Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supporting Information

Effect of Bovine Serum Albumin on Tartrate Modified Manganese Ferrite Nano Hollow Spheres: Spectroscopic and Toxicity Study

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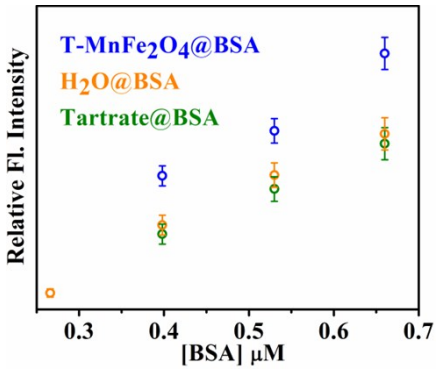

Figure S1. The comparative fluorescence intensity of BSA in presence of T-$MnFe_2O_4$ NHSs, H_2O and tartrate. Error bars are calculated from the standard deviation of 3 successive measurements for each case.

Continuous variation analysis (Job's plot)

Continuous variation analysis was done at 298.15 K (λ_{ex}= 329 nm). The fluorescence signal was recorded for solutions where the concentrations of both the BSA and the T-$MnFe_2O_4$ NHSs were varied while the sum of their concentrations was kept constant. The difference in fluorescence intensity (ΔF) of T-$MnFe_2O_4$ NHSs in the absence and presence of BSA was plotted as a function of the input mole fraction. Break point in the resulting plot corresponds to the mole fraction of the bound T-$MnFe_2O_4$ in the complex. The stoichiometry was obtained from [(1 − χ)/χ], where, χ denotes the mole fraction of T-$MnFe_2O_4$ NHSs. The results presented are average of at least three experiments.

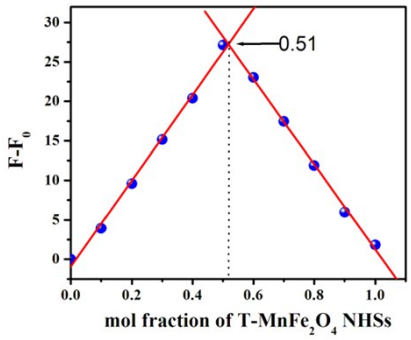

Figure S2. Job's plot depicting change in fluorescence intensity versus mole fraction of T-$MnFe_2O_4$ NHSs.

Table S2. The α-helical content (±3%) of BSA for three successive measurements in different concentration of T-$MnFe_2O_4$ NHSs.

Conc. of T-$MnFe_2O_4$ NHSs (μg/ml)	**% of α-helix**
0	56.1
0.024	49.3
0.032	45.2
0.040	44.8
0.048	41.9

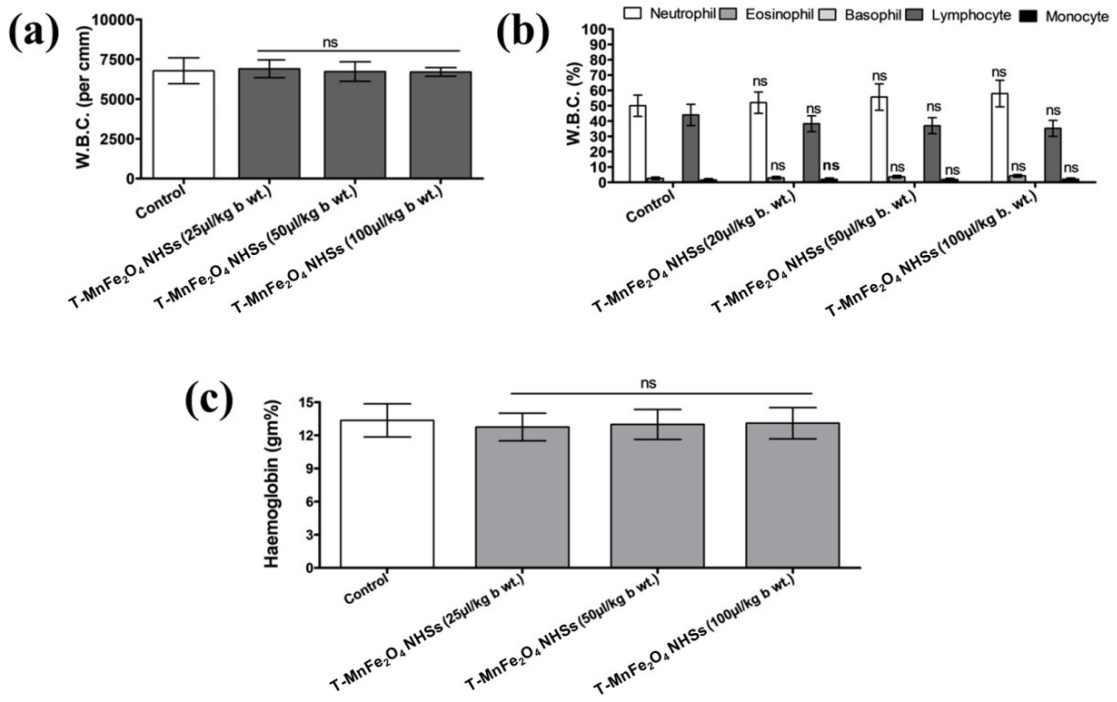

Figure S3. Analysis of the haematological parameters in T-$MnFe_2O_4$ NHSs treated rat. Changes in (a) W.B.C. count, (b) %W.B.C, and (c) Haemoglobin in rat blood treated with T-$MnFe_2O_4$ NHSs.

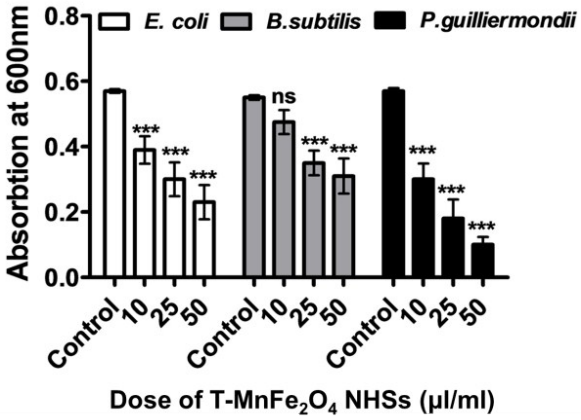

Figure S4. Antibacterial and antifungal activities of T-$MnFe_2O_4$ NHSs *in vitro.*