

## Isolation of Antimicrobial Compounds from Jenipapo (*Genipa americana* L.) Fruits

Meneguetti, B.T.<sup>1</sup>; Machado, L. dos S.<sup>1</sup>; Sousa, G.A.A.<sup>1</sup>; Migliolo, L.<sup>1</sup>; Carvalho, C.M.E.<sup>1</sup>; Franco, O.L.<sup>1,2</sup>

<sup>1</sup>S-inova Biotech, Programa de Pós-Graduação em Biotecnologia, Universidade Católica Dom Bosco, Campo Grande-MS, Brazil; <sup>2</sup>Centro de Análises Proteômicas e Bioquímicas, Pós-Graduação em Ciências Genômicas e Biotecnologia, Universidade Católica de Brasília, Brasília-DF, Brazil.

**INTRODUCTION:** Pathogenic microorganisms have been responsible for the wide majority of intestinal infections, which are commonly related to factors such as poor sanitation and hygiene. Among novel alternatives to antibiotics, antimicrobial peptides (AMPs) have been found in several natural sources including plants. In fruits, multiple AMPs classes have shown deleterious activities against Gram-positive and -negative bacteria that cause intestinal infections. **OBJECTIVES:** In this context, our study aims to isolate AMPs from jenipapo (*Genipa americana* L.) fruit pulp and further evaluate its effects toward Gram-positive (*Staphylococcus aureus* and *Enterococcus faecalis*) and Gram-negative (*Escherichia coli*) bacteria. **MATERIAL AND METHODS:** Jenipapo fruits were collected and pulp was extracted with a solution containing HCl 1% and NaCl 0.1 M. After centrifugation, crude extract supernatant was applied onto a polyamide chromatography. Subsequently, non-retained fraction was applied onto an ionic exchange DEAE-Sepharose resin, previously equilibrated with 50 mM Tris-HCl buffer, pH 8.0. Retained proteins were eluted with a linear NaCl (0-1.0 M) gradient of. The molecular masses were determined by SDS-PAGE and MALDI-ToF analyses **RESULTS AND DISCUSSION:** Crude extract and retained fraction of polyamide chromatography showed proteinaceous bands between 16 - 75 kDa. These fractions were evaluated at concentration of 256 µg.mL<sup>-1</sup> causing inhibition of 61.4% against *E. coli*, 62% against *S. aureus* and 53.9% toward *E. faecalis*. Moreover, ion exchange chromatography retained proteins presented 25-50 kDa. Such fraction presented inhibition rates of 47.6%, 38.9% and 17.3% against *E. coli*, *S. aureus* and *E. faecalis*, respectively, at 128 µg.mL<sup>-1</sup>. **CONCLUSIONS:** The isolation of proteins with antimicrobial activity from jenipapo (*G. americana* L.) pulp seems to be a novel alternative in the development of drugs for control pathogenic intestinal bacteria resistant to conventional antibiotics.

**Keywords:** antimicrobial peptides, intestinal infection, pathogenic bacteria.

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