

Synthesis and Characterization of a Magnetically Responsive Polymeric Drug Delivery System

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Abstract—A magnetic target drug delivery system consisting of biodegradable polymeric microspheres (*poly D, L-lactic acid*) loaded with magnetite nanoparticles (10-100 nm) and anticancer drug (*paclitaxel*) was studied. The magnetite nanoparticles were synthesized by chemical precipitation. The as-synthesized magnetite nanoparticles were subsequently introduced into a mixture of polymer magnetic polymeric composite particles were investigated and further correlated with the reaction parameters. It was found that the size and characteristics of the polymeric composite particles depended on the viscosity of the polymer solution. Preliminary drug release experiments showed that the loaded drug was released with the degradation of the polymer. The release rates could be enhanced by an oscillating external magnetic field.

[Full Text Not Available]