

Supplementary Materials

**Magnetic deep eutectic solvent based ultrasound-assisted liquid-liquid microextraction
method for determination of hexanal and heptanal in edible oils followed by gas
chromatography-flame ionization detection**

Shirin Babaei, Ali Daneshfar*

Tel/fax: +98-843-2227022

E-mail: daneshfara@yahoo.com; a.daneshfar@mail.ilam.ac.ir

Department of Chemistry, Faculty of Science, Ilam University, Ilam, 69315-516, Iran

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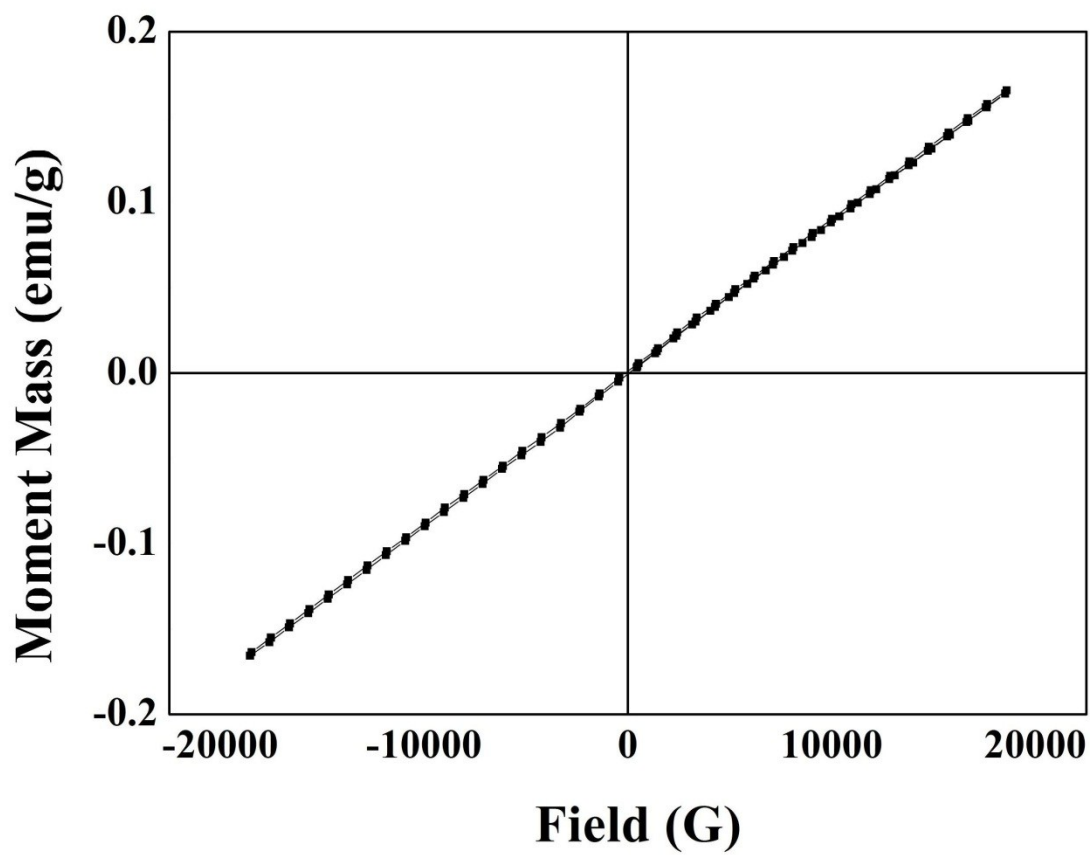


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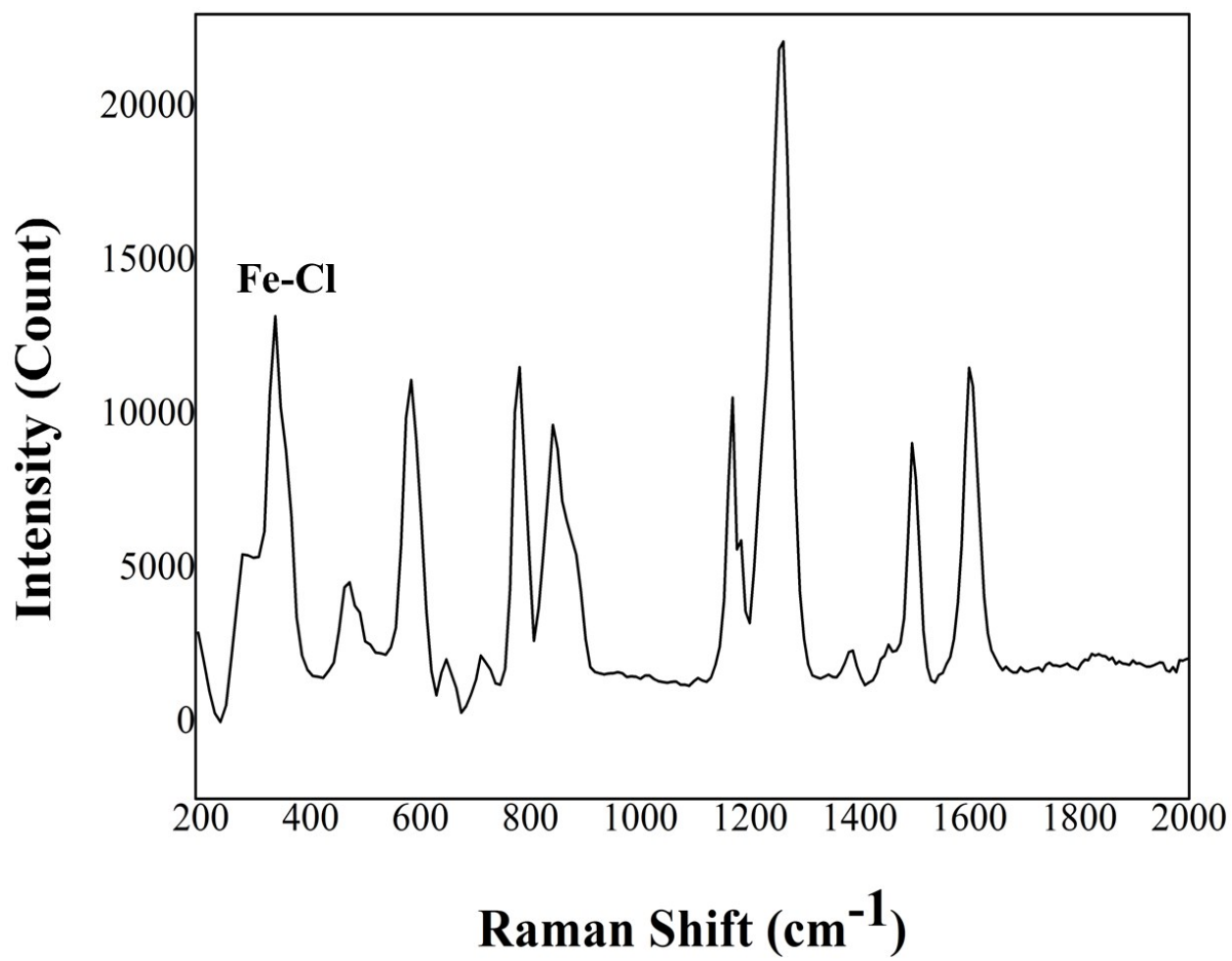


