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Supplementary Material

Hydrophilic magnetite nanoparticles enhances anticancer activity of anthracyclines in vitro

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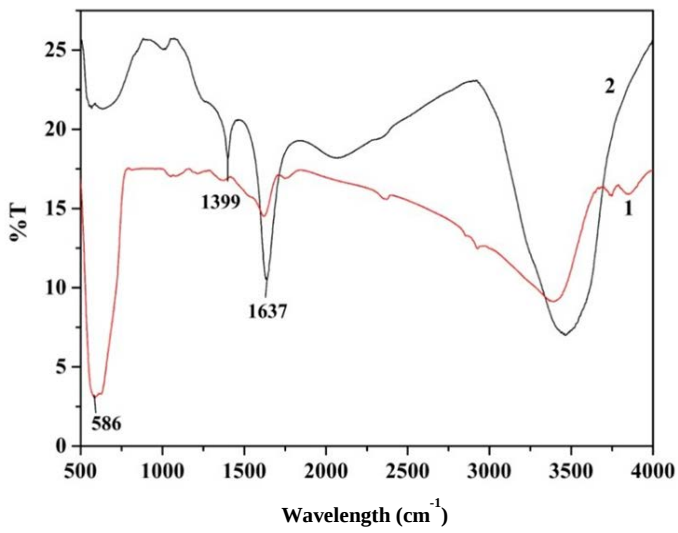

Fig. S1 FT-IR spectra of citric acid water-based Fe_3O_4 magnetic fluid

Condition: 1: nano-Fe_3O_4, 2: nano-Fe_3O_4-CA.

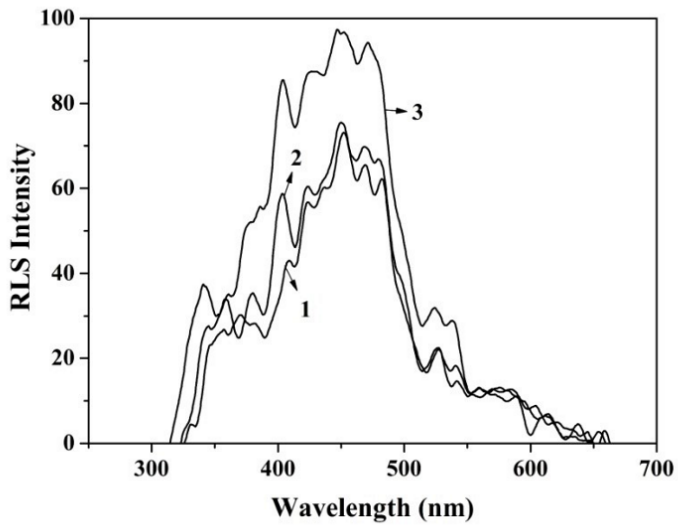

Fig. S2 RLS spectra of nano-Fe_3O_4-CA-fsDNA systems

Condition: 1: nano-Fe_3O_4-CA, 2: fsDNA, 3: nano-Fe_3O_4-CA -fsDNA, C_{fsDNA} 4.0 $mg \cdot L^{-1}$, $C_{nano\text{-}Fe_3O_4\text{-}CA}$ 2.0×10^{-7} $mol \cdot L^{-1}$.

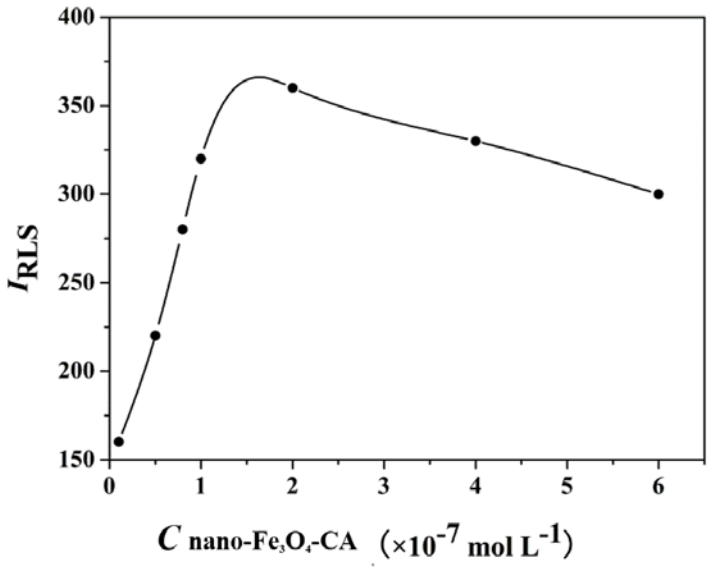

Fig. S3 Effect of nano-Fe_3O_4-CA concentration on the I_{RLS} of nano-Fe_3O_4-CA -MIT-fsDNA systems. Conditions: C_{MIT} 60.0 ng·mL^{-1}, C_{fsDNA} 4.0 mg·L^{-1}, pH 7.4.

