Supporting Information for

Targeted Nanotherapeutics Encapsulating Liver X Receptor Agonist GW3965 Enhance Anti-atherogenic Effects without Adverse Effects on Hepatic Lipid Metabolism in *Ldlr*$^{-/-}$ Mice

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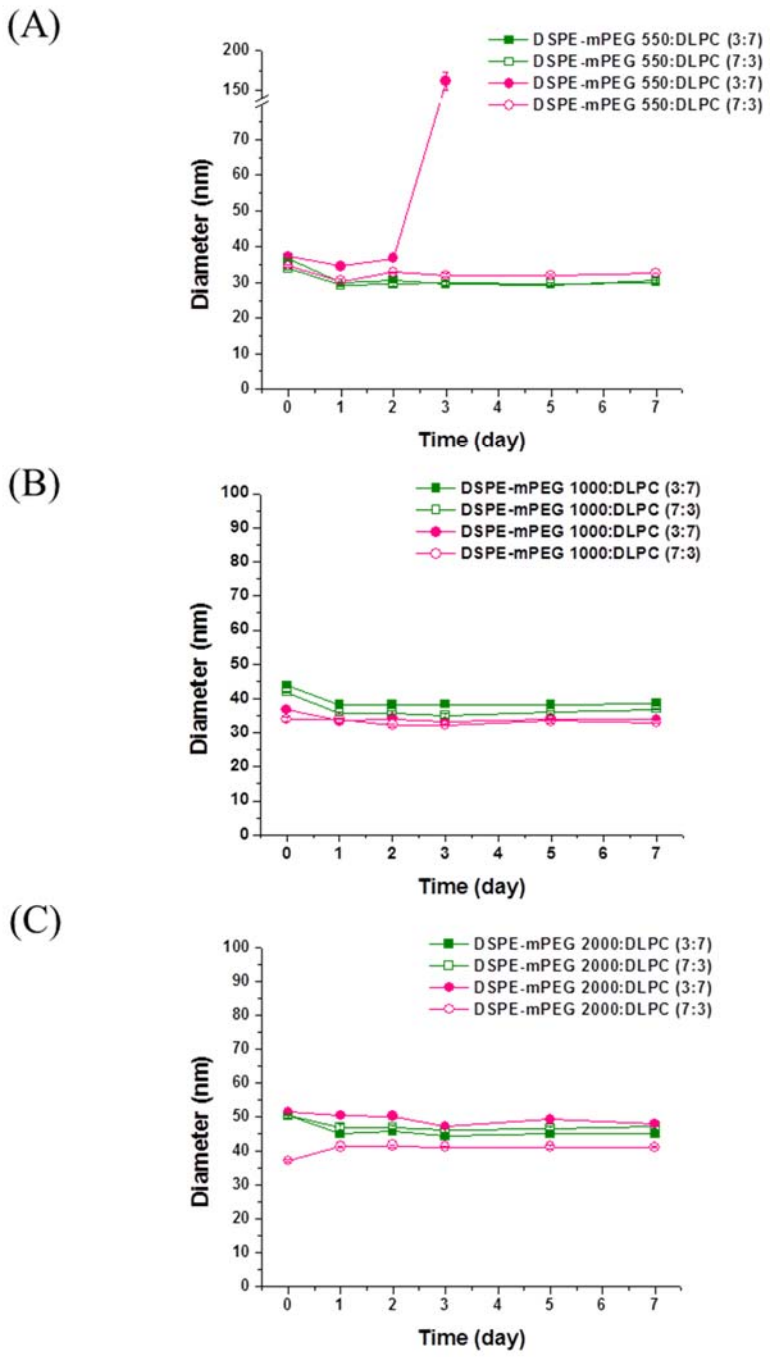

Figure S1. *In vitro* stabilities of the **(A)** NPs(550), **(B)** NPs(1000), and **(C)** NPs(2000) over 7 days. NPs(550), NPs(1000), and NPs(2000) were prepared with DSPE-mPEGs: DLPC (3:7 and 7:3), and incubated with PBS (green) and 10% FBS (pink), respectively, under gentle stirring (100 rpm) at 37℃. All the NPs with the molar ratio of DSPE-mPEGs: DLPC (7:3) were stable for 7 days in both PBS and 10% FBS.

