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Isolation and physiological adaptation for biologically active marine actinomycetes as anti-tumor producers

Manal M El-Naggar¹, Samy A El-Assar² and Abir Mohamed Ali Shata¹¹National Institute of Oceanography and Fisheries, Egypt²Alexandria University, Egypt

Production of antitumor agents from alternative natural marine microbial resources may decrease or avoid the bad side effects of the used anti-tumor chemotherapeutic agents and may increase the specificity of the antitumor agents to be safer for human application. So, this study aimed to search for new alternative antitumor agent producers using two recommended bioassays (Red Potato Disc Bioassay and Sulforhodamine B Bioassay). The obtained results indicated the isolation of three new marine actinomycetes strains from the western harbor of Alexandria, they identified using the 16S rRNA gene sequence as *Streptomyces* sp. strain AMS11, *Nocardiopsis halotolerans* strain AMS10b and *Nocardiopsis halotolerans* strain AMS10a. The bio-toxicity test was carried out using the biomarker *Artemia salina*, they showed a moderate toxicity level ($LC_{50} < 1000$ ppm). The antitumor activities of their supernatants against the colon cancer cell line (HCT116) and the liver cancer cell line (HEPG2) showed promising results in comparison to the recommended chemotherapeutic drug 5-flourouracil used for the treatment of both liver and colon cancer cells. The optimization for antitumor activity was performed using the Plackett-Burman experimental design.

Biography

Manal M El-Naggar has completed her PhD from Alexandria University and Postdoctoral studies from Stanford University School of Medicine. She was the Head of the Microbiology Laboratory, NIOF for seven years 2007-2014, a premier Bio-Soft service organization. She has published more than 25 papers in reputed journals and has been serving as an Editorial Board Member of *Cell Biology Journal* and as a Microbiological Reviewer for many international journals.

mmelnaggar@yahoo.com

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