Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

Lanthanide co-doped paramagnetic spindle-like mesocrystals for imaging and autophagy induction

Yun-Jun Xu[a,c,†], Jun Lin[b,†], Yang Lu[c,*], Sheng-Liang Zhong[d], Lei Wang[d], Liang Dong[a,c], Ya-Dong Wu[c], Jun Peng[a], Li Zhang[b], Xiao-Feng Pan[c], Wei Zhou[b], Yang Zhao[a], Long-Ping Wen[b,*], Shu-Hong Yu[a,*]

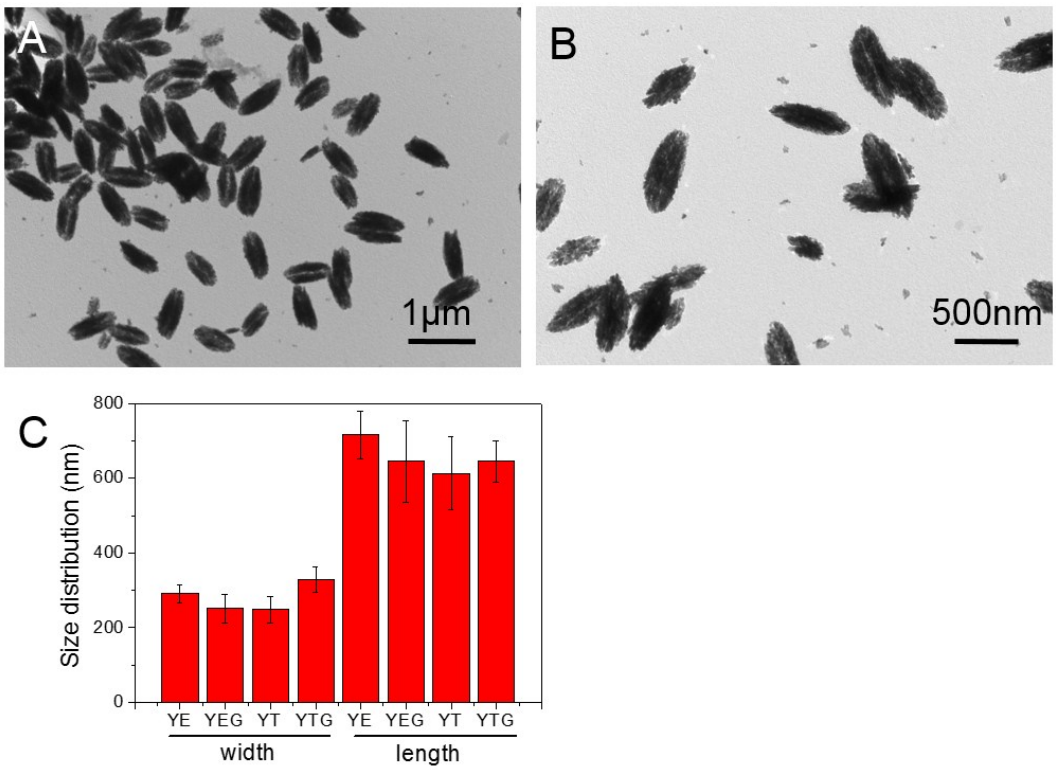

Figure S1. TEM of (A) YF_3:CeEu and (B) YF_3:CeTb spindle-like mesocrystals. (C) Size distribution of YF_3:CeEu, YF_3:CeTb, YEG and YTG spindle-like mesocrystals along the direction of long axis (length) and diameter (width).

