A Novel Antimicrobial Peptide Extract From Brazilian Coast Coral *Phyllogorgia dilatata*

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**INTRODUCTION:** The marine ecosystem consists in an enormous diversity of biomolecules source that could be used for numerous diseases treatment. Among the animals present in this system, the coral reefs are extremely important for marine environment since they are the first link in the food chain, which involves numerous species of mollusks, crustaceans, fishes and other organisms. In this highly competitive environment, organisms need chemical barriers to reduce or avoid microorganisms’ contamination. Among the molecules that protect such animals antimicrobial peptides (AMPs) are also included. Several studies have been reported the discovery of antimicrobial compounds in different organism such as sponges, quelicerates, tunicates, crustaceans and others. **MATERIAL AND METHODS:** The corals specimens *Palythoa caribaeorum*, *Carijoa riisei*, *Neospongodes atlantica*, *Muriceopsis sulphurea*, *Plexaurella grandiflora* and *Phyllogorgia dilatata* were challenged against multiple Gram-positive and –negative bacteria. Rich-fraction from *P. dilatata* was further purified by using Amicon® Ultra Centrifugal 10.000 MWCO associated to reversed-phase HPLC chromatography (C18) originating the peptide Pd-AMP1. **RESULTS AND DISCUSSION:** Bioassays showed that *M. sulphurea* and *P. dilatata* inhibited the development of most bacteria at a standard concentration of 200 µg.mL⁻¹. *P. dilatata* crude extract was ammonium sulfate (0-40%) fractionated showing higher activity against *E. coli* and *S. aureus* (30% and 80% respectively). Pd-AMP1 was able to decrease *S. aureus* development. Mass spectrometry analyses showed a monoisotopic mass of 5.372 Da and N-terminal peptide Pd-AMP1 sequenced showed no significant match with databank. **CONCLUSION:** Data here reported indicated that the prospecting of protein biomolecules and biotechnological potential from marine animals is still little explored and may serve as an alternative to common antibiotics.

Keywords: Reef coral, *Phyllogorgia dilatata*, peptides, human pathogenic bacteria

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