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A biological study of gelatin-PVA based scaffold functionalized with albumin for biomedical purposes

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Resumo:

Biomaterials have been designed for tissue reconstruction, bone regeneration and cell culture, and functionalized with presence of proteins, nanoparticles, peptides and other components to improve the biocompatibility for instance. This work shows a biological study of gelatin-PVA based scaffold with controlled pore size and functionalized with albumin for biomedical purposes. The in vitro study comprises cytotoxicity, cell adhesion and proliferation assessment. In practical terms, the gelatin-PVA scaffold crosslinked and sterilized by gamma radiation followed by freeze-drying was evaluated by cytotoxicity, adhesion and proliferation tests. The cytotoxicity results showed that the biomaterial produced was non-toxic, and adhesion and proliferation assays showed that the material was suitable for tissue engineering. The presence of albumin did not present a significant impact on the cell performance, at the assayed concentration.