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Synthesis and Characterization of Self-assembled Submicron Particles Based on Biotinylated N-palmitoyl Chitosan

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Self-assembled particles based on amphiphilic chitosan derivatives represent a promising research area, as remarkable properties of these polymeric structures can significantly improve their biological behaviour of the drug delivery systems. In the same time, biotin has been proposed as an active targeting molecule in anti-tumoral formulations. In this paper, self-assembled submicron particles based on biotinylated N-palmitoyl chitosan and loaded with a chemotherapy agent (Paclitaxel) have been prepared by dialysis method combined with ultrasonication. The composition of the particles has been confirmed by FT-IR Spectroscopy. Paclitaxel loaded particles exhibited narrow size distribution, negative charge, a pH-dependent release profile of drug and redispersion ability in simulated body fluids, features which can be useful in drug delivery applications.