Electronic Supplementary Information

Highly luminescent NIR-emitting CuFeS$_2$/ZnS core/shell quantum dots for optical imaging of inflamed tissue†

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Fig. S1 (a) UV–vis absorption and (b) PL spectra of CuFeS$_2$ core QDs taken at various reaction time at 180 °C. (c) UV–vis absorption and (d) PL spectra of CuFeS$_2$/ZnS core/shell QDs by using the core QDs with different reaction time at 180 °C.

Fig. S2 (a) UV–vis absorption and (b) PL spectra of CuFeS$_2$ core QDs taken at various reaction time at 160 °C. (c) UV–vis absorption and (d) PL spectra of CuFeS$_2$/ZnS core/shell QDs of
different CuFeS₂ core QDs reaction time at 160 °C.

Fig. S3 (a) UV-vis absorption and (b) PL spectra of CuFeS₂/ZnS core/shell QDs obtained with different zinc sources.
Fig. S4 UV-vis absorption (a) and PL spectra (b) of CuFeS$_2$ and CuFeS$_2$-CdS alloy QDs.
Fig. S5 Storage-stability of the LipQDs and LipQDs@M: the evolutions of (a) PL intensity, (b) PL peak position and (c) hydrodynamic diameter with time.
**Fig. S6** TEM images of LipQDs@Membrane nanocomposites after counterstaining
Fig. S7 The surface Zeta potential of LipQDs and LipQDs@M in water.
Fig. S8 The cytotoxicities of LipQDs (a) and LipQDs@M (b) by MTT assay for 24 h incubation.
Fig. S9 (a) Dynamic distributions of LipQDs and LipQDs@M nanocomposites in the tumor model mice, where the tumor site was marked by a white circle. (b) The corresponding evolutions of T/N (muscle) ratios in tumor model mice with time.

In general, the fluorescence signals were also detected at the tumor sites (the main reason is ascribed to the passive targeting effect (EPR)). The T/N ratio, at the same time, was significantly lower than that of postoperative tumor inflamed sites mice.
Fig. S10 Tissue section fluorescence imaging of LipQDs and LipQDs@M nanocomposites in the tumor model mice.
Fig. S11 LCSM images of RAW 264.7 cells incubated with LipQDs for 1, 2 and 4 h.