

Self-assembled nanoaggregates based on polyaspartamide graft copolymers for targeted therapy of bone metastatic cancer

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Bone targeting and pH-sensitive agent graft copolymer polyaspartamide derivatives were synthesized by grafting of octadecylamine (C18), hydrazine hydrate and O-(2-Aminoethyl)polyethylene glycol 5000 on polysuccinimide. And PEG was grafted to alendronate acted as ligand. These features make higher bone targeting delivery efficiency. And conjugated doxorubicin with linkers of acid sensitive hydrazone bond. This hydrazone bonds can be cleaved most effectively in an intracellular acidic environment.. The chemical structure of the polymer and the degree of substitution of the prepared polymer was confirmed by using 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 A HAp binding assay was performed in vitro and the affinity of the bone-targeting polymeric micelles for HAp are shown in Figure. This polymeric micelle can be a potential carrier for targeted therapy of bone metastatic cancer.