International Journal of Research in Pharmacy and Pharmaceutical Sciences
www.pharmacyjournal.in
ISSN: 2455-698X
Received: 27-05-2025, Accepted: 26-06-2025, Published: 12-07-2025
Volume 10, Issue 3, 2025, Page No. 40-43

Evaluation of anti-helminthic activity of leaves extract of *Triadica Sebifera*

Radhika Batchu[1], Suma Manda[2]
[1] Associate professor, Department of Pharmaceutical Sciences, Vaageswari College of Pharmacy, Thimmapur, Karimnagar, Telangana, India
[2] Department of Pharmaceutical Sciences, Vaageswari College of Pharmacy, Thimmapur, Karimnagar, Telangana, India

Abstract
The present work was done on Anti-helminthic activity of leaves of *Triadica sebifera.* The objective of this study was to evaluate the anthelminthic efficacy of crude methanolic extracts and crude chloroform extracts of leaves of *T.sebifera* was carried put against Indian adult earthworm *Pheretima posthuma.* Albendazole is used as the standard reference. The time taken to induce paralysis and time to induce death of the worms after extracts treatment was documented.

Keywords: Anthelmintic activity, pheretima posthuma, *t.sebifera,* albendazole

Introduction
The word helminth is obtained from the Greek language which means worm. The problem associated with worms/ helminths is known as Helminthiasis having unique types and transmitted from various sources. These mainly affect the health of humans in intestine causing problems and leads to complications in health. Some sufferings of helminthiasis are ascariasis, intestinal helminth and hookworm, followed by schistosomiasis and lymphatic filariasis. These causes various problems to humans which relates to their health and sometimes they lead to death, some may show blind, skin diseases, deformities in new born babies. So, these causes more problems, hence, the awareness and medications should be present more, especially for people living in underdeveloped places and countries.
Helminthiasis, or worm infestation, is one of the most prevalent disease and one of the most serious public health problems in the world. Hundreds of millions if not billions of human infections by helminths exist worldwide and increased world travel and immigration from the developing countries. It produces a global burden of disease and contribute to the prevalence of malnutrition, anemia, eosinophilia and pneumonia.
Anthelmintics are the agents that either stun or kill parasitic worms (helminths) from the body. People living in poverty in developing countries often suffer from helminthic infections, which more often physically impair their hosts than kill them. Although majority of infections due to worms are generally limited to tropical regions, they can occur to travelers who have visited those areas and some of them can develop in temperate climates.
In the present study we evaluated the potential Anthelmintic activity of crude methanolic and chloroform extract from the leaves of *Triadica sebifera* against *Pheretima posthuma.*

Requirements
Collection of Plant leaves
For the current investigation, *Triadica sebifera* leaves have been collected from Vaageswari College Karimnagar district. The plant was identified and authenticated by Dr. E. Narasimha Murthy, Specimen Accession No: ENM-100134. The leaves were shade dried and stored at room temperature. It was powdered, passed through sieve no.40 and it should be stored in air tight container.

Choice of Worms
Indian adult earthworms (*Pheretima posthuma*) are used to study anthelminthic activity. The earthworms are collected from moist soil and washed with distilled water to remove all excess carvel matter. They have same morphological characteristics similar to the human intestinal worms.

Management of Albendazole
Albendazole was collected and taken (10mg/ml) is prepared by using 1%v/v Tween 80 as a suspending agent as it is per methodology of extract.

Preparation of Tween 80 (1%v/v)
The suspending agent is taken by dissolving the 1ml of Tween 80 in 100ml distilled water.

Administration of extract
The suspension of both methanolic and chloroform extracts of *Triadica sebifera* leaves of different concentrations (10,20,30mg/ml) were prepared using 1%v/v of Tween 80 act as suspending agent. Albendazole is used as standard. Groups of approximately equal size worms consisting of one earthworm in each group were released into different concentrations of samples containing 20ml of desired concentrations of drug and extract preparations in the petri dishes.

Experimental design
The anthelmintic activity is performed on adult Indian earth worm *Pheretima posthuma* has anatomical and physiological resemblance with the intestinal round worm parasites of human beings. *Pheretima posthuma* placed in petri dish containing three dissimilar concentrations (10, 20, 30mg/ml) of both methanolic and chloroform extracts of leaves of *Triadica sebifera.* Worms were placed in petri dish and observed for paralysis time and death time.
Time for paralysis is noted when no movement of any sort is observed, except when worms was shaken vigorously. The time of death of worm is recorded after ascertaining those

worms neither moved when shaken nor when given external stimuli. The results were compared with reference compound Albendazole (10mg/ml) with test samples.

