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coagulation. Over the years, many strategies were developed to modify materials for vascular devices. One strategy involves pre-coating with the tripeptide Arg-Gly-Asp (RGD), which improves endothelialization, thus lowering thrombogenicity. In the present work, the hemocompatibility of native and RGD-modified bacterial cellulose (BC) was studied. Despite being a promising material for vascular replacements, a comprehensive characterization of the BC-blood interaction, namely in the presence of RGD peptide, has not been performed to date.

Methods. Blood from healthy donors was placed in contact with native or recombinant RGD-treated BC and parameters related to a material's hemocompatibility were determined. These included adsorption of plasma proteins, clotting times, whole blood coagulation time, plasma recalcification profiles, platelet adhesion and hemolysis.

Results. The clotting times (aPTT, PT, FT and PRT) and whole blood clotting results demonstrate the good hemocompatibility of BC. A significant amount of plasma protein adsorbed to BC fibres, presenting albumin a higher BC affinity than gamma-globulin or fibrinogen. According to analysis carried out by intrinsic tryptophan fluorescence, BC-adsorbed plasma proteins tested do not undergo major conformational modifications. Although the presence of the adhesion peptide on bare-BC surface increases the platelet adhesion, when the material was cultured with human microvascular endothelial cells a confluent cell layer was readily formed, inhibiting the adhesion of platelets.

Conclusion. Generally, our data demonstrates that both native and RGD-modified BCs may be classified as hemocompatible materials, since they showed to be non-hemolytic and the whole blood coagulation studies show that the results are comparable to those produced by currently available materials for blood replacements.

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Keywords. Bacterial cellulose; RGD peptide; Hemocompatibility; Vascular grafts.

(6.O10) HEMOCOMPATIBILITY STUDY OF BACTERIAL CELLULOSE

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Introduction. Vascular grafts must gather various complex attributes, like good mechanical properties, post-implantation healing response without any immunological reaction and no induction of blood

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