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Electronic Supplementary Information

Fabrication of magnetic metal-organic framework molecularly imprinted polymer for extraction of anti-malaria agent hydroxychloroquine

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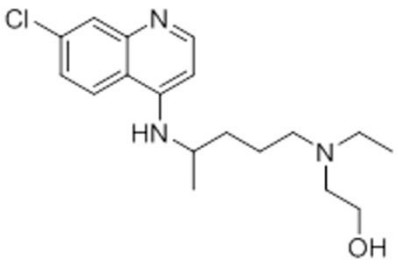


Figure S1.

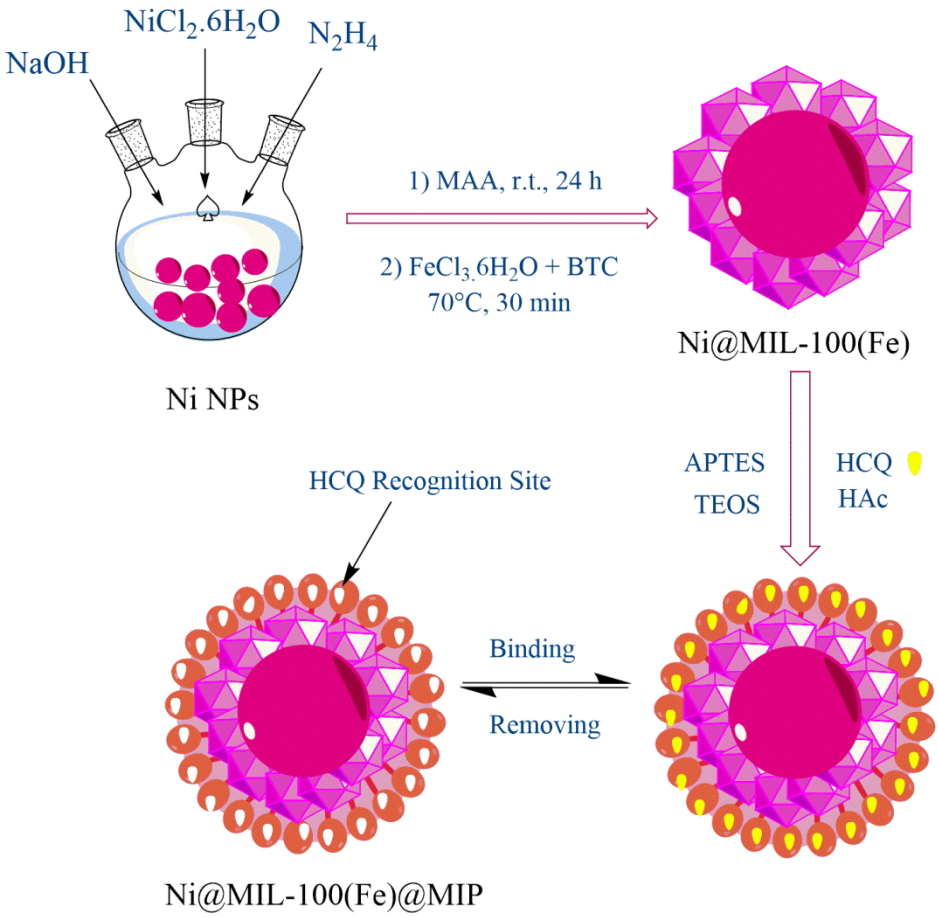


Figure S2.

