Functionalized Cu$_3$Bi$_3$S$_3$ nanoparticles for dual-modal imaging and targeted photothermal/photodynamic therapy

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Fig. S1. Size distribution data of hydrophobic Cu$_3$Bi$_3$S$_3$ NPs.

Fig. S2. Zeta potentials of Cu$_3$Bi$_3$S$_3$-DSPE-PEG(-NH$_2$) (a), Cu$_3$Bi$_3$S$_3$-PEG-(Ce6) (b), Cu$_3$Bi$_3$S$_3$-PEG-(Ce6-Gd$^{3+}$) (c) and Cu$_3$Bi$_3$S$_3$-PEG-(Ce6-Gd$^{3+}$)-FA (d).
Fig. S3. Vis-NIR spectra of Cu$_3$Bi$_3$S$_3$-PEG-(Ce6-Gd$^{3+}$)-FA solutions with different concentrations.

Fig. S4. Vis-NIR spectra of the Cu$_3$Bi$_3$S$_3$-PEG-(Ce6-Gd$^{3+}$)-FA solution (200 μg/mL) before laser irradiation and after 8 heating/cooling cycles.
Fig. S5. The inhibition ratio (measured by MTT assay) of HeLa cells after incubation with Cu$_3$Bi$_3$S$_3$-PEG-(Ce6-Gd$^{3+}$)-FA of different concentrations for 24 h.

Fig. S6. Typical bright field microscopy image of trypan blue stained HeLa cells after incubation with Cu$_3$Bi$_3$S$_3$-PEG-(Ce6-Gd$^{3+}$)-FA (100 μg/mL) for 4 h.
Fig. S7 (A) NIR thermal images of HeLa tumour-bearing mice intravenously injected with either PBS (Control) or Cu$_3$BiS$_3$-PEG-(Ce6-Gd$^{3+}$)-FA (Material) and then exposed to the NIR laser irradiation (808 nm, 0.5 W/cm$^2$); (B) The temperature changes of the tumours based on infrared thermal imaging data in (A).

Fig. S8. Representative photographs of HeLa tumor-bearing nude mice obtained from each treated group.
Fig. S9. Representative H&E histopathological images of major organs after various treatments.

The full name and units of the blood indexes shown in Figure 6D:

ALT: alanine aminotransferase (U/L)
AST: aspartate aminotransferase (U/L)
ALP: alkaline phosphatase (U/L)
CREA: creatinine (μM)
BUN: blood urea nitrogen (mM)
MCH: mean corpuscular hemoglobin (pg)
MCV: erythrocyte mean corpuscular volume (fl)
HGB: Hemoglobin (g/L)
WBC: white blood cell (10^9/L)

HCT: Red blood cell specific volume (%)

RBC: red blood cell (10^{12}/L)

MCHC: mean corpuscular hemoglobin concentration (g/L)