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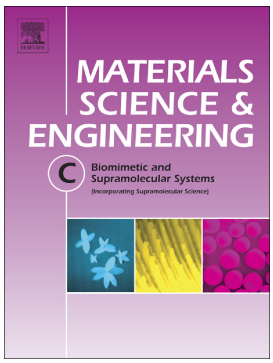

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Squid type II collagen as a novel biomaterial: isolation, characterization, immunogenicity and relieving effect on degenerative osteoarthritis via inhibiting STAT1 signaling in pro-inflammatory macrophages

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Abstract

Collagen from marine organisms has a broad prospect in biomedical field, yet the knowledge on marine-derived type II collagen is rare. Herein, a novel type II collagen was successfully isolated from squid cartilage for the first time. After being characterized, the immunogenicity of squid type II collagen (SCII) was evaluated and compared with that of bovine type II collagen (BCII). Then investigations were further conducted for the impacts of SCII on pro-inflammatory macrophages and macrophage chemotaxis. The degenerative osteoarthritis (OA) -relieving effects of SCII were explored using OA rat model *in vivo*. Our results demonstrated that the isolated SCII maintained triple-superhelical structure of native collagen with high purity.