Electronic Supplementary Material

An oxidation responsive nano-radiosensitizer increases radiotherapy efficacy by remolding tumor vasculature

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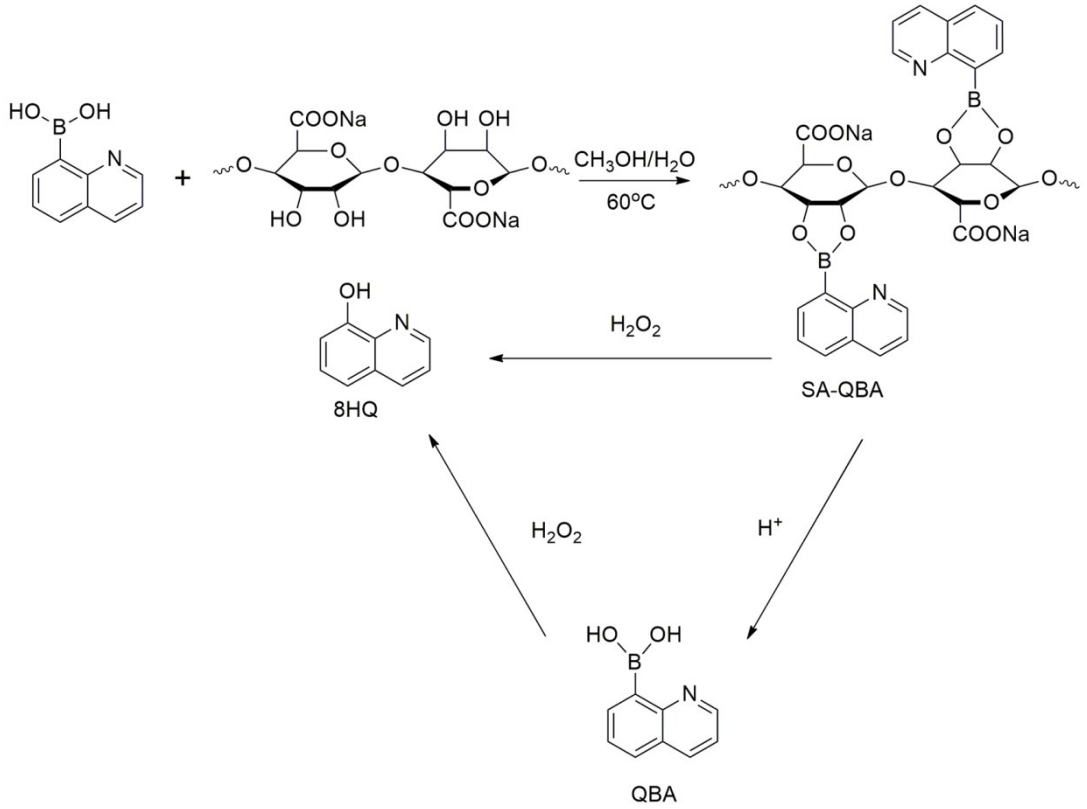
Scheme of synthesis and degradation process



Scheme S1 Synthesis and degradation process of NPs.

