Supporting information

Preparation of core-shell stationary phase by in-situ polymerization of hydrophilic polymer on silica surface and its chromatographic performance

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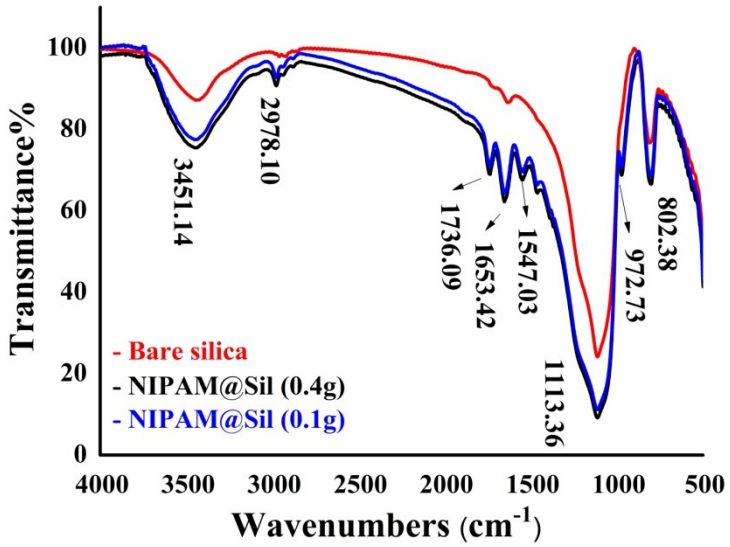

Fig. S1 IR spectra of Bare silica, NIPAM@Sil (0.1g) and NIPAM@Sil (0.4g).

Table S1 Surface and pore analysis of bare silica and NIPAM@Sil microspheres.

Stationary Phases	Surface Area (m^2/g)	Pore Volume (cm^3/g)	Pore Diameter (Å)
Bare silica	370.72	0.66	63.85
NIPAM@Sil (0.4g)	289.36	0.45	62.05

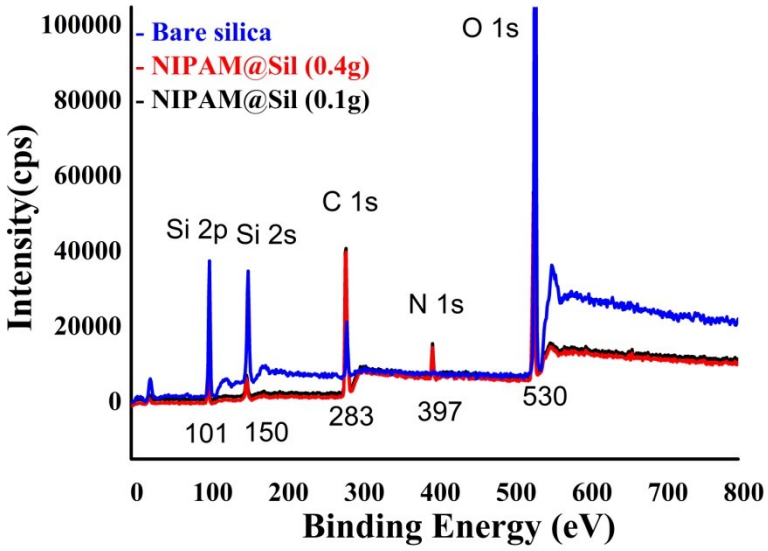

Fig. S2 XPS of Bare silica, NIPAM@Sil (0.1g) and NIPAM@Sil (0.4g).

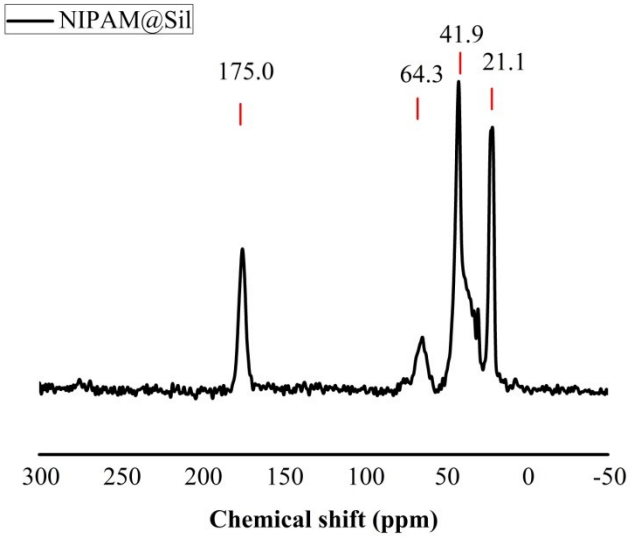

Fig. S3 Solid-state ^{13}C NMR spectrum of NIPAM@Sil.

