

PURIFICATION AND CHARACTERIZATION OF NEW ANTIMICROBIAL PEPTIDE FROM *Psidium guajava* SEEDS

Lottermann, M.T.¹; Pelegrini, P.B.², Franco, O.L.²., Freitas, S. M¹

¹Laboratório de Biofísica, UnB-DF, Brasil; ²Centro de Análises Proteômicas e Bioquímicas, UCB-DF, Brasil

The increase on pathogenic microorganism's resistance to antibiotics has been one of the world problems in the health's area. Several studies have reported anti-fungal and anti-bacterial activities of the plant defensins. Defensins are smaller cationic proteins of 45 to 54 amino acid residues stabilized by four disulfide bonds with molecular mass of approximately 5 kDa. In this work, a protein of 6.029,34 Da was partially purified from guava seeds (*Psidium guajava*). The crude extract was obtained from triturated seeds in 0.6 M NaCl and 0.1% HCl, followed by 80% ammonium sulfate precipitation. The precipitate was dialyzed and lyophilized. The purification was carried out by ion exchange chromatography in Red-Sepharose CI-6B resin, followed by reversed phase HPLC. The purity and molecular mass were analyzed by mass spectrometry (MALDI-TOF). Guava peptide presented bacteriostatic effect against two gram-negative bacteria, *Proteus* sp. and *Klebsiella* sp., inhibiting over 50% of those bacteria growth. According to these initial analyses, the purified protein was classified into defensins family. These results addresses further studies concerning the use of the *P. guajava* seeds as a natural source for treatment of endemic diseases caused by bacteria and fungi organisms.

Key words: Defensin; Protein purification; anti-bacterial activity.

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