Supporting Information

Screening on-chip fabricated nanoparticles for penetrating blood-brain barrier

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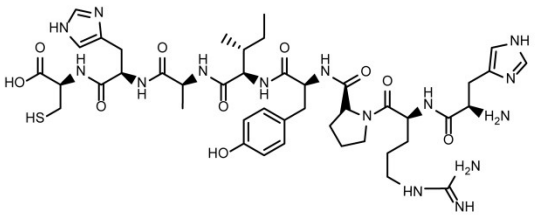
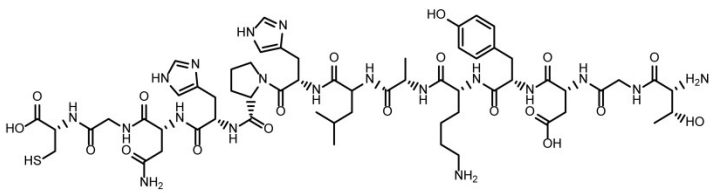
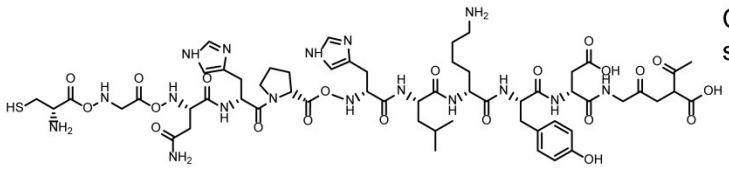
This SI includes the following contents: Fig. S1-9



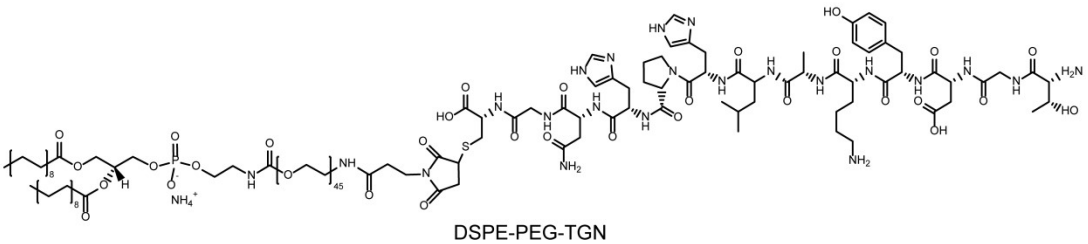
D-T7 peptide
sequence: D-HRPYIAHC



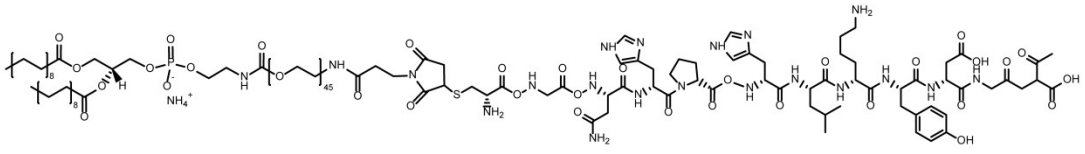
TGN peptide
sequence: TGNYKALHPHNGC



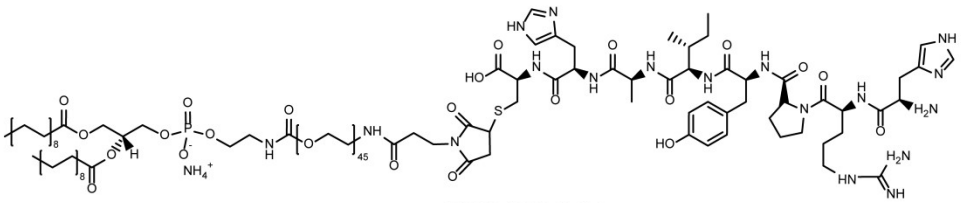
CGN peptide
sequence: D-CGNHPLAKYNGT



DSPE-PEG-TGN



DSPE-PEG-CGN



DSPE-PEG-D-T7

Fig. S1 Structural formula of D-T7, TGN, and CGN peptides and DSPE-PEG-D-T7, DSPE-PEG-TGN, and DSPE-PEG-CGN

