

The Collagen and Glycosaminoglycans Isolated from Salmo Salar Skin

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Abstract : Marine collagens such as fish skin, bone, cartilage, and scales, including both marine vertebrates and invertebrates sources, are more bioavailable compared to bovine or porcine collagen and have a higher absorption capability and more rapid bloodstream circulation due to their low molecular weight and small particle size. Fish skin may be used as a source of bioactive compounds. The advantage is that fish skin is a by-product of the food industry. The subject of the study is a lyophilizate consisting of a mixture of compounds from the group of glycosaminoglycans and collagen obtained as a result of processing fish skins. Bioactive compounds may find biomedical use in the production of dressing materials for wounds or in tissue engineering for the production of scaffolds for cells. Collagen and glycosaminoglycans were isolated from Salmo salar skin. The final mixture was obtained by the freeze-drying method. In the obtained lyophilizate, the content of amino acids was studied as well as the presence of polysaccharides. The studies showed the presence of glycine, proline, and hydroxyproline, which are the main amino acids of collagen. The HPLC analysis showed the presence of glucose which is a product of polysaccharides hydrolyzation and then reduction of glucuronic acid. It may be assumed that the lyophilizate contains both collagen and polysaccharide, which is probably hyaluronic acid. Acknowledgment: This work was carried out as a result of research project no. TANGO-V-A/0020/2021 financed by the National Centre for Research and Development.

Keywords : collagen, glycosaminoglycans, bioactive compounds, fish skin

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