

Antimicrobial Activity from *Hibiscus rosa-sinensis* L. Flowers Against Human Pathogenic Bacteria

Fensterseifer, I. C. M.¹, Almeida, R. G.¹, Amaro, D. S.¹, Costa F. T.¹,
Neto, S. M.¹, Pinto, M. F. S.¹, Moreira, J. S.¹, Franco, O. L.¹

¹ Centro de Análises Proteômicas e Bioquímicas, Programa de Pós-Graduação em Ciências Genômicas e Biotecnologia, Universidade Católica de Brasília, Brasília-DF, Brazil.

During last decade, the efforts to combat multidrug-resistant microorganisms are increasing, due their enhanced resistance to conventional drugs. In order to try to solve this issue novel antibiotic sources have been screened from plants, such as antimicrobial peptides. These components are important for natural defense system against invading pathogens. Moreover, *Hibiscus rosa-sinensis* has been commonly used for treatment of a wide variety of diseases, being explored in folk medicine on many Asian countries. In this research, proteins from *H. rosa-sinensis* red petals showed an expressive activity toward numerous bacterial classes. Firstly, *H. rosa-sinensis* proteins were extracted with a solution of 0.6 M NaCl and 0.1% HCl, following ammonium sulphate precipitation (100%). After dialysis, this fraction was able to completely inhibit the development of *Klebsiella* sp., *Streptococcus pyogenes*, *Proteus* sp. and *Escherichia coli*. Moreover, this sample was applied onto an anionic chromatography DEAE-Sepharose, generating a retained fraction (RF) and non-retained fraction (NRF). The RF was able to inhibit *Klebsiella* sp. (29.49%) growth and NRF presented *Klebsiella* sp. antibacterial inhibition (31.65%). Electrophoreses analysis showed proteins with a wide molecular mass range of 116 kDa to less than 14.4 kDa in both fractions. In summary here reported suggests that these proteins could be utilized in the development of novel antibiotic against gram-negative and positive bacteria.

Key words: Antimicrobial Peptides, Human pathogenic bacteria, *Hibiscus rosa-sinensis* Flowers.

Financial support: CNPq, CAPES and Universidade Católica de Brasília.