

In vitro Anthelmintic Activity of Alcoholic Extract of *Allivum Sativum* against Rumen Amphistome

Ghangale G. R*, Mahale Tushar and Jadhav N.D.

Department of Pharmacology and Toxicology,
Bombay veterinary college, Parel, mumbai-400012

* Corresponding author email: drganeshghangale@gmail.com

Abstract

The present investigation was undertaken to evaluate effect of alcoholic extract of *Allivum sativum* for anthelmintic activity *In vitro* against rumen amphistome. Mature and healthy worms randomly collected from rumen papillae of freshly slaughtered buffaloes from deonar abattoir in normal physiological solution (tyrode solution), having temp (37°C). The study was conducted at four different dilutions of extracts viz. 5,15,50,75 mg/ml prepared in tyrode solution. Albendazole 5 mg/ml and tyrode solution serves as positive control and negative control respectively. Each of the concentration selected was taken in total volume of 20 ml tyrode solution in a separate clean petridish. Ten vigorously motile worms irrespective of their sex were placed in each petridish and observation were made after every 15 min. for cessation of motility by pinch method (agarwal et al. 1979) mortality was assessed by slightly warming the petridish and observing the movements. The time taken for cessation of motility in alcoholic extract was 3 hour, 1hour, 10min., and instant at 5,15,50,75 mg/ml concentration respectively. Mortality was observed at 4hr, 1.5 hr, 15 min. and instantly respectively in test groups. Time taken for 100% mortality was 6 hour by standard drug. So it was concluded that alcoholic extract of *Allivum Sativum* is having good activity against worms' motility *In vitro*.

Keywords: Anthelmintic, *Allivum Sativum*, Parasite, Rumen, Alcohol.

Introduction

Parasitic infection is a major health problem throughout the world and is responsible for considerable economic losses in livestock industry. Other adverse effect of these parasites includes loss of meat, wool an egg production. Amongst helminthes, infection cause by trematodes like amphistome is more serious than that due to roundworm. Medicinal plant research continues to be considering as a fruitful approach for the search of safer, cheaper, and ecofriendly anthelmintic drug. *Allivum sativum* have multiple medicinal properties. it is claimed to posses Antibacterial, antifungal, anti-inflammatory, antimicrobial, anthelmintic, antiseptic, antiviral, hypotensive-vasodilator, cholagogue, antispasmodic, decreases blood cholesterol, increases HDL, anti-atheromatic, PAF antagonist, increases fibrinolytic activity, hypoglycemic, expectorant, diaphoretic, antioxidant, antitumour, antineoplastic, antimutagenic, diuretic.

The present study was undertaken to carry out scientific validation of *In vitro* anthelmintic activity of alcoholic extract of *Allivum Sativum* by petridish method. (Agarwal et al 1979).

Materials and methods

Collection of worms:

Mature and healthy worms randomly collected from rumen papillae of freshly slaughtered buffaloes from deonar abattoir in normal physiological solution (tyrode solution), having temp (37°C) until start of experiment.

Preparation of alcoholic extract:

Alcoholic extract of bulb of *Allivum Sativum* is obtained by using 70% ethanol and alcoholic extract made solvent free by using rotatory evaporator.

Total six groups are taken out of which four for different concentration of extract as namely 5,15,50,75 mg/ml prepared in tyrode solution and Fifth serves as a negative control (tyrode solution with worms only) and sixth with albendazole (standard drug) 5 mg/ml in tyrode solution serves as positive control. Each of the concentration selected was taken in total volume of 20 ml of tyrode solution in separately sterile petridish. 10 vigorously motile worms irrespective of their sex were place in each petridish and observation were made after every 15 min. for cessation of motility by pinch method (agarwal et al. 1979) mortality was assessed by slightly warming Petri dish and observing the movement.

Gross visual motility of worms and percent mortality recorded at every fifteen min. interval upto 6 hours as index for anthelmintic activity. The alcoholic extract showing the mortality of more than 80% was consider as effective anthelmintic during present study.

Results and discussion

Time taken for cessation of motility in alcoholic extract was 3 hour, 1hour, 10min., and instant at 5,15,50,75 mg/ml concentration respectively. Mortality was observed at 4hr, 1.5 hr, 15 min. and instantly respectively in test group. Percent mortality recorded statistically in different concentration were 29.99%+₋0.32, 46%+₋0.42, 84%+₋0.29, 100% which was statistically significant at P<0.05% Time taken for 100% mortality by standard drug was 6 hour. So it was concluded that alcoholic extract of *Allivum Sativum* is having good activity against worms' motility Invitro. however its clinical efficacy is to be explored

further by in vivo studies and further investigation should be directed towards identification and purification of active ingredients.

References

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