Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Electronic Supporting Information

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

Madhappan Santha Moorthy,[a] Subramanian Bharathiraja,[a] Panchanathan Manivasagan,[a] Kang Dae Lee,[c] and Junghwan Oh,[a,b],*

[a] *Department of Biomedical Engineering and Center for Marine-Integrated Biotechnology (BK21 Plus), Pukyong National University, Busan-48513, Republic of Korea*

[b] *Marine-Integrated Bionics Research Center, Pukyong National University, Busan-48513, Republic of Korea*

[c] *Department of Otolaryngology-Head and Neck Surgery, Kosin University College of Medicine, Busan-48513, Republic of Korea*

*Email: jungoh@pknu.ac.kr

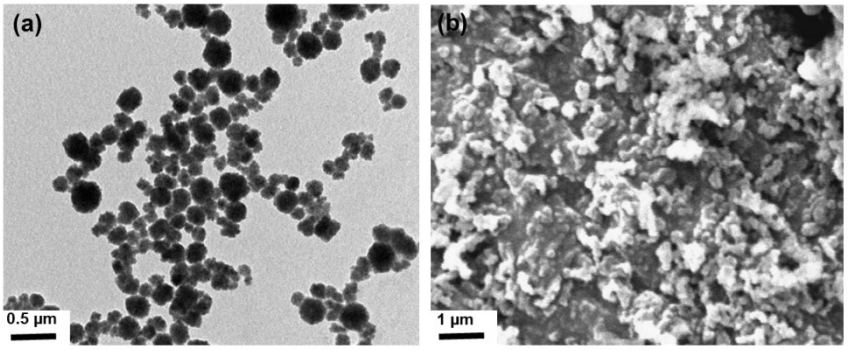

Fig. S1 (a) TEM; and (b) SEM images of the magnetic Fe_3O_4 nanoparticles.

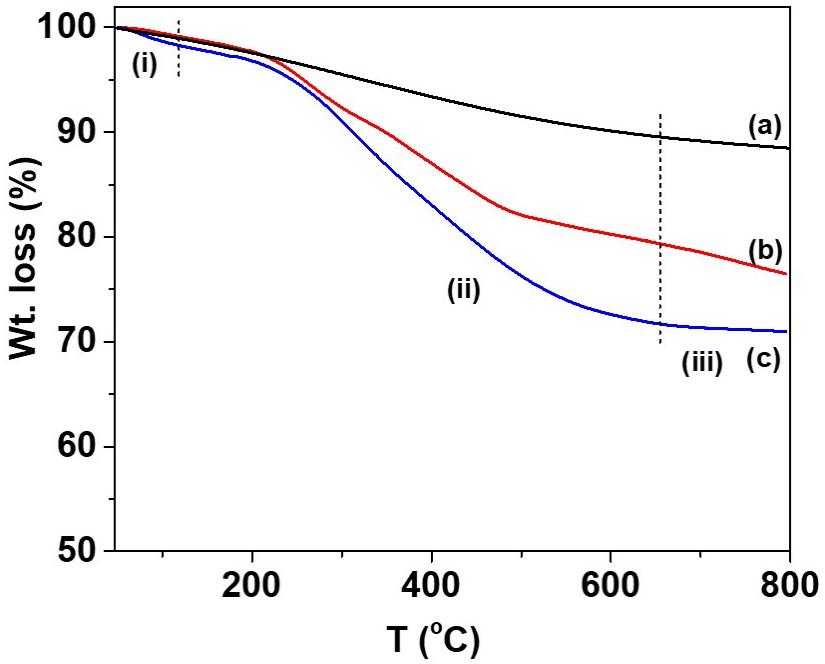

Fig. S2 TGA curves of (a) FeNP@SiOH@GPTMS NPs; (b) FeNP@SiOH@EDA NPs and (c) FeNP@SiOH@CET NPs.

