

MACROALGAE-ASSOCIATED BACTERIA WITH BIOTECHNOLOGICAL POTENTIAL

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Bacteria associated with marine organisms have shown potential producers of bioactive with biotechnological interest. Compounds produced by microorganisms have advantages, since they can be obtained in the laboratory and modified chemically and genetically. The objective of the present study was to isolate bacterial strains associated with marine macroalgae and test their biotechnological potential (biofouling control and medical importance). A total of 61 bacterial strains were isolated of four different macroalgae species from Arraial do Cabo region, using two different culture media (Marine Medium and Brain Heart Infusion). The number of isolated strains varied from 7 (*Ulva* sp.) to 19 (*Colpomenia sinuosa*). All each isolated strains were tested against seven indicator strains, being four of them related to biofouling (*Pseudoalteromonas elyakovii*, *Polaribacter irgensii*, *Pseudomonas fluorescens* and *Shewanella putrefaciens*) and three bacterial pathogens of medical importance (*Staphylococcus aureus*, *Escherichia Coli* and *Pseudomonas aeruginosa*). Fourteen strains did not inhibit the growth of any of the indicator strains. However, 31 strains were efficient in inhibiting at least two of the tested strains, showing potential production of bioactive compounds. The strains isolated from macroalgae *P. capillacea* and *Ulva* sp. in BHI medium were the most efficient in inhibiting the growth of biofouling and medical importance strains. These findings suggest that the isolated strains from macroalgae analyzed in the present study may contribute to the search for new sources of antimicrobial substances against microfouling and bacteria of medical importance.