

## Bioprospection of Antimicrobial Peptides in Eggplant Leaves

Almeida, H.O.<sup>1,2</sup>; Barbosa, M.O.<sup>1,2</sup>; Pereira, T.H.A.<sup>1,2</sup>; Games, P.D.<sup>1,2</sup>; Romeiro, R.S.<sup>3</sup>; Baracat-Pereira, M.C.<sup>1,2</sup>.

<sup>1</sup>Departamento de Bioquímica e Biologia Molecular, UFV, MG; <sup>2</sup>BIOAGRO, UFV, MG; <sup>3</sup>Depto. Fitopatologia UFV, MG, Brasil.

Plants of different varieties of eggplant present resistance against some plant-pathogens. Antimicrobial peptides (AMPs) could be part of this natural defense system. The goal of this work was to extract, purify and characterize plant AMPs to be use in the commercial defense of plants. Leaves were powdered, macerated (Tris-HCl added of protease inhibitors), the extract was centrifuged and the supernatant corresponded to the Soluble Extract (SE). The precipitate was washed (water), extracted with LiCl (added of protease inhibitors), the homogenate was centrifuged and the supernatant was named Cell-Wall Extract (CWE). SE and CWE was fractionated (ammonium sulfate and heating) and separated by gel filtration chromatography (Sephadex-G10). Four pools both for SE and for CWE were obtained, desalted, concentrated and submitted to antibacterial tests. *Ralstonia solanacearum* was more susceptible to the inhibitory effects of both extracts. Both for ES and for EP, the pool 1 was more effective in the control of the growth of the two evaluated bacteria, in general for the highest concentration used, reaching more than 60% inhibition for SE-Pool 1. SDS-Tricine-PAGE of fractions indicated the presence of peptides (less than 6 kDa). Two fractions were separated in a C18-RP-HPLC column, and the recovered peaks were submitted to mass spectrometry analysis. Molecules with molecular mass in the peptide range were detected, around 4 kDa. This peptides are now being sequenced. The others peptide peaks are also of interesting, and will be submitted to mass spectrometry analysis, amino acidic sequencing, and antimicrobial tests, aiming to select effective peptides against plant pathogens that are of interest in the agribusiness.

Keywords: antimicrobial peptides, eggplant, plants defense  
Supported by FAPEMIG, CNPq, CAPES, FINEP.