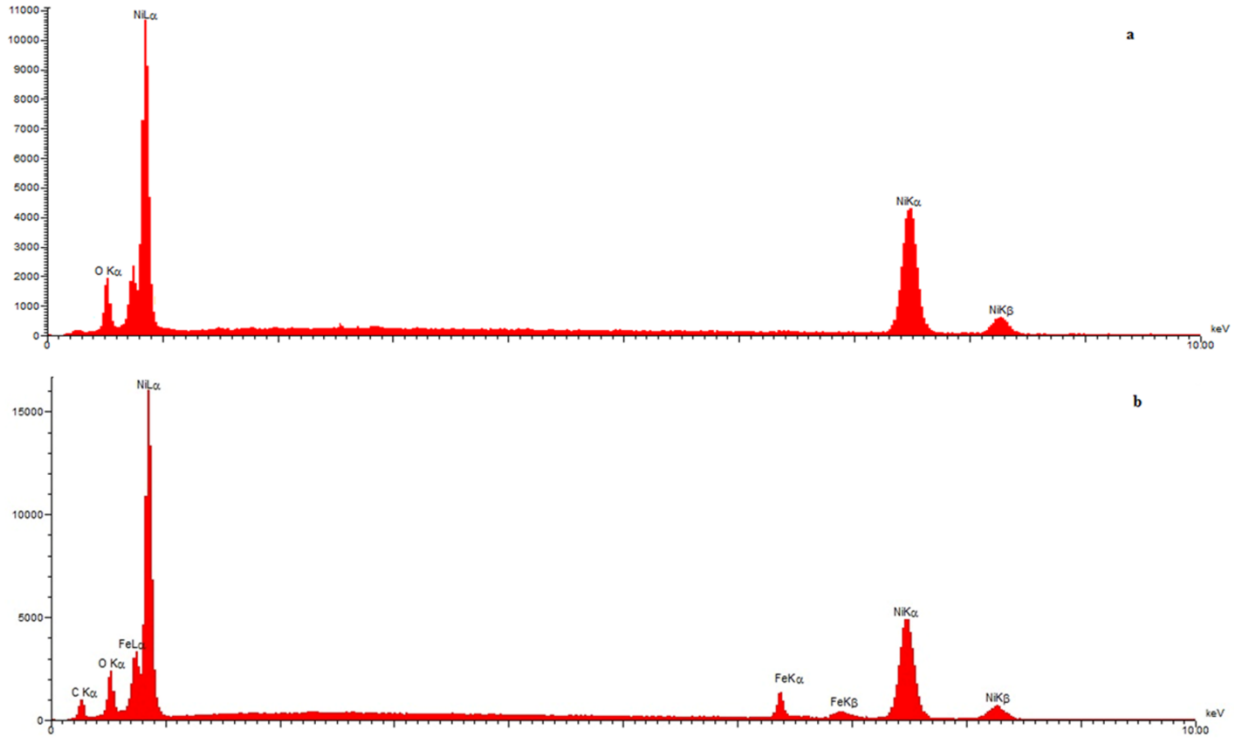
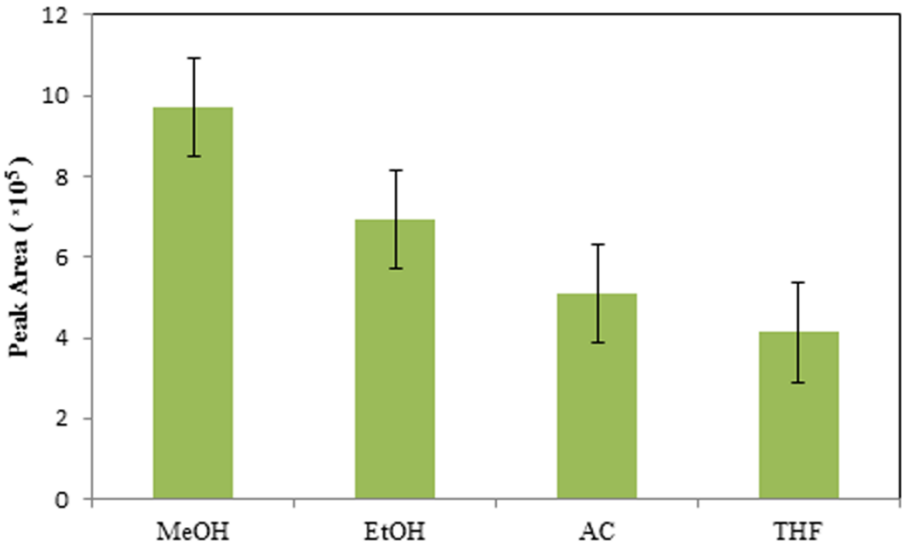


Figure S3.