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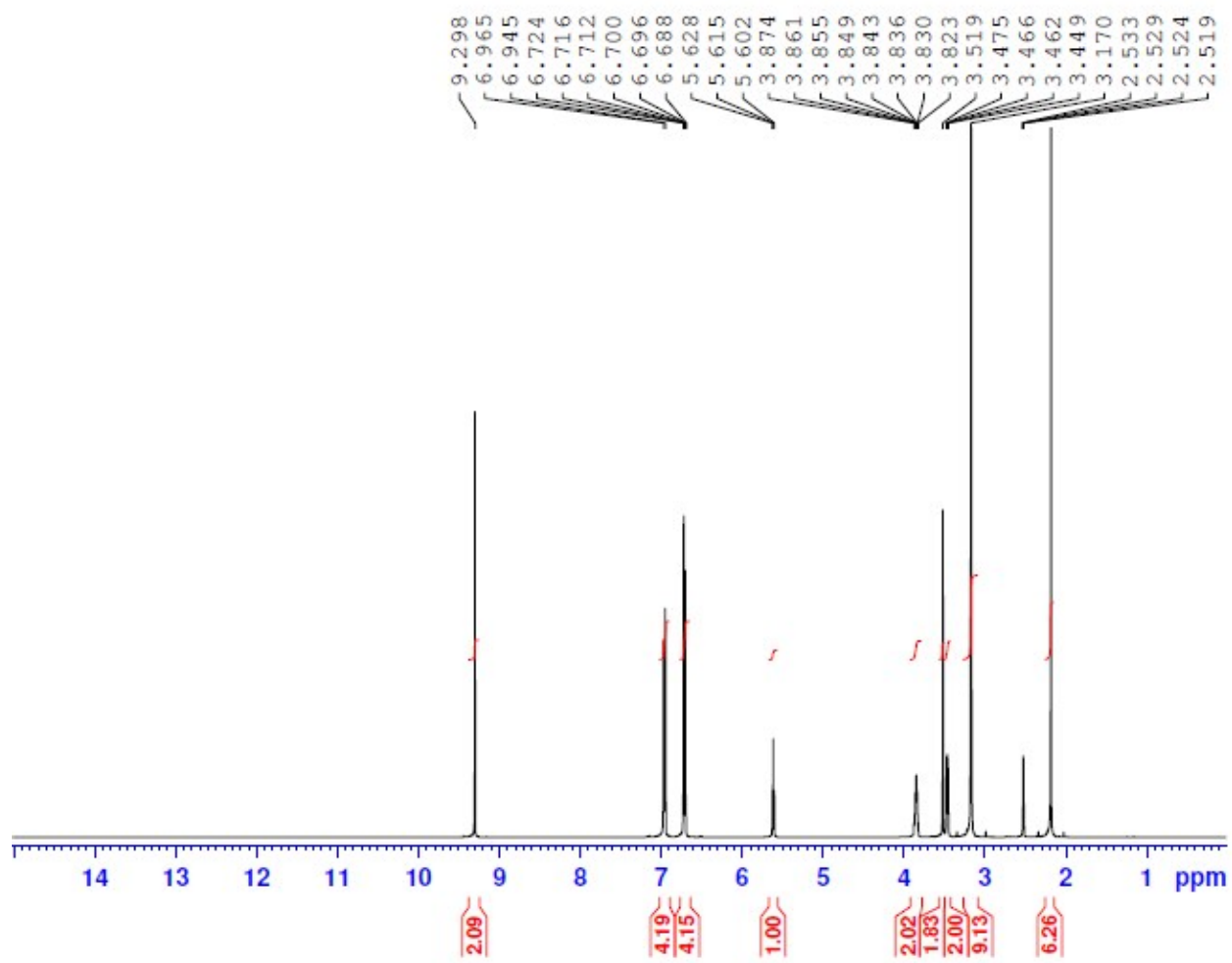


