

Electronic Supplementary Information

Ultrasmall biomolecule-anchored hybrid GdVO₄ nanophosphors as a metabolizable multimodal bioimaging contrast agent

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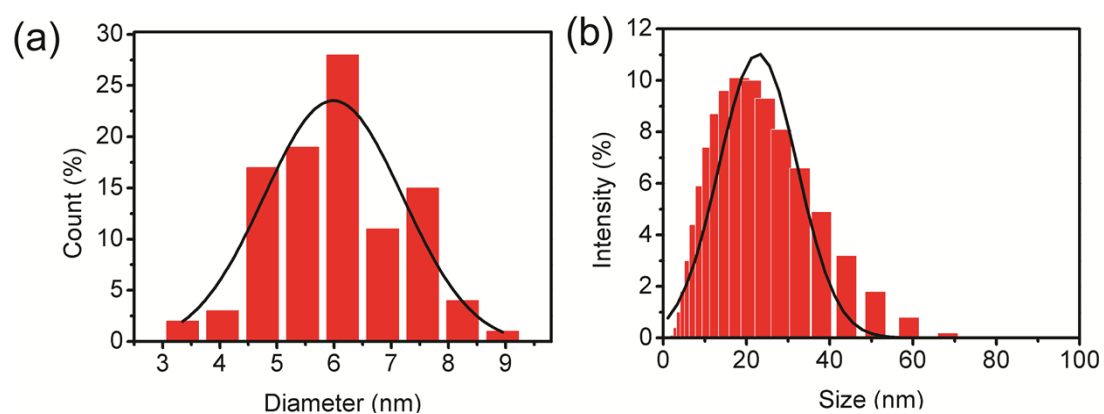


Fig. S1 (a) Particle-size distribution of 6-aminocaproic acid capped $\text{GdVO}_4:\text{Eu}^{3+}$ nanoparticles was observed from TEM images. (b) The hydrodynamic diameter of $\text{GdVO}_4:\text{Eu}^{3+}$ nanoparticle was measured by dynamic light scattering (DLS).

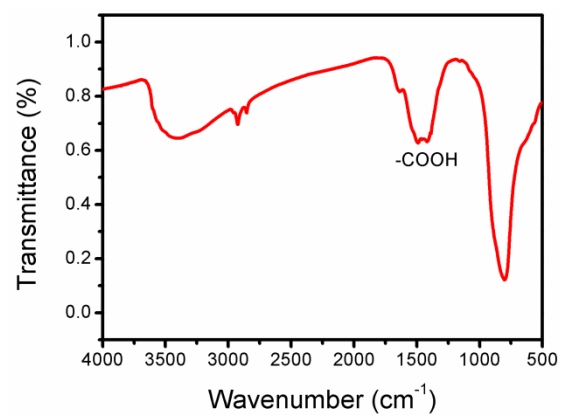


Fig. S2 FTIR spectrum of 6-aminocaproic acid capped GdVO₄:Eu³⁺ nanoparticles.

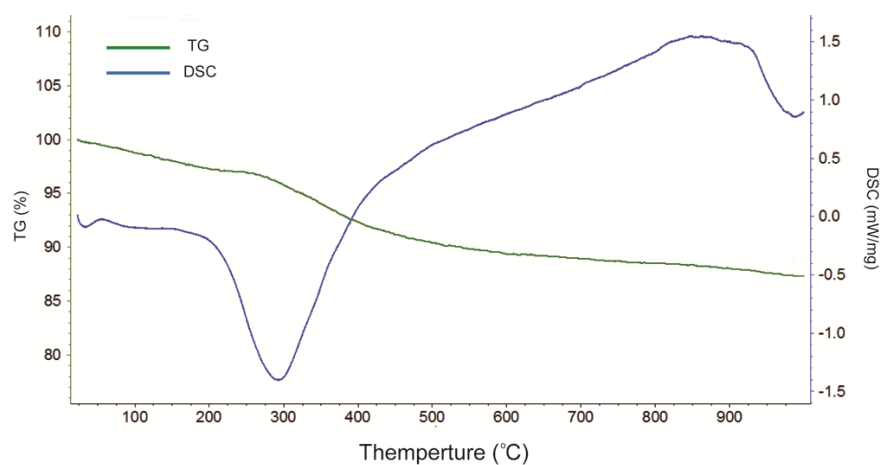


Fig. S3 Thermogravimetric analysis (TGA) curve of 6-aminocaproic acid capped GdVO₄:Eu³⁺ nanoparticles.

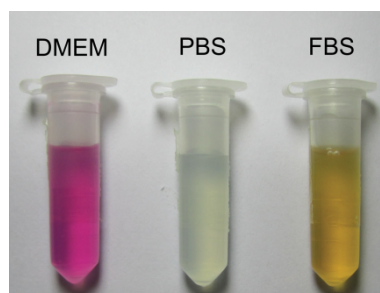


Fig. S4 Photos of 6-aminocaproic acid capped $\text{GdVO}_4:\text{Eu}^{3+}$ nanoparticles in various solutions including phosphate buffered saline (PBS), DMEM cell medium, and fetal bovine serum (FBS).

