

Controlled aggregation and cell uptake of thermoresponsive polyoxazoline-grafted superparamagnetic iron oxide nanoparticles

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ELECTRONIC SUPPORTING INFORMATION

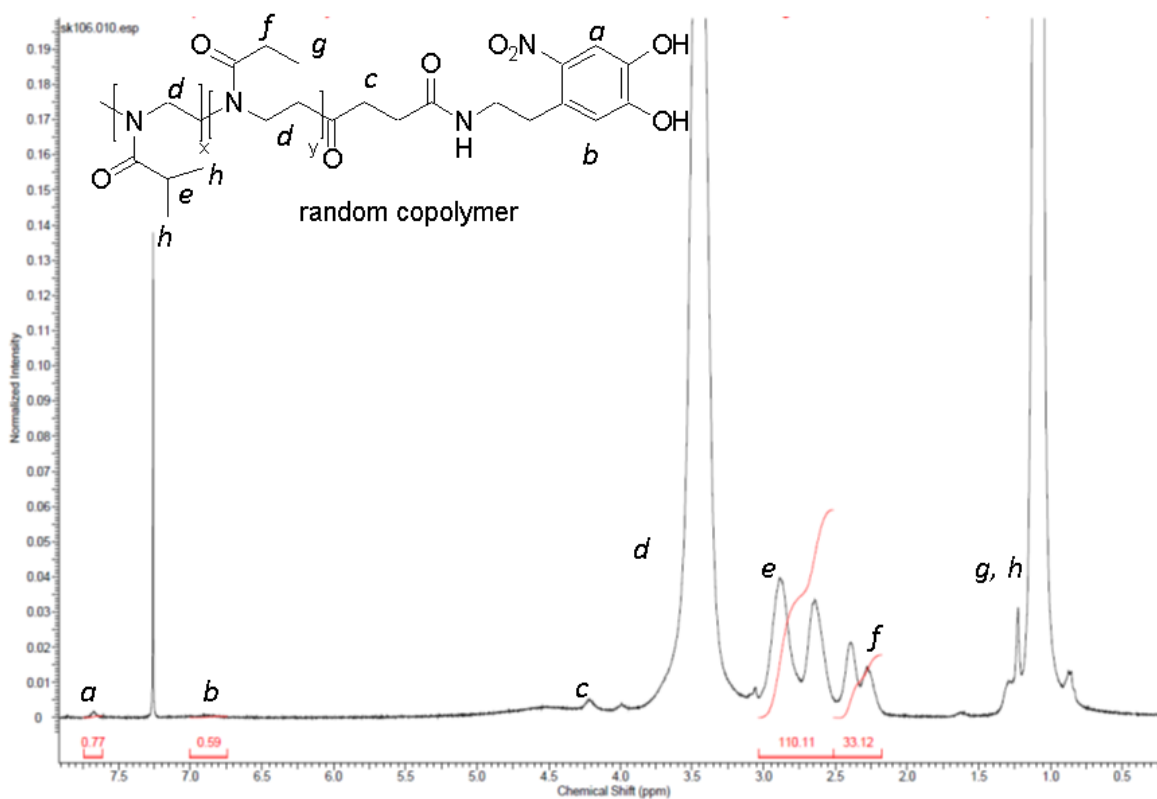


Fig. S1 $^1\text{H-NMR}$ spectrum of PIPOX/PETOX(87/13) in CDCl_3 .

