

Supplementary material

Table S1. ANOVA of fitting quadratic polynomial model for preparing ACS

Source	Sum of squares	df	Mean square	F value	P-value Prob > F	
Model	0.57	9	0.063	42.36	< 0.0001	significant
A	0.34	1	0.34	229.17	< 0.0001	
B	0.016	1	0.016	10.91	0.0131	
C	0.0006125	1	0.000613	0.41	0.5412	
AB	0.00123	1	0.00123	0.82	0.3939	
AC	0.0004	1	0.0004	0.27	0.6198	
BC	0.00903	1	0.00903	6.08	0.0431	
A ²	0.18	1	0.18	122.67	< 0.0001	
B ²	0.011	1	0.011	7.23	0.0311	
C ²	0.000206	1	0.000206	0.14	0.7204	
Residual	0.01	7	0.00149			
Lack of Fit	0.00248	3	0.000825	0.42	0.751	not significant
Pure Error	0.00792	4	0.00198			
Cor Total	0.58	16				
	R ² = 0.9820		R ² Adj = 0.9588		C.V.% = 3.79	

Table S2. Investigation on adsorption rate, desorption rate, and transfer rate of different macroporous adsorption resins

Macroporous adsorption resin type	Adsorption rate (%)	Desorption rate (%)	Transfer rate(%)
D-101	87.91±0.64	93.52±2.38	82.21±3.58
AB-8	94.31±0.21	72.62±2.85	68.49±2.85
LX-68M	92.57±0.32	74.85±1.69	69.29±1.33
DM-130	90.29±0.33	78.42±1.11	70.80±1.32
HPD-500	90.67±0.58	89.60±3.76	81.30±2.96

Table S3. Effects of adsorption rate, desorption rate, and transfer rate of macroporous adsorption resin with different crude drug concentrations

Concentration of crude drug (g mL⁻¹)	Adsorption rate (%)	Desorption rate (%)	Transfer rate (%)
1	82.62±0.60	89.83±2.52	74.21±2.17
2	81.21±0.53	98.95±1.65	80.35±1.78
4	79.04±0.94	95.94±3.43	74.79±2.46

Table S4. Effects of different ratios of column diameter to height on adsorption rate, desorption rate, and transfer rate of macroporous adsorption resin

Ratio of diameter to height	Adsorption rate (%)	Desorption rate (%)	Transfer rate (%)
1: 5	86.49±0.93	83.42±2.72	72.15±1.95
1: 10	87.06±0.50	89.94±1.86	78.31±1.70
1: 15	88.69±0.72	90.81±1.79	80.54±1.69

Table S5. The standard curve, precision RSD, recovery rate, and recovery rate RSD of the reference substances

Reference standards	Standard curve	Precision RSD (%)	Recovery rate (%)	Recovery RSD (%)
1	$y = 160300x - 5130.4R^2 = 0.9996$	1.01	100.32	1.49
2	$y = 395683x - 26066R^2 = 0.9996$	1.38	99.98	1.70
3	$y = 253336x - 26882R^2 = 0.9992$	1.90	100.54	1.33
4	$y = 200029x - 10586R^2 = 0.9991$	1.64	101.67	1.82
5	$y = 191912x - 11240R^2 = 0.9991$	1.22	99.81	1.59
6	$y = 346581x - 10331R^2 = 0.9991$	1.40	100.33	1.73
7	$y = 863216x - 33615R^2 = 0.9997$	1.37	101.01	1.74
8	$y = 1E+06x - 30827R^2 = 0.9991$	1.53	100.98	1.91

Table S6. The content, repeatability, and stability RSD of the sample

Samples	Content (%)	Repeatability RSD (%)	Stability RSD (%)
1	5.81	0.78	1.56
2	2.12	1.42	1.11
3	14.72	1.45	1.87
4	5.76	0.51	0.84
5	9.79	1.87	1.68
6	5.21	1.96	1.41
7	2.24	1.65	1.75
8	0.95	0.78	1.79