Supporting Information

Carbon Dots: Promising Biomaterials for Bone-Specific Imaging and Drug Delivery

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Keywords: carbon dots; calcified bone; drug delivery; fluorescence imaging; zebrafish

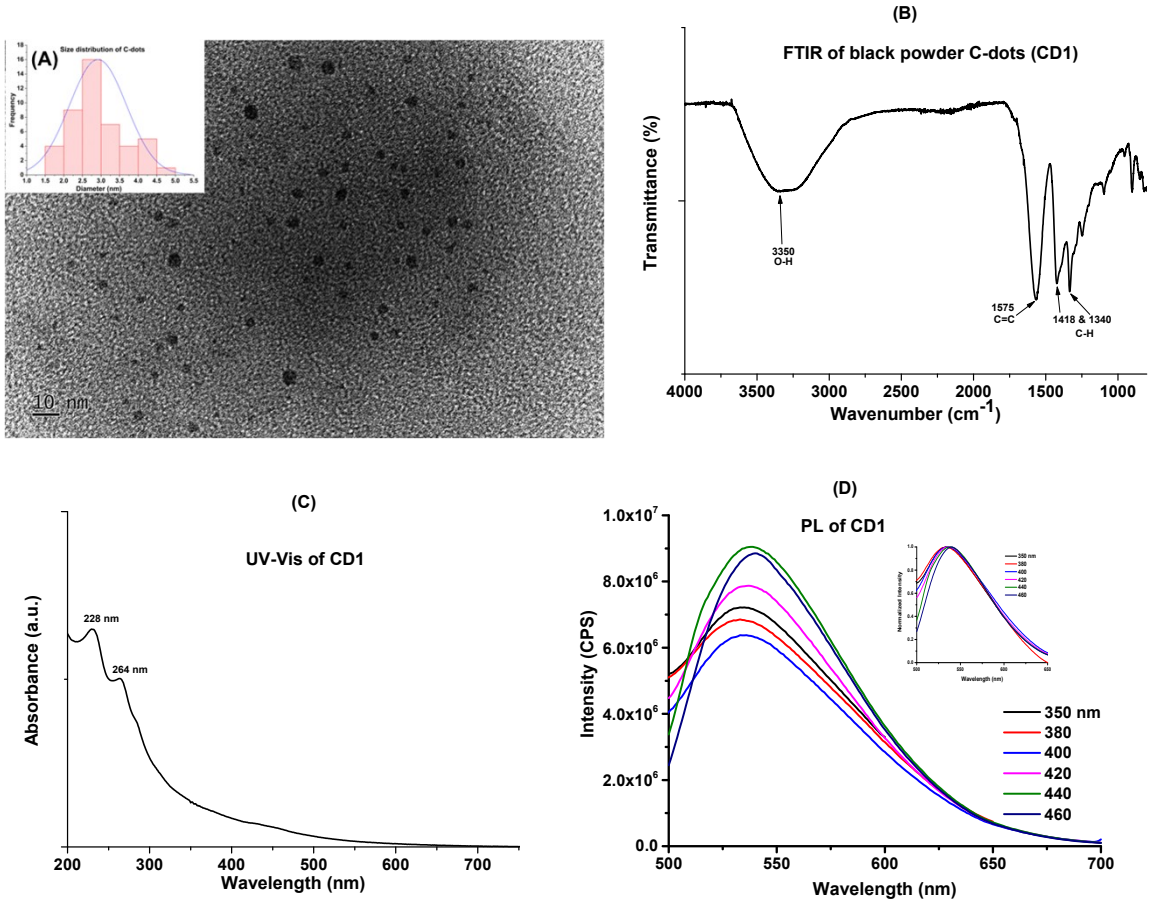

Figure SI 1. Characterization of black powder C-dots (CD1). (A): TEM, inset is the size distributions of the particles; (B): FTIR spectroscopy; (C): UV-Vis absorption spectroscopy and (D) fluorescence spectroscopy, inset is the normalized spectra.

