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AN EVALUATION OF PHYSIOCHEMICAL ANALYSIS OF CONQUER CAPSULES-AN ANTIPYRETIC UNANI MEDICINE.

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ABSTRACT:

Physio-chemical properties of a compound are the intrinsic physical and chemical characteristics of a substance. Phytochemicals are bioactive compounds obtained from plants are widely applied in the traditional Unani herbal Medicine. Herbal Medicine is a practice that includes herbs, herbal material and preparation that contain parts of plants or combination as active ingredients. These herbs are derived from plants parts such as leaves, bark, flowers, roots, fruits, and seeds. The plants kingdom is a treasure house of potential drugs and in the recent years there has been an increasing awareness about the importance of medicinal plants. Drugs from the plant are easily available, less expensive, safe, and efficient and rarely have side effects. The plant which has been selected for medicinal use over thousands of years constituting the most obvious choice of examining the current search for therapeutically effective new drugs such as anticancer drugs, antimicrobial drugs, antihepatotoxic compounds. According to World Health Organization [WHO], Medicinal plants would be best source to obtain variety of drugs. About 80% of individual from developed countries use traditional medicines, which has consists of the compounds derived from medicinal plants. To know more about this, screening of various phytochemicals and minerals such as Tannis, Saponins, Flavonoids, Diterpenes, and carbonate, nitrate, phosphate, ammonium etc. of conquer capsules, Unani herbal formulation. It was concluded that the herbal medicine extraction was rich in phytochemicals, biochemicals & minerals with significant medicinal properties.

KEYWORDS:

Phytochemical, Minerals, Drug, fever, Saponins, Tannins, Solubility, Unani Medicine, conquer capsules.

INTRODUCTION:

Phytochemicals are bioactive molecules which are also referred to as secondary metabolites that are derived from plants [1]. Primary metabolites and Secondary metabolites are the two types of metabolites generated by plants. Primary metabolites are necessary for a plant's normal metabolism, including growth and development. Secondary metabolites produced by plants may have little need for them. These may be found in nearly every part of the plant, including the bark, leaves, stem, root, flower, fruits, seeds, and so on [2]. Phytochemicals have been utilized as traditional herbal medicines for numerous years all over the world [3][4]. As a result, both the pharmaceutical industry and researchers place a higher focus on phytochemical research. These phytochemicals which are found in many plant sections, are also employed by indigenous peoples to treat various ailments. These are also frequently utilized in the agricultural sector. Drugs. flavoring agents, perfumes, dyes, pigments, pesticides, and food additives all rely on secondary metabolites for their synthesis Many medicines generated from secondary metabolites are simply synthetic alterations or duplicates of these naturally occurring compounds. The plant that has been selected for medicinal use for thousands of years is the most obvious choice when looking at the current search for therapeutically effective new drugs such as anticancer drugs, antimicrobial drugs, and antihepatotoxic compounds[5][6].

PREPARATION OF EXTRACT:

The extract of the conquer capsules is prepared by using the hot water extraction technique. The extract filtered solution was kept in a labelled plastic bottle. 10gm of the herbal drug powder extract was weighed on an electronic scale, dissolved the powdered extract in 100ml of distilled water and boiled it for 3 hours on water bath. The extract was filtered through Whatman No.1 Filter paper. For further use of the solution for analysis, the extract was kept in a sterile bottle and refrigerated.

MATERIALS AND METHODS:

PREPRATION OF EXTRACT OF CONQUER CAPSULES

The extract of conquer capsule a unani herbal formulation is prepared by using the hot water extraction technique. 30gm of the herbal drug powder extract was added weighed in an electronic weighing machine, dissolve the powdered extract in the 100ml of distilled water and boiled it between 3hours on water bath. The extract was filtered through Whatman No.1 Filter paper. For further use of the solution for analyses, the extract was kept in a sterile bottle and refrigerated.

MATERIALS REQUIRED:

Conquer capsules, weighing machine, distilled water, Bunsen burner, filter paper, reflux, volumetric flask, test-tube, test-tube stand, measuring tube.

PHYTOCHEMICAL ANALYSIS:

The phytochemical screening of the extract gives general ideas regarding the nature of chemical constituents present in the crude drug. The phytochemical tests were done as the methods illustrated [7].

Tests for Carbohydrates and reducing sugars:

1.Molisch's Test: 1 ml of filtrate treated with 2-2 drops of 1% alcoholic alpha – naphthol and 2 ml concentrated sulphuric acid was added in the test tube. Violet ring was observed.

2. Benedict's test:

1 ml of filtrate treated with Benedict's reagent and heated gently. Orange red precipitate was observed.

