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Marine Bacteria With Antagonic Activity Against Biofouling Forming Bacteria

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Abstract: Biofouling process occurs as succession of several organisms, from bacteria to invertebrates and has severe economic impacts over port and shipping infrastructures. This succession depends on the colonization success of microorganisms, so that controlling microfouling is often the solution to manage the whole process. Moreover, bacteria are known to produce antagonistic substances (Hughes and Fenical, 2010). Over the past few years, application of these natural compounds has aroused great interest in industry to prevent biofouling. In this study, we isolated bacteria with potential activity from different marine substrates (sediments, mangrove, invertebrate, algae). Bioassays of inhibitory activity by the well diffusion method were performed. Plates were cultured with biofouling forming bacteria; the medium where bacteria isolate grew was placed in wells made using a punch. The presence of inhibition halos was observed. One hundred and thirteen bacteria were isolated with which the antagonism bioassays were performed. It was found that 31 bacteria were active against biofouling forming bacteria; fourteen of them had activity against 3 or more strains. It was found that several strains of marine origin mainly from marine sediments and mangrove may have potential on its use for biofouling control.

Keywords: Bacteria, biofouling, antagonism, control

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