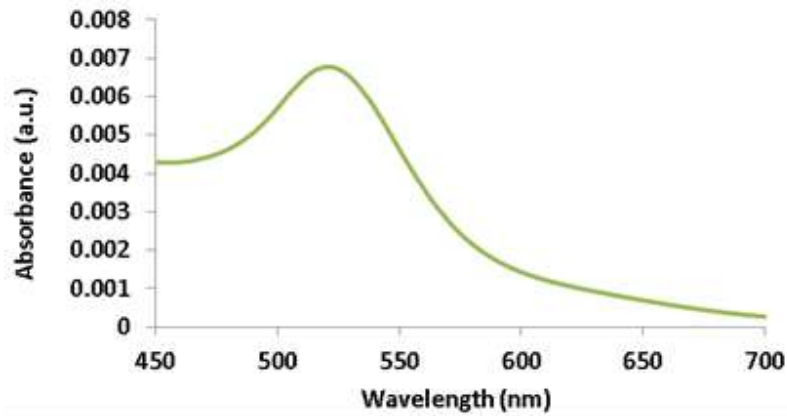


**Radiolabeled Iron Oxide@Gold Core/Shell Nanoparticles as Trimodal Contrast Agents for CT, MRI, and SPECT Imaging: Synthesis and Biomedical Characterization**

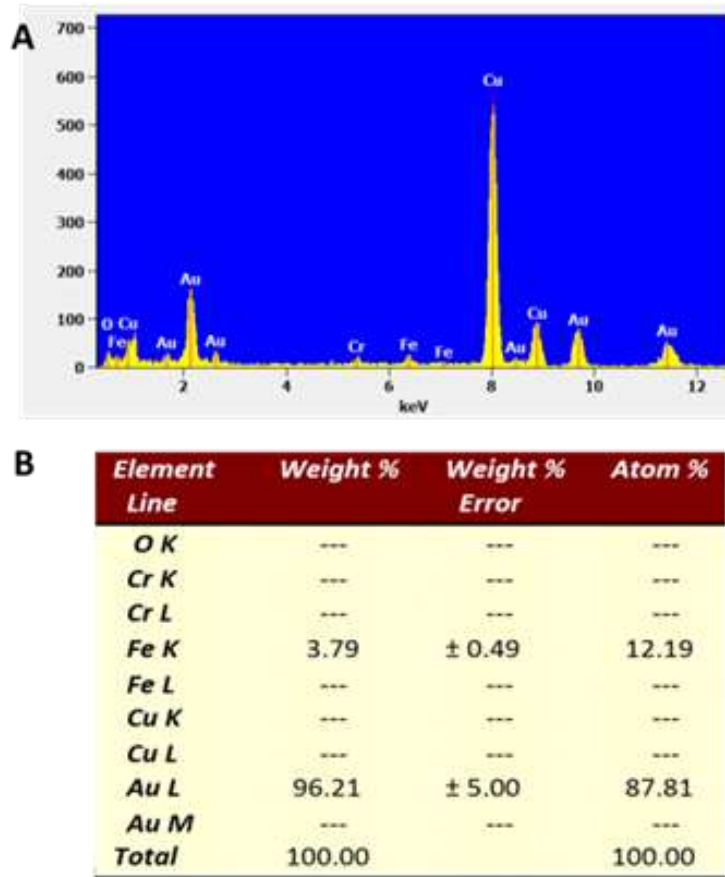
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**Supplementary Figures**



**Figure S1.** UV-Vis spectra of glucose-coated Fe<sub>3</sub>O<sub>4</sub>@Au nanoparticles.



**Figure S2.** EDAX profile of Fe<sub>3</sub>O<sub>4</sub>@Au nanoparticles. (A) EDAX spectrum showing absorption peaks for Au and Fe. (B) Quantification of the EDAX results.

### Supplementary Methods

#### MRI Protocol

The following MRI protocols<sup>1</sup> were used (voxel size: 0.4×0.4×5.0 [mm<sup>3</sup>], acceleration factor: x2 GRAPPA, for all): Multi spin-echo for T<sub>2</sub> (TE: 68 ms, TR: 2000 ms; acquisition bandwidth: 250 Hz/Px; total scan time 3:38 [min:sec], N<sub>Averages</sub>=1), multi gradient echo for T<sub>2</sub><sup>\*</sup> (TR: 3000 ms, TE: 48 ms; acquisition bandwidth: 610 [Hz/Px]; total scan time: 3:21 [min:sec], N<sub>Averages</sub> = 3), and inversion recovery for T<sub>1</sub><sup>1,2</sup> (TR: 10000 [ms], TE: 9 ms, TI: 23...3000, logarithmically spread; acquisition bandwidth: 303 Hz/Px; total scan time: 10:30 [min:sec], N<sub>Averages</sub>=1).

#### Relaxivity value calculation

Relaxivity values were calculated using a linear approximation of each graph (Fig. 2) according to: R<sub>1,2,3</sub>=[C]\*a+b, in which a is the slope, b the free coefficient, and [C] the examined concentration.

#### MicroCT Specifications

A Skyscan High Resolution model 1176 was used. Source voltage (kV)=40; source current (uA)=500; filter=Al 0.2mm.

## References

1. Berenstein MA, King KF, Zhou XJ. Basic Pulse Sequences. *Handb MRI Pulse Seq.* January 2004:579-647.
2. Ben-Eliezer N, Sodickson DK, Block KT. Rapid and accurate  $T_2$  mapping from multi-spin-echo data using Bloch-simulation-based reconstruction. *Magn Reson Med.* 2015;73(2):809-817.