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

Supporting information

Layered Double Hydroxide Nanoparticles to Enhance Organ-Specific Target and Anti-Proliferative Effect of Cisplatin

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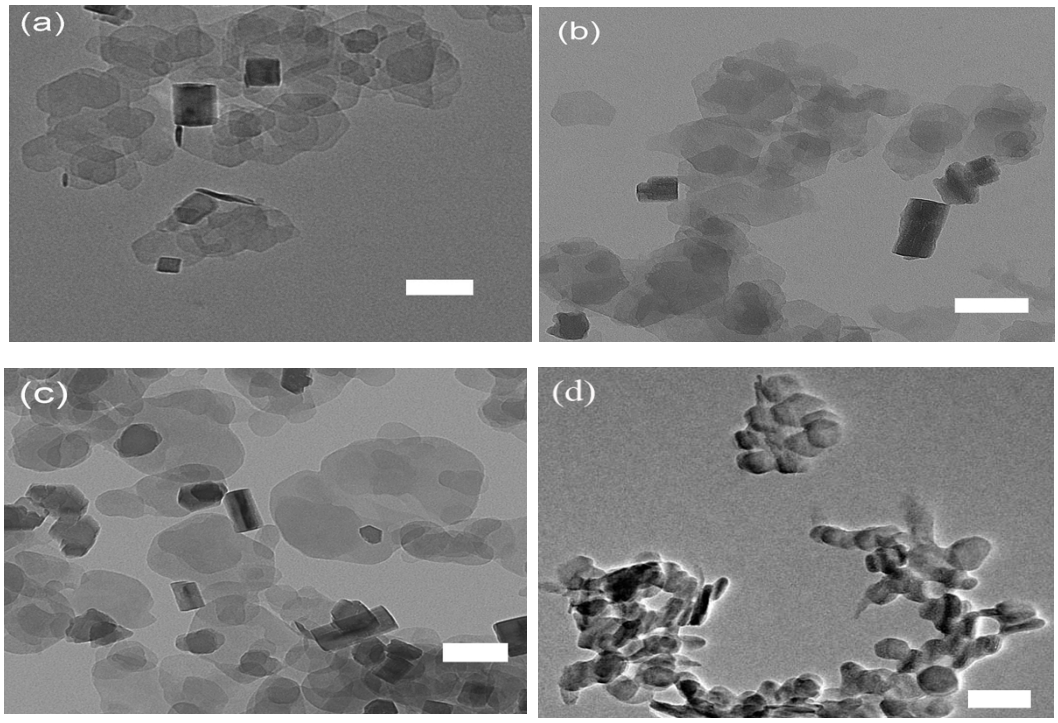

Figure S1. TEM images of (a) LDH-NH_2, (b) LDH-NH-COOH, (c) LDH-NH-PEG5000 and (d) LDH-NH-COOH-CP. The morphology of LDH-NH-COOH-CP samples showed high stability after treatment with blood plasma for 24 h. Scale bars-100 nm.

