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National Conference on

“EMERGING TRENDS IN BIOLOGICAL SCIENCES AND ITS IMPACT”

ETBSI - 2023

25th March, 2023



CONFERENCE PROCEEDINGS



Organised by

DEPARTMENT OF MICROBIOLOGY

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FT-IR analysis and Emulsifying activities of crude polysaccharides extracted from *Ulva lactuca*

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Abstract:

In this current research the seaweed *Ulva lactuca* was collected from new harbor coastal region, Thoothukudi. After collection the samples were washed in seawater and rinsed in double distilled water. The leaf material was chopped and immersed in NaCl/CTAB solution in a centrifuge; the tubes were sealed with paraffin and stored in ice box between ice packs. The seaweed was dried and powdered. From the powdered sea weed exopolysaccharide was extracted. The exopolysaccharide was checked for total carbohydrate content. The carbohydrate content of exopolysaccharide from *Ulva lactuca* was found to be 61.54% and protein content was found to be 5.16%. FT-IR characterization of the crude exopolysaccharide revealed the presence of alkanes, alkyl halides, alkenes, sulphate and aliphatic compounds. Emulsification activity of the crude exopolysaccharide was performed, the highest emulsification activity was observed in coconut oil and lower emulsification activity was observed in palm oil. The antibacterial activity of exopolysaccharide showed a maximum zone of inhibition of 16mm against *Klebsiella sp.* and minimum inhibition zone against *E.coli*. Exopolysaccharides obtained from marine seed weeds has properties that render it suitable for application as a biological agent, bio-detoxifier, and emulsifier.

Keywords: *Ulva lactuca*, Exopolysaccharides, Carbohydrates, FT-IR.

Introduction

Marine algae are one of the largest producers of biomass in the marine environment (Bhadury and Wright, 2004). They produce a wide variety of chemically active metabolites in their surroundings, potentially as an aid to protect themselves surroundings, potentially as an aid to protect themselves against the other settling organisms. These active metabolites, also known



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978-93-95967-15-0

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