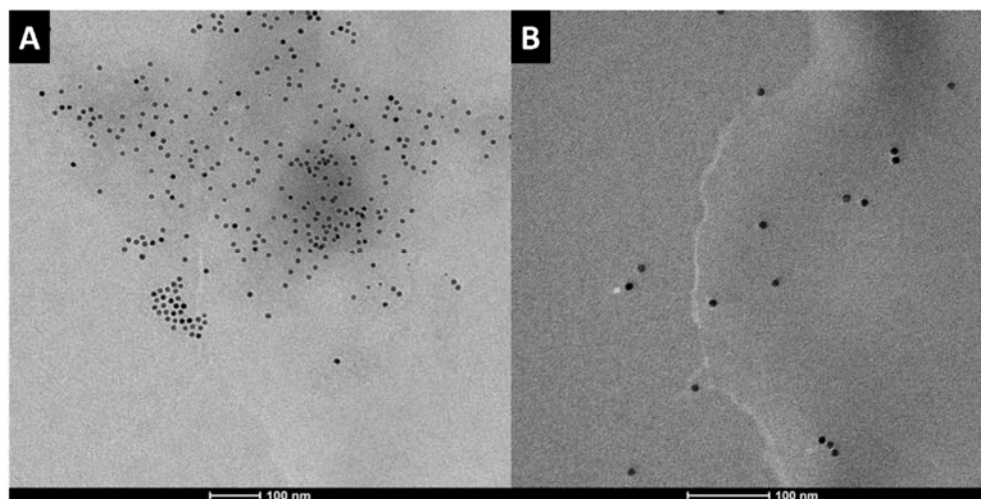


Fig. S2 Transmission electron micrographs of (A) $\text{Fe}_3\text{O}_4/\text{PIPOX}(100)$ and (B) $\text{Fe}_3\text{O}_4/\text{PIPOX}/\text{PETOX}(87/13)$, scale bar: 100 nm.