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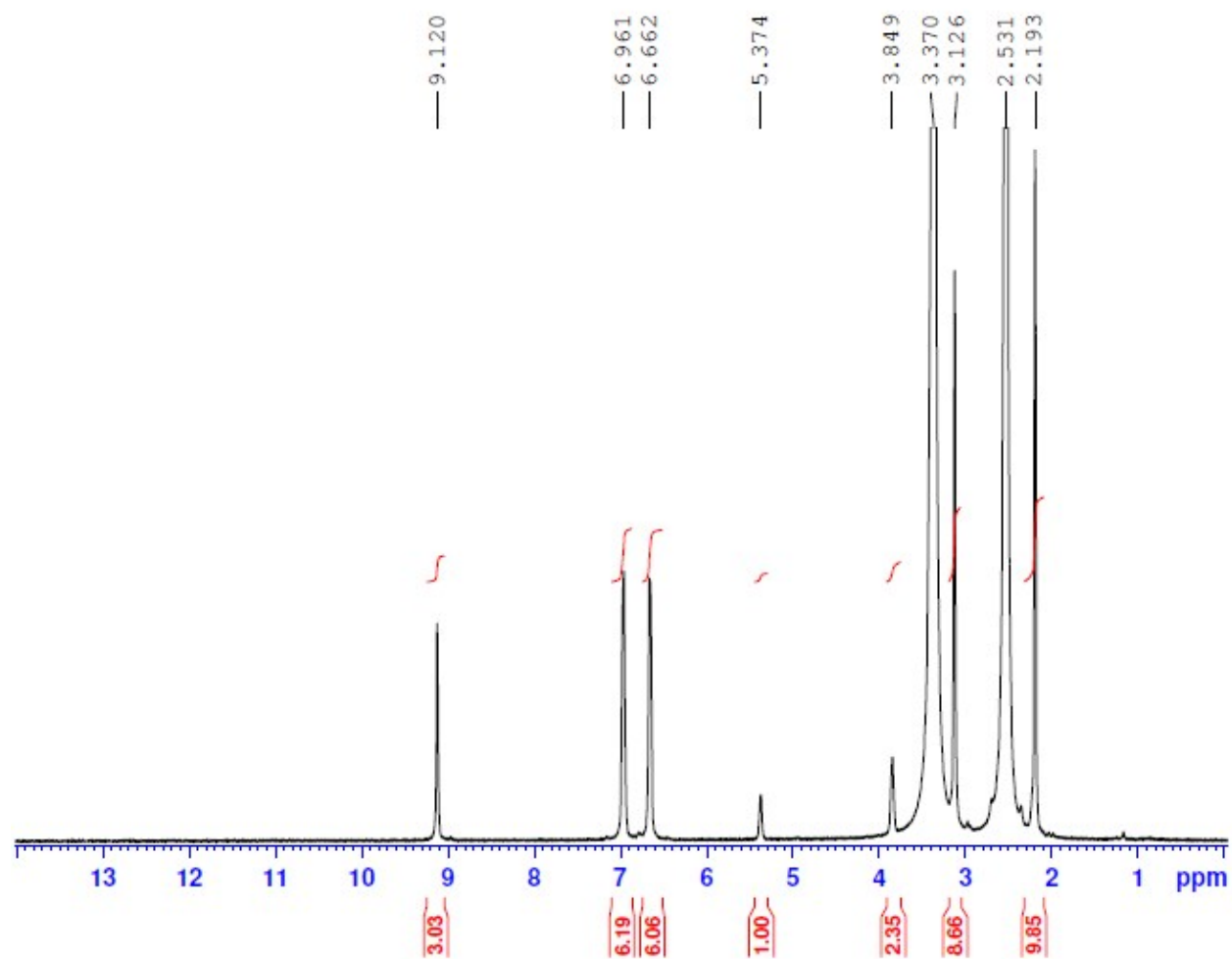
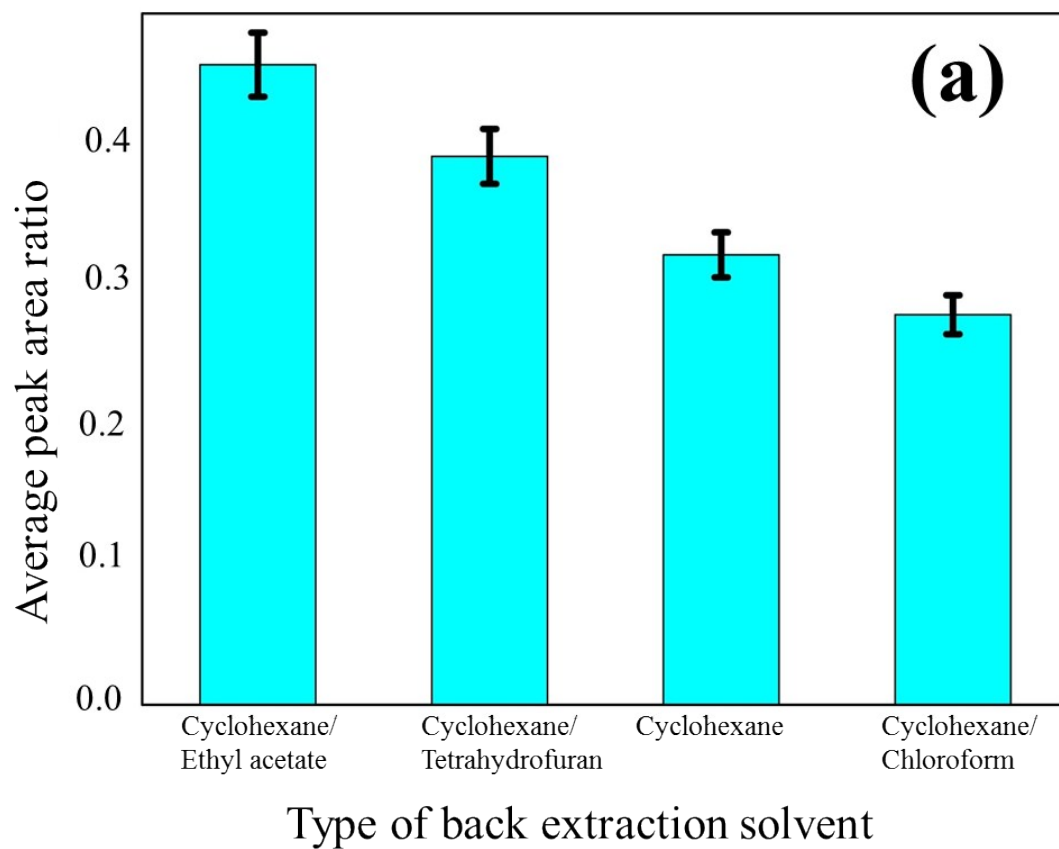


Figure (S4)