Results

"The results indicate that *Triadica sebifera* exhibits potent anthelmintic activity, whereas *Pheretima posthuma* required a longer duration for mortality. The earthworm selected for the anthelmintic study was highly sensitive to the different solvent extracts, namely the chloroform and methanol leaf extracts of *Triadica sebifera.* The anthelmintic activity results revealed dose dependent paralysis ranging from loss of motility to loss of response to external stimuli, which eventually progressed to death at 10mg/ml, 20mg/ml and 30mg/ml concentrations. Paralysis time was observed respectively at 123,105,75min and death time at 150,140,120min in methanolic extract and similarly in chloroform extract the paralysis time was observed respectively at 135,122,90min and death time at 174,154,138min. The standard drug (Albendazole) shows paralysis within 40min and time of death 75min in the solvent extracts. The observation of result show that the anthelmintic activity of methanolic extract is more potent than chloroform extract. The results are furnished in the table I

Table-I

Group	Treatment	Concentration (w/v) mg/ml	Pheretima posthuma	
			Paralysis time (mins)	Death time (mins)
1	1% Tween 80 (control) (ml)	20	150±5	-
2	Albendazole (Standard)	10	40±5	75±5
3	MSLE	10	123±5	150±5
		20	105±5	140±5
		30	75±5	120±5
4	CSLE	10	135±5	174±5
		20	122±5	154±5
		30	90±5	138±5

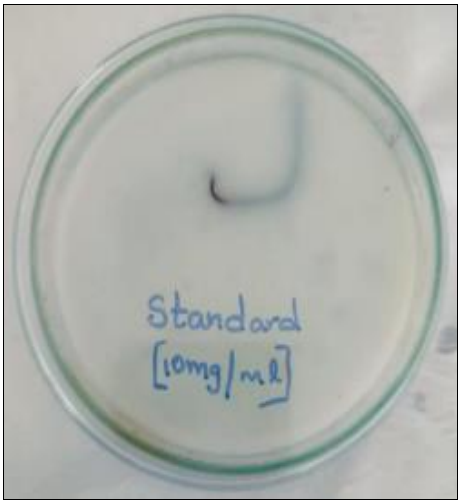


Fig 1: (Albendazole)

Fig 2: (Tween 80)

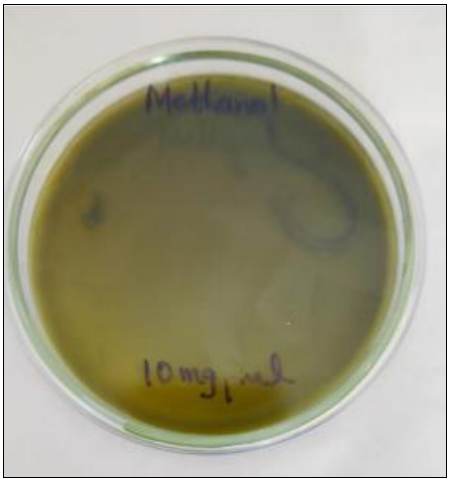


Fig 3: Methanolic extract (10mg)

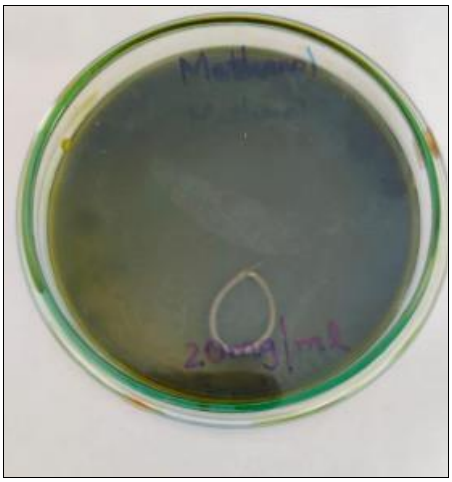


Fig 4: Methanolic extract (20mg)

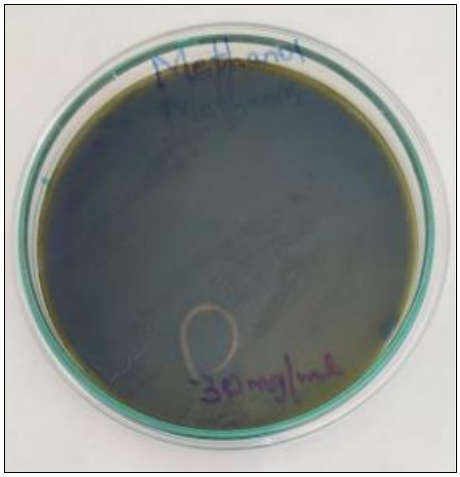


Fig 5: Methanolic extract (30mg)

