Special Issue

Polymeric Scaffold Materials for Tissue Engineering

Message from the Guest Editors

During the last decades the design of smart and active materials for scaffold fabrication has been attracting widespread interest driven by the need of engineering even more powerful platforms for tissue engineering and regenerative medicine applications. More recently, advanced biomaterials have been also explored for the development of in vitro tissue models, opening up new possibilities in pharma research and toxicology studies. Scaffolds are typically made of polymeric biomaterials and provide the structural support for cell attachment and subsequent tissue development. Scaffold constituent materials play a critical role by acting as synthetic frameworks and thus, their selection represents a crucial issue being strongly related to the tissue they are expected to replace or replicate. As a consequence materials strongly affect the resultant scaffolds properties, such as biodegradation behaviour, mechanical and biological properties. Furthermore, bulk or surface functionalization strategies can be adopted in order to better mimic the extracellular matrix composition and enhance cell adhesion.

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