

Phytochemical and Pharmacological Evaluation of *Ampelocissus Latifolia*

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ABSTRACT: *Phytochemical screening and physico chemical standards of acetone, chloroform and alcoholic extracts of Ampelocissus latifolia have been performed. These extracts were found to be safe upto a maximum dose of 500 mg/kg. They exhibit significant antiinflammatory activity that may be due to its inhibitory effect of histamine kinin and prostaglandins release.*

INTRODUCTION

Ampelocissus latifolia (1) (Family-Vitaceae) roots have been used for the treatment of snake bite (2,3) and for its astringent effect. The decoction of the root is also used in chronic dysentery (3). The sandals of Bihar used this plant for muscular pains, sores and fractured bones (4,5) The present stud is focused on phytochemical and pharmacological studies of various extracts of Ampelocissus latifolia.

MATERIALS AND METHODS

The whole plant of Ampelocissus latifolia was collected at Yercaud in the month of June and confirmed for all official monograph specifications wit Horticultural Research station, Tamil Nadu Agricultural University, Yercaud.

Shade dried root, stem and leaves of this plant is subjected to pulverisation to get coarse powder. Te coarse powdered materials (500 g) were subjected to continuous soxhlet hot extraction b using solvents vi acetone, chloroform and alcohol.

The percentage of yield were 1.56 , 1.26 and 138 respectively.

These extracts were subjected to phytochemical screening(6) to determine the presence of alkaloids, carbohydrate, phytosterols, fixed oils and fats, saponins tannins, aminoacids, protein gun and mucilage.

Physiochemical standards(7) like determination of total as, water soluble as, sulphated ash, alcohol soluble extractive and crude fibre content was also performed.

These extracts were subjected to TLC in different solvent system. The TLC plates are made with silica gel G and activated. The extracts are spotted by means of the micro pipette and dried developed in solvent systems I,II,III separately.

The different sports developed in each solvent system are identified and the Rf value are correspondingly calculated and tabulated.

Solvent system	Spraying reagent	Rf values		
		Acetone extract	Chloroform extract	Alcohol extract
Methanol: NH ₃ OH 200:3	Dragendroff's	0.90	0.76	0.85
MeOH: CHCl ₃ :17	Marquis	0.79	0.85	0.87
CHCl ₃ :NHE ₂	Marquis	0.77	0.91	0.87

ACUTE TOXICITY STUDIES

The LO₅₀ of acetone (707.94 mg/kg), chloroform (602.55 mg/kg), and alcoholic extract (741.31 mg/kg) of *A. latifolia* were determined by Litchfield and wiloxon method(8).

Animals were divided into 5 groups consisting of 4 Animals in each group one group served as control. For remaining 3 groups, extract was administered intraperitoneally (upto 500 mg/kg).

Following the drug administered during first 2 hours, animals were observed for gross behavioural changes (behavioural, neurological and autonomic responses). Animals observed once in half an hour for next 4 ours and ten in 25 hours, to find out the percentage of mortality.

ANTINFLAMMATORY ACTIVITY

The rats were divided into 5 groups consisting of 4 animals. One group served as negative control (received 5% Gum acacia) (5ml/kg), the second group served as positive control (received indomethacin 20 mg/kg). while the other groups received extract in 100 mg.kg. Edema was produced by the method described by winter et al (9). The paw volume was measured o our and 3 hours after the injection of carrageenin. The apparatus used for the measurement of rat

paw volume was the of Buttle et al, modified by sing and Ghosh (10).

This method followed her in our laboratory is able to detect a minimal change of paw volume of 0.02ml . Drug pretreatment was given 1 hour before the injection of carrageenin. The percentage inhibition of dema was calculated.

RESULTS AND DISCUSSION

Form the Table-1, it is clear that the preliminary phytochemical screening shows the presence of alkaloids and tannins in acetone, chloroform and alcoholic extracts of *A. latifolia* given in Table II.

The extracts were found to be safe upto a maximum dose of 500 mg/kg. There was no mortality and no changes in behavioural neurological and autonomic responses were observed.

Table –III shows the effect of extract treatments on carrageenin induced edema. The results were analysed by analysis of variance (11). Edema suppressant effect of 100 mg/kg dose of the extracts was 51.1%, 31.7% and 40.1 % for acetone, chloroform and alcoholic extracts respectively which was near equivalent to that of 20 mg/kg of indomethacin (48.52%).

Carrageenin induced paw edema was taken as a prototype of exudative phase of inflammation. The development of edema has been described as biphasic (12). The initial phase is attributable to the release of histamin, serotonin and kinin in the first hour after injection of carrageenin. A more

pronounced phase is related to the release of prostaglandins like substances in 2-3 hours (13). The significant antiinflammatory effect of these extracts may be due to its inhibitor effect on its inhibitory effect on histamin, kinin and prostaglandins release.

TABLE -1

Extracts	Alkaloids	Carbohydrate & Glycosides	Phytosterol	Fixed oil & Fats	Tannins	Gums & Mucilage	Flavonoids	Saponins
Aceton	+	-	-	+	-	-	+	+
Chloroform	+	-	-	-	-	-	-	-
Alcohol	+	-	-	-	-	-	-	-

Table - II

S.No	Total as %	Water soluble ash%	Acid soluble ash%	Sulphated ash%	Loss on drying %	Water soluble ext	Alcohol soluble ext.	Crude fibre content%
1.	10.50	1.03	9.82	16.72	82.38	2.12	1.88	26.88
2.	11.20	0.85	10.92	15.64	83.45	2.15	1.92	27.52
3.	10.38	0.95	10.28	15.98	83.32	2.20	1.95	26.84
4.	11.05	1.25	9.54	15.72	83.02	2.38	1.98	27.62
5.	10.78	0.98	10.72	15.09	83.78	2.08	1.95	26.78

Table -III**Effect of Ampelocissus Itifolia on Carrageenin induced paw edema:**

Method : Carrageenin rat paw edema
Animals : Albino rats
Weight : 100-125g
Vehicle : 5% Gum acacia
Route of admn : Intra-peritoneally
No.of animals : 4 in each group

S.No	Drug	Dos ml/kg	Increase in vol after 3 hrs mean \pm SEM	mean \pm SEM paw volume mean \pm SEM	t values
1.	Control %% Gum acacia	5ml/kg	1.185 \pm 0.04	---	--
2.	Indomethacin	20mg/kg	0.61 \pm 0.10	48.52%	4.87
3.	Alcoholic	750 mg.kg	0.58 \pm 0.031*	51.1%	8.52
4.	Acetone extract	750 mg.kg	0.81 \pm 0.013*	31.1%	5.43
5.	Chloroform	750 mg.kg	0.71 \pm 0.079*	40.1%	4.49.p

P<0.0

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