

عنوان مقاله:

Delivering Doxorubicin anti-cancer drug using biocompatible nano magnetic polyurethane drug vehicle

محل انتشار:

اولین کنفرانس ملی میکرو نانو فناوری (سال: 1397)

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خلاصه مقاله:

Polyurethane are biocompatible compounds with variety applications in the biomedical fields mostly as drug delivery vehicles. Their various applications is due to their Maneuverable structure with different blocks of diols and isocyanides. In the new presented work, magnetic polyurethane was used as drug carrier which formed of the reaction of Poly-caprolacton and isophoren diisocyanate and finally cyclodextrin as the cross linker. Characterization of the final polymer and certainty of its formation was done through different analytical methods such as FT-IR, TGA, XRD, SEM, TEM and VSM. On the other hand, the percentage of the magnetic nanoparticles in the polymer matrices was tracked using thermal gravimetry analysis. This nano drug carrier was used for in vitro delivering pharmaceutical agent of doxorubicin. The amount of drug loading and percentage and manner of the drug release were investigated using concentration profile. Cytotoxicity of nano drug carrier was evaluated using calorimetric method called methylthiazoletetrazolium (MTT) assay on the MCF-7 cell lines and according to the results presented system is very .profitable and proper one for delivering Doxorubicin anti-cancer drug

کلمات کلیدی:

polyurethane, isocyanides, diols, Poly-caprolacton, methylthiazoletetrazolium

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