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The cells viability study on the composites of chitosan and collagen with glycosaminoglycans isolated from fish skin

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Abstract

In this work we examined the influence of glycosaminoglycans (GAGs) isolated from fish *Salmo salar* skin on the biological properties of chitosan/collagen composites. Glycosaminoglycans mixture was isolated from food industry wastes as fish skin and the presence of chondroitin sulfate and hyaluronic acid was detected by spectrophotometric method. Isolated mixture was added to the composites based on chitosan, collagen and their mixture in ratio 1 and 5%. The positive MTS assay results of human osteosarcoma SaOS-2 cells on obtained composites were examined. The results showed SaOS-2 cells viability on all composite materials. The addition of GAGs improved the biocompatibility of composites compared to materials without glycosaminoglycans addition.

key words: glycosaminoglycans, composites, natural polymers, *in vitro* studies

Introduction

Tissue engineering is science, the aim of which is the use of medical and material engineering knowledge to obtain functional substitutes for damaged human tissues [1-3]. It

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