Supporting Information

Aqueous synthesis of dual-targeting Gd-doped $CuInS_2$/ZnS quantum dots for cancer-specific bi-modal imaging

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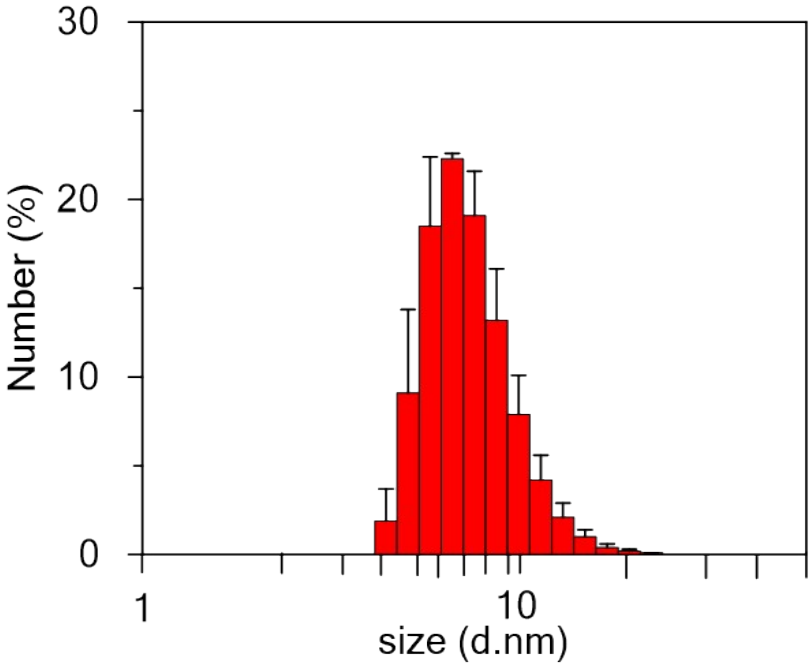

