

Cytotoxic and Anti- Inflammatory Activities of Glycosaminoglycans (GAGs) from Selected Sea Food Waste Extract on Cell Lines

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Abstract:

Glycosaminoglycans (GAGs) are long unbranched polysaccharide that composed of repeating disaccharide units. They are classified into heparan sulfate (HS), heparin, chondroitin sulfate (CS), dermatan sulfate (DS), keratan sulfate (KS) and hyaluronic acid (HA). During the last decade, demand of GAGs were getting increased due to their potential uses. Vertebrate animal, commonly cartilaginous mammalian tissue, were potential producer of GAGs and have the higher number of biological activities extracted from sea bass waste. Sea bass waste from *Lates calcarifer* was used as the raw material to extract crude GAGs. Different part of sea bass waste such as, gills, viscera and air bladders were used. The higher content of crude GAGs in sea bass waste was used in cytotoxic and inflammatory study. Different concentration of extract GAGs from gills were used ranging between 0.16-20 mg/mL. GAGs from sea bass waste (gills) showed dose-dependent cytotoxic activity towards MCF-7 cell line in lower concentration. Meanwhile, for anti-inflammatory study GAGs from sea bass waste (gills) showed dose-dependent manner and also reduce NO production in LPS-stimulated cells. This research study concluded that, GAGs from sea bass waste are the alternative source that can be used for cancer and inflammation study.

Keywords: Anti-Inflammatory; Cytotoxic; Glycosaminoglycans; Sea Bass Waste

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