

Identification of Antimicrobial Proteins from Exocarp, Mesocarp and Seeds of *Passiflora alata* Curtis.

Ribeiro, S. M.¹, Dias, S. C.², Pinto, M. F. S.², Nascimento-Silva, O.², Fensterseifer, I. C. M.², Cardoso-Silva, C. B.³, Oliveira, A. C.³ and Franco, O. L.²

¹Universidade Federal de Juiz de Fora, Juiz de Fora, MG;

²Centro de Análises Proteômicas e Bioquímicas, Universidade Católica de Brasília, Brasília, DF;

³Universidade Estadual do Sudoeste da Bahia, Vitória da Conquista, BA.

The increase of bacterial resistance is actually one of the major's threats to human health. In order to help to solve this problem, several studies about plant antimicrobial peptides have been carried out. For this reason our aims consist to evaluate the antimicrobial activity of proteins isolated from *Passiflora alata* Curtis exocarp, mesocarp and seeds. Peptides extraction was performed using a solution containing 0.6M NaCl and 0.1% HCl in a proportion 1:3 (w/v). Suspension was centrifuged at 4,000 rpm for 40 min, at 4°C and the supernatant was precipitated with ammonium sulfate at 100% saturation. After centrifugation, the precipitate was dialyzed (*cut off* 3.5 kDa) against distilled water and lyophilized. Rich fractions were challenged toward different human pathogenic bacteria such as *Salmonella typhimurium*, *Escherichia coli*, *Klebsiella pneumoniae* and *Staphylococcus aureus*. Distilled water was used as negative control and 40µg ml⁻¹ chloramphenicol, as positive control. The bacterial growth was monitored by turbidimetry (OD 595nm). All tissues extracts evaluated reduced 30% of *K. pneumoniae* development. Furthermore, mesocarp and exocarp were also active toward *S. typhimurium* (39% and 37%, respectively). None clear inhibition was observed to others bacteria. SDS-PAGE analyses presented a wide protein range in exocarp (15 to 80 kDa) and mesocarp (15 to 70 kDa) protein profile. These data indicate that *P. alata* compounds could contribute to the development of biotechnology tools against human infection.

Keywords: bacterial resistance, antimicrobial peptides, *Passiflora alata* Curtis