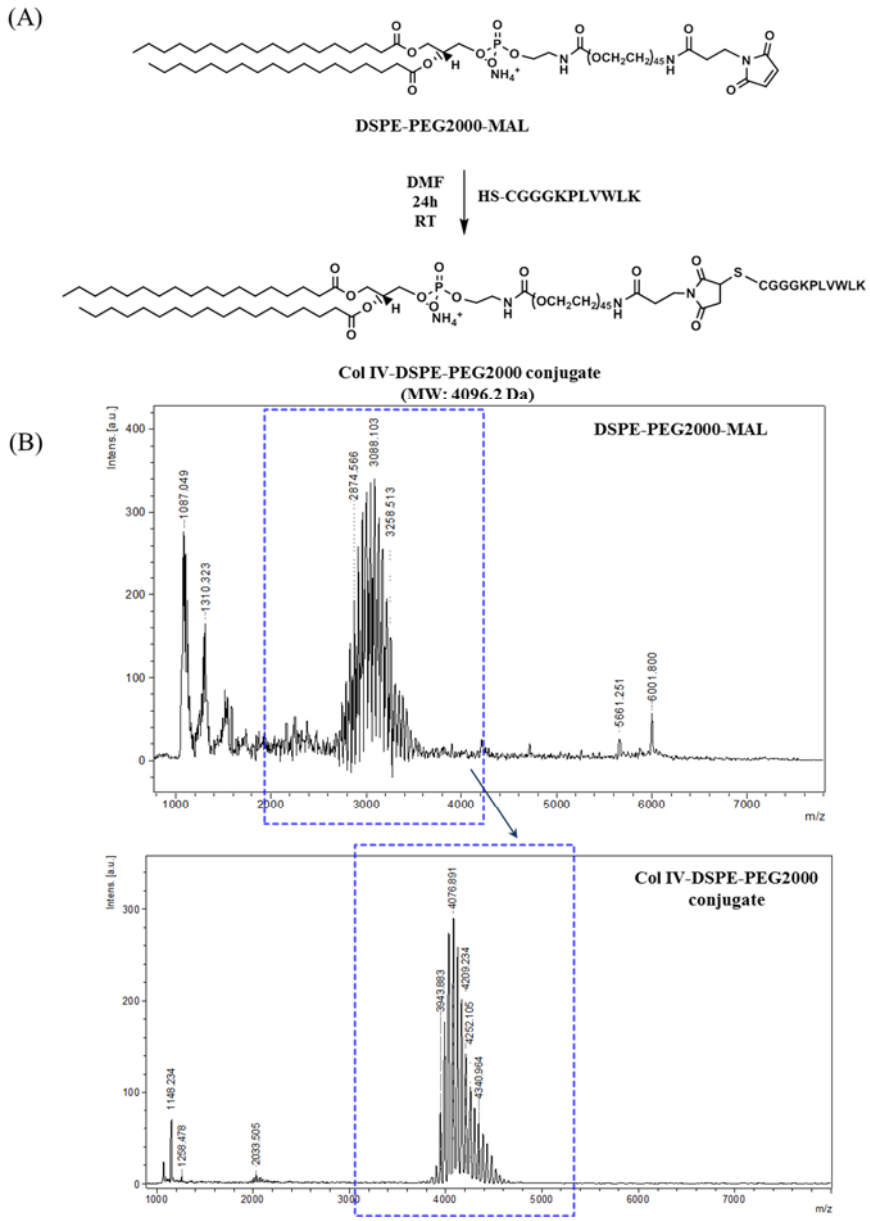

Figure S2. Synthesis and characterization of Col IV-DSPE-PEG2000 conjugate. **(A)** Schematic of Col IV-DSPE-PEG2000 synthesis. The maleimide-functionalized DSPE-PEG2000 (DSPE-PEG2000-MAL) dissolved in chloroform was added to the Col IV-targeting peptide (KLWVLPKGGGC) that was previously dissolved in dry DMF. The reaction was stirred at RT for 24h, then the final product of Col IV-DSPE-PEG2000 conjugate was purified using HPLC. **(B)** MALDI TOF Mass Spectrometry measurement of DSPE-PEG2000-MAL and Col IV-DSPE-PEG2000 conjugate.