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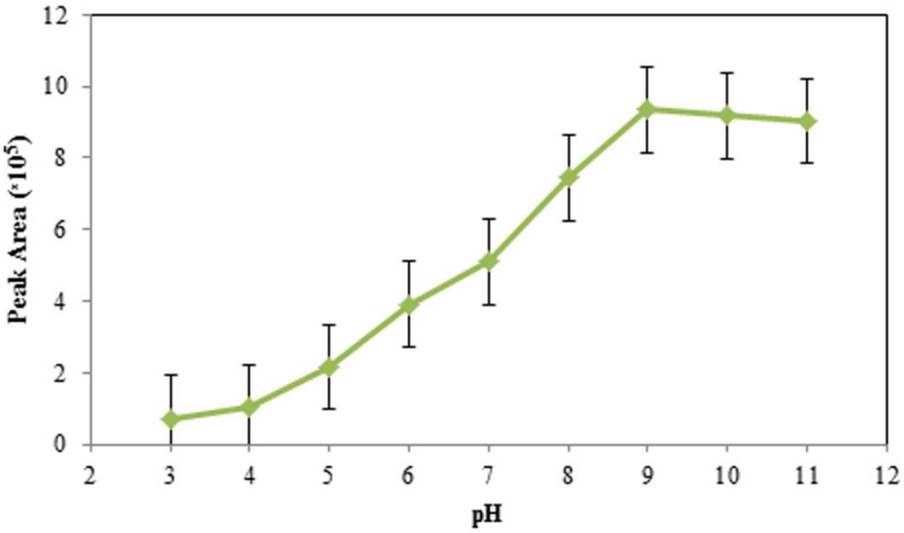

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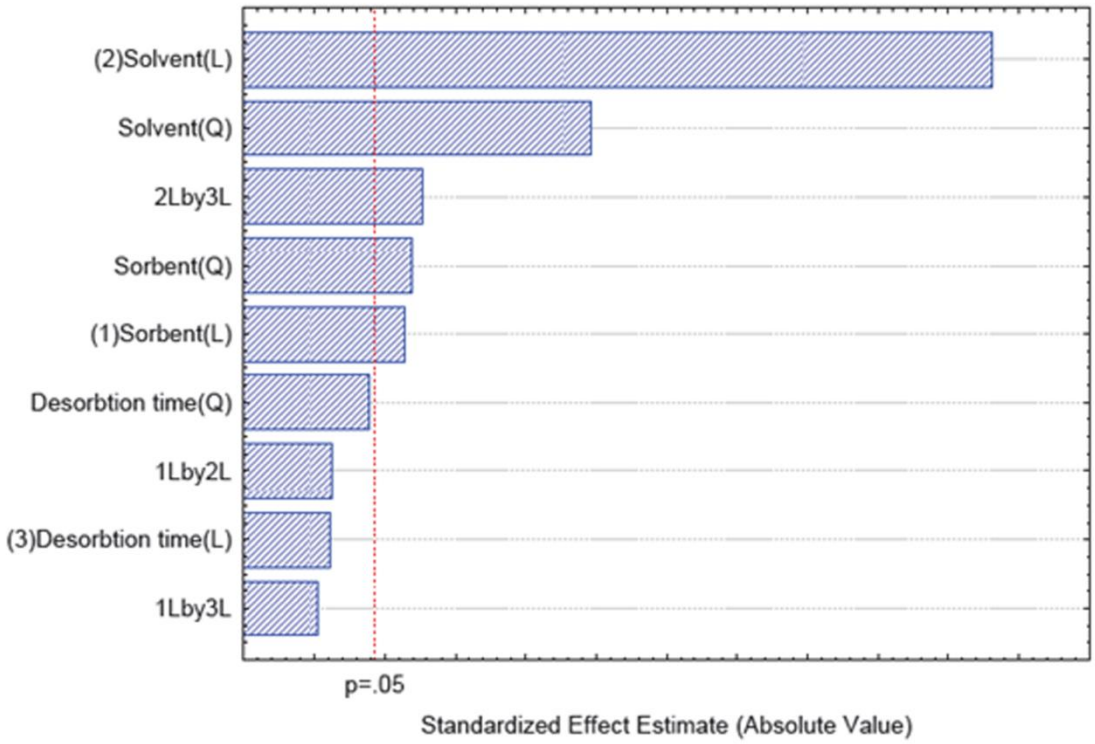
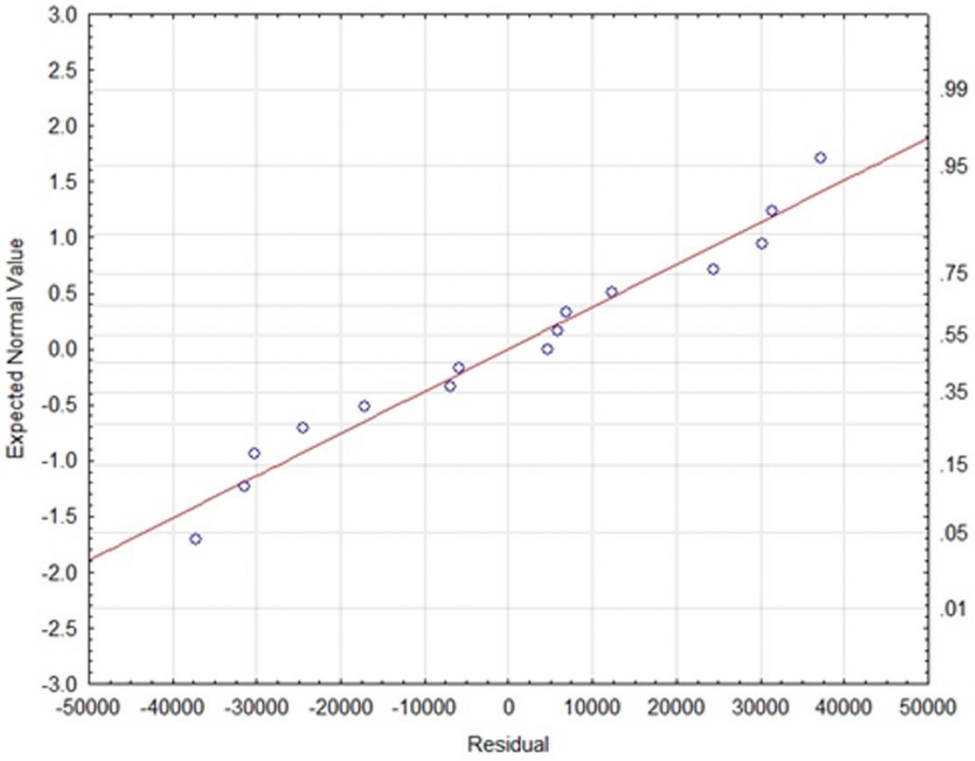