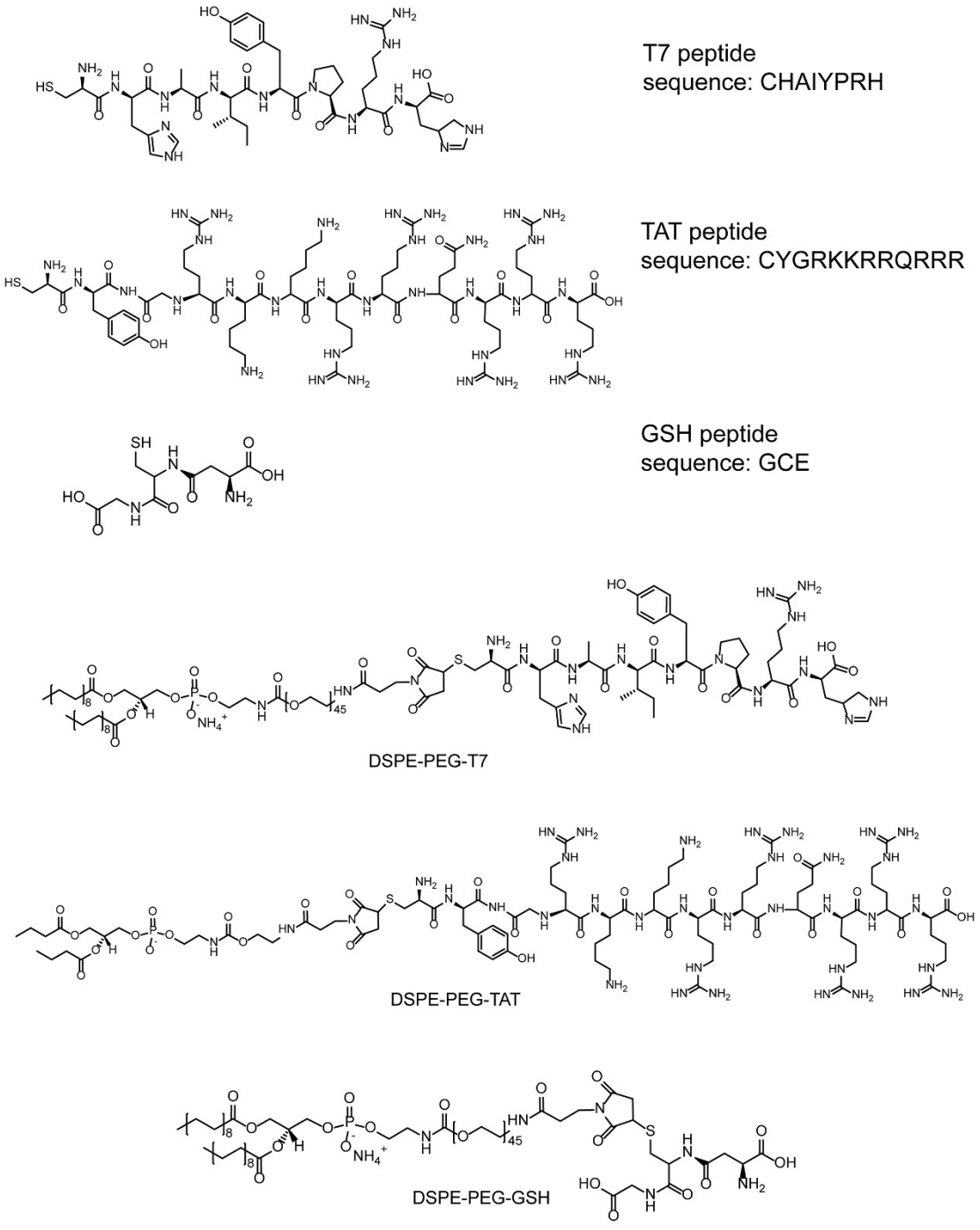


Fig. S2 Structural formula of T7, TAT, and GSH peptides and DSPE-PEG-T7, DSPE-PEG-TAT, and DSPE-PEG-GSH.