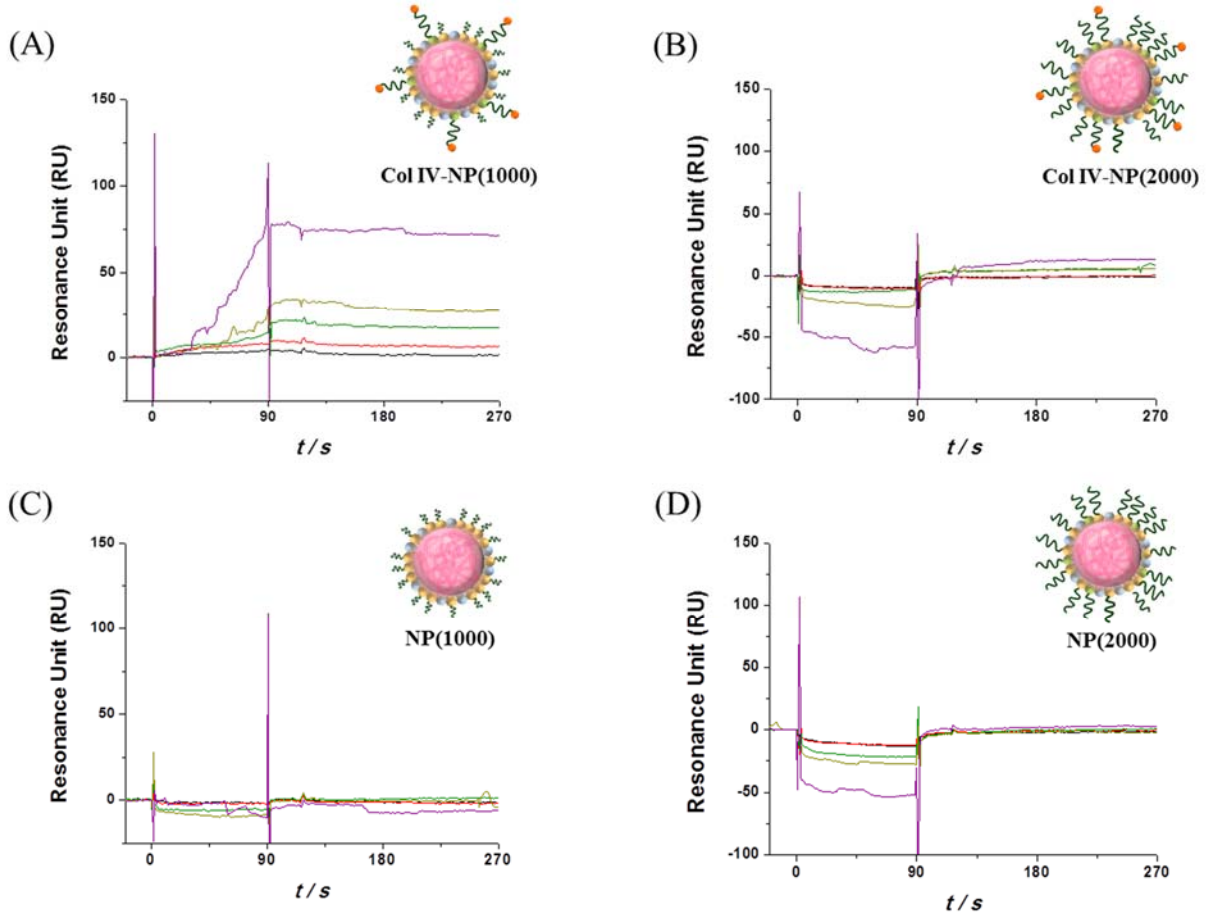

Figure S3. SPR sensorgrams obtained from BIAcore chips with immobilized collagen IV upon treatments with various concentrations of **(A)** Col IV-NPs(1000), **(B)** Col IV-NPs(2000), **(C)** NPs(1000), and **(D)** NPs(2000) (serial half dilution of the NPs from purple to black: purple: 5 mg/mL; yellow: 2.5 mg/mL; green: 1.25 mg/mL; red: 0.625 mg/mL; and black: 0.3 mg/mL). The RU value in Col IV-NPs(1000) was higher than those of other NPs.

