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Investigations on the Ulcer protection ability of various extracts of *Crossandra benoistii L.*

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ABSTRACT

The *Benoistii Crossandra L.* A widely distributed plant in India and Africa belongs to the Acanthaceae family. The forests of India have traditionally been used by several tribal people. This plant is home to many forests in India and is rich in Southern India. In this study, methanol and ethanol leaf extracts were tested for antiulcer activity following the folklore reports of antimicrobial activity. Methanolic and aqueous extracts were studied and proven to be equally effective in prevention and cure of ulcers for synthetic medicines. The CBME and CBEE inhibits were at 400 mg/kg higher than normal and the lower doses of 200 mg/kg still appeared to be the same operation as the standard one. The higher dose of the extracts was supposed to lead to greater activity. With the maximal dose of 2000mg/kg, the UD50 is raised, and the above limits contribute to an even greater dose than the one seen in the process. Given the side effects of prescription medications, it is strongly recommended to use natural medicines for the ulcer. Much phytochemical study has been carried out on the plant and the same number of feedings has so far been isolated. It demands that the latest medicine provision be implemented in order to include plant extracts to cure all diseases.

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INTRODUCTION

The *Benoistii Crossandra L.* A widely distributed plant in India and Africa belongs to the Acanthaceae family. The forests of India have traditionally been used by several tribal people. This plant is home to many forests in India and is rich in Southern India. Grown in ornamental plants in Tirumala Gardens. It is also grown in various places in India such as Tamilnadu, Karnataka, Uttar Pradesh, and so on. Depending on the geographic distribution, the plant has its own names and uses. Some of the uses are analgesic, anti-ulcer, aphrodisiac, etc. Many chemical components of the plant were isolated. Polyphenols and flavonoids are the major part of them. Tannins including Ellagic acid, Gallic acid are found in the polyphenols. Some fava-nutrients have been reported from the plant such as Quercetin, Kaempferol, Isoquercetin and related glycosides. Cyclic hydroxamic acids have been identified. Pooling, wound curing, antifungal activity and possess aphrodisiac activity have been recorded [1]. In this study, methanol and ethanol leaf extracts were tested for antiulcer activity following the folklore reports of antimicrobial activity [2].

Plant material

Crossandra benoistii L's new plant flowers. The hills of Tirumala, India, were collected in October. Due to the high extractive qualities, the powdered dry leaves have been separated using a soxhelt apparatus with solvents, methanol and water. Crossan-

dra benoistiiL was named after extracts. *Crossandra benoistii L*, Methanol extract, CBME (14.2% W/W) The CBEE (12,8% w/w) ethanol extract was correctly dried and used in experimental work.

Chemicals & animals

SD Fine Chem LTD. Mumbai has acquired all chemicals used in the experiment. Male and female albino wistar rats between 175 and 210 g were housed at 25 ^{0}c with regular pellet feed ad libitum and free access to drinking water. Quercetin was derived from the USA's Sigma Aldrich.

Antiulcer activity

Animals in each group have been split into seven groups of six animals. A category was known to have regular saline as a detrimental control group. CBME and CBEE received orally at the dose of 200 mg/kg and 400 mg/kg in Groups 2-5 and orally at the body weight of group 6 received normal quercetin orally [3]. For ethanol induced model and mesoprostal induced orally induced model with normal sucralfate suspension of 100 mg/kg. Group 7 was given orally in 50 mg/kg. Both are known as constructive controls.

Rat was fed orally with 1ml of 50% Ethanol 30 minutes after the vehicle was given and the test groups were given normal and the experimental groups obtained separate doses of leaf extract [4]. After 2 hours of cervical dislocation the animals were killed and the stomach isolated. The opened end was the following: 0=no ulcer; 1=1–2 mm ulcer, 2=3-4 mm ulcer and 4=5–6 mm ulcer. Ulcer has been decayed by the highest curvature and striated hemorrhagic lesions. The number of animals divides the sum of the cumulative scores and shows the mean ulcer index.

