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

Electronic Supplementary Information

Intrinsically Radiolabeled Multifunctional Cerium Oxide Nanoparticles for *in vivo* Studies

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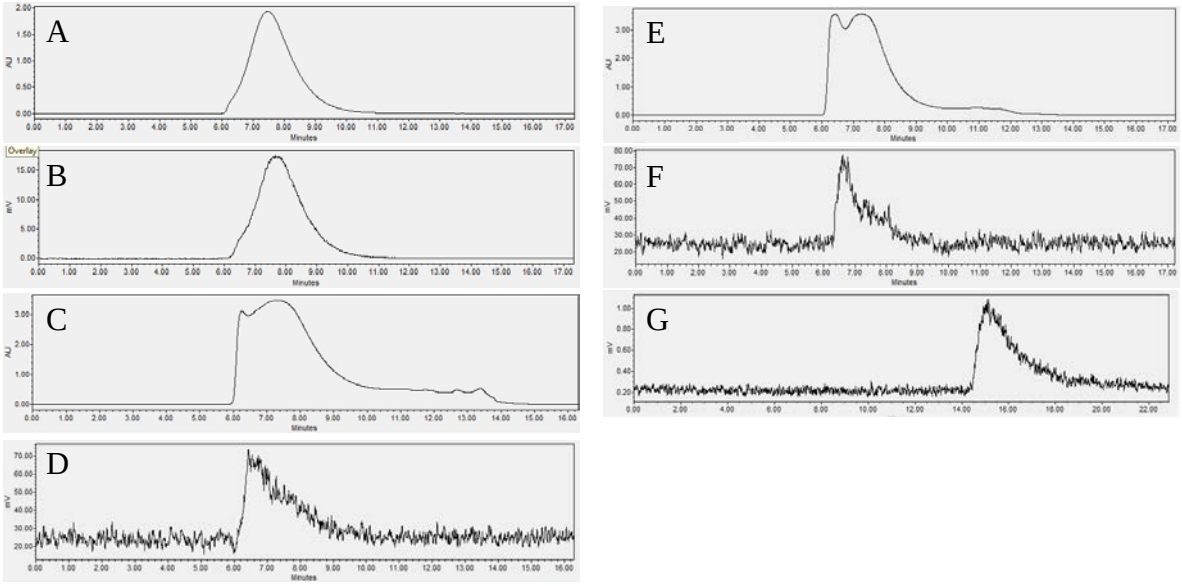

Fig. S1 (A) UV of DT10 ^{141}Ce-rCONP, (B) Radio-HPLC of DT10 ^{141}Ce-rCONP, (C) UV of DT10-PEG ^{65}Zn-rCONP, (D) Radio-HPLC of DT10-PEG ^{65}Zn-rCONP, (E) UV of DT10-SB ^{65}Zn-rCONP, (F) Radio-HPLC of DT10-SB ^{65}Zn-rCONP, (G) Radio-HPLC of $^{65}ZnCl_2$.