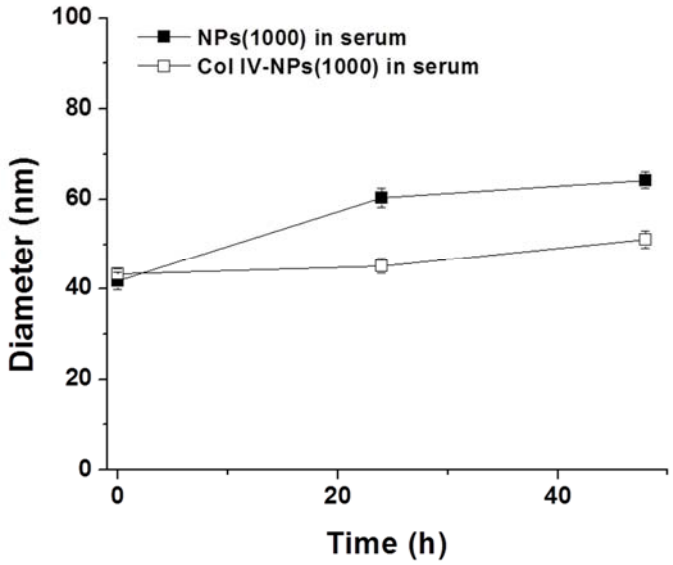

Figure S4. *In vitro* stabilities of NP(1000) and Col IV-NP(1000) in serum (100% FBS) at 37℃. Data are expressed as mean ± SEM.

