

Supporting Information

Magnetic Nanoparticle Loaded Biodegradable Vascular Stents for Magnetic Resonance Imaging and Long-Term Visualization

Mingxi Li,^{a,b} Dongwen Deng,^b Zhe Chen,^a Wentao Liu,^b Gutian Zhao,^b Yu Zhang,^a Fang Yang ^{*a}
and Zhonghua Ni ^{*b}

^aState Key Laboratory of Bioelectronics, Jiangsu Key Laboratory for Biomaterials and Devices, School of Biological Sciences and Medical Engineering, Southeast University, Nanjing 210096, P. R. China

^bJiangsu Key Laboratory for Design and Manufacture of Micro-Nano Biomedical Instruments, School of Mechanical Engineering, Southeast University, Nanjing 211189, China

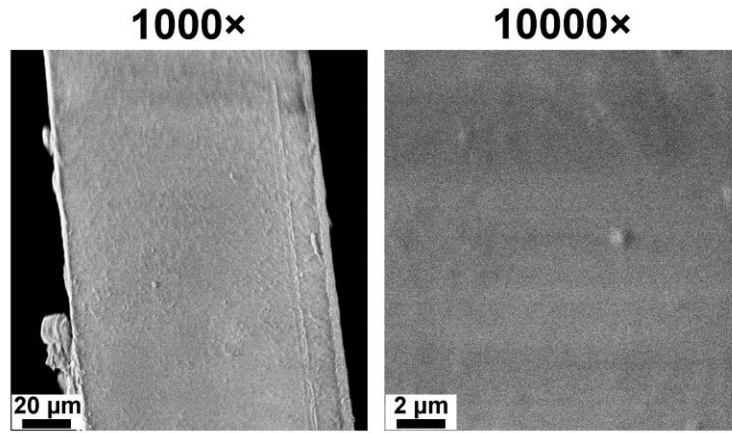


Fig. S1 SEM image of the surface morphology of the unsprayed stent.

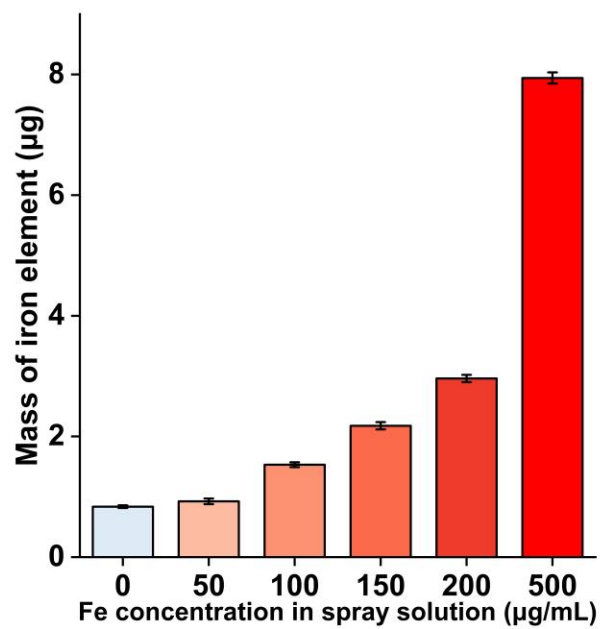


Fig. S2 Fe element mass in coatings of SPION-BDS with intact concentration gradient.