Supporting Figures

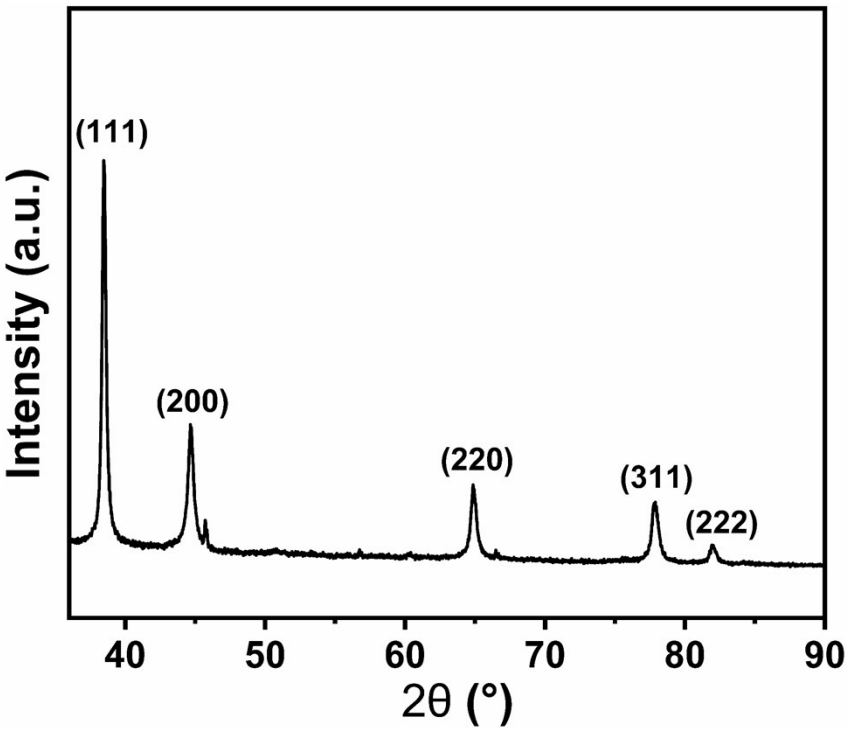


Fig. S1 XRD patterns of Au NPs.

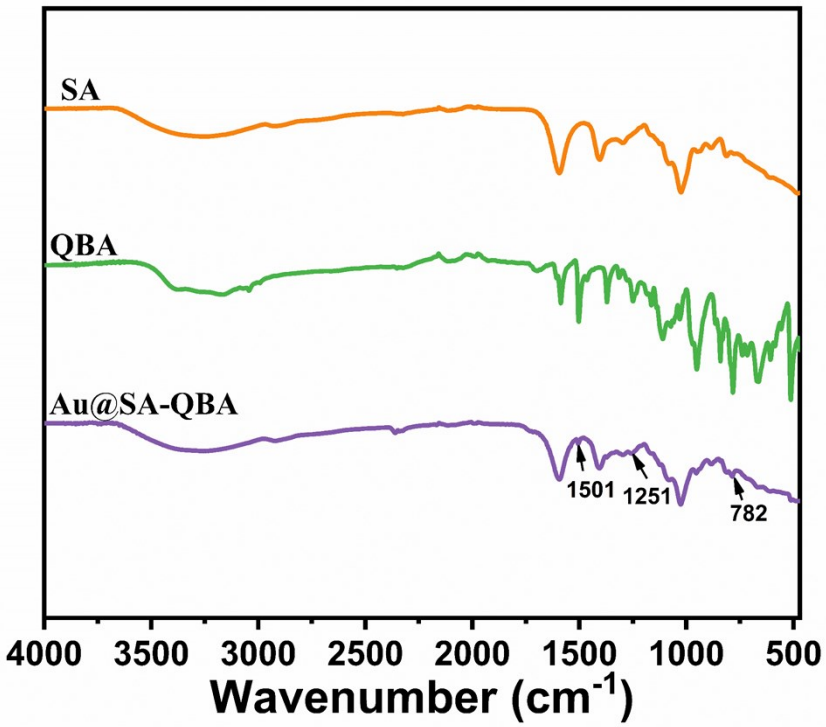


Fig. S2 FTIR spectra of QBA, SA and Au@SA-QBA.

