

## Supplementary Information

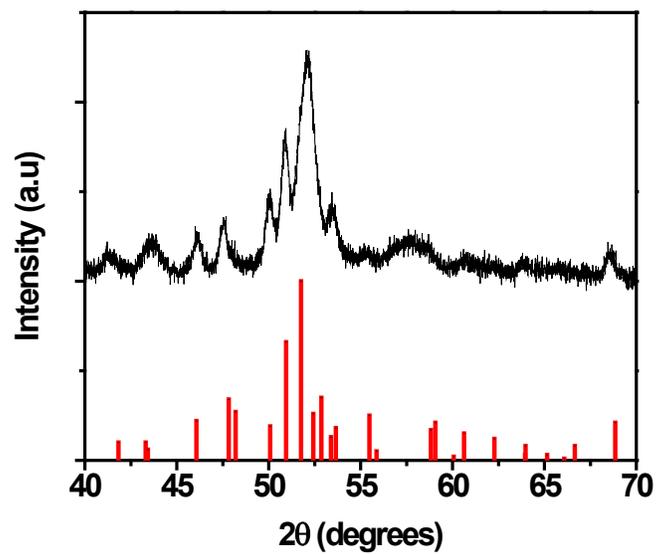
### Casein-Coated Fe<sub>5</sub>C<sub>2</sub> Nanoparticles with Superior r<sub>2</sub> Relaxivity for Liver-Specific Magnetic Resonance Imaging