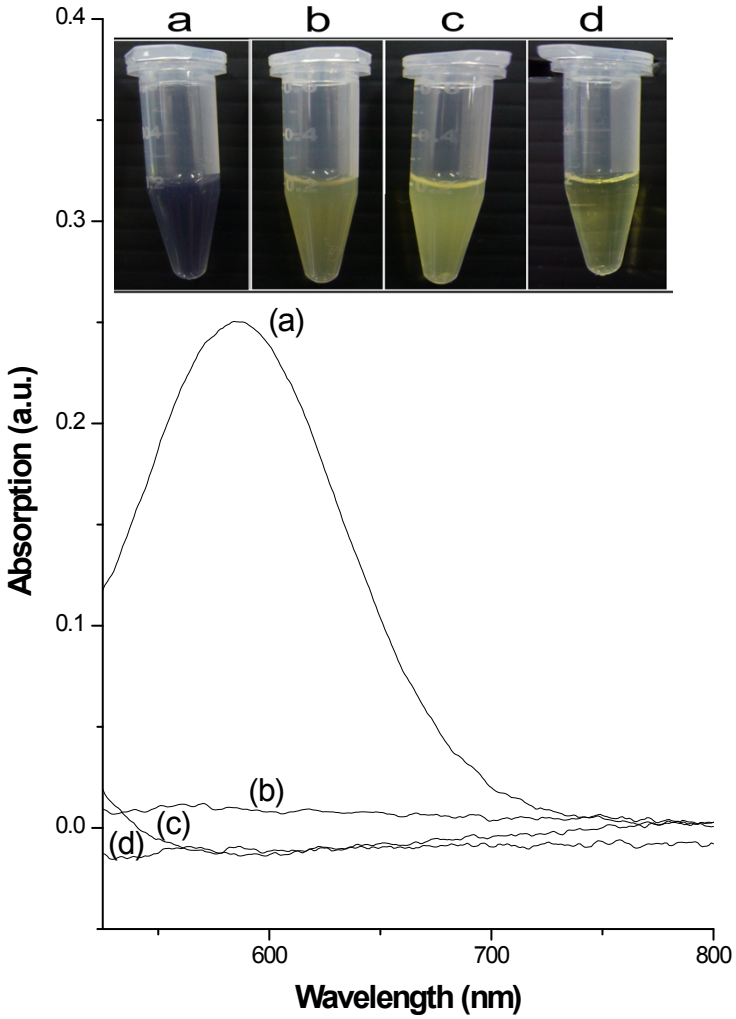

Figure S2. UV-Vis spectra and white-light sample images of ninhydrin treated (a) LDH-NH_2, (b) LDH-NH-PEG5000, (c) LDH-NH-COOH samples and (d) Ninhydrin solution alone.