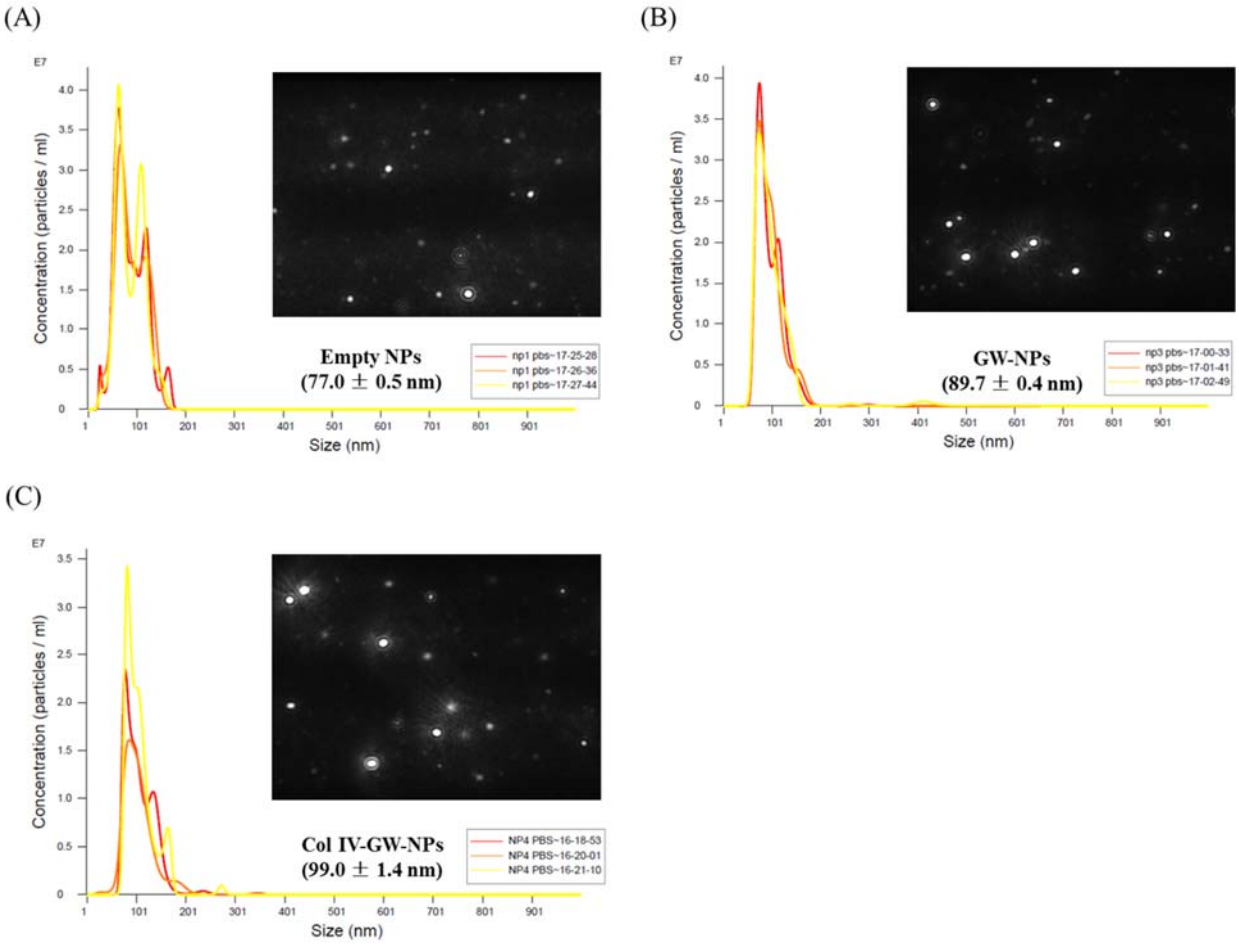

Figure S5. The mean hydrodynamic size measurements of empty NPs, GW-NPs, and Col IV-GW-NPs determined by nanoparticle tracking analysis (NTA). Inset data are expressed as the mean ± SEM.

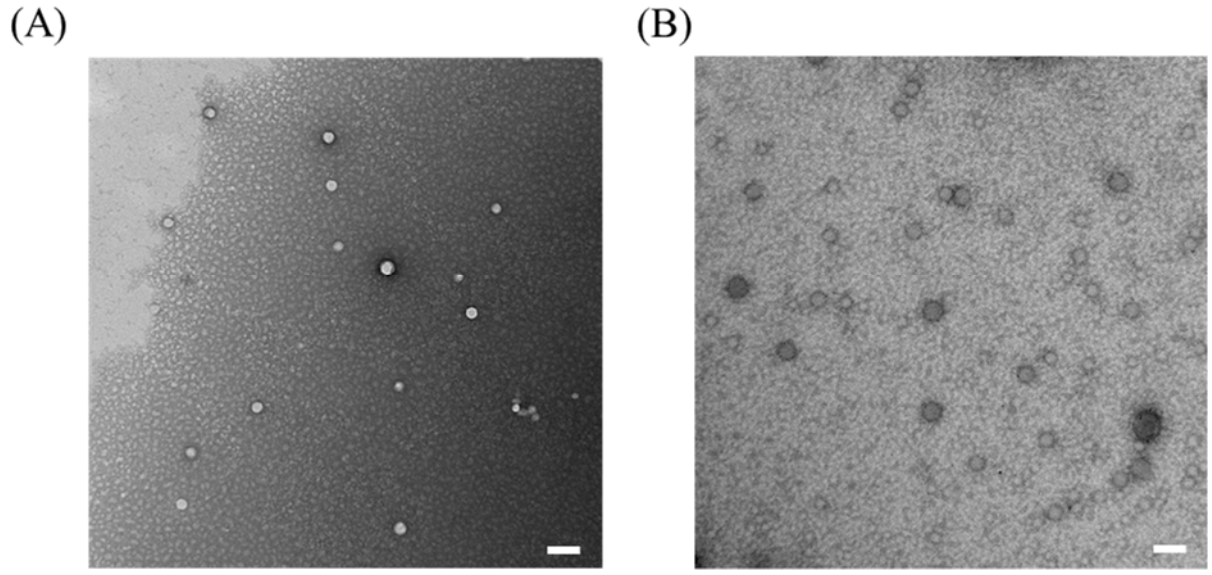

Figure S6. Representative TEM images of the **(A)** empty NPs stained with 0.75% uranyl formate and **(B)** GW-NPs stained with 1% uranyl acetate. Scale bars represent 100 nm.

