Preparation of ALA-ReoPro® Mixing Coated Stent by Low Temperature Plasma Polymerization

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Alpha-lipoic acid(ALA) and Abciximab(ReoPro®) coated stent was studied to be applied for inhibition of stent restenosis. It was considered whether ALA-ReoPro® mixing coated stent will be used for improving the blood compatibility and decreasing the restenosis because of anti-proliferation for ALA and anticoagulation for ReoPro®. In this study, the polymeric thin film containing amine functional group ($-NH_2$) was coated onto the stainless steel surface by low temperature plasma polymerization with the 1,2-diaminocyclohexane (DACH). The carboxyl group in ReoPro® and ALA was then chemically grafted to amine group onto the polymeric surface, respectively. The prepared ALA-ReoPro® mixing grafted surface was reacted in acidic solution, ALA-ReoPro® mixing solution in sequence to increase grafted drug amount. The chemical structures of grafted two drugs were characterized by FT IR and ESCA. The grafted amount of drugs onto the polymeric surface and drug release profile was determined by UV spectroscopy. The prepared ALA-ReoPro® mixing coated surface was ascertained by SEM.