

Cation Exchange Strategy to Construct a Targeting Nanoprobe for Enhanced T₁-weighted MR Imaging of Tumor

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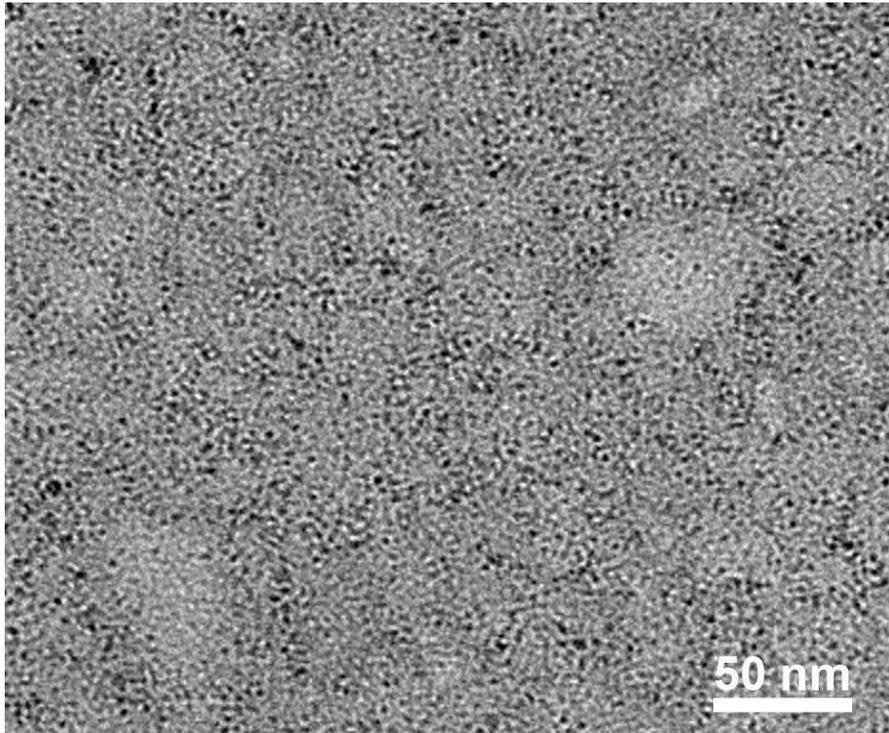


Figure S1 TEM image of USPIO.