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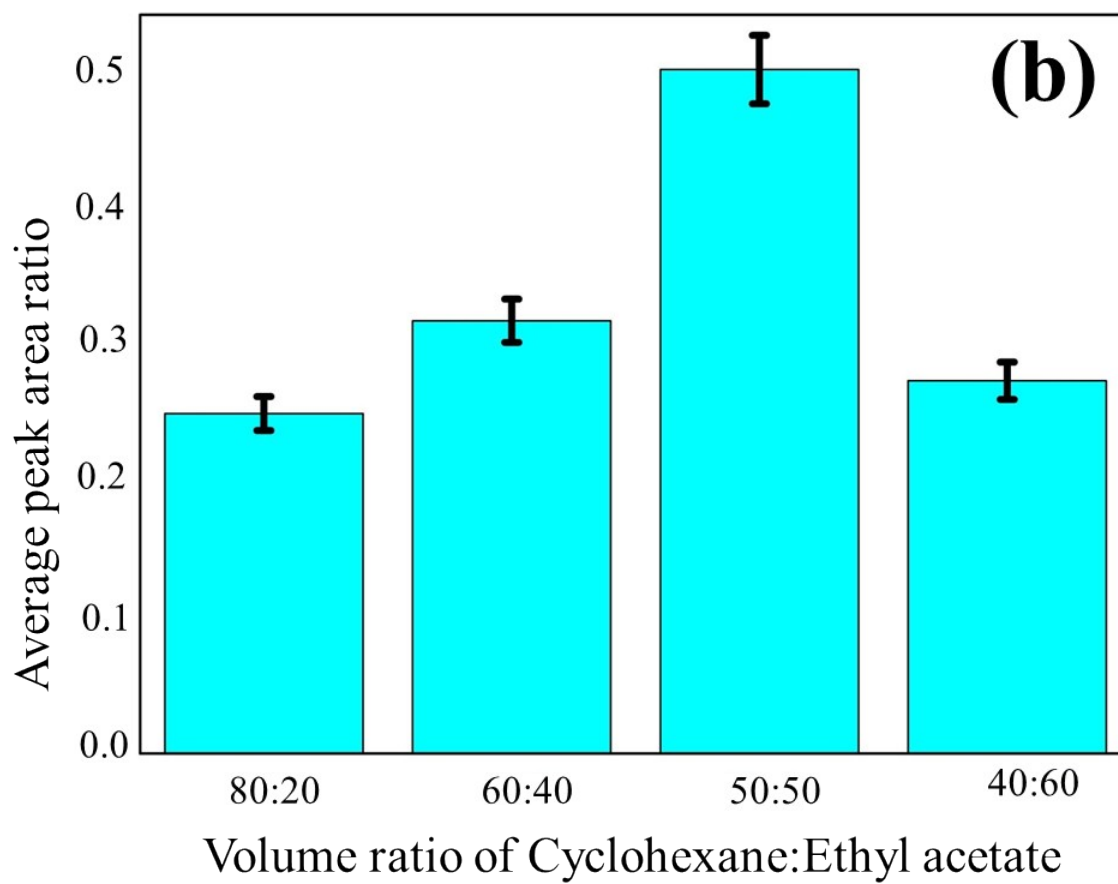


