

## Elucidation of Antibiofilm Mechanisms of Marine Extracts Against Infection and Preventing Antimicrobial Resistance (AMR)

**Nurfitriah Binti Halim**

PhD student, Institute of Climate Adaptation and Marine Biotechnology (ICAMB), Universiti Malaysia Terengganu, Malaysia

### Abstract:

The burgeoning growth of drug-resistant pathogens has reduced the effectiveness of current antibiotics in the management of infectious diseases. Therefore, this situation highlights the urgency to identify and develop potent antimicrobials derived from natural resources due to their abundance of bioactive compounds that might offer novel straightforward approaches with the least toxic manifestations and a low risk of acquiring resistance. In this study the extracts of *Stylissa carteri*, *Iotrochota baculifera*, and *Pasiflora edulis* were screened against *E. coli*, *P. aeruginosa*, *S. aureus*, and *B. subtilis* by the broth microdilution and disc diffusion assay. Components of the extract was identified by LC-MS and comparison to reference compounds. The toxicity of the extract was determined against rat skeletal muscle (L6) using MTS assay. *S. carteri* in methanolic extracts have shown incredible antibacterial activity against all the bacteria tested with MIC and MBC values of 0.781mg/mL and 12.5mg/mL, respectively. The extract was found to contain a high amount of various phytochemical compounds with antimicrobial properties, such as glycerol-myristate and erucamide. *S. carteri* is nontoxic to L6 cell line (IC<sub>50</sub> value was 85.29 µg/mL) in a dose dependant manner. Our preliminary investigation revealed that methanolic extracts of *S. carteri* have good antibacterial activity against all bacteria tested and the effect grew stronger with the concentration.