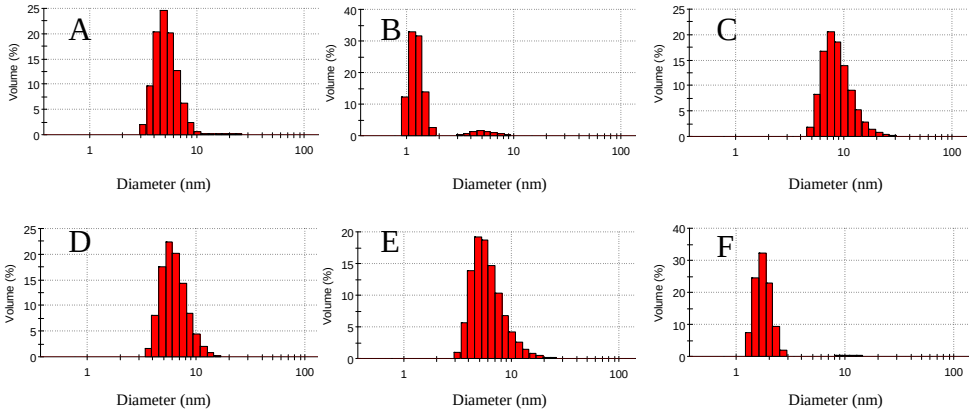

Fig. S2 Hydrodynamic size of (A) DT10 rCONP (6.0 nm), (B) PAA rCONP (2.0 nm 93% and 5.3nm 7%), (C) DT10-NH_2 rCONP (9.0 nm), (D) DT10-PEG rCONP (6.4 nm), (E) DT10-SB rCONP (6.3 nm), (F) ultrasmall size DT10-NH_2 rCONP (2.0 nm) without NH_4OH in H_2O.

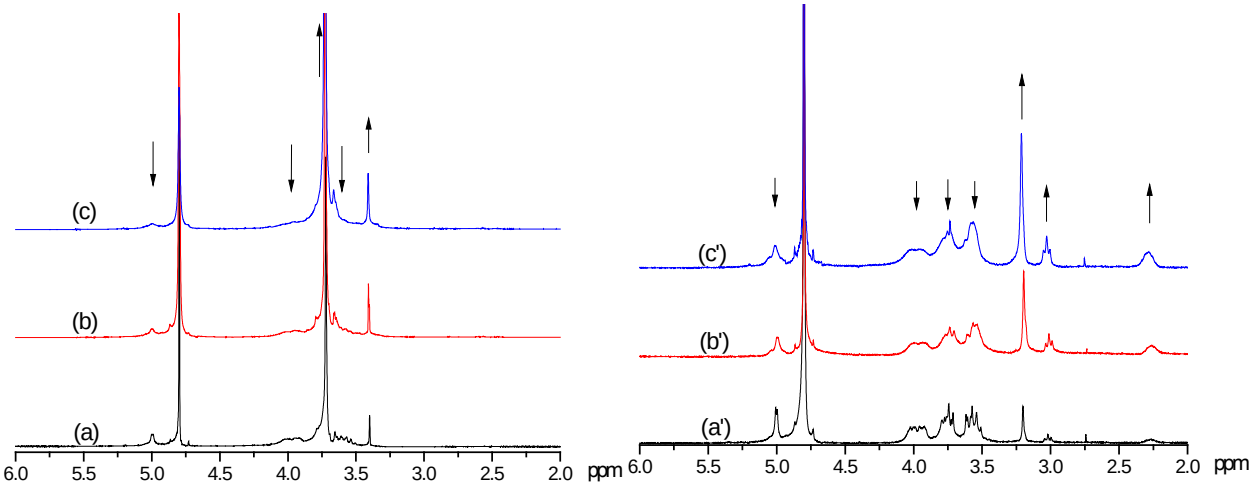

Fig. S3 Selected ^1H NMR of (a) DT10-PEG-10%, (b) DT10-PEG-20%, (c) DT10-PEG-30% and (a') DT10-SB-10%, (b') DT10-SB-20%, (c') DT10-SB-30%.