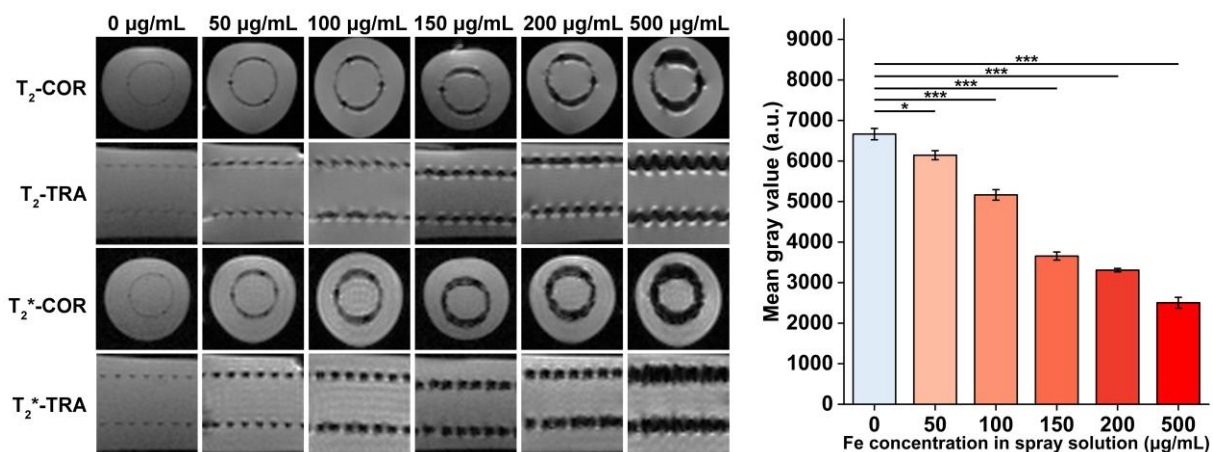


Fig. S3 T₂-weighted MR images of SPION-BDS with intact concentration gradient (a) and quantitative analysis of gray value in SPION-BDS region of T₂* images (b). Error bars: mean ± standard deviation (SD) (n = 3). *P < 0.05, **P < 0.01, and ***P < 0.001 (two-tailed Student's t-test).

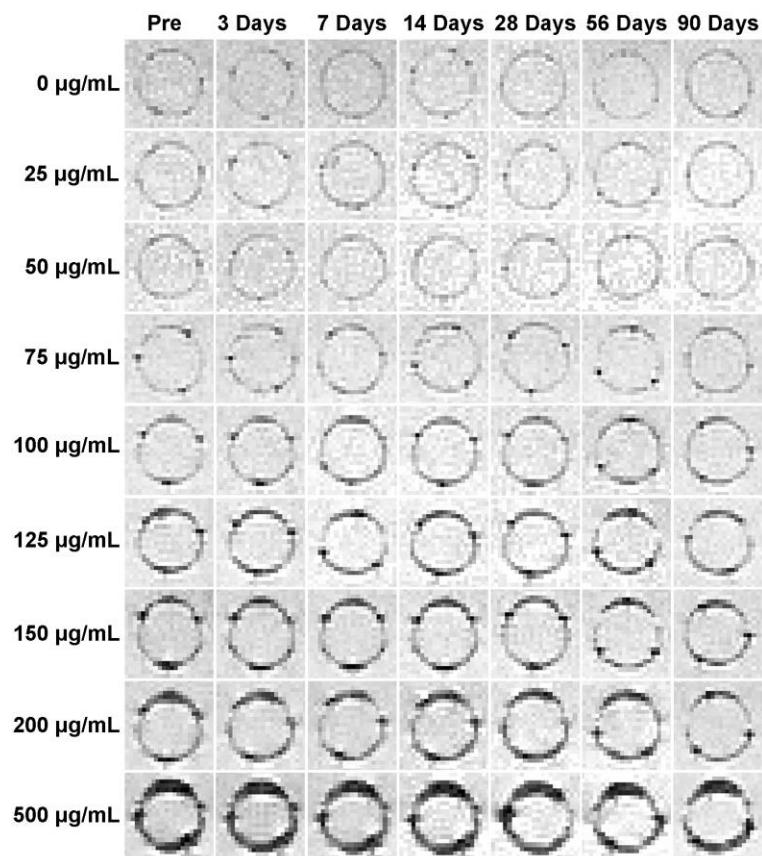


Fig. S4 MR imaging monitoring of the degradation of SPION-BDS with intact concentration gradient.

