

Bacterial Cellulose–Gelatin Composite Scaffolds for *in-vitro* Tissue Regeneration

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The current study involves the synthesis of regenerated bacterial cellulose–gelatin (RBC–G) composite scaffolds for *in-vitro* tissue regeneration applications. BC and gelatin were dissolved in N–methylmorpholine N–oxide (NMMO) and salt crystals were added as porogens followed by casting and leaching. 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 while FTIR spectra confirmed the synthesis of RBC–G composite scaffolds. *In vitro* biological tests showed that animal fibroblast cells proliferate on the RBC–G composite scaffolds while the cell toxicity assay confirmed their better cytocompatibility compared to RBC scaffolds. These results demonstrate our RBC–G scaffolds as potential candidate for future tissue regeneration applications.