Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B

Supporting Information

PEGylated Denatured Bovine Serum Albumin Modified Water Soluble Inorganic Nanocrystals as Multifunctional Drug Delivery Platforms

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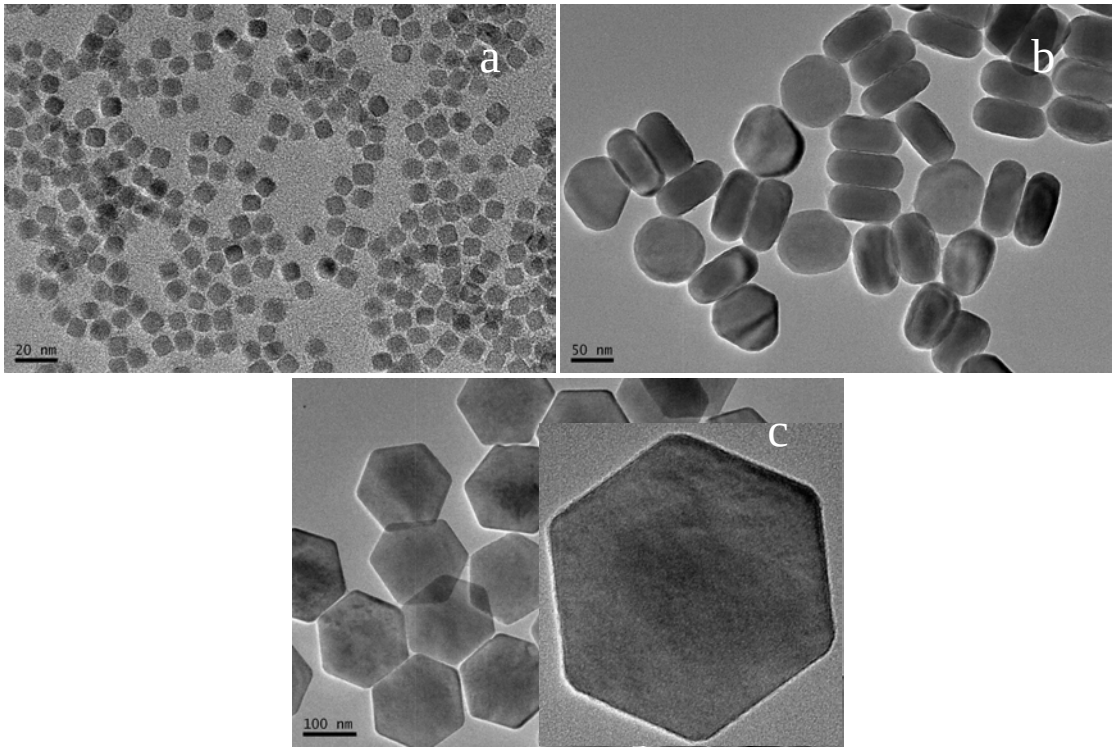

Figure S1. TEM images of engineered nanocrystals. Fe_3O_4@dBSA-mPEG (a); $NaYF_4$:Yb,Er@dBSA-mPEG (85 nm (b) and 170 nm (c) in diameters). The samples were negatively stained by 1% phosphotungstic acid.

