

Nota Científica
Scientific Note

ANTI-ULCER ACTIVITY FROM THE LEAVES OF *Bryophyllum sp.*

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ABSTRACT - Anti-ulcer protective properties of an ethanol extract of *Bryophyllum spp* leaves were assayed in an animal model indomethacin induced gastric ulcer.

RESUMO - Foi estudado o efeito protetor anti-úlceras, por ingestão oral de um extrato etanólico de folhas de *Bryophyllum spp*, em modelo experimental de úlcera induzida por indometacina.

Introduction

Until recently, little was known about the chemistry of the plants of the Crassulaceae family, including *Bryophyllum sp.*, for which previous phytochemical and pharmacological data have not been reported. Chemically, the species has been found to contain alkaloids, nitrates and soluble oxalates (WILLIAMS and SMITH, 1984).

A tea made up with the leaves of this species was found to be effective in relieving ulcer disorders (CORREA *et al.*, 1998).

In order to understand the pharmacological bases for the use in folk medicine of *Bryophyllum sp* for the treatment of ulcer illnesses, the present study was designed to investigate the effect of aqueous and ethanolic extracts obtained from these species on ulcer induced by indomethacin.

Material and Methods

Male Wistar rats weighting 200-250g were used. All animals were kept under controlled conditions at least one week prior to their use.

The extracts were administered (0.5 ml, p.o.) daily for 1 week prior to ulcer induction.

The animals were deprived of food for 48h and then given indomethacin orally at 30mg/kg. The animals were killed 20h later and the stomach of each was examined for lesions developed in the glandular portion, as described in REITMAN, 1970.

Results and Discussion

The aqueous extract did not prevent the formation of the gastric mucosal lesions induced by indomethacin. On the other side the ethanol extract protected the stomach as shown on table 1.

Table 1 Effect of *Bryophyllum sp* ethanol extract on indomethacin-induced gastric lesions in rats.

| Treatment (p.o.) | n | Lesion index | inhibition (%) |
|------------------|---|--------------|----------------|
| Control | 6 | 5.0 | |
| Extract | 6 | 2.5 ± 0.5 * | 50 |

Results are expressed as mean ± S.E.. * p<0.05

The plant is rich in alkaloids, nitrates and soluble oxalates present in nontoxic concentration (WILLIAMS and SMITH, 1984). The mean lethal doses were 5.0g dry matter/Kg (Mc KENZIE and DUNSTER, 1986).

Bulfadienolides, a potent glycoside, have also been isolated from this specie and probably account for the observed disease in cattle, as the syndrome is consistent with cardiac glycoside poisoning (Mc

KENZIE *et al.*, 1987; MASVINGWE and MAVENYENGWA, 1997).

So far the studies have shown that this plant has a potential therapeutic effect. A few reports have demonstrated that it has ATPase activity (FISCHER-SCHLIEBS *et al.*, 1997), chemotaxis (KEMNER *et al.*, 1997) and therapeutic effect in murine leishmaniasis (Da SILVA *et al.*, 1995).

It is suggested that this protective effect is due to its hyposecretory activity, since the extract also inhibited salivary secretion (PEREZ, 1999).

The detailed mechanism of action and the principle(s) responsible for the anti-ulcer

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activity remains unclear and must await further study.

In summary it was apparent from the above results that the ethanol displays an exerted anti-ulcer effect in animal model of acute ulcer.

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