

Phytochemical Analysis of *Sesamum orientale* L.

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Abstract:

Sesame (*Sesamum orientale*) seeds have been grown in tropical regions throughout the world since prehistoric times. Sesame seed, a rich source of protein, is one of the first crops processed for oil production. In *Sesamum orientale* the presence of Saponins, and Flavenoids were found to be in major quality. However, the more amount of terpenoids was reported by present investigation in the chloroform extract. Moreover, the absences of Tannins, Alkoloids and Steroids in the system reported by present investigation. For these phytochemical there is a urgent need for isolation that researchers should use the other solvents.

Keywords: *Sesamum orientale*, Phytochemistry.

Intruduction:

Sesame (*Sesamum orientale*) are Herbs, annual. Lower leaves opposite, long-petioled, trifoliolate or palmatisect, upper shortly petioled, ovate-lanceolate or oblong. Inflorescence of terminal, leafy racemes. Flowers pink. Capsules 4-angled, beaked, glandular-pubescent. Seeds reticulately rugose. Flowering and fruiting season is September-October.

Sesame (*Sesamum indicum* L.) seeds have been grown in tropical regions throughout the world since prehistoric times. Sesame seed, a rich source of protein, is one of the first crops processed for oil production. Plants contain diverse groups of phytochemicals such as tannins, terpenoids, alkaloids, and flavonoids that possess enormous antimicrobial potentials against bacteria, fungi and other microorganisms. Sesame is an important source of high quality oil and protein. Roughly half of the seeds weight is oil, which has excellent stability due to the presence of natural antioxidants such as sesamol and sesamin. Sesame seeds contain many phytochemical important compounds like flavonoids, phenolic acids, alkaloids, tannins, saponins, steroids, terpenoids and minerals like calcium, iron, magnesium, manganese, copper, zinc, phosphorus. Sesame has compounds like sesamin, sesaminol, gamma tocopherol, cephalic and lecithin. These compounds impart many of the pharmacological activities like antioxidant.

Material And Method:

The experimental material is seeds of *Sesamum orientale* collected from local area. The seeds were dried for 6-8 weeks at ambient temperature. After drying make fine powder and stored the powder in air tight container or in to the polythene bags.

Preparation of extract :

Seeds were crushed in fine powder with the help of mixture and stored in air tight bottle. The fine powder was used for qualitative analysis of secondary metabolites. Extraction was carried out in organic solvent such as n-hexane, petroleum ether and chloroform by using soxhlet apparatus.

Qualitative test:

Saponin

• The 2ml of the extract was mixed with 5ml of distilled water in a test tube and it was shaken vigorously. Formation of stable foam was taken as an indication for the presence of saponin.

Tannin

• 1ml of the extract was mixed with few drops of 1% lead acetate. The yellow precipitation was form indicated the presence of tannin. precipitation was form indicated the presence of tannin.

Steroid

• To 1 ml of extract, 10ml of chloroform and equal volume of and of conc. Sulphuric acid was added, the upper colour turn red where as colour sulphuric acid layer turn yellow with green influence indicate that the presence of steroid.

Flavonoid

• 3ml of sample was mixed with few drops of NaOH. An intense yellow was formed, which turned colorless on addition of few drops of diluted acid which indicates presence of flavonoid.

Alkaloid

• 2 ml of extract was added with 2ml of HCl and 6 to 7 drops of mayer's reagent was added and extract was observed. Red or orange form indicated presence of alkaloids.

Terpenoid

• 2 ml of extract was added with 2ml of chloroform and 1 ml of conc. Sulphuric acid. Reddish brown coloration of solution shows terpenoid in solution.

Observation and Result:

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S.N.	Phytochemical test	chloroform
1	Tannins	---
2.	Saponins	+
3.	Flavenoids	+
4.	Alkoloids	---
5.	Steroids	---
6.	Terpenoids	+++

(+++): Indicates the presence of excellent constituents.

(++) : Indicates the presence of moderate constituents.

(+) : Indicates the presence of low moderate constituents.

(-) : Indicates the absence of constituents.



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Result:

In *Sesamum orientale* the presence of Saponins, and Flavenoids were found to be in major quality .However ,the more amount of terpenoids was reported by present investigator in the chloroform extract .Moreover ,the absences of Tannins, Alkoloids and Steroids in the system reported by present investigator. For these phytochemical there is a urgent need for isolation that researchers should use the other solvents.

The presence of terpenoids, tannins, cardiac glycosides and saponifiable lipids obtained in this study showed that these seeds can be harnessed for both nutritional and medicinal purposes. The preliminary phytochemical tests are helpful in finding chemical constituents in the Seed extracts that may lead to their quantitative estimation and also in locating the source of pharmacologically active chemical compound. The preliminary phytochemical tests revealed that seed contained phyto constituents such as Cardiac glycoside, tannins, terpenoids and Saponifiable lipids, which also possess antioxidant activity. Fatty acids represent a chemically inert class of organic compounds that are easy to extract from biological material. Normally, fatty acids are acids produced in cell after catabolism break down of fat.

These compounds are hydrophobic and not water soluble. They are important part of a healthy diet and body requires them for organs and tissues and utilize them in many cellular activities. Hexane, Petroleum Ether and Chloroform has polarity index is 0.1, 0.1 and 2.7 respectively, therefore in our work we aimed to use them as extracting solvents for the secondary metabolite content of the leaching and soxhlet extracts of white Sesame seeds. *Sesamum* Seed subjected to soxhlet and leaching extraction the oil yield obtained was high in soxhlet extraction compared to Leaching.

The phytochemical screening carried out on *Sesamum* seeds reveal the presence of Steroids, terpenoids, tannin, alkaloids and terpenoids were detected. The presence of some of these secondary metabolites suggests that the plant might be of medicinal importance and supports the bases for some of the ethno uses. For instance, the presence of alkaloids, Flavonoids, glycosides, saponin and tannins suggest that the plant might have an antioxidant, anti-allergic, anti-inflammatory, anti- microbial, anticancer activity. It also suggests that the plant might have diuretic properties. The presence of tannins shows that the plant is astringent as documented and suggests that it might have antiviral and anti-bacterial activities and can aid in wound healing and burns. Some researchers properties.

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