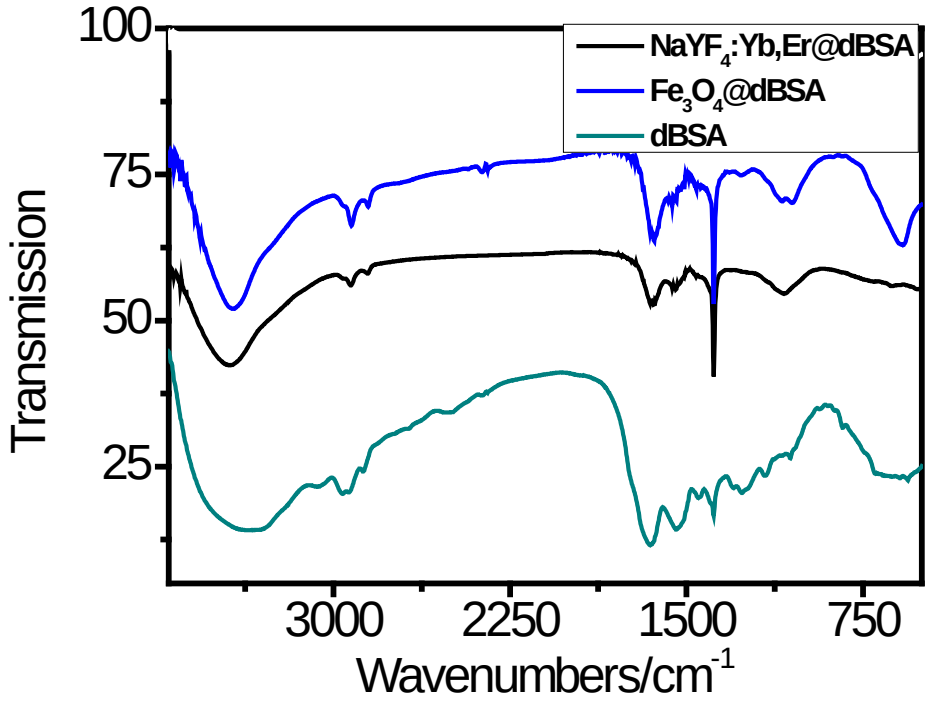

Figure S2. FT-IR spectra of dBSA coated nanocrystals

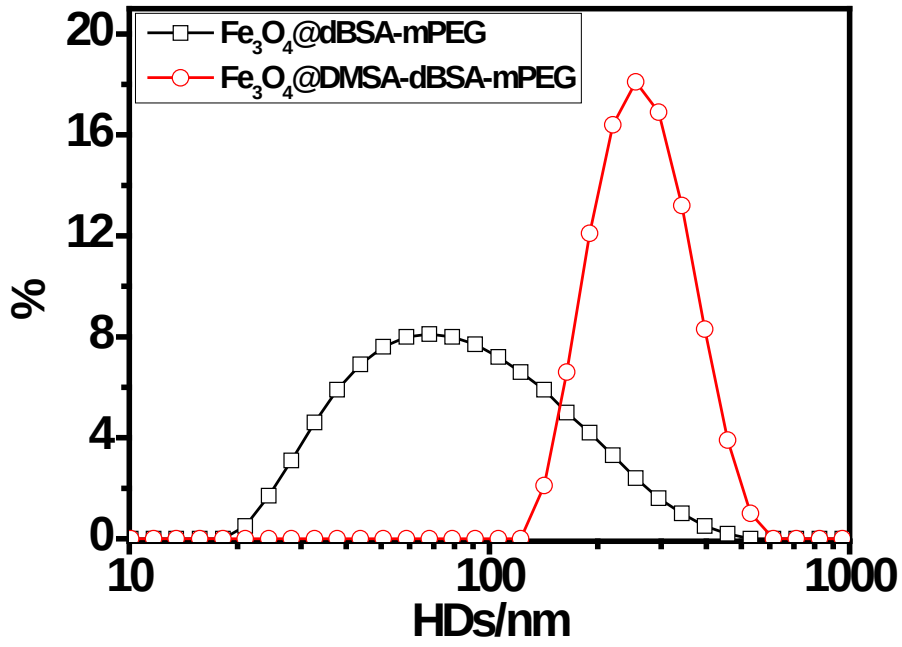

Figure S3. HDs of Fe_3O_4@dBSA-mPEG and Fe_3O_4@DMSA-dBSA-mPEG

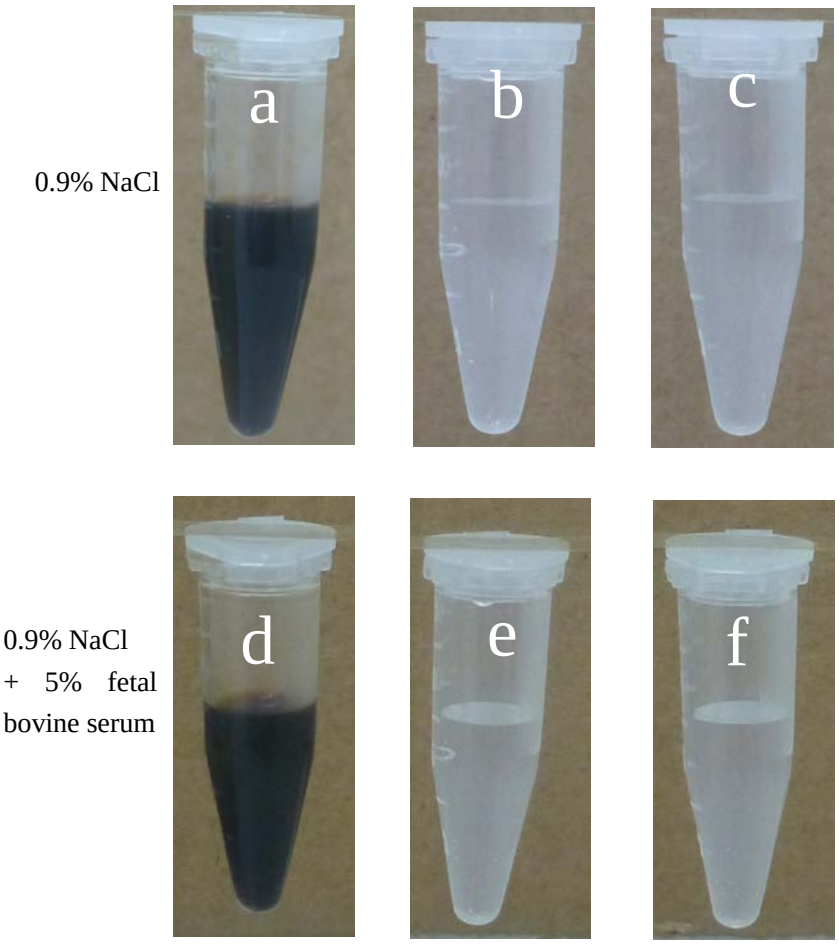

Figure S4. Photos of nanocrystals dispersed in 0.9% NaCl solution with or without 5% fetal bovine serum for 24 h. Fe_3O_4@dBSA-mPEG (a); $NaYF_4$:Yb,Er@dBSA-mPEG (85 nm (b) and 170 nm (c) in diameters) dispersed in 0.9% NaCl