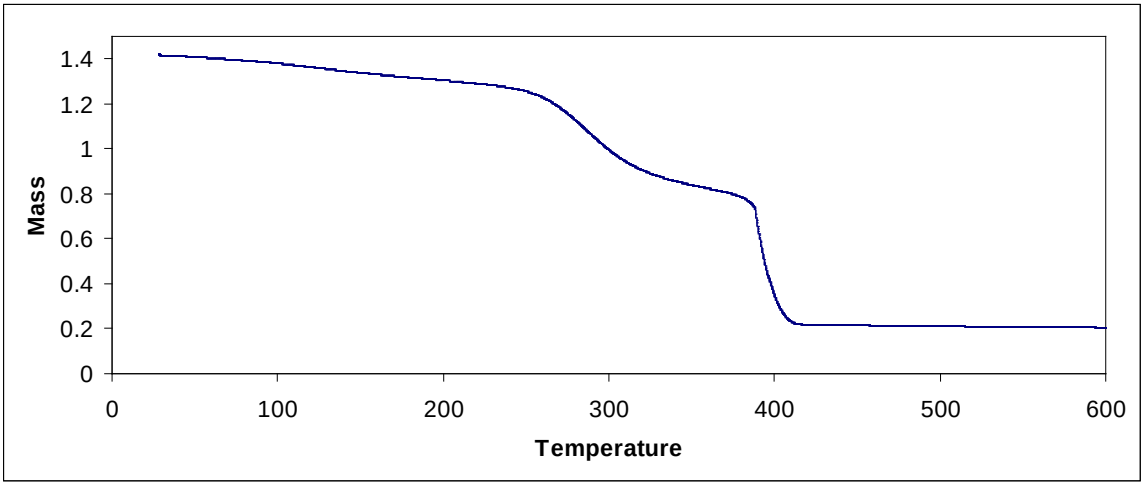

Fig. S4 Thermal gravimetric analysis (TGA) of DT10-NH_2 CONP.

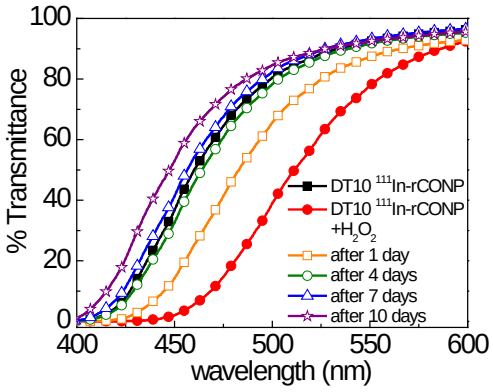

Fig. S5 Autocatalytic redox properties of DT10 ^{111}In-rCONP.

