

HEMOCOMPATIBLE PROPERTIES OF POLYMERIC DERIVATIVE OF PARACETAMOL

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It is well known that one of the most serious problem usually encountered in the field of cardiovascular prosthetic devices is the thrombogenic activity usually exerted by synthetic materials when they are in contact with blood. It has been reported that the microphase separated structure, plays an important role in blood compatibility. In this work, alternate copolymers composed of hydrophilic monomer N,N'-dimethylacrylamide (DMAA) and the hydrophobic monomer p-acryloyloxycetanilide (AOA) were synthesized by a conventional radical polymerization method using 2,2-azobutyronitrile (AIBN) (0.015 mol/L) in dimethylformamide (DMF) (1 mol/L). Different copolymer compositions coating on cover glasses (20x24 mm) were carried out by the solvent evaporation technique using a 0.5 wt% polymer solution and dried in vacuo for 24 h at room temperature. Contact angle was measured to determine the hydrophilicity of the coated cover glasses surfaces. Competitive adsorption of bovine serum albumin (BSA), and fibrinogen labelled with ¹²⁵I indicated a preferential adsorption for albumin with the increasing molar fraction (f) of DMAA in the copolymer. On coated surfaces with copolymers of f_{DMAA} : 0.77 and f_{AOA} : 0.23, the deposition of fibrin and adhesion of platelets, studied by scanning electron microscopy (SEM), were much lower than those uncoated surfaces.

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