

## Potential Application of Antimicrobial Peptides from Leaves of Bell Pepper `Magali R`

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Antimicrobial peptides (AMPs) have been considered by researchers as potential defense compounds to be used in agribusiness. The objective of this work was to bioprospect the antimicrobial potential of peptide-enriched fractions from leaves of bell pepper (*Capsicum annum`Magali R`*) leaves against plant pathogens of commercial importance, aiming biotechnological application. Leaves of bell pepper were macerated with Tris buffer added of protease inhibitors, the homogenate was centrifuged, and the supernatant was named soluble extract (SE). The precipitate was resuspended in LiCl solution containing protease inhibitors, centrifuged and the supernatant was named cell wall extract (CWE). SE and CWE were fractionated with ammonium sulfate, following two ultra-filtration steps (AMICON-Millipore, 1-10kDa). SE1-10 and CWE1-10 were used to evaluate the antimicrobial activity against plant-pathogenic microorganisms and were submitted to C18- and C4-RP-HPLC, and to MS (MALDI/TOF-TOF). SE1-10 and CWE1-10 were able to inhibit the growth of the bacteria *Ralstonia solanacearum*, *Clavibacter michiganensis* ssp. *michiganensis*, *Erwinia carotovora* ssp. *carotovora* and the fungus *Alternaria solani*. Thirteen peaks from SE1-10 after C18-RP-HPLC, and two peaks from CWE1-10 were selected for further analyses. Peptide bands were detected in different peaks. The peak-3 from SE1-10 was resubmitted to a C4-RP-HPLC and produced the peak 3.1, which was resubmitted to a C18-RP-HPLC, and produced the peak D, getting MM 4,242.2 and 4,398.6 Da. These peptides are now being sequenced. These antimicrobial extracts can be biotechnologically exploited for commercial application as defense compounds.

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