Research Article

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Environmentally sustainable Analytical Quality by design RP-HPLC method for the estimation of Brilliant blue in commercial food samples employing green ultrasound assisted extraction technique

Supplementary material

Table S1: Overview of the models for ANOVA and regression analysis

Responses	*F* value	*P* value	R^2	Adjusted R^2	Predicted R^2	Adequate precision	Standard deviation	CV (%)
Retention time (*R*1)	33.32	<0.0001	0.9597	0.9309	0.8937	20.6648	0.0447	1.63
Area(*R*2)	33.24	<0.0001	0.9596	0.9307	0.8939	16.0145	27.33	10.38
Theoretical plate(*R*3)	39.22	<0.0001	0.9655	0.9409	0.8252	22.4212	1027.20	10.06
Tailing factor (*R*4)	36.34	<0.0001	0.9629	0.9364	0.8255	20.0800	0.0297	2.30

Table S2: Outcomes of AES calculation

Factors related to AES calculation	No of Pictogram	Sub total
1. Solvents		
Ethanol (0–10 ml)	2	4
Acetic acid(glacial) (<10 mL)	2	4
2. Energy consumption by instrument (HPLC uses ≤1.5 kWh per sample)	1	1
3. Occupational hazard (Analytical process hermetization)	0	0
4. Wastage and recycling (0–10 mL)	0	0
Total PP	9	
AES	(100 – 9) = 91	

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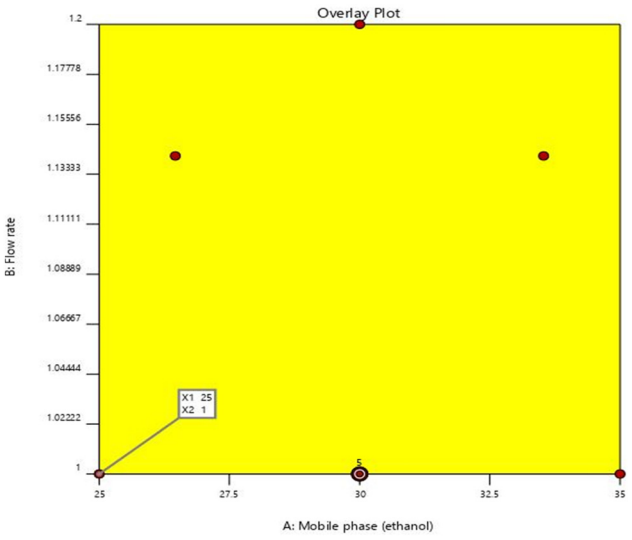

Figure S1: Overlay plot AQbD (design space).

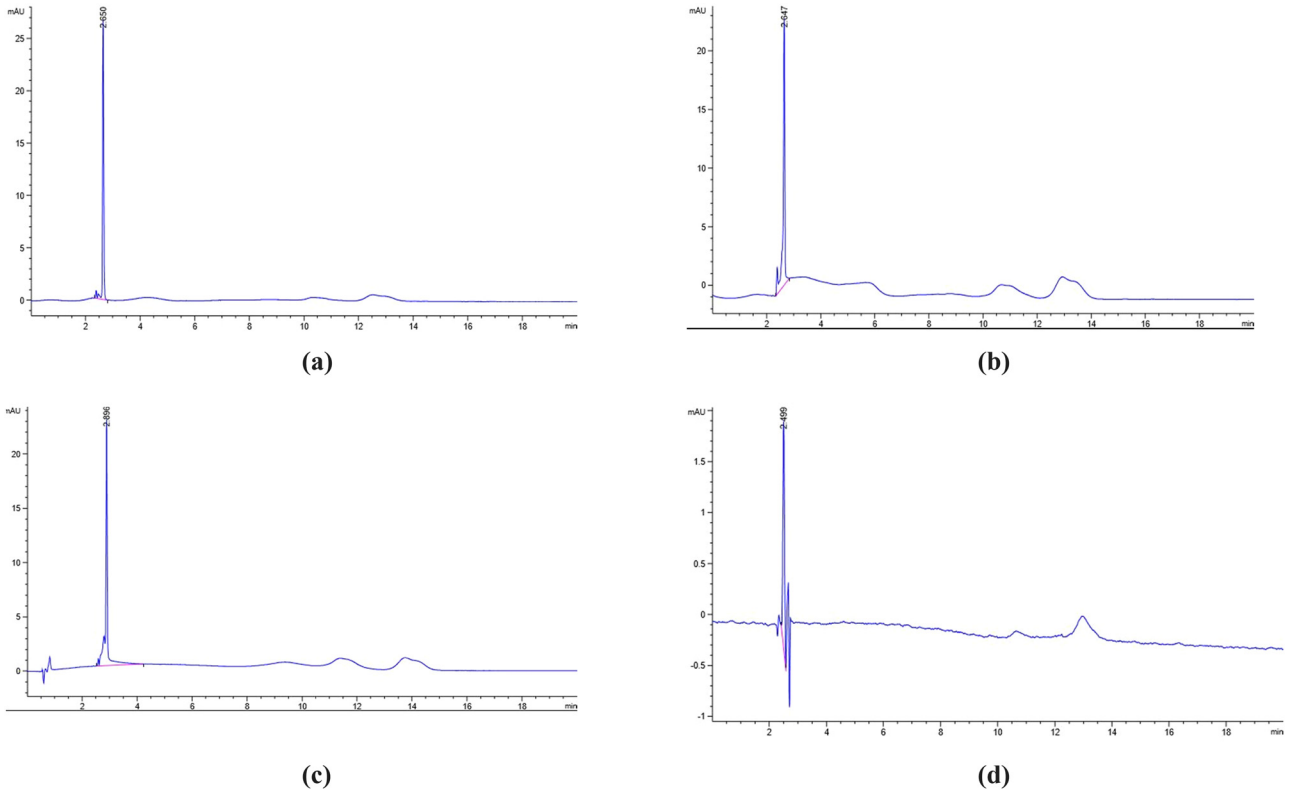

Figure S2: The chromatograms showing BB (10 µg/mL and food samples(spiked 10 µg/mL) degradation peaks for (a) thermal 30 min- standard BB (b) thermal 30 min- food sample B4 (c) thermal 30 min- food sample C8 (d) alkali degradation (0.001 N NaOH 0 min)- standard BB.