



BIOCHEMICAL ANALYSIS OF SIDDHA MONOHERBAL DRUG PERARATHAI CHLOORANAM -ALPINIA GALANGA

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ABSTRACT

Kaayakarpam is one of the unique therapeutic formulations in Siddha system advocated for rejuvenation, longevity and elimination of disease causing factors. Siddhars had primarily focussed on their spiritual well being through this kaayakarpam. In recent years lifestyle modification is one of the main causes for many diseases. So it necessitates to turn towards kaayakarpam herbs which are rich in natural source of antioxidants. Production of free radicals results in oxidative stress due to damage of DNA, proteins, lipids and has been suggested to be the cause of most of the serious human diseases. Osteoarthritis is a chronic degenerative disorder characterized by loss of articular cartilage, hypertrophy of bone at the margins, subchondral sclerosis and range of biochemical alternation of the synovial membrane and joints capsule. In this study biochemical analysis of Perarathai chooranam, a siddha medication, was performed for future research on osteoarthritis.

KEYWORDS: Osteoarthritis, Biochemical Analysis, Siddha medicine, Perarathai chooranam.

1. INTRODUCTION

Alpinia galanga is commonly known as Greater galangal. The root stocks are tuberous and slightly aromatic. Leaves are oblong-lanceolate, acute, glabrous, green above, paler beneath, with slightly callus white margins, sheaths are long and glabrous, ligule are short and rounded. Flowers greenish white, in dense flowered, 30 cm Panicles; bracts ovate-lanceolate. Calyx tubular, irregularly 3-toothed. Corolla lobes oblong, claw green, blade white, striated with red, rather more than 1 cm long, broadly elliptic, shortly 2-lobed at the apex, with a pair of subulate glands at the base of the apex, with a pair of subulate glands at the base of claw. Fruit the size of the small cherry, orange red.

Kaayakarpam is one of the unique therapeutic formulations in Siddha system advocated for rejuvenation, longevity and elimination of disease causing factors. The Siddhars had primarily focussed on their spiritual well being through this kaayakarpam.^[3] In recent years lifestyle modification is one of the main causes for many diseases. So it necessitates to turn towards kaayakarpa herbs which are rich in natural source of antioxidants. Production of free radicals results in oxidative stress due to damage of DNA, proteins, lipids and has been suggested to be the cause of most of the serious human diseases. Siddha pharmacopoeia literature recommends perarathai chooranam for vatha illnesses. perarathai chooranam^[2] is being studied for research purposes.

2. MATERIALS AND METHODS

Table no. 1: Drug description.

Drug	Botanical name	Family	Parts used	Quantity
Perarathai	<i>Alpinia galanga</i>	Zingiberaceae	Rhizome	1-3 gms twice A day

The required raw drugs for preparations are purchased from a well reputed country shop. The purchased drugs are authenticated by The Faculty / Expert members of Medicinal Botany and Gunapadam department at

GSMCH-Palayamkottai.

Methods of Purification and Preparations

All the ingredients have been completely purified as per

the siddha literature in the presence knowledge of Guide / Faculty members. Then the trial drug is prepared from the ingredients.

Biochemical analysis

Screening the drug Perarathai chooranam to identify the biochemical properties present in the ingredient.

Chemicals and Drugs

The chemicals used in this study were of analytical grade obtain from Department of Biochemistry, Government

Siddha Medical College & Hospital, Palayamkottai.

3. METHODOLOGY

Preparation of the extract

5 grams of the drug was weighed accurately and placed in a 250ml clean beaker. Then 50ml of distilled water added to it and dissolved well. Then it was boiled well for about 10 minutes. It was cooled and filtered in a 100ml volumetric flask and then it is made to 100ml with distilled water. This fluid was taken for analysis.

4. Qualitative analysis

Table no. 2: Inference from qualitative analysis of the drug “perarathai chooranam”.

S. No	Experiment	Observation	Inference
01	Test for calcium 2ml of the above prepared extract is taken in a clean test tube. To this 2ml of 4% Ammonium oxalate solution is added.	White precipitate is formed.	Presence
02	Test for sulphate 2ml of the extract is added to 5% barium chloride solution.	A white precipitate is formed.	Indicates Presence
03	Test for chloride The extract is treated with silver nitrate solution.	A white precipitate is formed.	Presence
04	Test for carbonate The substance is treated with concentrated hydrochloric acid.	No brisk Effervescence	Absence
05	Test for starch The extract is treated with weak iodine solution.	Blue colour	Presence
06	Test for ferric iron The extract is acidified with glacial acetic acid and potassium ferro cyanide.	No blue colour is formed.	Absence
07	Test for ferrous iron The extract is treated with concentrated Nitric acid and ammonium thiocyanate solution.	No blood red Colour is formed	Absence Ferrous iron
08	Test for phosphate The extract is treated with ammonium molybdate and concentrated nitric acid.	Yellow precipitate is formed.	Presence
09	Test for albumin The extract is treated with esbach's reagent.	No yellow Precipitate	Absence
10	Test for tannic acid The extract is treated with ferric chloride.	Blue black Precipitate	Presence
11	Test for unsaturation Potassium permanganate solution is added to the extract.	It gets decolourised	Presence 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 minutes and then 8-10 drops of the extract are added. It is again boiled for 2 Minutes.	Colour changes occur.	Presence
13	Test for amino acid One or two drops of the extract is placed on a filter paper and dried well. After drying, 1% ninhydrin is sprayed over the Same and it is dried well.	Violet colour	Indicates Presence
14	Test for zinc The extract is treated with potassium ferrocyanide.	No white Precipitate	Absence of zinc.

Source: Report of biochemical lab.

5. RESULTS AND DISCUSSION

The bio chemical analysis of the trial drug Perarathai chooranam was tabulated above in table. The trial drug, Perarathai chooranam contains,

1) Calcium

2) Sulphate

3) Chloride

4) Starch

5) Phosphate

6) Tannic acid

- 7) Unsaturation
- 8) Reducing sugar
- 9) Amino acid

6. CONCLUSION

Mode of action of the trial drug Perarathai chooranam which brings about the bone mineralisation osteoblastic and osteoclastic activity in body is due to the presence of Calcium, Sulphate, Phosphate, Amino acid in it.

It is a siddha drug taken from a siddha literature used in the treatment of Vatha diseases. The drug is screened for its bio chemical properties.

7. REFERENCES

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