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Human plasma gels: their preparation and rheological characterization for cell culture applications in tissue engineering

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Abstract

Tissue engineering is one of the fields of clinical medicine that has forged ahead in recent years, especially because of its role as a potential alternative to organ transplantation. The main aim of this study has been the development of biocompatible materials to form extracellular matrix (ECM) structures in order to provide the necessary conditions for the settlement, proliferation and differentiation of dermal cells such as fibroblasts. To this end, human plasma gels were synthesized with the addition of increasing concentrations of transglutaminase (TGase), which catalyses the formation of covalent bonds between Lys and Glu residues. These materials were structurally characterized using rheology and texturometry and were found to have good structural resistance and elasticity for fibroblast culture. A remarkable improvement in the

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