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STUDY OF HEMOCOMPATIBLE PROPERTIES OF PTFE-G-DMAA FILMS OBTAINED BY GAMMA IRRADIATION.

Álvaro Antônio de **Queiroz***, Olga Zazuco Higa, Maria Teresa C.P. Ribela
Coordenadoria de Bioengenharia - IPEN-CNEN/SP - São Paulo

For biomedical purpose is desirable that the blood contacting materials possess some degree of blood compatibility. The protein adsorption predicts thrombus formation when the adsorbed proteins are fibrinogen or globulin, although albumin adsorption does not promote clot formation. This theory explains the hemocompatibility of materials as the hydrophilic hydrogels. The adsorption of plasma proteins on poly(tetrafluoro-ethylene) PTFE films grafted with a hydrogel, the poly (N,N'-dimethylacrilamide) (PDMAA), was studied. The grafted copolymers were obtained by gamma irradiation at the dose in the range of 0.4 to 6.0 kGy. The graft yielded between 2 and 12%. The hydrophilicity of the grafted films, measured by swelling in water, increased linearly with the grafting degree. The contact angle of the PTFE-G-DMAA was measured and the hysteresis angle determined. Bovine serum albumin (BSA), γ -globulin and fibrinogen was labelled with ^{125}I by the chloramine T method. The adsorption of the labelled proteins was measured after 2 hours equilibration at 37°C in an appropriate cell. The adsorption of the proteins was significant up to a determined level of PTFE grafting degree (6-8%).

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