10th Brazilian Conference on Natural Products
XXXVI RESEM
4-7 November 2025, Belo Horizonte, MG, Brazil

Section: 02

METABOLIC AND BIOLOGICAL POTENTIAL OF PSEUDOALTEROMONAS SP. EXPLORED THROUGH THE OSMAC STRATEGY

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Pseudoalteromonas is a genus of marine bacteria studied for their production of secondary metabolites, including alkaloids, polyketides, and peptides, which exhibit antifungal, antibacterial, and algicidal activities. Genomic studies suggest that certain microorganisms possess a greater potential for metabolite production due to the presence of biosynthetic gene clusters that remain unexpressed under standard laboratory cultivation conditions. New methods have been developed to activate these silent genes, aiming to fully harness their metabolic potential for the discovery of novel natural products. Strategies employed include modifying cultivation conditions such as culture medium composition, temperature, pH, co-cultivation, and the use of chemical elicitors. The present work aimed to investigate and modulate the secondary metabolite profile of strains of the marine bacterium *Pseudoalteromonas* sp., isolated from the invasive coral *Tubastraea coccinea*, correlating the induced chemical variations with the antibacterial potential. The metabolic potential of strain BCS15 was investigated through cultivation in two different media supplemented with chemical elicitors, aiming to induce the production of novel metabolites. Chromatographic profile analyses of the extracts revealed variations in metabolite production by this strain under different elicitor conditions. Extracts from *Pseudoalteromonas* sp. strains cultivated in two diferent culture media with added elicitors were evaluated for antibacterial activity. Notable activity was observed against methicillin-resistant *Staphylococcus aureus* (MRSA) and *Klebsiella pneumoniae*. The authors thanks their institutions for support nd acknowledge the financial support provided by CNPq and FAPERJ.

Keywords: *Tubastraea coccinea, OSMAC, chemical elicitors, antibacterial activity.*