Electronic Supplementary Information for Publication

Preparation of iron porphyrin-based polymer monolithic column via atom transfer radical polymerization for separation of proteins and small molecules

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Captions for appendix figures in electronic supplementary information

Fig. S1 Chemical structure of iron porphyrin (hemin)

Fig. S2 Imagine of thermogravimetric analysis for monolith C

Fig. S3 The micro- and mesopore size distribution of monolith C

a: distribution of pore surface area; b: distribution of pore volume

Fig. S4 Relationship of linear velocity and pressure drop of monolith C

Fig. S5 Numbers of identified proteins by LC/MS from human plasma, peak 2 and peak 4 in Fig. 4b

The resulting LC/MS data were matched with "human_txid9606_110574.fasta" via "Proteome Discoverer".

Fig. S6 Plot of *k* and percentage contention of ACN

Table S1 Chromatographic parameters of Fig. 5

[a]: Resolution of each peak was calculated with the former one.

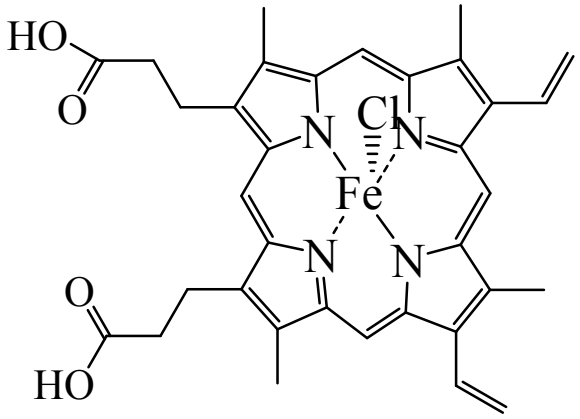


Fig. S1

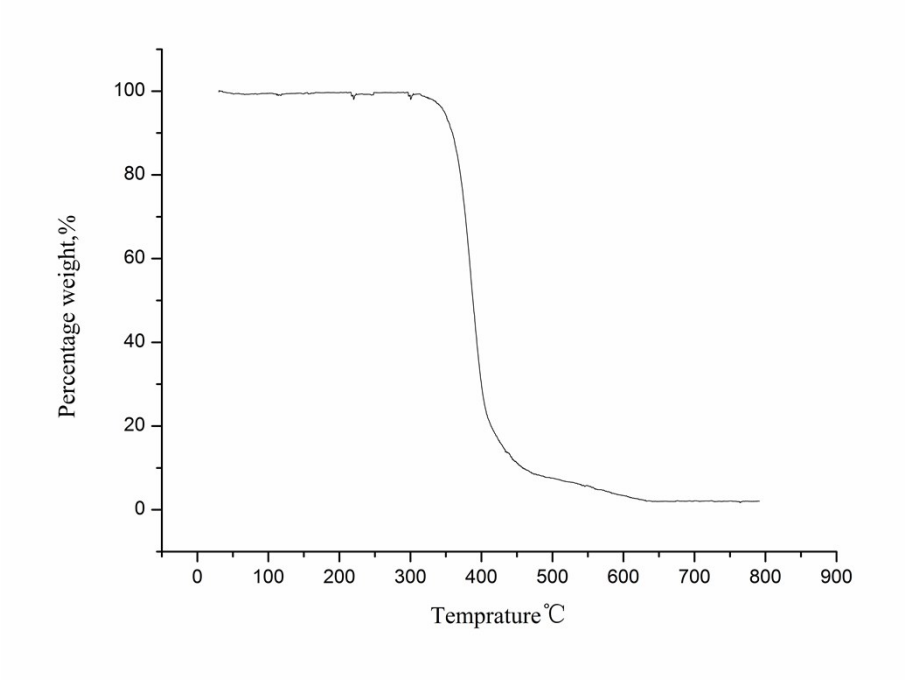
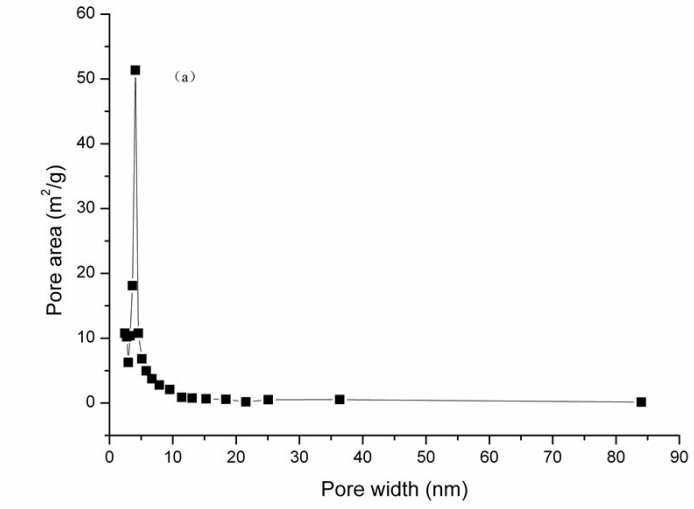