3.Fehling's Test:

1 ml of filtrate treated with equal volume of Fehling's solution A & B and gently heated. Orange red precipitate was observed.

S.no.	Tests for carbohydrates	Observation	Result
1.	Molisch's Test	Violet ring observed	Present
2.	Benedict's test	Orange-red precipitate	Present
3.	Fehling's Test	Orange-red precipitate	Present

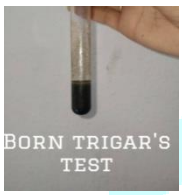
Test For Glycoside:

Extract was hydrolyzed with dilute HCl and subjected to test for glycosides. No change was observed.

(a) Modified Borntrager's test:

To the hydrolysate extract1 ml of ferric chloride solution was added and immersed in boiling water for about 5 minutes. The mixture was cooled and extracted with equal volume of benzene.

The Beneze layer was separated and tested with ammonia solution. Formation of rose pink was not observed.



[b]Legal's test:

The hydrolysate extract was treated with sodium nitroprusside in pyridine and sodium hydroxide. Formation of pink to blood red color indicates the presence of cardiac glycosides but no change was observed.

S. No.	Tests for Glycosides	Observation	Results
1.	Modified Borntrager's	No change observed	Absent
2.	Legal's	No change observed	Absent

Test for Saponins:

0.5 ml of extract was taken with 5 ml distilled water. The presence of saponins was indicated by the formation of copious lather.

Test for phenolic compounds:

To 0.5ml of extract,1ml of alcoholic ferric chloride solution was added in a test tube, No presence of phenolic compounds.

Test for phytosterols:

Ferric chloride-Acetic acid test:

1ml of extract was treated with 1ml of chloroform and then 2ml of ferric chloride solution acid reagent was added followed by 1ml of concentrated sulphuric acid. Appearance of reddish pink color shows the presence of phytosterols.

Test for diterpenes:

Copper-acetate test:

1ml of extract was dissolved in water and treated with 3-4 drops of copper acetate solution. Formation of Emerald green indicates the presence of Diterpenes.

Test for Triterpenes:

Salkowski test:

1ml of extract was treated with 1ml of chloroform followed by 1ml of conc. sulphuric acid shaken and allowed to stand. Appearance of golden yellow shows presence of triterpenes.

S.no.	Tests	Observation	Result
1.	Test for Saponins	Copious lather	Present
2.	Test for phenolic compounds	No Change	Absent
3.	Test for phytosterols	reddish pink color observed	Present
4.	Test for diterpenes	Emerald green observed	Present
5.	Test for Triterpenes	Golden yellow observed	Present

Test for Flavonoids:

Alkaline reagent test:

To 1 ml of extract 1ml of sodium hydroxide was added, Formation of dark yellow color indicates the presence of flavonoids.

Acetate test:

1m of extract, 3-4 drops of 10% lead acetate solution were added. Formation of yellow ppt indicates the presence of flavonoids.

Ferric chloride solution:

1ml of extract3-4 drops of ferric chloride solution was added. No appearance of dark green color indicates the presence of flavonoids.

S.no.	Test	Observation	Result
1.	Alkaline reagent	Dark yellow color observed.	Present
2.	Acetate	Yellow precipitate observed.	Present
3.	**Ferric chloride solution**	No change observed.	Absent

Test for proteins and free amino acids:

Xanthoproteic test:

1ml of extract, 3-4 drops of conc. Nitric acid were added, Appearance of yellow ppt. indicates presence of protein.

Millon's reagent:

0.5ml of extract, 2.5 of Millon's reagent was added. Formation of white ppt and the ppt warmed indicates the presence of protein of free acid.

Test for quinones:

Sodium hydroxide test:

0.5 ml of extract, 1ml of 10% sodium hydroxide was added. No presence of blue or green or red color shows absence of quinones.

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S. no.	Test	Observation	Result
1.TEST FOR PROTEINS	Xanthoproteic	Yellow precipitate	Present
	Millon's	White precipitate	Present
2.TEST OF QUINONES	Sodium hydroxide test.	No change observed	Absent

ORGANOLEPTIC CHARACTERS OF CONQUER CAPSULE

Colour	Beige
Odour	Odorless
Taste	Bittersweet
Texture	Smooth
Particle size	Fine powder

Test for Basic Radicals:

Test for potassium:

To a pinch of conquer capsule extract 2ml of sodium nitrate and 2ml of cobalt nitrate solution in 30% glacial Acetic acid added and observed the yellow color indicates the presence.

