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INVITRO ANTIOXIDANT ACTIVITIES OF CHLOROFORM EXTRACT OF *ANISOMELES MALABARICA*.

S.Selvakumar*, S. Vimalanban and D.Sajusha.
Department of Industrial Biotechnology, Bharath University, Chennai-600073, India.

Abstract:
Herbal medicines and Phytochemicals can be potent agents for lung cancer chemoprevention and treatment by regulating multi-molecular targets involved in angiogenesis, metastasis, and severe side effects; only provided quality control and reproducibility issues are solved. Compared with the conventional drugs used in cancer treatment, the toxicity of medicinal plants may seem trivial; however, it is a serious public health problem. Several medicinal plants are considered toxic and can cause serious damage to the health of patients. Hence it is of interest to investigate the in vitro antioxidant analysis 0f chloroform extract of Anisomeles malabarica was analysed. Our results indicate that the antioxidant potential of Anisomeles malabarica.

Key words: *Anisomeles malabarica, Medicinal plants, Phytochemicals, Lung cancer, Chemoprevention.*

***Corresponding authour:**
Dr. S. Selval Kumar. Ph.D,
Professor,
Dept. of Industrial Biotechnology,
Bharath University,
Chennai-600073.
Phone: +91-9840917984.
selvakumarmss@gmail.com

QR code

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INTRODUCTION:

Free radicals or highly reactive oxygen species are formed by exogenous chemicals or endogenous metabolic processes in the human body [1]. These are capable of oxidizing bio-molecules viz nucleic acids, proteins, lipids and DNA and can initiate different degenerative diseases like neurological disorders, cancer, emphysema, cirrhosis, atherosclerosis, arthritis etc [2]. Antioxidants are the compounds which terminate the attack of free radicals and thus reduce the risk of these disorders. Almost all organisms are protected up to some extent by free radical damage with the help of enzymes such as super-oxide dismutase, catalase and antioxidant compounds viz. ascorbic acid, tocopherol, phenolic acids, polyphenols, flavonoids and glutathione [3]. Antioxidant supplements or dietary antioxidants protect against the damaging effects of free radicals [4]. Recently much attention has been focused on the use of natural antioxidants to protect the human body especially human malignancies, diabetes mellitus and neurological disorders from the oxidative damage caused by free radicals. Therefore, the present study has been conducted to evaluate the antioxidant activity of chloroform extract of *Anisomeles malabarica*.

MATERIALS AND METHODS:

Collection of medicinal plants

The Indian medicinal plant *Anisomeles malabarica* aerial parts were collected from the nearby medicinal garden, Chennai, India. The parts of the plants were authenticated by the botanist.

Plant Materials

The Chloroform extract of a aerial parts of *Anisomeles malabarica* were used for this study.

Preparation of Plant extracts

The extraction of the plant material was carried out using known standard procedures . The plant materials were dried in shade and powdered in a mechanical grinder. The powder (25.0 g) of the plant materials were initially defatted with petroleum ether (60-80°C), followed by 900 ml of hydroalcohol by using a Soxhlet extractor for 72 hours at a temperature not exceeding the boiling point of the solvent. The extracts were filtered using Whatman filter paper (No.1) while hot, concentrated in vacuum under reduced pressure using rotary flask evaporator, and dried in a desiccator. The hydroalcoholic extract yields a dark greenish solid residue weighing 5.750 g (23.0% w/w). More yields of extracts were collected by this method of extractions. The extracts were then kept in sterile bottles, under refrigerated conditions, until further use. The dry weight of the plant extracts was obtained by the solvent evaporation and used to determine concentration in mg/ml. The extract was preserved at 2- to 4°C.

Chemicals and Reagents

All chemicals were used for this project were purchased from M/s. Sigma Chemicals, USA.

Determination of Antioxidant activity (DPPH free radical scavenging activity)

The antioxidant activity of the plant extracts was examined on the basis of the scavenging effect on the stable DPPH free radical activity. Ethanolic solution of DPPH (0.05 mM) (300 l) was added to 40 l of extract solution with different concentrations (0.02 - 2 mg/ml). DPPH solution was freshly prepared and kept in the dark at 4°C. Ethanol 96% (2.7 ml) was added and the mixture was shaken vigorously. The mixture was left to stand for 5 min and absorbance was measured spectrophotometrically at 517 nm. Ethanol was used to set the absorbance zero. A blank sample containing the same amount of ethanol and DPPH was also prepared. All determinations were performed in triplicate. The radical scavenging activities of the tested samples, expressed as percentage of inhibition were calculated according to the following equation. Percent (%) inhibition of DPPH activity = [(AB – AA) / AB] x 100 Where AA and AB are the absorbance values of the test and of the blank sample, respectively [5].