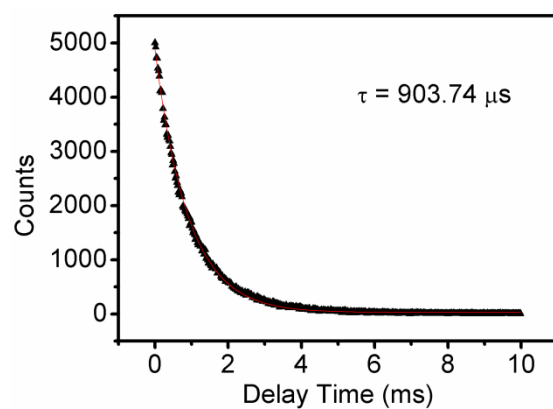


Fig. S5 Phosphorescence decay of the aqueous nanoparticles collected at 620 nm (black dots). The red line is the best-fit curve.

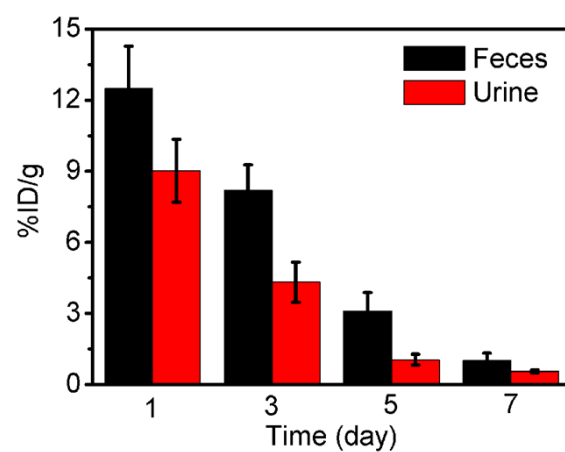


Fig. S6 Gd contents in mice excretions (feces and urine) in the first week after intravenous injection.

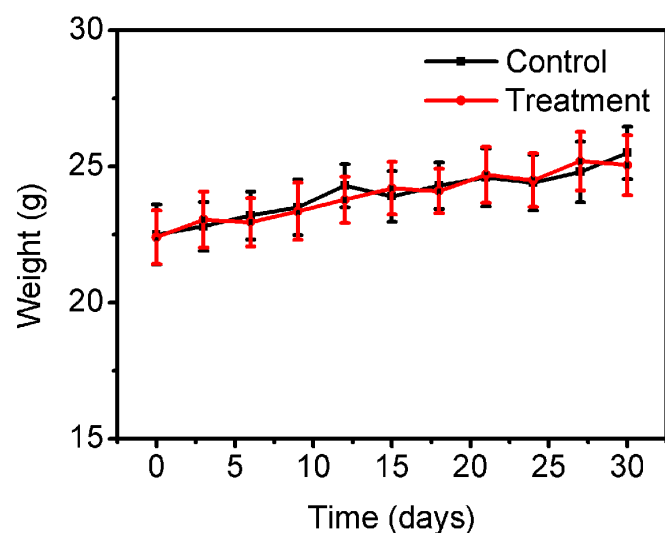


Fig. S7 Change in body weight obtained from mice injected with $\text{GdVO}_4\text{:Eu}^{3+}$ nanoparticles and without injection.

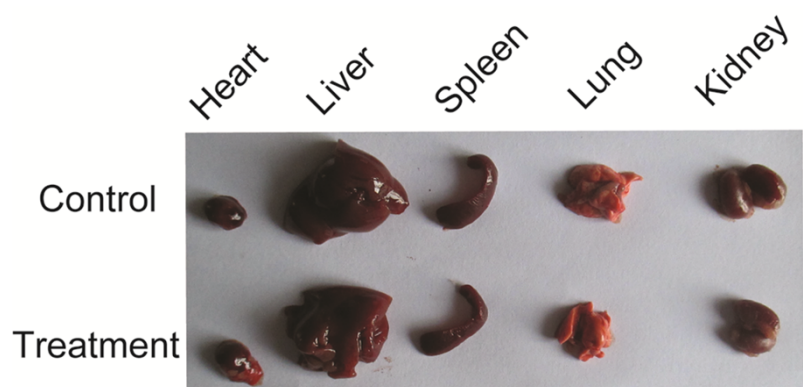


Fig. S8 photos of mice organs with and without intravenous administration.

Table S1. Hematology analysis and blood biochemical assay.

Test	Units	Control (mean±sd)	Treatment (mean±sd)
Hematological			
WBC	×10 ⁹ /L	5.27±0.90	5.56±0.75
RBC	×10 ¹² /L	9.05±1.05	9.85±0.92
HGB	g/L	142.50±15.00	153.00±17.50
MCV	fL	51.00±1.50	57.50±2.00
MCH	pg	15.00±0.50	15.80±1.00
MCHC	g/L	255.00±28.00	278.00±25.00
PLT	×10 ⁹ /L	610.00±50.00	625.00±45.00
LY	%	70.00±2.00	72.00±1.50
NE	%	12.80±0.90	12.90±1.50
Biochemistry			
ALT	U/L	40.50±8.50	45.00±5.50
AST	U/L	68.50±9.50	62.50±13.00
BUN	mmol/L	6.20±0.80	6.80±0.60
CRE	mmol/L	29.50±7.50	30.50±9.50