Multimodal imaging and photothermal therapy were simultaneously achieved in core-shell UCNR structure by a single near-infrared light

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Fig. S1 UV-vis adsorption spectrum of GNRs with high aspect ratio (the inset shows the photograph of the corresponding GNRs).



Fig. S2 Zeta potential of GNRs and GNRs@GdOF:Yb³⁺,Er³⁺.



Fig. S3 TEM images of GdOF:Yb³⁺,Er³⁺ NPs. (a) high magnification; (b) low magnification.



Fig. S4 The photothermal convert efficiency of the UCNRs. (a) The photothermal response of the UCNRs aqueous solution (400 μ g/ mL) for 500 s with 980 nm laser (0.6 W/cm²) and then the laser was shut off. (b) Linear time data *versus* – ln (θ) obtained from the cooling period of Fig. S4a.



Fig. S5 *In vivo* temperature increase of the tumor-bearing mouse after injection with UCNRs under irradiation by a 980 nm laser.