

Syntheses and Physicochemical Properties of Fluorescent Polymer-Drug Conjugate

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Paclitaxel is known to most widely used and superior effective an anticancer drug derived from the bark of the Pacific yew tree. It is highly lipophilic and poor solubility in water. We have developed the water-soluble paclitaxel based on PEG conjugates with a newly developed self-immolating group and investigated the interaction of water-soluble paclitaxel conjugate and serum proteins. Fluorescent polymer-drug conjugate, with a high quantum yield, are widely used as important tools in studies of the elucidation of structures of drug binding to proteins. The fluorescent water-soluble paclitaxel was synthesized by a condensation reaction of pegylated paclitaxel with dansyl chloride, pyrene butyric acid etc. These synthesized analogues were characterized by analytical-HPLC, FT-NMR, and laser-induced fluorescence spectrometry. It could be used for the studying the interaction of protein with a modified drug conjugate.