## Robust Two-Photon Visualized Nanocarrier with Dual Targeting Ability for Controlled Chemo-Photodynamic Synergistic Treatment of Cancer

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Figsure S1. Dynamic light scattering analysis of NS-C<sub>3</sub>N<sub>4</sub>.



Figsure S2. Photo of  $NS-C_3N_4$  solution.

## Zeta Potential Distribution



**Figure S3.** Zeta potential of Fe<sub>3</sub>O<sub>4</sub>-NS-C<sub>3</sub>N<sub>4</sub>@mSiO<sub>2</sub> (red line), Fe<sub>3</sub>O<sub>4</sub>-NS-C<sub>3</sub>N<sub>4</sub>@mSiO<sub>2</sub>-NH<sub>2</sub> (blue line) and Fe<sub>3</sub>O<sub>4</sub>-NS-C<sub>3</sub>N<sub>4</sub>@mSiO<sub>2</sub>-PEG-RGD (green line).



Figure S4. Photos of BCA solution treated with NS-C<sub>3</sub>N<sub>4</sub>,

Fe<sub>3</sub>O<sub>4</sub>-NS-C<sub>3</sub>N<sub>4</sub>@mSiO<sub>2</sub>-NH<sub>2</sub> and Fe<sub>3</sub>O<sub>4</sub>-NS-C<sub>3</sub>N<sub>4</sub>@mSiO<sub>2</sub>-PEG-RGD with different amounts of anchored RGD targeting peptide (increase from right to left).



Figure S5. Photos of  $Fe_3O_4$ -NS- $C_3N_4@mSiO_2$ -PEG-RGD with different amounts of embedded  $Fe_3O_4$  nanoparticles under irradiation of a UV hand lamp (amounts of  $Fe_3O_4$  decreased from left to right).



Figure S6. The room-temperature magnetization curve of

 $Fe_{3}O_{4}\text{-}NS\text{-}C_{3}N_{4}@mSiO_{2}\text{-}PEG\text{-}RGD.$ 



**Figure S7.** Photos of Fe<sub>3</sub>O<sub>4</sub>-NS-C<sub>3</sub>N<sub>4</sub>@mSiO<sub>2</sub>-PEG-RGD solution under UV illustration for 1-3 h (from left to right).



**Figure S8.** Subcellular localization of Fe<sub>3</sub>O<sub>4</sub>-NS-C<sub>3</sub>N<sub>4</sub>@mSiO<sub>2</sub>-PEG-RGD with HeLa cells. Lysotracker (red) was used to stain the acidic organelles

of the cell. Scale bar:  $10 \mu m$