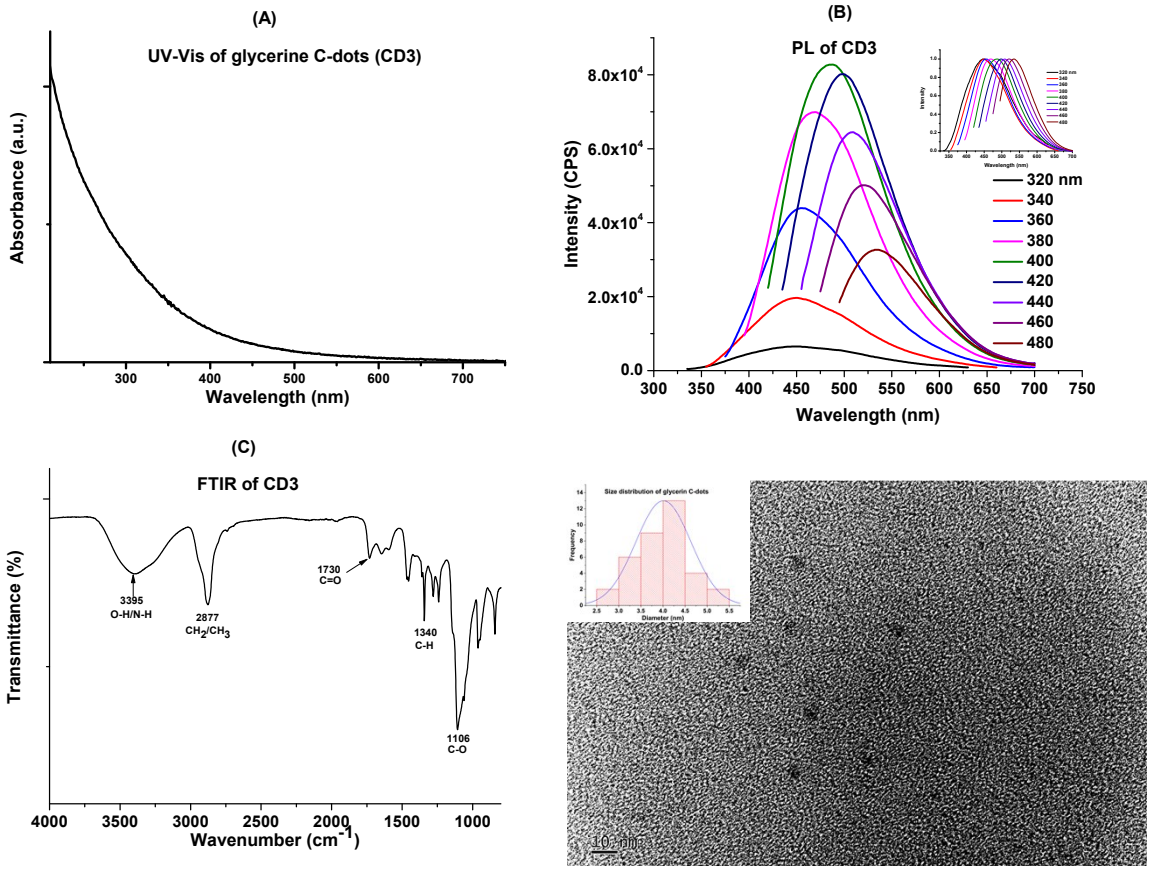

Figure SI 2. Characterization of glycerin C-dots (CD3). (A): UV-Vis absorption spectroscopy; (B): fluorescence spectroscopy, inset is the normalized spectra; (C): FTIR spectroscopy and (D) TEM, inset is the size distributions of the particles.