Figure S1. DLS histogram of the CIGS/ZnS *q*-dots

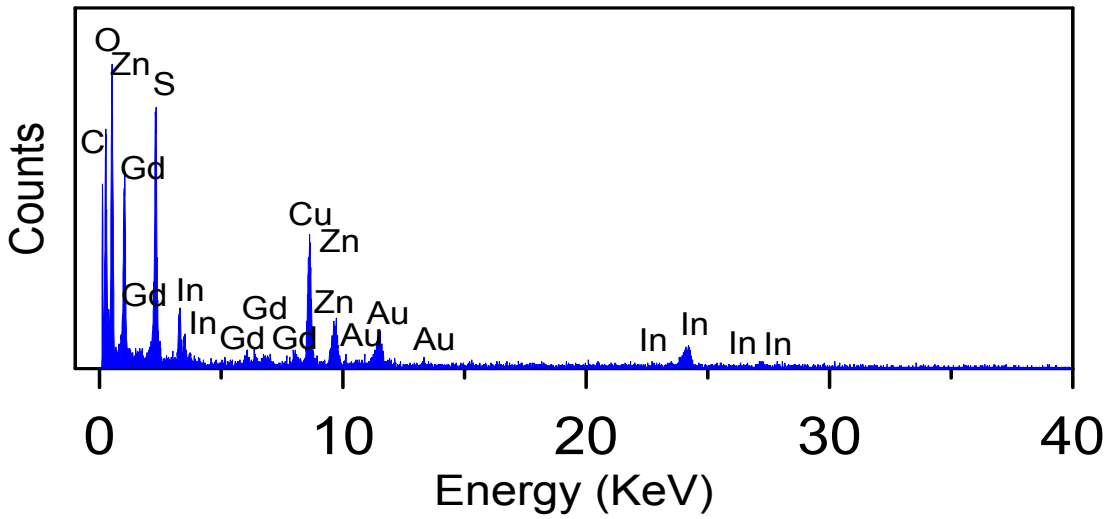

Figure S2. The EDS spectra of CIGS/ZnS *q*-dots

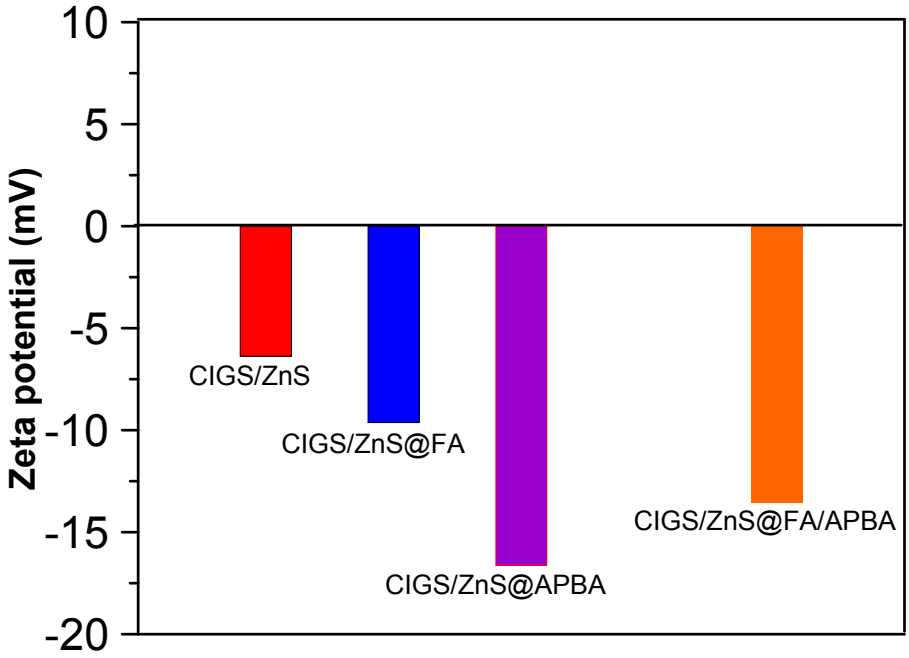

Figure S3. Zeta potential of CIGS/ZnS *q*-dots

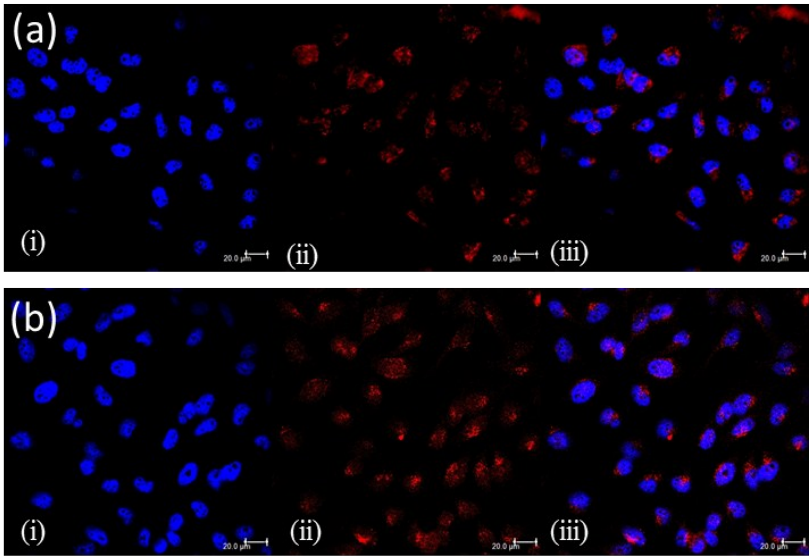

Figure S4. CLSM image of HeLa cells pre-treated with (a) CIGS/ZnS@APBA *q*-dots; and (b) CIGS/ZnS@APBA *q*- dots, respectively. (i) Blue fluorescence channel represents the location of the nucleus; (ii) Red fluorescence channel represents the location of the *q*-dots; (iii) Overlap images of fluorescence channel and bright field. The scale bars correspond to 0.2 μm.