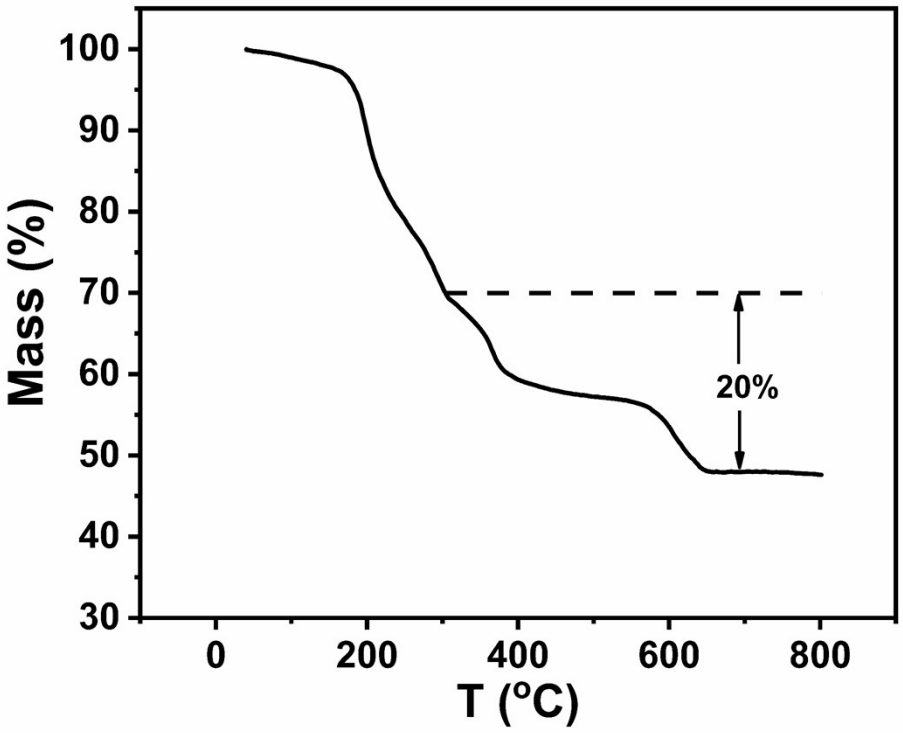


Fig. S3 TGA curve of Au@SA-QBA NPs.

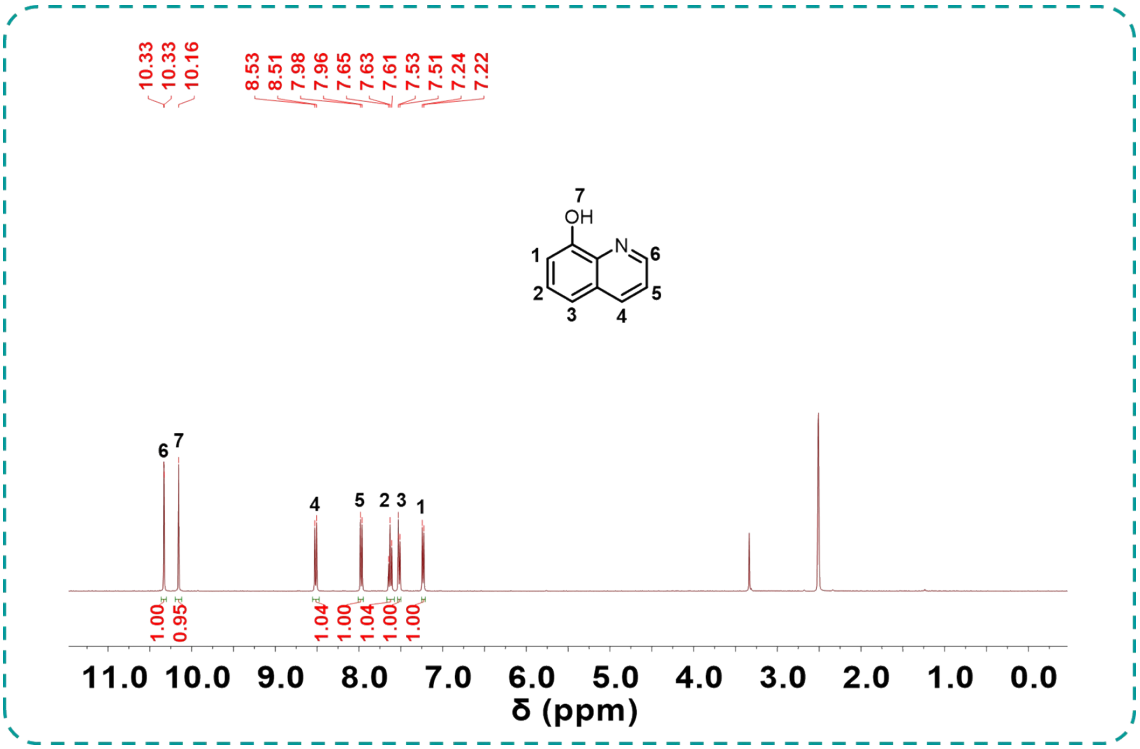


Fig. S4 ^{1}H NMR spectrum of 8-hydroxyquinoline in DMSO-d6 solvent (400 MHz).

