

Chemically bonded hydrophilized paclitaxel-sustaining stents

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A series of electrically initiated in-situ polymerization was conducted for surface treatment of a stent with a hydrophilic microtubulin stabilizing-drug. For the electropolymerization, a series of water-soluble paclitaxel prodrug (PP7) analogues were synthesized by using several vinyl containing monomers. Finally we have tried the electropolymerization of polymer-modified paclitaxel prodrugs for practical application. The electropolymerization for the prodrug was conducted and optimized in order to determine the polymerization parameters such as concentrations of monomers and electrolytes, electrical current density, reaction time and shape of stainless-steel or other implant-materials. Also, the electropolymerized steels were characterized.