

## Marine Niche: Applications in Pharmaceutical Sciences

Marine microbial pharmacognosy: Prospects and perspectives

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### **Abstract:**

Modern scientific advancements and research on marine microbes has revealed their significance as producers of therapeutic products useful in treating various human diseases. Microbes in marine habitat have evolved to adapt to the harsh condition that prevails in the ocean. Their struggle to compete for space and nutrients has paved way for the synthesis of different novel enzymes possessing distinctive characteristics. Thus, marine habitat hosts many remarkable microorganisms that offer unique biologically active compounds, enzymes endowed with astonishing properties, and mechanism to survive in extreme environmental conditions. The utilization of marine biotic resources grows at an extraordinary growth rate of 12% per annum and is evident from about 4900 patents filed connected with marine genetic resources and 18,000 natural compounds. This concern has boosted research all over the world to explore the untapped potential hidden in marine microbes, which has lot of biotechnological applications that includes bioactive compounds (metabolites) for therapeutics, novel enzymes, cosmetics, and nutraceuticals. This book chapter will meticulously deliberate the utilization of marine resources by biotechnological applications for therapeutics like antibiotics, chemical compounds, biopolymer, enzymes, and various microbial biomedical purposes such as drug delivery and tissue engineering from marine biota (bacteria, fungi, and algae).