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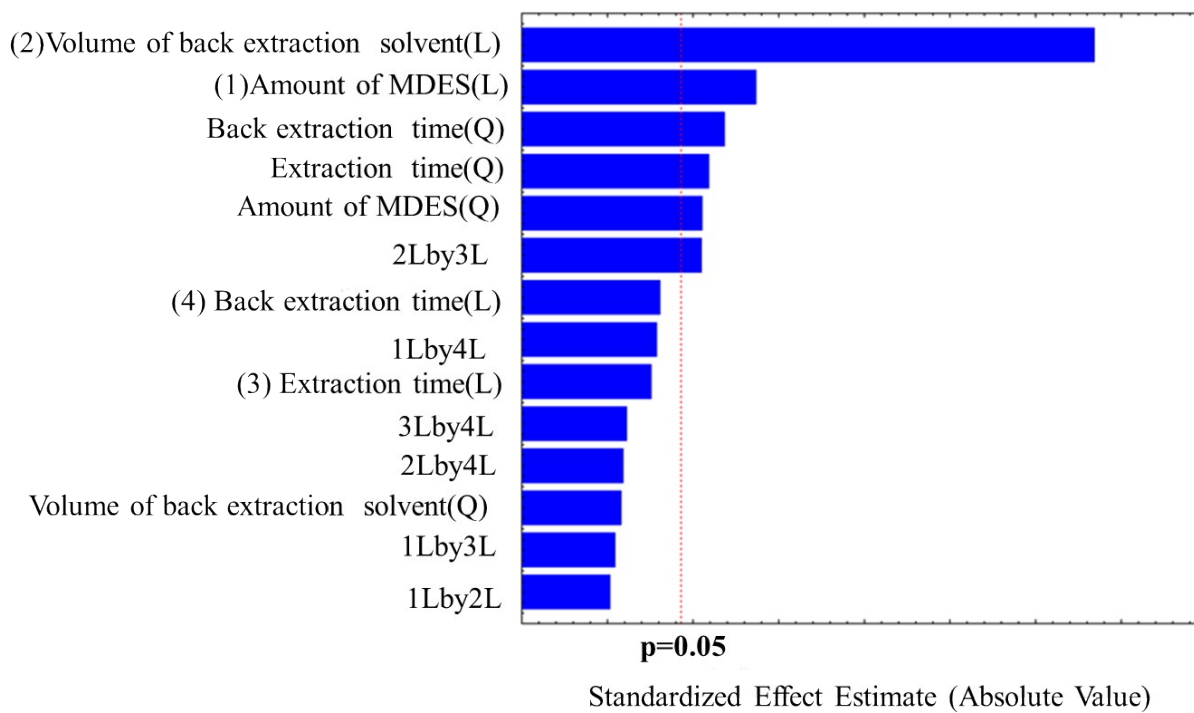
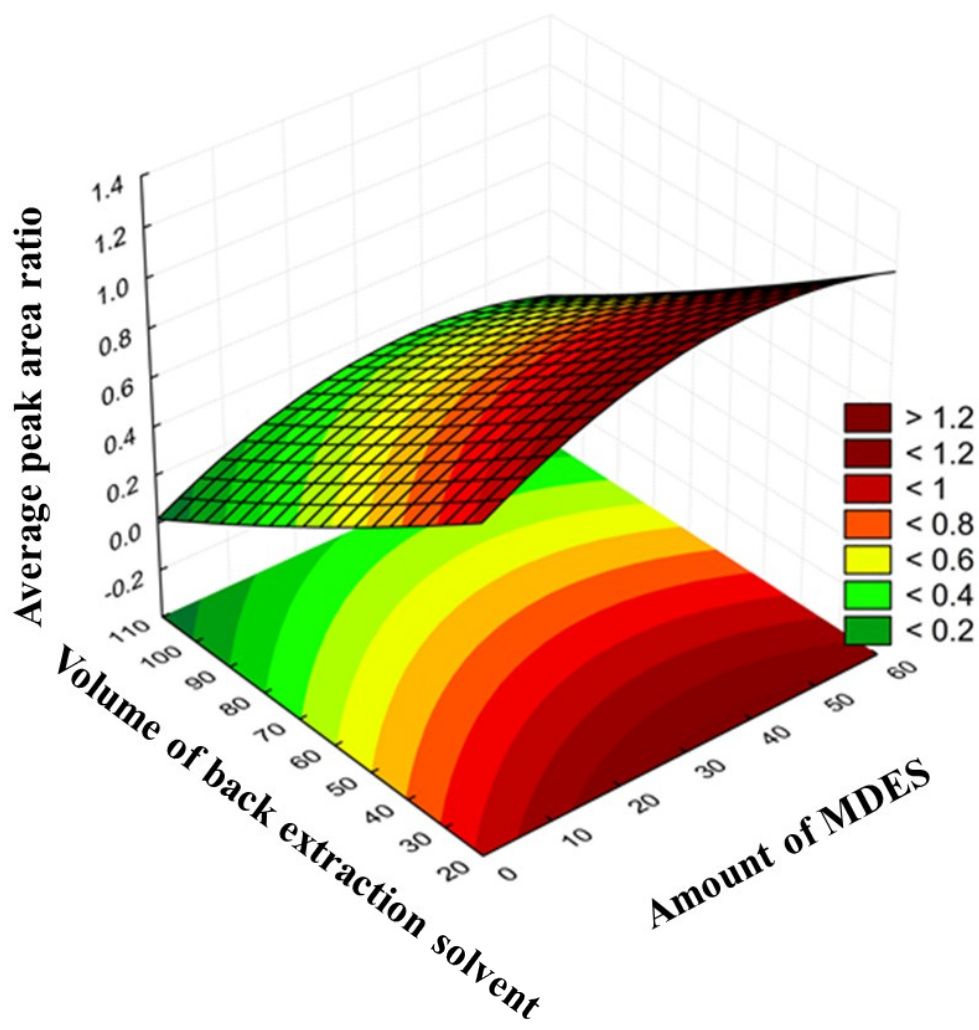
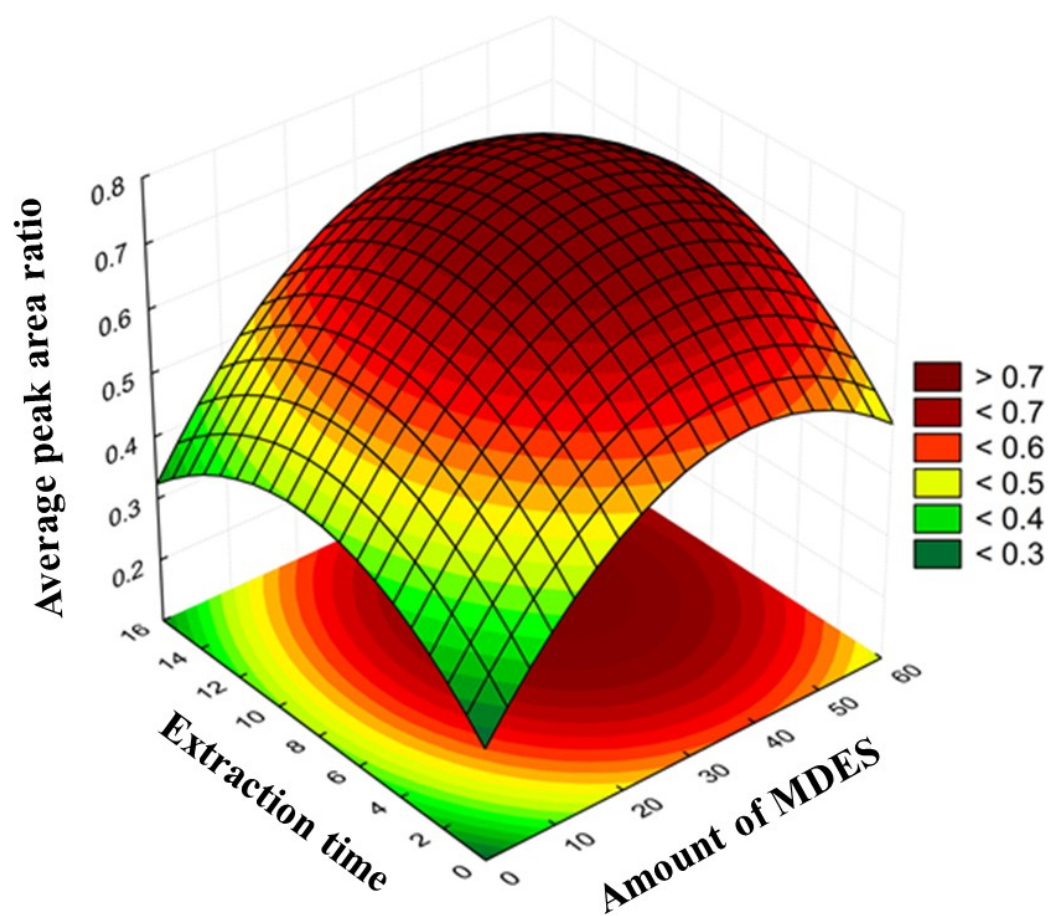


