


Source

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Abstract

Abstract Arctium lappa L. has been used in folk medicine as a diuretic, depurative, and digestive stimulant and in dermatological conditions. The mechanisms involved in the anti-ulcerogenic activity of the sesquiterpene onopordopicrin (ONP)-enriched fraction (termed the ONP fraction), obtained from A. lappa leaves, were studied. The gastroprotective mechanism of the ONP fraction was evaluated in experimental in vivo models in rodents, mimicking this disease in humans. ONP fraction (50 mg/kg, p.o.) significantly inhibited the mucosal injury induced by ethanol/HCl solution (75%), indomethacin/bethanecol (68.9%), and stress (58.3%). When the ONP fraction was investigated in pylorus ligature, it did not induce alteration in the gastric volume but did modify the pH and total acid concentration of gastric juice. ONP fraction significantly increased serum somatostatin levels (82.1±4.1 vs. control group 12.7±4 pmol/L) and decreased serum gastrin levels (62.6±6.04 vs. control group 361.5±8.2 μU/mL). Mucus production was not significantly altered by the ONP fraction. Gastroprotection by the ONP fraction was completely inhibited by N-ethylmaleimide treatment and did not modify the effect in the animals pretreated with L-N(G)-nitroarginine methyl ester. These results suggest an antisecretory mechanism involved with the antiulcerogenic effect of the ONP fraction. However, only endogenous sulphhydryls play an important role in gastroprotection of the ONP fraction.

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