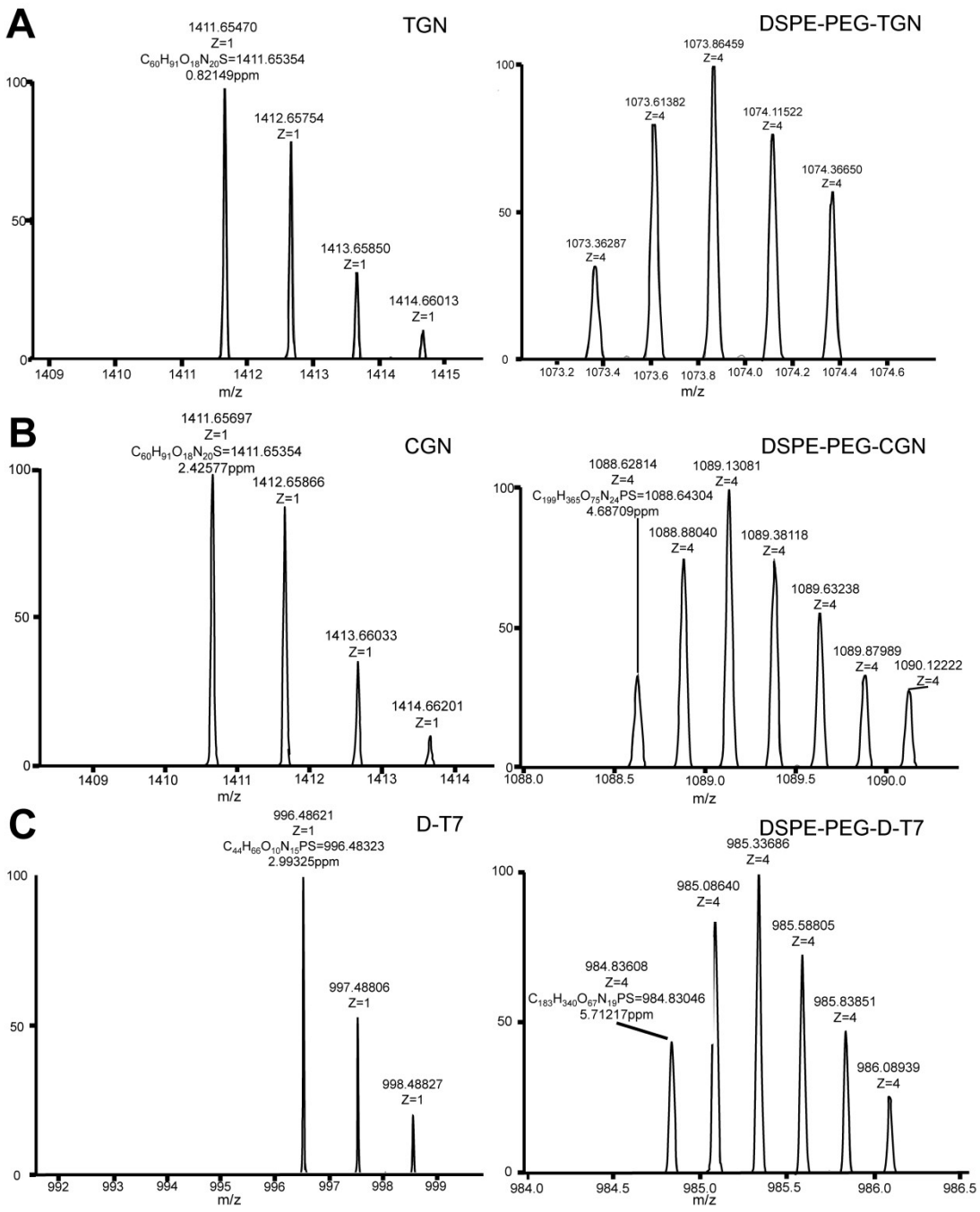


Fig. S3 Mass spectra of TGN, CGN, and D-T7 peptides and DSPE-PEG-TGN, DSPE-PEG-CGN, and DSPE-PEG-D-T7.

