

MAGNETIC CHARACTERIZATION OF TAXOL LOADED MAGNETIC PLGA-NANOSPHERES

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Magnetically controlled drug targeting is one of the various possibilities of drug targeting. One of these technologies is based on encapsulation established drug with magnetic fluids in polymer with aim to concentrate drug in the area of interest by means of magnetic field. The Poly(D,L/lactide-co-glycolide acid) (PLGA) nanospheres loaded with magnetic fluids and anticancer drug Taxol by the nanoprecipitation method were prepared. The morphology and the particle size distributions of the prepared nanospheres were investigated by transmission electron microscope (TEM) and scanning electron microscope (SEM) that confirmed the spherical shape of prepared nanospheres with size 250 nm. The magnetic properties of the Taxol loaded magnetic polymer nanospheres were studied using magnetometer (SQUID) at the temperatures from 4.2 K to 300 K. The obtained results showed superparamagnetism of the prepared nanospheres with the blocking temperature $T_B = 100$ K and the saturation magnetization $M_S = 0.48$ emu. The prepared magnetic labeled PLGA nanospheres showed suitable response to the external magnetic field.

9.7 cm

13.4 cm

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