Fig 6: Chloroform extract (10mg)

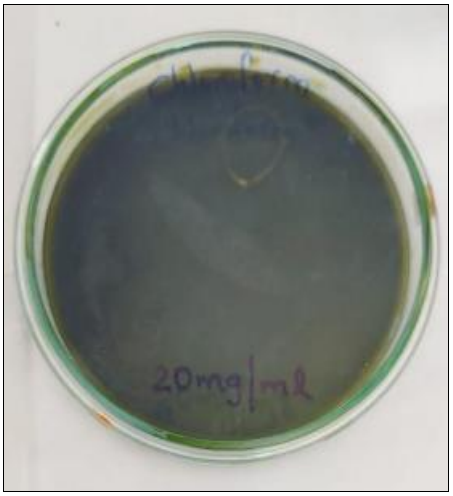


Fig 7: Chloroform extract (20mg)

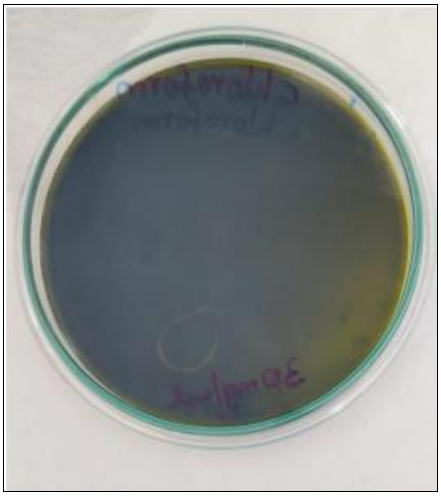
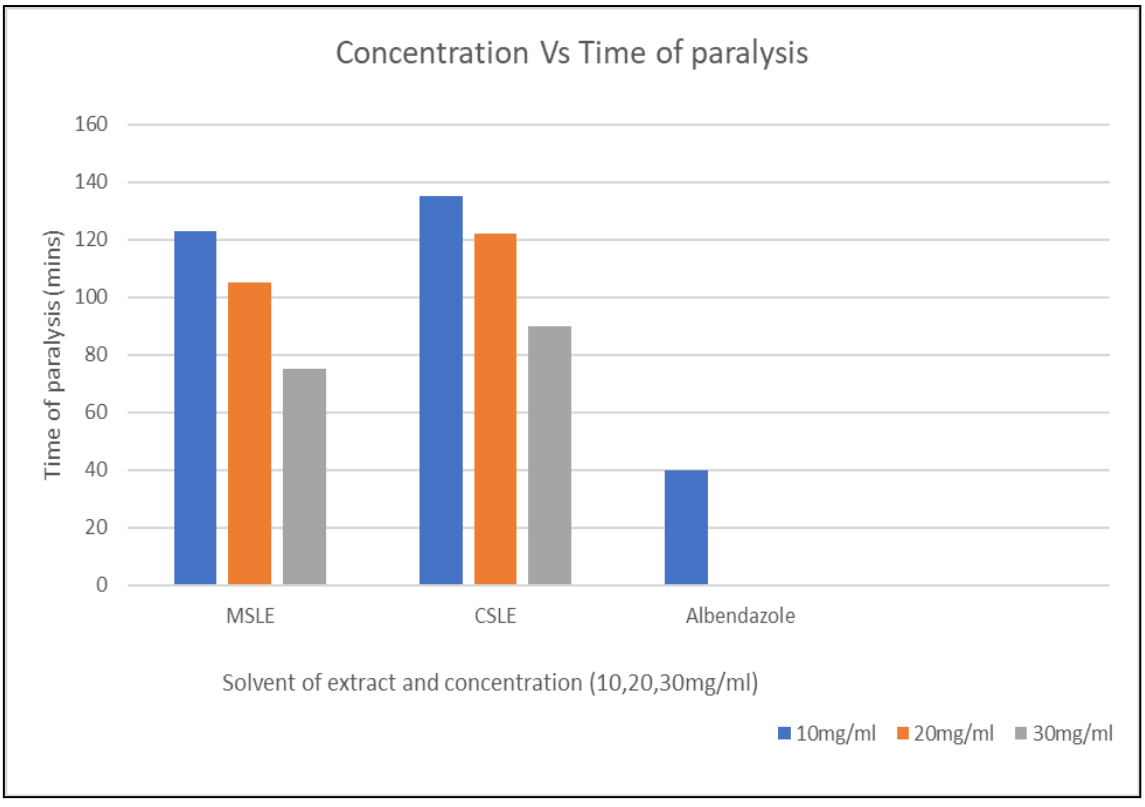
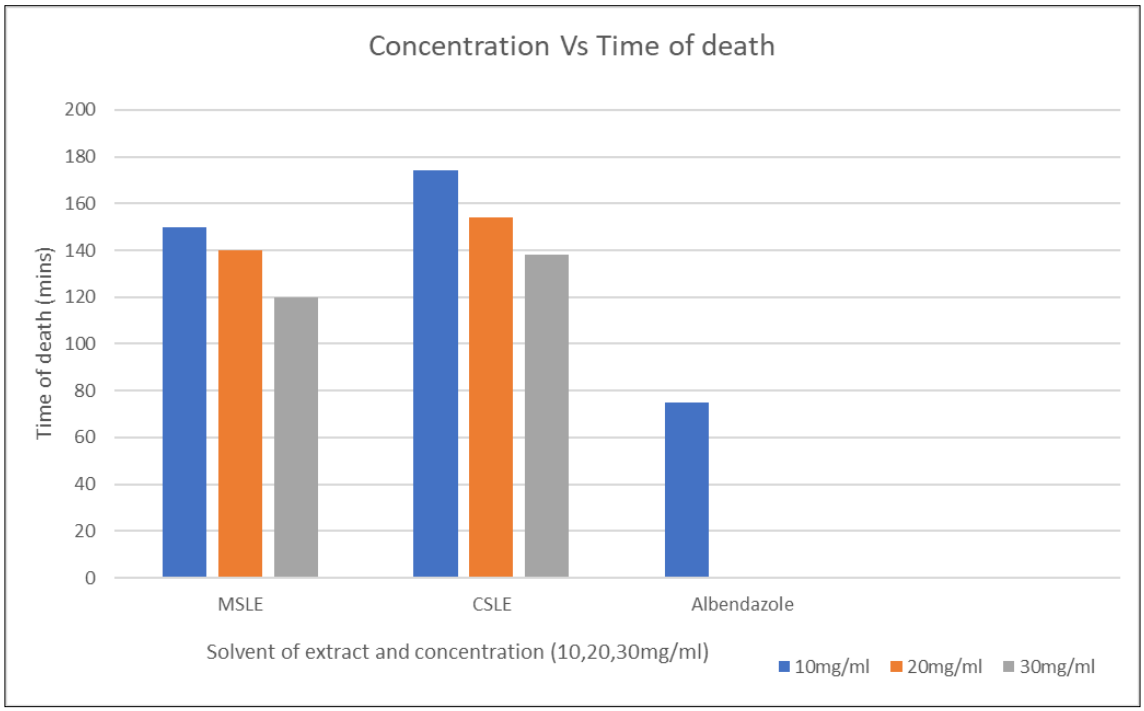


Fig 8: Chloroform **extract (30mg)**





Conclusion

The comparative studies of both methanolic and chloroform extracts was observed. The methanolic extracts of *Triadica sebifera* had shown more potent results than chloroform extract. These methanolic extracts are dose dependent anti-helminthic activity. These methanolic extracts was more effective in causing death of the worms as well as paralysis compared to standard.

References

1. BJ Bogitsh, TC Cheng, Immune response to Parasitic infections. Bentham ebooks,2014:2:175-212.
2. PJ Hotez, DH Molyneux, A Fenwick, J Kumaresan, SE Sachs, JD Sachs. *et al*. N Engl J Med,2007:375:1018-1027.
3. Rang and Dale's Pharmacology 6th edition, 712-717, 795, 323.
4. B Radhika, CH Swetha Bindu. Int H Pharma Biol Archives,2018:9(2):70-73.
5. Aaer M, Man I, Mohamed AO, Moustafa FM. Cytotoxic effects of Albendazole, ant parasitic drug, on the liver of the rat: Sub chronic study Egypt J Biol,1999:1:16-29.
6. Abdul Majeed S, Taju G, Nathiga Nambi KS, Menaka H. Research Journal of Pharmaceutical, Biological and Chemical Sciences,2011:2(3):774.