Supplementary Material

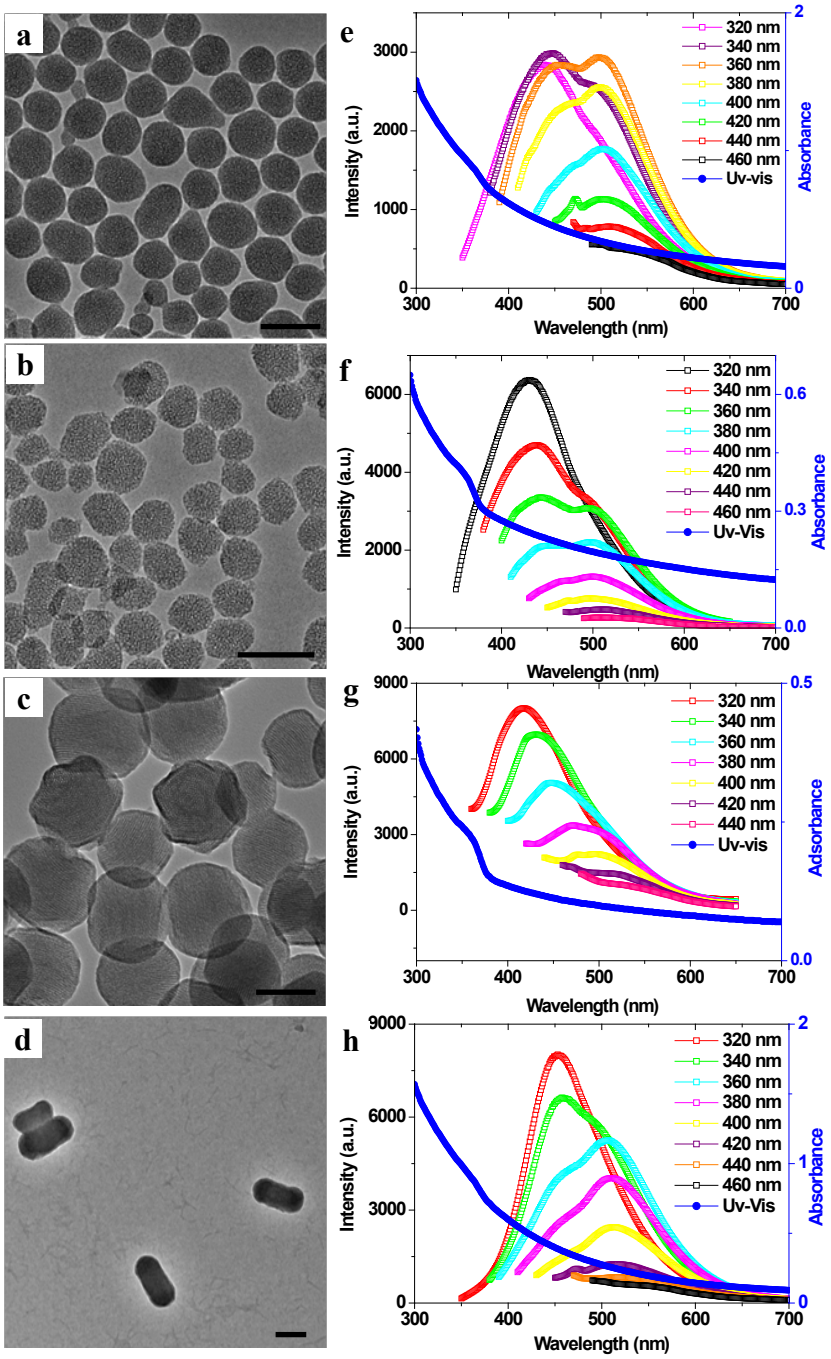

Figure S1.TEM images of a) 80 nm, b) 60 nm, c) 150 nm spherical mesoporous silica nanoparticles, and d) silica nanorods after calcination. Scale bars: 100 nm. e-h) Fluorescence emission spectra of particles a-d. 3-mercaptopropyltrimethoxysilane was used in c&d as the defect-generating organosilane.

