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SCAVENGING ACTIVITY OF METHANOLIC EXTRACT OF FLOWERS OF JASMINUM MULTIFLORUM LINN

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ABSTRACT
Jasminum multiflorum Linn is an ornamental flowering shrub, used as a traditional medicine. Mostly leaves, roots, flowers and fruits are used to maintain health and also treat fever, cough, indolent ulcer, and abdominal distention, diarrhea, lowering the blood glucose level, regulating menstrual flow, to clean kidney waste, urinary inflammation, other infections and blood shot eyes. The flowers of *Jasminum multiflorum Linn* are having different therapeutic activities like Vasodilatation, Cardiotropic, Analgesic, Suppression of Lactation and Anti-oxidant. It is also noticed that there was a report on Anti-bacterial activity of flower. So, present paper is aimed to carry out to test the Antioxidant property of methanolic extract of flower of *Jasminum multiflorum Linn.* The Methanolic extract was tested for its antioxidant activity by using Hydrogen peroxide scavenging (H_2O_2) Assay method. It shown good anti oxidant activity when compare with the standard Ascorbic acid.

KEYWORDS: Hydrogenperoxide, Anti oxidant, *Jasminum multiflorum*, Methanolic extract.

INTRODUCTION

In modern world, the synthetic drugs are readily available and more effective in curing numerous diseases. Even though, there are some people who still prefer using traditional folk medicines, because of their less harmful effects due to non-toxic in nature and easy availability at reasonable price. Natural products have a unique chemical diversity, which results in diversity in their biological activities. This is because of their well organized three dimensional chemical and steric properties. In the mean time the utility of natural products as biological function modifiers has also won considerable attention. Subsequently, they have been successfully employed in the discovery of new drugs. Therefore researchers are increasingly turning their attention to folk medicine, looking for new leads to develop better drugs. In the present research paper we evaluated the anti oxidant activity of Methanolic extract of flowers of *Jasminum multiflorum*.

Jasminum multiflorum (J.M) is a species of jasmine commonly known as Indian jasmine, star jasmine ,Winter jasmine and Downy jasmine. It is an ornamental flowering shrub native to India and South - East Asia. In ancient age, people used local flora and fauna as a traditional medicine for their survival. Mostly leaves, roots, flowers and fruits are used as traditional medicines to maintain health and also treat fever, cough, indolent ulcer, abdominal distention, diarrhea, lowering the blood glucose level, regulating menstrual flow, to clean kidney waste, inflamed and blood shot eyes etc.

Particularly flowers are used as beverage, lactifuge, emetic, cardiac tonic, an aphrodisiac, a sedative, an antiseptic, antidepressant, antispasmodic, to increase immunity, to treat conjunctivitis and analgesic & headache. Flowers are having different types of phytochemicals like alkaloids, flavonoids, terpenoids, tannins, emodin, leucoanthocyanins, steroids, coumarins, phlobatannins, and saponins. The active ingredients present in the flowers are Secoiridoid, lactones, jasmolactone A, B, C and D which contain novel bicyclic-2-oxo-oxepano [4, 5-c] pyran ring system. It also contains 2-acetoxyphenylethanol, n-tritetracontane, heptacosane, jusmultiside and multifloroside, multiflorine.

Human beings are exposed to H_2O_2 indirectly via the environment nearly about 0.28 mg/kg/day with intake mostly from leaf crops Hydrogen peroxide may enter into the human body through inhalation of vapor or mist and through eye or skin contact. H_2O_2 is rapidly decomposed into oxygen and water and this may produce hydroxyl radicals (-OH) that can initiate lipid peroxidation and cause DNA damage in the body.

As the flowers of *Jasminum multiflorum Linn* flowers having no.of active principles and using for treatment different types of diseases and disorders, present paper aimed and reported the scavenging activity of methanolic extract of *Jasminum multiflorum Linn* (J.ML) flowers.

MATERIALS

Methanolic extract, Hydrogen peroxide, Phosphate buffer, Ascorbic acid, Distilled water.