Figure S6.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-1.0
-1.5
-2.0
-2.5
-3.0
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-30000
-20000
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10000
20000
30000
40000
50000
Residual

Figure S7.

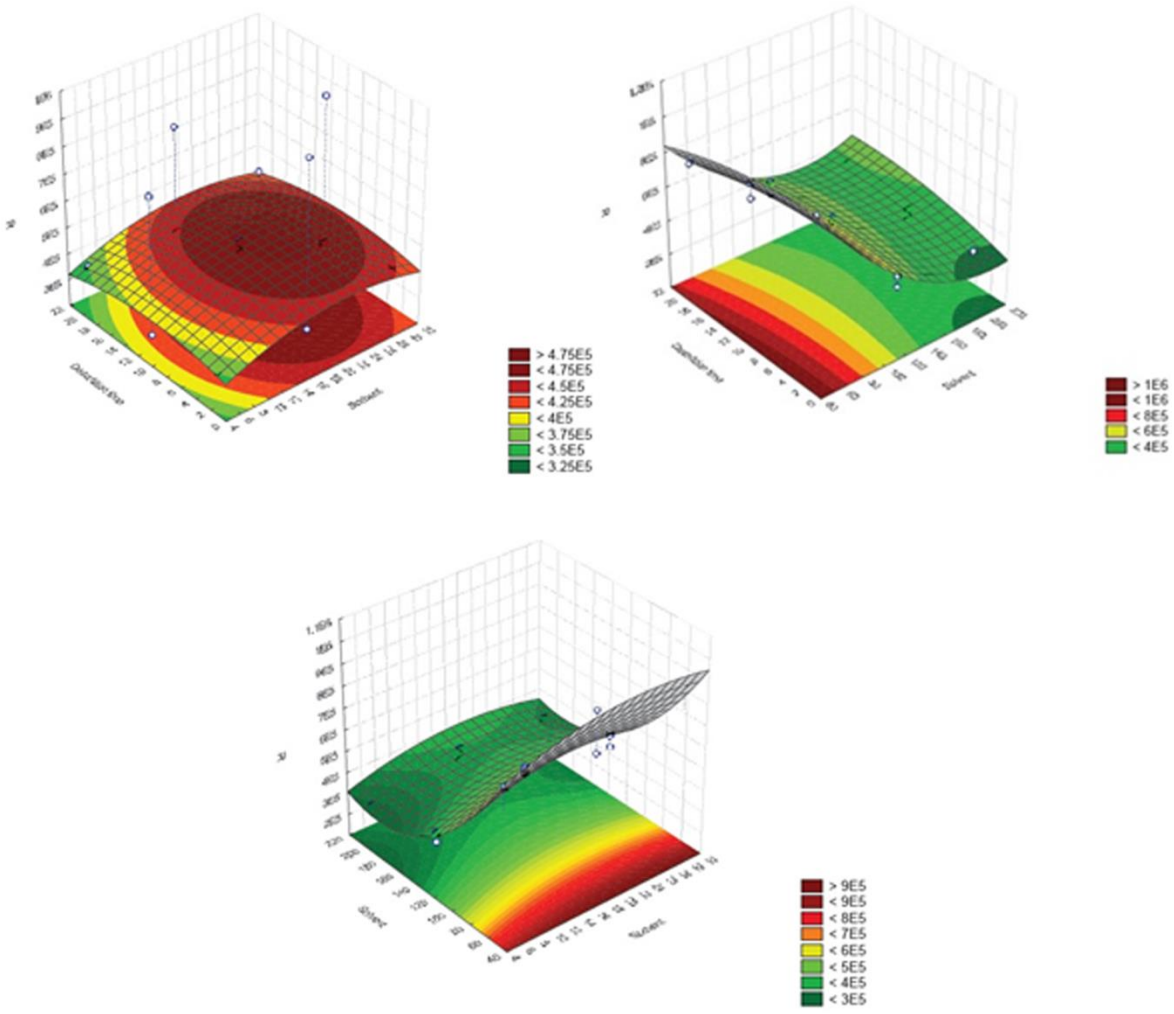
