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Study of marine actinobacteria diversity from X region de Los Lagos and evaluation of genes PKS/ NRPS as markers of biological activity

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Marine bacteria of the phylum actinobacteria have shown to exhibit the ability to produce a wide range of drugs with multiple biological activities such as antimicrobial, antitumor, antiviral, antiparasitic, insecticides and others. These bacteria are widely distributed in marine environments, but its greatest diversity is found in sediments and sponges. PCR primers targeted production of secondary metabolites as Non-ribosomal peptide synthetases (NRPS) and polyketide synthases (PKS) is usual used as molecular markers of metabolic and biotechnological potential screening of these bacteria. In the present study we isolated 2400 strains of sponge and sediment samples, from Region de Los Lagos in Chile. The 16S rRNA gene sequencing showed that nearly 20% of these strains belong to phylum actinobacteria, compound of 22 different genera. The most representative genera found in the samples was *Streptomyces* spp., *Rhodococcus* spp., *Nocardiopsis* sp. and *Arthrobacter* spp. To determine the biotechnological potential of these strains one screening was performed, to detect the presence of PKSI, PKSII, PKSIII and NRPS genes. Result indicates that 80% of the strains had the presence of one of these genes. And about 30% of the strains obtained had genes two or more of the synthetic routes discussed. These results demonstrate that marine actinobacterias have broad potential for finding natural compounds with biological activity and sediment and sponges Los Lagos Region has a wide diversity of marine Actinobacterias.

Biography

Geraldine Wittwer is a Dr(c) in biotechnology of UTFSM and PUCV from Chile. She has 9 years' experience working in environmental marine Microbiology. Biochemistry from Austral University.

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