



RESEARCH ARTICLE

Evaluation of Anti Ulcer Activity of *Cordia Monoica* Roxb Stem

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ABSTRACT

Cordia monoica Roxb belongs to family Boraginaceae. It is fairly common in south India. It is a small tree with white flowers and yellow fruits. In the present study an attempt has been made to evaluate the anti ulcer activity of the chloroform, ethyl acetate and methanol extracts of the stems of the *Cordia monoica* Roxb. Acute toxicity studies were performed as per OECD-423 guidelines. Toxicity signs and symptoms were not observed. 80% ethanol was used as inducing agent for ulcer. The extracts showed significant anti ulcer activity when compared with standard Lansoprazole (30 mg/ kg). This study suggested that, *Cordia monoica* possess anti ulcer activity.

KEYWORDS

Cordia monoica, Boraginaceae, anti- ulcer activity, 80% ethanol, toxicity, Lansoprazole

INTRODUCTION

Gastric ulcer is a major health hazard in terms of both morbidity and mortality¹. Untreated gastric ulcer is capable of inducing upper gastrointestinal bleeding². Several pharmaceutical products have been employed for the treatment of gastroduodenal ulcer and peptic diseases, resulting in decreasing mortality and morbidity rates, but they are not completely effective and produce many adverse effects. In recent years, there has also been growing interest in alternative therapies and the use of natural products, especially those derived from plants.

Cordia monoica Roxb belongs to family Boraginaceae. It is available in Deccan & Carnatic hilly areas. It is a small tree grows up to 6m.

Leaves are alternative, size 5.9X2.5-5 cm; base is rounded, crenate margin, acute apex, and rough with white discs above, thinly pubescent below. Flowers are fragrant, yellow in colour. Drupes are ovoid, bright orange red colour. Flowering and fruiting process occur during the months of October to December³⁻⁶. The present study was undertaken to evaluate *Cordia monoica* Roxb stems for the anti ulcer activity.

MATERIALS AND METHOD

Plant Material

The stems of *Cordia monoica* Roxb were collected from Talakona forest in Chittoor District of Andhra Pradesh in the month of June, 2013.

Preparation of Extract

The stems of *Cordia monoica* were dried and powdered. The powder was extracted by using Soxhlet apparatus with chloroform, ethyl acetate and methanol.

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The extract was further concentrated under reduced pressure.

Animals

Healthy adult Wister rats of either sex weighing 180-200gm were used for the study of anti ulcer activity. They were maintained under standard environmental conditions and were fed with standard pellet diet with water ad libitum.

Acute Toxicity Studies

Acute oral toxicity studies were performed as per OECD-423 guidelines. Healthy Wister mice were used for the study. The animals were divided into six groups containing six animals in each group. The extract was administered orally at the doses from 200- 2000mg/kg. There were no signs of toxicity and mortality was observed

up to 2000mg/kg.

Evaluation of Anti –Ulcer Activity

The anti- ulcer activity was evaluated in healthy adult Wistar albino rats (180-200gms) in groups of six animals of each dose. Albino rats were fasted for 24 hrs with free access to water. The rats were given test sample (chloroform, ethyl acetate and methanol stem extracts of *Cordia monoica* 150 and 300 mg/kg), Lansoprazole (30 mg/ kg).

One hour later, 1ml of 80% ethanol administrated orally to each animal. After 1 hr of ethanol administration, animals were sacrificed; the stomach was removed and cut along the greater curvature to measure the Ulcer Index⁷.

Table1: Effect of *Cordia monoica* Roxb stem against ethanol induced gastric ulcer in rat

Group	Dose	Alcohol	
		Ulcer Index	% of Ulcer Protection
Control	-----	70±0.56	-----
Standard (Lansoprazole)	30 mg/kg	1.28±0.40	81.90***
Chloroform extract	150 mg/kg	2.35±0.52	25.17*
Chloroform extract	300 mg/kg	4.52±0.76	31.72**
Ethyl acetate extract	150 mg/kg	4.45±0.58	28.95*
Ethyl acetate extract	300 mg/kg	3.30±0.44	48.50**
Methanol extract	150 mg/kg	4.48±0.79	29.06**
Methanol extract	300 mg/kg	3.51±0.45	50.89**

Results are mean±S.E.M.(n=6) Statistical comparison was performed by using ANOVA coupled with student 't' test. * P<0.05, **P<0.01, ***P<0.001 were consider statistically significant when compared to control group.

RESULTS AND DISCUSSION

The *Cordia monoica* Roxb stem extract was evaluated for anti-ulcer activity in experimental animal models. Pretreatment of rats with *Cordia monoica* extracts produced a dose dependent protection in the ethanol induced ulceration model as compared to control group. The maximum effect of ulcer protection was produced at 300mg/kg for methanol extract. The *Cordia monoica* stem extract showed significant anti-ulcer activity as compared to standard. However the protection was statistically significant reduced the severity of ulcer and caused a significant reduction of ulcer index in this model.

CONCLUSION

The present study revealed that the stems of *Cordia monoica* Roxb possess a significant anti-ulcer activity which is supporting the folklore claims. Hence attempts are going on for the isolation of the compounds responsible for the anti-ulcer activity.

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