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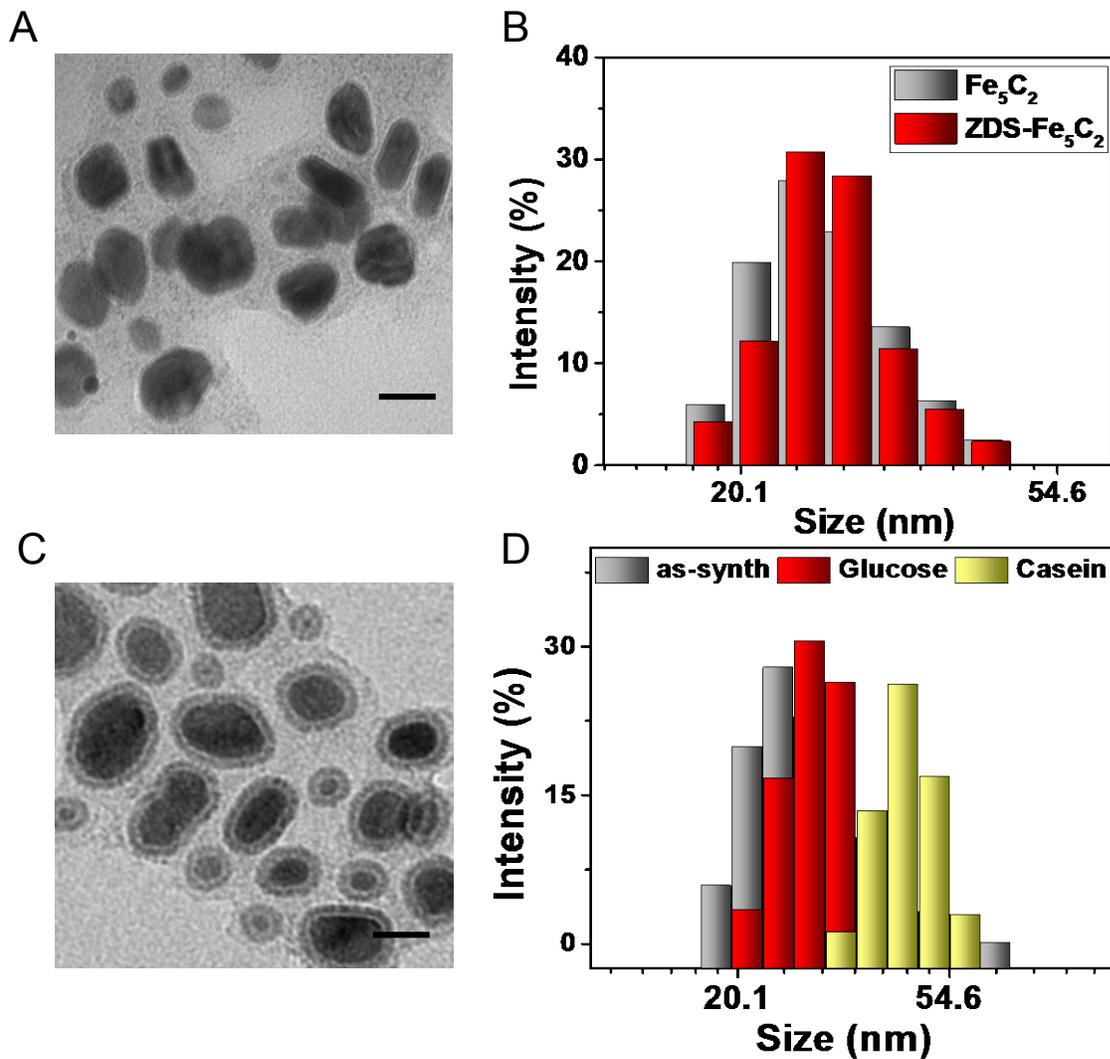
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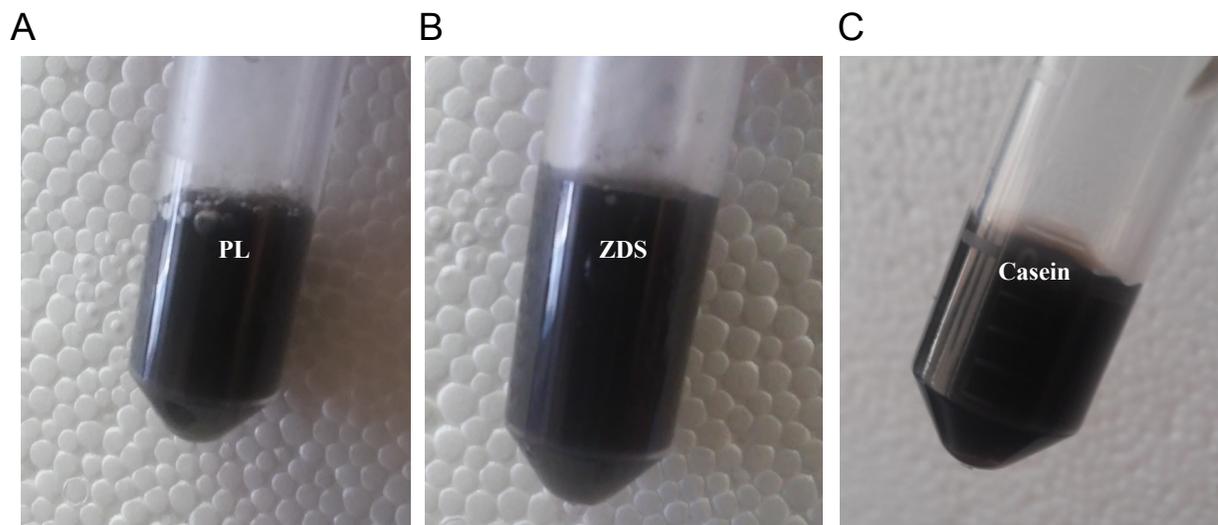
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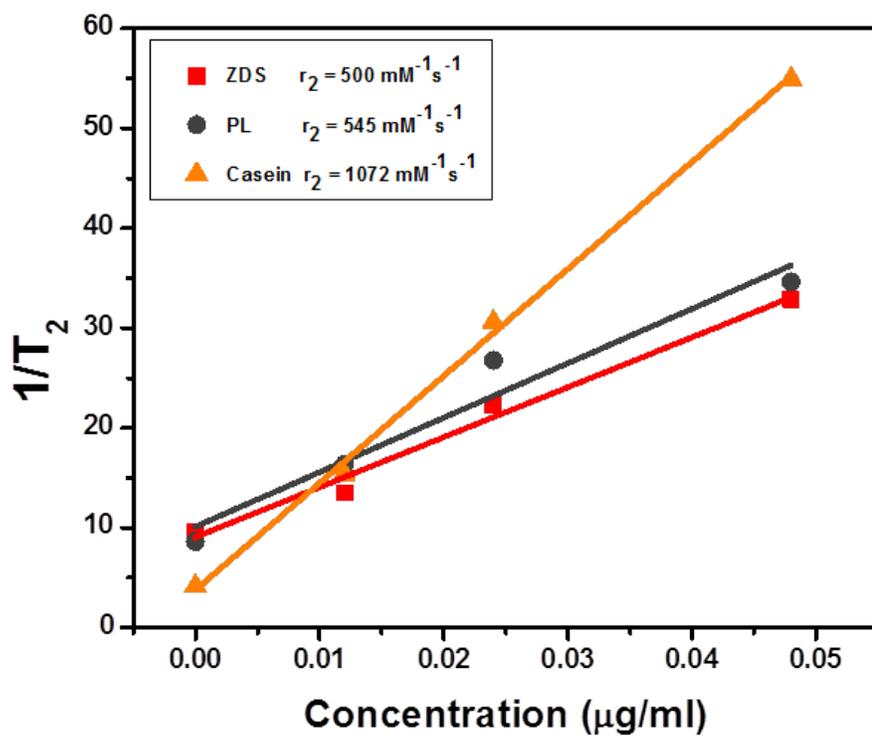
**Figure S1.** XRD pattern of Fe<sub>5</sub>C<sub>2</sub> nanoparticles.