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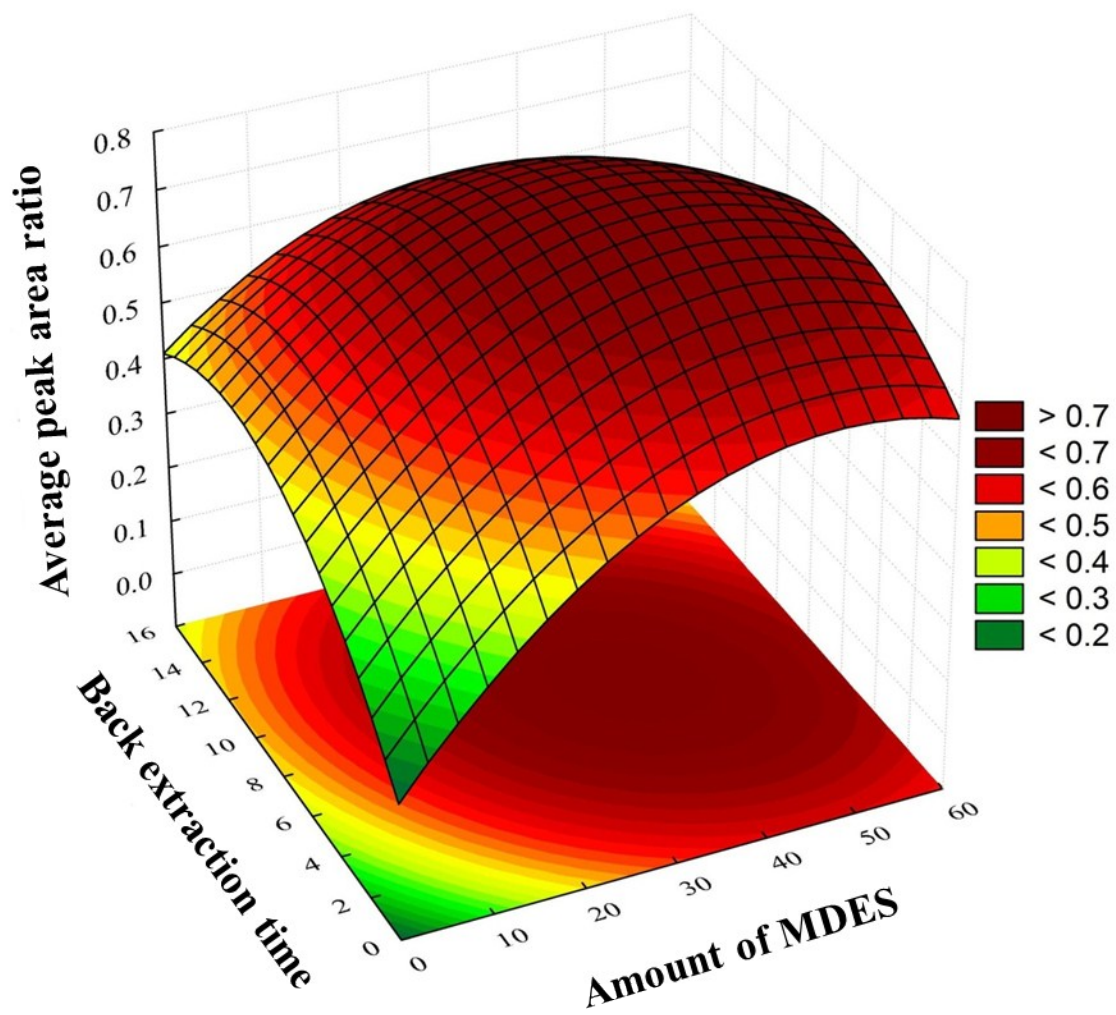


