

Supporting Information for
Self-Propelling Bacteria-Based Magnetic Nanoparticles (BacMags) for Magnetic
Hyperthermia Therapy targeting Hypoxic Tumors

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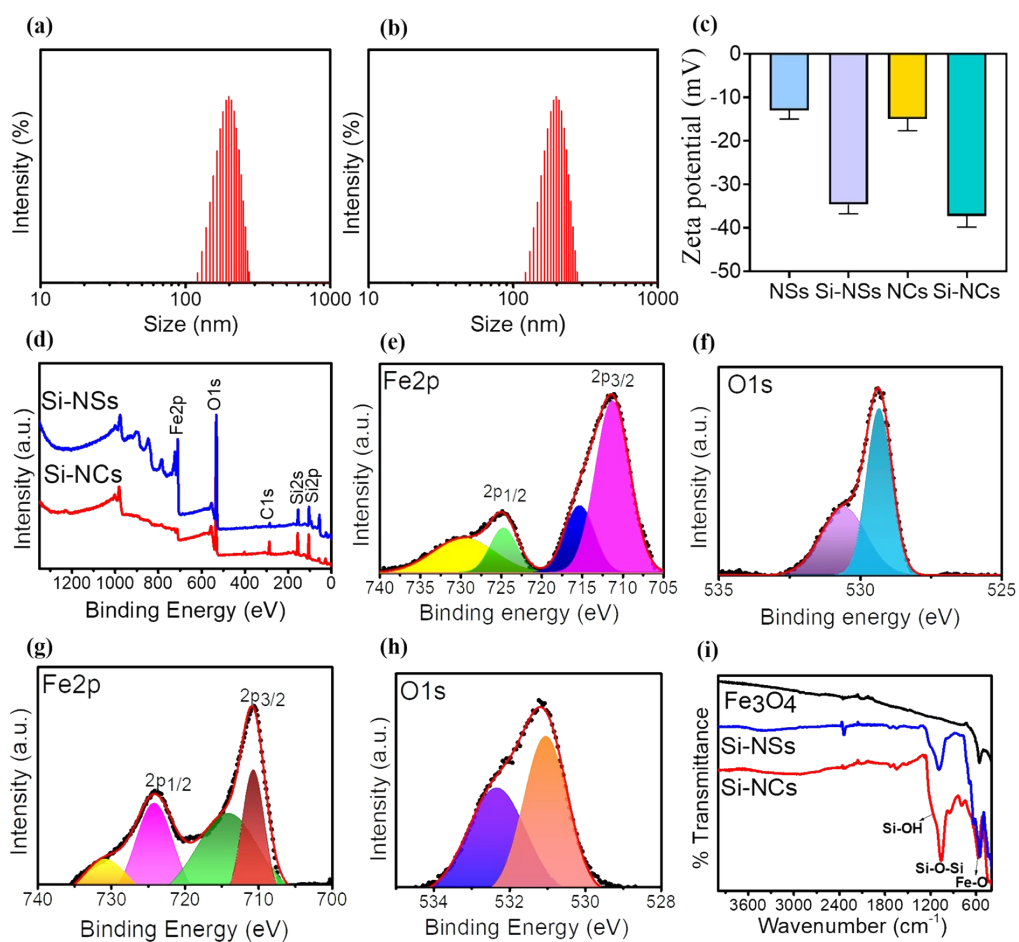


Figure S1. (a-b) Dynamic light scattering measurements of Si-NSs and Si-NCs respectively; (c) Zeta potential of the synthesised MNPs before and after silica coating; (d) XPS survey spectrum of Si-NSs and Si-NCs; (e, g) high resolution XPS spectra of Fe2p and (f, h) O1s of Si-NSs and Si-NCs respectively; (i) FTIR plot of uncoated Fe₃O₄ and silica coated MNPs.

