Electronic Supplementary Material (ESI) for Nanoscale.

MET-targeted NIR II luminescence diagnosis and up-conversion guided photodynamic therapy for triple-negative breast cancer based on lanthanide nanoprobes

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Conflict of Interest: The authors state no conflicts of interest.

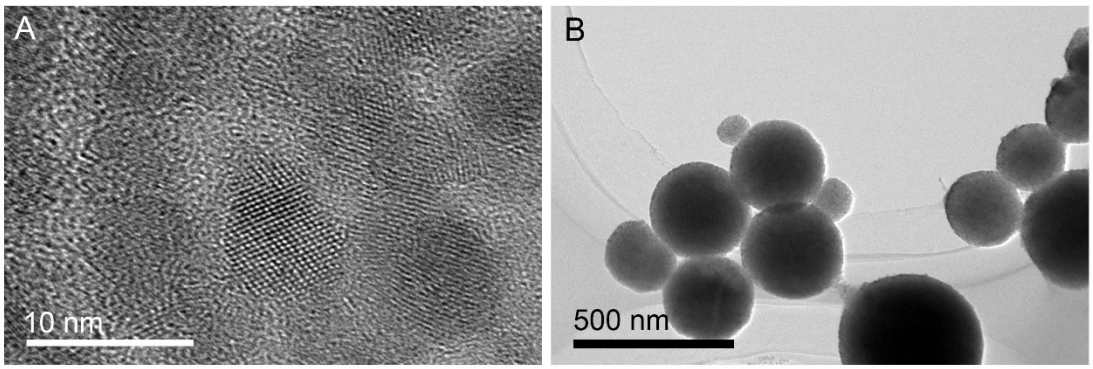

Fig. S1. (A) High-resolution transmission electron microscopy (TEM) image of UCNP, and (B) TEM images of ZUPEA.

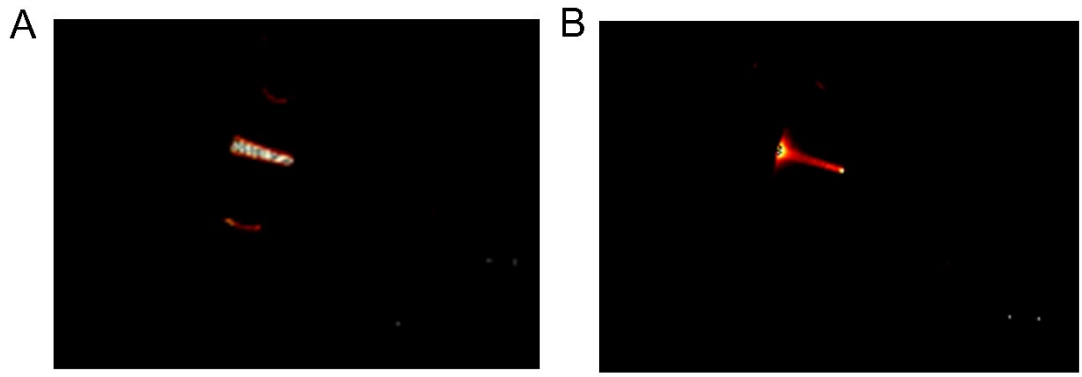

Fig. S2. The NIR II imaging of (A) RENP and (B) ZUPEA excited by 980 nm.

