

Summer Meeting, 15–18 July 2013, Nutrition and healthy ageing

Suppression of gastric ulcer in mice by administration of *Erigeron canadensis* extract

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Erigeron canadensis (*Conyza canadensis*) is an annual or biennial herb, widely distributed all over the Korea. It is also known to be horseweed or Canadian horseweed, or butterweed in North America and Central America⁽¹⁾. Although this plant has been used as a folk medicine to treat allergic diarrhea, stomatitis, otitis media, conjunctivitis, and acute toothache, and its several biological activities such as anti-inflammatory, anticoagulant and anti-platelet activities have been reported, the effect of this plant on gastric ulcer has not been investigated⁽²⁾.

In our study, the 70% ethanolic extract (EEC) of the aerial parts of *E. canadensis* was found to protect the gastric ulcer induced by HCl/ethanol in mice. The administration of HCl/ethanol produced lesions on the gastric mucosa which were significantly and dose-dependently reduced from 74.4% ulceration percentage to 14.4% in the animals pretreated with this extract, *p.o.* at the doses of 1 ($54.6 \pm 10.2 \text{ mm}^2$), 10 ($21.6 \pm 6.4 \text{ mm}^2$) and 100 mg/kg ($10.6 \pm 4.5 \text{ mm}^2$) (Fig. 1).

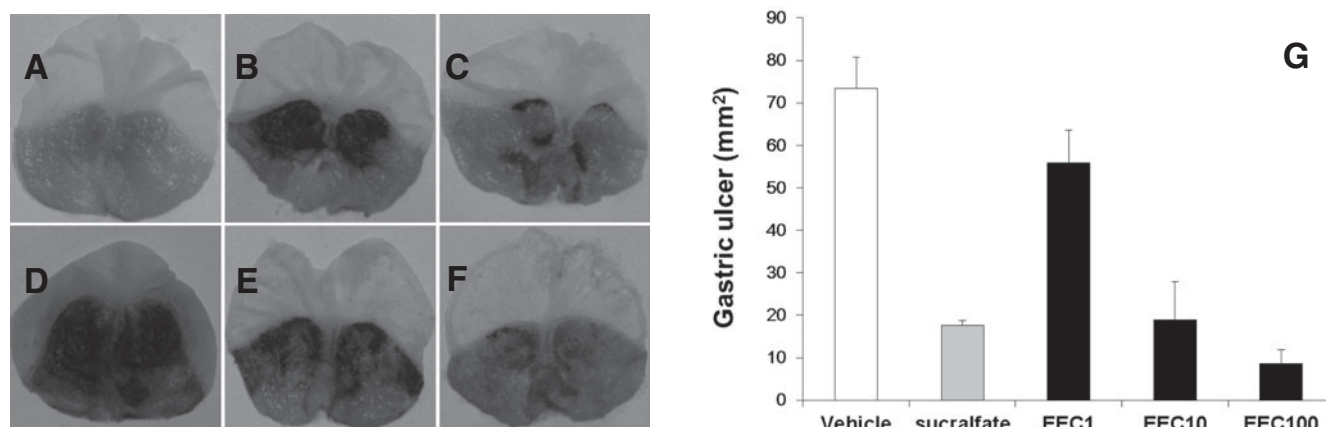


Fig. 1. (A), normal stomach; (B), glandular stomach treated with vehicle; (C), the stomach of positive control group treated with sucralfate, 100 mg/kg, *p.o.*; (D~F), the stomach of test groups treated with EEC, 1, 10, and 100 mg/kg, *p.o.*, respectively, 1 h before administration of 150 mM HCl/ethanol; (G) determination of the gastric ulcer area (mm²). Data are expressed as mean \pm S.E.M., *n* = 6 to 10.

In case of the group pretreated with EEC at the dose of 100 mg/kg, the protective effect was higher than that of sucralfate used as a reference drug. Under histological evaluation, pre-treatment with EEC reversed the alterations such as inflammation, edema, moderate hemorrhage and a great loss of epithelium cells presented by HCl/ethanol treated stomachs, and the histological aspect was similar to those observed in normal stomach and the pretreated group with the reference drug.

EEC treatment decreased NO production in a murine macrophage cell line, Raw 264.7 in a dose-dependent manner as follows: 25, 40 and 64% reductions, respectively, at the concentrations of 1, 10 and 100 $\mu\text{g/ml}$. In addition, EEC did not affect on the cell viability and it showed potent DPPH radical scavenging activity.

This work was supported by grants from the Connected Cooperation Projects of Metropolitan Economic Areas (Grant # A004500005), Ministry of Knowledge Economy, Republic of Korea.

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2. Yan MM, Li TY, Zhao DQ *et al.* (2010) *Chin Chem Lett* **21**, 834–837.