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A Review on Chitosan Centred Scaffolds and Their Applications in Tissue Engineering

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Abstract

The diversity and availability of biopolymer and increased clinical demand for safe scaffolds lead to an increased interest in fabricating scaffolds in order to achieve fruitful progress in tissue engineering. Due to biocompatibility, biodegradability, inherent antimicrobial character, chitosan has drawn ample consideration in recent years. Chitosan is a biopolymer obtained by de-acetylation of chitin extracted from shells of crustaceans and fungi. Due to the presence of reactive functionality in the molecular chain chitosan can be modified either chemically or physically to fabricate the tailor-made scaffolds having desired properties for tissue engineering centered applications. In this review chitosan, its properties and role either virgin, chemically or physically modified, 2D or 3D scaffolds for tissue engineering application have been highlighted.

Keywords: Biomaterials; chitosan; scaffolds; tissue engineering