

Accepted Manuscript

Title: Sulfated polysaccharide from *Sargassum tenerrimum* attenuates oxidative stress induced reactive oxygen species production in *in vitro* and in zebrafish model

Authors: Vasantharaja Raguraman, L. Stanley Abraham, Jyotsna, Palaniappan Seedevi, Gopal Sathish Kannan, R. Thirugnanasambandam, R. Kirubakaran



PII: S0144-8617(18)31130-5
DOI: <https://doi.org/10.1016/j.carbpol.2018.09.056>
Reference: CARP 14099

To appear in:

Received date: 23-7-2018
Revised date: 26-8-2018
Accepted date: 20-9-2018

Please cite this article as: Raguraman V, Abraham LS, Jyotsna, Seedevi P, Kannan GS, Thirugnanasambandam R, Kirubakaran R, Sulfated polysaccharide from *Sargassum tenerrimum* attenuates oxidative stress induced reactive oxygen species production in *in vitro* and in zebrafish model, *Carbohydrate Polymers* (2018), <https://doi.org/10.1016/j.carbpol.2018.09.056>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Sulfated polysaccharide from *Sargassum tenerrimum* attenuates oxidative stress induced reactive oxygen species production in *in vitro* and in zebrafish model

Vasantharaja Raguraman^a, L. Stanley Abraham^{a*}, Jyotsna^a, Palaniappan Seede^b, Gopal Sathish Kannan^c, R. Thirugnanasambandam^a and R. Kirubakaran^d

^a Centre for Ocean Research, Sathyabama Institute of Science and Technology, Chennai - 600 119, Tamil Nadu, India

^b Department of Environmental Science, Periyar University, Salem - 636011, Tamil Nadu, India

^c Department of Chemistry, Indian Institute of Technology Madras, Chennai - 600036, Tamil Nadu, India

^d Marine Biotechnology Division, ESSO-NIOT, Chennai – 600100, Tamil Nadu, India.

*Corresponding author

L. Stanley Abraham

Scientist-E,

Center for Ocean Research

Sathyabama Institute of Science and Technology

Chennai, Tamil Nadu - 600119

Mobile no: +91-9841658827,

Tel no/Fax no: 044 - 2450 3308 Extn- 5821/ 044 - 2450 0646

Email: stanleyabraham.cor@gmail.com

Highlights:

- Sulfated polysaccharide (SP) was successfully isolated from *Sargassum tenerrimum*.
- The structural features of SP were characterized by FT-IR, GC-MS, ¹H NMR.
- The molecular weight of SP was found to be 31 kDa.
- SP possess *in vitro* anti-oxidant effects in fibroblast cells.
- SP exhibits a protective effect against H₂O₂ induced oxidative stress in zebrafish.

Abstract

The sulfated polysaccharide (SP) was isolated from the brown alga *S. tenerrimum*. The chemical composition of SP composed of 57 ± 0.29% of total sugar, 1.14 ± 0.28% of protein and 25.6 ± 0.45% of sulfate. Elemental analysis of SP shows 28.8% of carbon, 4.02% of hydrogen and 0.29% of nitrogen. The molecular weight of SP was estimated as 31 kDa. Further, the SP was characterized through FT-IR, ¹H-NMR, GC-MS, XRD and TGA analysis. The DPPH and ABTS

Download English Version:

<https://daneshyari.com/en/article/11027194>

Download Persian Version:

<https://daneshyari.com/article/11027194>

[Daneshyari.com](https://daneshyari.com)