

## Phytochemicals, Antimicrobial and Antioxidant Screening of Marine Microalgal Strain, Amphora Sp.

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**Abstract :** Marine microalgae are rich sources of novel and biologically active metabolites; therefore they may be used in the food industry as natural food ingredients and functional foods. They have several biological applications related to health benefits, among others. The aim of the study focused on the screening of phytochemicals from Amphora sp. biomass extracts, and to examine the in vitro antioxidant and antimicrobial potential. Amphora sp. biomass was obtained from CSIR (South Africa) and methanol, hexane and water extracts were prepared. The in vitro antimicrobial effect of extracts were tested against some pathogens (Staphylococcus aureus, Listeria monocytogenes, Bacillus subtilis, Salmonella enteritidis, Escherichia coli, Pseudomonas aeruginosa and Candida albicans), using the disc diffusion assay. Qualitative analyses of phytochemicals were conducted by chemical tests. The present investigation revealed that all extracts showed relatively strong antibacterial activity against most of the tested bacteria. The highest phenolic content was found in the methanolic extract. Results of the DPPH assay showed that the biomass contained strong antioxidant capacity, 79% in the methanolic extract and 85% in the hexane extract. Extracts have displayed effectively reducing power and superoxide anion radical scavenging activity. Results of this study have highlighted potential antioxidant activity in the methanol and hexane extracts. The results of the phytochemical screening showed the presence of terpenoids and sterols with potential applications as food flavorants and functional foods, respectively. The use of Amphora sp. as a natural antioxidant source and a potential source of antibacterial compounds and phytochemicals in the food industry appears promising and should be investigated further.

**Keywords :** antioxidants, antimicrobial, microalgae, phytochemicals, cymbella

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