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Research Article

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Biochemical Analysis and Physicochemical Analysis of Omavanni Chenduram

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Abstract

Omavanni Chenduram is a herbo-metal drug. It consists of herbals and metals. In the present study biochemical analysis and physicochemical analysis of the herbo–metal drug Omavanni Chenduram has been studied and this study reveals that the drug contain biochemicals such as calcium, sulphate, ferrous iron and unsaturated compound. The physicochemical analysis also reveals that this drug have the ability to elicit pharmacological effects.

Keywords: Omavanni Chenduram, herbo-metal drug, biochemical analysis, calcium, sulphate, ferrous iron, unsaturated compound, physicochemical analysis, pharmacological effects

Introduction

Biochemical analysis helps to understand the function of proteins or protein complexes at the molecular level. Biochemical compound consists of carbon and they involved in all biochemical activities. The presence of biochemicals in any of the drug will induce all the biochemical activities of the particular person who intake the drug. The physico chemical property of the drug determines the ability of the particular drug elicit a pharmacological or therapeutic effect or not. Solubility, partition coefficient, dissociation constant, hydrogen bonding, ionization of drug, redox potential, complexation, surface activity, protein binding, isosterism are some of the various methods of physico-chemical properties.

Materials and Methods

Biochemical analysis of Omavanni Chenduram:

Preparation of the extract:

100 mgs of chenduram is weighed accurately and placed into a clean beaker and added a few drops of conc. Hydrochloric acid and evaporated it well. After evaporation cooled the content and added a few drops of conc. nitric acid and evaporated it well. After cooling the content add 20ml of distilled water and dissolved it well. Then it is transferred to 100ml volumetric flask and made up to 100ml with distilled water. Mix well, Filter it. Then it is taken for analysis.

Physicochemical analysis of Omavanni Chenduram:

Sample Description : ***OMAVANNI CHENDHURAM***
Equipment used : Atomic Absorption Spectrometer (AAS)

Colour:

About 50g of ***OMAVANNI CHENDHURAM*** was taken in a clean glass beaker and tested for its colour by viewing again a water opaque background under direct sunlight.

pH:

The **pH** of ***OMAVANNI CHENDHURAM*** was estimated as per the method prescribed in Indian Standard (IS) – 6940 (1982). One gram of the ***OMAVANNI CHENDHURAM*** was taken into a 100ml graduated cylinder containing about 50ml of water and filled up to the mark with water. The cylinder was stopped and shaken vigorously for two minutes and the suspension was allowed to settle for an hour at 25^0 to $27^{0.}$ About 25ml of the clear aqueous solution was transferred into a 50ml breaker and tested for **pH** using DIGISUN digital **pH** meter (DIGISUN Electronics, Hyderabad, India)

Determination of Ash Value:

Weighed accurately 2 grams of ***OMAVANNI CHENDHURAM*** in tarred platinum or silica dish and incinerate at a temperature not be exceeding 450^0C until free from carbon, cooled and weighed. Calculate the percentage of ash with reference to the air dried drug.

Water Soluble Ash:

To the gooch crucible containing to the total ash, added 25ml of water and boiled for 5 minutes. Collected the insoluble matter in a sintered glass crucible or on ash less filter paper. Wash with hot water and ignite in a crucible for 15 minutes at a temperature nor exceeding 450^0 C subtract the weight of the insoluble matter from the weight of the ash the difference of the weight represents the water soluble ash. Calculate the percentage of water soluble ash with reference to the air dried drug.

Acid Insoluble Ash:

Boiled the ash 5 minutes with 25ml of 1:1 dil HCL. Collect the insoluble matter in gooch crucible on an ash less filter paper wash with hot water and ignite. Cooled in a desiccators and weighted calculated the percentage of acid insoluble ash with reference to the air dried drug.

Loss on Drying:

Five grams of ***OMAVANNI CHENDHURAM*** is heated in a hot oven at 105^0C to constant weight and the percentage of loss of weight has calculated there from.

Results and Discussion

Biochemical analysis of Omavanni Chenduram:

Table 1— Biochemical analysis of Omavanni Chenduram:

S.NO	EXPERIMENT	OBSERVATION	INFERENCE
1.	**TEST FOR CALCIUM** 2ml of the above prepared extract is taken in a clean test tube. To this add 2ml of 4% Ammonium oxalate solution	A white precipitate is formed	**Indicates the presence of calcium**
2.	**TEST FOR SULPHATE** 2ml of the extract is added to 5% Barium chloride solution.	A white precipitate is formed	**Indicates the presence of sulphate**
3.	**TEST FOR CHLORIDE** The extract is treated with silver nitrate solution	No white precipitate is formed	**Absence of chloride**
4.	**TEST FOR CARBONATE** The substance is treated with concentrated Hcl.	No Brisk effervessence is formed	Absence of carbonate
5.	**TEST FOR STARCH** The extract is added with weak iodine solution	No Blue colour is formed	Absence of starch
6.	**TEST FOR FERRIC IRON** The extract is acidified with Glacial acetic acid and potassium ferro cyanide.	No blue colour is formed	Absence of ferric iron

7.	**TEST OF FERROUS IRON** The extract is treated with concentrated Nitric acid and Ammonium thio cyanate solution	Blood red colour is formed	**Indicates the presence of ferrous iron**
8.	**TEST FOR PHOSPHATE** The extract is treated with Ammonium Molybdate and concentrated nitric acid	No yellow precipitate is formed	Absence of phosphate
9.	**TEST FOR ALBUMIN** The extract is treated with Esbach's reagent	No Yellow precipitate is formed	Absence of Albumin
10.	**TEST FOR TANNIC ACID** The extract is treated with ferric chloride.	No Blue black precipitate is formed	Absence tannic acid
11.	**TEST FOR UNSATURATION** Potassium permanganate solution is added to the extract	It gets decolourised.	**Indicates the presence of unsaturated compound**
12.	**TEST FOR THE REDUCING SUGAR** 5ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and add 8-10 drops of the extract and again boil it for 2 mts.	No colour change occurs.	Absence of Reducing sugar
13.	**TEST FOR AMINO ACID** One or two drops of the extract is placed on a filter paper and dried well. After drying, 1% Ninnhydrin is sprayed over the same and dried it well.	No Violet colour is formed	Absence of Amino acid
14.	**TEST FOR ZINC** The extract is treated with Potassium Ferrocyanide.	No white precipitate is formed	Absence of Zinc.

Inference:

Analysis reveals the presence of **calcium, sulphate, ferrous iron and unsaturated compounds** in OMAVANNI CHENDHURAM.

Physicochemical analysis of Omavanni Chenduram:

Table 2— Physicochemical analysis of samples of OMAVANNI CHENDHURAM

Parameters	Total ash	Values
Ash value	Water soluble ash Acid insoluble ash	4.70±0.058 0.80±0.023
Extractive value	Ethanol soluble extractive value Water soluble extractive value	8.20±0.310 8.20±0.410
Loss on drying	Loss on drying at 70°C	9.13±0.540

SEM- singularity **expansion** method

Table-3 Particle size and pH of OMAVANNI CHENDHURAM

S.No	Parameters	Values obtained
1	Particle size by SEM	1µm - 10 µm
2	pH	6.8

Summary and Conclusion

From the above results, I conclude that the drug Omavanni Chenduram is the best drug for all kind of fever. Because it contain biochemicals such as calcium, sulphate, ferrous iron and unsaturated compound. These biochemicals imbalance the electrolytes and neutralize the body temperature and also this drug elicit the pharmacological effect on the patient.

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