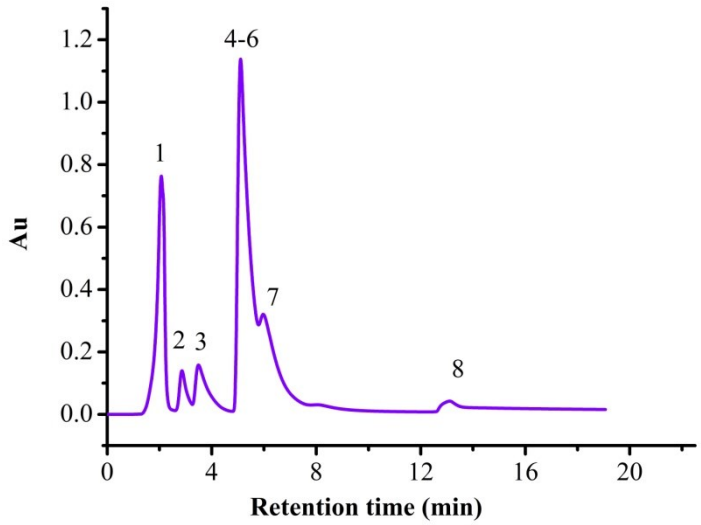

Fig. S4 Separation of test mixtures of 6-chlorouracil (1), thymidine (2); uridine (3); inosine (4); guanine (5); adenine (6); cytidine (7); cytosine (8) on 0.1g-NIPAM@Sil column. The chromatographic condition same as Fig 5.

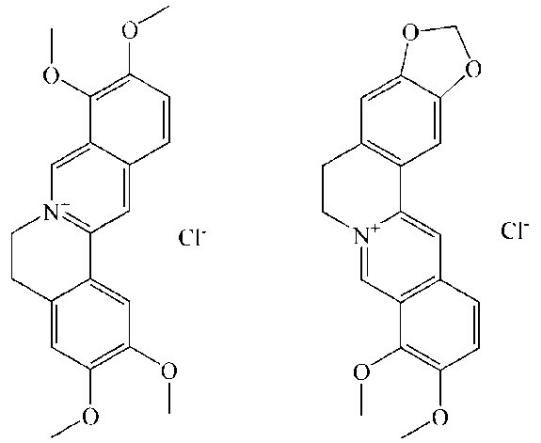

Fig. S5 The molecular structural of palmatine hydrochloride and berberine hydrochloride.

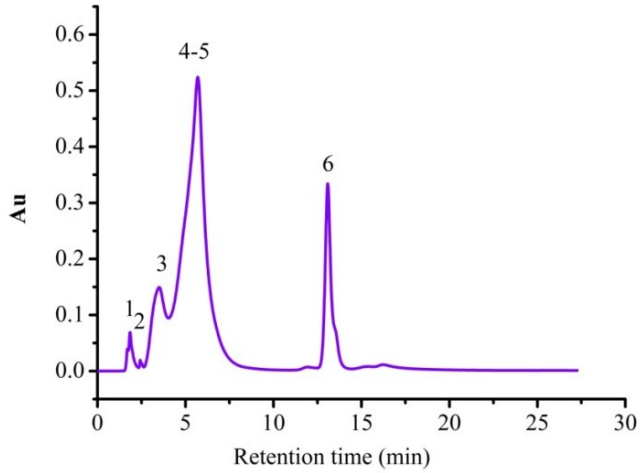

Fig. S6 Separation of test mixtures of sanguinarine (1); theophylline (2); colchicines (3); berberine hydrochloride (4); palmatine hydrochloride (5); jatrorrhizine (6) on 0.1g-NIPAM@Sil column. The chromatographic condition same as Fig 6.