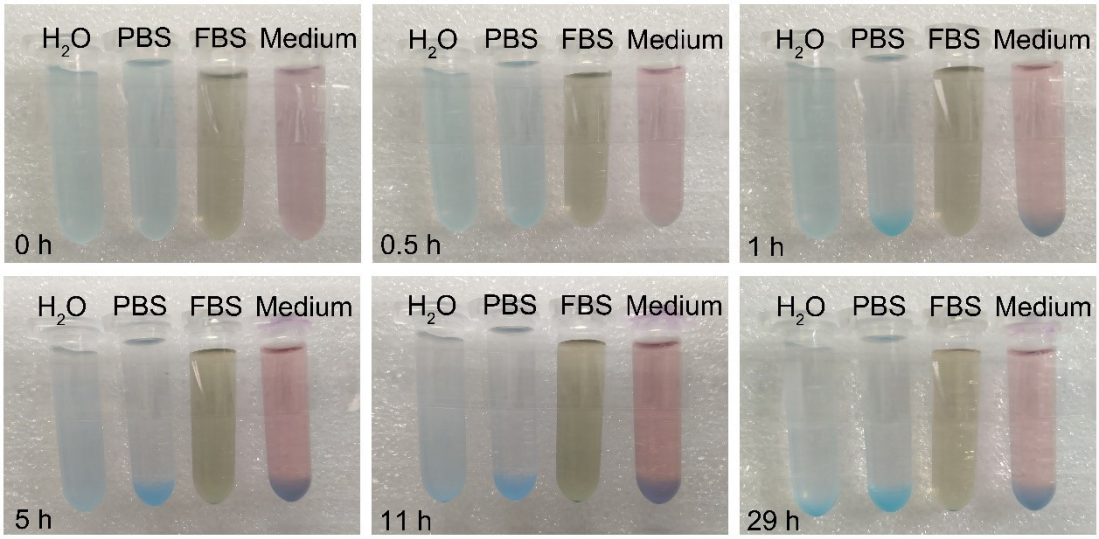

Fig. S3. The stability of ZUPEA in ultrapure water, PBS, FBS and culture medium.

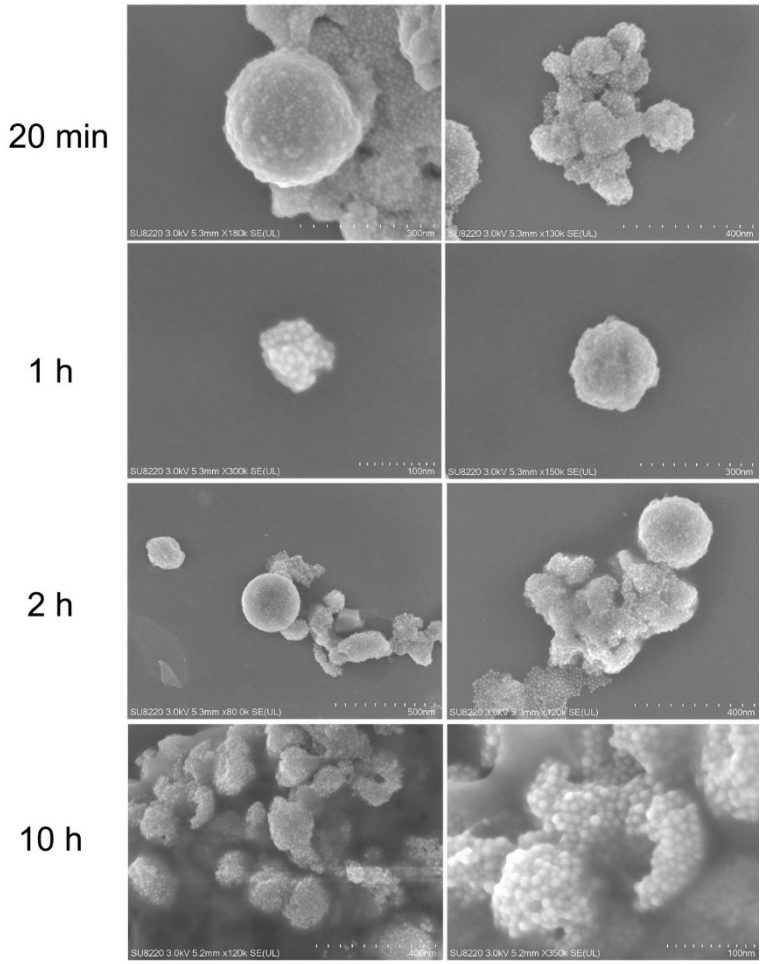

Fig. S4. SEM images of ZUPEA in PBS solution (pH = 7.4) for different hydrolysis time points: 20 min, 1 h, 2 h, and 10 h.

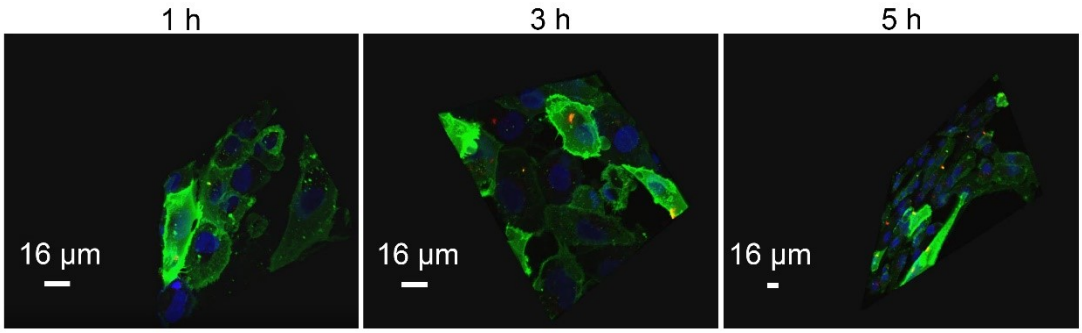

Fig. S5. 3D confocal microscopy images of MDA-MB-231 cells incubated with ZUPEA-cMBP for different times. (Here, the blue color means nuclei marked by DAPI, and the green color means cytoplasm marked by mitotracker.)