solution; Fe_3O_4@dBSA-mPEG (d); $NaYF_4$:Yb,Er@dBSA-mPEG (85 nm (e) and 170 nm (f) in diameters) dispersed in 0.9% NaCl solution with 5% fetal bovine serum.

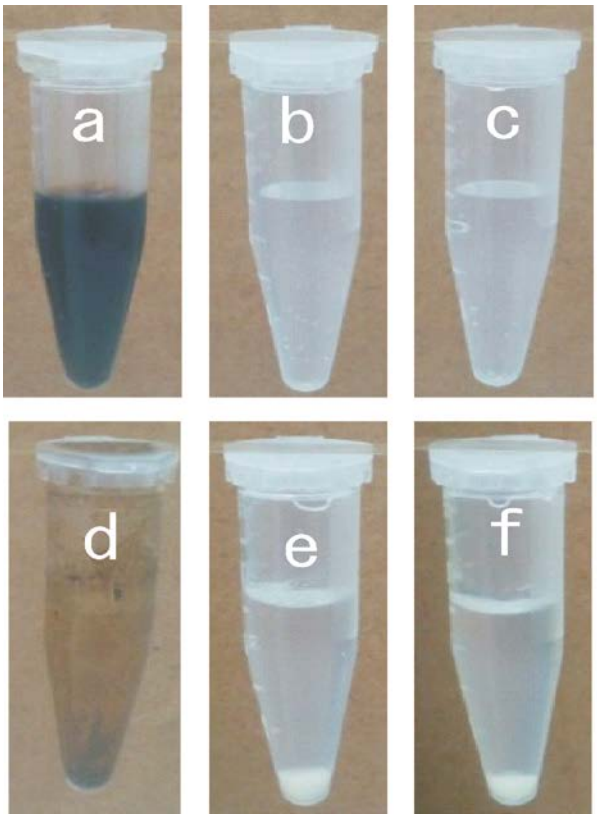

Figure S5. Photos of nanocrystals dispersed in distilled water. Fe_3O_4@dBSA-mPEG (a); $NaYF_4$:Yb,Er@dBSA-mPEG (85 nm (b) and 170 nm (c) in diameters); oleic acid modified Fe_3O_4 (d); oleic acid modified $NaYF_4$:Yb,Er (85 nm (e) and 170 nm (f) in diameters).

