

# Biomolecules Derived-Marine Ecosystems as Attractive Targets for SRCD Applications

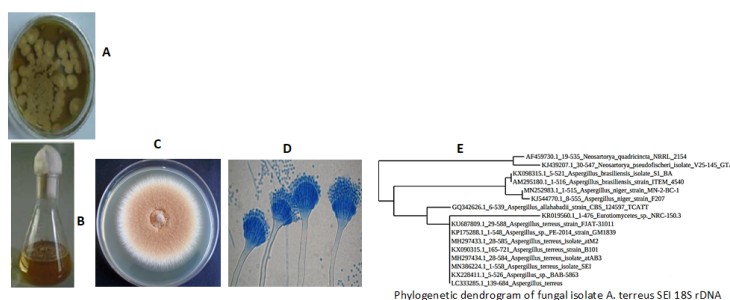
**Mohamed I. A. Ibrahim**<sup>a</sup>, Eman H. Zaghloul<sup>b</sup>, Ghada E. Hegazy<sup>b</sup>, Abeer A. M. El-Sayed<sup>a</sup>, Madelyn Moawad<sup>a</sup>, Mohamed Saleh Amer<sup>b</sup>

<sup>a</sup>Laboratory of Marine Chemistry, Marine Environment Division, National Institute of Oceanography & Fisheries, NIOF, Egypt

<sup>b</sup>Laboratory of Microbiology, Marine Environment Division, National Institute of Oceanography & Fisheries, NIOF, Egypt

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Marine ecosystems are aquatic environments of high salinity levels with characteristics physical and biological features [1]. They have been regarded as promising sources for isolation of new microorganisms (fungi, bacteria and actinomycetes) which are powerful producers of bioactive natural products *e.g* biodegradable polyesters, exopolysaccharides, carotenoids, *etc.* [2-4]. For example, the fungal exopolysaccharide produced by *Aspergillus terreus* (isolated from marine sediment) has been reported as anticoagulant and possesses cytotoxic activities against breast cancer and human skin fibroblast cell lines (IC<sub>50</sub> > 100 mg/mL and IC<sub>50</sub> ~ 47 mg/mL), respectively [4]. In addition, the C<sub>50</sub> carotenoid bacterioruberin was found to be the predominant compound produced by *Natralba* sp. M6 of marine origin, which demonstrated potent anticancer and antiviral activities [2]. Although numerous studies reported promising applications of several biomolecules derived from natural origin, rare studies went deep for their structural elucidation using Synchrotron-Radiation Circular-Dichroism spectroscopy (SRCD) [3, 5, 6]. In this context, there is a necessity of using SRCD for providing more detailed information about the secondary structure and the contents of  $\alpha$ -helix and  $\beta$ -strand segments with high accuracy. Then, combining SRCD data with bioinformatics can predict the tertiary-structure model of a protein which may facilitate understanding its biological mechanism of action [7].



**FIGURE 1.** Isolation, production and purification of exopolysaccharide produced from marine-derived *Aspergillus terreus* SEI with prominent biological activities.

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