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THE PLANT-DERIVED PEPTIDE PPC20 IS MORE POTENT THAN CECROPIN B AGAINST *Ralstonia solanacearum* WITH LESS TOXICITY TO HUMAN CELLS[1] / O peptídeo derivado de plantas, PPC20, é mais efetivo que a Cecropina B no controle de *Ralstonia solanacearum* e menos tóxico a células humanas.

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The phytobacterium *Ralstonia solanacearum*, causative agent of bacterial wilt in several agronomically important crops, has limited disease management strategies in place. The negligible effect of well-established antimicrobial peptides (AMPs), like cecropin B (CecB), on this pathogen calls for the development of novel rationally-designed therapies. Also, the traditionally successful strategy of generating transgenic resistant lines faces severe criticism for using non-native peptides, like the moth-derived CecB. Previously, the antimicrobial properties of several alpha-helical (AH) cationic peptides (PPC20, CHITI25, etc) encoded by plant genomes have been validated against three plant pathogens (*Xylella fastidiosa*, *Xanthomonas arboricola*, and *Liberibacter crescens*). In the current work, the effect of these peptides, as well as other AMPs derived from human proteins, are determined on *R. solanacearum*. Remarkably, PPC20 (a linear AH-peptide within the existing structure of phosphoenolpyruvate carboxylase) has a three-fold improved MIC on *R. solanacearum* compared to CecB (25μM vs 75μM) and lower toxicity (20% vs 48%) on human intestinal epithelial cells. The length of the linear-AMPs seemed to impact the efficacy, exemplified by the ineffectiveness of the AMP CATH12, corresponding to residues 18 to 29 of cathelicidin (LL-37), on *R. solanacearum*. Thus, PPC20 can be a promising candidate as a novel defense mechanism expressed by transgenic lines designed to be resistant to bacterial wilt.

Keywords: Phosphoenolpyruvate carboxylase; α-helical antimicrobial peptides; Kill-curves; MTT cell viability assay; Bacterial wilt.

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