Shear Thinning Chitin and Chitosan Hydrogels in Tissue Engineering & Regenerative Medicine

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Abstract

Injectable chitin and chitosan based hydrogels has potential applications in the field of tissue engineering and drug delivery due to their biocompatibility and biodegradability as well as the ability to deliver them in a minimally invasive manner to the defect site. Shear-thinning property of the hydrogel is an upcoming area. This shear thinning hydrogels can be injected by application of shear stress (during injection) and quickly self-heal after removal of shear. The prepared chitin and chitosan based hydrogels possess shear thinning property and can easily incorporate drugs, growth factors, ceramics (nano/micro), fillers and cells. This talk will discuss about the preparation, *in vitro* and *in vivo* analysis of developed shear thinning hydrogels in detail for potential applications in tissue engineering and regenerative medicine.

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