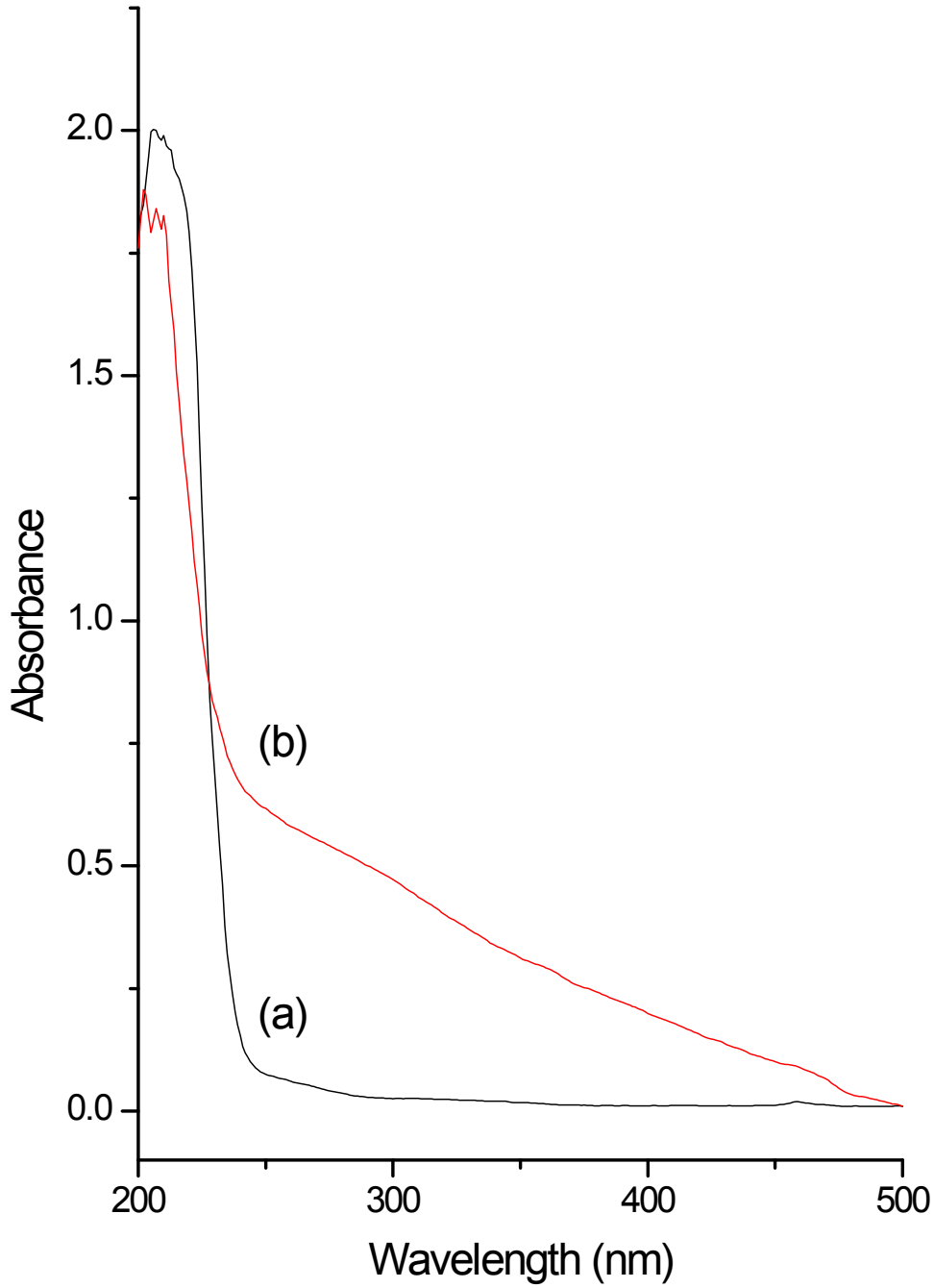

Figure S3. UV-Vis spectra of (a) hydroxo-cisplatin, and LDH-NH-COOH-CP samples.