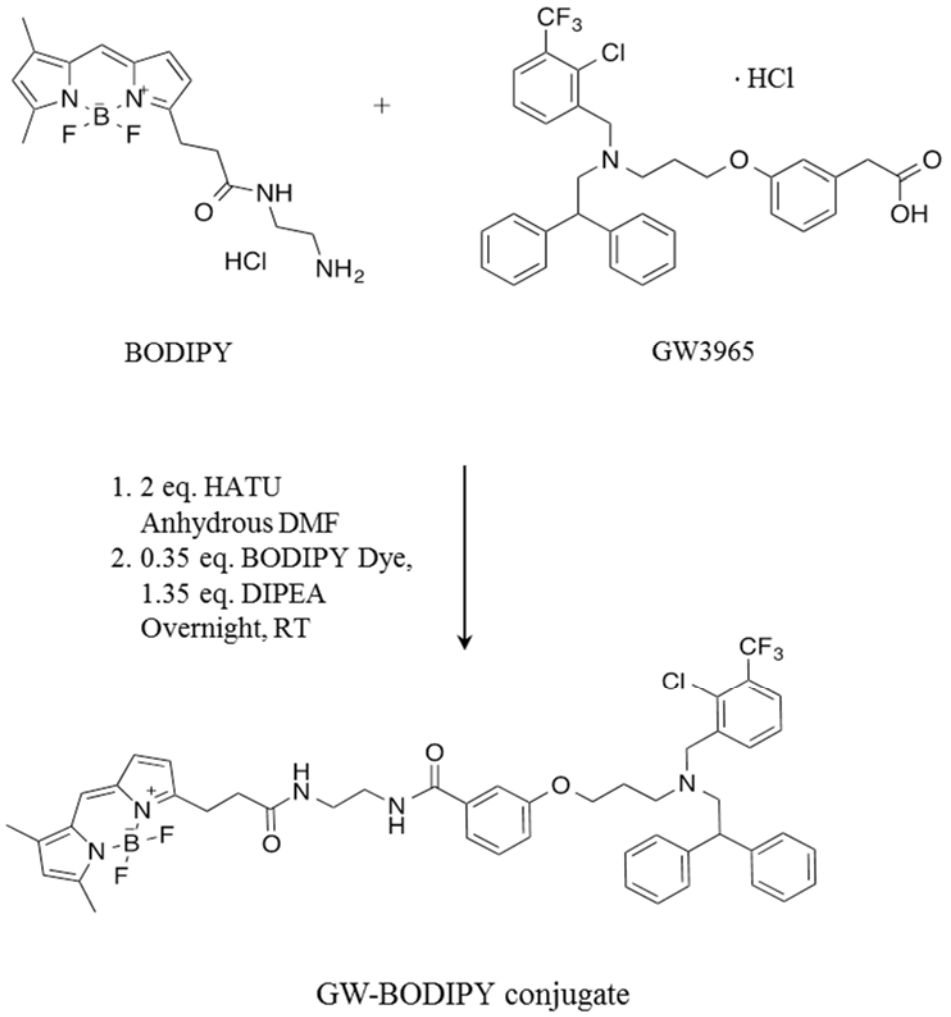

Figure S7. Synthetic scheme for GW-BODIPY conjugate.

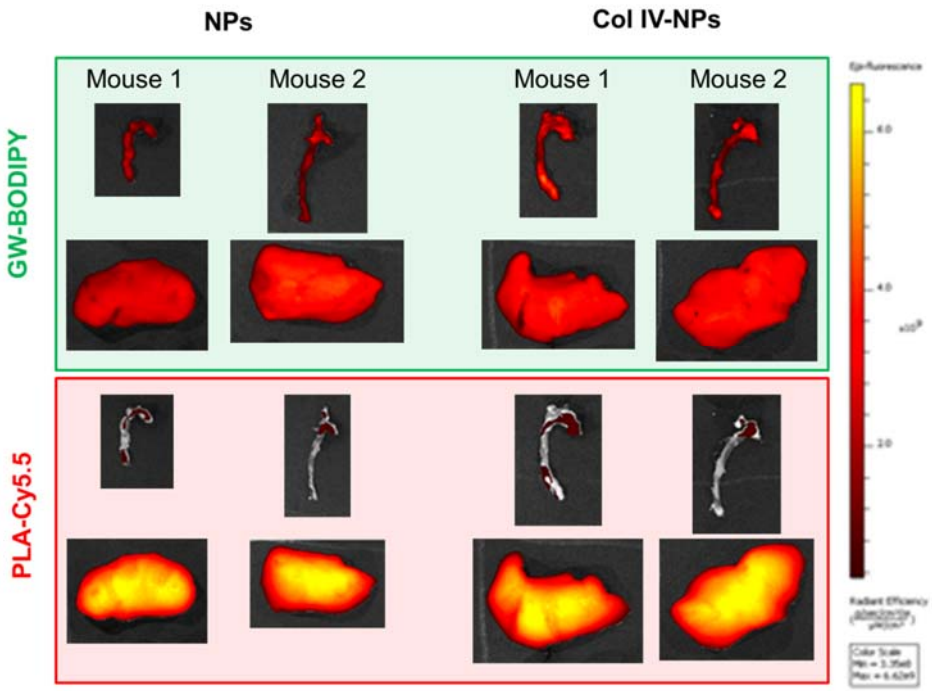

Figure S8. IVIS images for the relative accumulations of GW-BODIPY and PLA-Cy5.5 in the aorta and liver.