Supporting Information

Preparation and Properties of Dual-mode Luminescent $NaYF_4$:Yb,Tm@SiO_2/carbon dots Nanocomposites

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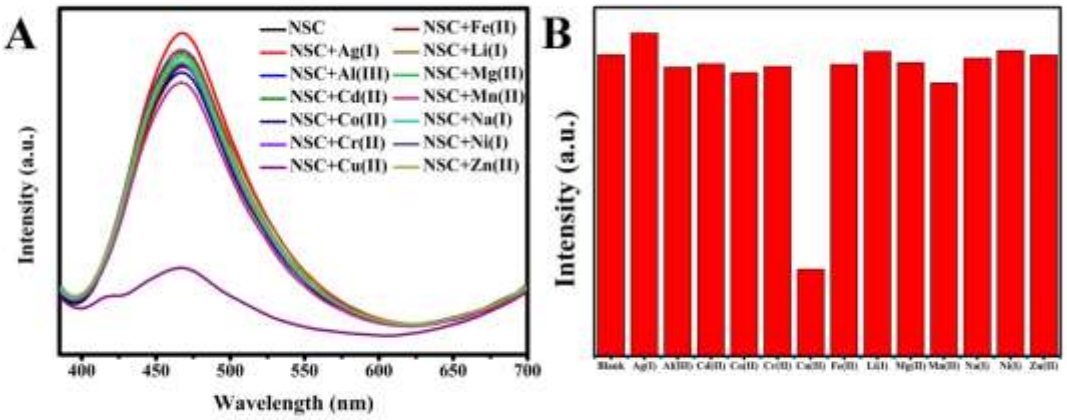

Figure S1. (A) Fluorescence emission spectra of NSC ($NaYF_4$:Yb,Tm@SiO_2/CDs solution) after addition of various metal ions under 365 nm excitation. (B) A histogram of the effect of metal ions on the fluorescence quenching of NSC under 365 nm excitation.

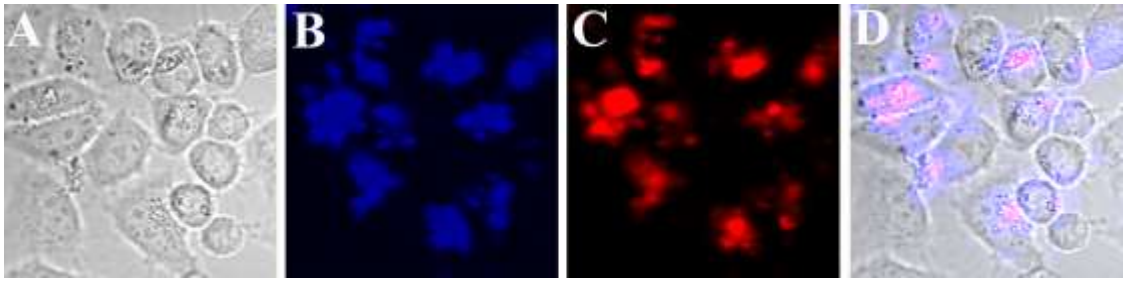

Figure S2. *In vitro* UC optical bioimaging of HeLa cells treated with $NaYF_4$:Yb,Tm@SiO_2/CDs nanocomposites under 980 nm excitation. (A) bright field image, (B) corresponding blue UC emission image (460-500 nm), (C) red-green UC emission image (570-694 nm) and (D) the overlay of the fluorescence microscopy image and bright field image.