Electronic Supporting Information

Crown ether triad modified core-shell magnetic mesoporous silica nanocarrier for pH-responsive drug delivery and magnetic hyperthermia applications

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Fig. S1 (a) TEM; and (b) SEM images of the magnetic Fe$_3$O$_4$ nanoparticles.

Fig. S2 TGA curves of (a) FeNP@SiOH@GPTMS NPs; (b) FeNP@SiOH@EDA NPs and (c) FeNP@SiOH@CET NPs.
Fig. S3 Zeta potentials of FeNP@SiOH@EDA and FeNP@SiOH@CET nanoparticles as a function of different pH conditions.
**Fig. S4** Thermal response curves of FeNP@SiOH@CET NPs dispersed in water with the different concentrations and subjected to an AMF (f = 409 kHz and H = 180 Gauss).

![Bar graph showing SAR values of Fe_{3}O_{4} and FeNP@SiOH@CET NPs](image)

**Fig. S5** The SAR values of pristine Fe_{3}O_{4} nanoparticles and FeNP@SiOH@CET NPs under magnetic field frequency f = 409 kHz and applied magnetic field H = 180 Gauss.

**Fig. S6** Wide scan X-ray photoelectron spectra of (a) FeNP@SiOH@CET NPs; and (b) FeNP@SiOH@EDA NPs, respectively.

![X-ray photoelectron spectra](image)
Fig. S7 UV-vis spectra of (a) initial concentration of Dox solution; and (b) final concentration of Dox solution after absorption by FeNP@SiOH@CET NPs.