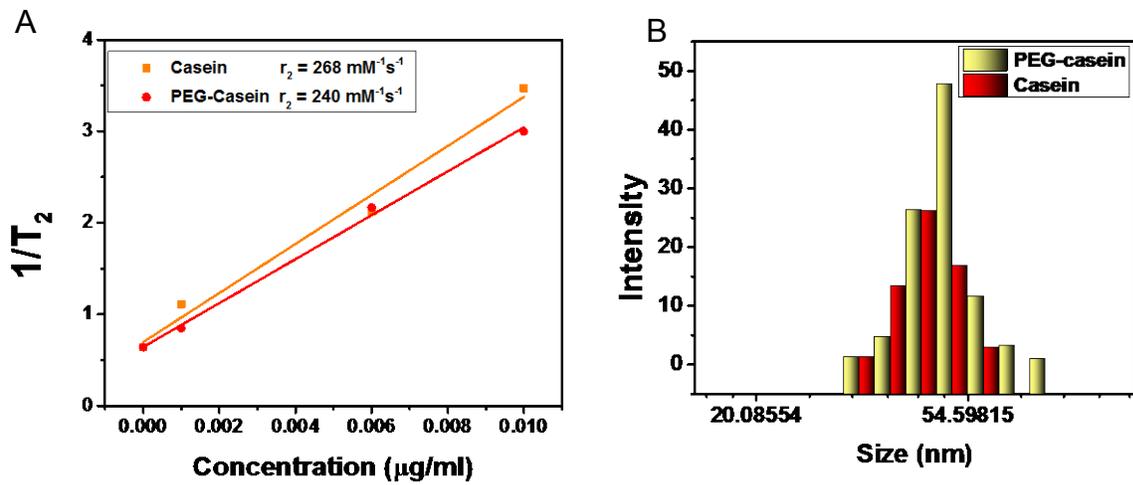
**Figure S2.** A,B) TEM (A) and DLS (B) analysis results of ZDS coated 22 nm Fe<sub>5</sub>C<sub>2</sub> nanoparticles. C,D) TEM (C) and DLS (D) results of casein coated Fe<sub>5</sub>C<sub>2</sub> nanoparticles. Scale bars, 20 nm.



**Figure S3.** Photographs of A) phospholipid, B) ZDS, and C) casein-coated  $\text{Fe}_5\text{C}_2$  nanoparticles in 10% fetal bovine serum (FBS). All the colloidal solutions were stable for over one week without showing precipitation.



**Figure S4.** MRI phantom studies with RAW264.7 cells that had been incubated with Fe<sub>5</sub>C<sub>2</sub> nanoparticles (14 nm) of different coatings.



**Figure S5.** A) TEM image Ocean Nanotech  $\text{Fe}_3\text{O}_4$  nanoparticles. Scale bar = 20 nm. B)  $r_2$  relaxivity of casein coated  $\text{Fe}_3\text{O}_4$  nanoparticles.