Percentage weight,%
100
80
60
40
20
0
0
100
200
300
400
500
600
700
800
900
Temprature℃

Fig. S2


(a)
Pore area (m²/g)
Pore width (nm)
0
10
20
30
40
50
60
70
80
90

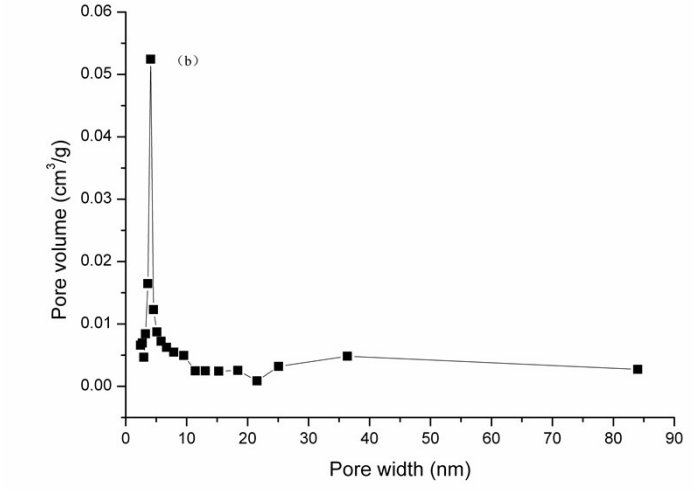

(b)
Pore volume (cm³/g)
Pore width (nm)
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0
10
20
30
40
50
60
70
80
90

Fig. S3

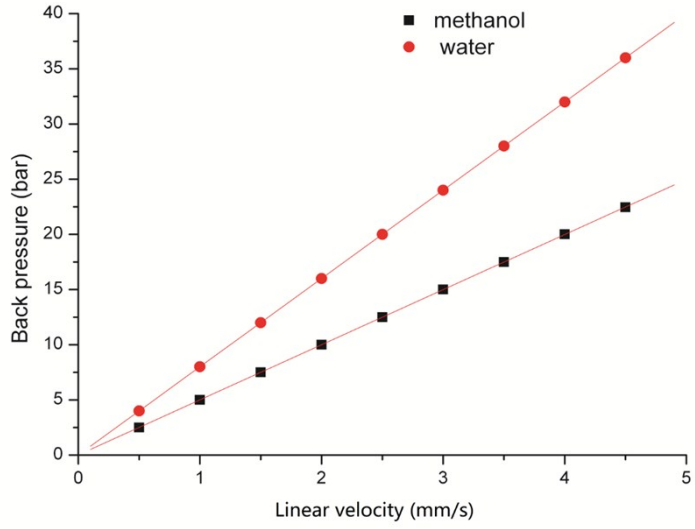

methanol
water
Back pressure (bar)
Linear velocity (mm/s)
0
5
10
15
20
25
30
35
40
0
1
2
3
4
5