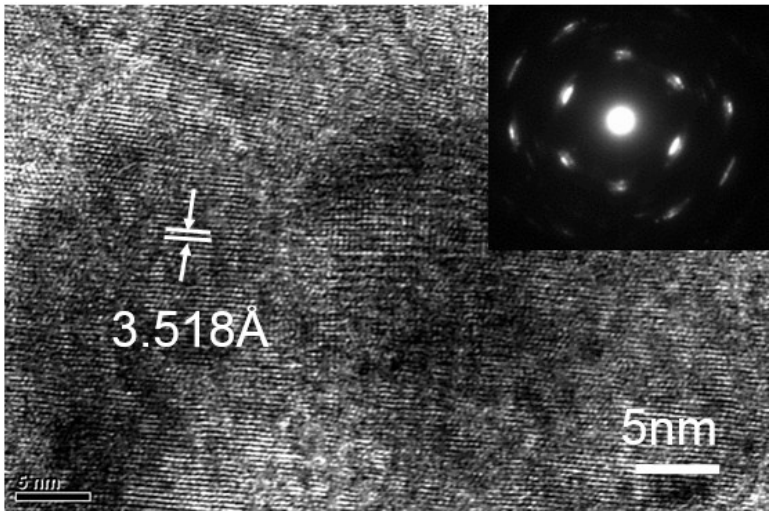

Figure S2. The high-resolution transmission electron microscopy (HRTEM) image performed on a YEG spindle shows a continuous crystal lattice with the d space of 3.518Å, corresponding to the crystal plane of (020). In addition, the well-recognized periodic diffraction spots was observed in the selected area electron diffraction (SAED) image (inset image) indicated the single crystal-like diffraction behavior of our YEG spindle, confirming the oriented organization of smaller particles into spindle-like gadolinium co-doped YF_3 mesocrystals.

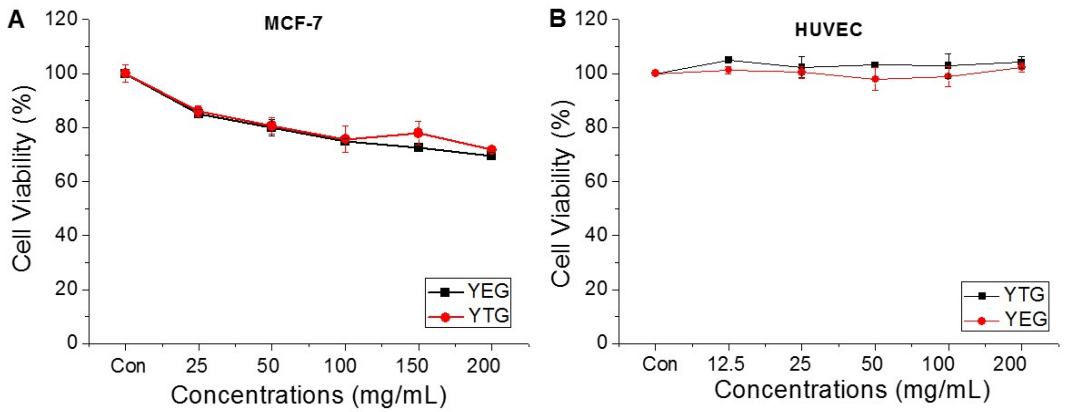

Figure S3. Cell viability of (A) MCF-7 cells (a breast cancer cell line) and (B) HUVEC cells (a human umbilical vein endothelial cell line) treated with different concentrations of YEG or YTG mesospindles for 24 h.

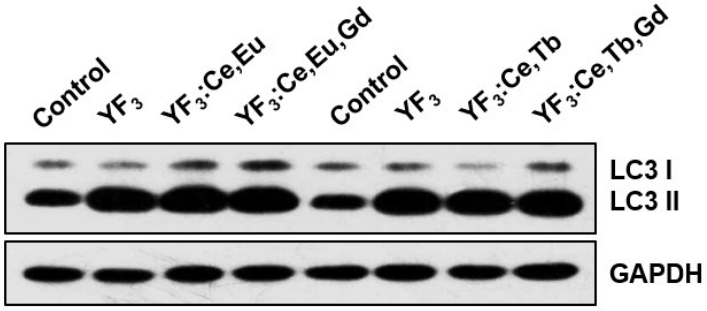

Figure S4. Western blotting of LC3 in HeLa cells treated with 100 μg/mL mesospindles with different chemical compositions for 24h.