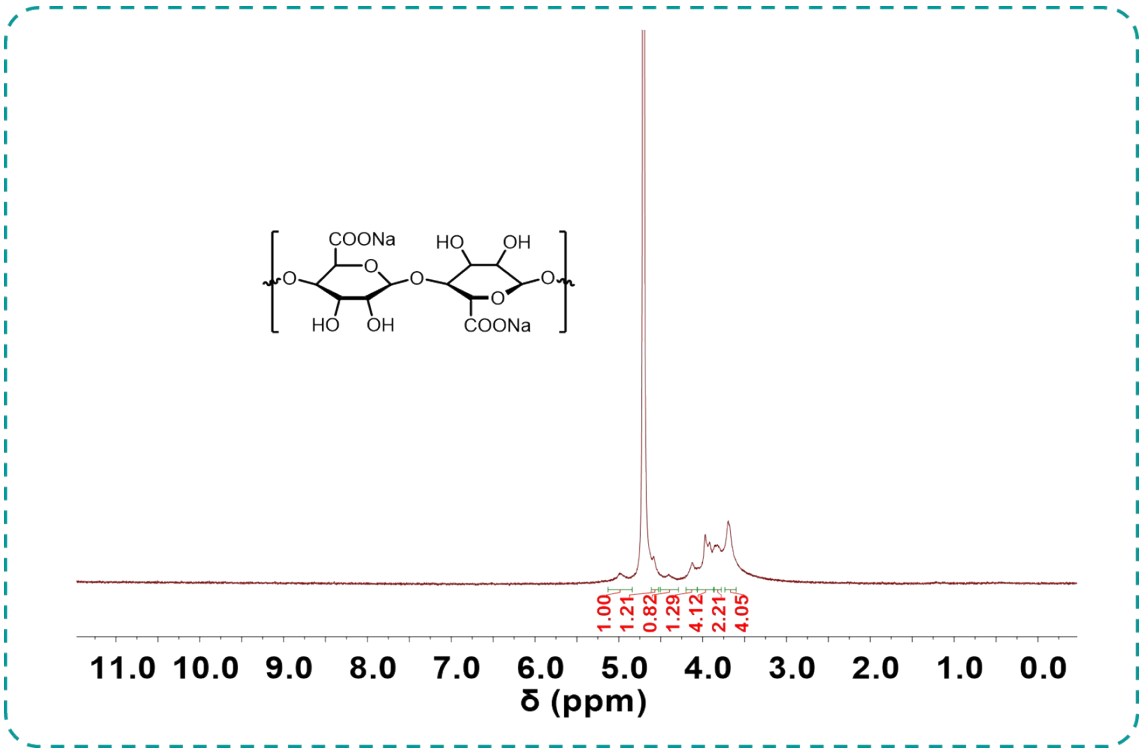


Fig. S5 ^{1}H NMR spectrum of sodium alginate in D_2O solvent (400 MHz).