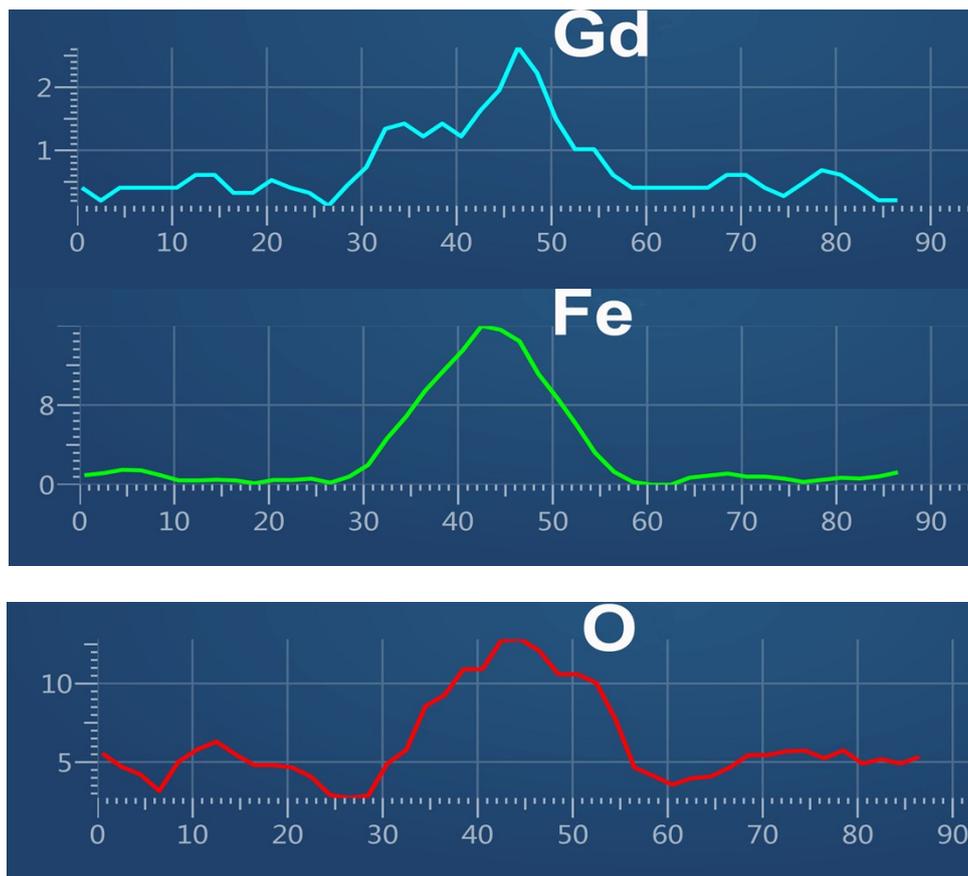


Figure S2. SEM element line scanning analysis of TUG.

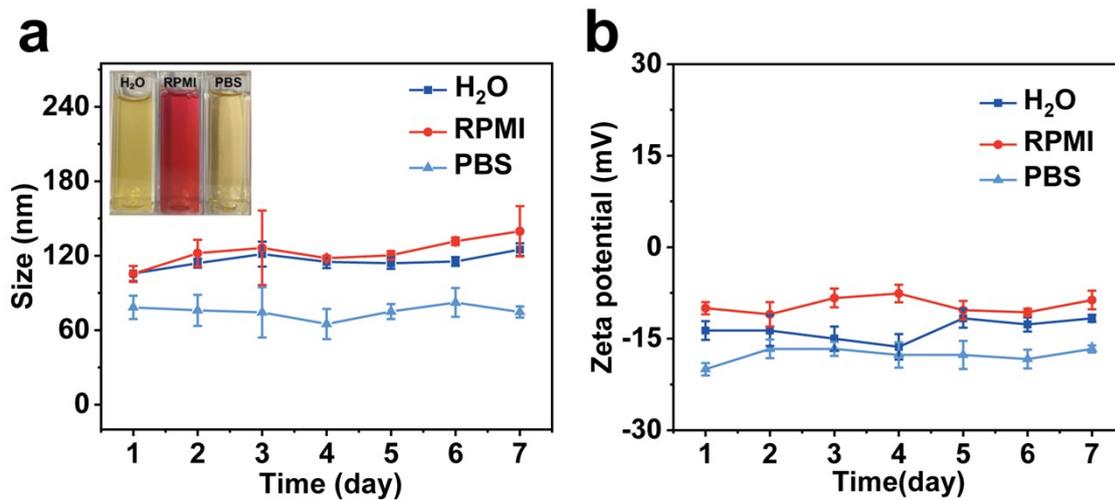


Figure S3. (a) Photo of TUG dispersed in deionized water, PBS, and serum contained medium for 3 months (inset) and hydrated particle sizes of the TUG dispersed in deionized water, PBS, and serum contained medium for 7 days. (b) Zeta potentials of the TUG dispersed in water, PBS, and medium for 7 days.

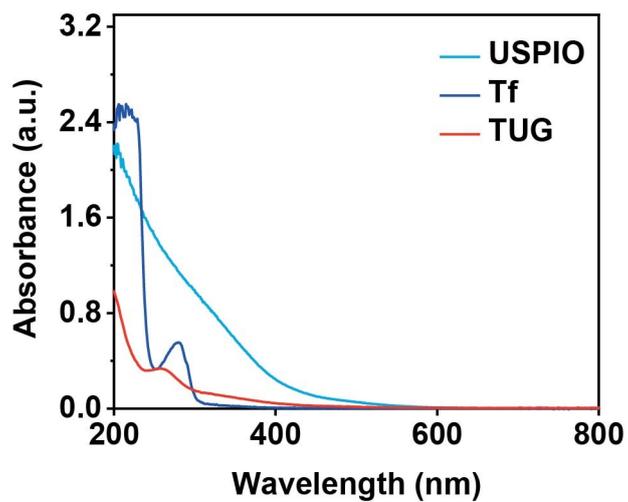


Figure S4. UV-vis absorbance spectra of USPIO, Tf and TUG.

