

BIO-PROSPECTING FOR ACTIVE COMPOUNDS: FTIR AND GCMS PROFILING OF ETHYL ACETATE-EXTRACTED SECONDARY METABOLITES FROM SEA WATER-ORIGIN *ACINETOBACTER BAUMANNII* MP-1

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ABSTRACT

It is alarming and concerning that, as time progresses, due to lifestyle modifications and the emergence of resistant microbial strains, the need to explore novel drugs against them is escalating and becoming a trend. Natural products are versatile substances with remarkable qualities that could be manipulated to reap beneficial outcomes, if managed rigorously. Among the natural troves, the marine environment is one of the most jubilant environments as it harbors diverse ecosystems where organisms adapt various mechanisms and possess many complex molecules to tackle the harsh conditions around them. Bacteria are an omnipresent entity, and it has been proven previously that the bacteria from marine environments can produce secondary metabolites or marine natural products with many crucial biological applications. This study investigated the bioactive compounds present in the secondary metabolite (ethyl acetate extracted crude- EAEC) extracted from the antagonistic bacteria *Acinetobacter baumannii* (MP-1) isolated from seawater; concurrently, it also explored the possible pharmaceutical applications of the EAEC. FTIR analysis showed the presence of variety of functional groups and GC-MS spectroscopy unraveled the existence of a wide range of bioactive compounds, including the derivatives of oxazine, pentanoic acid, butanoic acid, dehydromevalonic lactone, etc. The identified compounds from the EAEC have all been previously recorded for their valuable (antibacterial, anticancer, antimalarial, and herbicidal) biological activities. It could be suggested that the EAEC from antagonistic bacterial strain MP-1 can be utilized as a drug after ascertaining its potential through further *in vivo* and *in vitro* trials.