



Original Research Article

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Preliminary Biochemical, Physicochemical and Phytochemical analysis of Herbal formulation Chitramanakku Ilai Chooranam (*Ricinus communis*).

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Introduction

Siddha medicine is a conventional and ancient medicine followed by siddhars that has its origin in South India. In this methodology they not only heal the illness but also treat the mind and soul. Worldwide large mass of the people used the traditional medicine, particularly herbals or their byproducts for basic health care concern. In traditional therapeutic practices herbs have been used for the treatment of various kinds of sickness since classic times. In current scenario lots of individual in this community still have trust in ancient herbal medicine. Ceganavatham is one of the standard vatha disease in siddha literature. In accordance with siddha literature yugi vaithya chinthamani 800, cegana vatham is one among the 80 vatha diseases. It is represented by severe neck pain, impotent to move in neck and hands, pain that travels in both hands, dizziness, numbness in palm. This state can be clinically match up with cervical spondylosis. It is categorized by degenerative changes in the

cervical spine and intervertebral disc. The inspiration of the current study is to gather presence of bio active component in phytochemical, physiochemical and biochemical studies of Chitramanakku ilai chooranam (*Ricinus communis*) to supply the beneficial information for the further more clinical research.

Materials and Methods

The details about the siddha formulation Chitramanakku ilai chooranam was obtained from Siddha text Vaithiya Rathinam Dr.K.S.Murugesu Muthaliar Gunapadam pagam-1 (Mooligai vaguppu). The raw drug was fetched in and around Palayamkottai, Tirunelveli. The drug was recognized and authenticated by the Medicinal botany specialist at Govt Siddha Medical College and Hospital, Palayamkottai. The adulterants in the drug were detached and evaporated. The drug was made in powder and sieved by utilizing a fine cloth and bottled up.

Table 1:Ingredients of Chitramanakku ilai chooranam

S.no	Tamil name	Scientific name	Parts used	Quantity
1	Chitramanakku	<i>Ricinus communis</i>	Leaf	Q.S

Results and Discussion

Preliminary qualitative phyto-chemical analysis:

The drug was extracted by using alcohol. The extract were concentrated under reduced pressure at room temperature. The extract is subjected to following tests. The results are discussed below.

Table2: Phyto chemical analysis of chitramanakku ilai chooranam.

Tests	Results
Saponins	-
Tannins	-
Phenols	-
Terpenoids	-
Alkaloids	+
Flavanoids	+
Steroids	+
Glycosides	-
Carbohydrates	-
Quinones	-
Proteins	-

+Present ,-Absent

Alkaloids

Alkaloids are a kind of organic compound owning various pharmacological behavior since olden times, organic products have been used to cure a broad spectrum of health complications and have elevated therapeutic potential, Alkaloids have a great spectrum of pharmacological application in the therapeutic area such as anticancer, antipyretic, analgesic, antihypertensive, antioxidant, antihyperglycemic, antiasthmatic effect.

Flavonoids

Flavonoids owns a huge value of medicinal benefits, including anticancer, antioxidant, anti-inflammatory, and antiviral properties. They also possess neuroprotective and cardio-protective actions. The majority of the latest research is attentive on their isolation, synthesis of their effects on human health using a wide range of approach and animal models.

Thousands of flavonoids have been favorably isolated, and their count raised steadily.

Many of the clinical roles of steroids are related to their potent anti-inflammatory and immunomodulating properties. The term steroid applies to a wide range of molecules with varying physiological effects.

Table 4: Quantitative analysis of Chitramanakku Ilai Chooranam

Test	OD Value 1	OD Value 2	Mean OD Value	Result
Alkaloid	0.120	0.129	0.124	49 mcg/100 mg
Flavonoid	0.364	0.372	0.368	80 mcg/100 mg
Steroid	0.341	0.355	0.348	111 mcg/100 mg

Note: mcg – microgram, mg – milligram

Table 3: Physico chemical analysis:

Sl. No.	Parameter	Result%
1.	LOD at 105 C	7.20
2.	Total ash	13.61
3.	Acid insoluble ash	0.61
4.	Water soluble ash	6.34
5.	Sulphated ash	18.96
6.	Alcohol soluble extractives	18.09
7.	Water soluble extractives	29.16
8.	pH	6.87
9.	Volatile oil	Nil

LOD at 105c:

Moisture refers to all the content within the illustrative that can be gasified thus involve not just water but also fat, alcohols and volatile solvents. The LOD of the sample drug is 7.20%

Total ash:

The Acid insoluble Ash, Water insoluble Ash and Sulphated Ash values of the trail drug is 0.61%, 6.34%, 18.96% respectively

pH:

A solution with a pH less than 7 is marked acidic; a solution with a pH greater than 7 is marked as basic or alkaline. The pH of the sample drug is 6.87

It means the trail drug is slightly Acidic in nature.

Extractive Values:

Alcohol soluble extractive and water soluble extractive of the trial drug is 18.09%, and 29.16% respectively.

Biochemical analysis:

250 ml of clean beaker is taken, 5grams of drug is measured and added then 50ml of distilled water is added and mixed well.

It is then heated for 10 minutes, cooled and then filtered in 100ml volumetric flask and it is then made to 100ml with distilled water. This fluid is drawn for examination

Table 4: Biochemical analysis

S.No	Bio-chemical analysis	Results
1	Test for calcium	+
2	Test for sulphate	+
3	Test for chloride	+
4	Test for carbonate	-
5	Test for starch	-
6	Test for Ferric iron	-
7	Test for Ferrous iron	-
8	Test for phosphate	-
9	Test for Albumin	-
10	Test for Tannic acid	+
11	Test for Unsaturation	+
12	Test for The Reducing sugar	-
13	Test for Amino acid	+
14	Test for Zinc	-

Calcium

Calcium as a nutrient which is majorly often linked with the evolution and metabolisation of the bone. In the circulatory system, muscle, extracellular fluid and other tissues calcium is crucial for mediating vasodilatation and vasoconstriction, muscle function, nerve transmission and hormonal secretion

Bone tissue aids as a reservoir for the origin of calcium for these crucial metabolic demands through the process of bone remodeling.

Sulphate

Sulphate is a constituent of major structural molecules of the body. It is the most ample anions grounded in the environment.

Chloride

Chloride is essential to keep the proper balance of body fluids.

Tannic acid

Due to its antibacterial and anti-inflammatory properties, Tannic acid is also considered as a component in numerous types of prostheses and biomaterials for the treatment of bone defects.

Amino acid

Amino acids are necessary for numerous cellular activities. They also act as precursors of bioactive molecules such as neurotransmitters, second messengers and cytokines

Conclusion

From the overhead quantitative & qualitative phytochemical survey, bio chemical survey, and physicochemical survey, we acknowledge that Chitramanakku ilai chooranam contains phytochemicals alkaloids, flavanoids, steroids, and bio chemical analysis showed the presence of calcium, sulphate, chloride, tannic acid, aminoacids. From overhead the research we infer that, the therapeutic effectiveness of the chitramanakku ilai chooranam is due to existing of these component especially curing inflammatory condition thus the output of the investigation gives prized possession for more advanced clinical analysis.

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