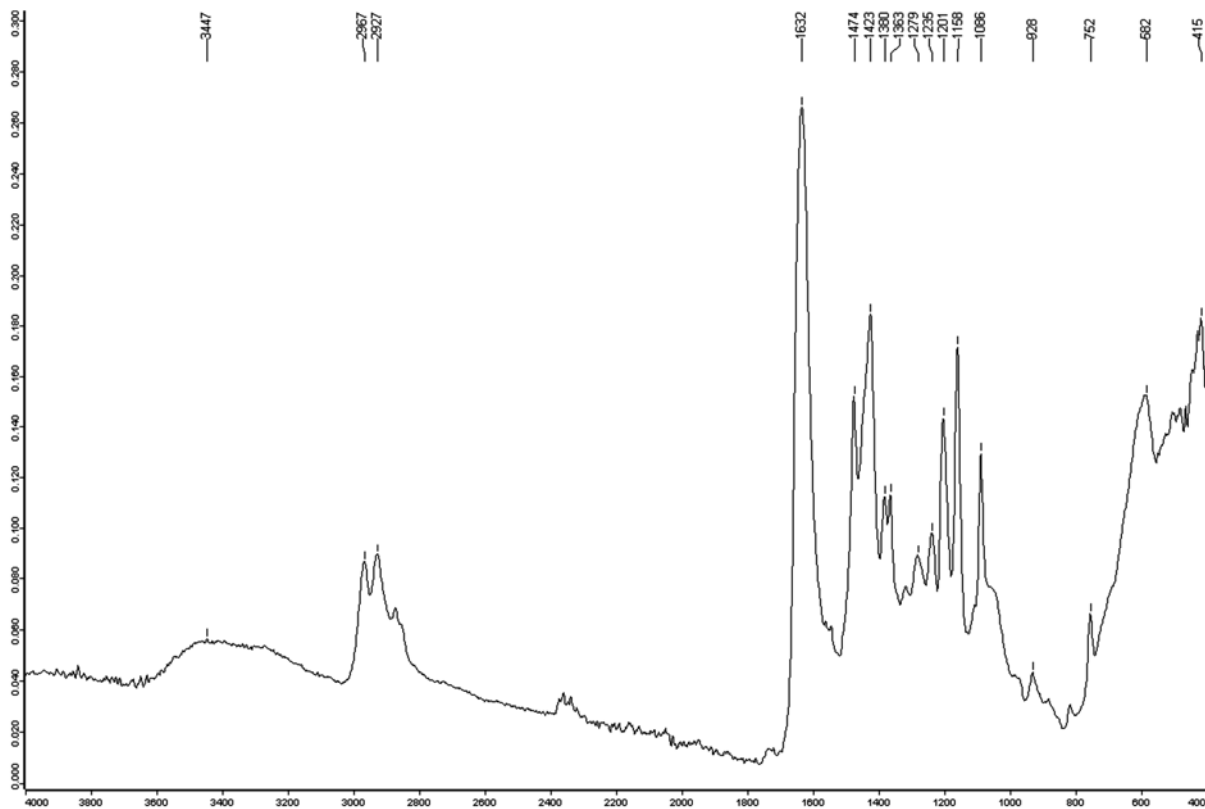


Fig. S3 FTIR-spectrum of Fe₃O₄/PIPOX/PETOX(87/13), bands at 3447 cm⁻¹ (H₂O) and 2336, 2359 cm⁻¹ (CO₂).

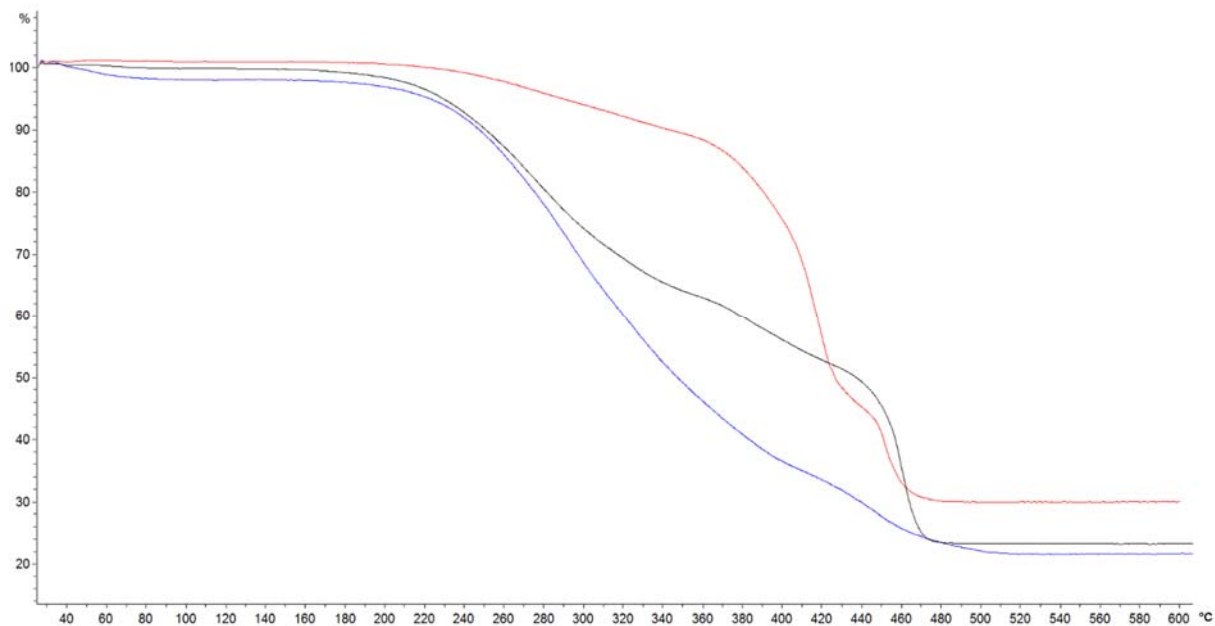


Fig. S4 TGA of Fe₃O₄/PIPOX(100) (blue), Fe₃O₄/PIPOX/PETOX(87/13) (red) and Fe₃O₄/PETOX(100) (black) in synthetic air, 10 K min⁻¹ (25-600 °C).