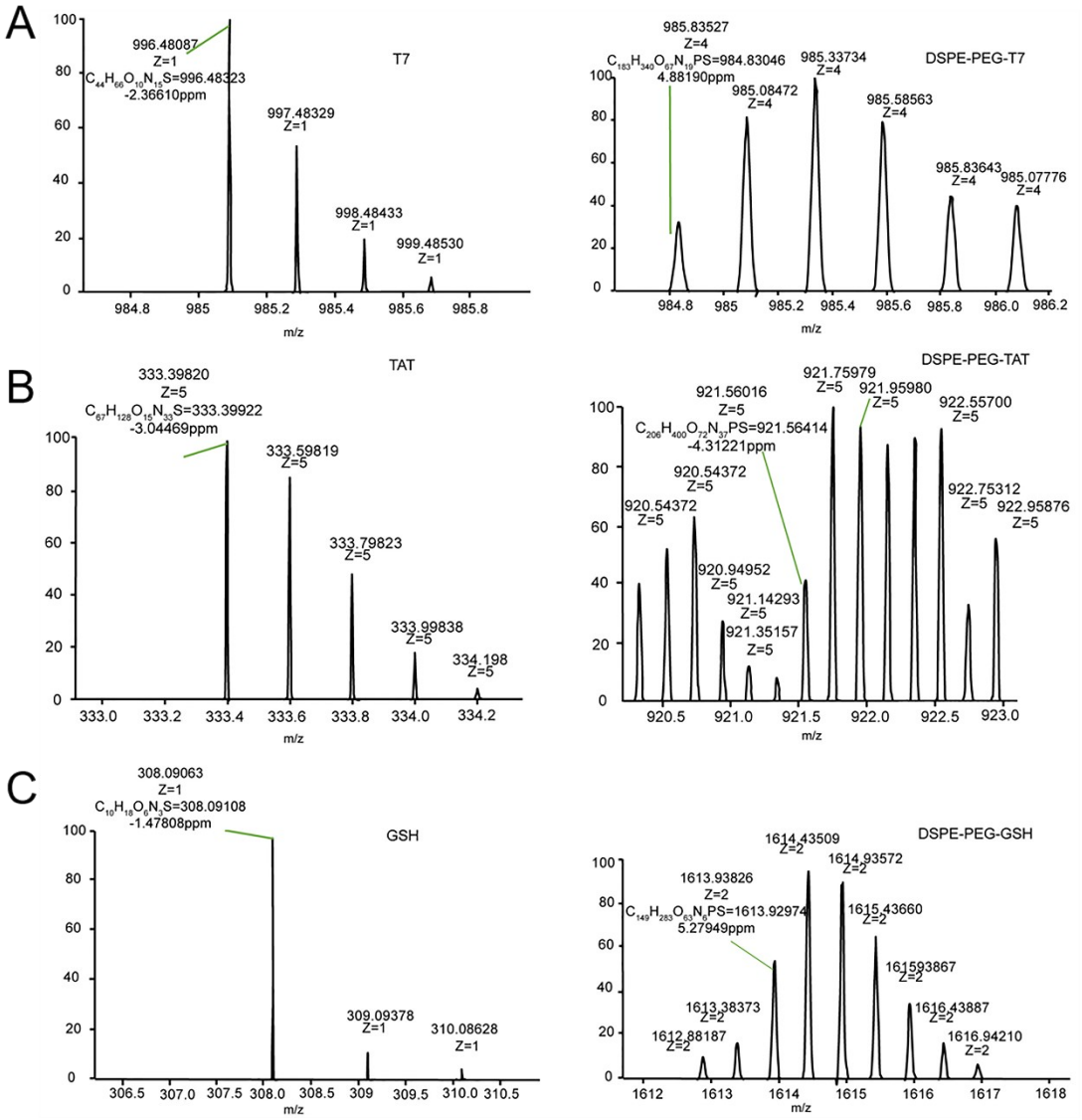


Fig. S4 Mass spectra of T7, TAT, and GSH peptides and DSPE-PEG-T7, DSPE-PEG-TAT, and DSPE-PEG-GSH.

