

SUPPLEMENTARY INFORMATION FOR

Analysis of the influence of synthetic paramaters on the structure and physico-chemical properties of anisotropic iron oxide nanocrystals and their biological stability and compatibility.

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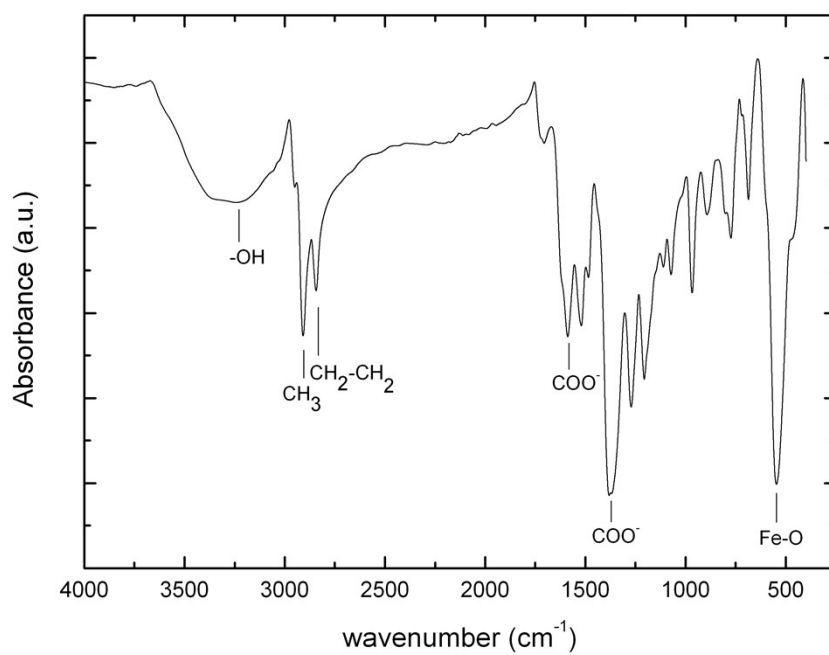


Figure S1: FTIR spectrum of as-synthesized 48 nm IONCS.

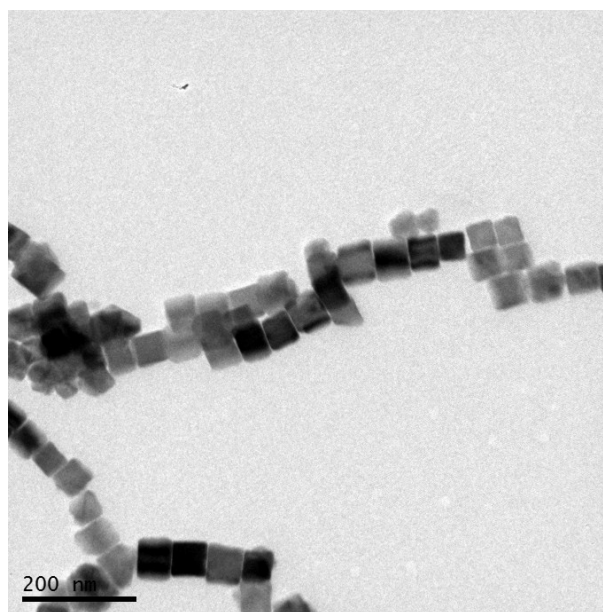


Figure S2: TEM image of IONCS obtained at a reaction temperature of 265 $^{\circ}\text{C}$.