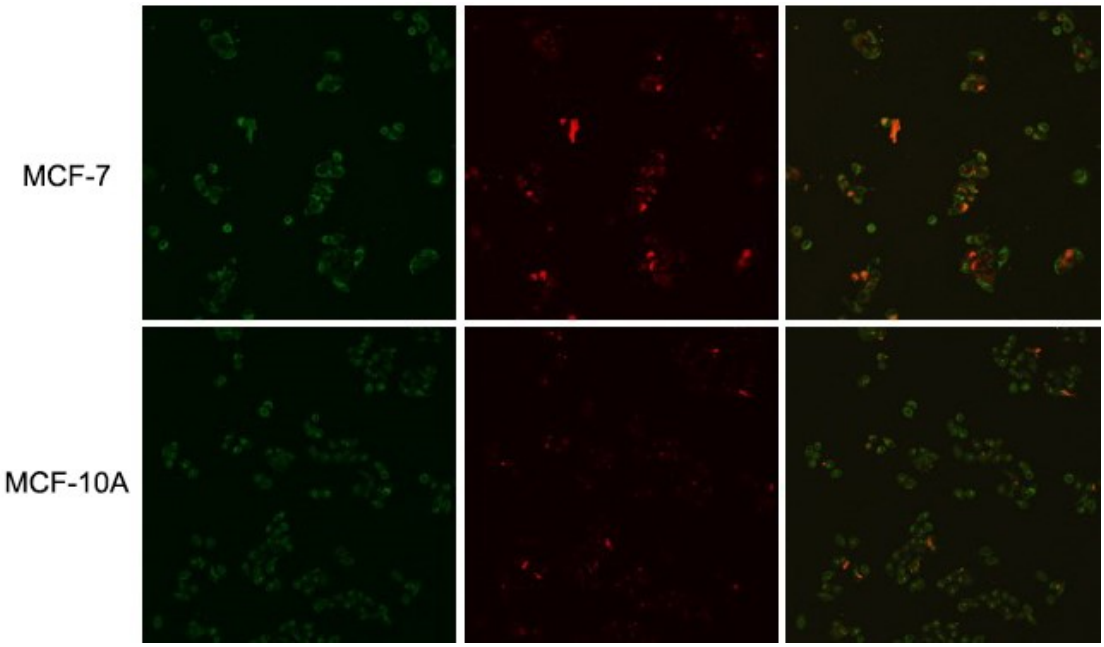

Fig. S6. Microscopy images of MCF-7 and MCF-10A cells incubated with ZUPEA-cMBP for 3 h. (Here, the green color means cytoplasm marked by mitotracker, and the red color means the intracellular ZUPEA-cMBP materials.)

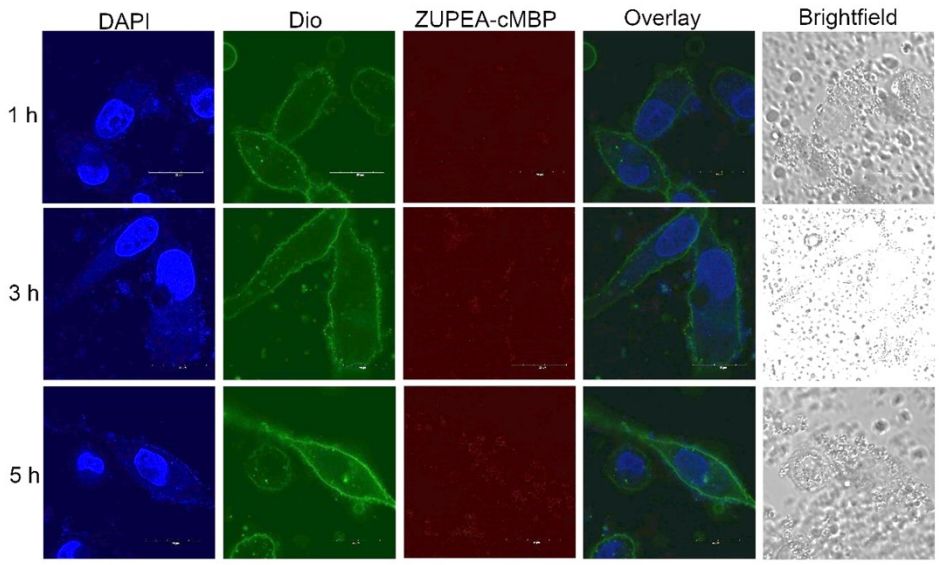

Fig. S7. Confocal image of A549 cells incubated with ZUPEA-cMBP. (Here, the blue color means the nuclei marked by DAPI, the green color means the cytomembrane marked by DIO, and the red color means the intracellular ZUPEA-cMBP materials.)

