

Synthesis and characterization of polyaspartamide derivatives for theranostic application

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A series of biodegradable graft copolymer polyaspartamide derivatives were synthesized by grafting of O-(2-aminoethyl)-O'-methylpoly(ethylene glycol) 5000 (MPEG) on polysuccinimide(PSI), and conjugated doxorubicin with linkers of acid-sensitive hydrazone bond. This hydrazone bonds can be cleaved most effectively in an intracellular acidic environment, and conjugated cholic acid as hydrophobic moieties. The chemical structure of the polymer and the degree of substitution of the prepared polymer was confirmed using FT-IR and ¹H NMR spectroscopy. Their pH-sensitive properties were characterized by light transmittance measurements, and the mean particle size and their distribution were investigated by dynamic light scattering measurement through varying pH values. And this polymeric micelle can be a potential carrier for the drug delivery system.