

Integrated Sonication-assisted Deep Eutectic Solvent for Antibacterial Compounds

Extraction from Cacao Shells

Supplementary Information (SI)

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Table S1. Statistical validation model fitness

Source	Sequential <i>p</i> -value	Lack of Fit <i>p</i> -value	Adjusted R ²	Predicted R ²	Remarks
Yield of TPC					
Linear	< 0.0001	0.0692	0.8458	0.7449	
2FI	0.6984	0.0551	0.8210	0.4735	
Quadratic	0.0176	0.1780	0.9562	0.7761	Suggested
Cubic	0.1780		0.9866		Aliased
Yield of TFC					
Linear	0.0028	0.0555	0.6287	0.3889	
2FI	0.6176	0.0460	0.5866	-0.2002	
Quadratic	0.0005	0.5881	0.9769	0.9187	Suggested
Cubic	0.5881		0.9742		Aliased

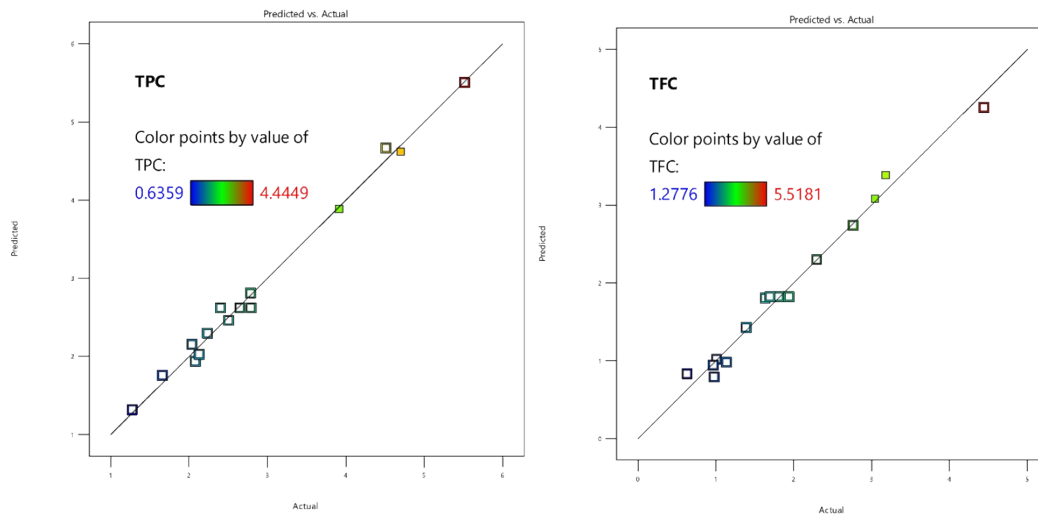


Fig. S1. Predictive performance of the regression model for TPC and TFC responses.

