

# marine drugs

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## Marine Glycomics

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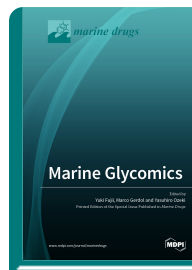
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Marine creatures are rich sources of glycoconjugate-containing glycans and have diversified structures. The advance of genomics has provided a valuable clue for their production and developments. This information will encourage breeding and engineering functional polysaccharides with slime ingredients in algae. These glycans will have the potential for applications to antioxidant, anticancer, and antimicrobial drugs in addition to health supplements and cosmetics. The combination of both biochemical and transcriptome approaches of marine creatures will lead to the opportunity to discover new activities of proteins such as glycan-relating enzymes and lectins. These proteins will also be used for experimental and medical purposes, such as diagnostics and trial studies.

The topic of marine glycomics is also focusing on understanding the physiological properties of marine creatures, such as body defense against pathogens and cancers. In the competitions for natural selection, living creatures have evolved both their glycans and their recognition. They have primitive systems of immunity, and few of their mechanisms are closely related to glycans. If we are able to describe the accumulation of data of glycans of creatures living in the seashore and the oceans, we may be able to anticipate a time when we can talk about the ecosystem with glycans. That knowledge will be useful for the development of drugs that cure our diseases and for an understanding of living systems in addition to the preservation of living environments.



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