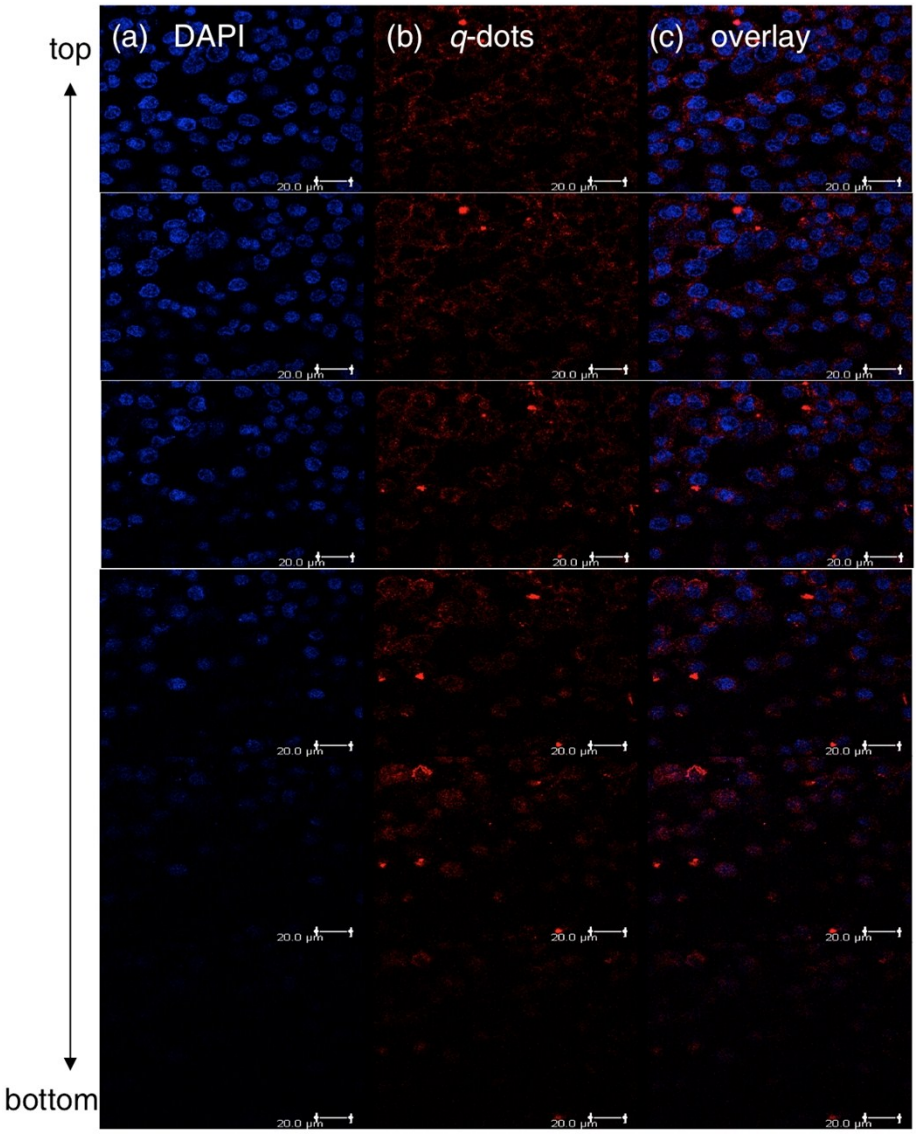

Figure S5. CLSM Z-stack images of CIGS/ZnS@FA|APBA *q*-dots internalized by HeLa cells. The images were taken every 0.2 μm by scanning the samples across a defined section along the z-axis.

