



## NOVEL STANDARDIZATION AND CHARACTERIZATION OF LINGA CHENDURAM

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### ABSTRACT

Siddha medicine presently practiced predominantly in South India. In practice, generally the plants used are often in the compound form to which either herbs, metals, minerals and animals products are added. The main aim of the present study is to standardize Linga Chenduram, a nano sized formulation and also to characterize the same by using Sophisticated techniques like Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-OES), Scanning Electron Microscope (SEM).

**KEYWORDS:** Linga Chenduram, Standardization, Characterization, Sophisticated techniques.

### INTRODUCTION

The Siddha System of medicine mainly practiced in the Southern part of India is one of the earliest traditional medicine systems in the world and deals with physical, psychological, social and spiritual well being of an individual. The roots of this system are intertwined with the culture of ancient Tamil Civilization.

### MATERIALS AND METHOD

In the present study, Herbo Metallic preparation Linga Chenduram has been selected to establish its standardization status from the classical siddha literature.

**Details regarding SEM analysis**

To evaluate the size of the particle, surface topography SEM analysis was carried out using at SAIF, IIT madras. The sample was mounted on specimen stub, placed inside the microscope's vacuum column evaporator and a beam of electrons passed from an electron gun, travelled through a series of magnetic lenses. The electrons are counted by the detector and the signals are sent to the amplifier. The number of electrons dispersed from each spot of the sample builds up the resultant image. The micrographs obtained give sufficient data about the topography of the sample.

**Details regarding ICP-OES analysis**

The Inductively Coupled Plasma Optical Emission Spectrometric (ICP-OES) analysis was done using Perkin Elmer Optima 5300 DV.

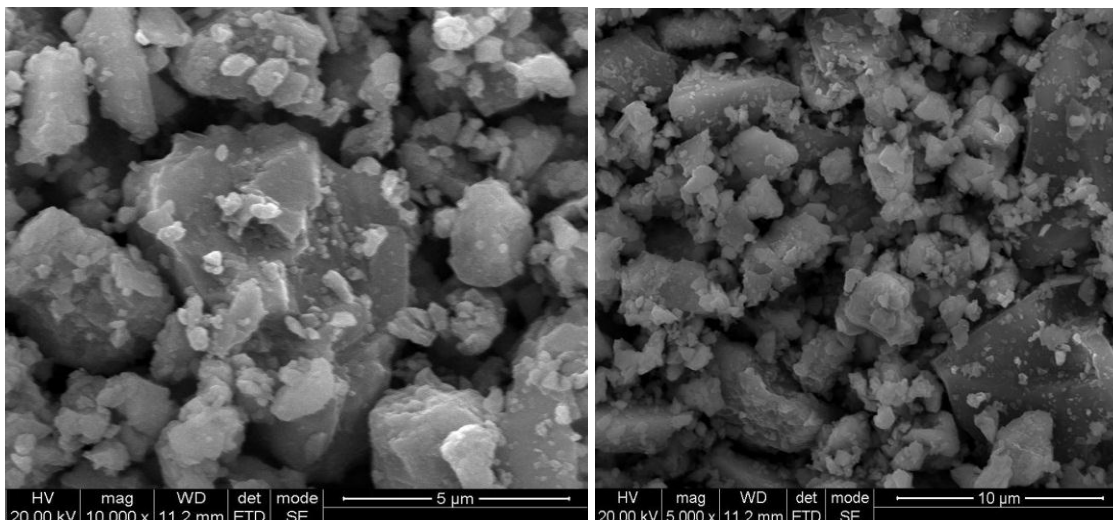
**RESULTS****Table 1: ICP-OES analysis for Linga Chenduram.**

<b>Al 396.152</b>	<b>BDL</b>
<b>As 188.979</b>	<b>BDL</b>
<b>Cd 228.802</b>	<b>BDL</b>
<b>Cu 327.393</b>	<b>BDL</b>
<b>Mg 285.213</b>	<b>BDL</b>
<b>Ni 231.604</b>	<b>BDL</b>
<b>Pb 220.353</b>	<b>BDL</b>

The heavy metals such as Aluminum, Arsenic, Cadmium, Copper, Magesium, Nickel, Lead are present in the sample Linga chenduram (LC) as within the WHO permissible limits. This ICPOES Analysis clearly indicates the presence and quantity of some compounds and confirms that the drug is safe for therapeutic use.

## SEM analysis

### Image of SEM analysis for Linga Chenduram



The morphology of the Linga Chenduram can be determined by SEM [FEI Quanta]. A representative portion of each sample must be sprinkled onto a double side carbon tape and mounted on aluminum stubs, in order to get a higher quality secondary electron image for SEM examination. We have observed from SEM photographs that particles are nano and sizes are in the range from 1 micron to 10 microns. Although the particle sizes of different batches showed similarity, it seems that these particles are aggregates of much smaller particles. When dispersed in an aqueous medium, these preparations from a negatively charged hydrophobic particle suspension. This hydrophobicity gives these particles a tendency to aggregate together to form large particles. Linga Chenduram exhibited larger sizes and agglomeration of the particles. Therefore, the comparatively larger size may be due to agglomeration of the particles by repeated cycles of calcinations involved in preparation.

## CONCLUSION

The ICPOES analysis confirms the presence of heavy metals such as Arsenic, Aluminum, Cadmium, Copper, Lead, Magnesium and Nickel are identified within the WHO permissible limits. This clearly indicates that the drug is very safe for therapeutic use.

The SEM analysis of this siddha formulation Linga Chenduram reveals the surface morphology of the drug. SEM analysis shows that the particles of the drug Linga Chenduram are in nano size. This confirms that the drug Linga Chenduram can be considered as nano medicine. So the bioavailability of the drug is more.

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