

Supporting Information

High Quality Polyacrylic Acid Modified Multifunction Luminescent Nanorods for Tri-Modality Bioimaging, *In Vivo* Long-Lasting Tracking and Biodistribution

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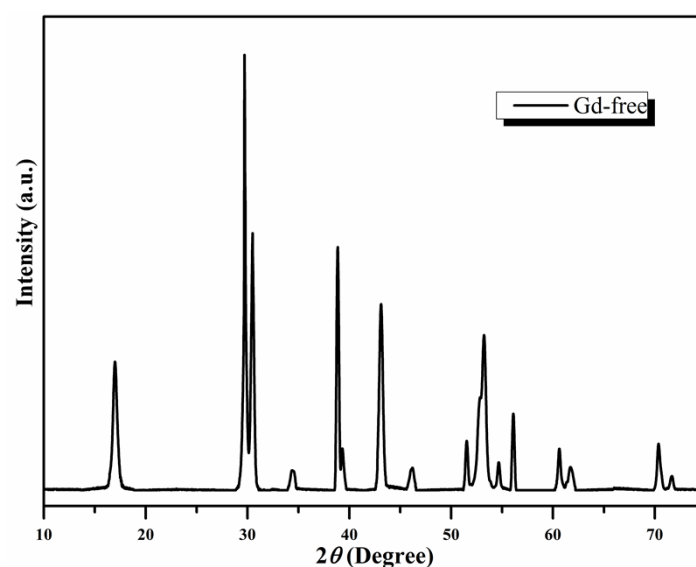


Figure S1. XRD pattern of the oleic acid capped NaYF₄:Yb/Er UCNRs. Similar as the crystal phase and compositions of NaYF₄:Gd/Yb/Er, the diffraction peaks of NaYF₄:Yb/Er are all indexed as pure hexagonal phase NaYF₄ (JCPDS FILE No. 16-0334).

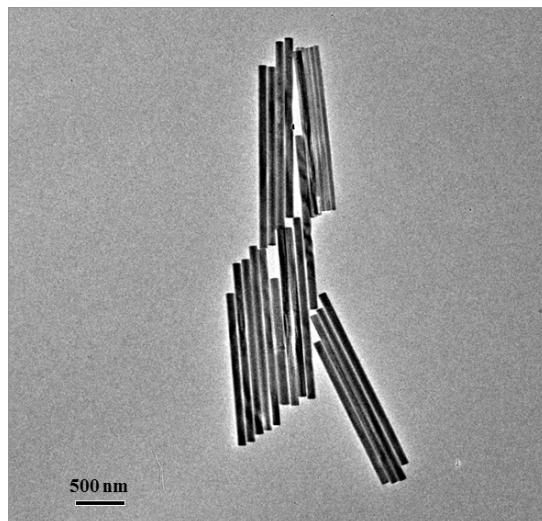


Figure S2. Typical TEM image of the oleic acid capped NaYF₄:Yb/Er UCNRs.

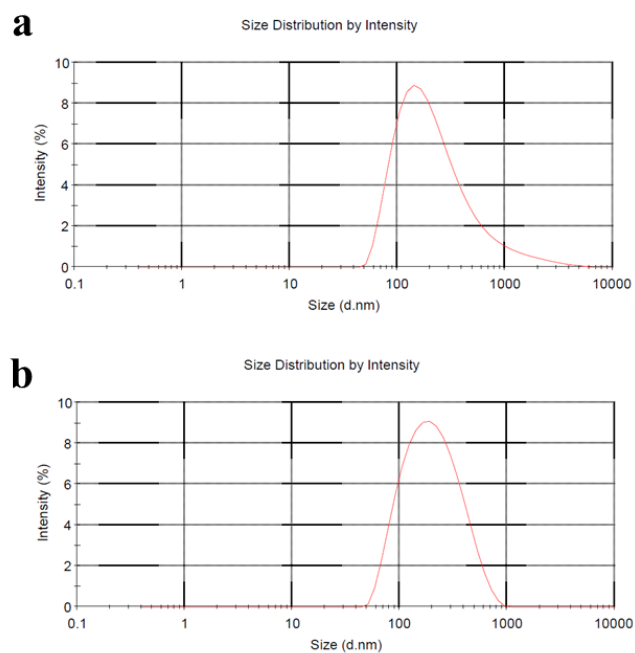


Figure S3. DLS of PAA-UCNRs (2 mg/mL) in (a) aqueous solution and (b) phosphate buffer solution (pH = 7.4)

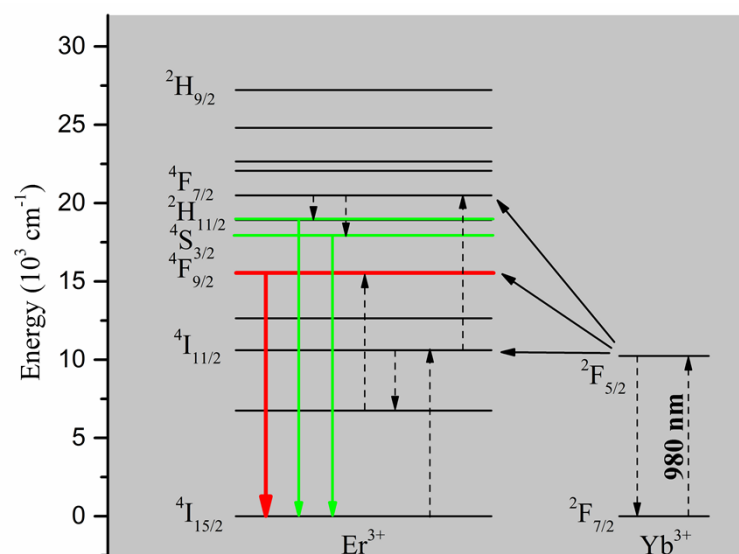


Figure S4. Schematic energy-level diagram of Yb³⁺ and Er³⁺ ions.

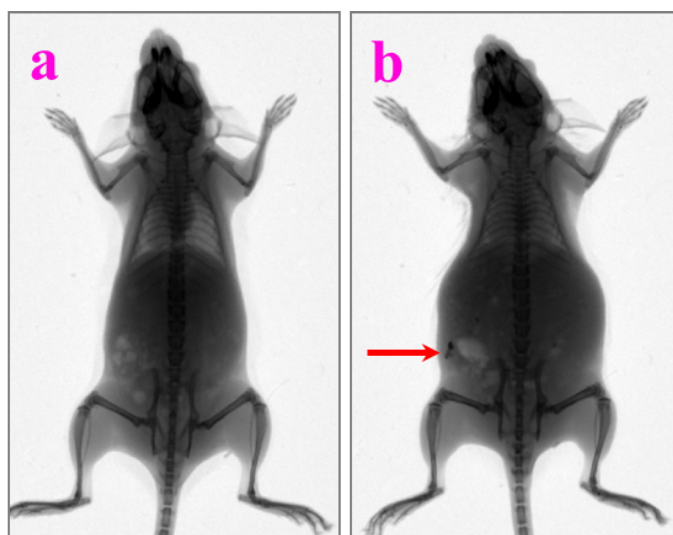


Figure S5. *In vivo* X-ray imaging of a Kunming mouse: (a) without and (b) with subcutaneous injection of PAA-UCNRs. The red arrow indicates the injected region.