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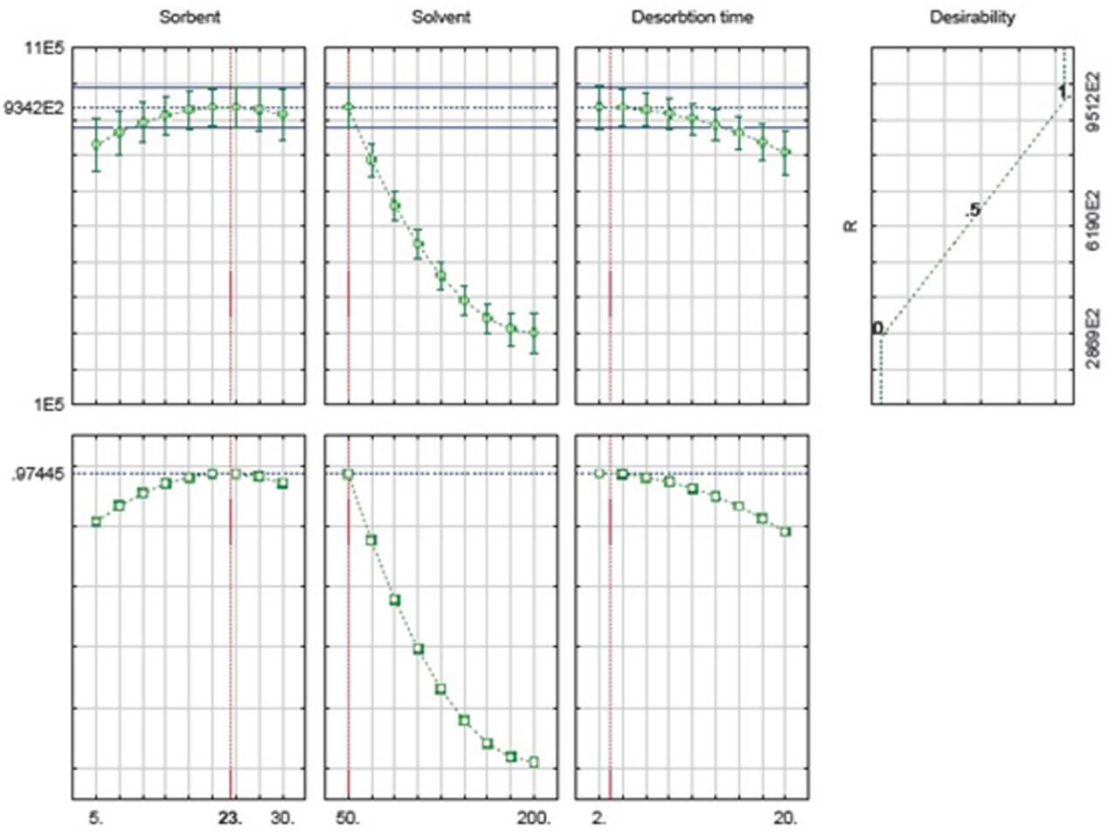
Figure S8.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Solvent
Desorbtion time
Desirability
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1E5
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5.
23.
30.
50.
200.
2.
20.
R
1.
.5
0.
9512E2
6190E2
2869E2