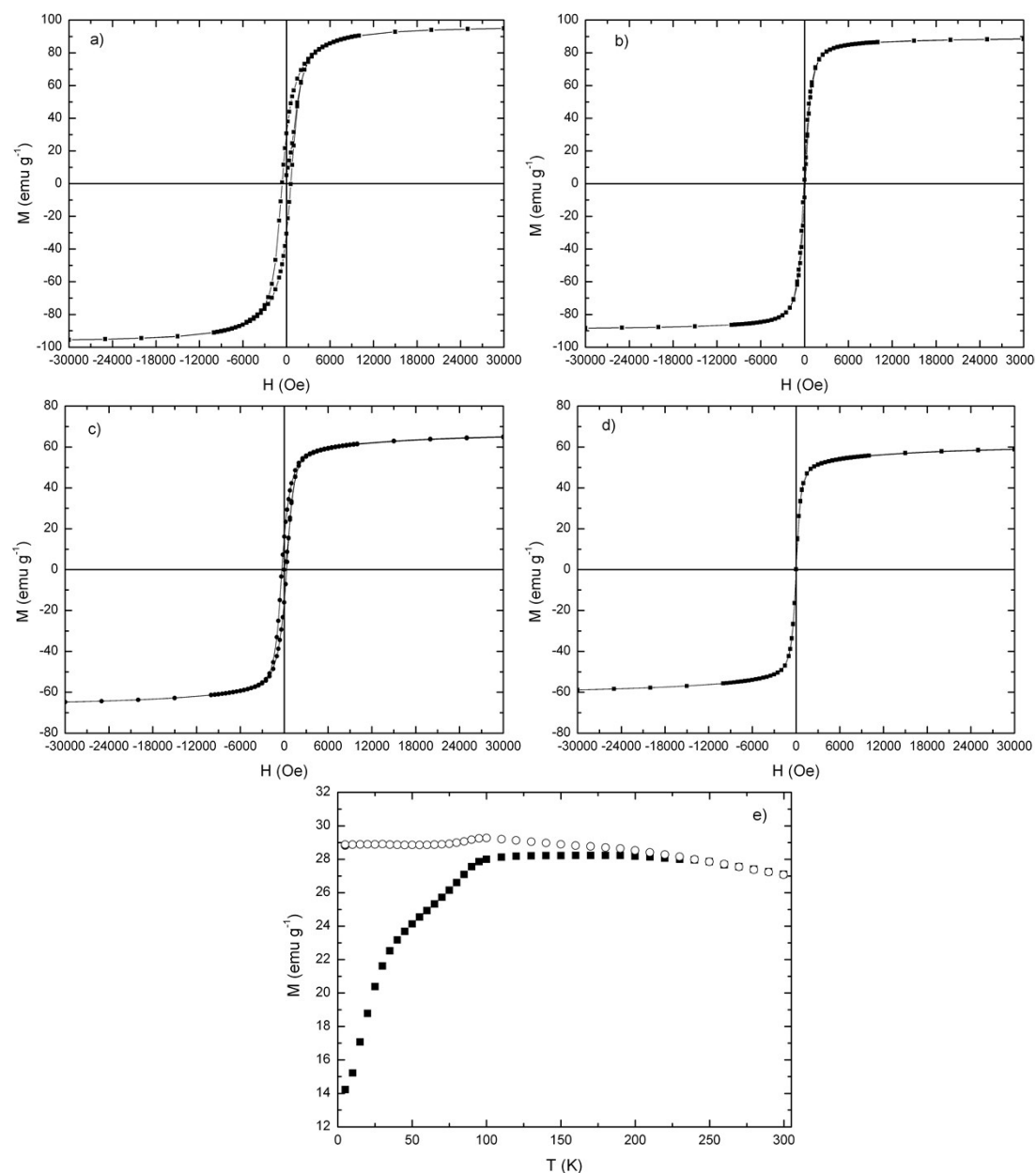


Figure S3: Magnetization as a function of the applied magnetic field for 94 nm (a,b) and 28 nm IONCS (c,d) at 5 and 300 K, respectively. e) ZFC (●) and FC (○) curves of powder 28 nm IONCs samples.