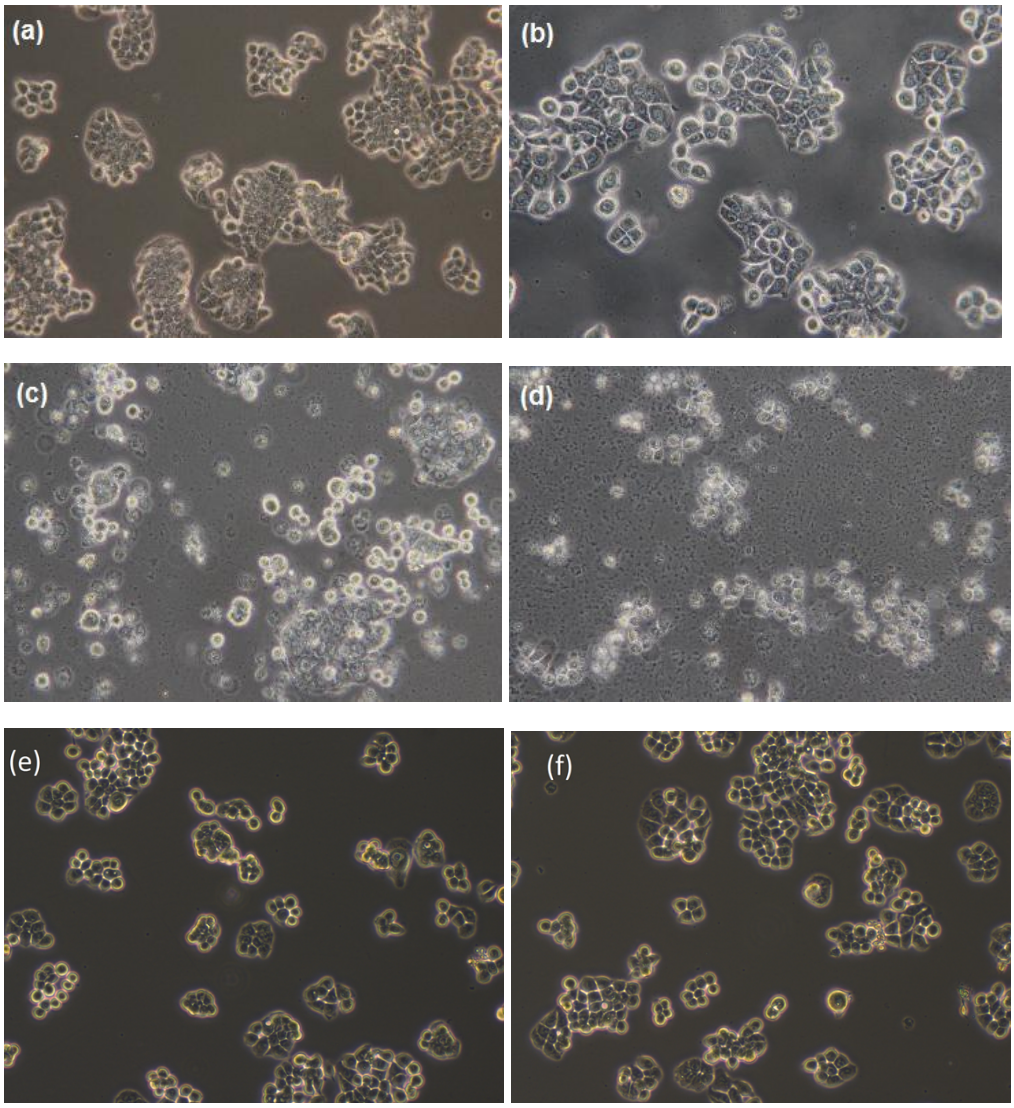

Figure S4. Cellular morphology after treated with (a) Control (0 μg mL^{-1}), (b) 10 μg mL^{-1}, (c) 50 μg mL^{-1}, and (d) 100 μg mL^{-1} of LDH-NH-COOH-CP (e) LDH-NH-PEG5000 (100 μg mL^{-1}), (f) LDH-NH-COOH (100 μg mL^{-1}) nanoparticles for 24 h. Then, the cell cytotoxicity was detected by microscopic morphological examination.

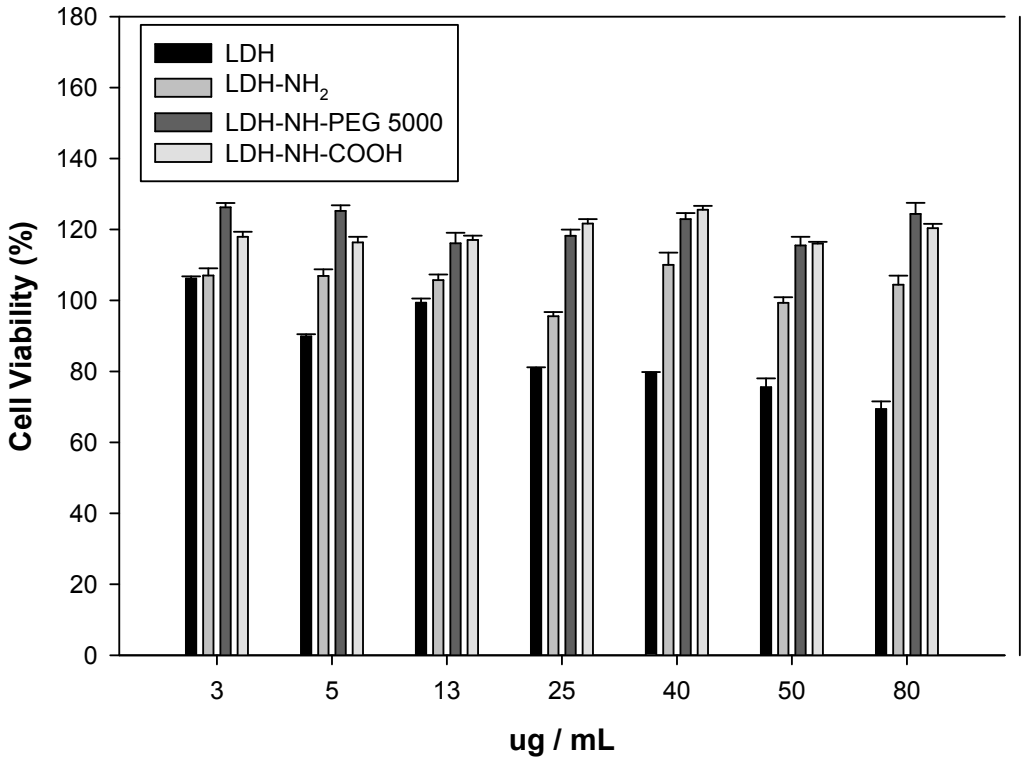

Figure S5. MTT cytotoxicity assay of HT-29 cells treated with LDH, LDH-NH_2, LDH-NH-PEG5000, and LDH-NH-COOH samples at various concentration ranges (3, 5, 13, 25, 40, 50, 80 μg mL^{-1}) for 24 h. Cells without added nanoparticles were taken as the control experiment and the viability was set as 100%. The final report data were expressed as a percentage of the control (mean± standard deviation).

