substitutent at N-3 position of thiazolidinone ring were important requirements for antiHIV activity.

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Antiinflammatory activities of *Calamus rotang* Mill

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***Calamus rotang* is a shrub, which is not much explored scientifically. Studies on the ethanolic (95%) extract of rhizome exhibited antiinflammatory activity in carrageenan-induced paw oedema and cotton pellet granuloma pouch models and the results were comparable with that of standard drug Phenylbutazone.**

Calamus rotang Linn (Family: Palmae) is a shrub, distributed endemically in India[1]. Rhizomes are astringent, acrid and bitter in taste. They are used as expectorant, antiinflammatory, diuretic, febrifuge and as tonic[2]. This plant has been traditionally used for reducing inflammation; hence, 95% ethanol extract of *C. rotang* (CRE) was evaluated for antiinflammatory activity in different phases of inflammation in animal models.

Rhizomes were collected from Coutrallam, Tamilnadu and authenticity was confirmed with local Floras. They were shade dried, cut into small pieces and powdered in a pulverizer. Coarse powder was extracted with ethanol using Soxhlet apparatus. CRE was suspended in 0.75% carboxy methyl cellulose and used throughout the experiment. They were analysed for antiinflammatory activity by carrageenan-induced paw oedema and cotton pellet granuloma models.

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Male Wistar rats weighing between 150 and 200 g procured from King Institute, Guindy, Chennai were selected for the studies. The study was carried in accordance with the rules and regulations laid down by the Institutional Animal Ethical Committee.

For carrageenan-induced paw oedema model, rats were grouped into 7 groups, containing 6 animals per group. Group 1 served as negative control (1 ml of saline). The second group served as positive control (phenylbutazone 5 mg/kg), while the other groups received CRE in different doses of 50, 100, 150, 200 and 250 mg/kg orally. Oedema was induced as per standard methods[3]. The paw volume was measured 0 h and 3 h, after the injection of carrageenan (0.1 ml 1% w/v). Drug pretreatment was given 1 h before the injection of carrageenan. Percent inhibition of oedema was calculated[4].

In cotton pellet granuloma model, rats were divided into 7 groups, containing 6 animals per group. Group 1 served

TABLE 1. EFFECT OF *CALAMUS ROTANG* ON CARRAGEENAN-INDUCED PAW OEDEMA

Treatment	Dose (mg/kg, orally)	Oedema volume (ml)	Inhibition (%)
Control	Saline, 1.0 ml	0.87±0.04	-
Phenylbutazone	5	0.41±0.05*	52.87
C. rotang	50	0.68±0.03	21.84
C. rotang	100	0.60±0.05	31.03
C. rotang	150	0.47±0.02*	45.98
C. rotang	200	0.40±0.02*	54.02
C. rotang	250	0.44±0.04*	49.43

Values are mean±SEM (n=6). *P<0.001 vs control; Student's *t*-test.

as negative control (1 ml of Saline). The second group served as positive control and received phenylbutazone 5 mg/kg. While the other groups received CRE (50, 100, 150, 200 and 250 mg/kg orally). After shaving off the fur on the dorsal side, rats were anaesthetized with pentobarbitone (30 mg/kg), through a single middle incision on the dorsal surface, sterilised pre-weighed cotton pellets (50±1 mg) were implanted in both axillae and groins according to standard methods[5]. Extracts were administered orally, daily for 10 days (0 to 9 days). On the 10th day, the animals were sacrificed and cotton pellets were dissected out, dried at 60° and weighed.

The results were analysed statistically using Students *t*-test[5]. Table 1 illustrates the effect of CRE in carrageenan-induced oedema. Oedema suppressant effect of 150, 200 and 250 mg/kg doses were 46.0, 54.0 and 49.4%, respectively. Table 2 demonstrates the effect at the dose level on 200 and 250 mg/kg, which inhibited granuloma formation, showing a dose dependent inhibitory effect on the granuloma weight.

Carrageenan-induced paw oedema was taken as prototype of exudative phase of inflammation, where development of oedema being described as biphasic. The initial phase is attributable to release of histamine, serotonin and kinins in the first hour after injection of carrageenan. A more pronounced second phase is related to the release of prostaglandins like substances in 2 to 3 h[7].

TABLE 2: EFFECT OF *CALAMUS ROTANG* ON GRANULATION WEIGHT

Treatment	Dose (mg/kg, orally)	Oedema volume (ml)	Inhibition (%)
Control	Saline, 1.0 ml	79.17±3.64	-
Phenylbutazone	5	52.86±12.33*	33.23
C. rotang	50	66.15±3.56	16.45
C. rotang	100	60.73±1.55	23.29
C. rotang	150	59.48±1.12	24.87
C. rotang	200	57.40±2.26*	27.50
C. rotang	250	57.46±0.75*	27.42

Values are mean±SEM. (n=6). *P<0.001 vs control; Student's *t*-test.

In cotton pellet granuloma model, inflammation and granuloma develops during the period of several days. This model is an indication of the proliferative phases of inflammation[7]. Inflammation involved proliferation of macrophages, neutropils and fibroblasts, which are basic sources for granuloma formation. Therefore the decrease in granuloma weight indicates suppression of the proliferative phases, which was effectively inhibited by CRE in the present study. The anti-inflammatory activity of CRE at a dose of 200 mg is also comparable with the standard drug phenylbutazone. Further studies are being carried out to explore its mode of action in our laboratory.

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