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ISOLATON AND CHARACTERIZATION OF BIOACTIVE PEPTIDES FROM THE MARINE ACTINOBACTERIA Streptomyces sp. BRA-214

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The marine ecosystem offers an extensive diversity of bioactive natural products. Algae, invertebrates and marine microorganisms are sources of specialized metabolites that act on multiple molecular targets. Preliminary studies from our group identified that the marine actinobacteria *Streptomyces* sp. BRA-214, recovered from sediments collected at the St. Peter and St. Paul Archipelago, produced peptides that interact with survivin, an apoptosis inhibitor protein and a relevant anticancer target. In this context, this study aimed at the isolation and structural characterization of peptides obtained from strain BRA-214. Initially, a screening comprising the cultivation of the bacteria in four distinct liquid culture mediums was carried out to identify improved conditions for production of the metabolites of interest. The extracts from each medium were obtained in ethyl acetate and evaluated by thin-layer chromatography (TLC) and cytotoxicity against HCT-116 cells. The extracts obtained in A1 (1% starch, 0.4% yeast extract and 0.2% peptone in reconstituted sea water) and ISP2 cultures were the most interesting concerning biological activity and chemical diversity, thus the strain was cultivated in large scale (5L) in the selected medium (A1). The extract was fractionated in Sephadex LH-20 column chromatography, yielding 45 fractions, which were analysed and pooled by similarity based on TLC. The fractions were interpreted in terms of metabolites intensity present in HPLC and some peaks based on previous results were selected for partial purification and initial characterization in ^{1}H NMR. Enriched fractions and purified compounds were interpreted in UHPLC-ESI-HRMS-MS and their respective mass spectra were compared with previous data and searched in Norine/GNPS databases. Four peptides were annotated and one of them, a major component from a peptide enriched fraction with *m/z* 704, was isolated and elucidated for its chemical structure, suggesting that it is an unprecedented compound. The identification and isolation of the peptides will allow further studies to advance beyond the affinity of these molecules with survivin, and reinforce the importance of addressing underexplored locations in search of new natural products with pharmacological relevance.

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