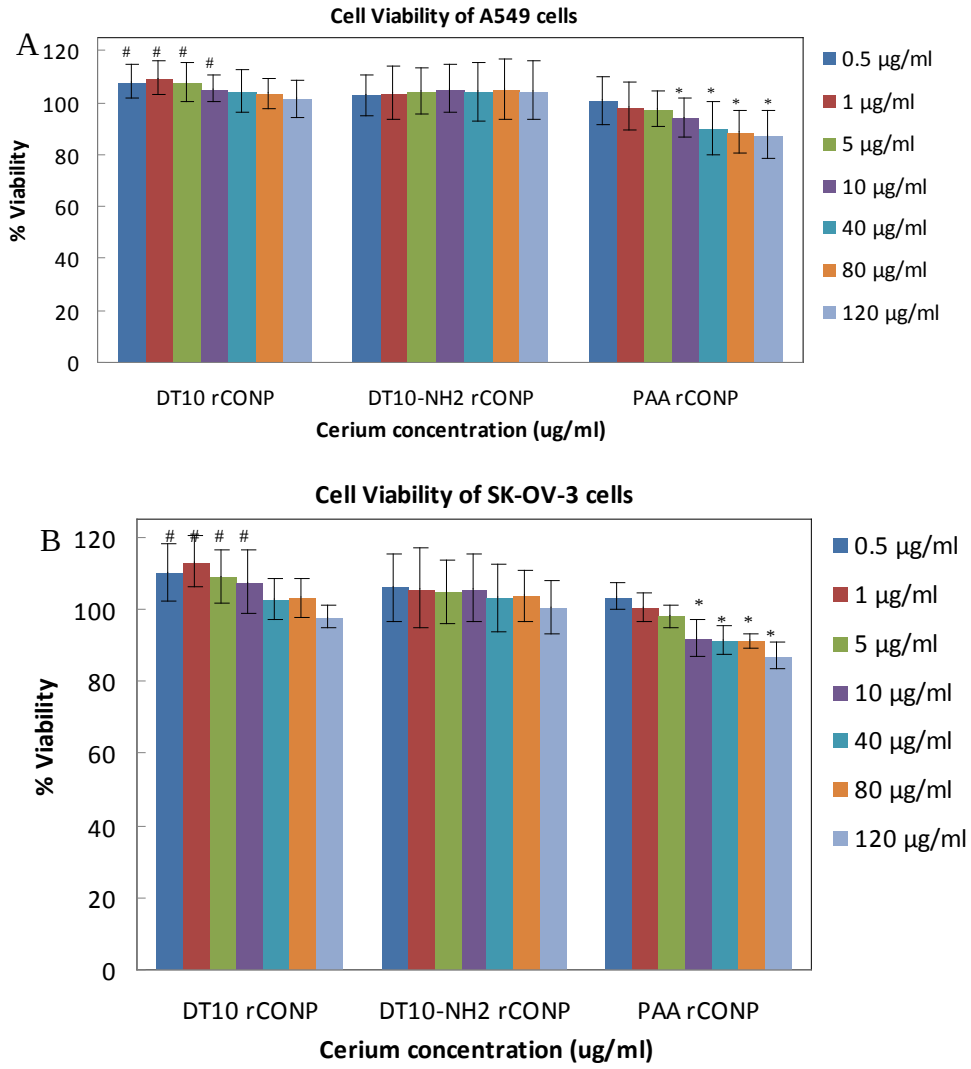

Fig. S6 Cell viability of (A) A549 cells and (B) SK-OV-3 cells after 24 hrs exposure to various cerium concentrations of DT10, DT10-NH_2 and PAA ^{141}Ce-rCONP. Data is expressed as mean % viability ± SD. Significant increase or significant decrease in viability is indicated by # and *, respectively ($p<0.05$).