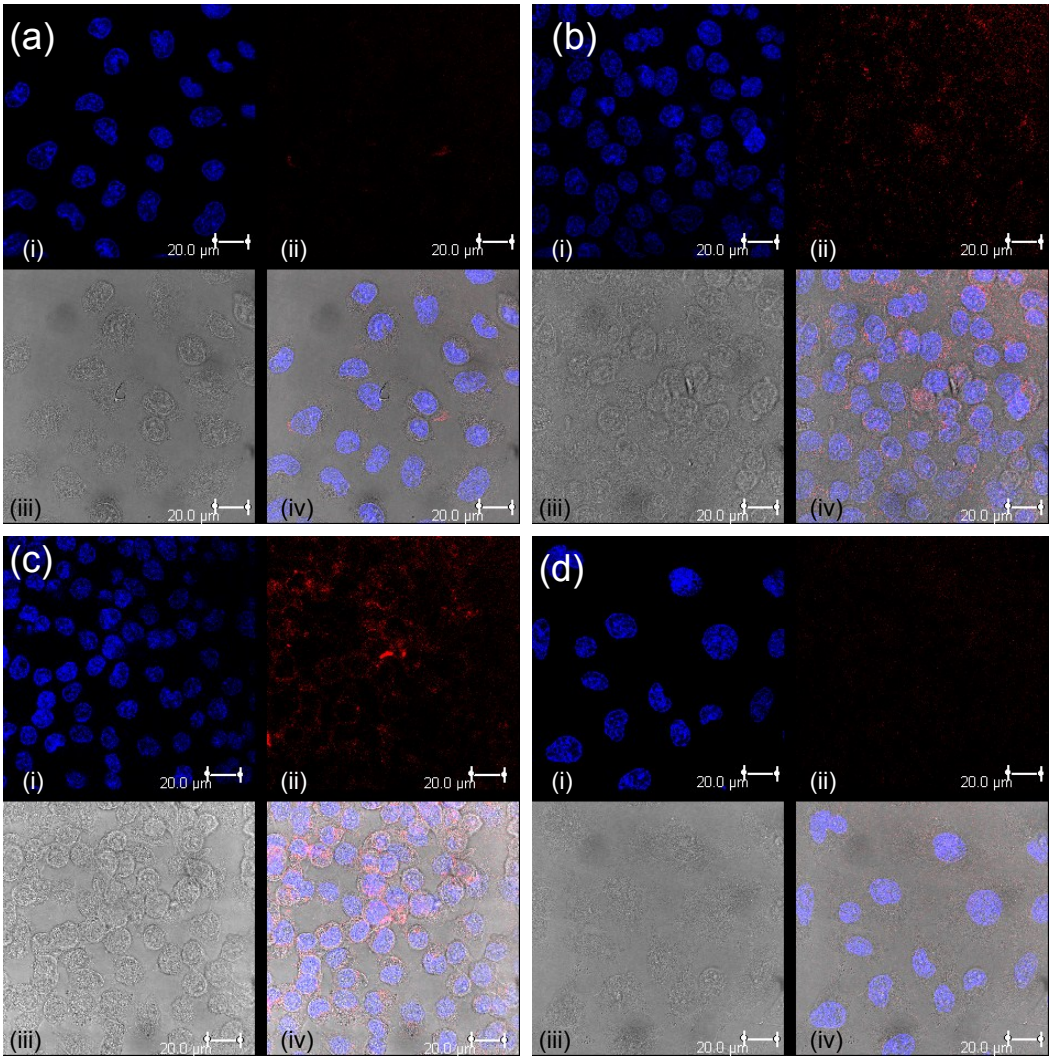

Figure S6. CLSM images of HeLa cells pre-treated with (a) sialidase and folic acid, (b) folic acid, and (c) sialidase, respectively, before incubating with CIGS/ZnS@FA|APBA *q*-dots. (d) CLSM images of HeLa cells incubated with CIGS/ZnS *q*-dots for 2 h, fixed and treated with a nuclear staining agent, DAPI. (i) Blue fluorescence channel represents the location of the nucleus; (ii) Red fluorescence channel represents the location of the *q*-dots; (iii) Bright-field represents the cell morphologies; (iv) Overlap images of fluorescence channel and bright field. The scale bars correspond to 0.2 μm.