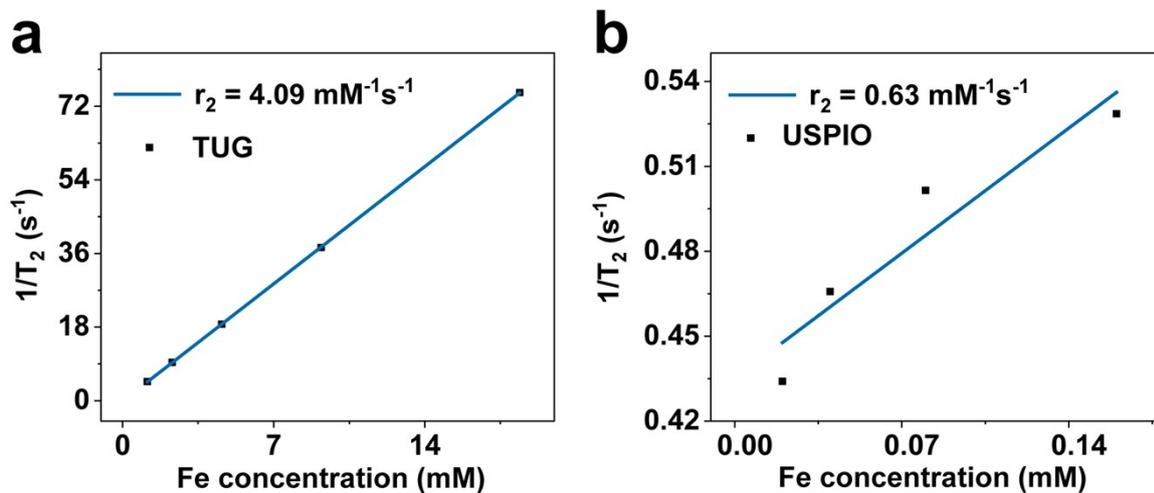


Figure S5. (a) Plot of $1/T_2$ over Fe concentration of TUG; (b) Plot of $1/T_2$ over Fe concentration of USPIO nanoparticles; the slope indicates the specific relaxivity (r_2).

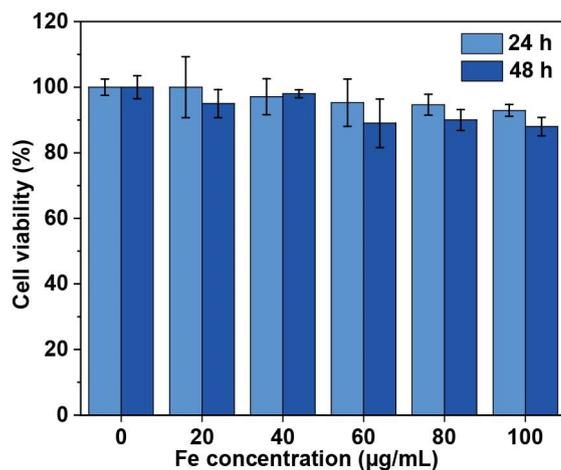


Figure S6. The viability of L929 cells (Mouse fibroblasts) after coculture with TUG at different Fe concentrations for 24 h or 48 h measured by the CCK8 assay;

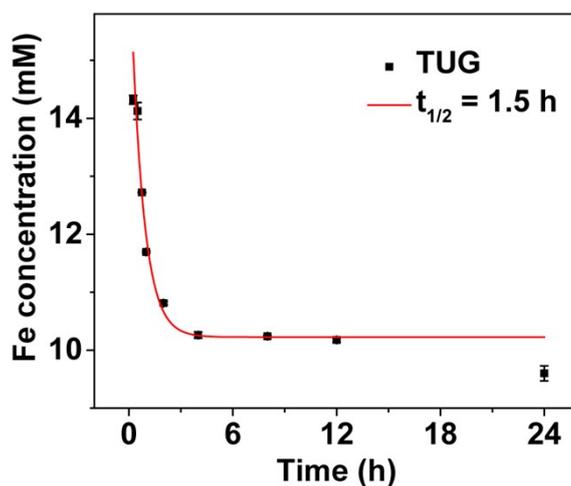


Figure S7. *In vivo* blood circulation time of TUG. The healthy Balb/c mice were injected with TUG (1 mg/mL Fe, 250 µL) and then 10 µL blood were taken from tail vein at the fixed time points (15min, 30 min, 45 min, 1 h, 2 h, 4 h, 8 h, 12 h, 24 h) and sent for ICP-OES.

