Supporting Information

Optimization of upconversion luminescence of Nd^{3+}-sensitized $BaGdF_5$-based nanostructures and their application in dual-modality imaging and drug delivery

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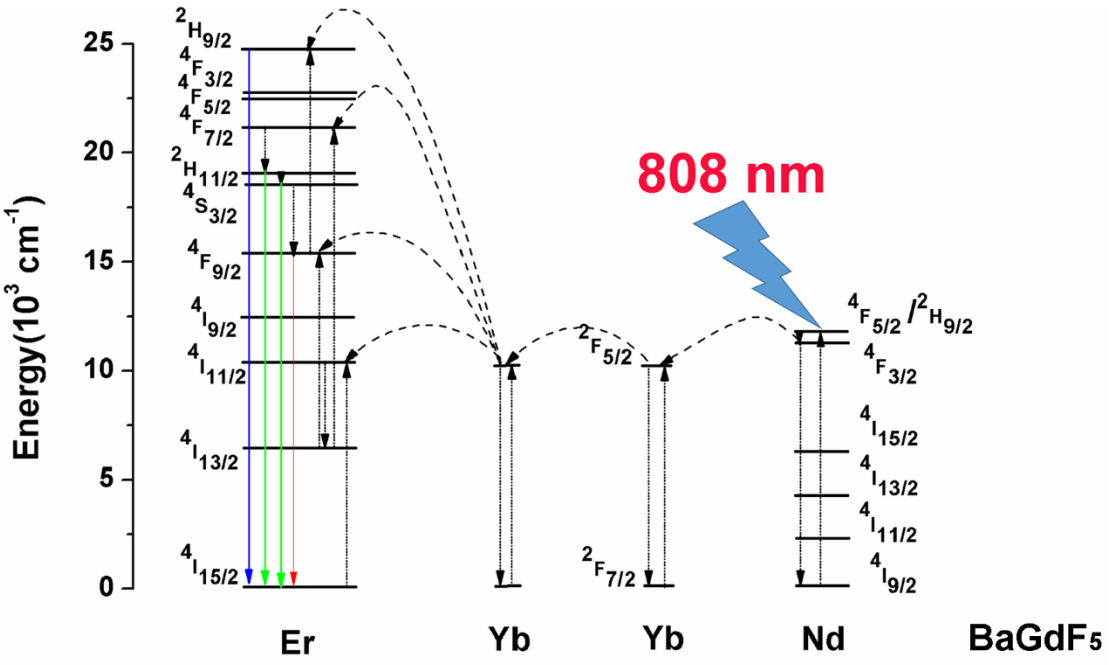

Fig S1. Energy-transfer mechanisms in the core/shell/shell/shell Er@Yb@Nd@Gd structured nanoparticle upon 808 nm diode-laser excitation.

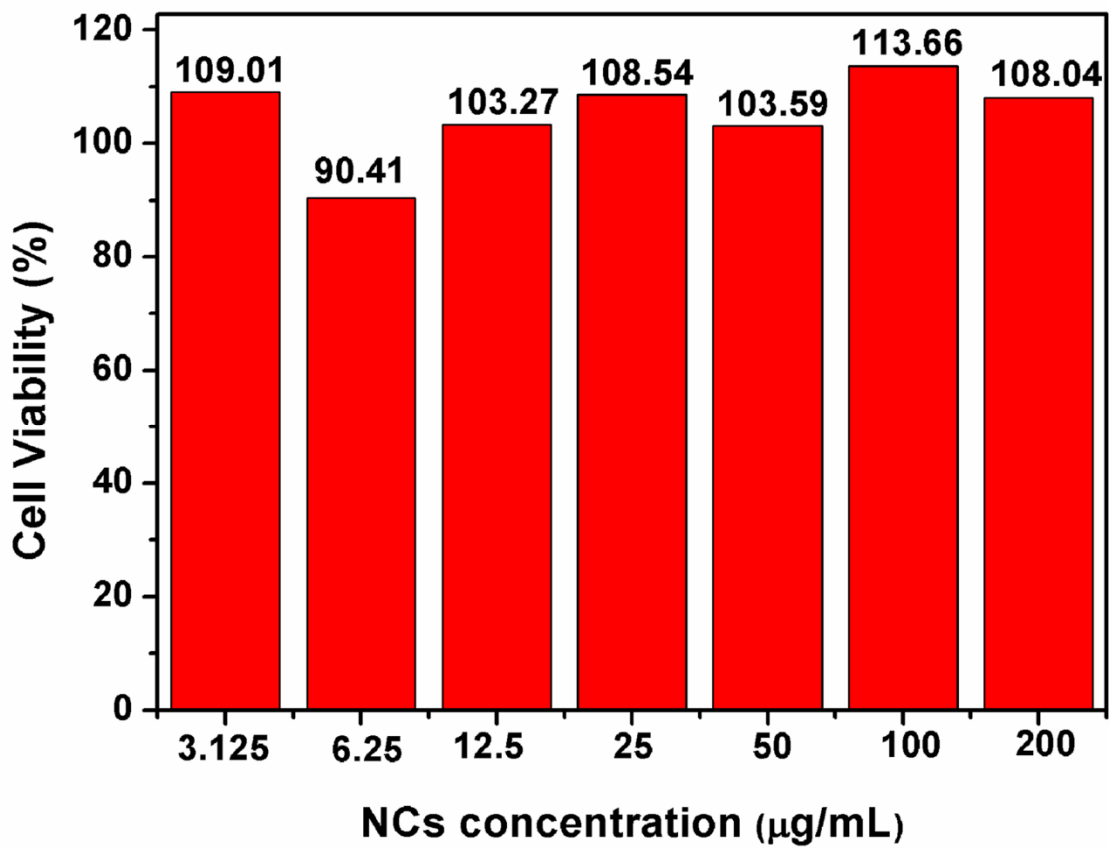

Fig S2. In vitro cell viability data of cultured HeLa cells after incubation with CMC-Er@Yb@Nd@Gd for 24 h using standard MTT colorimetric assay.

Gd^{3+} concentration (mM)	The values of T_1 (ms)	The values of r_1 ($1/T_1, s^{-1}$)
0	7117.44	0.1405
0.125	164.28	3.0872
0.25	85.61	11.6809
0.5	39.46	25.3421
1	21.89	45.6829
2	11.38	87.8735

Fig S3. The values of T_1 and r_1 at different Gd^{3+} concentration.

Fig. S4 In vivo upconversion luminescence images of Kunming mice bearing tumors after the intratumoral injection of CMC-Er@Yb@Nd@Gd nanoparticles with the excitation of 808 nm laser.