Test for magnesium:

2ml of extract, few ml of sodium hydroxide and excess of sodium hydroxide solution are added and the watched for the appearance of white ppt. Not observed.

Test for ammonium:

To 2 ml of conquer capsule extract, few ml of Nessler's reagent and excess of sodium hydroxide solution are added and the appearance of brown color is observed.

Test for Sodium:

HCL was added with a pinch of the conquer capsule extract made as paste flame on Bunsen burner and observed intense yellow color.

Test for iron [ferrous]:

The conquer capsule extract was treated with conc. HNO3 & Ammonium thiocyanate and waited for the appearance of blood red color.

Test for zinc:

2ml of the extract, drops of sodium hydroxide solution was added and observed for white ppt. formation.

Test for aluminum:

2ml of conquer capsule extract extract 2ml of sodium hydroxide solution was added in a drop and noted for yellow colored ppt. formation.

Test for lead:

2ml of conquer capsule extract 2ml of potassium iodine solution was added and yellow color ppt. observed.

Test for copper:

To 2ml of conquer capsule extract, excess of ammonia solution was added and observed for the appearance of blue coloured ppt. not observed.

Test for mercury:

2ml of conquer capsule extract, 2ml of sodium hydroxide solution was added and notes for the appearance for yellow ppt. observed.

Test for arsenic:

2ml of conquer capsule extract, 2ml of sodium hydroxide solution was added and brown or red ppt formation was not appeared.

TABLE: TEST FOR BASIC RADICALS STUDIES

S.No	PARAMETER	OBSERVATION	RESULT
1.	Test for potassium	Yellow coloured ppt observed	Positive
2.	Test for magnesium	Not Observed	Negative
3.	Test for ammonium	Brown colour observed	Positive
4.	Test for sodium	Intense yellow colour observed	Positive
5.	Test for iron(ferrous)	Blood red colour appeared	Positive
6.	Test for zinc	White ppt formation	Positive
7.	Test for aluminium	Yellow coloured ppt formation	Positive
8.	Test for lead	Yellow ppt Observed	Positive
9.	Test for copper	Not Observed	Negative
10.	Test for mercury	Yellow ppt Observed	Positive
11.	Test for arsenic	Not Observed	Negative

Test for acid radicals:

Test for sulphate:

2ml of conquer capsule extract 5% of barium chloride solution was added and observed for the appearance of white ppt. observed.

Test for chloride:

Conquer capsule extract was treated with silver nitrate solution and observed for the appearance of white ppt formation.

Test for carbonate:

Conquer capsule extract was treated with conc. HCL & observed for the appearance of yellow ppt observed.

Test for flavonoids and oxalate:

2ml of conquer capsule extract 2ml of dil. acetic acid and 2ml of calcium carbonate solution was added and heated and watched for cloudy appearance not observed.

TABLE: RESULTS OF ACID RADICALS STUDIES.

S.NO	PARAMETER	OBSERVATION	RESULT
1.	Test for sulphate	White ppt observed	Positive
2.	Test for chloride	White ppt formation	Positive
3.	Test for carbonate	Yellow ppt observed	Positive
4.	Test for flavonoid & Oxalate	Not observed (cloudy appearance)	Negative

RESULT AND DISCUSSION:

Many Phytochemicals such as Tannins, Flavonoids, Alkaloids, Saponins, Phenols and inorganic constituents such as nitrate, Ammonium, Phosphate, Chloride ions were found. This Medicine is used for the treatment of inflammation, boost the immune system, etc. The results of phytochemical and bio chemical analysis of conquer capsule a unani herbal medicine are reported in the tables. The phytochemical constituents of conquer capsule were analyzed and the results were reported in tables conquer capsule was discovered to have a significant proportion of secondary metabolites. Our studies showed that the conquer capsule is rich in alkaloids, flavonoids, saponins, carbohydrates and proteins. The results of our study further prove the presence of various basic radicals and acidic radicals in conquer capsule with these phytochemicals and minerals may be responsible for its pharmacological actions, conquer capsule a unani herbal medicine is cost effective with lesser side effects.

CONCLUSION:

Thus, the preliminary analysis of "Conquer" drug, an Unani medicine, will act as a fingerprint for clinical studies.This study examines the phytochemicals present in the drug, which reflects its pharmacological and therapeutic action. The results of this study have confirmed the presence of flavonoids, alkaloids, saponins, phenols, ammonium, alkaline, ferric chloride, mercury, lead, aluminum, potassium, phytosterols & carbohydrates. It was concluded that the extract of Unani medicine has significant pharmacological and medical applications. Further phytochemical screening will help in the isolation of therapeutically active components.

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