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# Facile Synthesis of Biocompatible Iron Oxide Magnetic Nanoparticles

Ragini Raghav [1,2], Dibya R. Jha [1], Sudha Srivastava [1*]

[1] *Department of Bioetchnology, Jaypee Institute of Information Technology, A-10, Sec 62, Noida 201307, Uttar Pradesh, India*

[2] *Department of Biotechnology, Shree M & N Virani Science College, Kalawad Road, Rajkot-360005, Gujarat, India*

**Address for Correspondence:** Sudha Srivastava, sudha.srivastava@jiit.ac.in

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Magnetic Nanoparticles; Biocompatible; Co-precipitation.

**ABSTRACT:** In the present study, magnetite ($Fe_3O_4$) nanoparticles were synthesized by modified co-precipitation method employing ferrous/ferric mixed salt-solution inalkaline conditions (ration 1:1). The surface of magnetic nanoparticles was coated with trisodium citrate facilitating charge stabilization. The $Fe_3O_4$ nanoparticles displayed magnetic properties and were well dispersed in water. The magnetite nanoparticles were characterized by scanning electron microscopy (SEM) and UV-visible spectroscopy. Cup borer method was performed to evaluate the biocompatibility of magnetite nanoparticles employing *Micrococcus luteus* and *Bacillus licheniformis* as model microorganisms. Further, the effect of different concentrations of magnetic nanoparticles was also evaluated over these microbial strains. The results displayed that the synthesized $Fe_3O_4$ nanoparticles displayed biocompatibility even at high concentrations. 

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