Supplementary Information

**Osteogenic Potential of Zn$^{2+}$-passivated Carbon Dots for Bone Regeneration *in Vivo*  

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**Figure S1.** The PL spectra of Zn-CDs under long excitation wavelengths at 400-580 nm.
Figure S2. The photographs of GH scaffolds (A) and Zn-CDs/GH (B) under daylight (left) and UV light irradiation (right). (C) The PL spectra of Zn-CDs/GH under different excitation wavelengths.

Figure S3. The scanning images of Alizarin red staining (A) Control group, (B) Zn-G group under the concentration of Zn$^{2+}$ at 10$^{-5}$mol/L, (C, D, E) Zn-CDs group under the concentration of Zn$^{2+}$ at 10$^{-7}$mol/L (C), 10$^{-6}$mol/L (D) and 10$^{-5}$mol/L (E).