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R E V I E W A R T I C L E

Qualitative and Quantitative Identification of Ficus Carica *(Anjeer)*

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A B S T R A C T

Fresh leaves of Figs (Ficus carica), F. Moraceae, *were* subjected to grind in a electric mixer& extracted it. To assess their effect on the nutritional & Health-Related properties of figs leaves. The Quantitative identification, total phenolic compound & Qualitative identification, estimation of alkaloids, glycosides, oils, sugars, amino acids & proteins were determined. With these results it can be concluded that the differences in analyzed compounds in fresh leaves of figs are significant. This result indicate that fresh leaves of figs can be used as good source of many Phytochemicals like Alkaloids, Phenolic compounds, Glycolides, Sugars, Amino acids & Proteins estimated by different phytochemical tests like hager's & Dragan Droff"s test for alkaloids, Benedict"s test for Reducing sugars and Ninhydrine test for proteins & it can be used in many industries and as nutrients against the treatment of piles, heart improvement, breast cancer, liver improvement etc.

Keywords: Glycolides, Alkaloids, Ninhydrine test, Dragan Droff"s tes

A R T I C L E I N F O

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C O N T E N T S

1. Introduction

Phytochemistry is the study of phytochemicals, which are chemicals derived from plants. Those studying phytochemistry strive to describe the structures of the large number of secondary metabolic compounds found in plants, the functions of these compounds in human and plant biology, and the biosynthesis of these compounds. Plants synthesize phytochemicals for many reasons, including protecting themselves against insect attacks and plant diseases. Phytochemicals in food plants are often active in

human biology, and in many cases have health benefits. The compounds found in plants are of many kinds, but most are in four major biochemical classes, the alkaloids, glycosides, polyphenols, and terpenes.

2. Extraction Method

Extraction, as the term is used pharmaceutically, involves the separation of medicinally active portions of plant or animal tissues from the inactive or inert components by using selective solvents in standard extraction procedures. The products so obtained from plants are relatively impure liquids, semisolids or powders intended only for oral or external use. The extract thus obtained may be ready for use as a medicinal agent in the form of tinctures and fluid extracts, it may be further processed to be incorporated in any dosage form such as tablets or capsules, or it may be fractionated to isolate individual chemical entities such as ajmalicine, hyoscine and vincristine, which are modern drugs. Thus, standardization of extraction procedures contributes significantly to the final quality of the herbal drug.

- Infusion
- Decoction
- Percolation
- Digestion
- Hot continous extraction
- Maceraton

Digestion:

This is a form of maceration in which gentle heat is used during the process of extraction. It is used when moderately elevated temperature is not objectionable. The solvent efficiency of the menstruum is thereby increased.

Plant Profile:

Ficus Carica (Common fig): ANJIR

Biological Source: It is fresh leaves of plant Ficus carica belonging to the family of Moraceae.

Synonims:

Ficus carica is an Asian species of flowering plant in the mulberry family, known as the common fig (or just the fig). It is the source of the fruit also called the fig, and as such is an important crop in those areas where it is grown commercially. Native to the Middle East and western Asia, it has been sought out and cultivated since ancient times, and is now widely grown throughout the world, both for its fruit and as an ornamental plant. The species has become naturalized in scattered locations in Asia and North America.

3. Tests for Phytochemicals

Detection of Alkaloids

Dragandroff's test

- Filtrate was treated with potassium bismuth iodide solution (Dragendroff's reagent).
- Formation of orange red precipitate indicated the presence of alkaloids.

Hager's test

- Filtrate was treated with saturated aqueous solution of picric acid (Hager's reagent),
- Presence of alkaloids were confirmed by the formation of yellow coloured precipitate

Detection of Carbohydrates

Molisch's test

- Filtrate was treated with 2 drops of alcoholic αnaphthol solution in a test tube, shaken
- Add conc. sulphuric acid from the side of the test tube.
- Development of a violet ring @ the junction of two liquid confirmed the presence of carbohydrates.

Detection of Reducing Sugars

Bendict's test

Filtrate was treated with Benedict's reagent & boil in a thermostatic • water bath for 5 minutes. • Formation of an orange red precipitate indicated the presence of reducing sugars.

Fehling's test

- Filtrate was acidified with dil. Hydrochloric acid, neutralized with alkali & heated with Fehling's A & B solutions.
- Formation of red precipitate indicated the presence of reducing sugars.

Detection of Saponins

Foam test

- Small quantity of the extract was shaken with 2 ml of water. Persistence of foam produced for ten minutes indicated the presence of saponins.

1. **Detection of Phytosterols**

Salkowaki's test

Small quantity of extract dissolved in 5 ml of chloroform, on adding a few drops of conc. Sulphuric acid. Allow the solution to stand Formation of brown ring indicated the presence of phytosterols.

