



Collagen-glycosaminoglycan scaffolds: Lyophilization for wound care applications

ABSTRACT:

Collagen-glycosaminoglycan (CG) scaffolds have long been utilized as ECM analogs for the regeneration of skin and are currently being considered for the regeneration of nerve, conjunctiva, and a host of orthopedic tissues. These scaffolds are typically fabricated via freeze drying, where the solidification stage is used to control the final scaffold microstructure.

Here we describe the fabrication, and characterization, and modeling of a series of non-mineralized and mineralized CG scaffolds. We then discuss their use *in vivo* to induce tissue regeneration following injury and *in vitro* as standardized 3D materials to study the influence of microstructural and mechanical features on cell behaviors such as motility and contraction.