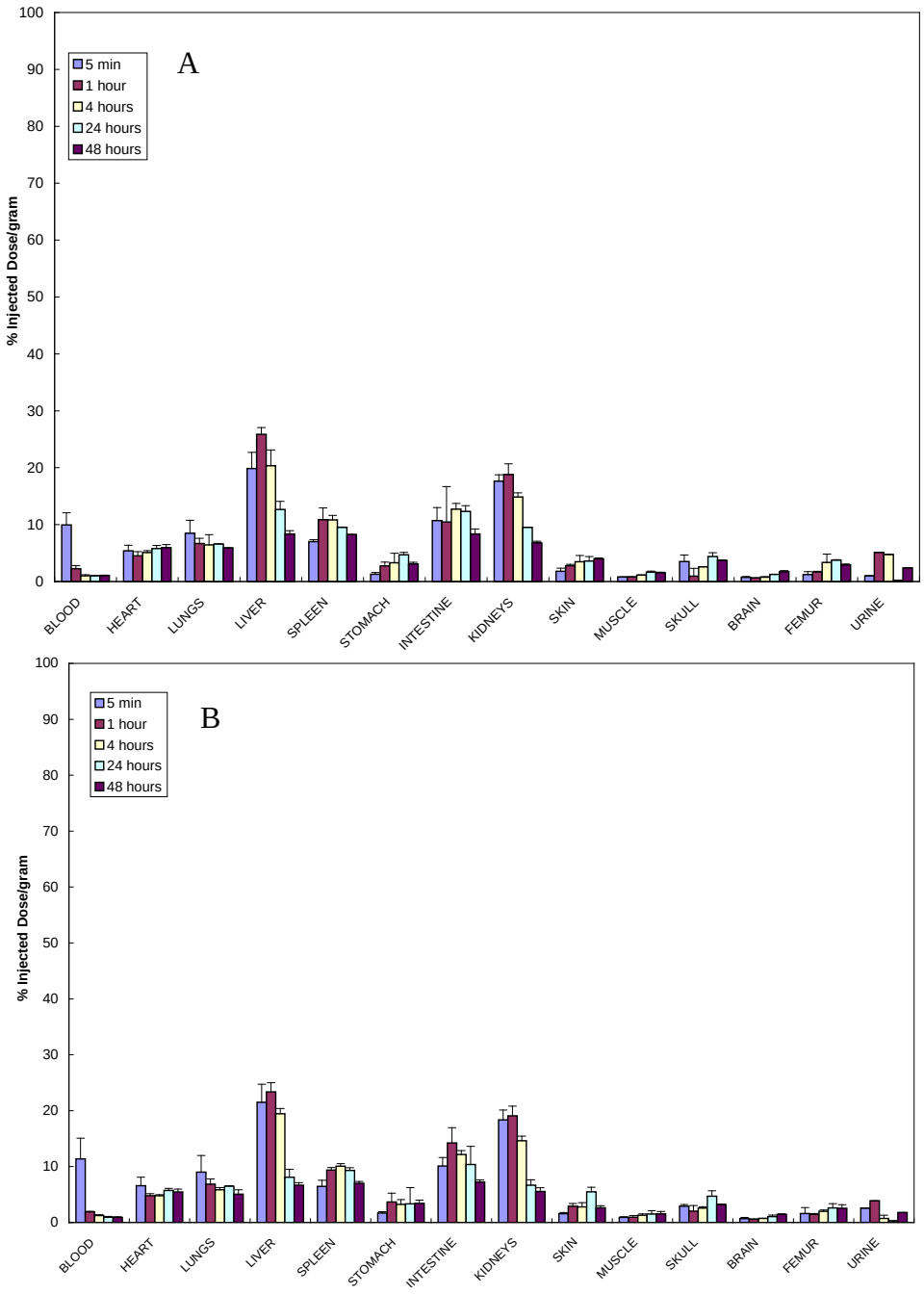

Fig. S7 Biodistribution (%ID/g) at various time points post i.v. administration of (A) DT10-PEG ^{65}Zn-rCONP and (B) DT10-SB ^{65}Zn-rCONP.

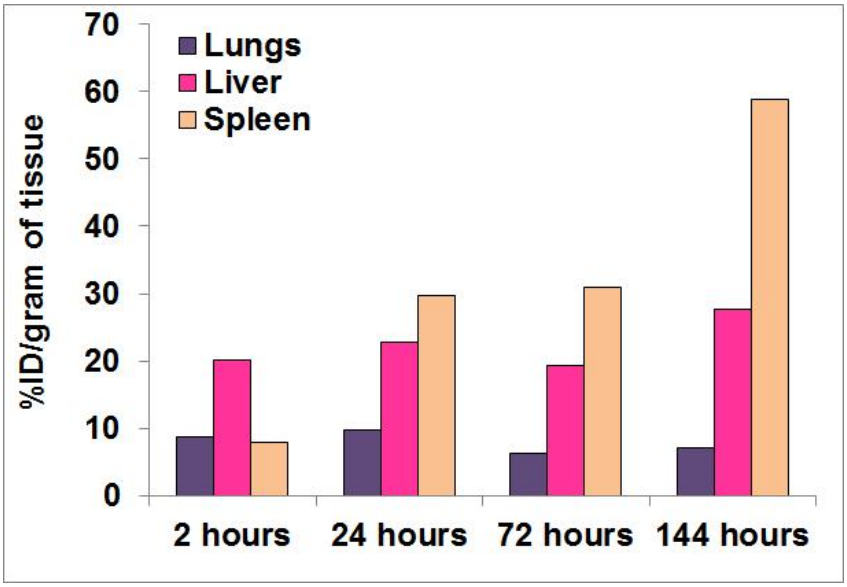

Fig. S8 Quantitative analysis of micro-SPECT images of a nude mouse injected with DT10 ^{141}Ce-rCONP.