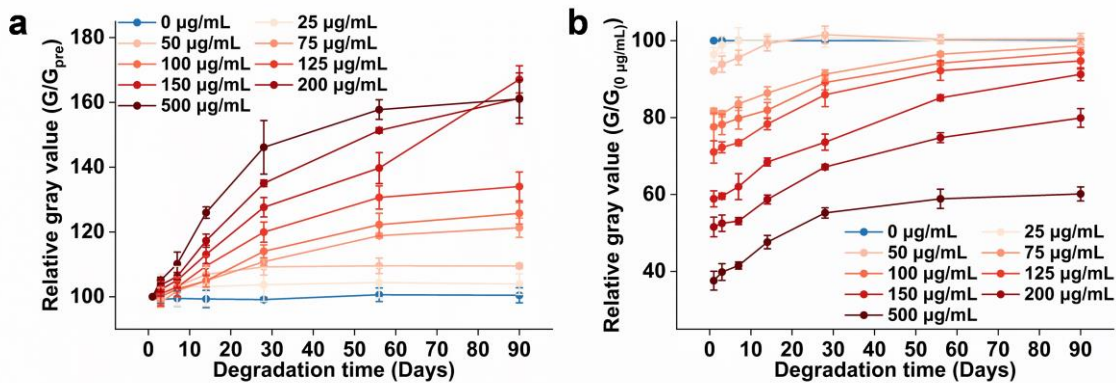


Fig. S5 (a) Normalized quantitative analysis of SPION-BDS gray value of the intact concentration gradient with degradation time. (b) Normalized quantitative analysis of the gray value ratio of the intact concentration gradient SPION-BDS to the blank BDS.

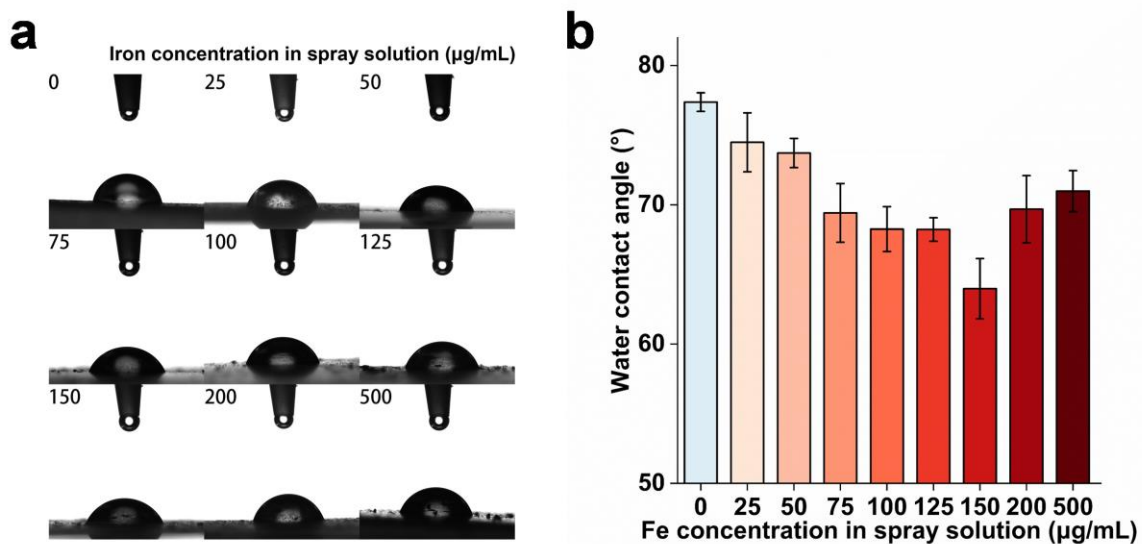


Fig. S6 Hydrophilic characterization of stent coatings with intact gradient content of SPIONs. (a) Water contact angle images. (b) Quantitative analysis results. Error bars: mean \pm standard deviation (SD) ($n = 3$).