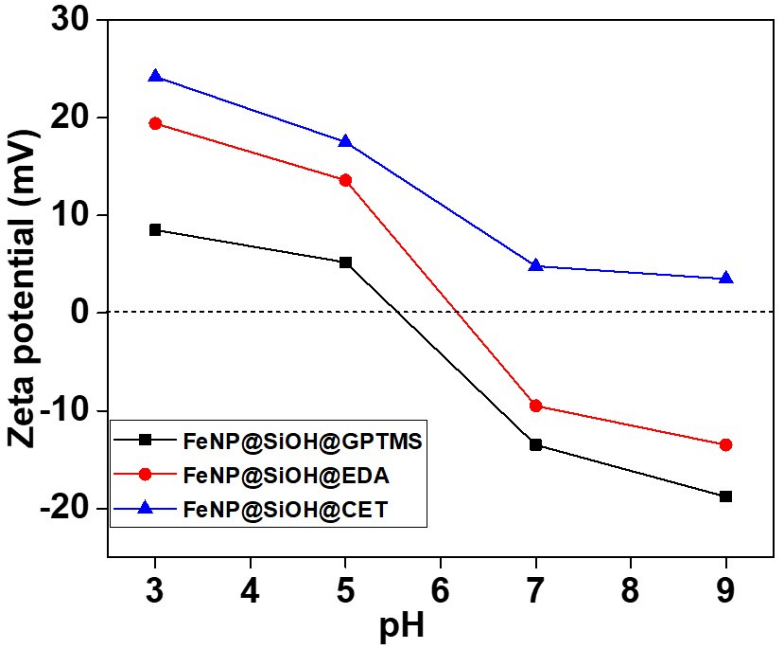

Fig. S3 Zeta potentials of FeNP@SiOH@EDA and FeNP@SiOH@CET nanoparticles as a function of different pH conditions.

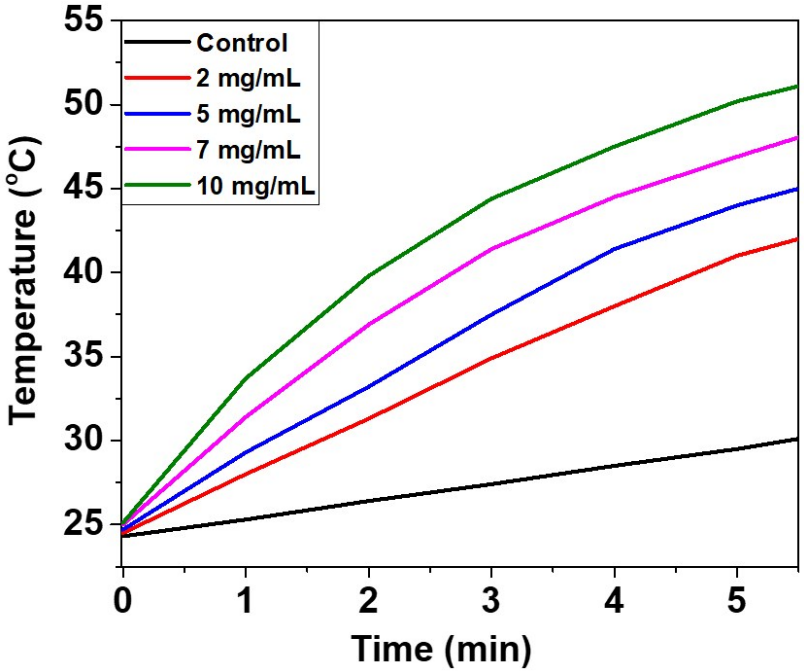

Fig. S4 Thermal response curves of FeNP@SiOH@CET NPs dispersed in water with the different concentrations and subjected to an AMF (f = 409 kHz and H = 180 Gauss).

