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Hierarchical macro/micro-porous silk fibroin scaffolds for tissue engineering

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Abstract:

Scaffolds with hierarchical structures capable of promoting cells attachment, proliferation and guiding tissue formation have always been one of the major goals in tissue engineering. Here, a macro/micro-porous silk fibroin (SF) scaffold was fabricated by combining the paraffin sphere leaching and phase separation methods. The scaffolds possess adjustable macro/micro pores size, interconnected pores, high porosity and certain mechanical property. The scaffolds also promoted cell attachment, infiltration and proliferation, which can be an ideal candidate for cell delivery and tissue regeneration.

Key words: Porous materials; Biomimetic; Scaffold; Hierarchical structure; Silk fibroin; Macro/micro-pore

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