

Marine Actinomycetes: A Source of Novel Therapeutic Drugs

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Marine microorganisms widely distributed on our oceans of the earth and emerging as the great source for the discovery of natural products. Further they are developing as therapeutic agents for various human diseases. Antibacterial [1,2], antifungal [1-3], anti-parasitic [4], antiviral [5], anti-infective [6], insecticidal [4], antitumor [2], anti-inflammatory, antioxidant [7] and herbicidal compounds [8] as well as many other compounds are enzyme inhibitors [9] have been isolating from marine actinomycetes. Almost 60% of the antibiotics discovered in the year 1990 and most of the antibiotics (Streptomycin related antibiotics) are from the genus *Streptomyces* [10].

Marine drugs have been using for various diseases like cancer, typhoid, cholera etc, Hymenialdisine (HMD), a sponge-derived natural product reported as human kinase inhibitors with nanomolar activity. Several antitumor antibiotics like aporphine alkaloids have been isolated from marine actinomycetes. A new macromolecular peptide antibiotic, named AN-1 was isolated from the culture broth of *Streptomyces albus* AJ 9003 [11]. An antibiotic complex identical to Paulomycins A & B active against multiple resistant strains of staphylococci and other gram-positive bacteria was isolated from cultures of *Streptomyces albus* G [12]. Salinosporamide A, produced by the marine actinomycete, *Salinispora tropica*, shows strong inhibitory activity against the erythrocytic stages of the parasite cycle. Biochemical characterization supports the likely inhibition of the parasite 20S proteasome. Several marine-derived compounds used as anticancer agents are undergoing promising preclinical and clinical development. Therefore, the marine-derived actinomycetes act as a prominent reservoir for novel drug molecules and answer to several diseases.

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