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Extended Abstract

Extraction and Characterization of Glycosaminoglycans from Marine Snail *Rapana venosa* †

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Glycosaminoglycans (GAGs) are anionic straight chain polysaccharides with a wide range of applications in the pharmaceutical, cosmetic and food industries [1]. The aim of this study was to extract and to evaluate the chemical and biological characteristics of GAGs isolated from *Rapana venosa* collected from the Black Sea, in order to obtain valuable extracts for use in the biomedical field.

In this study, GAGs were obtained from snail soft tissue by chemical extraction, followed by ethanol precipitation. The extract obtained was analyzed in terms of total hexose [2], uronic acid and carbohydrate content [3]. Agarose gel electrophoresis was performed to separate the extract into the main types of GAG using chondroitin 4-sulfate sodium salt from bovine trachea (Sigma) as per commercial standards. In vitro cytotoxicity tests were conducted on NCTC clone L929 mouse fibroblasts cultivated in the presence of different concentrations of GAGs, in standard conditions, for 48 h. Cell viability was determined using MTT assay [4], while cell morphology was evaluated using Giemsa staining.

The extract obtained was rich in total hexoses, uronic acids and carbohydrates. The electrophoretic pattern revealed a single band at high molecular weight. Data obtained from in vitro studies showed that GAGs extract exhibited a good cytocompatibility up to the concentration of 3000 µg/mL after 48 h of cell exposure. Qualitative morphological observations of treated cells after Giemsa staining indicated the maintenance of a normal fibroblast phenotype, which has been correlated with the MTT quantitative results.

Rapana venosa represents a rich source of GAGs with high contents of hexoses, carbohydrates and uronic acids, which can be used for various applications in the biomedical field.

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