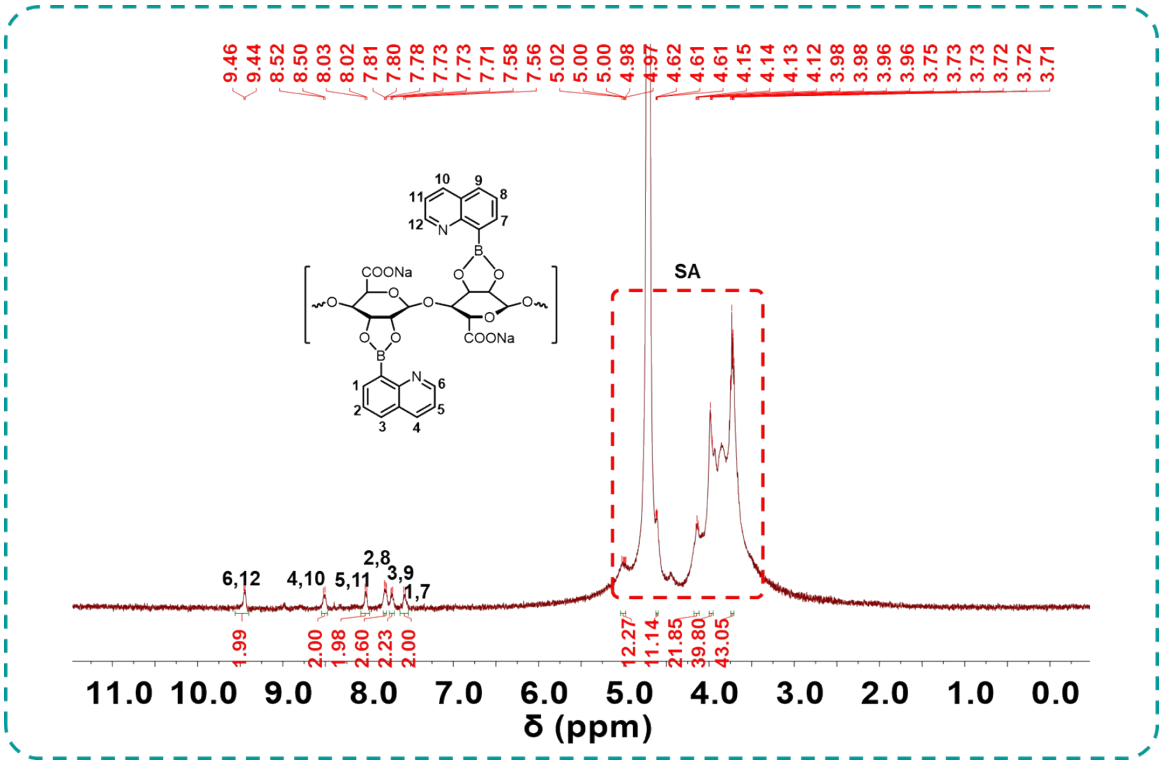


Fig. S6 ^{1}H NMR spectrum of SA-QBA NPs in D_2O solvent (400 MHz).

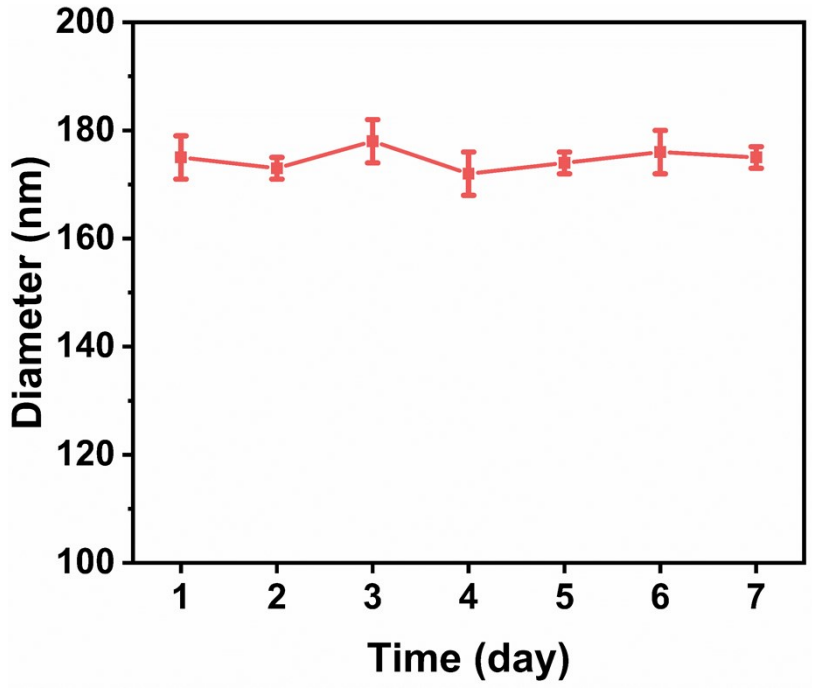


Fig. S7 Hydrodynamic diameter of Au@SA-QBA in PBS with 10% FBS during a week period.