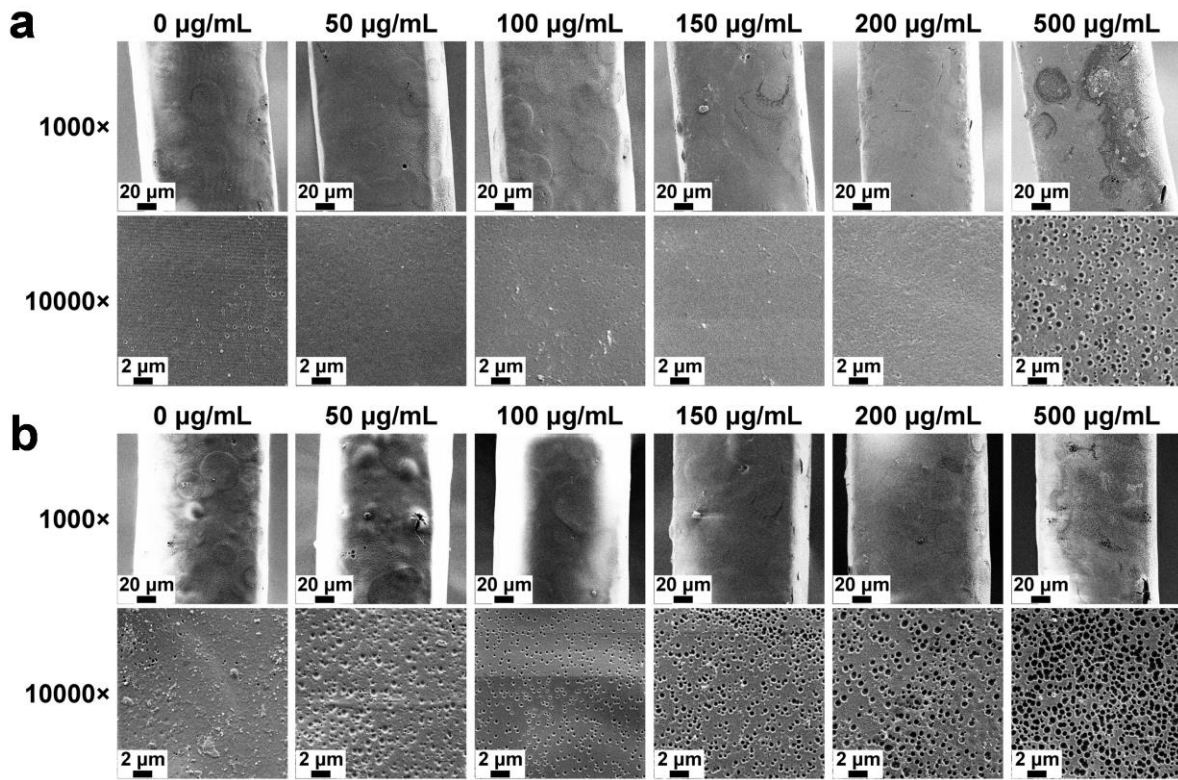


Fig. S7 SEM images of SPION-BDS with intact concentration gradient on 14th (a) and 90th (b) days after degradation.

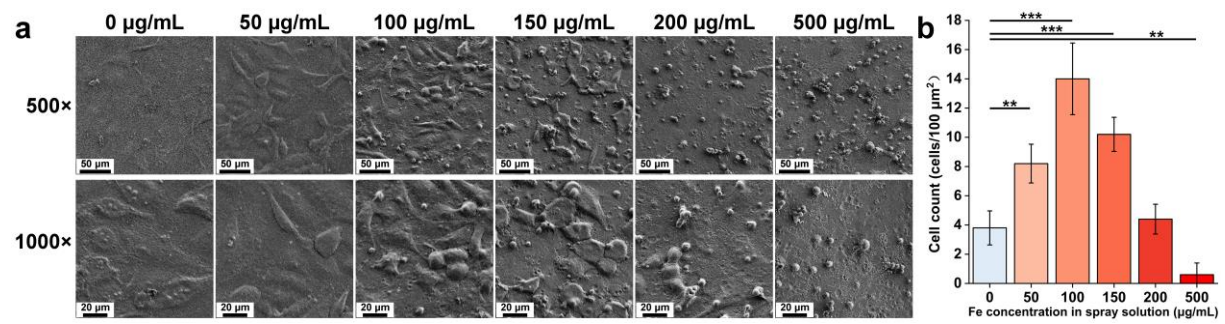


Fig. S8 SEM characterization of HUVEC growth on SPION-BDS coating film with intact concentration gradient. Error bars: mean \pm standard deviation (SD) (n = 3). *P < 0.05, **P < 0.01, and ***P < 0.001 (two-tailed Student's t-test).