

Electronic Supplementary Information

for

Dual roles of 3-aminopropyltriethoxysilane in preparing molecularly imprinted silica particles for specific recognition of target molecule

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Table S1. Imprinting factor of the MIPs.

Polymer Name	Imprinting factor (IF)	
	In ethanol	In water
MIP1	32.2	15.2
MIP2	4.8	3.5
MIP-NH3	2.1	2.4
MIP-NaOH	0.7	0.8

Imprinting factor (IF) was calculated by template amount bound on MIP dividing that bound on NIP.

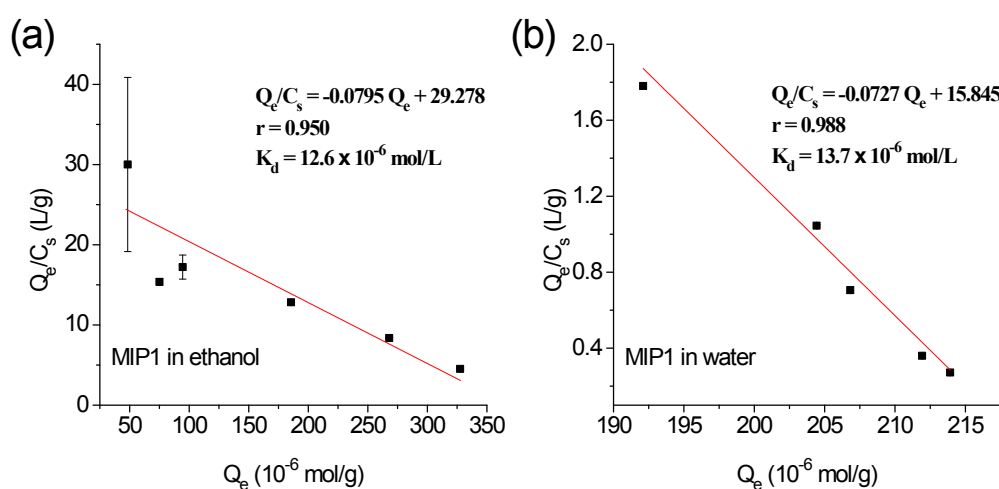


Fig. S1. Dissociation constant (K_d) of MIP1 to NPA in ethanol (a) and water (b). Q_e is the amount of the molecule bound to the polymer; C_s is the free molecule concentration after binding experiments.

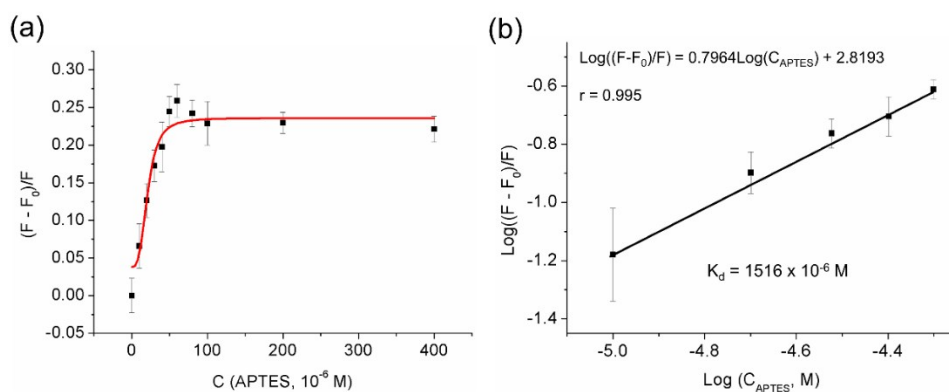


Fig. S2. Dose fluorescence response of NPA (50 μM) to different APTES concentrations (a), and dissociation constant (K_d) between APTES and NPA in ethanol (b). The fluorescence intensity (F) was measured at 330 nm using an excitation wavelength of 280 nm. F_0 means the fluorescence intensity measured in the absence of the test compound.

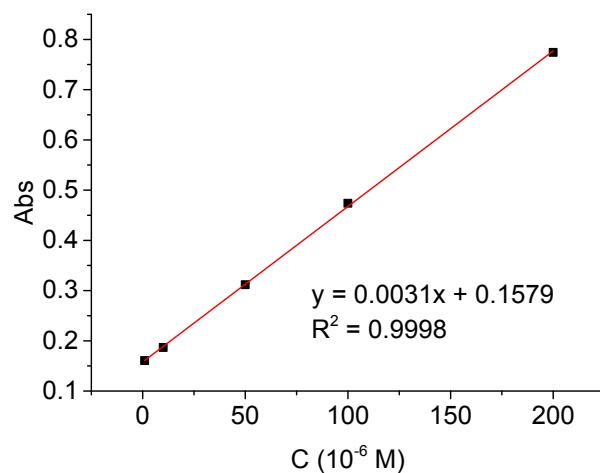


Fig. S3. Linear relationship of the NPA concentration in water to its UV absorbance

Table S2. Recycle rate of the desorbed NPA from the MIP-based SPE column

Repeating time	Washing step	V, μL	Abs	C, μM	NPA, nmol	Recycle rate, %
First	(1)	400	0.311	49	20	49
	(2)	400	0.260	33	13	33
	(3)	400	0.217	19	8	19
	SUM	/	/	/	40	101
Second	(1)	400	0.321	53	21	53
	(2)	400	0.253	31	12	31
	(3)	400	0.205	15	6	15
	SUM	/	/	/	39	98
Third	(1)	400	0.324	54	21	54
	(2)	400	0.268	36	14	36
	(3)	400	0.198	13	5	13
	SUM	/	/	/	41	102