Supporting Information

For

Mesoporous Silica Integrated with Fe_3O_4 and Palmitoyl Ascorbate as a New Nano-Fenton Reactor for Amplified Tumor Oxidation Therapy

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Figure S1

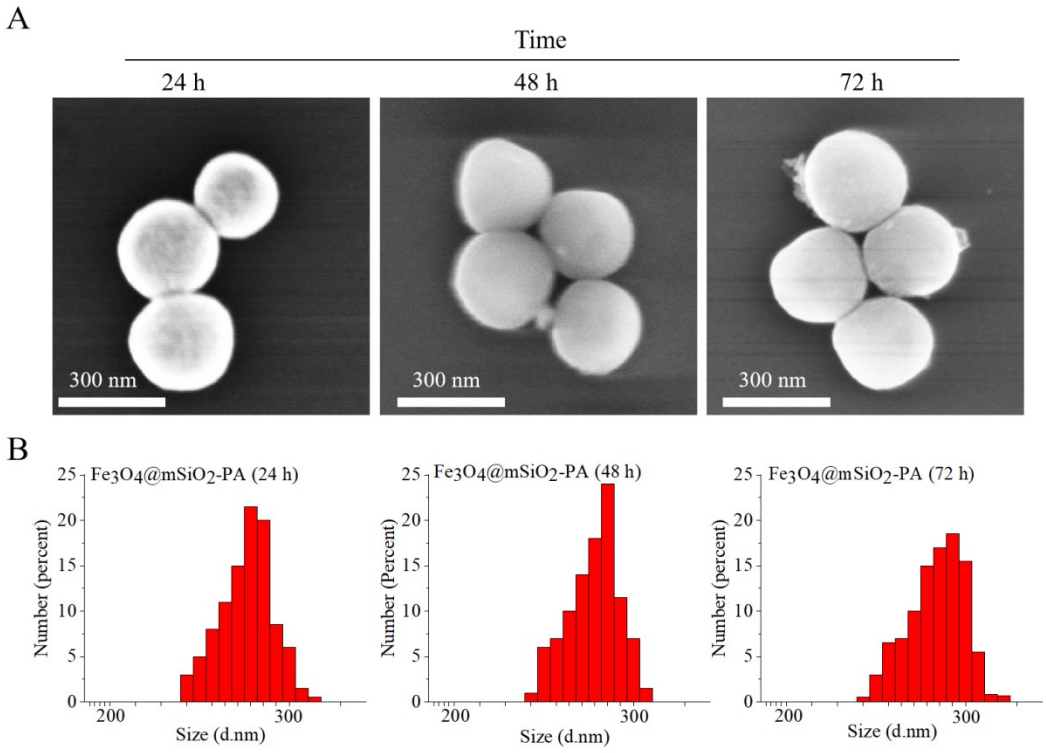

Figure S1: The stability of nanoparticles in PBS (pH = 7.4) was evaluated. SEM and DLS were used to detect the morphology (A) and size changes (B) of Fe_3O_4@mSiO_2-PA at 24 h, 48 h and 72 h, respectively.

Figure S2

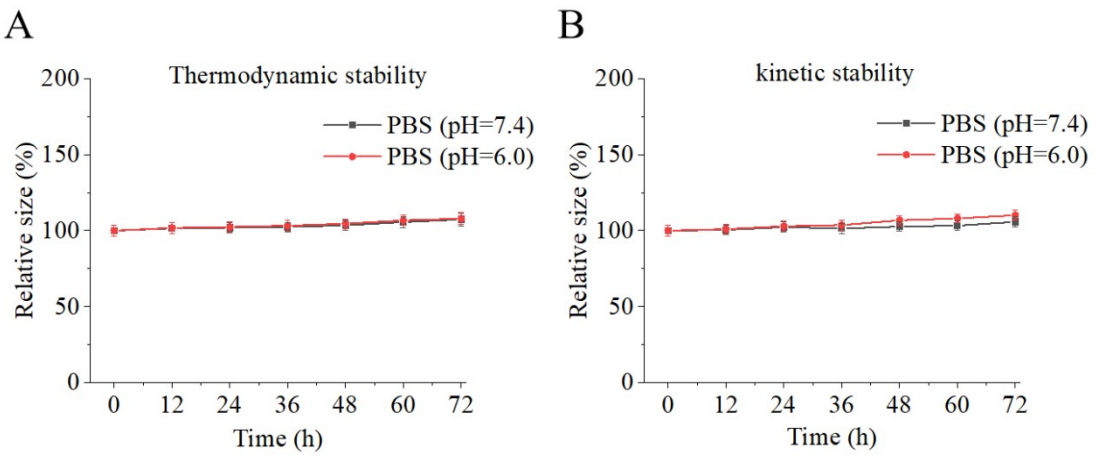

Figure S2: Colloidal stability of nanoparticles at 37 °C in various media. (A) Thermodynamic stability presented by size change; and (B) kinetic stability presented by transmittance change.