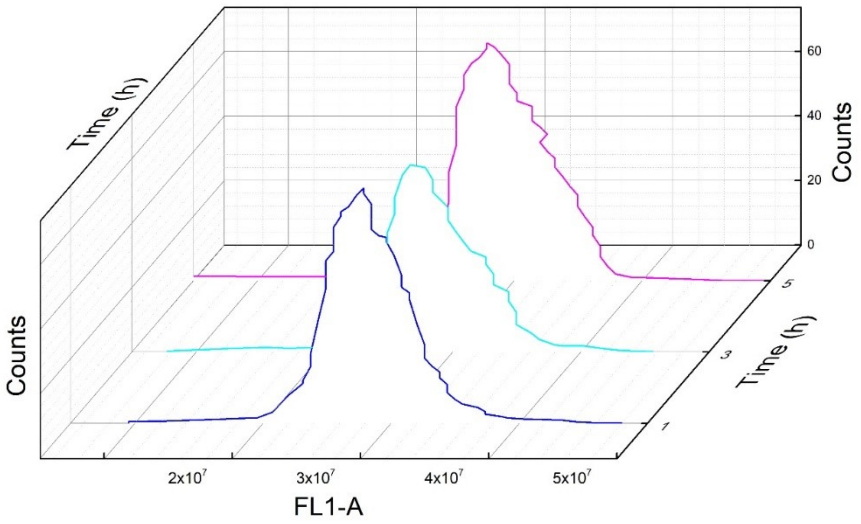

Fig. S8. Flow cytometry results of MDA-MB-231 cells intracellular with ZUPEA-cMBP**.**

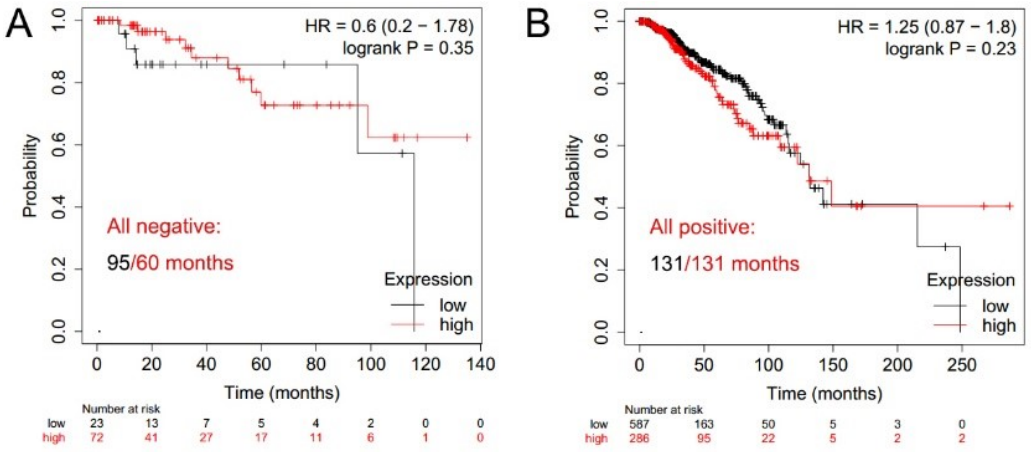

Fig. S9. The overall survival curves relative to cMET expression of patients in different ER, PGR, and HER2 substyles of breast cancer: (A) TNBC with all negative targets, (B) with all positive targets. (Resulted from http://kmplot.com/analysis/index.php?p=service&cancer=breast)

As shown in **Fig. S8,** the cMET expression has obvious meaning in the TNBC patients with all negative targets than that of all positive targets. The TNBC patients has high survival period with low cMET expression, indicating the cMET protein may have positive effect for the tumor growth.