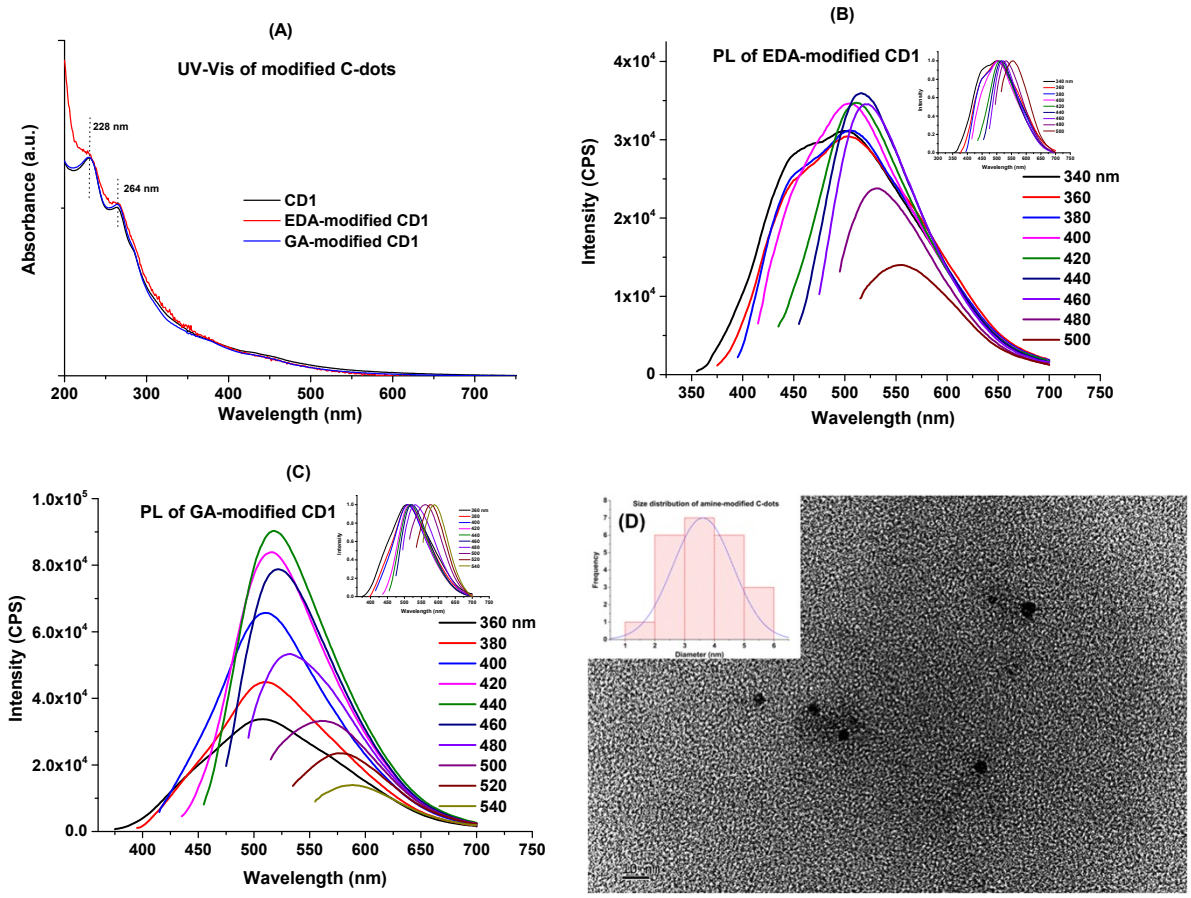

Figure SI 3. Characterization of EDA-CD1 and GA-CD1 conjugates. (A): UV-Vis absorption spectroscopy; (B): fluorescence spectroscopy of EDA-CD1, inset is the normalized spectrum; (C): fluorescence spectroscopy of GA-CD1, inset is the normalized spectra and (D) TEM of EDA-CD1, inset is the size distributions of the particles.

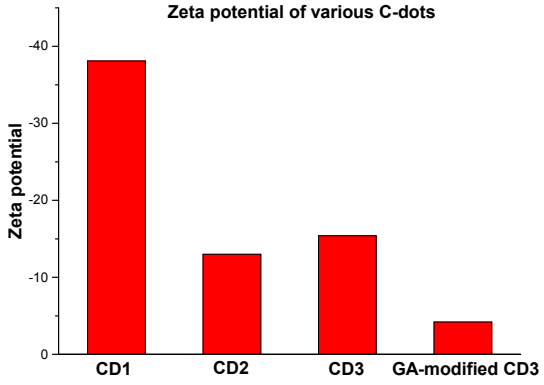

Figure SI 4. Zeta potential of GA-CD3 and other C-dots.