RESULTS AND DISCUSSION:

Free radicals or highly reactive oxygen species are capable of inducing oxidative damage to human body. Antioxidants are the compounds which terminate the attack of reactive species and reduce the risk of diseases. *Anisomeles malabarica* was used to determine the free radical scavenging activities of chloroform extract of *Anisomeles malabarica* was estimated. The antioxidants activity of the chloroform extract of Indian traditional medicinal plant *Anisomeles malabarica* was evaluated by measuring the reducing ability, Free radical scavenging activity was compared to the standard BHT. The chloroform extract of aerial parts of *Anisomeles malabarica* exhibited significant antioxidant activity in the dose dependent manner when the concentration increases the inhibition also increased [100,200,300,400 and 500 µg/ml of control BHT and plant sample shows the percentage of inhibition such as 38.9,54.2,71.1,74.5 and 99.8 and 10.1,27.1,66.1,69.4 and 81.3 respectively. The results of the pressure study can be concluded from the study that the regular use of *Anisomeles malabarica* as a supplement could be more helpful to enhance the antioxidant activity against various human diseases such as microbial infections, Neurological disorders, Human malignancies and rheumatoid artherities. [6]

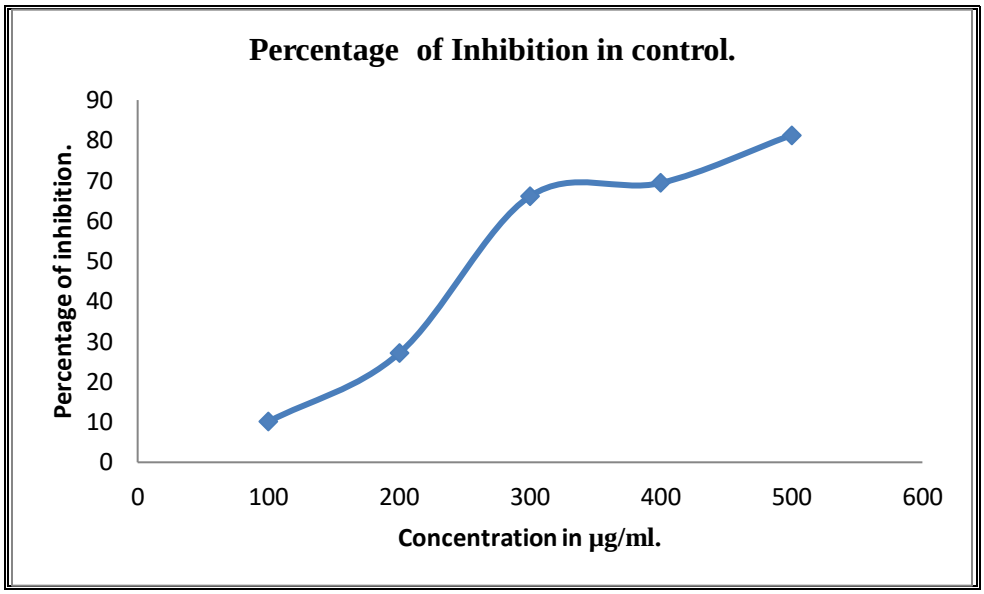


Fig.1: shows the antioxidant activity of control BHT.

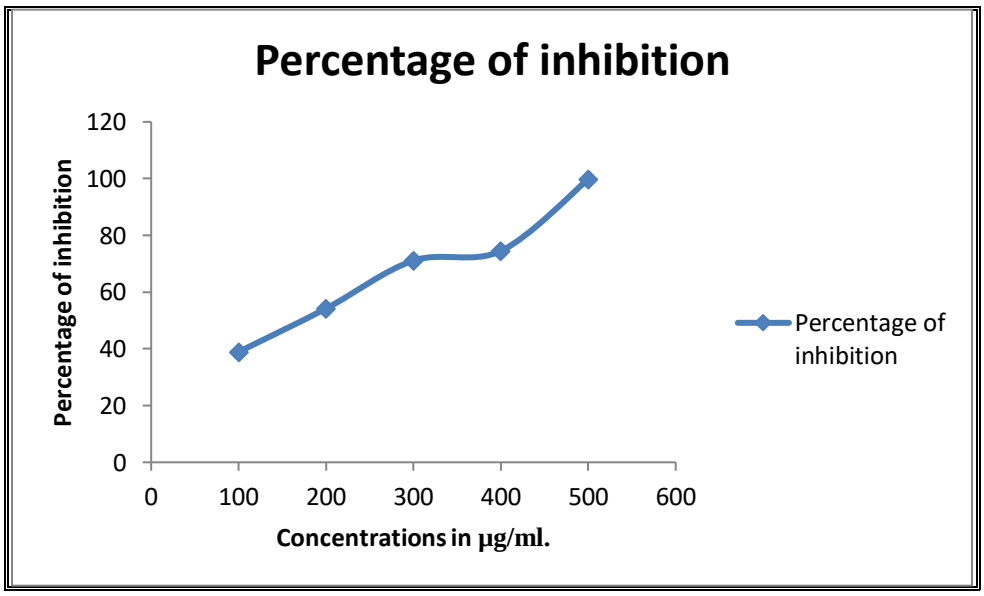


Fig. 2: shows the antioxidant activity of chloroform extract of *A.malabarica.*

In chloroform extract of *A. malabarica* exhibited an antioxidant activity in a dose depended manner. When the concentration increases the inhibition of radical scavenging activity of *A.malabarica* also increased (100,200,300,400 and 500 µg/ml shows and respectively). Our present study clearly indicate that the free radical scavenging activity of chloroform extract of *A.malabarica* due to the presence of various Phytochemical components such as flavanoids, alkaloids, tannins , reducing sugars, cardiac glycosides and anthraquinones [7].

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