



Synthesis of Biomimetic Melanin-like Multifunctional Nanoparticles for pH Responsive Magnetic Resonance Imaging and Photothermal Therapy

Jing Qu ¹, Devin Guillory ¹, Pohlee Cheah ¹, Bin Tian ¹, Jie Zheng ², Yongjian Liu ², Courtney Cates ³, Amol V. Janorkar ³ and Yongfeng Zhao ^{1,*}

¹ Department of Chemistry, Physics and Atmospheric Science, Jackson State University, Jackson, MS 39217, USA; jing.qu@students.jsums.edu (J.Q.); dmguillory@yahoo.com (D.G.); pohlee.cheah@jsums.edu (P.C.); bin.tian@jsums.edu (B.T.); yongfeng.zhao@jsums.edu (Y.Z.)

² Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, MO 63110, USA; zhengj@wustl.edu (J.Z.); yongjianliu@wustl.edu (Y.L.)

³ Department of Biomedical Materials Science, School of Dentistry, University of Mississippi Medical Center, Jackson, MS 39216, USA; ccates@umc.edu (C.C.); ajanorkar@umc.edu (A.J.)

* Correspondence: yongfeng.zhao@jsums.edu

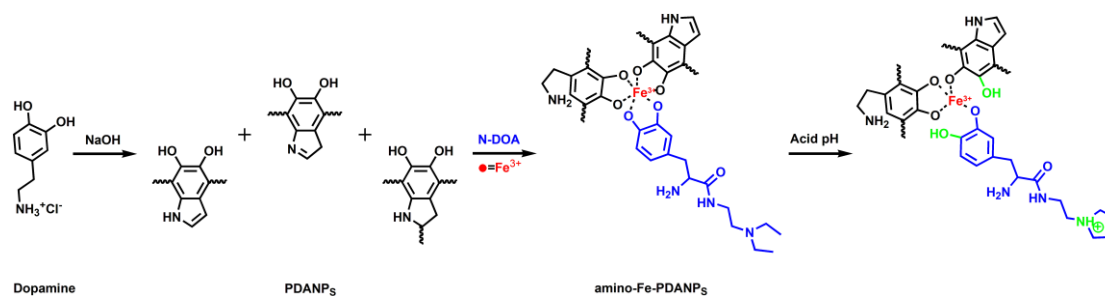


Figure S1. The possible chemical reactions in the synthesis of PDANPs and amino-Fe-PDANPs.

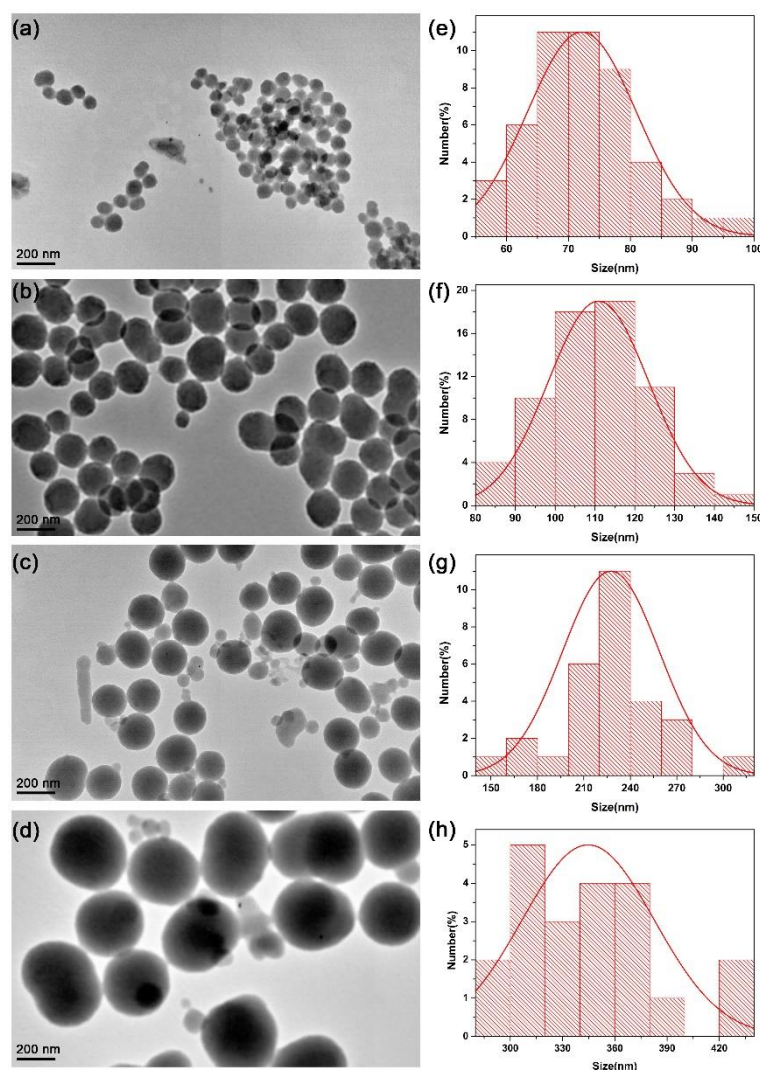


Figure S2. The TEM images of PDANPs synthesized using different amount of NaOH. The average size for each NaOH amount are (a) NaOH 45.5 μL : 72.2 ± 8.8 nm, (b) NaOH 38 μL : 110.9 ± 12.6 nm, (c) NaOH 32 μL : 227.5 ± 31.3 nm, and (d) NaOH 28 μL : 344.7 ± 38.0 nm. (e-h) are nanoparticle size distribution histogram corresponding to figure a-d, respectively.