Fig. S4

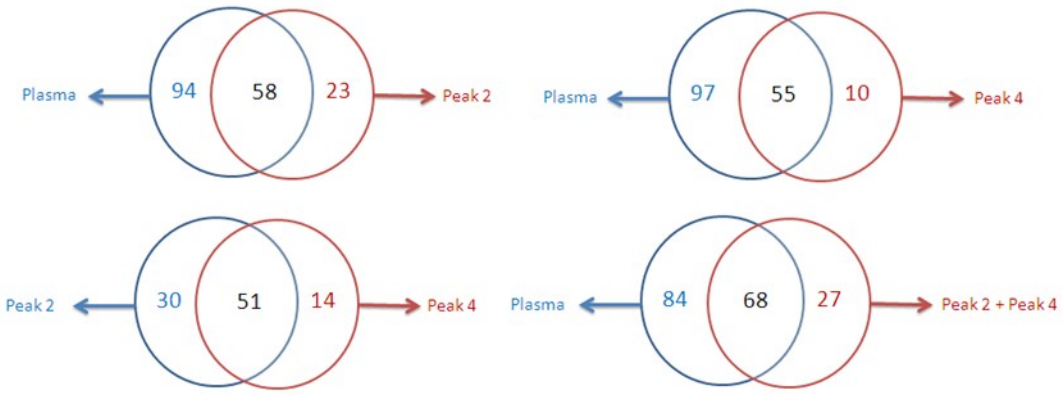

Plasma
94
58
23
Peak 2
Plasma
97
55
10
Peak 4
Peak 2
30
51
14
Peak 4
Plasma
84
68
27
Peak 2 + Peak 4

Fig. S5

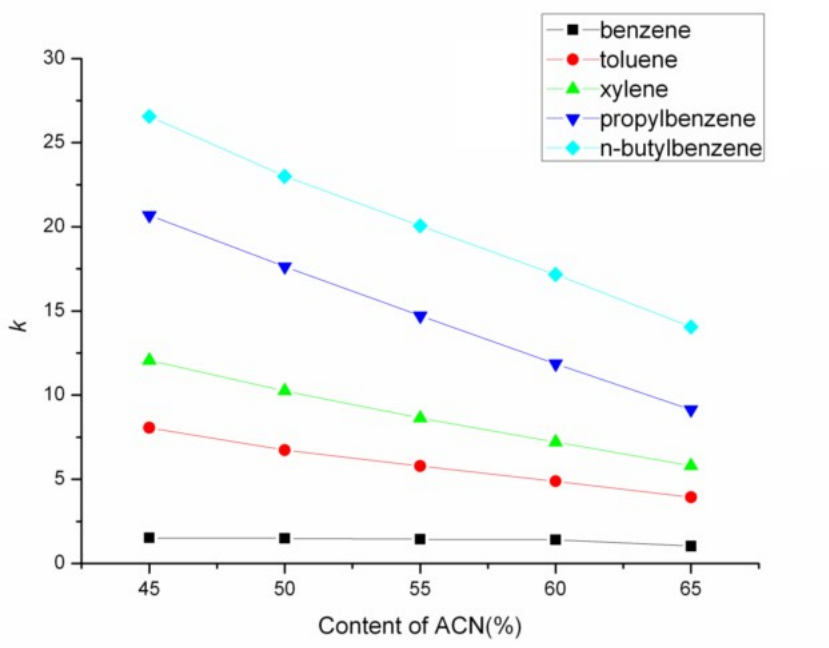

benzene
toluene
xylene
propylbenzene
n-butylbenzene
30
25
20
15
10
5
0
k
45
50
55
60
65
Content of ACN(%)

Fig. S6

Table S1

Analyte	benzene	toluene	xylene	propylbenzene	n-butylbenzene
Retention time (min)	1.203	2.942	4.105	6.430	9.086
Symmetry factor	1.031	0.980	0.980	1.021	1.010
Resolution [a]	-	2.890	2.326	3.394	2.887
Column efficiency(plates per meter)	9 900	25 200	28 600	26 900	29 600