Figure S3

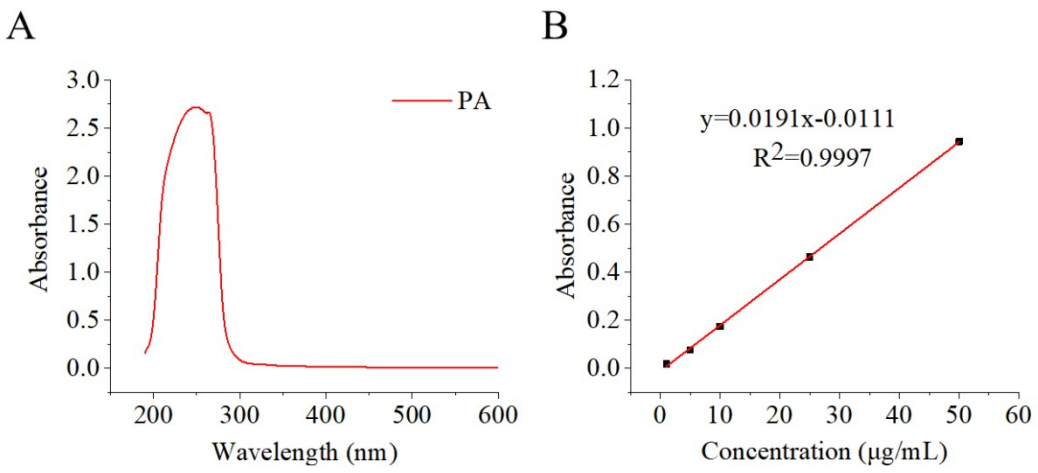

Figure S3: The standard curve of PA is used for drug loading evaluation. (A) UV-visible absorption spectra of PA. (B) Linear fit of the standard curve of PA in ethanol solution.

Figure S4

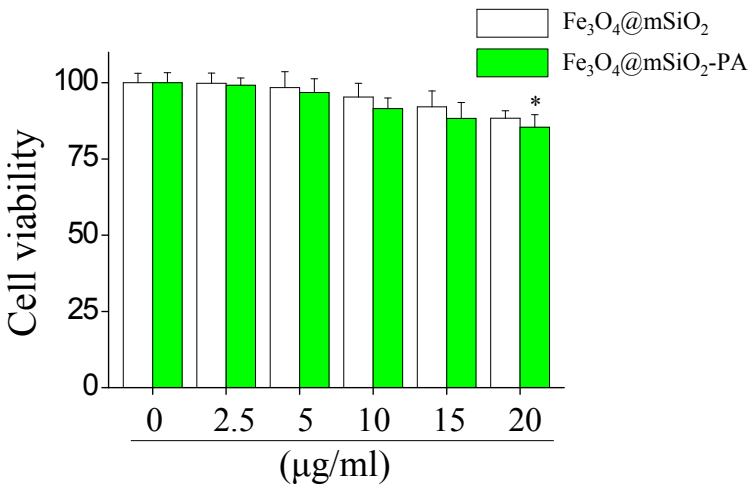

Figure S4: Cytotoxicity of Fe_3O_4@$mSiO_2$-PA or Fe_3O_4@$mSiO_2$ towards human normal cells. HUVECs (human umbilical vein endothelial cells) as human normal cells were seeded in 96-well plate (5000 cells/well) and treated with 2.5-20 μg/ml Fe_3O_4@$mSiO_2$-PA or Fe_3O_4@$mSiO_2$ foe 24 h. Cell viability was detected by MTT assay.

Figure S5

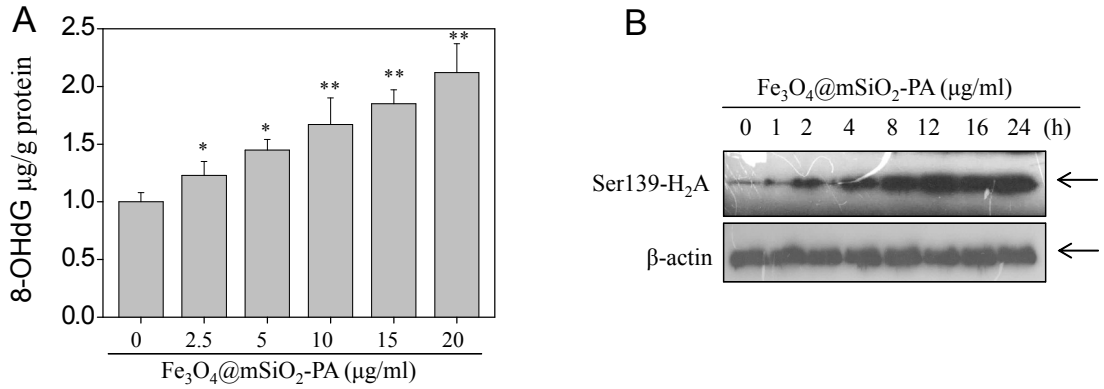

Figure S5: Fe_3O_4@$mSiO_2$-PA-induced DNA damage *in vitro*. (A) Content of 8-OHdG in Fe_3O_4@$mSiO_2$-PA-treated Hela cells. 8-OH-deoxyguanosine (8-OHdG), a DNA damage marker, was examined in Fe_3O_4@$mSiO_2$-PA-treated cells by ELISA method. (B) A time-course of Ser139-histone expression. Cells were treated with 20 μg/ml Fe_3O_4@$mSiO_2$-PA for 0-24 h. Ser139-histone, another DNA damage marker, was examined by western blotting. All data and experiments were repeated three times.