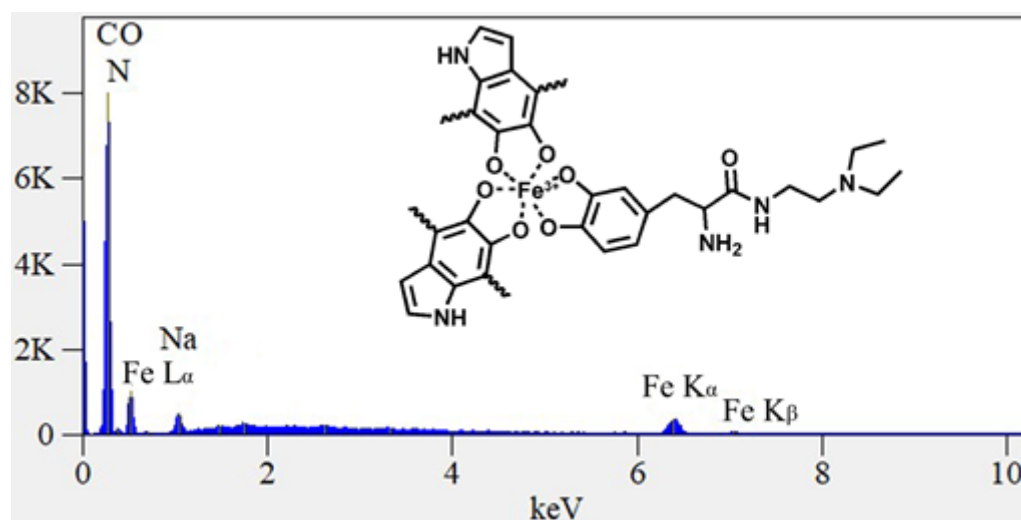


Figure S3. EDS of amino-Fe-PDANPs.

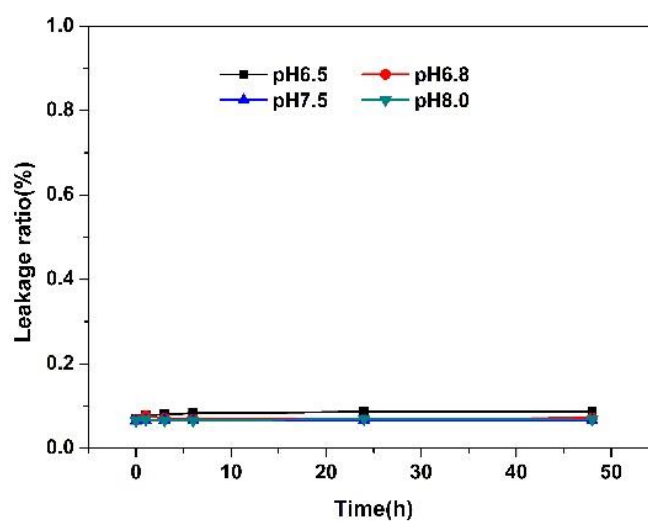


Figure S4. The iron percentage leaking out of the nanoparticles at various pHs.

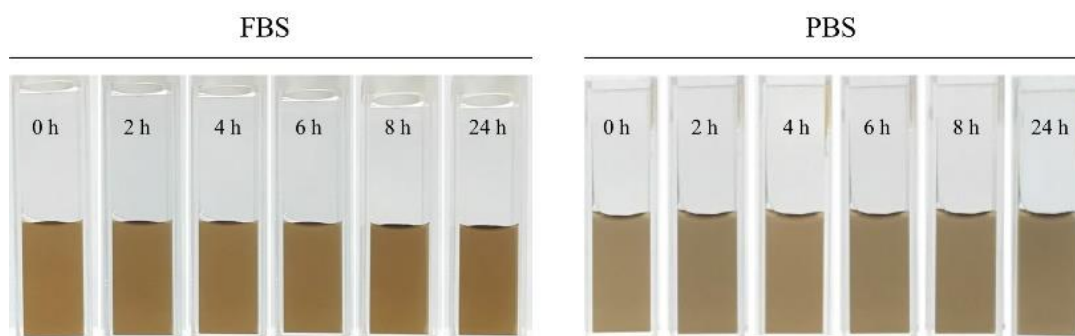


Figure S5. Photographs of amino-Fe-PDANPs after incubation with FBS and PBS for 24 h.