



## Anthelmintic activity of ethanolic seed extract of abrus precatorius linn

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### ARTICLE INFO

#### Article history:

Received: 10 December 2012;

Received in revised form:

22 November 2015;

Accepted: 27 November 2015;

### Keywords

Pheretima posthuma,  
Abrus precatorius,  
Anthelmintic activity.

### ABSTRACT

*Abrus precatorius* Linn. (Fabaceae) is a climbing shrub widely distributed in most of the districts of the country in hedges and among bushes on open lands. The objective of this work is to evaluate and compare anthelmintic activity of ethanolic extract of red seeds of *Abrus precatorius*. Earth worms were used for anthelmintic activity. Albendazole was used as standard drug. Time required for paralysis and death of animals were noted for each sample.

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### Introduction

Helminth infections are among the most common infections in man, affecting a large proportion of the world's population. In developing countries they pose a large threat to public health, and contribute to the prevalence of malnutrition, anaemia, eosinophilia and pneumonia. Although the majority of infections due to worms are generally limited to tropical regions, they can occur to traveller's who have visited those areas, and some of them can be developed in temperate climates. Parasitic diseases causing severe morbidity include lymphatic filariasis (a cause of elephantiasis), onchocerciasis (river blindness), and schistosomiasis<sup>1</sup>. These infections can affect most availability and affordability of pharmaceutical medicines mean that the world's population depends to a great extent on traditional medicinal remedies, and some 20,000 species of higher plants are used medicinally throughout the world.

*Abrus precatorius* Linn. (Fabaceae) commonly known as Indian Liquorice, is a climbing shrub found in subtropical regions of India. The seeds are acrid, bitter, astringent, purgative, aphrodisiac, applied locally for sciatica etc<sup>2</sup>. From literature review, it reveals that no work has been carried on the seeds of *Abrus precatorius* for anthelmintic activity. The objective of this study is to evaluate anthelmintic activity of ethanolic extract of red seeds of *Abrus precatorius*.

### Materials And Methods

#### Authentication of the plant material

The plant specimen was collected from S.V University; Tirupati has been identified as *Abrus precatorius* Linn. Family Fabaceae, Voucher NO: SDIP, Ref No: 001 dated 10/10/2011 and authenticated by Dr.Madhavachetty, Botanist, Tirupati. The plant materials were dried in vacuum oven to 40° C.

#### Preparation of plant extract

Coarsely powdered material is successively extracted by triple maceration method with petroleum ether (60-80°) and 75% ethanol. From the dried extract, accurately 20mg/ml and 40mg/ml suspensions of ethanolic extract of seeds of *Abrus precatorius* in 1% gum acacia solution (1% gum acacia solution in normal saline) was prepared.

### Standard used for the activity

Albendazole suspension (micronized albendazole suspension in the concentration of 20mg/ml and 40mg/ml).

### Animals

Earth worms (*Pheretima posthuma*) of about 5-7cms long were used for anthelmintic activity.

### Method

Earth worms were used for anthelmintic activity, and they are grouped into control, standard and Ethanolic extract of *Abrus precatorius*, six animals in each group having length of 8 ± 1cms. Albendazole was used as standard, where 15 gum acacia solution in normal saline solution as control, poured in 10ml of each suspension in separate petri dishes. Leave six worms in each petri dish. Time required for paralysis and death of animals were noted for each sample. Death of the worm was ascertained by transferring it into a beaker containing hot water at 50°C, which stimulated and induced movements if the worm was alive<sup>3,4</sup>.

### Results and Discussion

Preliminary phytochemical analysis showed the presence of carbohydrates, flavonoids, amino acids, steroids, saponins and tannins like phyto-constituents. Some of these components are responsible for anthelmintic activity. The Table No:1 reveals that the extracts obtained from the red seeds of *Abrus precatorius* are active against the earth worm. Ethanolic extract of *Abrus precatorius* showed good anthelmintic activity. The earth worm *Pheretima posthuma* is one of the most important soil invertebrate in promoting soil fertility. Its feeding and burrowing activities break down organic matter and release nutrients and improve aeration, drainage and aggregation of soil. Anatomy and Physiology of *pheretima posthuma* is similar to helminthes<sup>5</sup>. Therefore it was used in order to investigate the activity of *Abrus precatorius*. In search of compounds with anthelmintic activity, a number of substances were screened using different species of worms, for example, earth worms, *Ascaris*, *Nippostrongylus* and *Heterakis*. Of all these species, earth worms have been widely used for the initial evaluation of anthelmintic compounds invitro because they resemble intestinal

worms in their reaction to anthelmintics and are easily available. It has been demonstrated that all anthelmintics are toxic to earth worms and a substance toxic to earth worms is worthy for investigation as an anthelmintic<sup>6</sup>. These extracts can be used for further isolation of compounds for their anthelmintic activity, which is our future plan of research work.

**Table No: 1 Anthelmintic activity of ethanolic extract of red seeds of *Abrus precatorius***

Groups	Dose in concentration (mg/ml)	Time of paralysis (min)	Time of death (min)
Ethanolic extract	20	22.23±6.23	46.57 ± 2.23
	40	12.06 ±2.98	27.32 ± 2.62
Albendazole	20	11.16 ± 1.12	16.12 ± 1.67
	40	08,21 ± 0.37	12.12 ± 0.66

Results are expressed as mean ± SEM from 6 observations.

#### Acknowledgments

Authors are thankful to the manager of vermin culture plant, who provided us earth worms. Authors are also very thankful to

the Management and Directors of Sree Dattha Institutions, Sheriguda, Ibrahimapatnam, Hyderabad for providing us the facilities to carry out the research work.

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