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Mechanisms of gastroprotection by ethyl acetate fraction of hot water extract of *Trichosanthes cucumerina* Linn.

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Trichosanthes cucumerina Linn (Family: Cucurbitaceae), locally known as Dummella is commonly found in Asian countries including Sri Lanka. In Sri Lanka, the aerial parts of *Trichosanthes cucumerina* (T.C) are used as a remedy for gastric ulcers. In a previous study, it was found that the ethyl acetate fraction of hot water extract of T.C aerial parts (EAF; 75 mg/kg) possesses marked gastroprotective properties as evidenced by its potential to inhibit the formation of gastric lesions induced by absolute ethanol in rats. The aim of the present study was to evaluate the mode of gastroprotective activity mediated by EAF on production of (a) histamine (b) mucus in stomach (c) acidity and (d) volume of gastric juice.

Forty male and female Wistar rats were divided into five groups with equal male female ratios and maintained under standard conditions. For investigating the antihistamine effect, groups 1-3 were orally administered EAF (75 mg/kg), reference drug Clopheniramine (0.40 mg/kg) and distilled water (control) respectively. After 1 hour histamine dihydrochloride (200 µg/mL) was subcutaneously injected and the area of the wheal formed measured. Effects of EAF on gastric acidity, volume of gastric juice and mucus content were evaluated using groups 4-5 against a distilled water control using standard protocols. EAF showed potent anti-histamine activity with a significant ($p \leq 0.05$) reduction (25.6 %) in the wheal area of the rats when compared with the control. Administration of the EAF significantly ($p \leq 0.05$) increased the amount of mucus produced by the rat gastric mucosa (control vs treatment: 198.6 ± 9.2 vs 402.1 ± 5.8 µg/stomach). Further, compared with the control, rats treated with EAF showed a significant ($p \leq 0.05$) reduction in free acidity (45 %) and total acidity (48 %) in the gastric juice. pH of the gastric juice increased from 3.2 to 6.1. However, there was no significant difference in the volume of gastric juice. In conclusion, EAF mediates gastroprotection via inhibiting histamine production and decreasing the acidity of gastric juice and enhancing mucus content in stomach.

Keywords: *Trichosanthes cucumerina* Linn, gastroprotection, antihistamine effect, gastric juice, Wistar rats

Acknowledgement: National Research Council (NRC) Grant No: 12-23