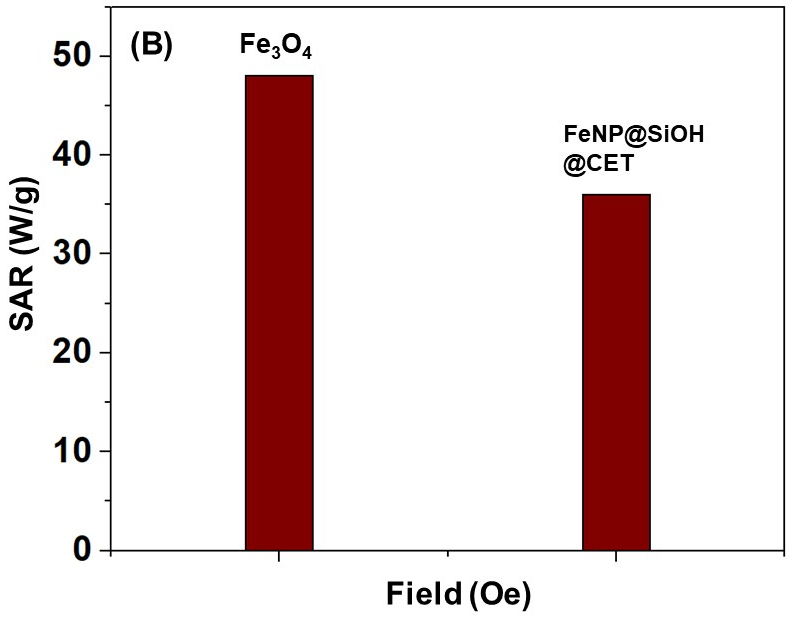

Fig. S5 The SAR values of pristine Fe_3O_4 nanoparticles and FeNP@SiOH@CET NPs under magnetic field frequency f = 409 kHz and applied magnetic field H = 180 Gauss.

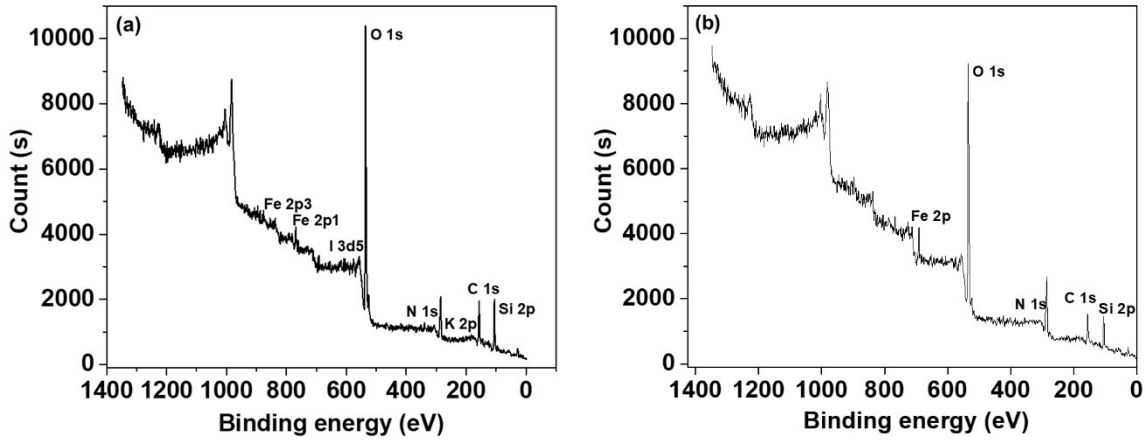

Fig. S6 Wide scan X-ray photoelectron spectra of (a) FeNP@SiOH@CET NPs; and (b) FeNP@SiOH@EDA NPs, respectively.

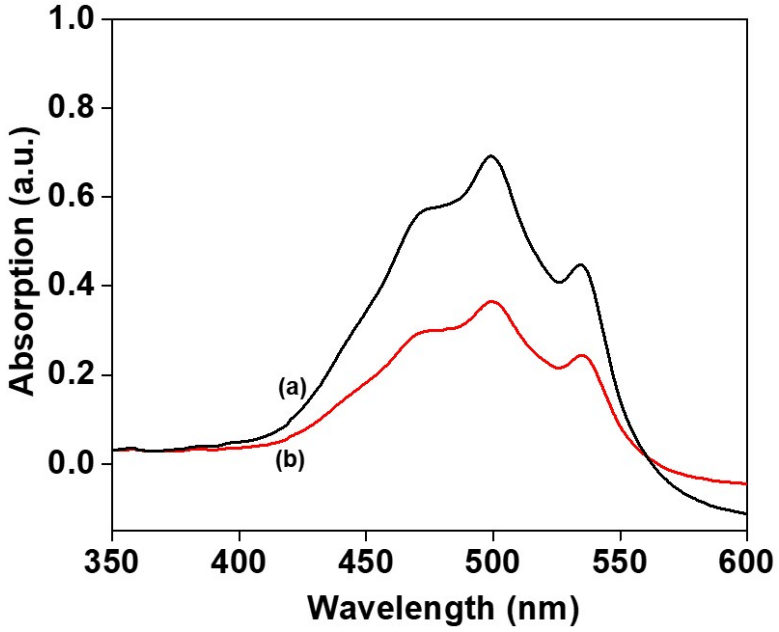

Fig. S7 UV-vis spectra of (a) initial concentration of Dox solution; and (b) final concentration of Dox solution after absorption by FeNP@SiOH@CET NPs.