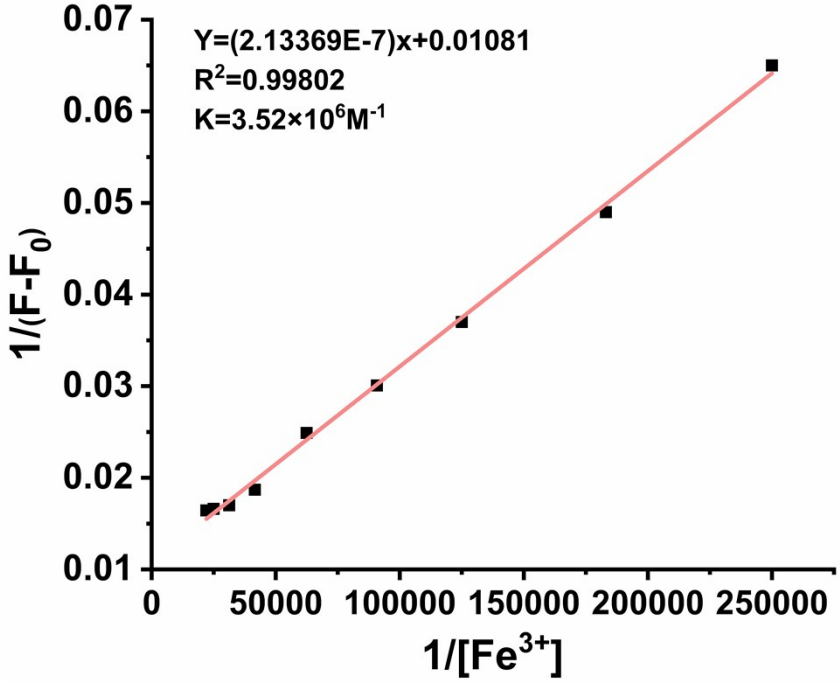


Fig. S8 Benesi-Hildebrand plot of 8HQ with Fe^{3+} for the determination of stability constant.

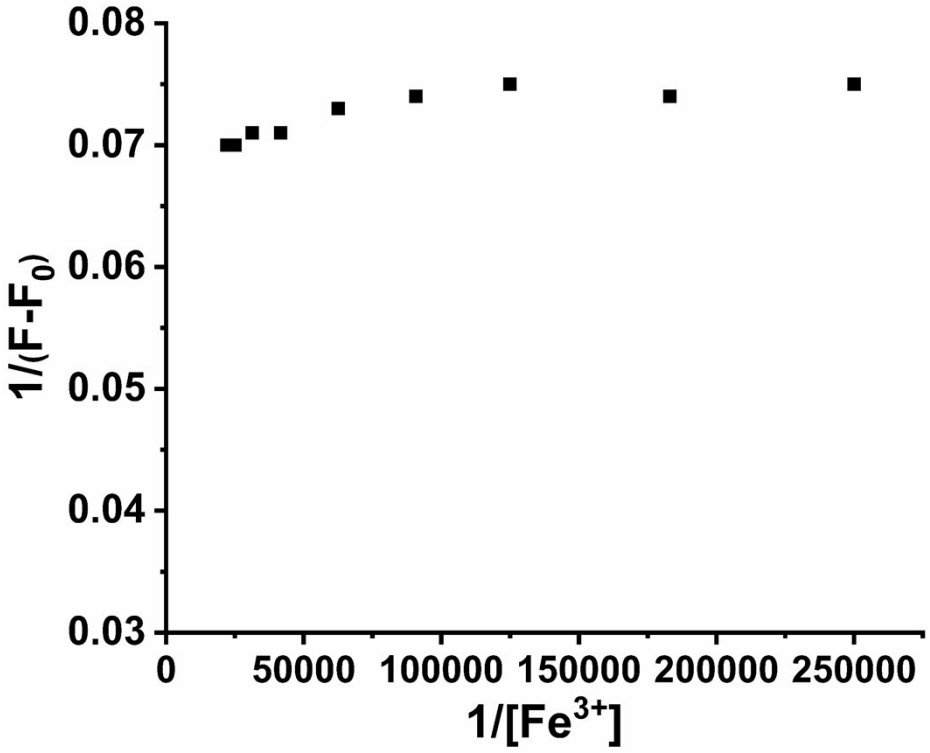


Fig. S9 Benesi-Hildebrand plot of Au@SA-QBA with Fe^{3+} for the determination of stability constant.

