



## Oceanography-2015: Oceanic bioactive molecules and marine natural products with biopharmaceutical potential

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### Abstract

The vast array of oceanic sources of bioactive molecules provides a new frontier in exploration and discovery. In blending a variety of ocean sciences, an innovative development of disciplines such as, proteomics, metabolomics, metagenomics as well as the study of a variety of oceanic derivatives of carbohydrate and lipid metabolism are yielding promising marine natural products. These are yielding remarkable potential in human, veterinary medicine, nutraceuticals and cosmeceuticals measurably contributing to enhancing the quality of life and perhaps even leading to considerable extension of longevity of the human life span while at the same time, reducing morbidity and disability resulting from chronic degenerative diseases and illnesses burdening terrestrial life forms. Phenomenal adaptive mechanisms by a wide variety of oceanic organisms including their marine toxins, of considerable greater potency arising from the significant biodiversity of oceanic life forms in comparison to land-based sources of natural products; provide enormous potential for exploration of bioactive molecules for biopharmaceutical development. Ocean-derived agrichemicals have already shown proven potential in optimizing and measurably augmenting crop yields for farmers. Oceanic sponges may lead to further procurement of bioactive molecules which shall deliver new and effective chemotherapeutic agents, anti-microbial, anti-inflammatories in treating a multitude of various forms of cancer as well as antiangiogenic effect in preventing metastatic spread of existing forms of cancer and thereby contributing to improved prognosis and extending survival for existing cancer patients. Marine natural products such as Triterpene glycosides derived from Sea Cucumbers are proving to be effective precursor bioactive molecules for a multitude of biomedical benefits including antimicrobial and especially potent anti-viral potential. It is therefore evident that marine natural products, delivering Oceanic Bioactive Molecules are a logical, current and future source of a vast array of promising new products for biomedical application. This is leading to an exciting new pioneering Era of scientific innovation in the new and fascinating biomedical disciplines of Infectious disease, Regenerative Medicine, Pandemic & Bioterrorism contingency planning, as well as stem-cell therapies, Many new Bio-markers in early disease detection and prevention, bio-engineering and 3-D printing among several new and exciting other technologies. This shall lead to enhanced repair as well as regeneration of new body parts, entirely new organs, human tissue damaged by disease, trauma, environmental exposure or even natural aging, associated with cost-prohibitive chronic degenerative illnesses. This Symposium at the Third International Conference of Oceanography shall delve into several of such fascinating subjects and thereby share information critical in the time-sensitive emergence of these burgeoning new subspecialties of oceanic and marine biomedical sciences

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