

## DISCOVERY OF NEW ANTIMICROBIAL PEPTIDES BY PLANTS GENOME MINING

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*antimicrobial peptides, genome mining*

The past decade has witnessed a revolution in the genomics field. The great efforts made in the plants genomics sequencing projects has resulted in the accumulation of massive amount of DNA information in public databases. The availability of this huge amount of data has led to the emergence of an approach called genome mining. The term genome mining refers to the activity of searching the genomes for DNA sequences coding for particular products. In this study the plants genome sequencing data available in such public database have been exploited for the identification of new antimicrobial peptides (AMPs) useful for application in food preservation and food safety. Plants are known to produce AMPs that act against pathogens. Here we present a bioinformatics workflow developed to identify conserved open reading frame (ORFs) coding for small peptides with antimicrobial activity. Some of the predicted AMPs were synthesized and tested for antimicrobial activity against a panel of foodborne pathogenic and commensal bacteria. The MIC was determined against *Escherichia coli*, *Salmonella*, *Pseudomonas fluorescens*, *Bacillus cereus* and *Listeria monocytogenes*. The antagonistic activity of the most promising peptides was assessed in food models. The results obtained are also reported.