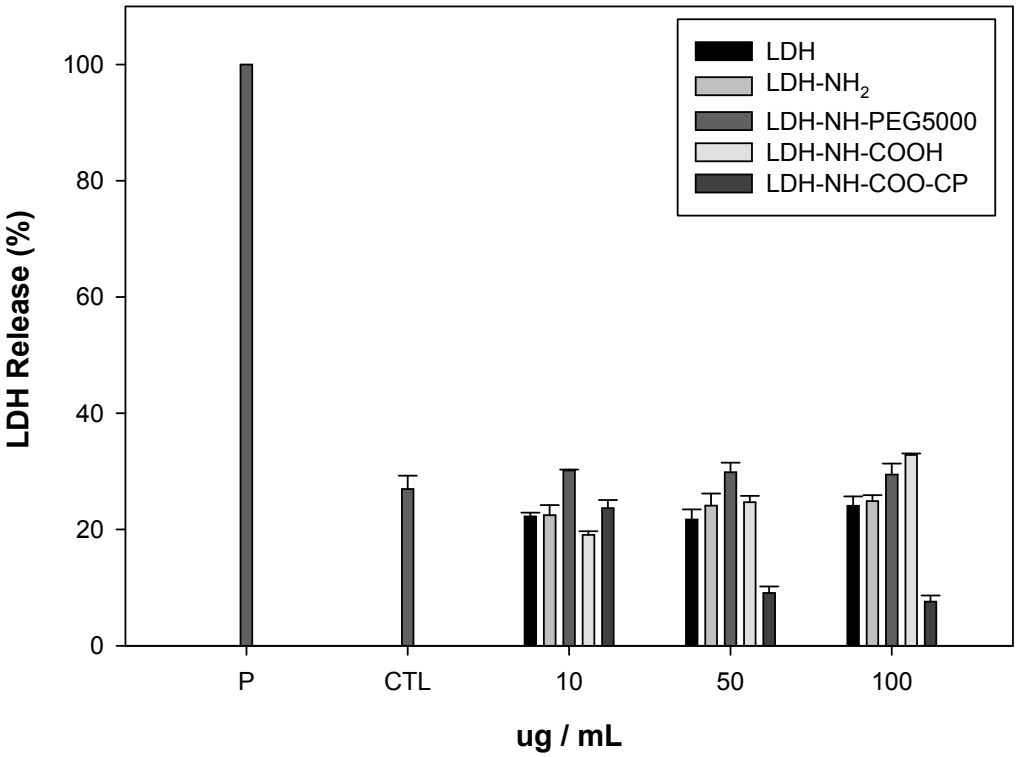

Figure S6. The Lactate dehydrogenase assay of HT-29 cells treated with LDH, LDH-NH_2, LDH-NH-PEG5000, LDH-NH-COOH, and LDH-NH-COOH-CP samples at 10, 50, and 100 μg mL^{-1} for 24 h. Samples without nanoparticle treatment were defined as the control (CTL) experiment and Triton X-100 (1 %) treated sample was defined as the positive (P) experiment.

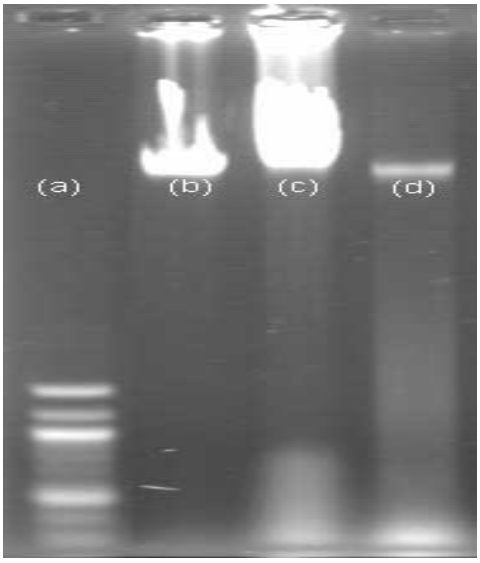

Figure S7. Induction of DNA fragmentation of LDH-NH-COOH-CP nanoparticles to colon cancer cells (HT-29): (a) 100 bp DNA marker, (b) 0 μg mL^{-1}, (c) 5 μg mL^{-1}, and d) 10.3 μg mL^{-1} of LDH-NH_2-COOH-CP treatments.