At 48 mg/kg body weight, both animals were fed orally with Aspirin. Maximum gastric lesion amounts to be inducted in 4 h [5]. The study groups received various doses of the leaf extract 30 minutes before aspirin therapy, while only vehicle and normal were received by the control groups. The animals were murdered by cervical dislocation after 4 h, the stomach was dissented and the lesions from gastric mucosals were recorded as follows: 0 = no ulcer, 1 The sum of ulcer spots divided by the number of animals in each category shows the average ulcer index.

RESULTS

In two models of gastric ulceration caused by ethanol and aspirin, methanol and aquatic extracts were tested for the antimicrobial function. Tables 1 and 2 showed the findings [Table 1Table 2]. The extracts revealed the dosage of antiulcer activity in the gastric ulceration caused by Aspirin dependently, but less than the Mesoprostal level was found. The exact causative function of Aspirin should be understood before the effects are discussed. Aspirin is a counter inflammatory agent that inhibits the COX enzyme and thereby decreases pain mediator synthesis, prostaglandin protective gastric mucosal. This decline in prostaglandin production raises the release of gastric acid and reduces mucosal secretions leading to peptic ulcers. Aspirin also creates oxygen-free radicles, which contribute to improved lipid peroxidation, and thus to less tissue damage caused by glutathione peroxidation [6]. A synthetic E1 prostaglandin analog was chosen as normal with respect to this mechanism Mesoprostol. Mesoprostol prevents peptic ulcer by lowering the secretion of gastric acid and protecting the tissue against oxidation [7] that damages the tissue. CBME and CBEE demonstrated dose-dependent action of antiulcer in ethanol-induced ulceration with the results similar to that of quercetin. Contrary to the model Aspirin, the CBME and CBEE inhibits were at 400 mg/kg higher than normal and the lower doses of 200 mg/kg still appeared to be the same operation as the standard one. The higher dose of the extracts was supposed to lead to greater activity. With the maximal dose of 2000 mg/kg, the UD50 is raised, and the above limits contribute to an even greater dose than the one seen in the process.

It forms complexes with protein and gastric acid buffers [8, 9] as the mechanism currently exists. The findings indicate that injury healing is far easier with the extracts and the polyphenols presented in the extract may have led to the operation with the antioxidant ability. The system will also be aided by the ulcerative ethanol mechanism. As described above, ethanol produces free radicals that reduce mucosal barrier resistance and thereby degrade membrane integrity [10, 11]. It also allows protein to spill into the gastric juice.

CONCLUSION

Methanol and aqueous extracts were also studied and proven to be equally effective in prevention and cure of ulcers for synthetic medicines. Given the side effects of prescription medications, it is strongly recommended to use natural medicines for the ulcer. Much phytochemical study has been carried out on the plant and the same number of feedings has so far been isolated. Since the plant produces a high level of polyphenols and antioxidants, many other diseases may be handled. It demands that the latest medicine provision be implemented in order to

Table 1: Ulcer index of extracts of *Crossandra benoistii* in Ethanol induced model

Sl.no.	Group	Ulcer index	% inhibition
1.	Control	15.72±0.41	—
2.	Standard	5.63 ±0.69	86.01
3.	CBME-200mg/kg	10.06±0.92	56.13
4.	CBME-400mg/kg	6.84±0.24	80.75
5.	CBEE-200mg/kg	11.39±0.75	44.37
6.	CBEE-400mg/kg	7.91±0.29	73.81
7.	Quercetin	9.16±0.287	62.10

Table 2: Ulcer index of extracts of *Crossandra benoistii* in Aspirin induced model

Sl.no	Group	Ulcer index	% inhibition
1.	Control	17.02±0.34	
2.	Standard	5.61±0.12	76.83
3.	CBME-200mg/kg	11.23±0.48	34.39
4.	CBME-400mg/kg	7.42±0.53	58.61
5.	CBEE-200mg/kg	12.75±0.9	33.76
6.	CBEE-400mg/kg	8.0 ±0.56	53.05
7.	Quercetin	7.38±0.279	60.01

include plant extracts to cure all diseases.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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