METHOD

Preparation of methanolic extract of Flower and Phytochemical screening

At first the fresh flower of *Jasminum multiflorum Linn* was collected, cleaned and weighed. The flowers were allowed for maceration for 2 days in Methanol. The methanolic extract was collected by filtration and extract was concentrated by using Rota-vaporizer. The collected concentrated extract was allowed for the air dry and stored in a cool place for further use.

The Methanolic extract was tested for the following chemical constituents like Proteins,Carbohydrates, Aminoacids, Alkaloids, Glycosides, terpenoids, Steroids, Saponins and Phenols by using different types of chemical tests and also conformed with I.R –spectrum.

Hydrogen peroxide scavenging (H_2O_2) assay

A solution of hydrogen peroxide (40 mM) was prepared in phosphate buffer (50 mM pH 7.4).

The methanolic extract was diluted with distilled water to get series of dilutions having concentration ranging from 20-60 µg/ml, after addition of 2ml of buffer with H_2O_2. Keep the mixture a side for 10 minutes. The concentration of hydrogen peroxide was determined by measuring the absorbance at 230 nm using a spectrophotometer against a blank solution containing phosphate buffer without hydrogen peroxide. The absorbance of both standard (Ascorbic acid) and samples were measured. The percentage inhibition was calculated by using equation given below.

$\%\ \text{Scavenged}\ (H_2O_2) = [(A_i - A_t) / A_i] \times 100$

Where, A_i - Absorbance of control and A_t Absorbance of test.

RESULT

The absorbance of both standard and samples are presented in Table.No-1. Calibration graph was ploted by taking Concentration on X-axis and Absorbencies on Y-axis, which was represented in Fig.No-1 & 2. The percentage inhibition was calculated and results are presented in Table.No-2.

Calibration graph was ploted by taking Concentration on X-axis and percentage inhibition on Y-axis, which was represented in Fig.No-3.

DISCUSSION

The present work dealt with the study of antioxidant activity of methanolic extract of flowers. The phytochemical evalution of extract shows the presence of Flavonoids, Steroids, phenols, Saponins, Alkaloids, Terpenoids, Tannins and Amino acids. Coming to it scavenging activity against H_2O_2, shows significant effect. By observing the absorbance values of both standard and sample, the methanolic extract shown good anti oxidant activity as like ascorbic acid. As the concentration increases the activity also increased. The percentage inhibition activity of extract as the concentration of drug increases the activity of Hydrogen peroxide decreased.

From calibration graph IC_{50} was calculated and found to be 16.25. Based on this, we are concluding that the methanolic extract of *Jasminum multiflorum Linn* flowers having good anti-oxidant activity.

Table no. 1: The absorbance of methanolic extract of flowers of (J.ML) and Ascorbic acid.

S. no.	Concentration (µg/ml)	Absorbance	
		Sample	Standard
1	20	0.462	0.284
2	30	0.767	0.421
3	40	1.017	0.575
4	50	1.29	0.721
5	60	1.549	0.925
IC_{50} VALUE		16.25	

Table no. 2: Percentage inhibition activity of methanolic extract of flowers of JML on H_2O_2.