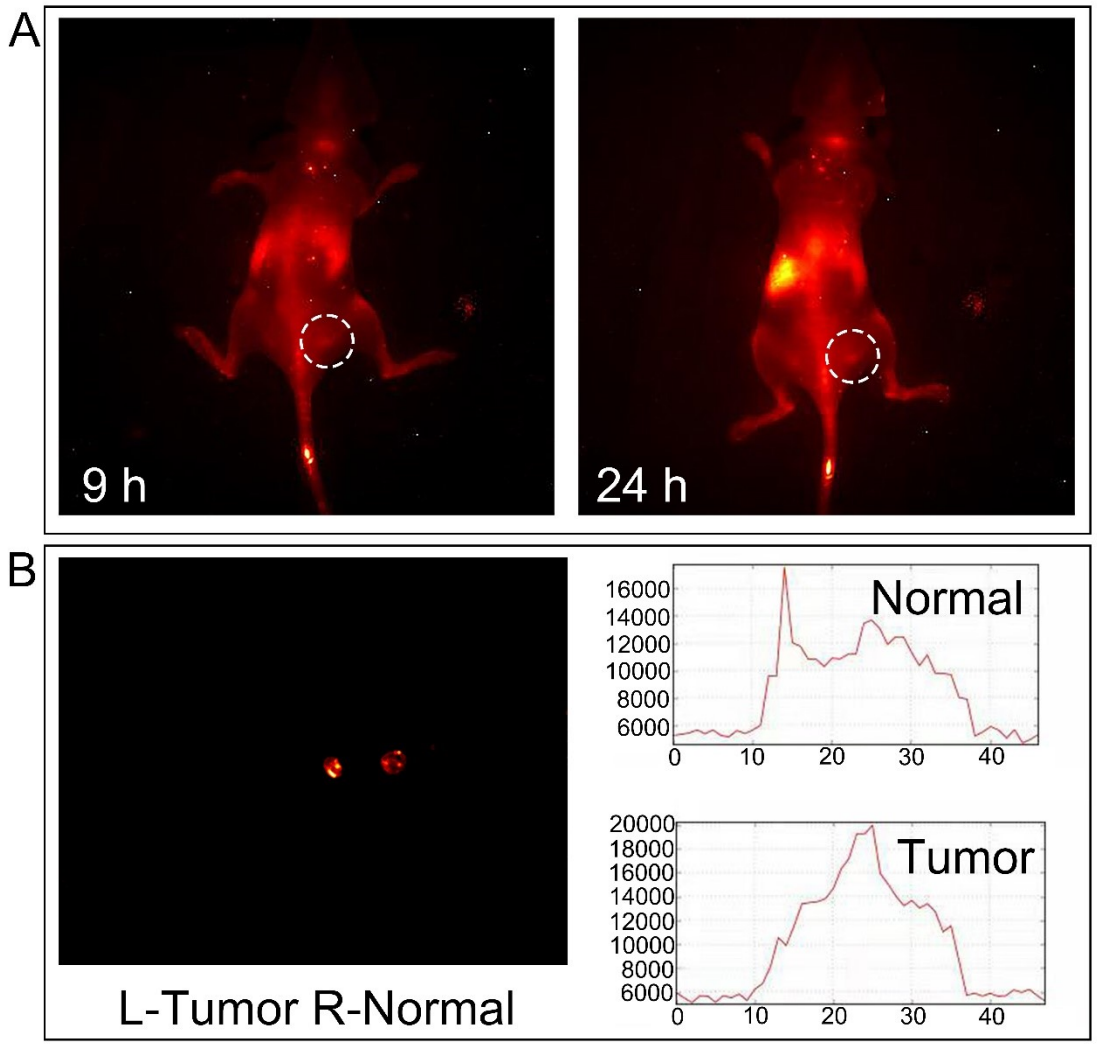

Fig. S10. (A) NIR II imaging of mice with tumor after tail vein injection of ZUPEA at 9 h and 24 h. (B) NIR II imaging and signal value of TNBC tumor tissue and normal breast tissue.

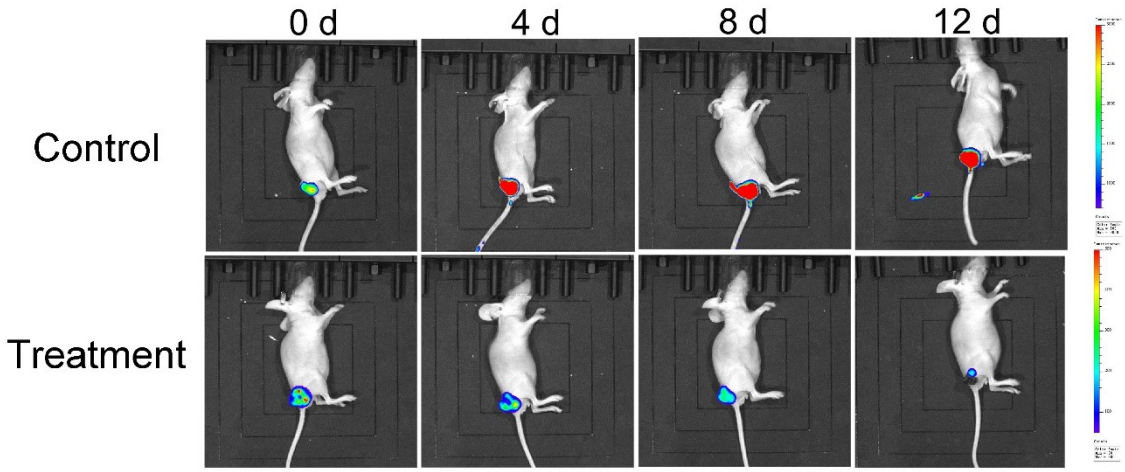

Fig. S11. Bioimaging pictures of Luc-labeled tumor cells in mice.