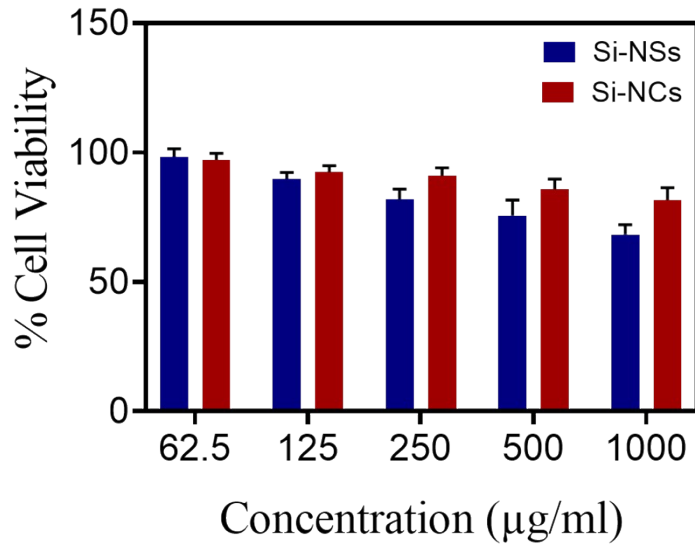


Figure S2. Biocompatibility analysis of Si-NSs and Si-NCs.