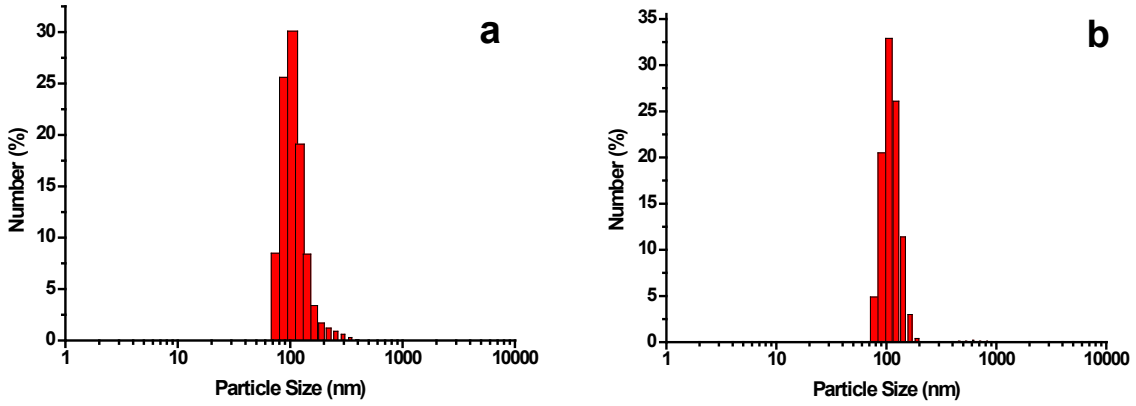

Figure S2. Dynamic light scattering study results of a) NH_2-FL-SiO_2 and b) RGD-FL-SiO_2 nanoparticles. The average hydrodynamic sizes were 114 and 120 nm, respectively.

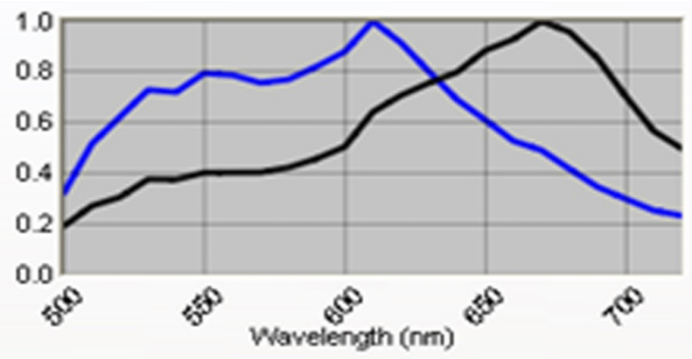

Figure S3. Emission spectra analysis on tumor (blue curve) and intestine (black curve) from *ex vivo* imaging studies (**Figure 3a**).

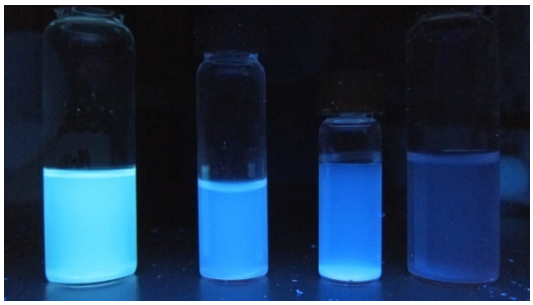

Figure S4. From left to right, silica nanoparticles functionalized by TSD (solid silica, calcined at 400^{o}C), APTES (solid silica, calcined at 400^{o}C), APTES (mesoporous silica, calcined at 210 ^{o}C), and untreated silica nanoparticles. Excited by 365 nm UV light.