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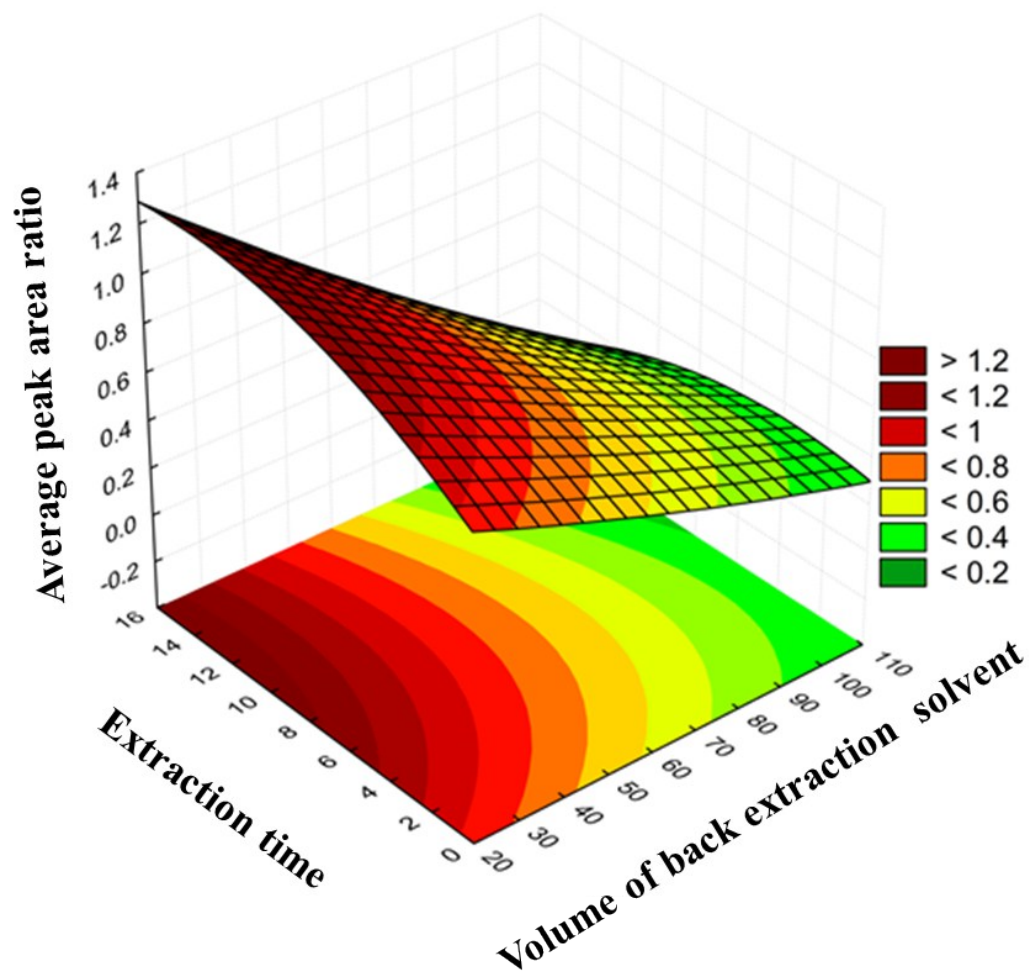
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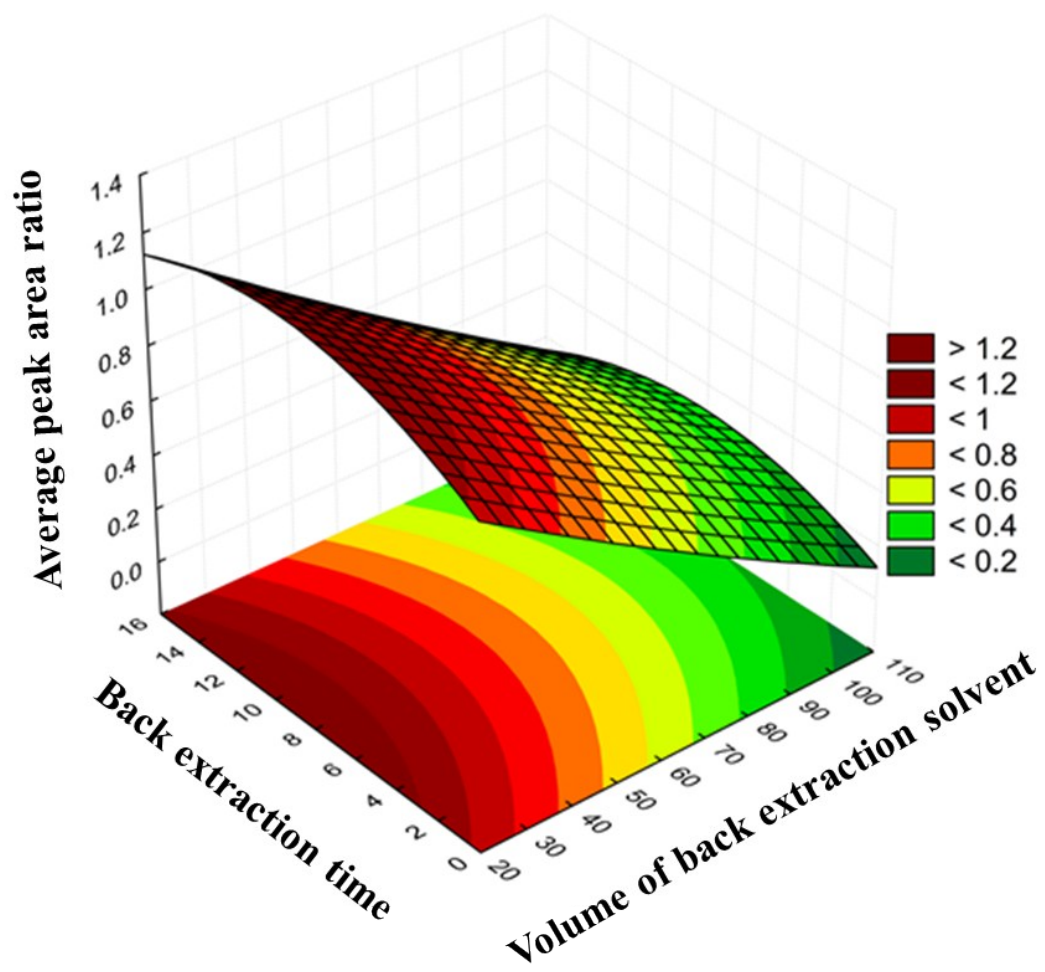
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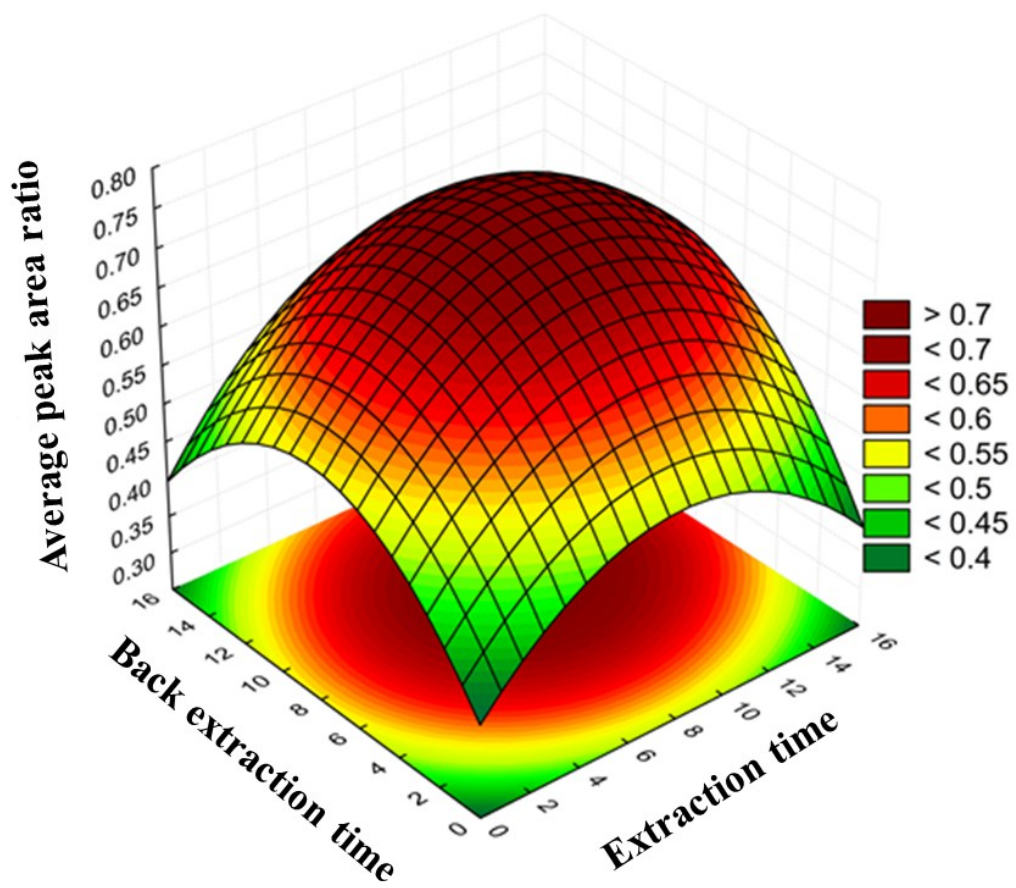