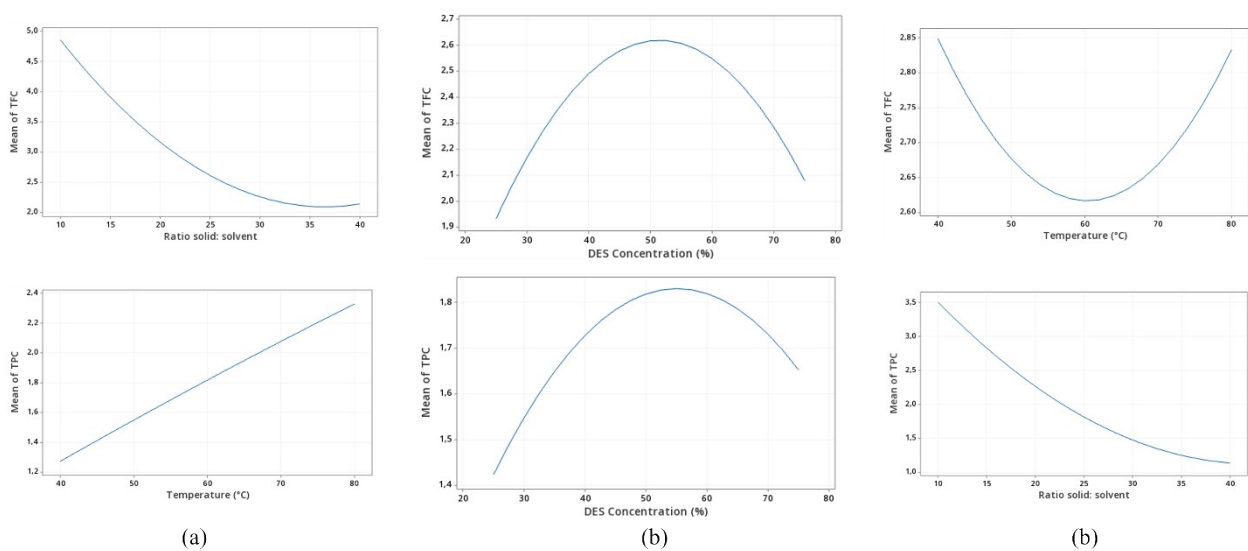
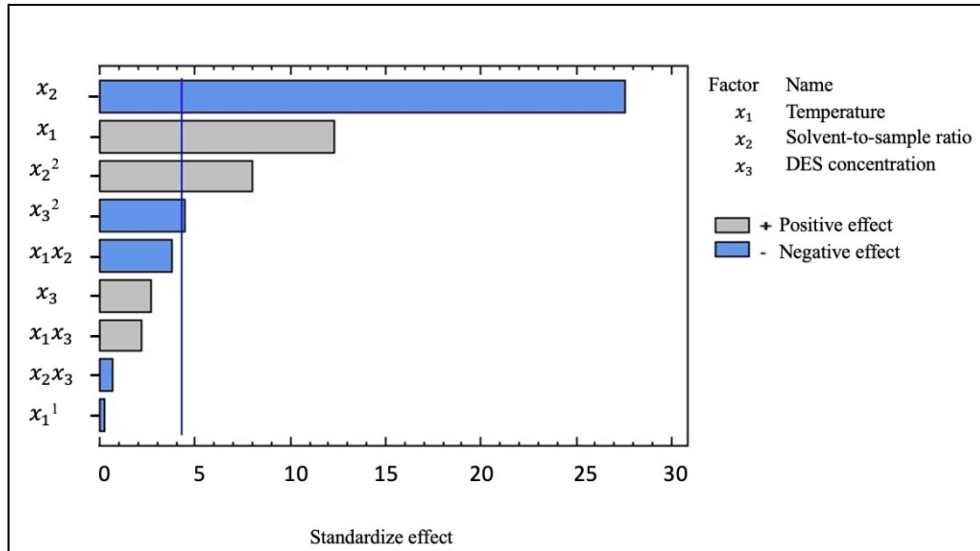
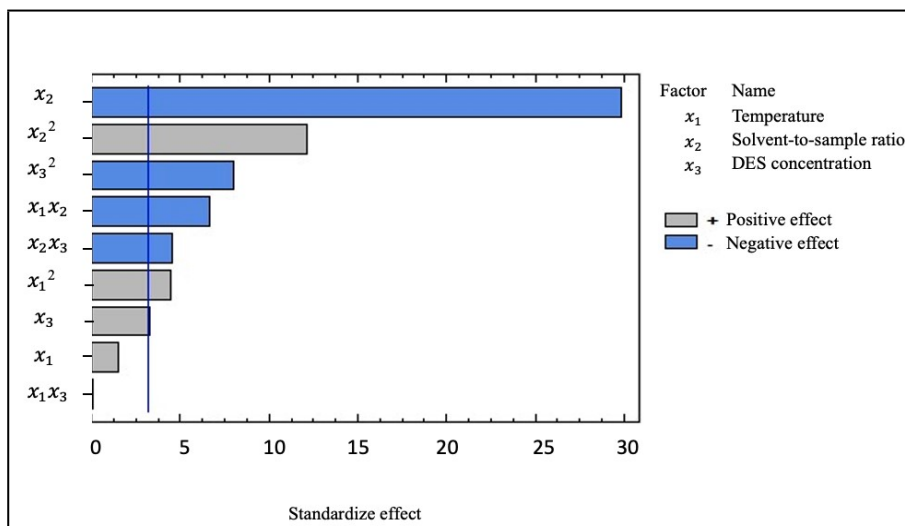


Fig. S2. Effect of individual extraction parameters on total phenolic content (TPC) and total flavonoid content (TFC). (A) Extraction time (min); (B) Temperature (°C); (C) DES concentration (%).



(a)



(b)

Fig. S3. The main, interaction, and quadratic effects of the UAE variables on TPC levels (a) and TFC levels in the extracts (b). The blue line across the bars demonstrates that the corresponding factor has a positive (grey) or negative (blue) impact ($p < 0.05$).