Libermann Burchard test

The chloroform extracted solution was treated with few drops of acetic anhydride. Boil & cool. Add conc. sulphuric acid. Formation of a bluish green colour solution confirmed the presence of phytosterols.

2. **Detection of Phenolic compound**

- Treat the extract with 3-4 drops of ferric chloride solution
- Formation of bluish black colour indicated the presence of phenols. Ferric Chloride Test:
- Treat the extract with 3ml of 10% lead acetate solution.
- A bulky white precipitate indicated the presence of phenolic compounds.

Detection of Tannins

Take 0.5 g of the dried powdered plant, Boil 0.5g sample in 20 ml of water in a test tube, Filter the above mixture, add few drops of 0.1% ferric chloride. Development of a brownish green or a blue-black colouration indicated the presence of tannins.

Detection of Flavonoids

Lead acetate test

- Treat the extract with few drops of lead acetate solution.
- Formation of yellow precipitate indicated the presence of flavonoids.

Ferric chloride test

- Add a few drops of ferric chloride solution to the extract solution.
- Development of intense green colour indicates the presence of flavonoids.

Detection of Proteins and Amino acids

Biuret test

- Treat the test solution with few drops of 2% of copper sulphate solution
- Add 1ml of ethanol followed by excess of potassium hydroxide pellets
- Formation of pink colour in the extract layer indicates the presence of Protein.

Ninhydrine test

- Add Ninhydrin reagent to the test solution & boiled for few minutes.
- Formation of blue colour indicated the presence of amino acids.

Detection of Terpenoids

Salkowaki's test

Mix 2 ml of chloroform to extract solution carefully added conc. Sulphuric acid (3 ml) to form a layer.A reddish brown colouration of the interface indicated the presence of terpenoids

Detection of Glycoside

Keller-killani test

Treat the extract with 2 ml of glacial acetic acid containing one drop of ferric chloride solution, Add 1ml of conc. sulphuric acid, Appearance of brown ring @ the interface indicate the deoxysugar characteristic of cardenolides, Appearance of a violet ring below the brown ring & a greenish ring in the acetic acid layer confirmed the results.

Test for Fixed oils and Fats

Spots test

- Place small quantity of the extract in between two filter papers.
- Oil stain produced with any extract showed the presence of fixed oils and fats in the extracts.

Saponification test

- Add few drops of 0.5N alcoholic potassium hydroxide extract with few drops of phenolphthalein solution.
- Heat on a water bath for 1-2 hours.
- Formation of soap indicated the presence of fixed oils and fats in the extracts.

Test for Cardiac Glycosides

Born trager's test

Borntrager's test is employed for presences of anthraquinones. The drug is boiled with dilute sulphuric acid, filtered and to the filtrate benzene, or ether or chloroform is added and shaken well. The organic layer is separated to which ammonia is added slowly. The ammoniacal layer shows pink to red color due to presences of anthraquinone glycosides.

Legal test

The test is employed for digitoxose containing glycosides. The extract of drug is dissolved in pyridine, sodium nitroprusside solution is added to it and made alkaline, pink or red color is produced**.**

4. Quantitative Identification

Estimation of Flavonoids

One Gram of plant sample was repeatedly extracted with 100 ml. of 80% of aquous methanol at room temperature , the mixture was filtered through a Whatman No.1 filter paper into a pre-weighed 250 ml. beaker. The filterate was transferred into a water bath and allow to evaporate to dryness and weighed.

Estimation of total Phenols

The fat free sample was boiled with 50 ml. of ether for the extraction of the phenolic components for 15 minutes 5 ml. of the extract was pippetted out into a 50 ml. flask then 10 ml. of distilled water was added 2 ml. of Ammonium Hydoxide solution and 5 ml. of concentrated amyl alcohol were also added. The sample was made upto mark and left to react for 30 mins. For colour development. This was read at 505nm.

Use:

- Improve Heart Health
- Cure Anemia
- Prevent Colon Cancer
- Lower Sugar Levels In Diabetic Patients
- Prevent Breast Cancer
- Strengthen Bones
- Rich In Antioxidants
- Regulate High Blood Pressure
- Prevent hyper tension
- Treat piles
- Lower cholesterol
- Prevent coronary heart disease
- Treat asthma
- Increase sexual stamina.

5. Conclusion

Thus, from the present study the plant leaf extracts of Ficus carica showed an abundant production of Phytochemicals as secondary metabolites and they can be used in the

pharmaceutical industries for producing a potent drug against piles and treat in Breast Cancer & etc. The studies result of the above plant gives a basis of its use in traditional medicine to manage ailments and disorders. It also contains some biologically active constituents worthy of further investigations. Characterization and isolation of the active chemical components possessed by these traditional plants for further study may lead to the development of a potential drug that may treat various kinds of treatments and may lead to full utilization by the local community. The results of this study may also be of commercial interest to research institutes and pharmaceutical industries in the development of new drugs.

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