

Synthesis and characterization of bacterial cellulose-gelatin composite scaffolds for tissue engineering

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Bacterial cellulose (BC) is widely investigated for biomedical applications due to its excellent biocompatibility and biodegradability etc. The current study involves the synthesis of bacterial cellulose-gelatin (BC-G) composite scaffolds for tissue regeneration purpose. BC and gelatin were dissolved in a common solvent and salt crystals were added as porogens followed by casting in molds. The synthesized scaffolds were characterized through Field emission scanning electron microscopy (FE-SEM) and Fourier transform infrared spectroscopy (FTIR). FE-SEM showed the porous structure of scaffold while FTIR spectra exhibited characteristic bands for both BC and gelatin. In vitro biological tests showed that animal fibroblast cells proliferate on the BC-G composite scaffolds while the cell toxicity assay confirmed their nontoxic nature towards animal cells. These results demonstrate our BC-G scaffolds as potential candidate for future tissue engineering applications.