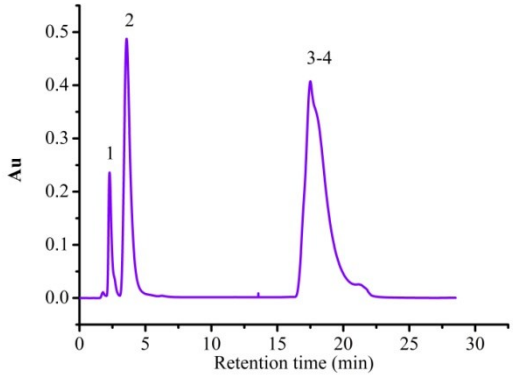

Fig. S7 Separation of test mixtures of SDM (1); SM2 (2); SG (3) and SST (4) on 0.1g-NIPAM@Sil column. The chromatographic condition same as Fig. 7a.

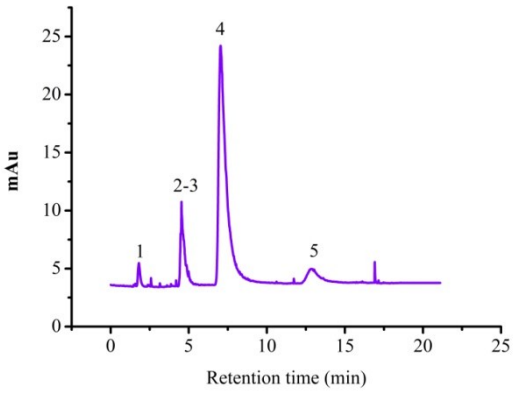

Fig. S8 Separation of test mixtures of D-ribose (1); D-fructose (2); sucrose (3); lactulose (4) and triaccharide (5) on 0.1g-NIPAM@Sil column. The chromatographic condition same as Fig. 7b.

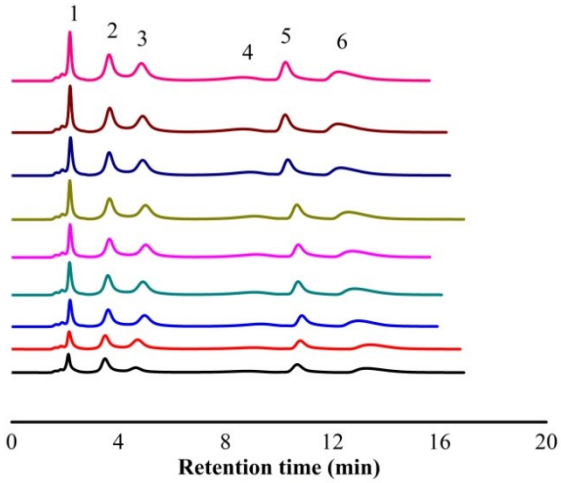

Fig. S9 The reproducibility of separation alkaloids on 0.4g-NIPAM@Sil column. sanguinarine (1), theophylline (2), colchicines (3), berberine hydrochloride (4), palmatine hydrochloride (5) and jatrorrhizine (6).Other conditions same as Fig.6

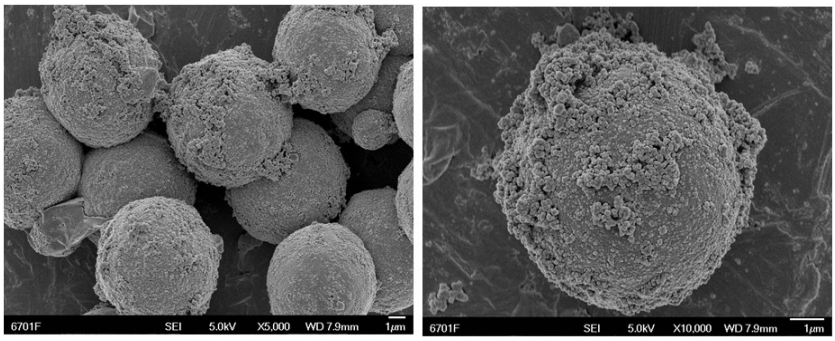

Fig. S10 The SEM images of 0.4g-NIPAM@Sil after using six months.