IDENTIFICATION OF PROTEASE INHIBITOR AND ANTIMICROBIAL PEPTIDES IN LASIODORA SP HEMOLYMPH

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Protease inhibitors are molecules which have physiological roles on the regulation of enzyme activity. Antimicrobial peptides are molecules that are produced by many tissues in a variety of invertebrates. This work aimed to detect antimicrobial peptides and protease inhibitor activity in the hemolymph of *Lasiodora* sp. The protease inhibitor activity of plasm was measured through residual activity of proteolitic enzymes trypsin, chymotrypsin, subtilisina and neutrophil elastase. Protease inhibitor was partially purified by affinity chromatrography on Trypsin Sepharose. The purification of antimicrobial peptides was performed using plasm and hemocytes samples. Extraction used serially linked Sep-Pak C_{18} colums with acetonitrile (3 x times). 40% fraction was concentrated, redissolved and subjected to phase-reverse chromatography on a semipreparative Jupiter RP-300 C_{18} column. The plasm presented inhibition activity against trypsin and chymostrypsin but it not present inhibitor activity against subtilisina, neutrophil elastase. After purification in Trypsin Sepharose, the inhibitor showed a Ki of 0.86 nM to trypsin. Partial purified peptides obtained from plasm samples showed 87.2% of antimicrobial activity against *Escherichia coli*. In addition, peptides obtained from hemocytes completely inhibited *Candida tropicalis* growth. Results demonstrated the presence of protease inhibitors and antimicrobial peptides in the hemolymph of *Lasiodora* sp.

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