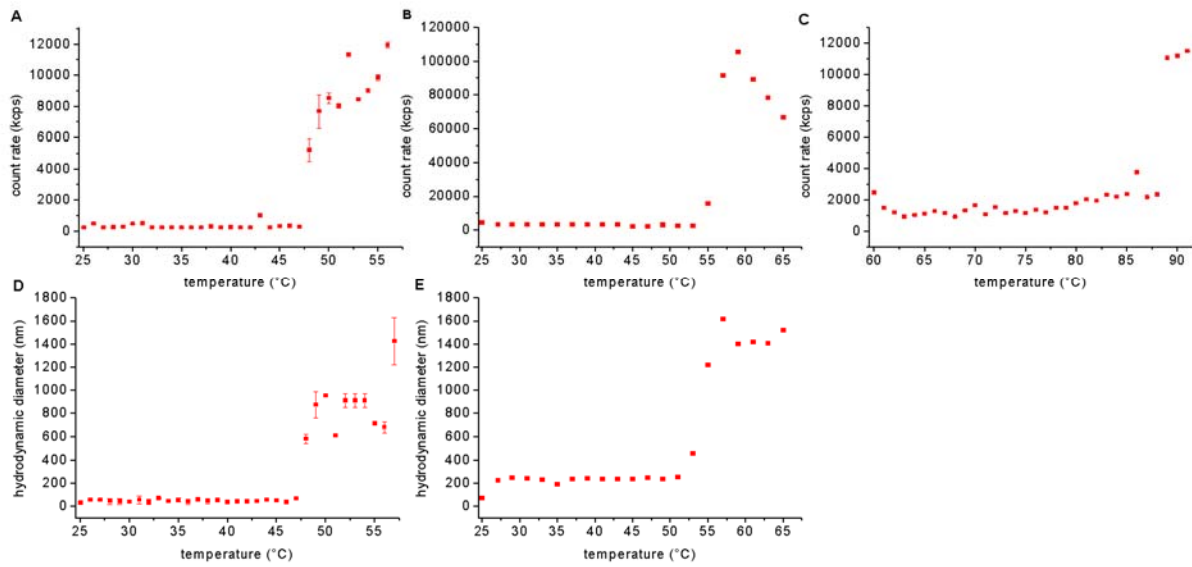


Fig. S5 DLS heating curves for free polyoxazolines in MilliQ, count rate vs. temperature, and hydrodynamic diameter vs. temperature, (A, D) for PIPOX(100) (1 mg mL⁻¹), (B, E) for PIPOX/PETOX(87/13) (1 mg mL⁻¹) and (C) for PETOX(100) (7 mg mL⁻¹).