S. no.	Concentration (µg/ml)	Percentage inhibition (%) of H_2O_2
1	20	76.9
2	30	61.65
3	40	49.15
4	50	35.5
5	60	22.55

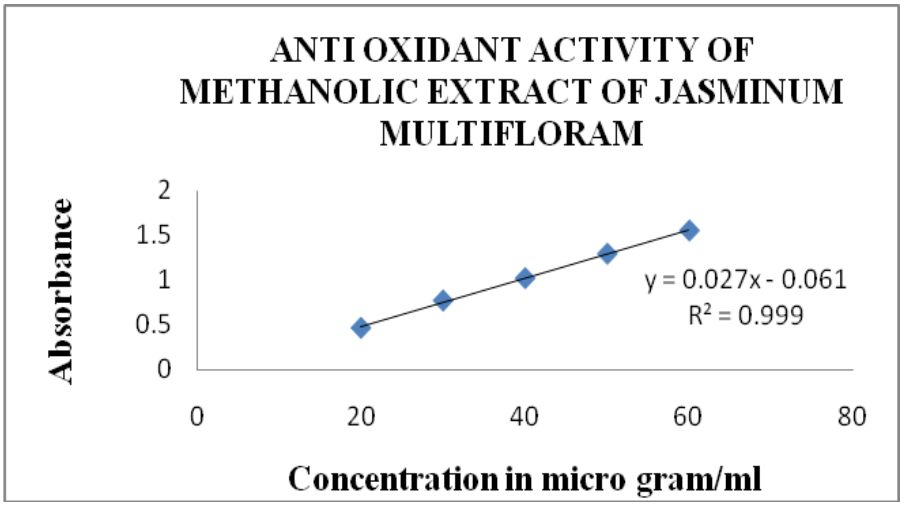

Fig. no. 1: Calibration graph for anti oxidant activity of methanolic extract of flowers of JML.

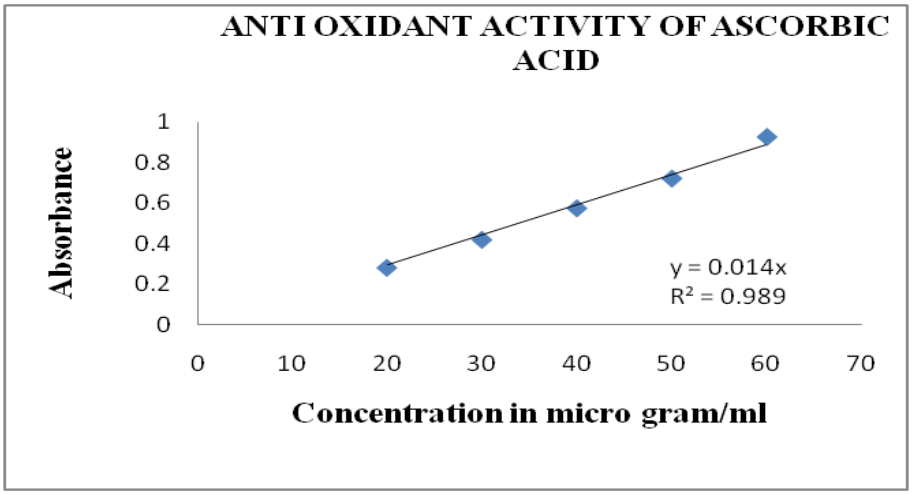

Fig. no. 2: Calibration graph for anti oxidant activity of ascorbic acid.

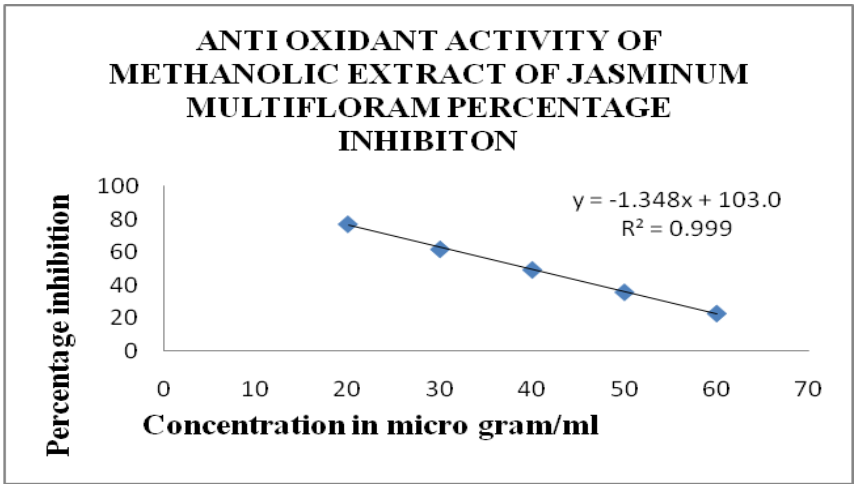

Fig. no. 2: Calibration graph for percentage inhibition of H_2O_2 by methanolic extract of flower.

CONCLUSION

From the report we are concluding that the methanolic extract of *Jasminum multiflorum Linn* flowers having good anti-oxidant activity when comparing with standard and we want extend this work for the isolation of active ingredients and testing them for the same activity in future.

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