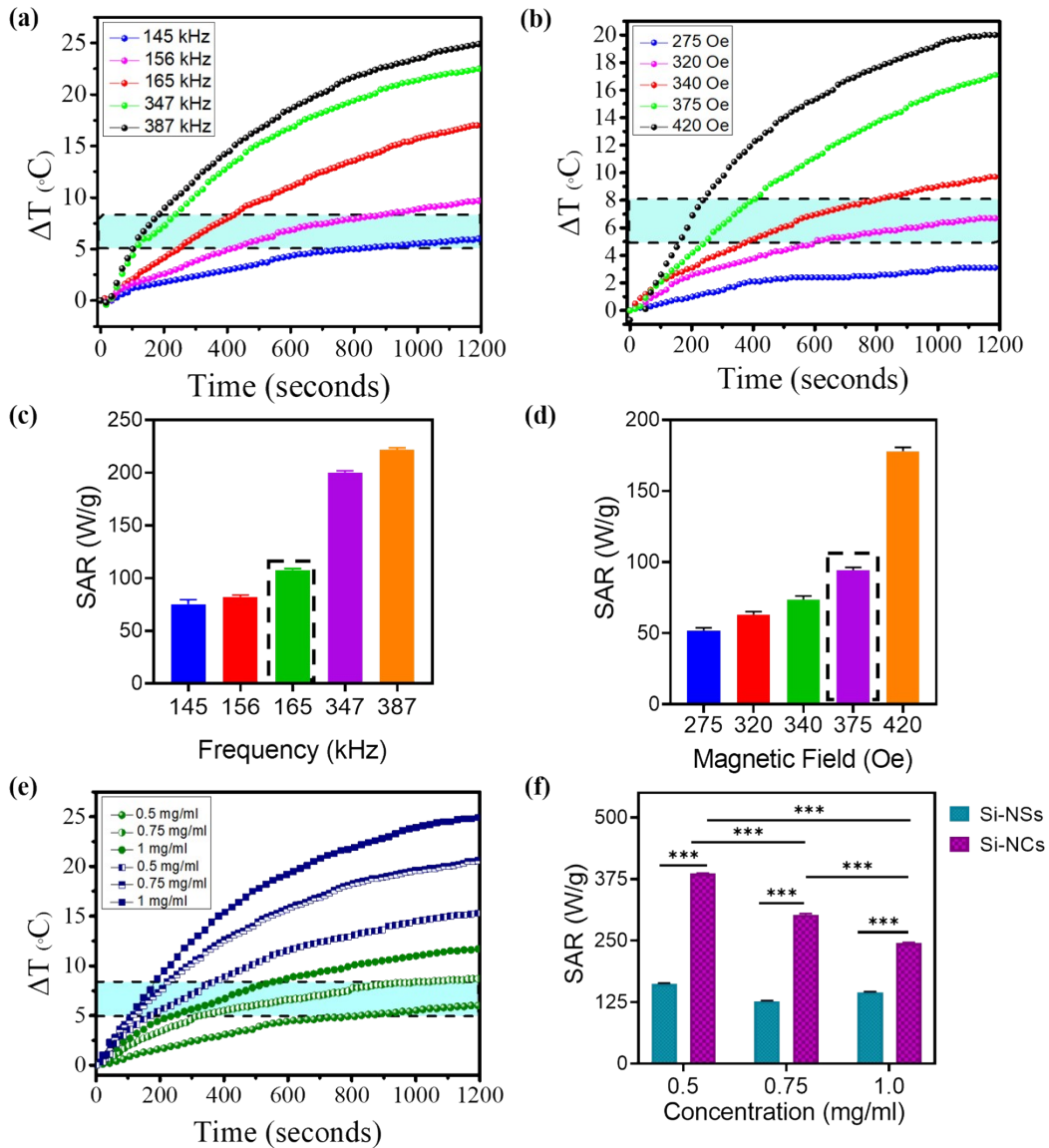


Figure S3. (a) Effect of different frequencies and (b) different magnetic field strengths on the hyperthermia potential of the Si-MNPs; (c-d) Specific absorption rate (SAR) at the different magnetic field strengths and frequencies tested in a-b; (e) effect of various concentrations of Si-MNPs on the calorimetric hyperthermia potential; (f) SAR obtained from different Si-MNPs concentrations tested in e.

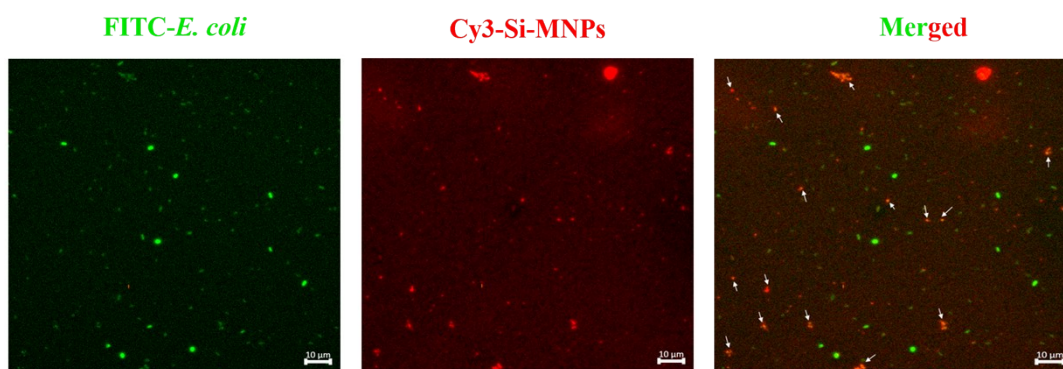


Figure S4. Confocal laser scanning microscopy images of FITC-tagged *E. coli* (left), Cy3-tagged Si-MNPs (middle), and merged image showing co-localized signal from BacMags (right). The scale bar = 10 μm .

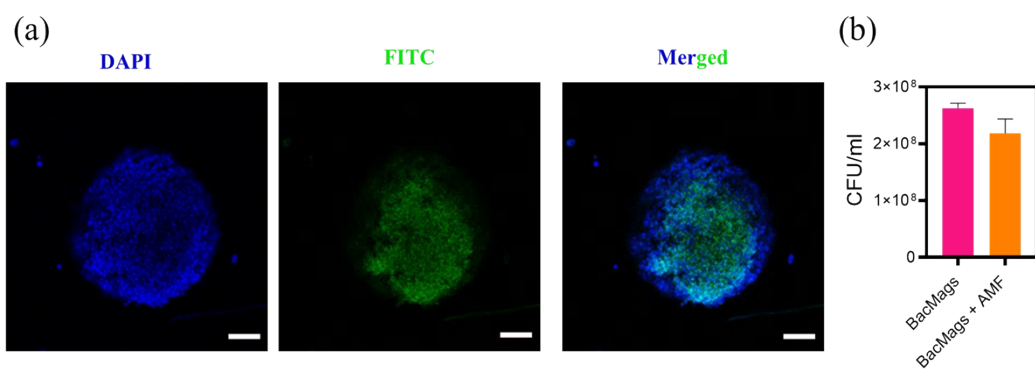


Figure S5. Bacterial penetration in 3D-MCTS. (a) Confocal laser scanning microscopy images of DAPI stained nuclei in 3D-MCTS (left), FITC-tagged *E. coli* (middle) and merged image showing localization of BacMags in the cores of 3D-MCTS (right). The scale bar = 100 μm . (b) Quantification of bacteria from disintegrated 3D-MCTS.

