

**Structure elucidation of active metabolites of the marine- derived endophytic
Streptomyces sp. GSBNT10**

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The secondary metabolites study of the selected marine strain *Streptomyces* sp.GSBNT10 started by chromatographic analysis (PLC and HPLC) of the ethyl acetate crude extracts followed by molecular structures characterization by mass spectrometry and NMR spectroscopy. Using agar state fermentation, three pure bioactive molecules were obtained from the cultured strain GSBNT10, chemically characterized as members of the actinomycins family (reported to be produced by different species of the genus *Streptomyces*) and identified as: Actinomycin D, Actinomycin X2 and an Actinomycin D analogue.

The isolated compounds exhibited bioactivities against almost all the tested organisms including Gram negative and positive bacteria. The studied strain GSBNT10 was able to produce actinomycins on all the tested carbon sources.

In conclusion, these studies suggest that marine algae-actinobacteria associations are a particularly promising group from which novel metabolites can be elicited. The isolation of strains with antimicrobial activity indicated that marine seaweeds may represent an ecological niche, which harbors a largely untapped microbial diversity and a yet unexploited potential for new secondary metabolites.

Keywords: *Streptomyces*, agar state fermentation, structure elucidation, marine algae actinobacteria association