Insights into several activities of fucan from seaweed *Spatoglossum schröederi*

Hugo A O Rocha and Edda L Leite

Depto. de Bioquímica, Universidade Federal do Rio Grande do Norte -UFRN, Natal-RN

Fucans and fucoidans comprise a family of polydisperse polysaccharides composed of sulfated L-fucose. Usually homofucans are denominated as fucans, whereas heterofucans also known as fucoidans. They are not widespread in nature, occurring only in brown seaweed and tunicates, therefore, seaweeds are their most important source. Each seaweed synthesizes its own fucan possessing unique structural characteristics, which reflect in their biological, pharmacological and biotechnological proprieties. These features results in a low rate of redundancy in both structural type and mechanism of action. The brown seaweed, *Spatoglossum schröederi*, synthesizes three heterofucans known as fucan A, fucan B and fucan C. The 21 kDa fucan A was purified and its structure was suggested to contain a central core composed of core of beta (1-3) glucuronic acid-containing oligosaccharide of 4.5 kDa with branches at C-4 of alpha (1-3)- linked fucose chains. The fucose is mostly substituted at C-4 with sulfate groups and at C-2 with chains of beta (1-4) xylose, which, in turn, is also partially sulfated. This fucan is not mutagenic and toxic in vivo. In addition, fucan A showed several activities like as antithrombotic, antioxidant, antitumor, antiadhesive. Here we have showed recent data regarding the bioactivities of fucan A. Moreover, the relationship between structure and some biological action of this sulfated polysaccharide will also be reviewed.

Suported by CAPES, CNPq, MCTI, and FAPERN
Keywords: fucoidan; sulfated polysaccharides; brown seaweed.