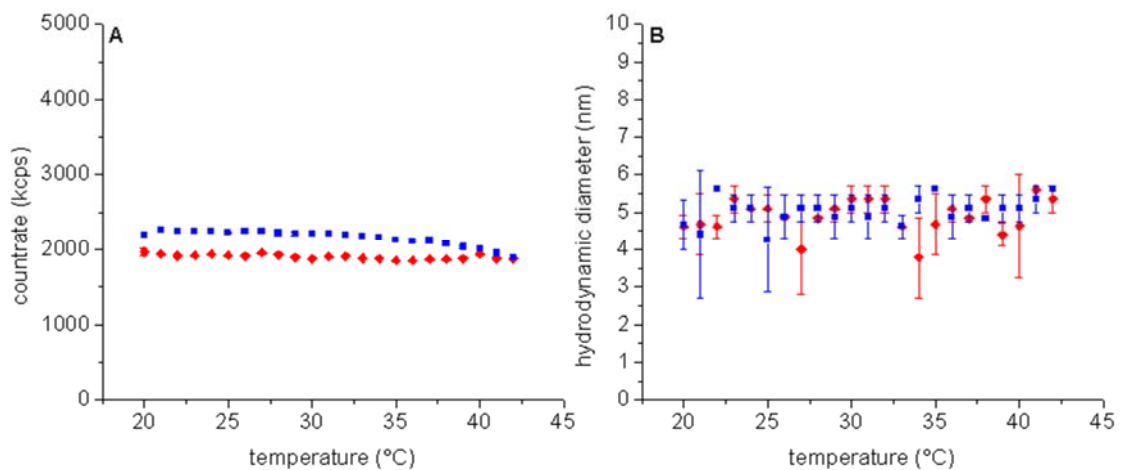


Fig. S6 Temperature cycled DLS measurements for medium (RPMI-1540) with 10 vol% FCS, red diamonds: heating curve, blue squares: cooling curve.

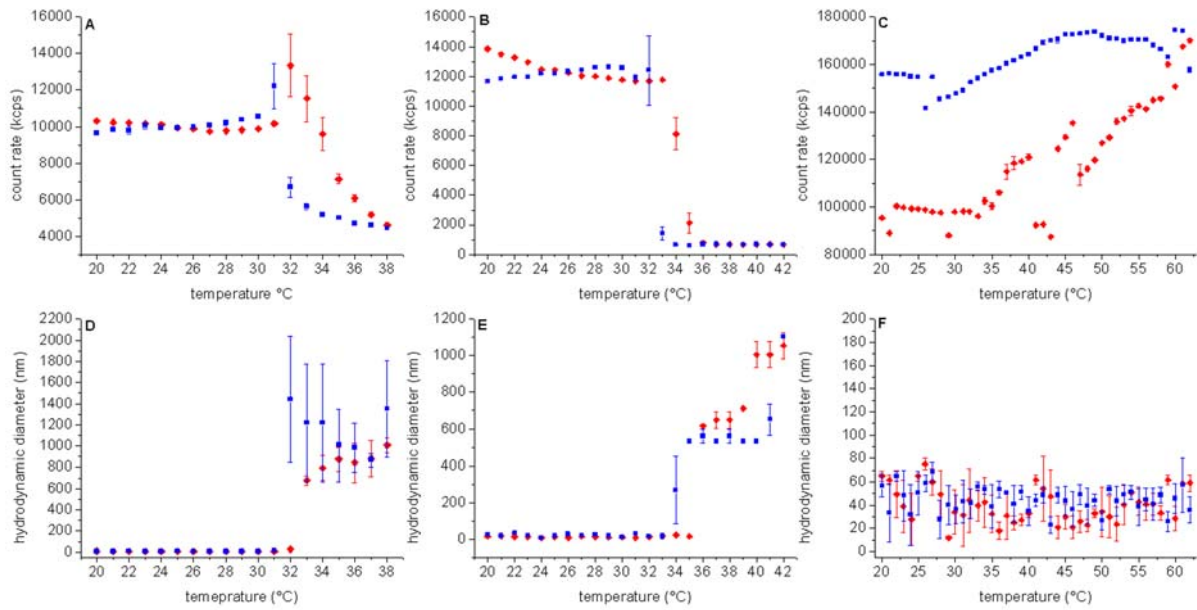


Fig. S7 Temperature cycled DLS measurements for pozzylated SPIONs (1 mg mL^{-1}) in medium with 10 vol-% FCS, count rate vs. temperature and hydrodynamic diameter vs. temperature for $\text{Fe}_3\text{O}_4/\text{PIPOX}(100)$ (A, D), for $\text{Fe}_3\text{O}_4/\text{PIPOX}/\text{PETOX}(87/13)$ (B, E) and $\text{Fe}_3\text{O}_4/\text{PETOX}(100)$ (C, F).

