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PHYTO CHEMICAL EVALUATION AND ANTI-CONVULSANT ACTIVITY OF *CLEOME VISCOSA LINN*

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ABSTRACT

All the extracts of *Cleome viscosa* (petroleum ether, chloroform and alcoholic) were subjected to qualitative test for the identification of various active constituents. The qualitative test shows all the three extracts contain carbohydrates, glycosides, alkaloids, phytosterol, saponin, tannin, flavanoids, fixed oil, fat, proteins and amino acids. The anti-convalsant activity of petroleum ether, chloroform and alcoholic extract of whole plant of *Cleome vicosa* (150 mg/kg i.p) in albino Wister rat was assessed Maximum Electroshock Seizure (MES) test.

KEYWORDS: MES, Dog mustard, *Cleome viscosa*.

INTRODUCTION

Cleome viscosa is a common weed found all over the plains of India and throughout the tropics of the world. The seeds are carminative, anthelminitic, anti-septic and remedy for infantile convulsion. Juice of the leaves is sudorific. Bark is irritant and acrid vesicant.[1,2] The present study was undertaken to determine the chemical constituents' presents and anti-convulsing activity of whole plant of Cleome viscose against seizure induced by Maximal Electro Shock (MES) in Mice.

MATERIAL AND METHODS

The whole plant of *Cleome viscosa* Linn was collected from Perambalur District in Tamil nadu in the month of November and officially identified by Dr.S.Sankaran R.I.M.P. The whole plants were cleaned and shade dried then made into coarse granules. Then it was used for extraction.

Preparation of extracts

The coarse granules of *Cleome viscosa* were extracted with petroleum ether, chloroform and alcohol by using soxhlet apparatus for five hours respectively. The corresponding extracts were concentrated under reduced pressure. The extracts were stored in a refrigerator and reconstituted just before use.

Identification of Phto-Chemical Constituents

All the extracts of whole part of *Cleome viscosa* were subjected to qualitative test for identification of its active constituents.[3,4,5] The result shows that carbohydrates, glycosides, alkaloids, phytosterol, saponin, tannin, flavanoids, proteins, amino acids, fixed oil and fats were present in all the three extracts.

Anti-Convulsant Activity

Animal

The 30 male albino Swiss Wister rats weighing 180±5 gm were used. The animal was housed in groups of six per cage at a temperature of 25 ± 2^{0}C and relative humidity 50-60%. A 12: 12 dark: light cycle was followed during the experiment. Animal had free access of food and water however food but not water withdrawn 8 hours before and during the experiment. The institutional animal ethical committee approved the protocol of the study.[6]

Drugs

Phenytoin sodium was purchased from drugs stores. It was prepared in normal saline. The extracts were diluted with sesame oil. All intraperitoneal (*i.p.*) injection was administered in volume not higher than 10ml/kg of body weight of animal.

Assessmsnt of Anti-Convulsant Activity[7]

Electro-Convulsive Shock inducing Hind limb Tonic Extension [HLTE] in 99.9%of the animal was previously determined by a current-percent effect curve.[8,9]

All the 30 albino swister rats were divided into 5 groups 6 rat per groups.

Group I: Was treated with normal saline dose 0.1ml *i.p* thirty minutes before MES induced convulsion.

Group II: Was treated with alcoholic extract 150 mg /kg *i.p* thirty minutes before MES induced convulsion.

Group III: Was treated with petroleum ether extract 150 mg /kg *i.p* thirty minutes before MES induced convulsion.

Group IV: Was treated with chloroform extract 150 mg /kg *i.p* thirty minutes before MES induced convulsion.

Group V: Was treated with Phenytoin sodium [standard] 25mg/kg *i.p* thirty minutes before MES induced convulsion.

[Thirty minutes before application of electrical shock (42mA, 0.2 sec) using corneal electrode.[10] The duration of tonic hind leg extension was noted.].

Table I: Effect of various extracts of *Cleome viscose on* MES induced seizures in rats.

Treatment (mg/kg) phase	Duration of tonic extension in seconds [mean±SEM]	Incidence of convulsion
Control	10.50±0.89	6/6
Alcoholic extract(a:150mg/kg)	1.67 ± 0.33 *	6/6
Pet. Ether extract(b:150mg/kg)	1.33 ± 0.21 **	6/6
Chloroform extract(c:150mg/kg)	1.50 ± 0.22***	6/6
Standard(phenytoin, 25mg/kg)	0.33 ± 0.21	6/6

n = 6 in each group, p values * a < 0.000 Vs control, ** b < 0.000 Vs control, *** c < 0.000 Vs control

P values a < 0.007 Vs STD, b < 0.007 Vs STD, c < 0.004 Vs STD.

[ANOVA followed by Dunnett's test]

RESULT AND DISCUSSION

The study was undertaken to carryout the phyto-chemical screening and anti-convulsing activity of *Cleome viscosaLinn*.Preliminary phyto-chemical studies revealed that the presence of carbohydrates, glycosides, alkaloids, phytosterol, saponin, tannin, flavanoids, fixed oil, fat, proteins and amino acids.

Maximal Electro Shock Test (MES)

The duration of tonic hind leg extension in rats treated with normal saline control was 10.50 ± 0.89 seconds. The alcoholic, petroleum ether and chloroform extracts of *Cleome viscose Linn* at the dose of 150mg/kg body weight treated animals from seizures and duration of hind

leg extension was reduced and exhibited hind leg extension for 1.67 ± 0.33, 1.33 ± 0.21 and 1.50 ± 0.22 sec respectively.

The Phenytoin sodium [standard dose 25mg/kg] treated with rats and showed tonic hind leg extension for 0.33 ± 0.21 sec.Where as rats treated with the alcoholic, petroleum ether and chloroform extracts of *Cleome viscose Linn* (150mg/kg) exhibited hind leg extension for 1.67 ± 0.33, 1.33 ± 0.21 and 1.50 ± 0.22 sec respectively. The values were given in mean value ± SEM, all the extract shows that significant activity.

This study revealed that the various extract of *Cleome viscose Linn* at dose of 150mg/kg administrated *i.p* to rats produced significant activity of anti-convulsing activity.

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