Fabrication and characterization of three-dimensional poly(lactic-co-glycolic acid), atelocollagen, and fibrin bio-scaffold composites for intervertebral disk tissue engineering applications


Abstract

This study aimed to fabricate and characterize three-dimensional poly(lactic-co-glycolic acid) scaffolds and naturally derived materials in regeneration of intervertebral disks. The scaffolds were fabricated and characterized in terms of porosity, pore size, mechanical strength, and swelling ratio. The scaffolds showed good porosity and pore size, which are essential for cell attachment and tissue ingrowth. The mechanical strength and swelling ratio of the scaffolds were adequate for use in intervertebral disk tissue engineering.

Keywords:

poly(lactic-co-glycolic acid), atelocollagen, fibrin, bio-scaffold, intervertebral disk, tissue engineering.