Figure S9.

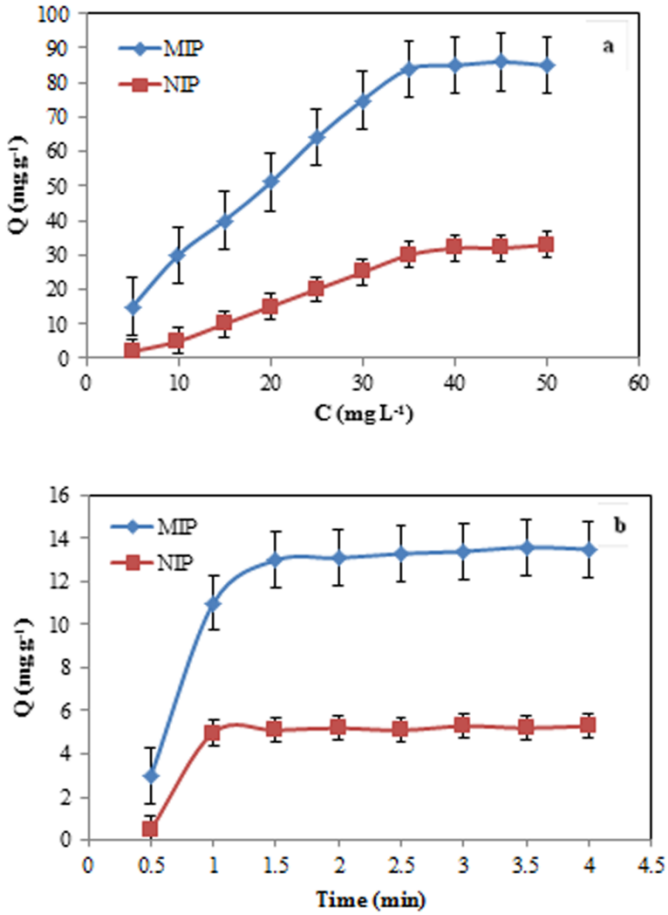

Figure S10.