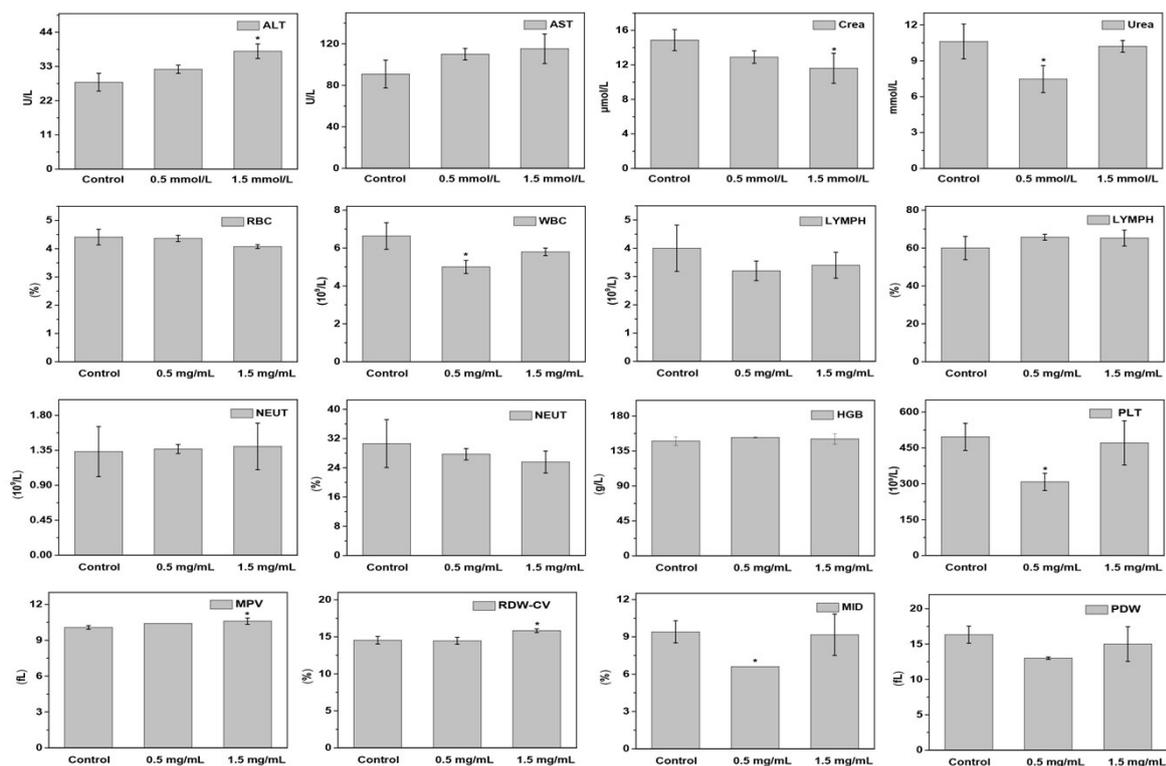


Figure S8. Hematological assay of healthy Balb/c mice after intravenous injection of TUG (15 mg kg⁻¹) for 14 days. The mice without treatment was used as control.

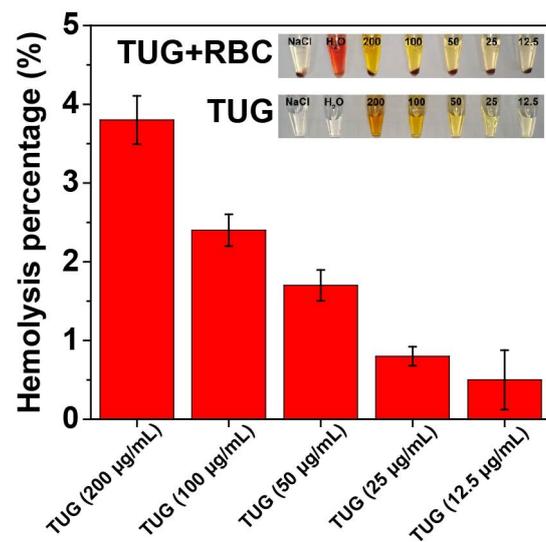


Figure S9. Hemolysis assay of TUG (Fe 200 µg/mL, 100 µg/mL, 50 µg/mL, 25 µg/mL, 12.5 µg/mL).