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Phytochemical Screening and Anti-Helminthic Activity of Canthium Parviflorum Roots

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ABSTRACT

The main aim of the study was to investigate phytoconstituents and anti-helminthic activity in the canthium parviflorum root. Roots were collected and shade dried. Extraction was carried out by continues hot percolation method using ethylacetate and methanol as solvents. Both the extracts were subjected to phytochemical screening, using standard methods, where as anti-helminthic activity was evaluated at three different concentrations on Pheretima Postuma; the parameters like time of paralysis and time of death were determined. The extract showed significant activity in the dose dependent manner and methanolic root extract showed significant activity than that of standard drug Albendazole. This might due to the presence of secondary metabolite tannins which are responsible for the activity.

Keywords: Phytochemical screening, *Canthium parviflorum,* Anthelmintic activity, *Pheretima posthuma.*

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INTRODUCTION

Herbal medication generally referred to as Herbalism or Botanical medicine. It is the usage of herbs for their therapeutic or medicinal value. An herbs is a plant or plant-part valued for its medicinal, fragrant or savour qualities.

Helminthiasis is a macro parasitic disease which is common in both humans and animals. Though they are many anthelimenthic drugs available in the market, there is rapid increase the research and establishment of a new anthelminthic drugs Because of the development of resistance towards the drugs . Hence the present focus is on discovery of new anthelmintic drug from the plants.

Canthium parviflorum (Ver.name Eng: Carry cheddie, Hin: Kirma and kadbar, Tel: Balusu) is a thorny sub scandent shrub with spreading branches distributed throughout India in scrub forests and dry plains. The leaves and roots are astringent, sweet, thermogenic, diuretic, febrifuge, constipating, anthelmintic, and tonic.

MATERIALS AND METHOD

Collection of plant material

Samples:

Roots of *Canthium parviflorum, Fam: Rubiaceae*

Collection:

The roots were carefully examined for foreign matter and washed thoroughly, shade dried.

About 1 kg of powder was obtained by mechanical grinding of the roots which was used for further studies.

Preparation of extract:

For the present study, the extracts were prepared by continuous hot percolation method using soxhlet apparatus.

The extracts were designated as EACP for Ethyl acetate and ALCP for methanol extract respectively.

Phytochemical analysis

All phytochemical tests were done by using standard protocols.

Experimental Model

Adult earthworm *Pheretima posthuma* were collected from moist soil, obtained from agricultural fields.

Paralysis onset time and death time of individual worms were noted. Paralysis was said to occur when the worms do not revive even in normal saline.

Death was concluded when the worms lost their motility followed by fading away of color of worm

RESULTS AND DISCUSSION

Table.1: Percentage yield of *Canthium parviflorum* extracts

Extracts	Percentage of yield
EACP	4.5% w/w
ALCP	3.6% w/w

Table 2: Preliminary Phytochemical screening of *Canthium parviflorum* extracts

Tests	EACP	ALCP
Alkaloids	+	+
Glycosides	-	+
Tannins	+	+
Flavonoids	+	+
Carbohydrates	+	+

"+" indicates presence "-"indicates absence

By the above table it is clear that the *Canthium parviflorum* extracts contains rich presence of tannins and flavonoids which are responsible for the anti-helminthic activity

Table.3. Anthelmintic activity of *C. parviflorum roots*

Treatment	Time Taken for PARALYSIS (min)	DEATH (min)
Control	_	_
Albendazole (20mg/ml)	25.6±0.75	65±0.65
EACP		
10 mg/ml	33±0.45	90±0.54
25 mg/ml	29±0.63	76±0.65
50 mg/ml	18±0.15	55±0.56
ALCP		
10 mg/ml	30.16±0.33	75.17±0.54
25 mg/ml	25±0.67	60.16±0.68
50 mg/ml	15±0.77	40.16±0.45

When observed the response of worms in case of paralysis, there was significant variation among the results at different concentrations. Where as methanolic extract at 50 mg/ml showed better activity of 40.16 min (death time) than standard Albendazole.

CONCLUSION

Methanolic root extract of *Canthium parviflorum* showed significant anthelminthic activity than that of standard drug Albendazole. This might due to the presence of secondary metabolite tannins which are responsible for the activity.

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