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Phytochemical Investigations and Antioxidant Properties of Iris Kashmiriana Leaves Family-Iridaceae

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Research Article

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Abstract

Antioxidants are nature's way of protecting the body and cells from damaging free radicals. Free radicals are unstable molecules that are generated by sun exposure, straks and a part of natural aging process, and prevent the process of oxidation. Our present experiment was to study some phytochemicals and identify the chloroform extract of Iris kashmiriana leaves. The antioxidant property was carried out by different methods like hydrogen peroxide method, scavenging assay and reducing power assay. Our experiment of chloroform extract method is more effective than other two methods. This study shows chloroform extract method of iris kashmirina leaves and is natural antioxidant and be very helpful in stopping the phenomenon of much oxidative stress.

Keywords: Iris Kashmirina; Antioxidant Property; Hydrogen Peroxide; Phytochemicals; Chloroform; Oxidative Stress

Introduction

Human body has natural antioxidant system due to which they can reacts with active species and neutralize their effects automatically, they are enzyme which includes catalase, superoxidase and dismutase which prevent our body from free radicals and oxidative stress. Human brain have made the artificial antioxidants like butylated hydroxyl toluene, anisole which prove to be very harmful for human body so their arises a basic need of methods like hydrogen peroxide scavenging, DPHH assay, radical scavenging assay reducing power our experiment of chloroform extract method is more effective than other two methods. This study shows chloroform extract method of iris kashmirina leaves are better source of natural antioxidant and be very helpful in stopping the phenomenon of many oxidative stress [1-3].

Materials and Methods

Plant Material

Plants are collected from Himalayan ranges of india, and the botanical authentication by biodiversity Bhopal india.

Preparation of extract

The leaves of plant was shade dry at room temperature and the powder was extracted with 95% ethanol, and the extract was filtered and the extract was concentrated under reduced pressure and successively with n-hexane, chloroform, ethylalcohol and methanol extract, chloroform extract were subjected for the phytochemical and antioxidant activity and chemical test that is used to determine active compounds in the chloroform extract of iris kashmiriana leaves by the various standard methods. Various test have been peformed on the chloroform extract of Iris kashmiriana leaves.

Flavonoid Tests: Take a part of extracts and add little solution of Aluminum and a yellow colour was observed indicates the presence of flavonoids.

Mayer Test: 0.5ml of extract is added with 1ml of mayer

reagent, no change in solution shows the absence of alkaloids.

Tennin Test: 0.5 g dried powered sample boil in 20ml of water in test-tube, then filtered. A few drops of 0.1% Ferric chloride were added, presence of brown colour indicating the presence of tennins.

DPPH Method

Antioxidant Activity: Take test-tube and add small amount of 0.1ml of chloroform extract after that add 5ml of diphenyl picryl hdrozyl (DPPH) sol, place the test-tube in dark for about one hour and interept the colour at 515nm, the dissimilarity was calculated in optical density of DPPH solution and sample solution of DPPH ,with sample addition the downturn of optical density is used for a forecast of antioxidant computation. This analysis was compared with BHT standard using the formula free radical scavenging activity given below.

Percentage of antioxidant activity=×100—(i)

Reducing Power Assay

1ml of chloroform extract is blended with phosphate buffer and potassium ferricyanide, blended substance was incubated at 45° for 15 minutes, then add small amount of trichloroacetic acid to the blended substance for 10 minutes centrifuge it (2800rpm).The loftier portion of solution blended with distilled water and ferric chloride, absorbance determined at 680nm. The infilated absorbance of reaction substance point out energetic reducing capacity. The action was measured with BHT, and the inhibition activity was calculated by equation 1.

Scavenging Activity Hydrogen peroxide

Solution was prepared with standard phosphate buffer. The distinct concentration of extract in distilled water was add to 0.5ml of sol and absorbance was estimated at 220nm and the calculation means inhibition activity was determined with equation 1.

Results

The result of the phytochemical screening and antioxidant activity are given in the Table 1 & 2.

S.No	Phytochemical Results
1	Alkaloids Absent
2	Flavonoids Present
3	Tennins Present
4	Isoflavonoids Present

Table 1: Qualitative Analysis of Phytochemicals of Iris kashmiriana leaves.

S.NO	Method	Percentage of Antioxidant activity	Standard (BHT)
1	DPPH assay	43.28	76.74
2	Reducing power assay	33.83	69.72
3	Hydrogen peroxide assay	18.35	44.81

Table 2: Antioxidant activity of chloroform extract of Iris kashmiriana leaves.

Conclusion

The chloroform extract of iris kashmiriana leaves has higher antioxidant activity as compared to other two methods, nearly half of population depends on traditional medicine mostly plant drugs so there is an urgent need of screening antioxidant properties of herbs that will be helpful for the treatment of several diseases. In small quantity they will helpful for the treatment of several diseases and will also act as inhibitor for diverse physiological role in the body. Antioxidants are made synthetically which will be more hazardous for health so, need to be made effective and prominent natural compound. Our results of Iris kashmiriana seems to be have good treatment for various related diseases. It will be considered as one of the good medicinal plant with active compounds [4,5].

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