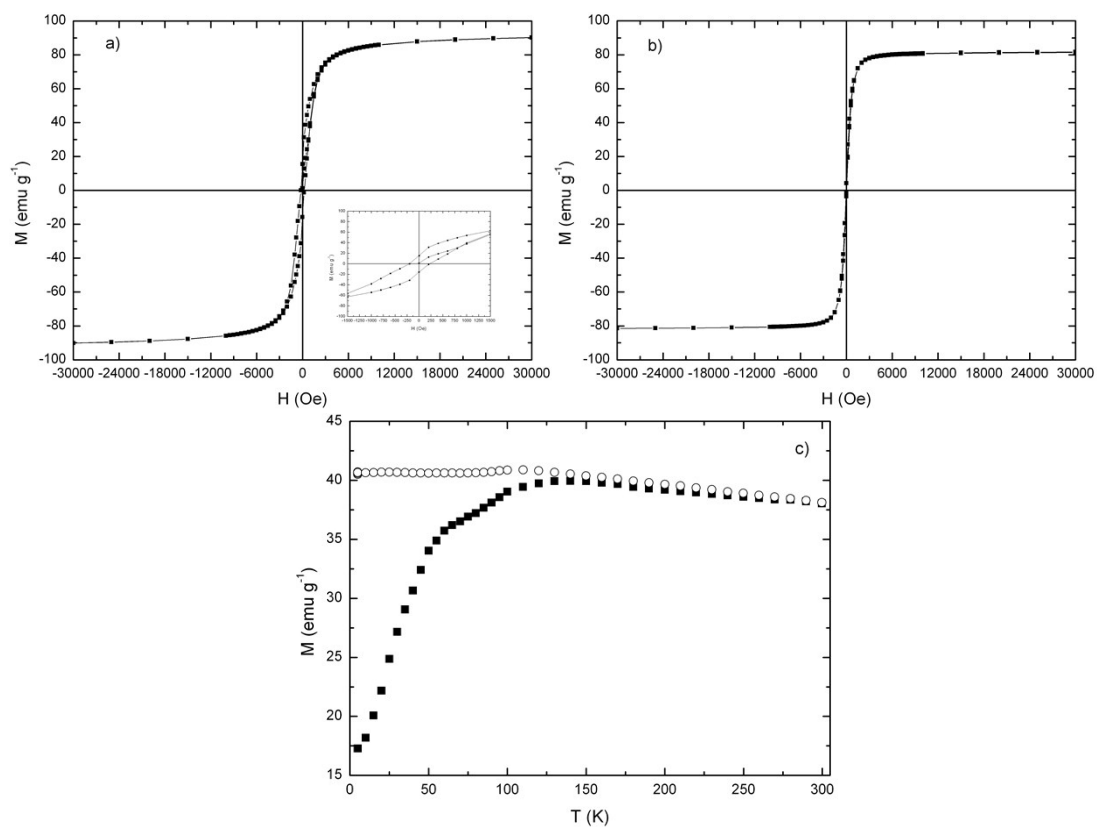


Figure S4: Magnetization as a function of the applied magnetic field for the powder 55 nm cubooctahedra samples at a) 5 and b) 300 K. c) ZFC (●) and FC (○) curves of powder 55 nm cubooctahedra samples.