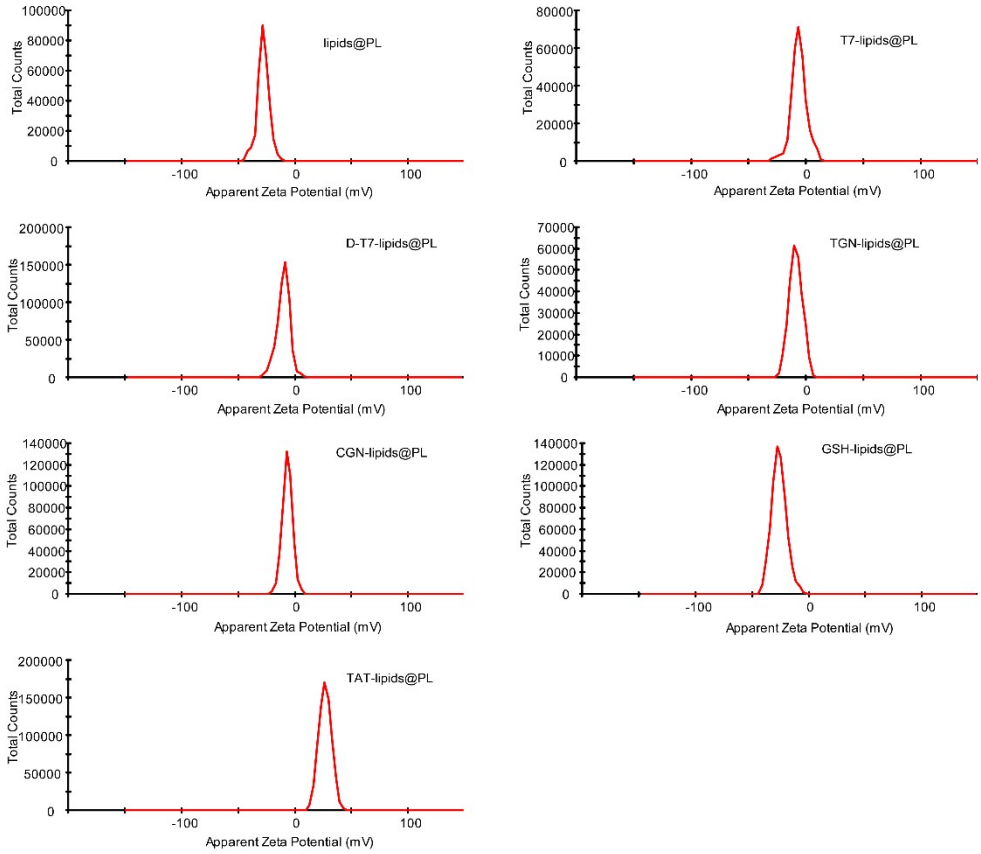


Fig. S5 Zeta potential of the different peptide-lipids@PL nanoparticles analyzed by DLS.

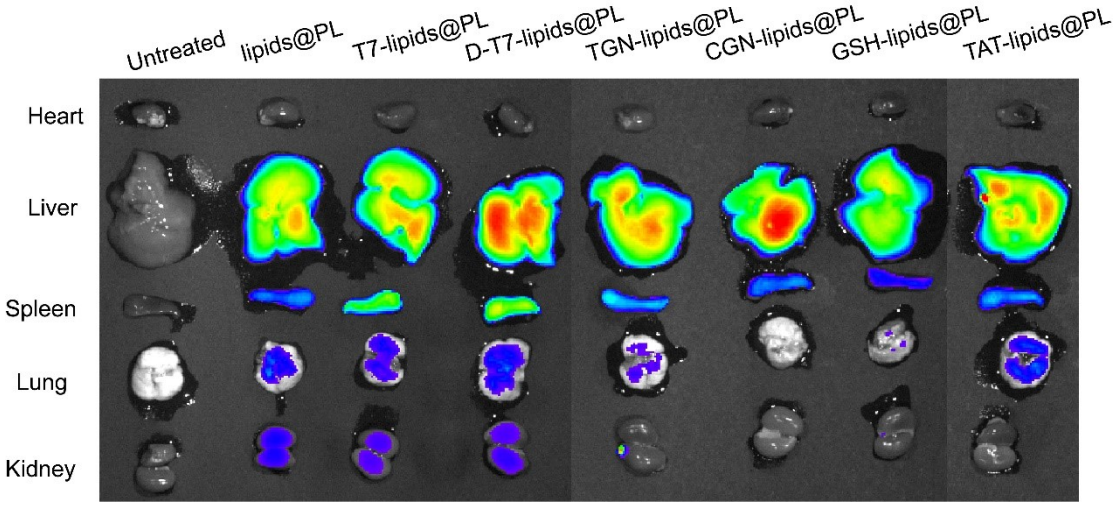


Fig. S6 Fluorescent imaging of organs *ex vivo* 24 h after the injection of DiR-labelled nanoparticles.

