

Chemical Profile of Marine Ascidian *Didemnum bistratum* and its Antibacterial and Mosquitocidal Properties

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ABSTRACT

Ascidians are sessile marine invertebrates with immense promise to produce bioactive molecules with prominent therapeutic applications. It is highly warranted to investigate their active biomolecules and pharmacological properties. The present study was focused towards the chemical investigation of methanolic extract of *Didemnum bistratum* using Fourier Transform Infrared (FTIR) Spectroscopy and Gas Chromatography-Mass Spectrometry (GC-MS) analysis. A total of 13 transmittance peaks corresponding to distinct functional groups were observed from the FTIR analysis. GC-MS analysis revealed the vapor phase elution of 234 metabolites. *D. bistratum* exhibited commendable inhibition of the bacterial strains *P. aeruginosa*, MRSA, *K. ascorbata*, *E. coli* and *K. oxytoca*. Active compounds of *D. bistratum* also exhibited pronounced larvicidal activity against the dengue vector mosquito *Aedes aegypti*. Further compound separation, Structural identification and bioassays may lead to the development of novel candidate drugs which could be lead compounds of pharmaceutical importance, in future.