158 Isolation and characterization of bacterial strains from a consortium associated to the Antarctic ciliate Euplotes focardii

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Ciliates (Alveolata, Ciliophora possess a diverse association of symbiotic bacteria. They can be present as endosymbionts or localized in the outer surface as ectosymbionts. In a previous study we reported the characterization of a bacterial consortium associated to E. focardii, a strict psychrophilic ciliate isolated from the Terra Nova Bay, Antarctica (Pucciarelli et al 2015), This consortium is composed by Bacteroidetes (19%), Alpha proteobacteria (28%), Beta proteobacteria (5%), and Gamma proteobacteria (33%) In the present study, we report the isolation of bacterial strains from this consortium. In particular, we were interested in the isolation of bacterial strains able to growth in the presence of pollutants, in order to verify their potential application in bioremediation. By using culture enrichment technique with different source of pollutants such as diesel oil, methanol and cadmium chloride, we succeeded to isolate three bacterial species. The amplification and sequencing of the 16S rDNA genes revealed that the isolated strains were Marinomonas sp, Rhodococcus sp, and Bacillus sp., respectively. Fluorescence In Situ Hybridization (FISH) technique revealed the intracellular localization of Marinomonas sp, whereas the other two strains are still under investigation. This study opens the way to the discovery of new bacterial strains that can grow under extreme conditions and that can be used in bioremediation. Furthermore, the characterization of the bacterial consortium in E focardii contributes to understand how different organisms cooperate for environmental adaptation.