

Fabrication of Dual Drug Eluting Stent by Plasma Polymerization Followed by Grafting of ALA and Abciximab

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It was investigated that dual drug-coated stents simultaneously grafting abciximab and ALA onto the stent surface has potential to improve the blood compatibility and drug eluting ability as well as prevent in-stent restenosis. At first, low temperature plasma polymerization reaction with DACH was performed to deposit amine containing polymeric film onto bare metal stent surface. Then, the modified stent was immersed in 2 milliliters of ALA and abciximab mixed solution for 1 h at ambient temperatures for the grafting of ALA and abciximab onto the DACH deposited stent surface. Characterization by ATR FT IR and ESCA showed that DACH deposited surface contains amine functional groups. It was also suggested that abciximab and ALA was chemically grafted to DACH deposited surface. The surface morphology of prepared dual drug-coated stent was ascertained by SEM, indicating that the coating surface was smooth and uniform. In the results of in vitro drug release measurement, drugs were eluted during 1 month from abciximab and ALA coated stent surface.