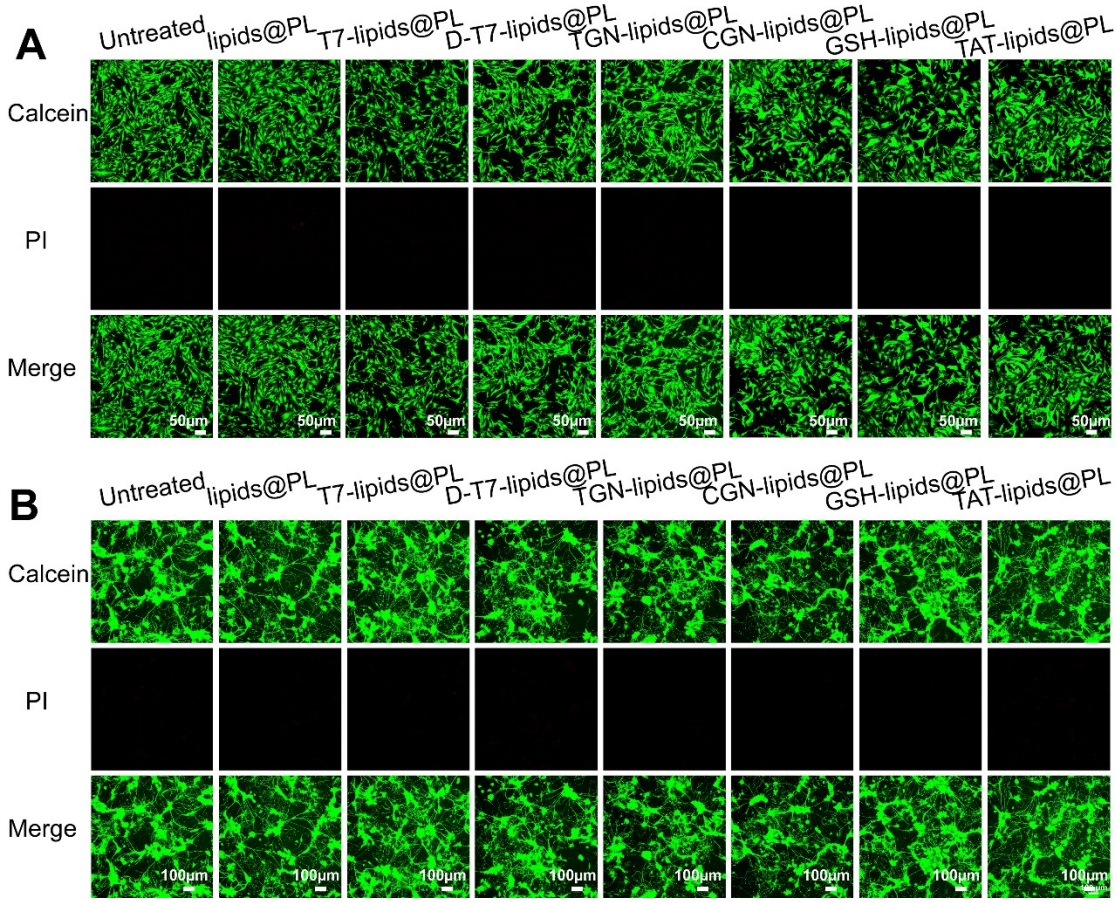


Fig. S7 Confocal microscopy image of bEnd.3 cells (A) and hippocampal neurons (B) co-cultured with various nanoparticles for 24 hours.

