Supporting Information

Protein-passivated Fe_3O_4 Nanoparticles: Low Toxicity and Rapid Heating for Thermal Therapy

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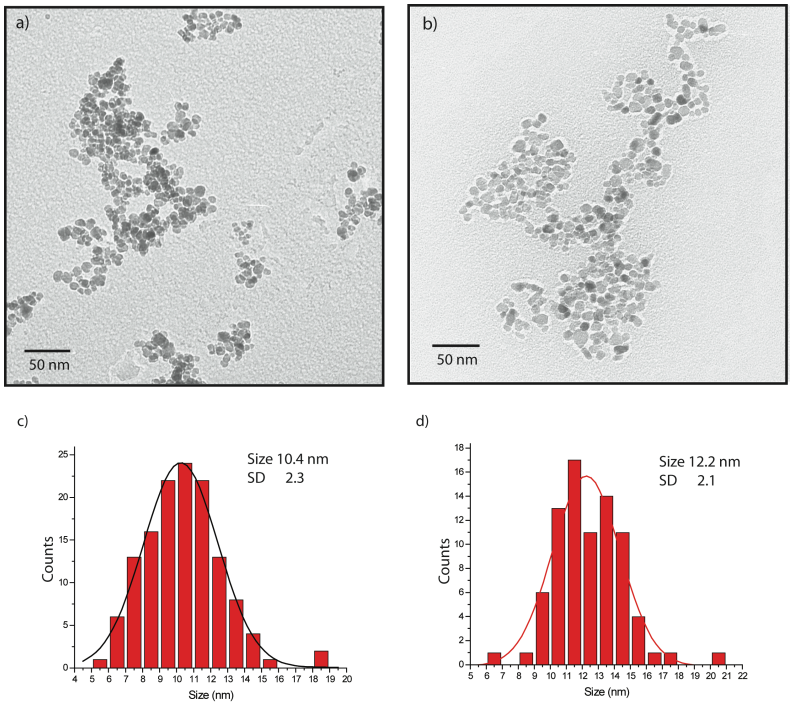
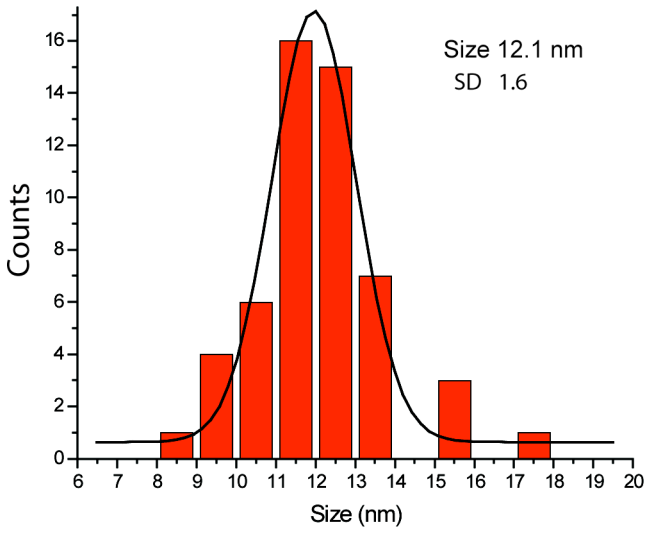


S1: a) and **c)** are TEM image and histogram of with out size sorted MNP-A respectively. **b)** and **d)** are TEM image and histogram of size sorted MNP-B respectively.

Histogram of MNP-A size distribution:

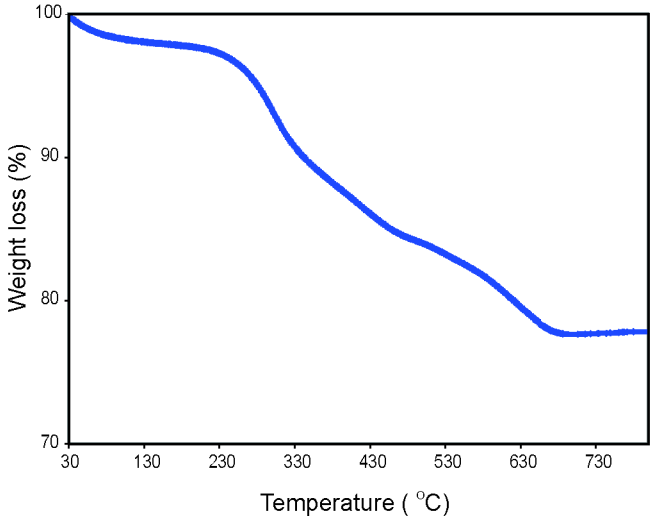
Particles size was measured using ImageJ software and the data were plotted using Origin 7. The average diameter of the particles is 12 nm with 2.0 nm of standard deviation (SD).



S2: Histogram of MNP-A diameter distribution by TEM.

Thermogravimetric analysis:

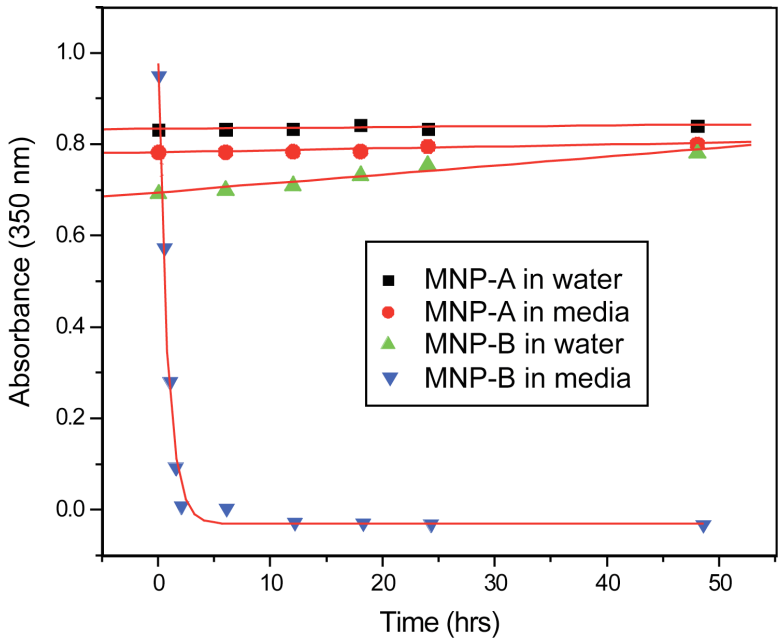
Thermogravimetric analysis was carried out using a TA Instruments (New Castle, DE) TGA 2050 thermogravimetric analyzer. 4.4 mg of MNP-A was placed in a open platinum pan and heat it from room temperature to 800 °C with a heating rate of 10 °C/min under a continuous air purge of N_2. Total weight loss in this process is 22.5% of initial weight.



S3: TGA result for MNP-A

Stability Assays:

To investigate stability, 100 µL of nanoparticles (10 mg/mL stock in distilled water) was added to 1900 µL of deionized water, phosphate buffered saline (pH= 7.4) or cell culture medium. UV-visible absorbance spectra (HP 8452 spectrophotometer) were obtained for different time interval under room temperature. S4 illustrates the stability of MNP-A and MNP-B in milliQ water, and cell culture medium with time. This figure suggest that the excellent stability of MNP-A in these dispersing medium. MNP-B showed huge precipitation in media.



S4: Stability assay of nanoparticles (0.5 mg/mL) in water, and cell culture media.