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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 ($54.6 \pm 10.2\,mm^2$), 10 ($21.6 \pm 6.4\,mm^2$) and 100 mg/kg ($10.6 \pm 4.5\,mm^2$) (Fig. 1).

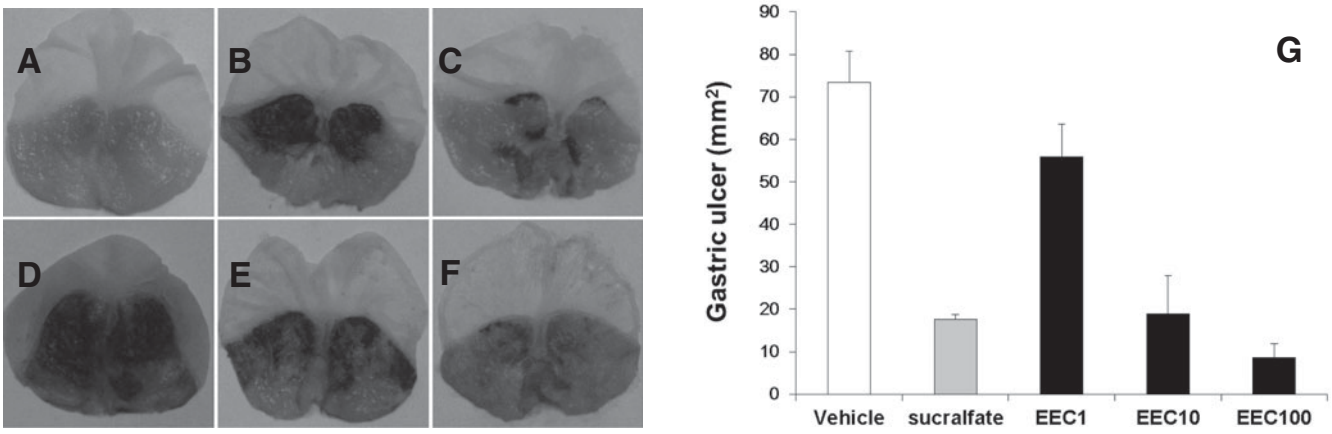

Fig. 1. (A), normal stomach; (B), glandular stomach treated with vehicle; (C), the stomach of positive control group treated with sucralfate, 100 mg/kg, *p.o.*; (D~F), the stomach of test groups treated with EC, 1, 10, and 100 mg/kg, *p.o.*, respectively, 1 h before administration of 150 mM HCl/ethanol; (G) determination of the gastric ulcer area (mm^2). Data are expressed as mean ± S.E.M., n = 6 to 10.

In case of the group pretreated with ECC 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 µg/ml. In addition, EEC did not affect on the cell viability and it showed potent DPPH radical scavenging activity.

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