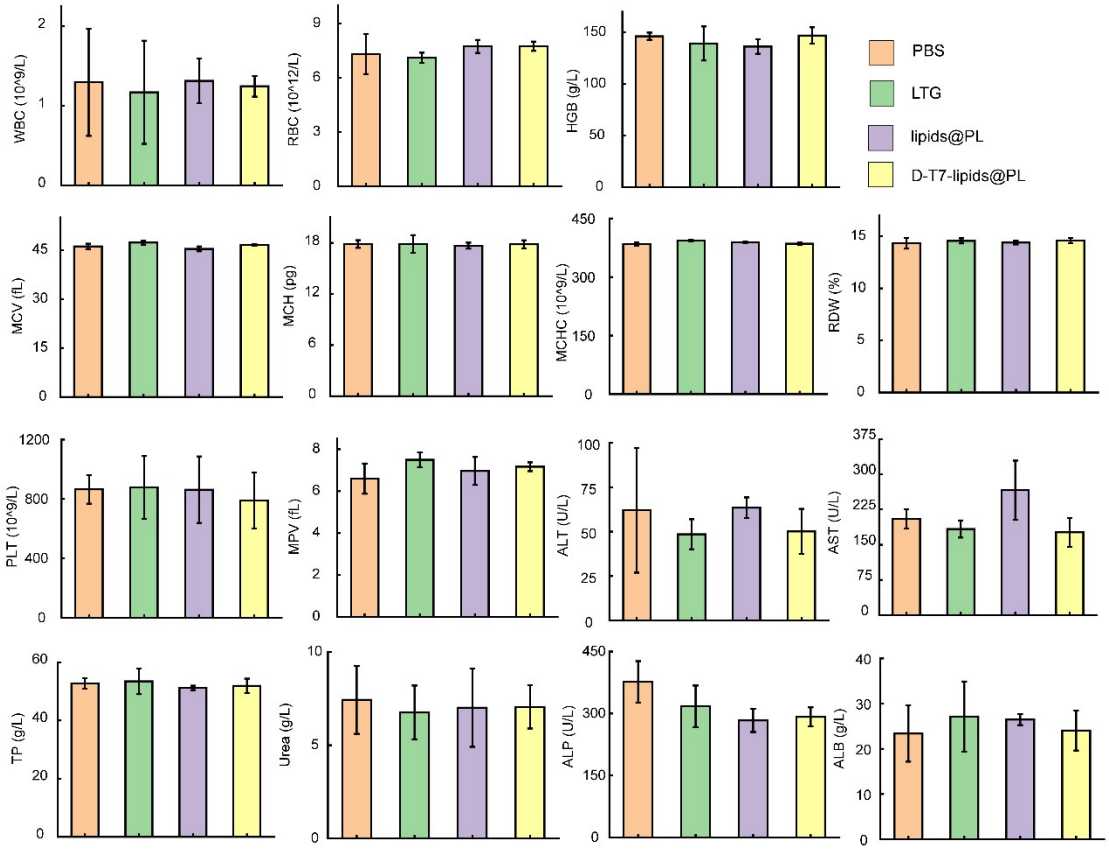


Fig. S8 The biosafety of PBS, LTG, lipids@PL nanoparticles and D-T7-lipids@PL nanoparticles was evaluated by blood routine and blood biochemical analysis.

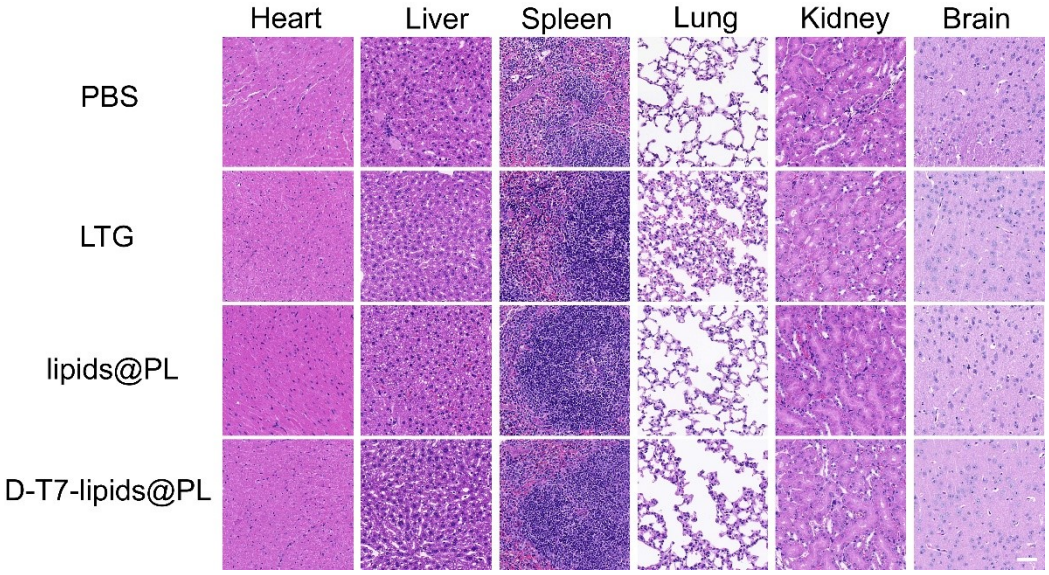


Fig. S9 Biosafety of lipids@PL nanoparticles and D-T7-lipids@PL nanoparticles was evaluated by H&E staining analysis.