

STORAGE PEPTIDES: THE SECRETE GUARD OF THE SEEDS.

Octávio Luiz Franco

Centro de Análises Proteômicas e Bioquímicas, Programa de Pós-Graduação em Ciências Genômicas e Biotecnologia, UCB, Brasília – DF, Brazil

An important worldwide problem consists in an expressive increasing in economic and healthy losses caused by pathogenic bacteria. In order to reduce these diseases in humans and plants, several studies have related the screening of defense peptides with antibacterial activities. In this research, fruit and cereal peptides were purified and challenged against fungi and bacteria with the ability to colonize humans and vegetables. All peptides evaluated caused a remarkable reduction on pathogens growth. Peptides molecular masses, obtained by SDS-PAGE and mass spectrometry, showed approximately 5.0 to 6.0 kDa. Therefore, amino acid sequencing revealed that primary and theoretical tertiary structures showed enhanced identity to plant storage seeds as glycine-rich and 2S protein families. Combining all results, a double function of these protein classes was observed. In fact they are common sources of carbon, nitrogen and sulfur in seeds. Therefore, our studies indicate that they presented the ability to reduce pathogen infections as a secondary function. These suggest that all peptides here described could, in a near future, contribute to development of novel biotechnological products as natural drugs and bioengineered resistant plants.

Financial Support: CAPES, CNPq, EMBRAPA and UCB.

Keywords: antimicrobial peptides; plants, infections