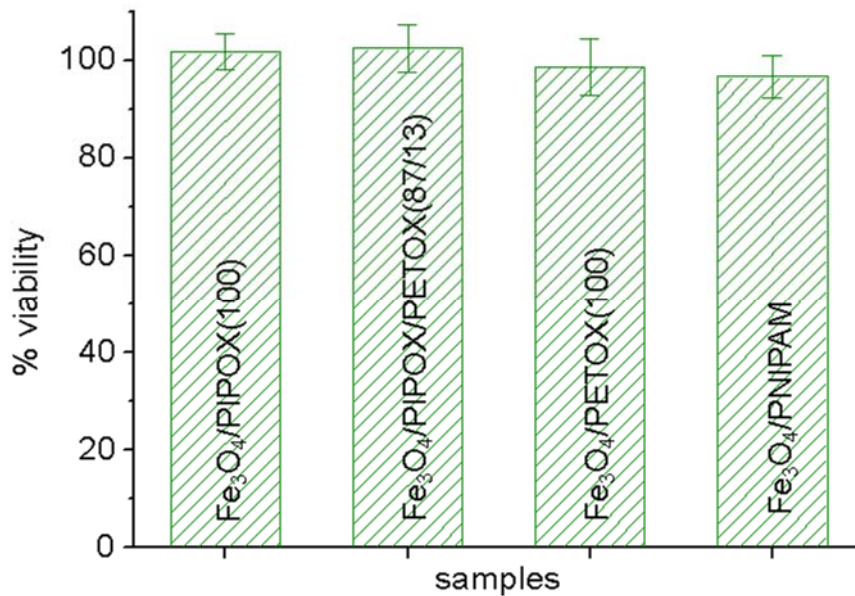


Fig. S8 Viability of HeLa cells compared to control after incubation at 37°C for 24 h with pozzylated SPION (addition of $10 \mu\text{L}$ SPION-dispersion (1 mg mL^{-1} in MilliQ) to cells suspended in medium (RPMI-1640) ($100 \mu\text{L}$)).

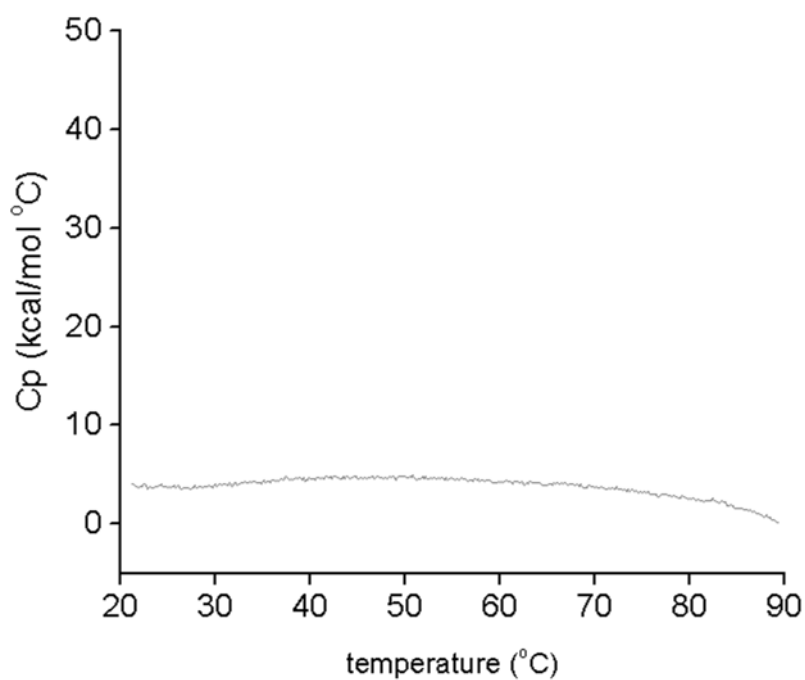


Fig. S9 DSC heating curve ($1\text{ }^{\circ}\text{C min}^{-1}$) for $\text{Fe}_3\text{O}_4/\text{PETOX}(100)$, 1 mg mL^{-1} in MilliQ water.

