

# Isolation, Synthesis and Biological Evaluation of the Marine Bisditerpene Biselisabethoxane B.

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Due to the evolutionary process, disease-causing pathogens (such as tuberculosis and malaria) are developing resistance against the drugs used to combat them. Marine natural products (specifically secondary metabolites) have been an effective avenue of finding new compounds that may be used to fight such pathogens. The marine organism *Pseudopterogorgia elisabethae* has produced a vast number of secondary metabolites that have proven to be biologically active. The biological activities reported include anti-tuberculosis, antiplasmodial, anti-inflammatory, anti-viral and anti-neoplastic. Biselisabethoxane B, being a secondary metabolite from this organism, will likely possess biological activity against diseases such as tuberculosis, malaria, cancer, and hepatitis B among others. In our investigation, we will re-isolate the marine natural product Biselisabethoxane B from the Caribbean gorgonian soft coral *Pseudopterogorgia elisabethae* using a variety of chromatographic techniques (CC, HPLC, and TLC). In order to confirm the molecular structure of Biselisabethoxane B, we will apply some semi-synthesis techniques. Throughout the isolation and synthesis steps, the chemical characterization of this compound will be carried out by spectroscopic methods ( $^1\text{H}$ -NMR,  $^{13}\text{C}$ -NMR, etc.). Once we establish and confirm its molecular structure by synthesis, a series of bioassays will be carried out to establish its biomedical importance.