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GC-MS Profiling of Bioactive Compounds Inphenolic Extract of *Chnoospora minima* (Hering 1841)

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Abstract

Seaweeds, rich in bioactive compounds is important in development of drug leads and nutraceuticals. Brown algae is known for their rich bioactive compounds with numerous biological activities. However, Sri Lankan marine algae are underexploited. Hence, the present study aimed to determine the bioactive compounds present in different fractions (hexane, chloroform and ethyl acetate) of phenolic rich methanol extract of a Sri Lankan brown algae *Choonospora minima* for the first time. De-polysaccharide methanolic extract of *C. minima* was partitioned with hexane, chloroform and ethyl acetate with increasing polarity. The GC-MS analysis was performed two times for the same fraction using an Agilent Technologies gas chromatograph model 5975C and HP-5MS capillary column to increase the reliability of the results obtained. Maximum number of active compounds were identified in ethyl acetate fraction of *C. minima;* alkenes, phenolic compounds, ketones, thiophene derivatives and benzene-carboxylic acids. Among them, most of the compounds possess antioxidants(7,9-di-tert-butyl-1-oxaspiro(4,5)deca-6,9-diene-2,8-dione and 3,5-bis(1,1-dimethylethyl)-4-hydroxy octadecyl ester), anti-diabetic (2-phenylthiophene), anti-microbial (2-Tetradecene, Phenol,2,5-bis (1,1-dimethylethyl) and 1-Hexadecene) and anti-cancer (1,2-benzenedicarboxylic acid mono (2-ethylhexyl) ester and 1-nonadecene) activities.Whereas in chloroform and hexane fractions, four compounds (dodecanoic acid methyl ester,diethyl phthalate, methyl tetra-decanoate and hexadecanoic acid. methyl ester) was identified as common which exhibit antioxidant, cytotoxic and anti-diabetic activities. Methyl esters (9,12-octadecadienoic acid. methyl ester, octadecanoic acid. methyl ester and 9-octadecanoic acid. methyl ester) are abundant in chloroform fraction, exhibit antioxidant, anti-diabetic and cytotoxic effects. The GC-MS profiling data concluded that bioactive compounds present in fractions of *C. minima* play a significant role in medicine. Hence, isolation of active compounds from bioactivity guided fractionation is warranted.

Keywords: *Choonospora minima,* Hexane fraction, Chloroform fraction, Ethyl acetate fraction, GC-MS

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