P24: Isolation of Actinomycetes from marine sediments with potential to produce bioactive compounds

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Introduction: The various health problems experienced by the humanity, together with an increasing number of antibiotic-resistant microorganisms have been driven scientists to look for additional reserves of new bioactive substances. Actinomycetes are an important source of bioactive compounds with industrial and pharmaceutical interest. The distribution of this vast microbial group in the oceans is largely unexplored, making oceans an untapped and promising source of novel bioactive compounds.

Objectives: This study aimed to isolate actinomycetes with the potential to produce bioactive compounds from a coastal marine environment.

Materials and Methods: The isolates were obtained from coastal marine sediments collected in Parque Natural do Litoral Norte, Esposende, Portugal. Three different pre-treatments and three selective media were tested. Identification of isolates was performed by 16S rRNA gene sequencing.

Results and Discussion: A total of 140 microbial colonies were isolated. Identification of each isolate is on-going. 16S rDNA sequencing results obtained so far curiously revealed that two isolates belong to the Firmicutes phylum, which also encompasses many bacterial producers of interesting bioactive compounds. One of these isolates may represent a new bacterial species.

Conclusion: The results so far obtained point to the isolation of a new bacterial species, which has potential to be a novel source of bioactive substances. There is also high potential of identifying additional novel species among the non-identified isolates. Novel isolates will be all tested for their capacity to produce bioactive compounds.

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