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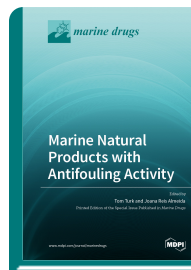
Marine Natural Products with Antifouling Activity

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Marine fouling affects most man-made surfaces temporarily or permanently immersed in the sea, causing important economic costs. Intense research is aimed at methods for preventing or reducing fouling development. The most widespread solution to inhibit fouling is to make surfaces unsuitable for settlers by coating them with antifouling paints containing toxic compounds. Most such antifouling agents give undesirable effects on nontarget species, including commercially important ones. The search for new nontoxic antifouling technologies has become a necessity, particularly after the ban of organotin compounds such as tributyltin (TBT), once the most widespread and used antifouling agent. Alternative organic and metal-based biocides are now used in antifouling paints, but their possible toxic effects on the aquatic environment are not yet fully understood. A nontoxic alternative for antifouling protection comes from the possibility of adopting natural antifouling compounds that are and may be found in marine sessile invertebrates like sponges, bryozoans, corals, and tunicates and in marine microorganisms. Such metabolites can prevent their producers from being fouled on by other organisms or be responsible for specific metabolic functions that may interfere with biofouling species adhesion. As natural marine compounds, they may inhibit settlement through a nontoxic mechanism without adverse effects to the environment. They could be developed into active ingredients of new antifouling coatings. So far, a rather limited number of natural products antifoulants (NPAs) has been isolated from marine organisms, but a huge reservoir of compounds with potential antifouling activity is hidden in marine organisms. The SI aims at the discovery of such



their activity, toxicity and potential application in environmentally friendly antifouling coatings.

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