Electronic Supplementary Material (ESI) for RSC Advances.
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Supplemental materials

Fig. S1. The ^{1}HNMR of cationic porphyrins

Fig. S2. FTIR spectrum of Porphyrin **1** (—), SPION(—) and porphyrin **1**@SPION(—).

Fig. S3. TG-curve of porphyrin **1**@SPION nanospheres.

Fig. S4 a: Transmittance of porphyrin **2** @SPION monitored by UV with and without magnetic field; b. Comparison of the magnetic and natural separation of porphyrin **2** @SPION from the liquid media.

Fig. S5. The plot of the fluorescence intensity ratio of HSA at 340 nm in the absence and presence of porphyrin **3**@SPION as a function of the quencher concentration

Fig. S6. Synchronous fluorescence spectra of HSA in the presence of porphyrin@SPION in PBS solution. (a) $\Delta\lambda$= 15 nm, specific for Tyr and (b) $\Delta\lambda$= 60 nm, specific for Trp. Conditions: HSA: 1.0×10^{-6} mol/l; porphyrin@SPION : 0; 1; 2; 3; 4; 5×10^{-3} mg/ml (pH = 7.40).

Fig. S7 Docking results of porphyrins and HSA system.

a. Porphyirn **1**

b. Porphyirn **2**

c. Porphyirn **3**

d. Porphyirn **4**

Fig. S1 The ^{1}HNMR of cationic porphyrins

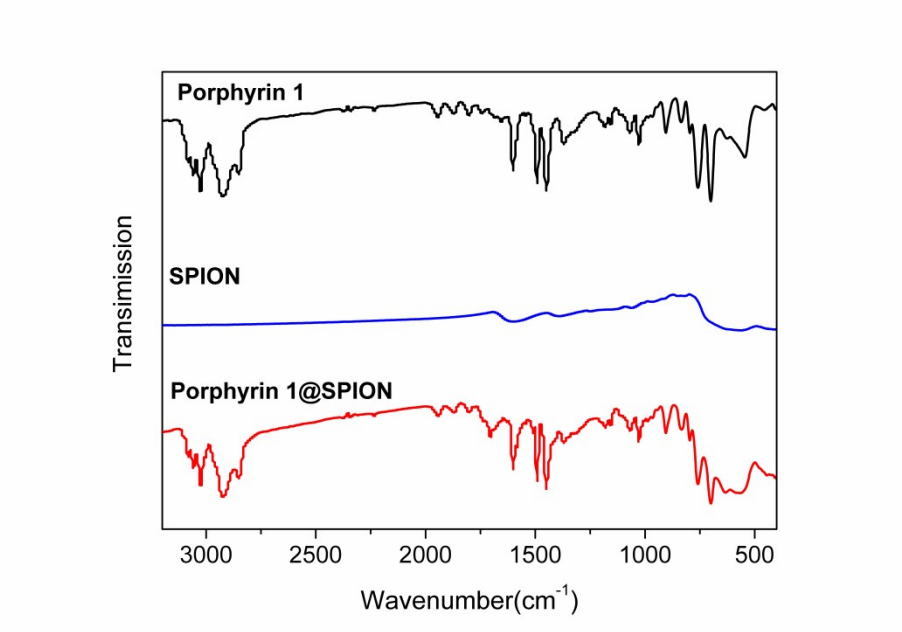

Fig. S2. FTIR spectrum of Porphyrin **1** (—), SPION(—) and porphyrin **1**@SPION(—).

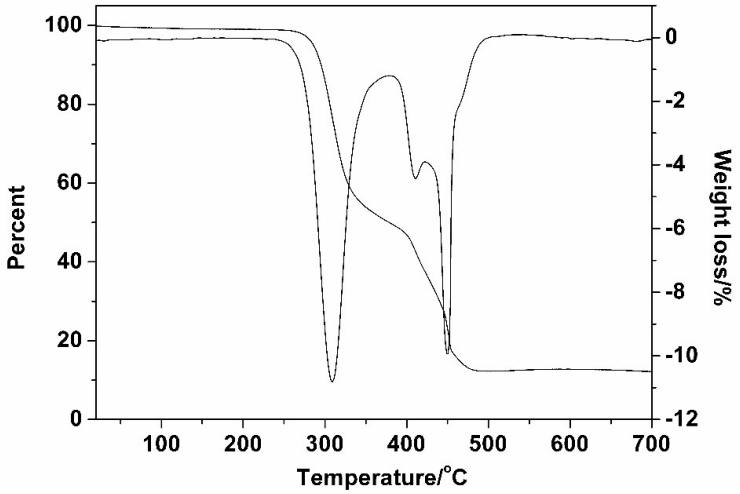

Fig. S3 TG-curve of porphyrin **1**@SPION nanospheres.

(a) (b)

Fig. S4 a: Transmittance of porphyrin **1** @SPION monitored by UV with and without magnetic field; b. Comparison of the magnetic and natural separation of porphyrin **2** @SPION from the liquid media.

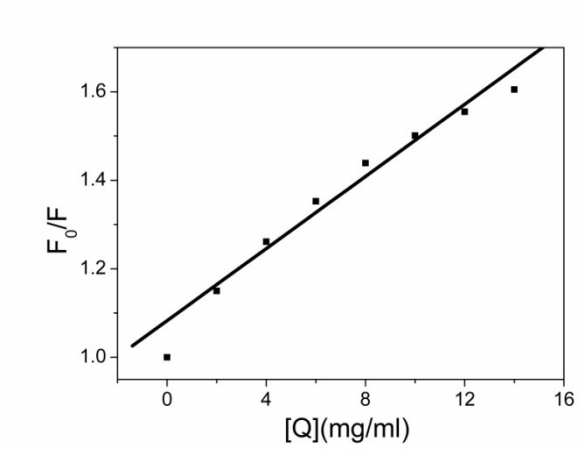

Fig. S5. The plot of the fluorescence intensity ratio of HSA at 340 nm in the absence and presence of porphyrin **3**@SPION as a function of the quencher concentration

Fig. S6. Synchronous fluorescence spectra of HSA in the presence of SPION-DNM in PBS solution. (a) $\Delta\lambda$= 15 nm, specific for Tyr and (b) $\Delta\lambda$= 60 nm, specific for Trp. Conditions: HSA: 1.0×10^{-6} mol/l; SPION-DNM: 0; 1; 2; 3; 4; 5×10^{-3} mg/ml (pH = 7.40).

a. Docking results of porphyrin **1** and HSA system.