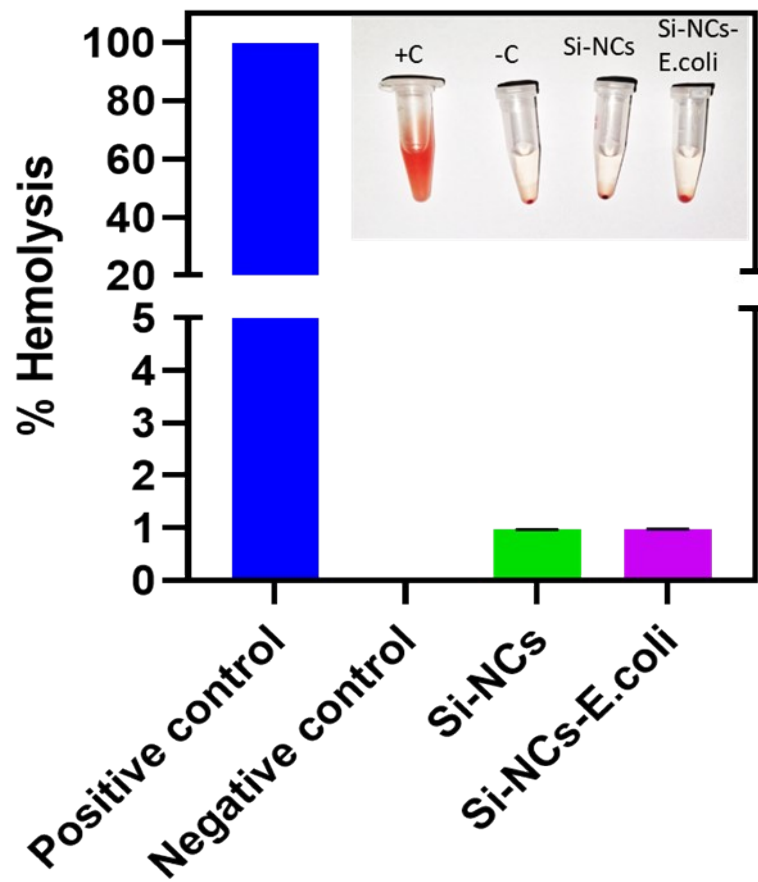


Figure S6. Hemocompatibility analysis of Si-NCs and Si-NCs-BacMags. The inset shows digital images of samples incubated with 2% RBCs suspension where + C denotes positive control (distilled water) and - C denotes negative control (PBS).

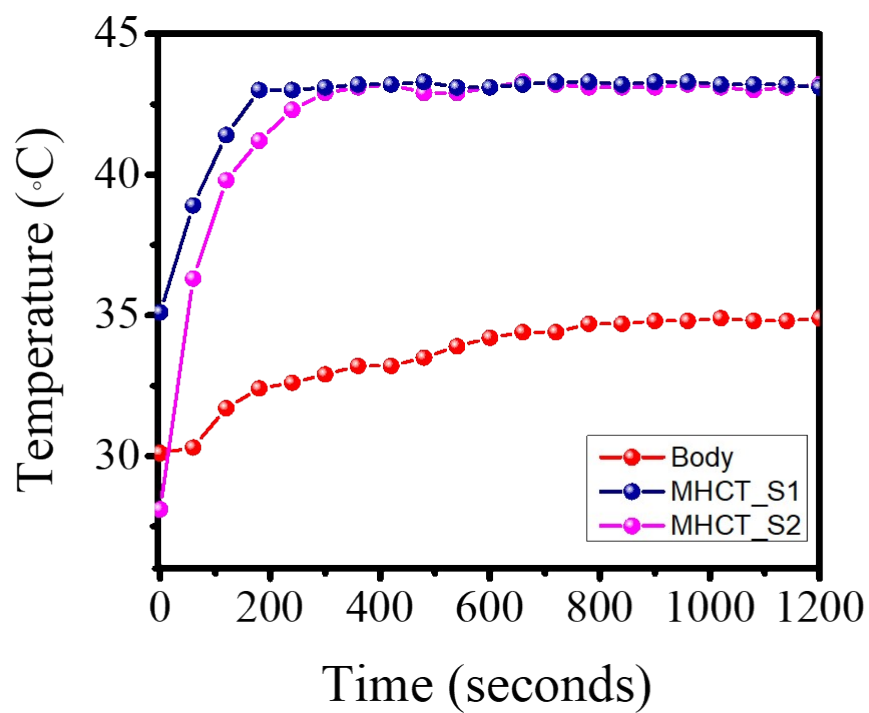


Figure S7. Time-dependent temperature profile measured during sessions 1 and 2 of MHCT.