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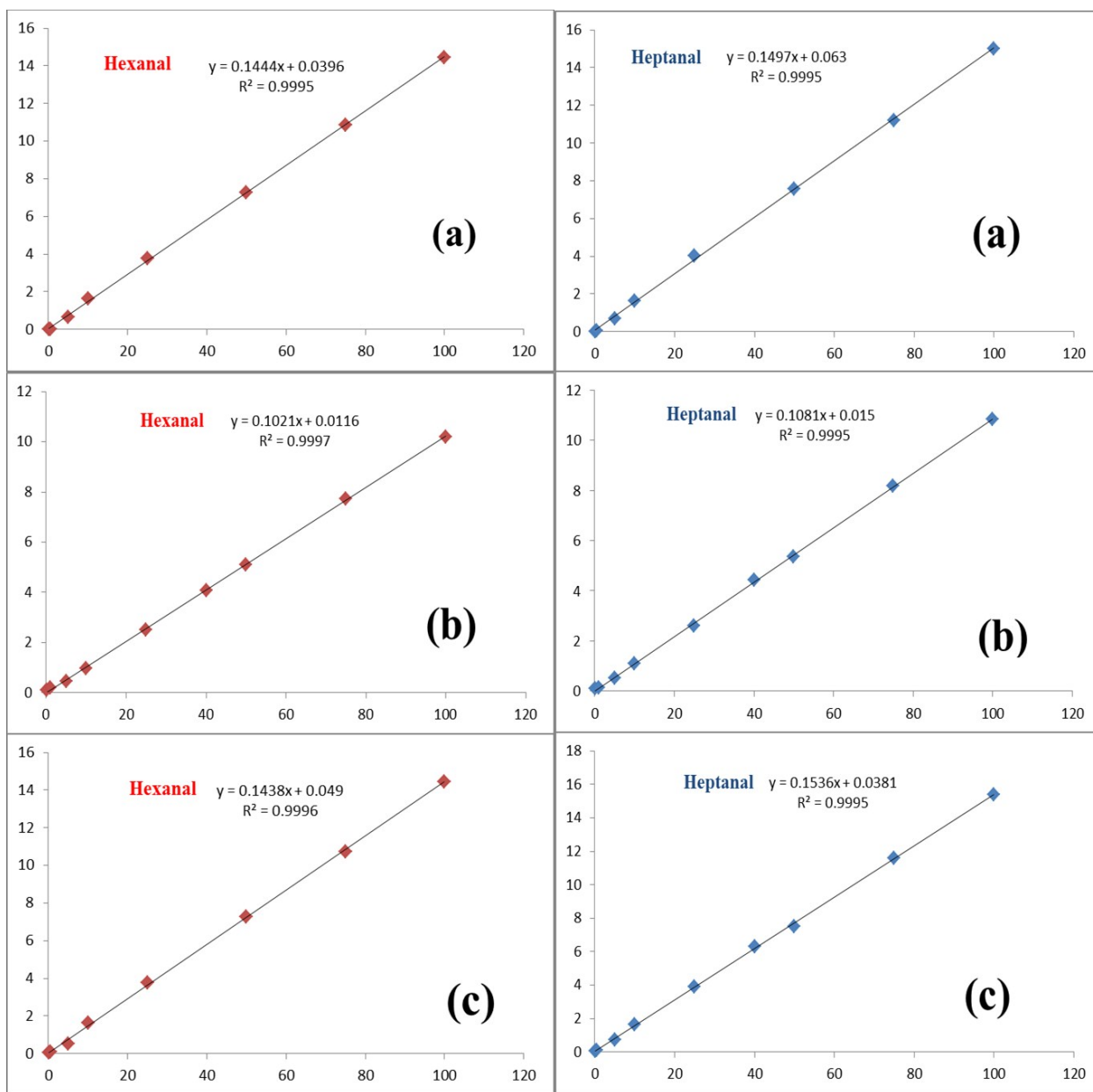


Figure (S8)

71 **Table S1** Actual and coded values of factors used in Box-Behnken for the extraction of hexanal and heptanal.

			Levels		
Factors			Low (-1)	Central (0)	High (+1)
(X ₁) Volume of MDES (μL)			5	27.5	50
(X ₂) Volume of back extraction solvent (μL)			30	65	100
(X ₃) Extraction time (min)			1	8	15
(X ₄) Back extraction time (min)			1	8	15
Run	X ₁	X ₂	X ₃	X ₄	P ^a
1	-1	-1	0	0	0.925
2	+1	-1	0	0	1.230
3	-1	+1	0	0	0.201
4	+1	+1	0	0	0.494
5	0	0	-1	-1	0.580
6	0	0	+1	-1	0.506
7	0	0	-1	+1	0.568
8	0	0	+1	+1	0.591
9 CP	0	0	0	0	0.727
10	-1	0	0	-1	0.314
11	+1	0	0	-1	0.520
12	-1	0	0	+1	0.539
13	+1	0	0	+1	0.495
14	0	-1	-1	0	0.743
15	0	+1	-1	0	0.279
16	0	-1	+1	0	1.167
17	0	+1	+1	0	0.225
18 CP	0	0	0	0	0.696
19	-1	0	-1	0	0.344
20	+1	0	-1	0	0.599
21	-1	0	+1	0	0.358
22	+1	0	+1	0	0.651
23	0	-1	0	-1	0.878
24	0	+1	0	-1	0.207
25	0	-1	0	+1	1.012
26	0	+1	0	+1	0.262
27	0	0	0	0	0.782

72 ^aAverage peak area ratio

73 **Table S2** ANOVA results obtained by Box-Behnken.

Factors	Sum of Square (SS)	Degree of Freedom (DF)	Mean Square (MS)	F-value	p-Value
X ₁ (L+Q)	0.200350	2	0.100175	52.8070	0.018585
X ₂ (L+Q)	1.532737	2	0.766369	403.9898	0.002469
X ₃ (L+Q)	0.078608	2	0.039304	20.7190	0.046043
X ₄ (L+Q)	0.106310	2	0.053155	28.0205	0.034458
X ₁ X ₂	0.000036	1	0.000036	0.0190	0.903049
X ₁ X ₃	0.000361	1	0.000361	0.1903	0.705240
X ₁ X ₄	0.015625	1	0.015625	8.2367	0.102991
X ₂ X ₃	0.057121	1	0.057121	30.1112	0.031642
X ₂ X ₄	0.001560	1	0.001560	0.8225	0.460181
X ₃ X ₄	0.002352	1	0.002352	1.2400	0.381362
Lack of Fit	0.108128	10	0.010813	5.7000	0.158385
Pure Error	0.003794	2	0.001897		
Total SS	2.069250	26			
R-squared	94.6				
R-adjusted	88.3				

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