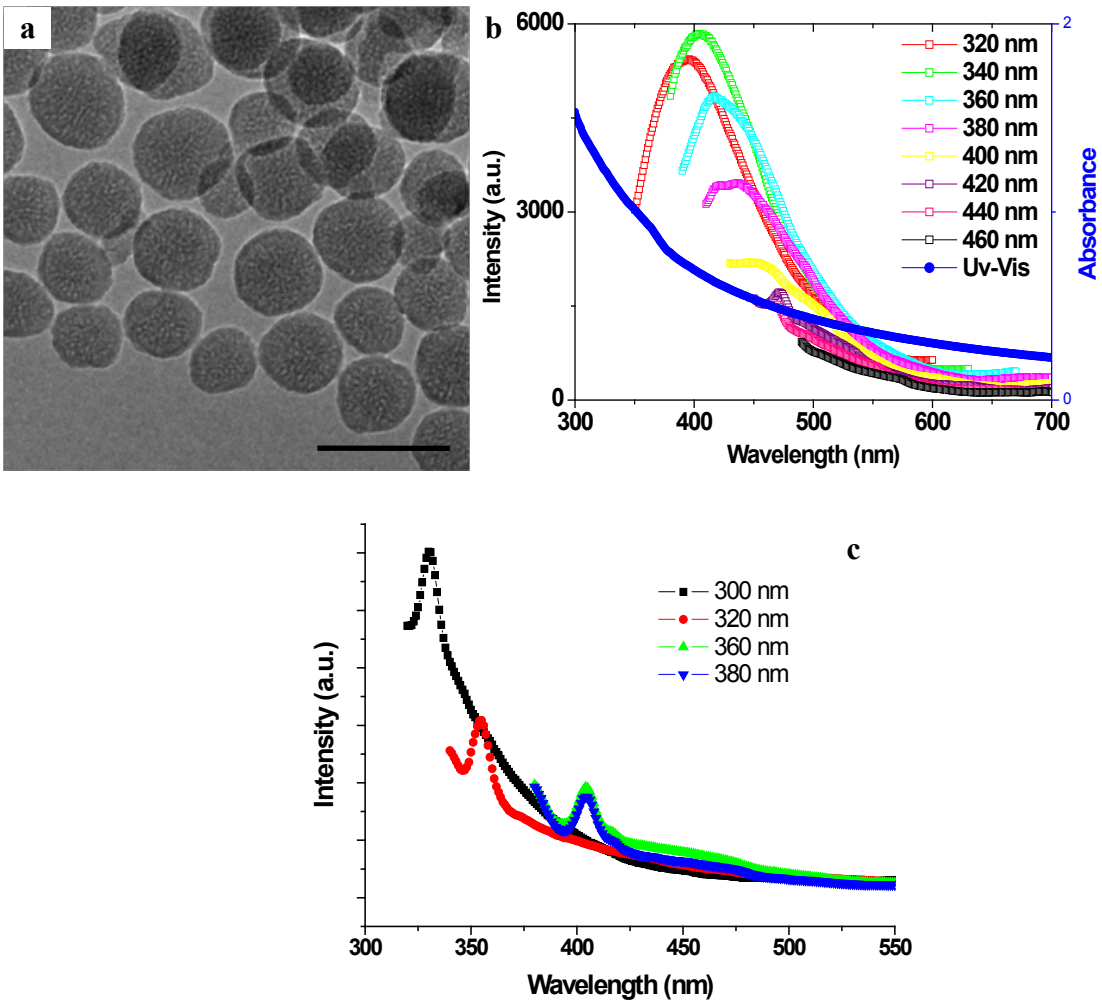

Figure S5. a) TEM image of mesoporous SiO_2 nanoparticles after calcination at 210 °C. Scale bar, 100 nm. b) Fluorescence and UV-Vis spectra of particles in a. c) Fluorescence spectra of mesoporous SiO_2 nanoparticles after calcination at 600 ^{o}C.