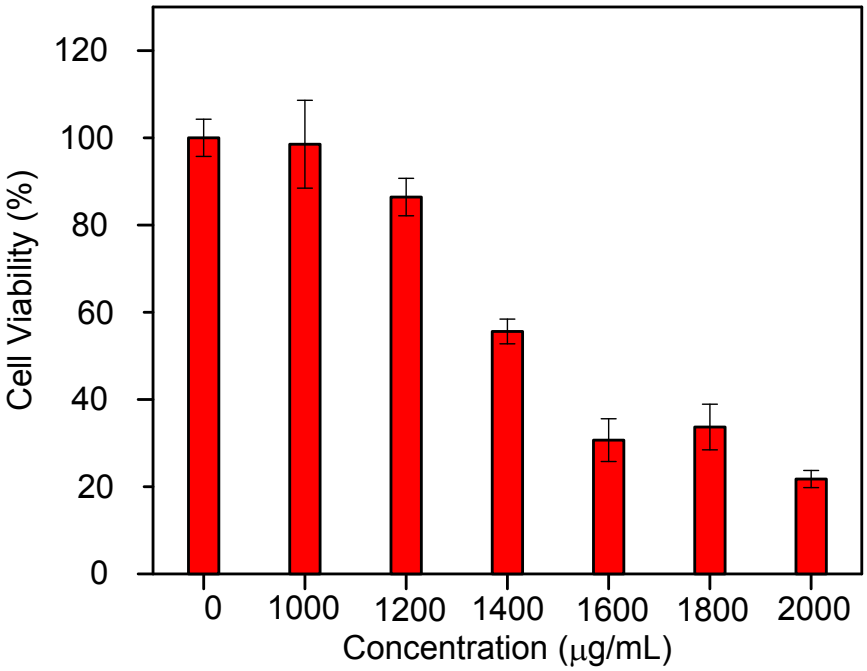

Figure S7. The cell viability of the CIGS/ZnS@FA|APBA *q*-dots against the HeLa cells from a MTT assay after 24 h incubation. The data presented percentage cell viability (means% ± SD, n = 3), which was calculated relative to that of untreated cells (with arbitrarily assigned 100% viability).