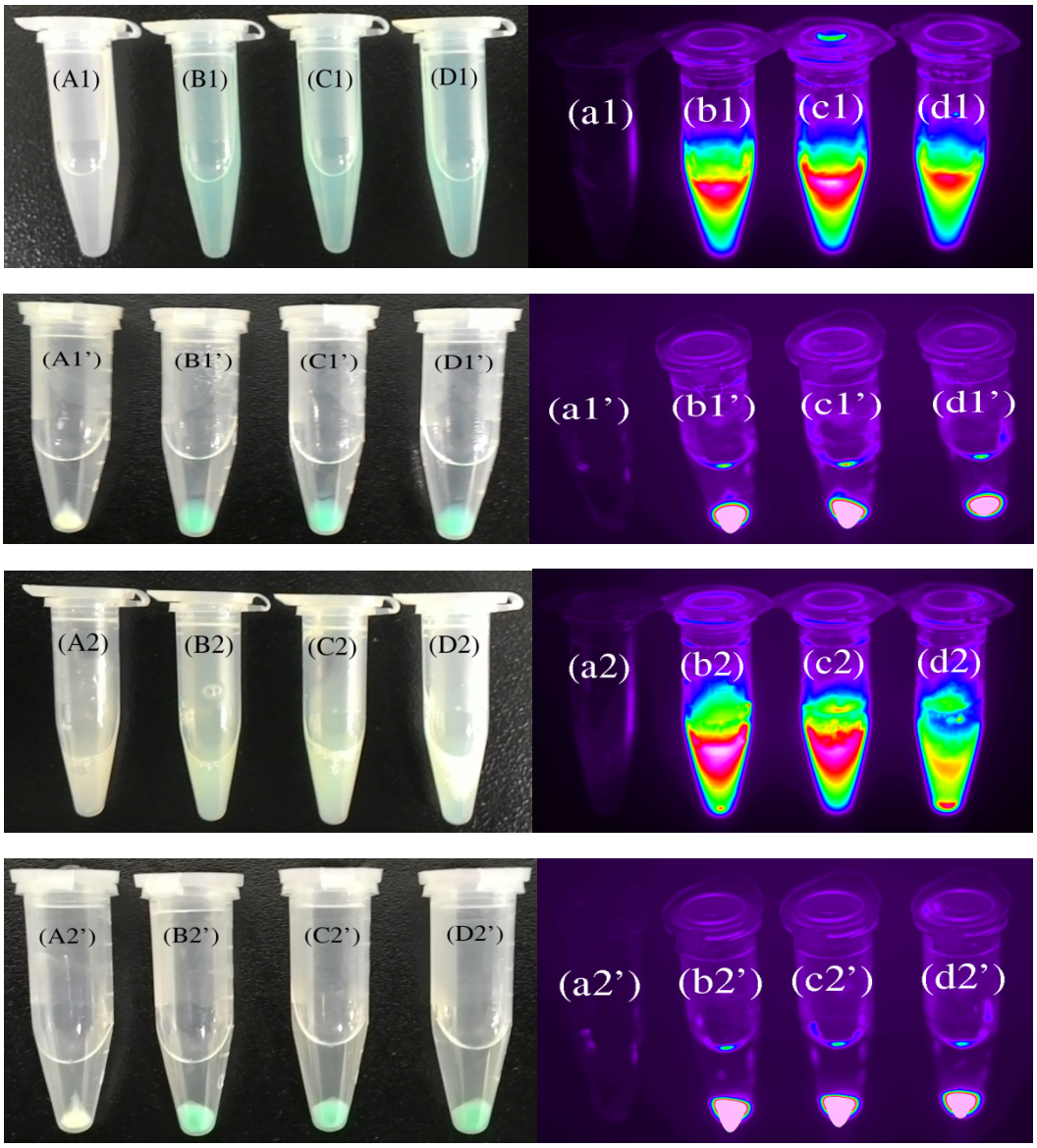

Figure S8. White-light (left samples) and fluorescent images (right samples) of the centrifuged (represented ‘) and suspended samples after incubation in PBS (labeled 1) and plasma (labeled 2) for 3 h. (A) LDH, (B) LDH-NH_2, (C) LDH-NH-PEG5000, (D) LDH-NH-COOH.