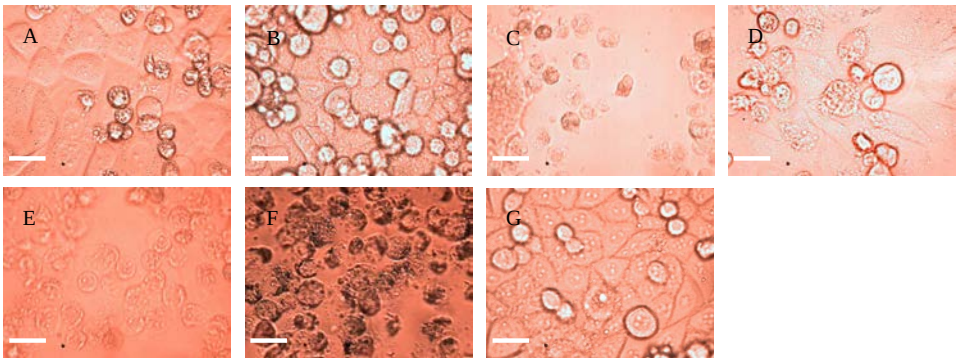

Fig. S4 Changes in HepG-2 cell morphology upon incubation for 48 h with the anthracyclines and nano-Fe_3O_4-CA: (A) incubation with 0.3 μmol·L^{-1} MIT; (B) incubation with 3 μmol·L^{-1}MIT;(C) incubation with 30 μmol·L^{-1} MIT; (D) incubation with 0.3 μmol·L^{-1} MIT+ nano-Fe_3O_4-CA;(E) incubation with 3 μmol·L^{-1} MIT+ nano-Fe_3O_4-CA; (F) incubation with 30 μmol·L^{-1} MIT+ nano-Fe_3O_4-CA; (G) incubation with nano-Fe_3O_4-CA. $C_{nano\text{-}Fe_3O_4\text{-}CA}$: 2.0×10^{-7} mol·L^{-1}, Bar: 20 μm.

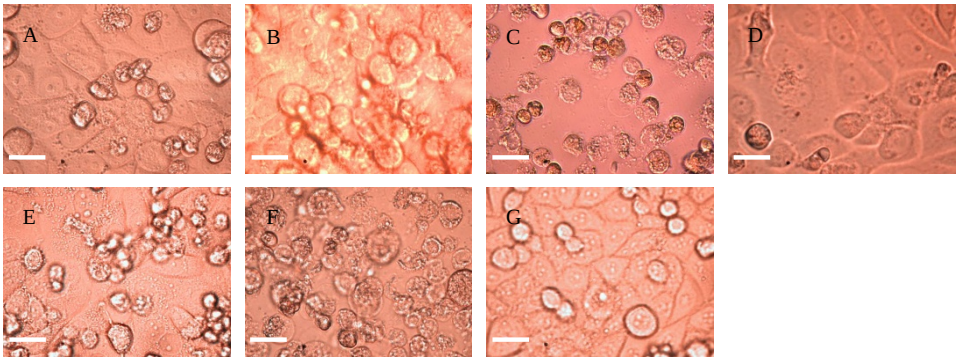

Fig. S5 Changes in HepG-2 cells morphology upon incubation for 48 h with the anthracyclines and nano-Fe_3O_4-CA: (A) incubation with 0.3 μmol·L^{-1} DAU; (B) incubation with 3 μmol·L^{-1} DAU;(C) incubation with 30 μmol·L^{-1} DAU; (D) incubation with 0.3 μmol·L^{-1} DAU+ nano-Fe_3O_4-CA;(E) incubation with 3 μmol·L^{-1} DAU+ nano-Fe_3O_4-CA; (F) incubation with 30 μmol·L^{-1} DAU+ nano-Fe_3O_4-CA; (G) incubation with nano-Fe_3O_4-CA. $C_{\text{nano-Fe3O4-CA}}$: 2.0×10^{-7} mol·L^{-1}, Bar: 20 μm.

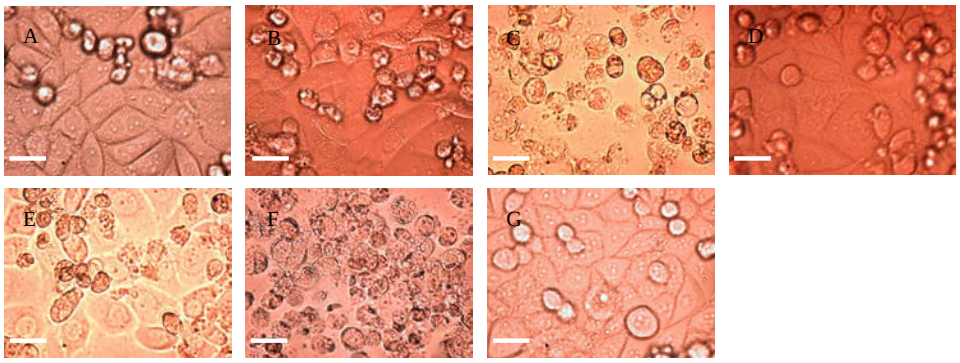

Fig. S6 Changes in HepG-2 cell morphology upon incubation for 48 h with the anthracyclines and nano-Fe_3O_4-CA: (A) incubation with 0.3 μmol·L^{-1} ADM; (B) incubation with 3 μmol·L^{-1} ADM;(C) incubation with 30 μmol·L^{-1} ADM; (D) incubation with 0.3 μmol·L^{-1} ADM+ nano-Fe_3O_4-CA;(E) incubation with 3 μmol·L^{-1} ADM+ nano-Fe_3O_4-CA; (F) incubation with 30 μmol·L^{-1} ADM+ nano-Fe_3O_4-CA; (G) incubation with nano-Fe_3O_4-CA. $C_{\text{nano-Fe3O4-CA}}$: 2.0×10^{-7} mol·L^{-1}, Bar: 20 μm.