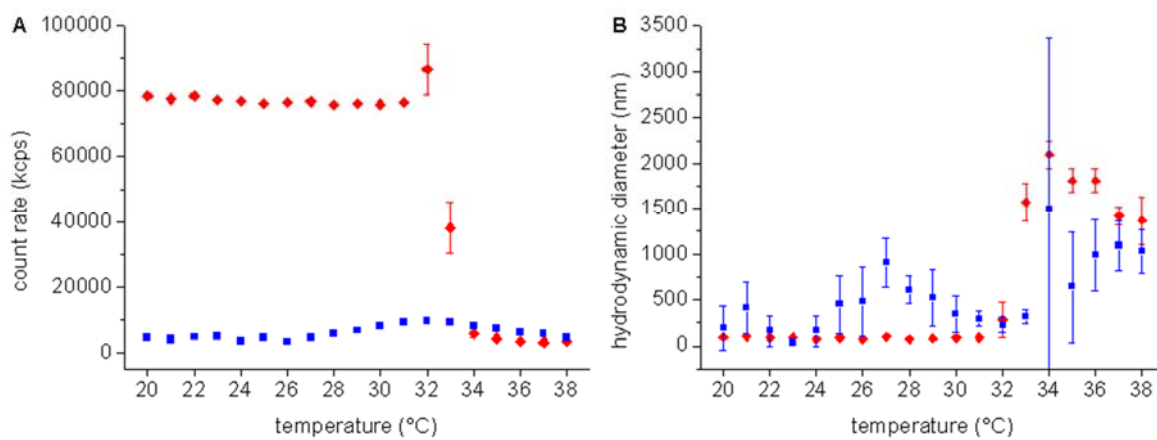


Fig. S10 Temperature-cycled DLS measurements for SPION sample $\text{Fe}_3\text{O}_4/\text{PNIPAM}$ (1 mg mL^{-1}) in medium (RPMI-1640), A) count rate vs. temperature, B) hydrodynamic diameter vs. temperature.

