

## ICP-OES Analysis of Cheenalinga chendooram

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### ABSTRACT

Siddhars knowlede about various herbs, metals and minerals are still undiscovered by the scientific world. It is mystery to the scientific society to evaluate the extraction of a herbo – mineral formulation. Often medicines like parpam and chendooram in Indian system of medicine are frequently reported with heavy metal content above permissible limits by the western science according to siddha literature Cheenalinga Chendooram is a mineral medicine used in the treatment of Keelvayu (Arthritis).

It has been decided to standardize the Cheenalinga Chendooram which is prepared as per the siddha literature Anuboga Vaithiya Navaneetham. The present study gains its own importance in the scientific society being focused on the analysis of heavy metal content in the siddha medicine Cheenalinga Chendooram using inductively coupled plasma optical emission spectrometry (ICP-OES) carried out at Sophisticated Analytical Instrument facility IITM, Chennai -36.

### KEYWORDS

Siddha Medicine for Keelvayu, Mineral Medicine, Analgesic, Anti-inflammatory

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## INTRODUCTION

Keelvayu (Arthritis) is a chronic inflammatory disease that affects joints including cartilage, synovium of tendons and muscles. Worldwide musculoskeletal disorders represent a global threat to healthy ageing, and are ranked as the second most common cause of disability. Though conventional treatment option for the condition have improved in terms of effectiveness, the use of Non Steroid Anti-Inflammatory Drugs (NSAIDs). Often results in gastric irritation, renal damages, dependence, etc., traditional siddha medicines offer a wide range of Anti-inflammatory drugs which are herbal, metallic, salts (Karasaram), mineral

preparations when compared to herbs as they were used in curing diseases and also in alchemy. Medicines prepared from minerals and salts have long shelf life than herbs and are often used for chronic ailments which resist herbal formulations. The medicine selected Cheenalinga Chendooram is the mineral and salt combination used in treating Keelvayu (Arthritis). Evaluation on safety aspects using scientific parameters is essential scope up with the growing scientific world.

In the current scenario standardization of the drug is needed to prove the safety and efficacy of any medicine. This helps mainly in the acceptance of medicine throughout the world.

## MATERIALS AND METHODS

**Table 1: Details of Minerals which are used in Cheenalinga Chendooram**

S.no	Ingredients	Chemical/botanical name	Parts used	Quantity
1.	Vedi Uppu	Pottasium Nytrate	Whole	70 gram
2.	Lingam	Red Sulphide of Mercury	Whole	35 gram
3.	Cheenakaram	Aluminium Sulphate	Whole	70 gram

### COLLECTION OF RAW DRUGS

All the drugs were purchased in the drug shop from Nagercoil, Tamilnadu.

### AUTHENTICATION OF RAW DRUGS

All the above minerals used in siddha formulation Cheenalinga Chendooram is used as internal for the management of Keelvayu. All minerals are correctly identified and authenticated through visual inspection, experience, education and training, morphology, microscopic method in medicinal chemistry section, Department of Gunapadam, Government Siddha Medical College and Hospital, Palayamkottai.

### PURIFICATION OF RAW DRUGS

#### 1.Purified Lingam

Lime juice, cow's milk and the *Acalypha indica* juice are mixed together in equal proportion and allowed to fuse Cinnabar so as to get it in a purified potent form.

#### 2.Purified Cheenakaaram

The alum is dissolved in water filtered, boiled and dried to get purified form.

#### 3.Purified Kambivediuppu

Salt – 100gm, Water – 400gm, Fermented butter milk – 100gm, Lime juice – 100 gm.

Water is added to the salt and boiled on a hearth with mild flames. The white of eggs (4 nos) is added to every 1400gm of salt and the bubbles appearing with impure substances are removed with wooden spoon.

The ingredients are then transferred to another pot, sealed with mud pasted cloth, filtered and transferred to another pot, sealed with mud pasted cloth, filtered and kept in places without aeration. Next day the water is filtered and salt is dried under sun shade. This process is repeated for seven times to get it purified.

### PREPARATION OF CHEENALINGA CHENDOORAM

Purified VEDIUPPU and Purified Cheenakaaram are powdered well and it kept in the new pot then it allowed to heat in the low flame and it turns melted. At this time the Lingam is allowed to soaked well and make it upside down. Once the smoke is seen then outer layer is removed and finally ground into a fine powder and stored in the air tight container.

### SHELF LIFE:

75 years

**DOSAGE :** 1 to 1 ¼ Kundri (1 Kundri -130 mg, 1 ¼ Kundri - 162.5 mg)

**ADJUVANT:** Honey, Palm jaggery, Milk

### ICP-OES STUDY OF CHEENALINGA CHENDOORAM

#### SAMPLE PREPARATION:

ICP for inductively coupled plasma, is one method of optical emission spectrometry. When the plasma energy is given to an analysis sample from outside the components elements (atoms) or excited. When the excited atoms return to low energy position emission rays, (spectrum rays) are released and the emission rays that corresponds to the photon wavelength are measured.

**Table 2: ICP-OES of Cheenalinga Chendooram**

S.NO	ELEMENTS	LEVEL
1	AS 188.979	BDL
2	Ca 315.807	BDL
3	Cd 228.802	BDL
4	Cu 327.393	BDL
5	Fe 238.204	BDL
6	Hg 253.652	3.456 mg/L
7	K 766.491	01.430 mg/L
8	Mg 279.077	01.100 mg/L
9	Na 589.592	03.112 mg/L
10	Pb 220.353	BDL
11	P 213.617	146.341 mg/L
12	S 180.731	441.250 mg/L

**BDL- Below Detection Limit.**

### DISCUSSION

Heavy metal Viz., lead, arsenic, cadmium, copper and other mineral of Cheenalinga Chendooram on the table 2 was found to be within the permissible limits as per WHO Guidelines.

The Cheenalinga Chendooram was free from the toxicity there by proving the safety of its utilization in siddha system.

### CONCLUSION

It is concluded that documentation of ICP-OES analysis of Cheenalinga Chendooram. So this study is a step forward to scientific validation of Cheenalinga Chendooram.

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