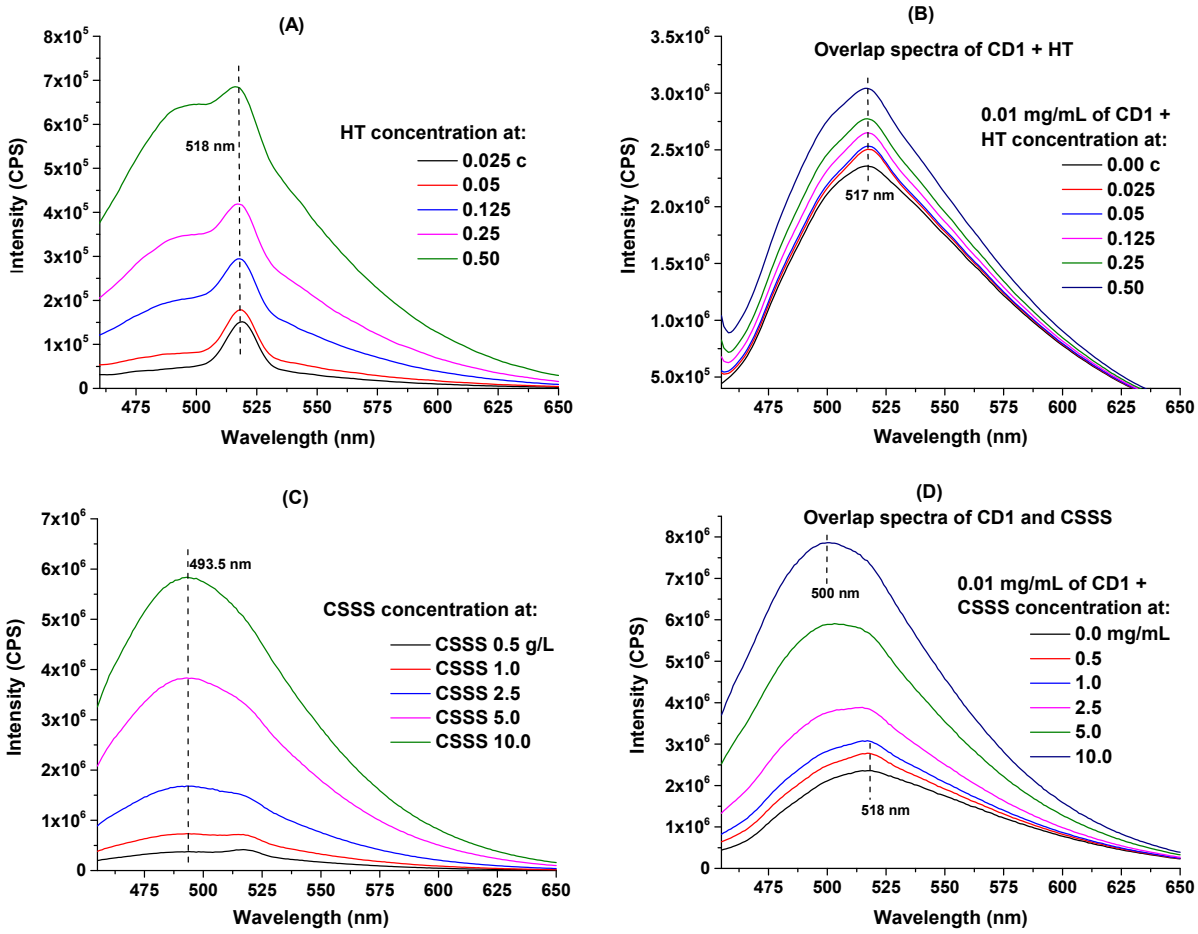

Figure SI 5. Mechanistic study of CD1 and bone interaction: (A), fluorescence spectroscopy of hydroxyapatite (HT) at various concentrations; (B), overlap spectra of CD1 and HT, obtained by first taking the fluorescence spectrum of 0.01 mg/mL CD1 and various concentrations of HT individually, then overlap the spectra by mathematically adding them up; (C), fluorescence spectroscopy of chondroitin sulfate sodium salt (CSSS) at various concentrations; (D), overlap spectra of CD1 and CSSS, obtained by first taking the fluorescence spectrum of 0.01 mg/mL CD1 and various concentrations of CSSS individually, then overlap the spectra by mathematically adding them up.