

Gastroprotective and Antielastase Effect of Protein Inhibitors from *Erythrina velutina* Seeds in an Experimental Ulcer Model

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INTRODUCTION. Gastric ulcer is an inflammatory disease where human neutrophil elastase (HNE) hyperactivity has a prominent role in the inflammatory process. Trypsin and chymotrypsin inhibitors from *Erythrina velutina* seeds have been previously isolated by our group. In previous studies using a sepsis model, we demonstrated the anti-tumor and anti-inflammatory action of these compounds. **OBJECTIVES:** This study aimed to evaluate the gastroprotective and antielastase effect of protein inhibitors from *Erythrina velutina* seeds in an experimental stress induced ulcer model. **MATERIAL AND METHODS:** Two protein isolates from *E. velutina* seeds, with antitrypsin (PIAT) and anti-chymotrypsin (PIAQ) activities were tested. Six groups of animals (female Wistar rats, n = 6) went through ulcer induction using ethanol (99%). Before ulcer induction, these animals received during 5 days one of the following: 1- PIAT (0.2 mg/Kg), 2- PIAT (0.4 mg/Kg), 3- PIAQ (0.035 mg/Kg), 4- Ranitidine hydrochloride (50 mg/Kg), 5- Saline solution (0.9%), 6- No intervention (Sham). **DISCUSSION AND RESULTS:** Both protein isolates showed a high affinity and inhibitory effect against HNE, with 84% and 85% of inhibition, respectively. Both PIAT and PIAQ protected the gastric mucosa against ulcer, preventing hemorrhagic lesions, edema and mucus loss. No histologic toxic effects of PIAT or PIAQ were seen in liver and pancreatic cells. **CONCLUSIONS:** These results show that protein isolates from *E. velutina* seeds have significant gastroprotective effects, emerging these compounds as natural candidates for gastric ulcer prevention.

Key words: antitrypsin; antichymotrypsin; gastric mucosa; gastric ulcer; neutrophil activity

Source of funding: FAPERN, CNPq and CAPES