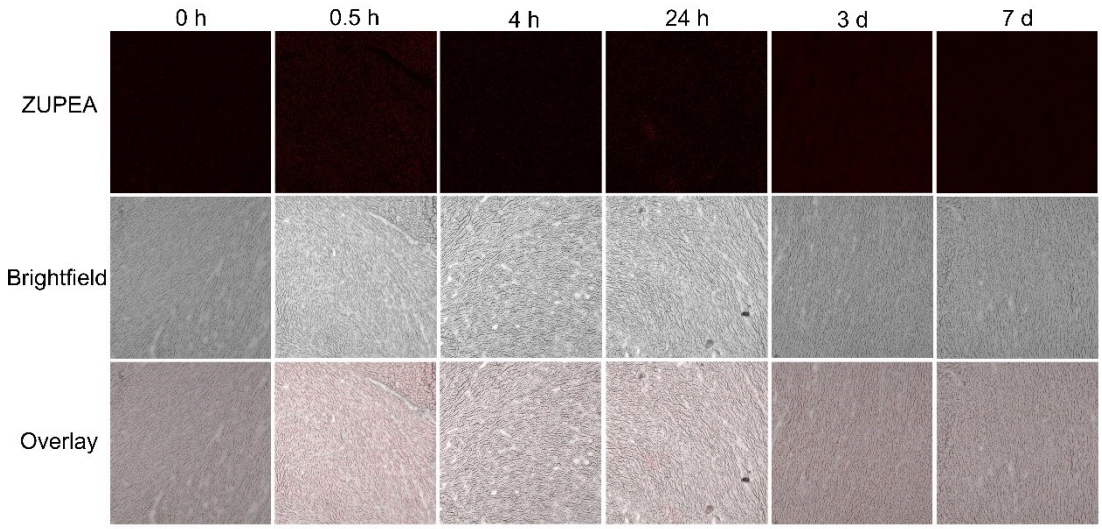

Fig. S12. Luminescence and bright field microscopy images of the sliced heart.

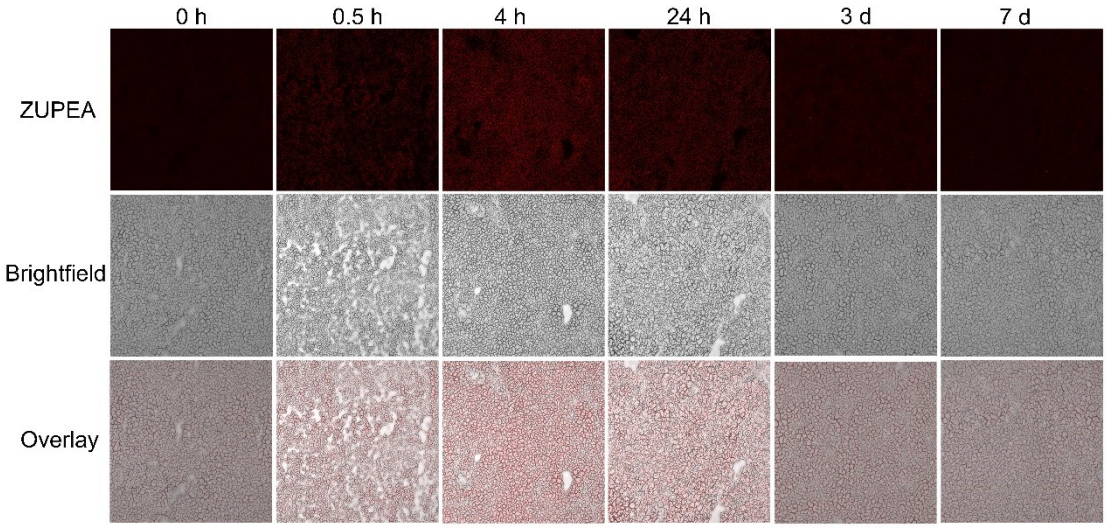

Fig. S13. Luminescence and bright field microscopy images of the sliced liver.

