

SILICONE TUBES GRAFTED BY IONIZING RADIATION: BIOCOMPATIBILITY TESTS

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Radiation technology has offered good tools for the preparation of polymeric biomaterials. An advantage of the radiation-chemical methods compared with traditional method is the purity of the materials (there is no need of addition of chemical initiators or catalysts). The preparation of hemocompatible polymeric matrices has been the subject of many investigations and the grafting of hydrophilic hydrogels onto polymeric matrices has allowed the obtention of surfaces with lower sorption of proteins which can elicit the blood coagulation. In this work the radiation grafting of 2-hydroxyethyl methacrylate (HEMA) onto polydimethylsiloxane (PDMS) was achieved by the mutual irradiation in ^{60}Co source. Following the human albumin immobilization in the grafted surfaces was promoted to strengthen the antithrombogenic property.

The biocompatibility of the radiation modified surfaces and the ones passivated with albumin was evaluated by *in vitro* tests of cytotoxicity and hemocompatibility (platelets adhesion and hemolytic activity) as described in the ISO 10993. The samples were not cytotoxic and the results pointed out for an improvement of the antithrombogenic behavior, mainly with the grafted polymeric surfaces immobilized with albumin.