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Poly(ethylene glycol) was functionalized with carboxyl groups by esterification with succinic anhydride in the media of dioxane and pyridine as catalyst. Maghemite nanoparticles were synthesized by chemical coprecipitation and coated with carboxylated poly(ethylene glycol) to improve their biocompatibility. And the properties were characterized using Fourier transform infrared spectroscopy, Transmission electronic microscopy, X-ray diffraction, Zeta potential analyzer and Vibrating sample magnetometer. The immunomagnetic nanoparticles were obtained by grafting anti-sperm protein 17 monoclonal antibody onto the surface of carboxylated poly(ethylene glycol) coated maghemite nanoparticles by covalent bonds. After incubated with human sperm protein 17 gene transfected ovarian cancer HO8910 cells, the immunomagnetic nanoparticles were targeted successfully to the positive cells and no obviously non-specific adsorption occurred. It is of significance to target to the cell successfully for diagnosis and therapy of ovarian carcinoma such as magnetic resonance imaging and magnetic hyperthermia.

Immunomagnetic Nanoparticles, Carboxylated Poly(Ethylene Glycol), Sperm Protein, Target, Ovarian Cancer.



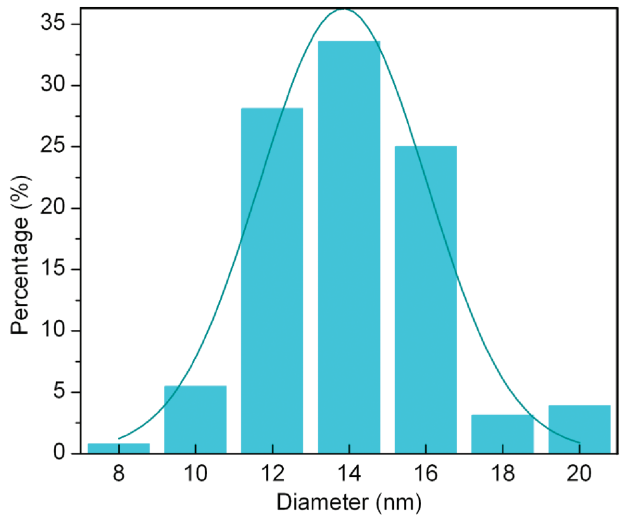
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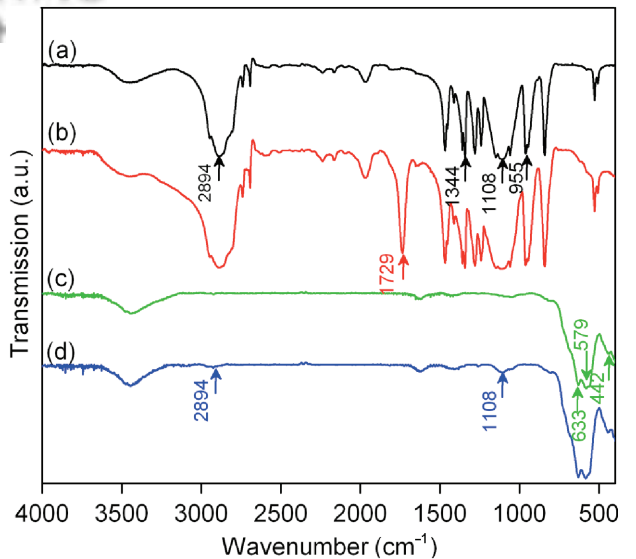
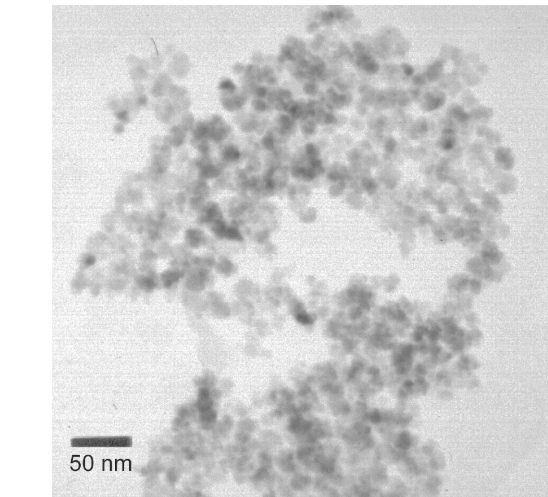


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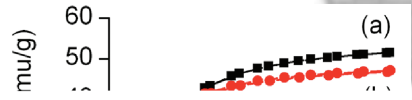
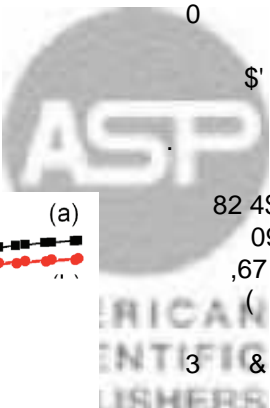


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