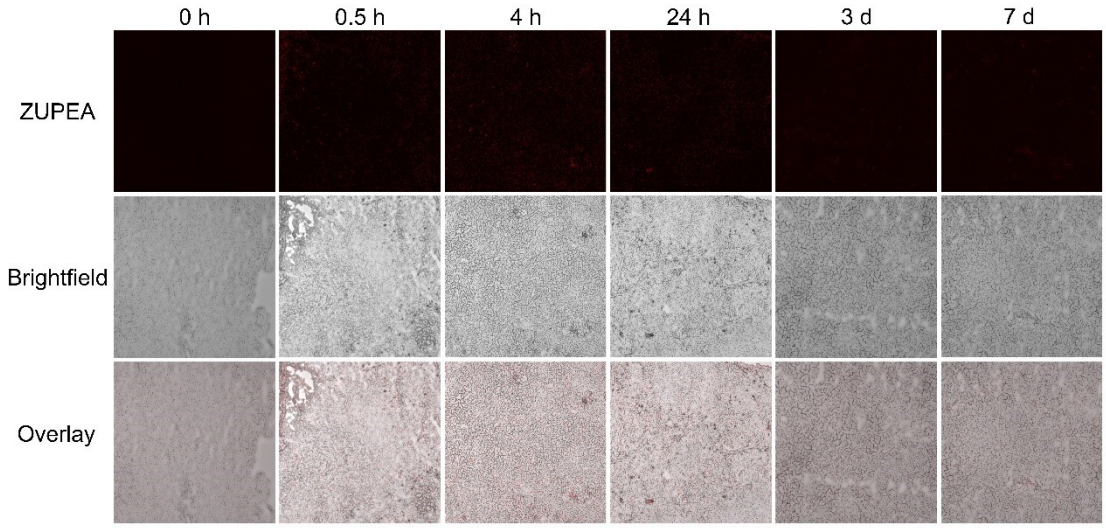

Fig. S14. Luminescence and bright field microscopy images of the sliced spleen.

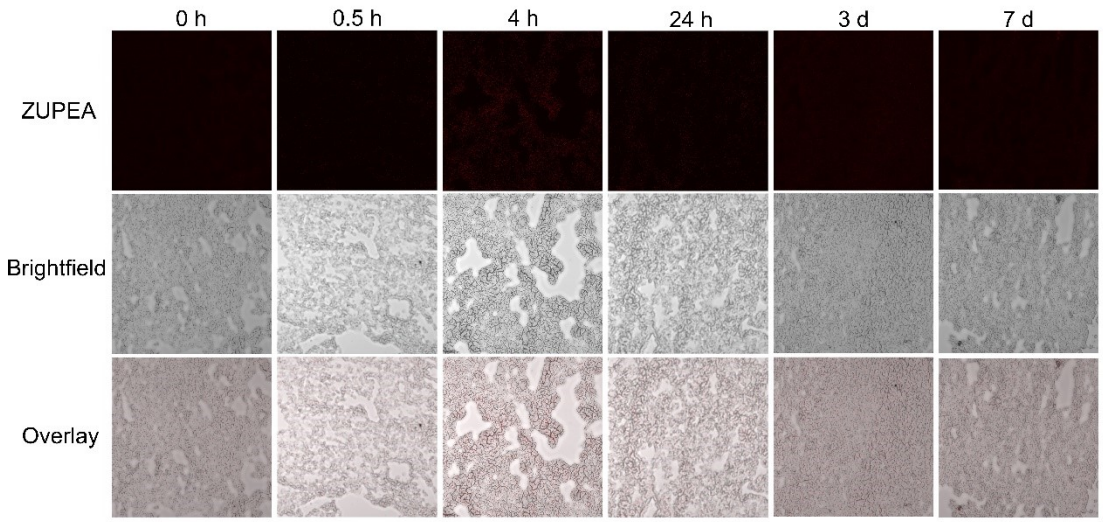

Fig. S15. Luminescence and bright field microscopy images of the sliced lung.