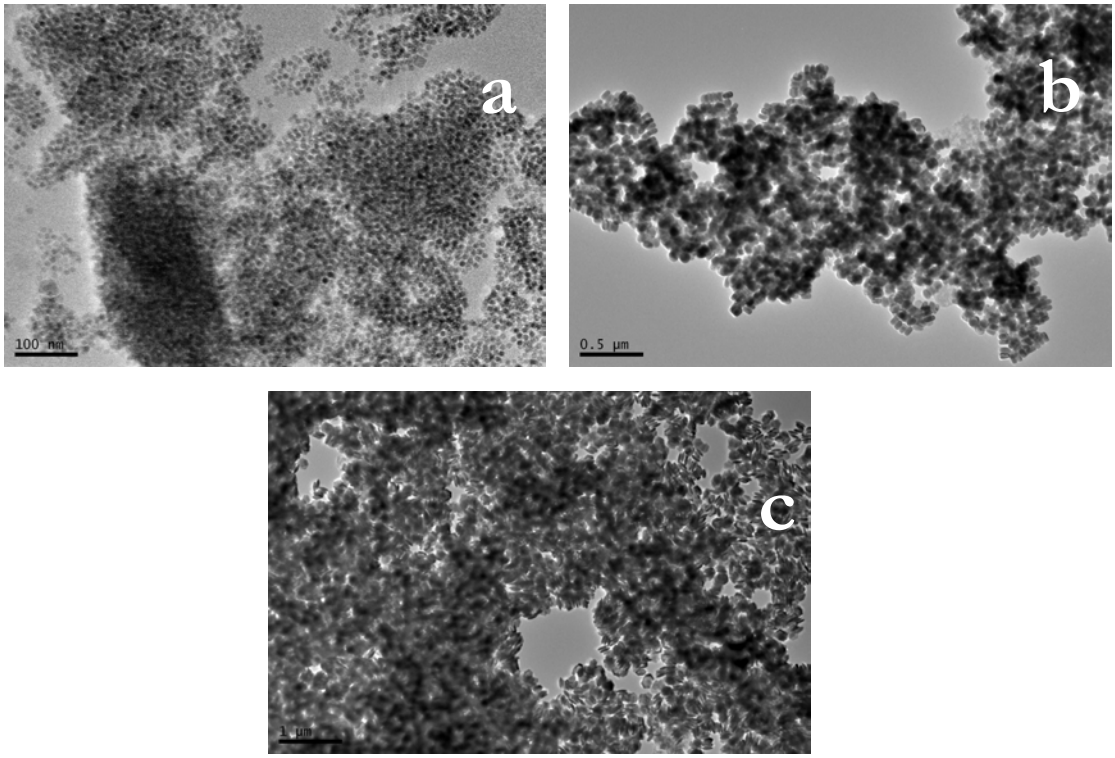

Figure S6. TEM images of nanocrystals dispersed in distilled water. Oleic acid coated Fe3O4 (a); oleic acid coated $NaYF_4$:Yb,Er crystals (85 nm (b) and 170 nm (c) in diameters).

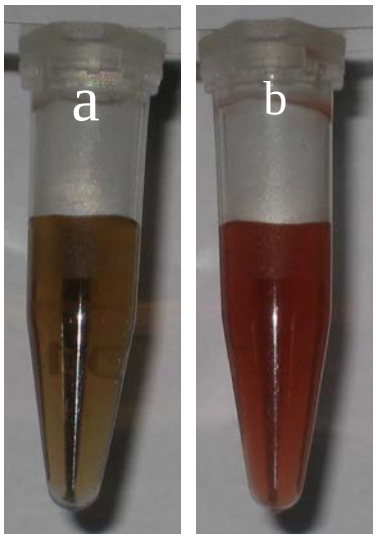

Figure S7. photos of DOX unloaded (a) or loaded (b) Fe3O4@dBSA-mPEG nanoparticles solutions.

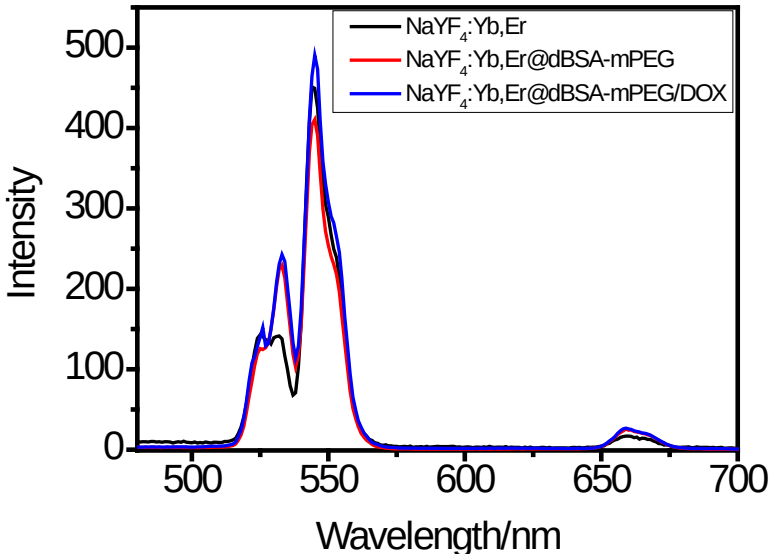

Figure S8. Fluorescence spectra (excitation at 980 nm) of $NaYF_4$:Yb,Er upconversion nanoparticles, $NaYF_4$:Yb,Er@dBSA-mPEG, and $NaYF_4$:Yb,Er@dBSA-mPEG/DOX complexes.