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Hydrogel matrices based on elastin and alginate for tissue engineering applications

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Abstract

Hydrogels from natural polymers are widely used in tissue engineering due to their unique properties, especially when regarding the cell environment and their morphological similarity to the extracellular matrix (ECM) of native tissues. In this study, we describe the production and characterization of novel hybrid hydrogels composed of alginate blended with elastin from bovine neck ligament. The properties of elastin as a component of the native ECM were combined with the excellent chemical and mechanical stability as well as biocompatibility of alginate to produce two hybrid hydrogels geometries, namely 2D films obtained using sonication treatment and 3D microcapsules produced by

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