

## XIII Biofouling, Benthic Ecology and Marine Biotechnology Meeting. 5 - 9 August 2019 - Arraial do Cabo, RJ.

### CHEMICAL DIVERSITY AND ANTIBACTERIAL ACTIVITY OF THE GENICULATE CORALLINE ALGAE *Jania crassa* J.V. LAMOUREUX

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Macroalgae are an important source of bioactive natural products with several biological activities including antibacterial, antiviral, antifungal and antifouling. The production of these compounds can be influenced by abiotic factors (temperature, light and nutrients) as well as biotic factors (competition and predation). The geniculate coralline red algae (Corallinales, Rhodophyta) have a worldwide distribution and great importance for reef ecosystems. Some compounds with biological activity have been discovered, but there are few studies about this group, mainly about the brazilian species. Thus, the aim of this study was to compare the lipophilic chemical profile of two *Jania crassa* populations and to evaluate the antibacterial potential against five fouling marine bacteria strains (*Vibrio aestuarianus*, *Pseudoalteromonas elyakovii*, *Polaribacter irgensii*, *Pseudomonas fluorescens* and *Shewanella putrefaciens*). The samples were collected on the rocky shores of Prainha and Anjos beaches (Arraial do Cabo - RJ), lyophilized and extracted with ethyl acetate and methanol (1:1) to yield the crude extract. The lipophilic extracts were analyzed by thin layer chromatography (TLC) and gas chromatography-mass spectrometry (GC-MS). For the bioassays with marine bacteria, extracts in the natural concentration were solubilized in dichloromethane (DCM) and incorporated into filter paper disks (5mm). Discs with the antibiotic rifampicin were used as a positive control and disks with DCM disks were used as a negative control. The GC-MS data were analyzed by the statistical method of principal components analysis (PCA) and antibacterial activity was analyzed by one-way (ANOVA). The results of the TLC and GC-MS showed that the extract from Anjos beach presented greater chemical diversity. The PCA analysis identified two substances (l-(+)-ascorbic acid 2,6-dihexadecanoate and (3 $\beta$ ) cholest-5-en-3-ol) responsible by separation of macroalgae populations. Both the extracts inhibited the growth of all bacteria, but the sample from Anjos beach had the inhibition significantly higher ( $p < 0,05$ ) against two bacteria (*P. fluorescens* and *S. putrefaciens*). Our results showed for the first time the natural products composition and the antibacterial potential of geniculate calcareous algae brazilian populations.

Financial support : Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - CAPES.