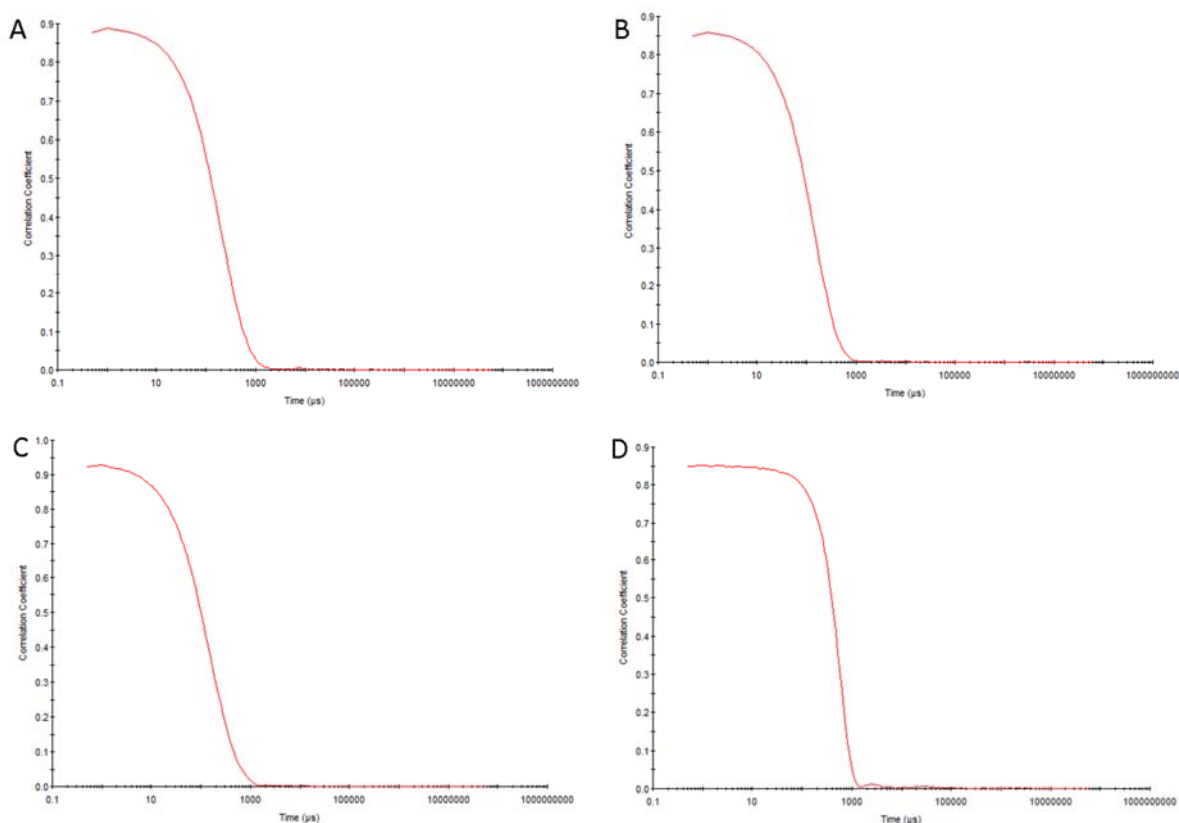


Fig. S11 DLS correlation functions A-B) for SPION sample $\text{Fe}_3\text{O}_4/\text{PIPOX}(100)$, (1 mg mL^{-1}) in MilliQ water, A) at 25°C , B) at 45°C , C-D) for SPION sample $\text{Fe}_3\text{O}_4/\text{PIPOX}/\text{PETOX}(87/13)$, (1 mg mL^{-1}) in medium (RPMI-1640), C) at 20°C , D) at 38°C .

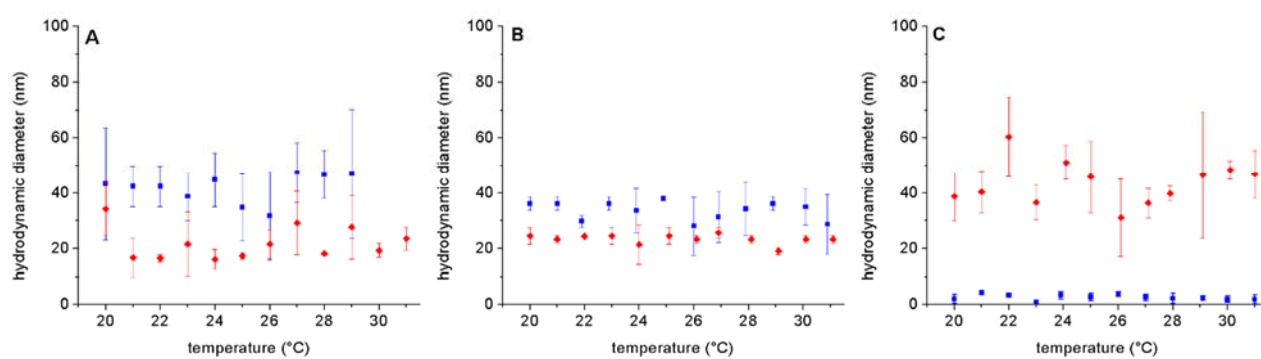


Fig. S12 DLS heating curves (zoomed region from 20 to 31°C for Fig. 3 from main text) for SPION dispersed in medium (RPMI-1640) at 1 mg mL^{-1} , hydrodynamic diameter vs. temperature for A) $\text{Fe}_3\text{O}_4/\text{PIPOX}(100)$, B) $\text{Fe}_3\text{O}_4/\text{PIPOX}/\text{PETOX}(87/13)$ and C) $\text{Fe}_3\text{O}_4/\text{PETOX}(100)$. Heating curve: red diamonds, cooling curve: blue squares.