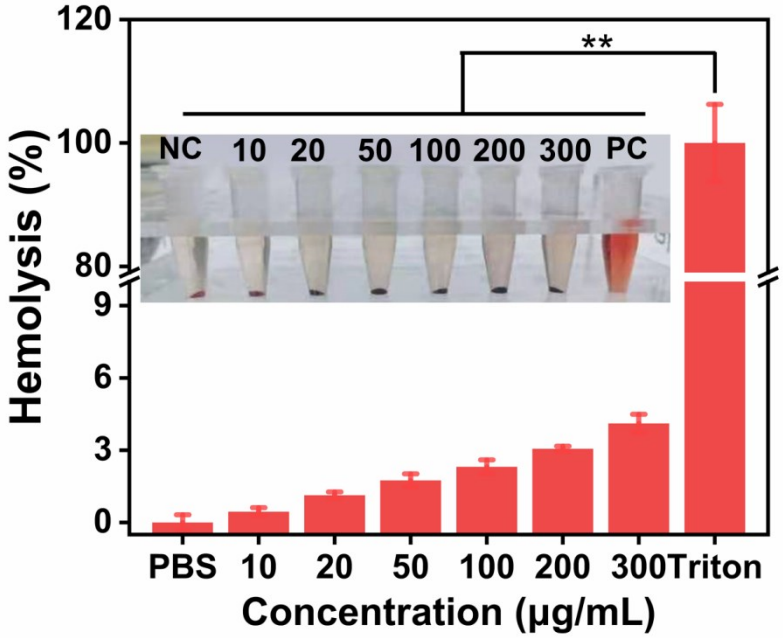


Fig. S10 Hemolysis of Au@SA-QBA NPs after incubation with red blood cells at various concentrations for 2 h. Inset: hemolysis photographs after centrifugation.

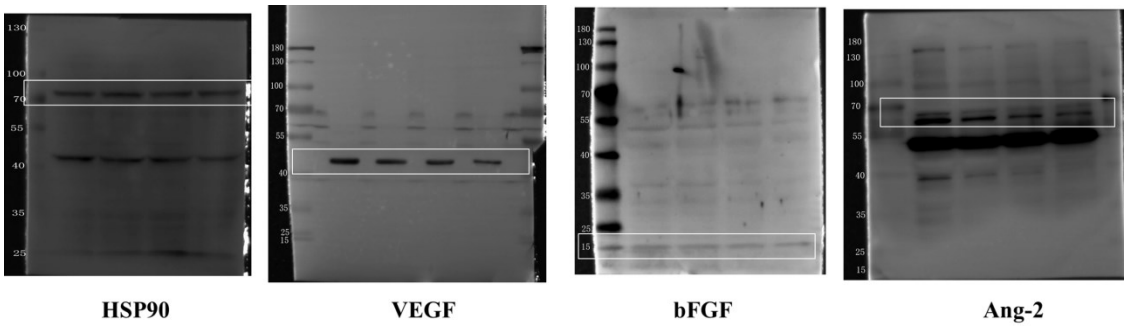


Fig. S11 Raw data of Western boltting.

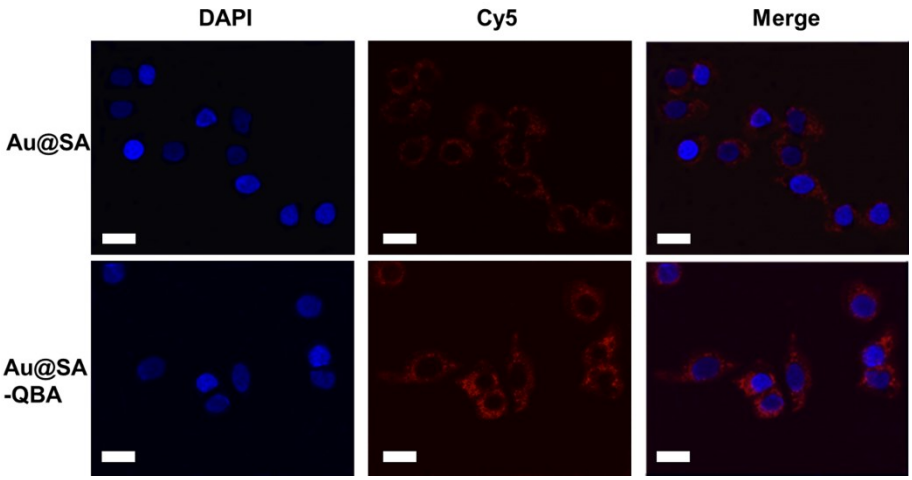


Fig. S12 Confocal images of HepG2 cells incubated with Au@SA and Au@SA-QBA for 4 h at an equal gold concentration of 150 μg mL^{-1}; Scale bar=20 μm.