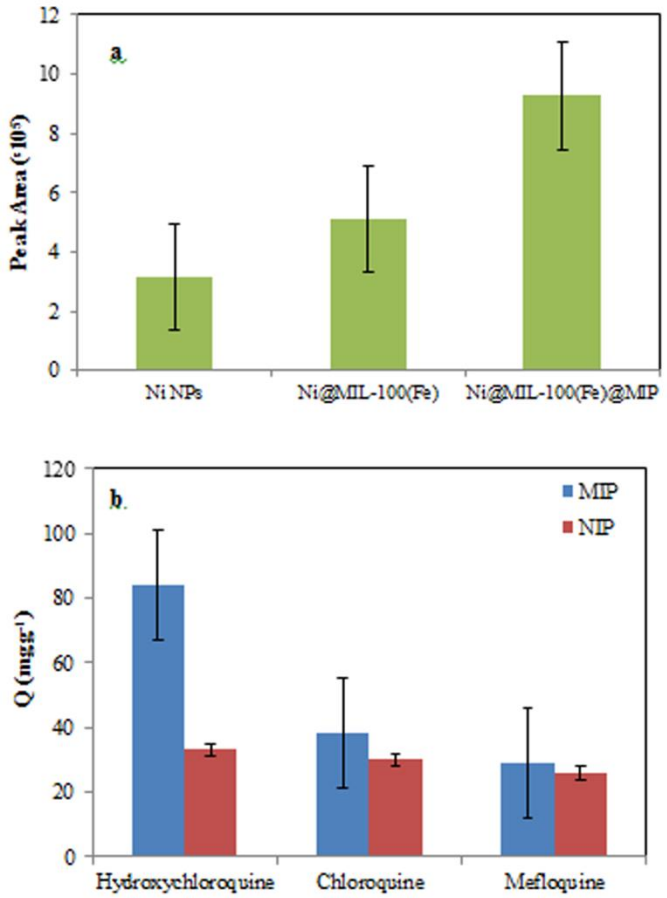

Figure S11.

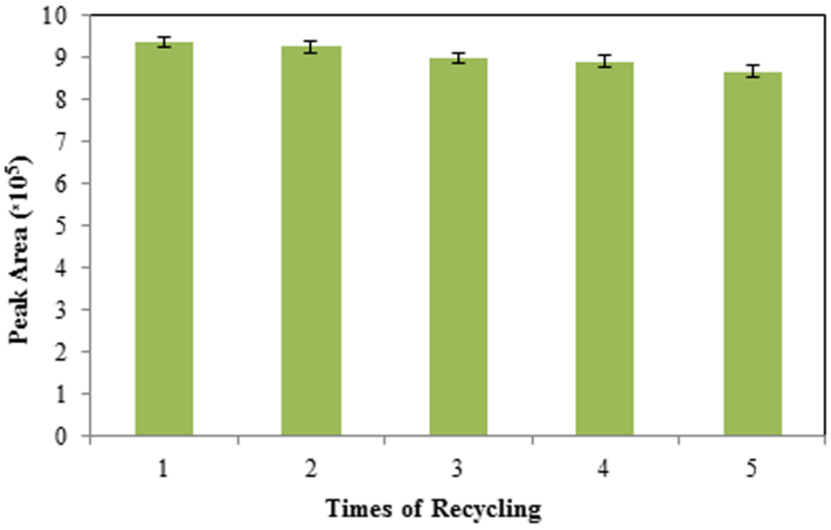

Figure S12.

Table S1 The Box-Behnken design, the levels of the 3 factors and the analytical response values.

Factors	Levels		
	Low (-1)	Central (0)	High (+1)
(X_1) amount of sorbent (mg)	5	17.5	30
(X_2) eluent volume (µL)	50	125	200
(X_3) desorption time (min)	2	11	20

Run	X_1	X_2	X_3	R
1	0	0	0	489202
2	1	-1	0	888245
3	-1	1	0	286874
4	-1	0	-1	332194
5	1	0	-1	398867
6	0	0	1	378480
7	1	0	1	452272
8	1	1	0	335494
9	0	1	-1	325655
10	0	-1	1	759879
11	-1	-1	0	800874
12	0	0	0	481409
13	0	0	0	459647
14	0	1	1	369886
15	0	-1	-1	951210

Table S2 The results of the analysis of variance and regression coefficients.

Factors	SS[a]	DF[b]	MS[c]	F-value	p-value
(1) X_1 L[d]+Q[e]	2.074002E+10	2	1.037001E+10	44.196	0.022126
(2) X_2 L+Q	6.320385E+11	2	3.160192E+11	1346.851	0.000742
(3) X_3 L+Q	3.888298E+09	2	1.944149E+09	8.286	0.107691
1*2	3.754100E+08	1	3.754100E+08	1.600	0.333337
1*3	1.267004E+07	1	1.267004E+07	0.054	0.837859
2*3	1.387236E+10	1	1.387236E+10	59.123	0.016497
Lack of Fit	7.943445E+09	3	2.647815E+09	11.285	0.082494
Pure Error	4.692712E+08	2	2.346356E+08		
Total SS	6.867748E+11	14			

[a]Sum of Square, [b]Degree of Freedom, [c]Mean Square, [d]Linear, [e]Quadratic

Table S3. Selectivity parameters of the MIP and NIP sorbents.

Compound	MIP		NIP		k'
	K_d (mg.g^{-1})	k	K_d (mg.g^{-1})	k	
HCQ	29.55		11.34		
CQ	11.72	2.52	8.98	1.26	2.00
MQ	9.45	3.13	8.20	1.38	2.27