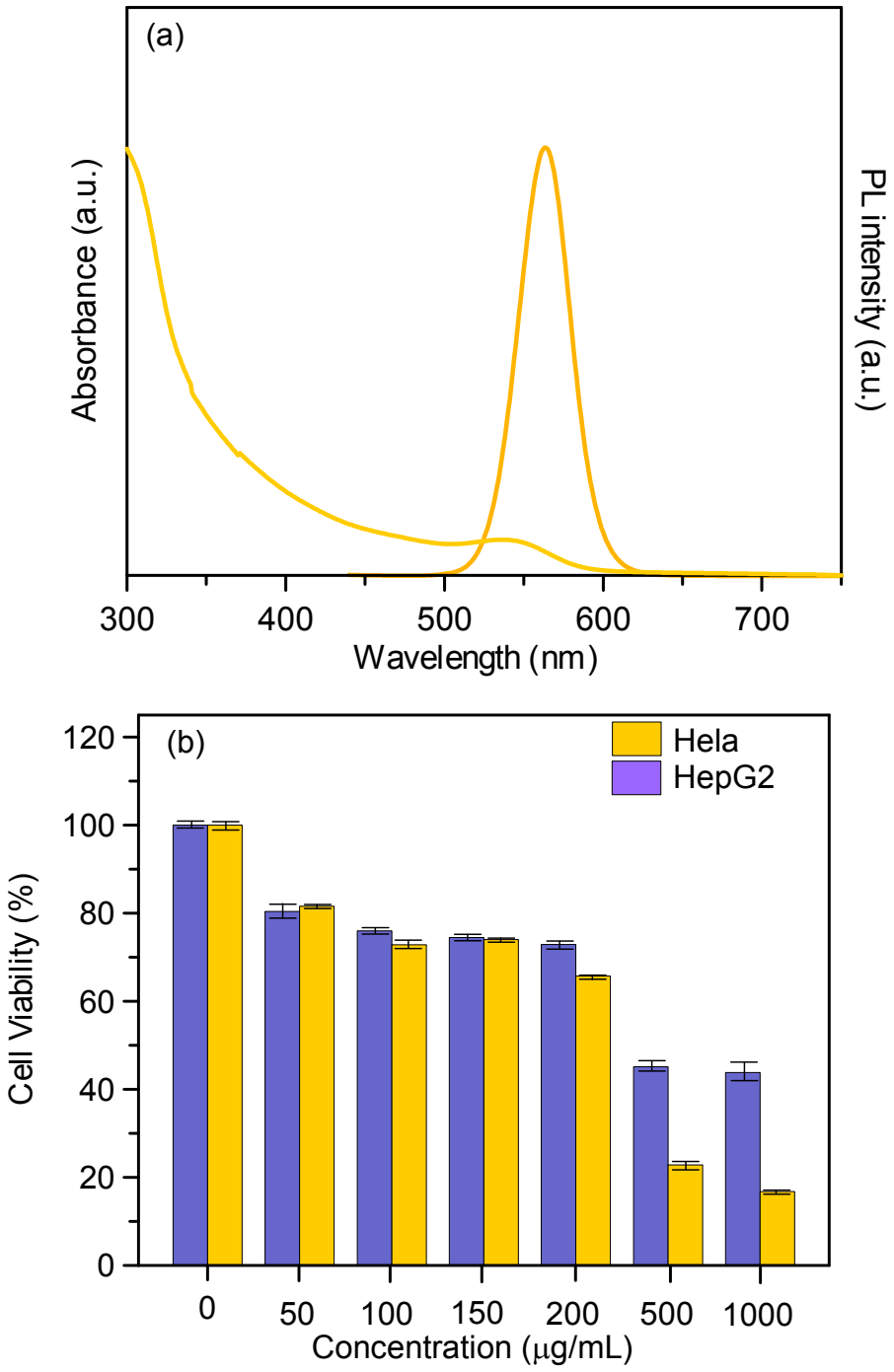

Figure S8. (a) The absorption and PL spectra of GSH-coated CdTe QDs prepared at 100 °C for 65 min. (b) The cell viability of the GSH-coated CdTe QDs against the HeLa and HepG2 cells from a MTT assay after 24 h incubation. The data presented percentage cell viability (means% ± SD, n = 3), which was calculated relative to that of untreated cells (with arbitrarily assigned 100% viability)

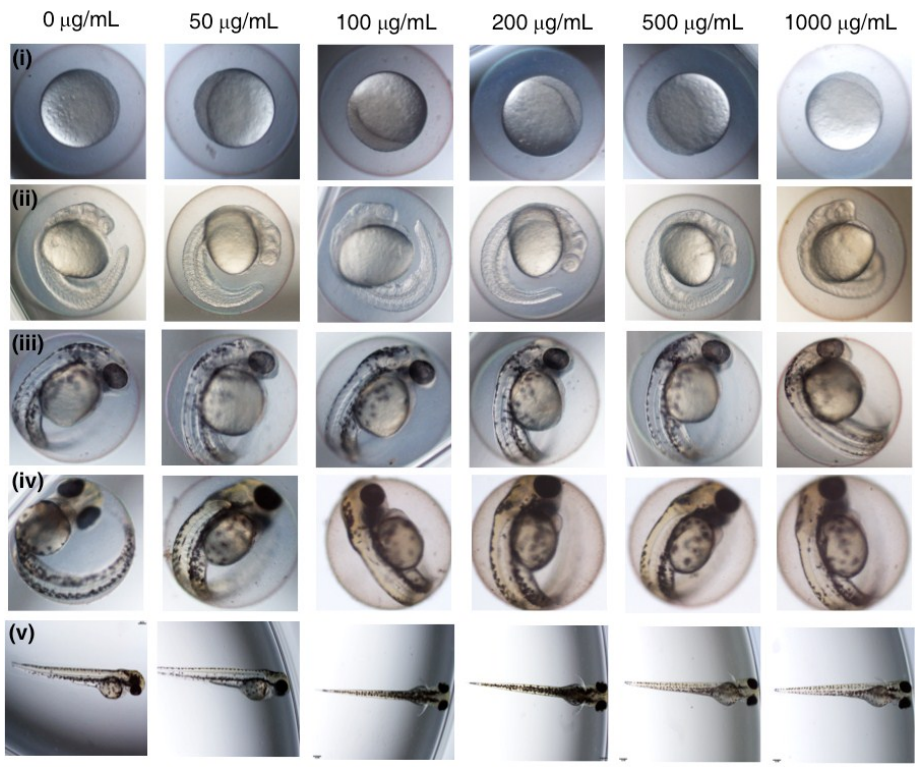

Figure S9. Optical images of representative developmental stages of zebrafish embryos in water containing different concentration of CIGS/ZnS *q*-dots without the modification of dual targeting ligands: (i) 3 hph, (ii) 24 hpf, (iii) 48 hpf, (iv) 72hpf, and (v) 96 hpf. hpf = hours post-fertilization.