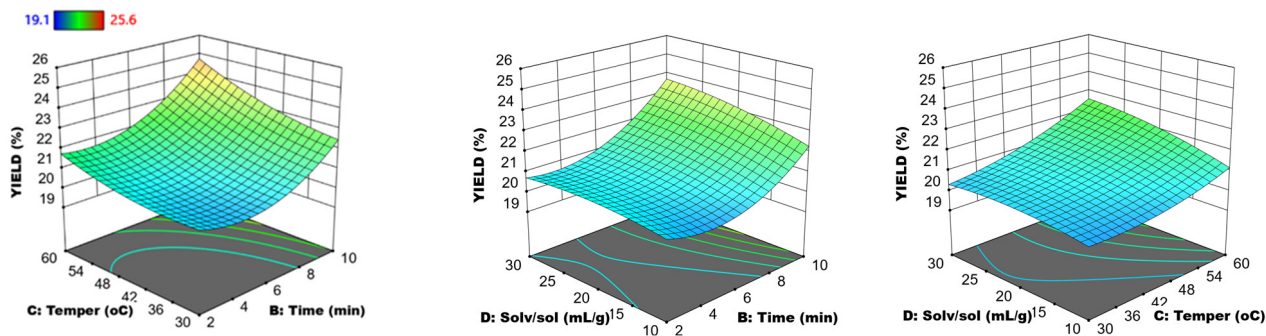
Total Phenolic Content
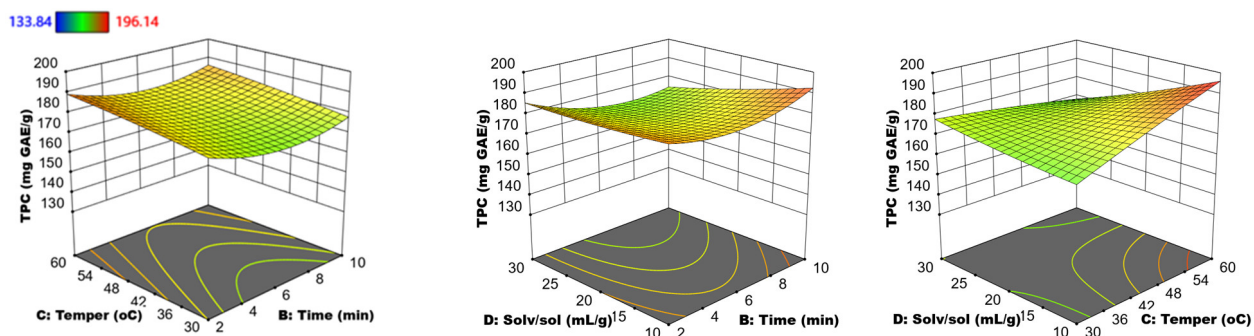
ABTS Radical Scavenging Activity

DPPH Radical Scavenging Activity

Figure S4. Response surface plots showing combined effects of the UAE parameters (time-temperature, time-solvent/solid, temperature-solvent/solid) for extraction yield (EY), total phenolic content (TPC), ABTS and DPPH radical scavenging activity, by keeping the two independent variables constant at medium levels.
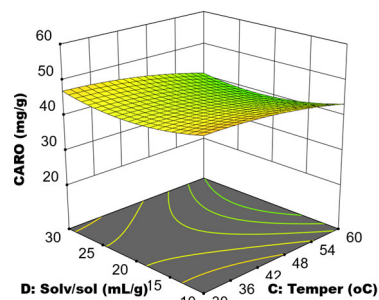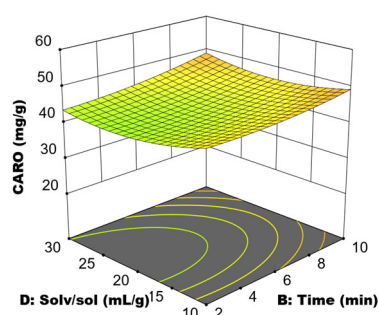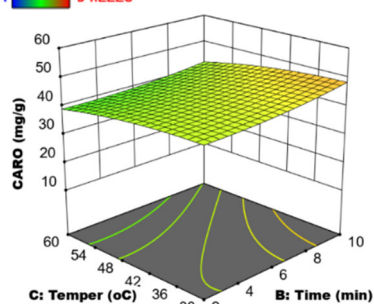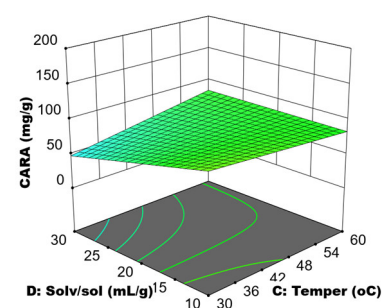
Rosmarinic Acid

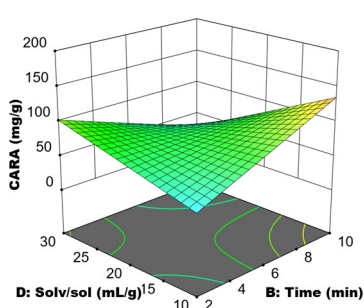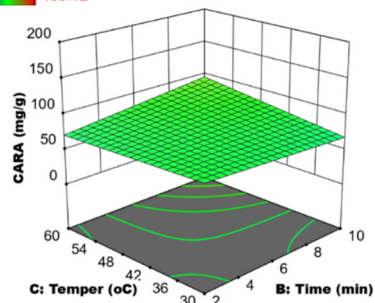# Carnosol

Carnosic Acid

Figure S5. Response surface plots showing combined effects of the UAE parameters time-temperature, time-solvent/solid, temperature-solvent/solid) for rosmarinic acid (RMA), carnosol (CARO) and carnosic acid (CARA), by keeping the two independent variables constant at medium levels.