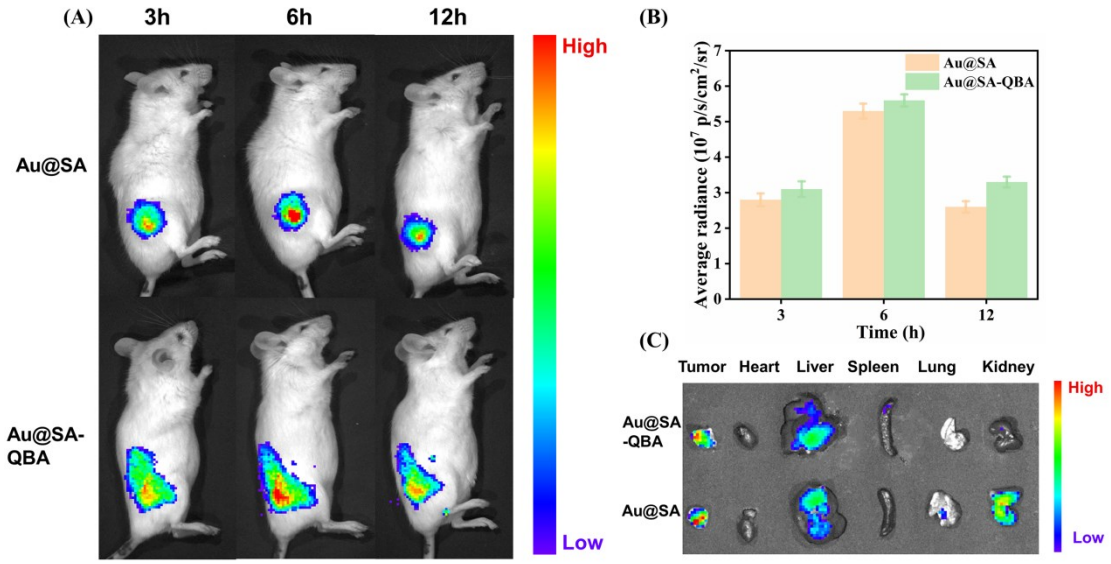


Fig. S13 (A) Live imaging of ICR mice after intravenous injection with Au@SA and Au@SA-QBA labeled with Cy5 at different time intervals. (B) Semi-quantitation

analysis of mice intravenously administrated with Au@SA and Au@SA-QBA for 3, 6, and 12 h. n=3. (C) Fluorescence images of main organs and tumors.

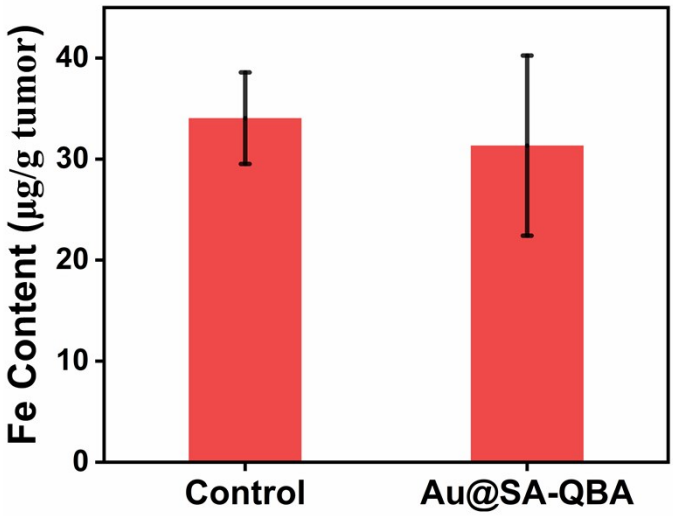


Fig. S14 The iron content in tumors before and after Au@SA-QBA treatment.

Q2: Please clarify the whole products and the reaction mechanism of Au@SA-QBA NPs and H_2O_2.

Supporting Tables

Table S1 ICP-OES results of SA-QBA.

	B (wt%)
SA-QBA	0.629