Antibacterial proprieties of an Inhibitor Peptidase from *Erythrina poeppigiana*

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INTRODUCTION. Peptidase inhibitors have been widely used against infectious agents in the treatment or prevention of various diseases. The molecular diversity of protein derivatives is higher in relation to synthetic products. Therefore, the search for new antibacterial agents derived from plant proteins is a real alternative against the increase of bacterial resistance to drugs. *Erythrina poeppigiana* is a species well-known by its pharmacological properties and was studied here. **OBJECTIVE:** To purify peptidase inhibitors from *Erythrina poeppigiana* seeds and screening for antibacterial activity against some bacteria of medical interest. **MATERIAL AND METHODS**: Seeds of *Erythrina poeppigiana* were submited to the classic purification process for peptidase inhibitors, as follows. Seeds were peeled, mashed, delipidated with hexane and subjected to extraction in phosphate buffer. The crude extract was dialyzed, lyophilized, chromatographed in the Sephadex G-75, trypsin-sepharose 4B columns, subsequently,C-18 HPCL columns. The peptidase inhibitor was tracked at each step by antitryptic assays using BApNA as specific substrate. The active protein pool was tested in vitro against *Staphylococcus aureus*, *Escherichia coli*, *Acinetobacter baumannii* e *Enterobacter cloacae* by broth microdilution method. **RESULTS AND DISCUSSION**: The crude extract of *E. poeppigiana* subjected to gel filtration chromatography on Sephadex G-75 resulted in elution profile with three fractions. The second fraction, which demonstrated inhibitory activity against trypsin, was applied onto the affinity column Trypsin-sepharose. The retained proteins (EPTI) was further purified by HPLC in analytical column and three active fractions were observed. EPTI showed inhibition of about 50% for *Staphylococcus aureus*, *Escherichia coli*, *Acinetobacter baumannii* and *Enterobacter cloacae*. **CONCLUSIONS:** These results EPTI contributed to understanding the use of this peptidase inhibitor in antimicrobial activity as proposed for future use as therapeutic agents.

Keywords: Inhibitors of peptidases, *Erythrina poeppigiana*, Antimicrobial protein

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