Electronic Supplementary Material (ESI) for Analytical Methods.

Supplementary data to:

Application of response surface methodology in the optimization of modified molecularly imprinted polymer based pipette tip micro solid phase extraction for spectrophotometric determination of nicotine in seawater and human plasma

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Table SI1. Design matrix in the model, observed response and predicted values

A	B	C	D	$Y_{observed}$	$Y_{predicted}$	Error %
100	3	7	10	0.311	0.296	4.88
100	3	7	12	0.349	0.360	-3.07
100	3	11	10	0.369	0.390	-5.79
100	3	11	12	0.462	0.441	4.54
100	5	9	11	0.906	0.914	-0.84
100	7	7	10	0.328	0.341	-3.91
100	7	7	12	0.369	0.383	-3.93
100	7	11	10	0.517	0.497	3.94
100	7	11	12	0.535	0.526	1.68
200	3	9	11	0.857	0.859	-0.20
200	5	7	11	0.895	0.843	5.81
200	5	9	10	0.899	0.895	0.44
200	5	9	11	1.121	1.083	3.41
200	5	9	11	1.094	1.083	1.02
200	5	9	11	1.074	1.083	-0.82
200	5	9	11	1.098	1.083	1.38
200	5	9	11	1.101	1.083	1.65
200	5	9	11	1.005	1.083	-7.74
200	5	9	12	0.956	0.959	-0.35
200	5	11	11	0.932	0.983	-5.51
200	7	9	11	0.941	0.939	0.25
300	3	7	10	0.202	0.199	1.71
300	3	7	12	0.264	0.298	-12.77
300	3	11	10	0.338	0.337	0.34
300	3	11	12	0.448	0.423	5.63
300	5	9	11	0.879	0.871	0.94
300	7	7	10	0.239	0.273	-14.35
300	7	7	12	0.385	0.351	8.77
300	7	11	10	0.496	0.473	4.67
300	7	11	12	0.509	0.538	-5.60

Table SI2. Summary of analysis of variance (ANOVA) for extraction of nicotine

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	% PC= (SS/ ∑ SS) × 100
Model	2.95	14	0.21	147.90	< 0.0001	
A- Eluent solvent volume	0.0083	1	0.0083	5.81	0.03	1.77
B-Extraction cycles	0.029	1	0.03	20.18	0.0004	6.17
C-Elution Cycles	0.089	1	0.09	62.35	< 0.0001	18.94
D-PH	0.019	1	0.02	13.04	0.0026	4.04
AB	0.00088	1	0.00088	0.62	0.44	0.19
AC	0.0019	1	0.0019	1.34	0.26	0.40
AD	0.0012	1	0.0012	0.87	0.36	0.25
BC	0.0037	1	0.0037	2.63	0.12	0.79
BD	0.00045	1	0.00045	0.32	0.58	0.10
CD	0.00018	1	0.00018	0.12	0.73	0.04
A^2	0.094	1	0.094	66.14	< 0.0001	20
B^2	0.088	1	0.088	61.71	< 0.0001	18.72
C^2	0.07	1	0.074	52.37	< 0.0001	14.89
D^2	0.063	1	0.06	44.08	< 0.0001	13.40
Residual	0.02	15	0.0014			
Lack of Fit	0.01	10	0.0013	0.79	0.65	
Pure Error	0.0083	5	0.0016			
Cor Total	2.97	29				

PC %: Percent contribution, SS: Sum of squares