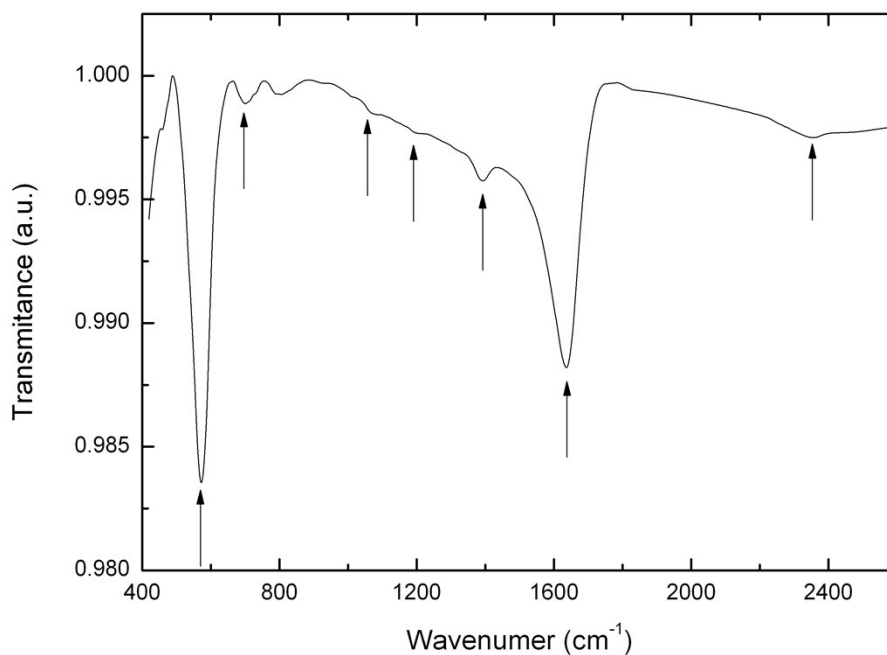


Figure S5: FTIR spectrum of DMSA-coated IONCs.

The spectrum of DMSA-coated IONCs showed bands at 1620 to the vibration of the C=O. The band present at 1370 cm⁻¹ is due to vibrations of CH₂ groups. At 2340 cm⁻¹, a weak band assigned to the vibration of S-H bond is observed. Furthermore, a shoulder at 1178 can be assigned to C=O stretching modes. The small band at 1055 cm⁻¹ can correspond to the vibration of the bond S-CH. The signals at ca. 545 cm⁻¹ corresponds to the Fe-O vibration related to the magnetite phase.

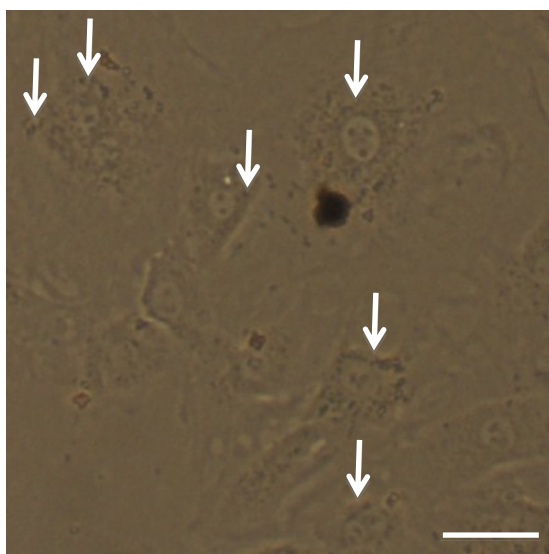


Figure S6: Bright field microscopy of MSC cells. The arrows denote the presence of IONCs inside the cells. Scale bar 20 nm.

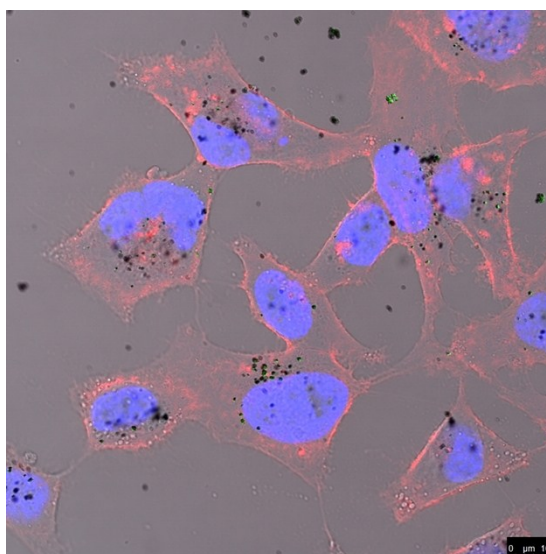


Figure S7: Merged fluorescence microscopy of HeLa cells denoting the internalization of DMSA-coated IONCs inside the cells without altering their cytoskeleton. Cell nuclei are stained with DAPI (in blue), and the actin of cytoplams with Bodipy Phalloidin (in red).