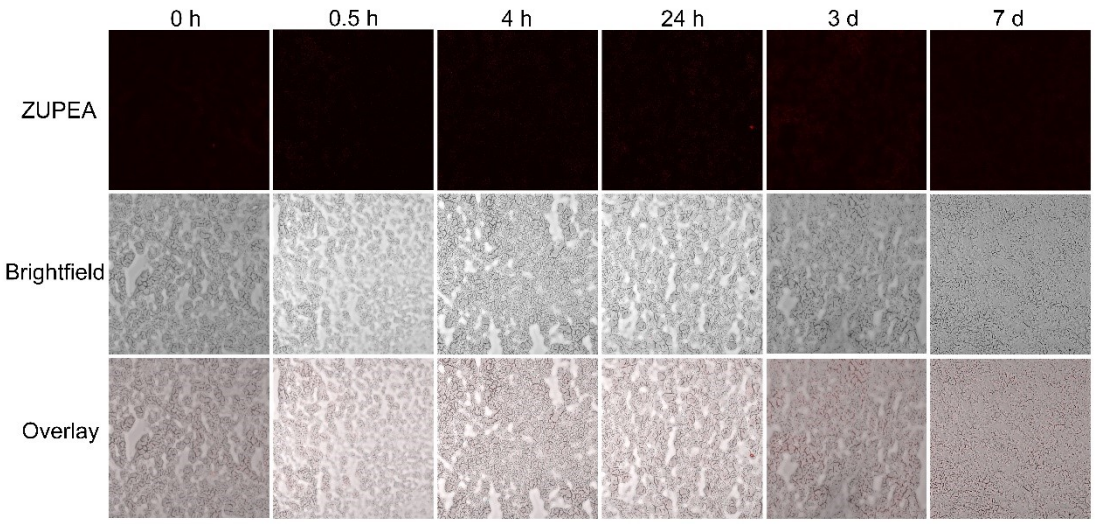

Fig. S16. Luminescence and bright field microscopy images of the sliced kidney.

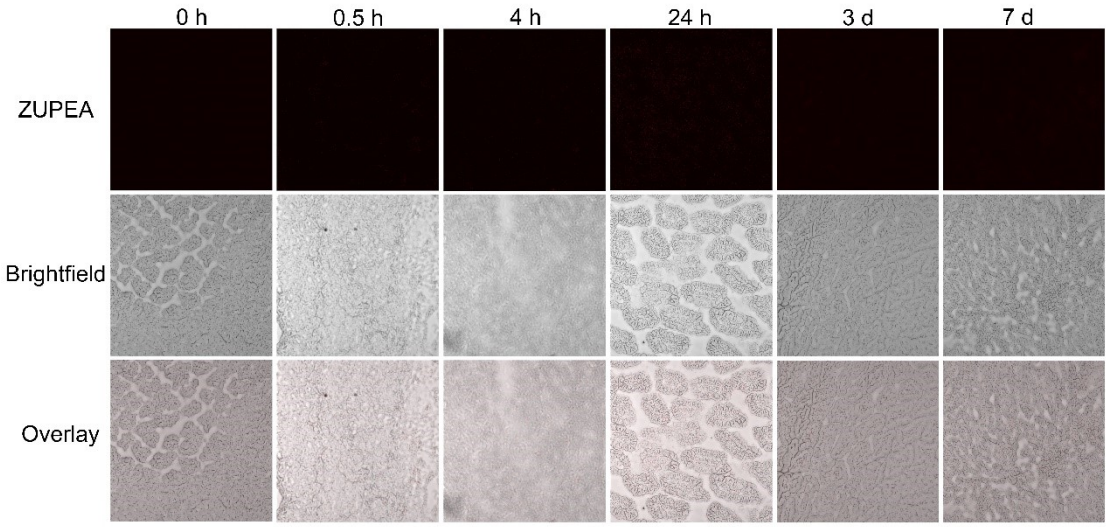

Fig. S17. Luminescence and bright field microscopy images of the sliced intestine.

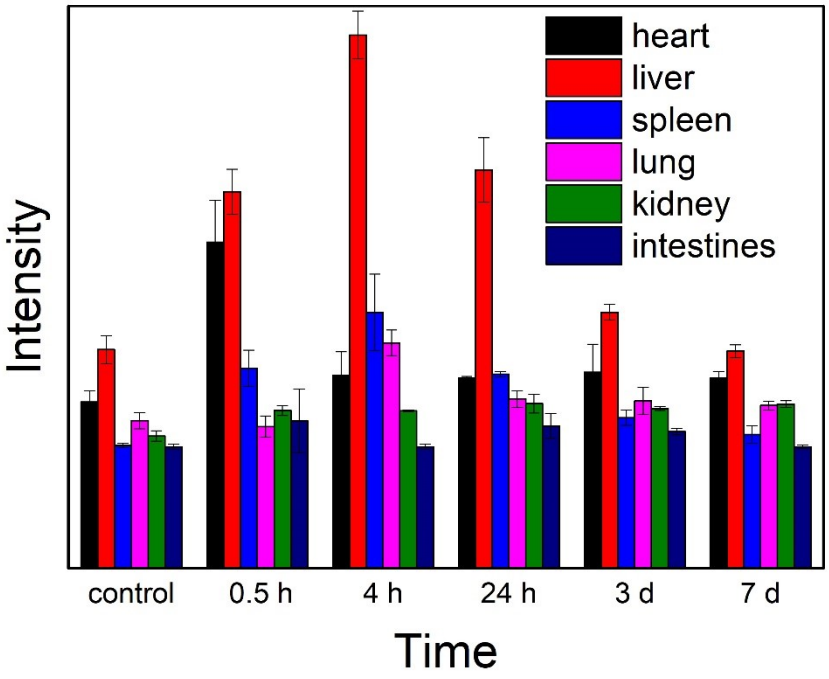

Fig. S18. Biodistribution of ZUPEA in different organs.