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Standardization of Omavanni Chenduram

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Abstract

In the present study various standardization techniques were used to standardize the herbo-metal drug Omavanni chenduram. Because, since this drug is in literature basis. Literature basis of any drug is not enough for clinical practice. For clinical practice standardized drugs are needed. In this study, to standardize the drug Omavanni Chenduram FTIR, HR-SEM, ICPOES methods are performed. From the above mentioned methods it proved that the drug Omavanni Chenduram contains minerals, phytochemicals to elicit pharmacological effects.

Keywords: Omavanni Chenduram, FTIR, HR-SEM, ICPOES, minerals, phytochemicals, pharmacological effects

Introduction

In a drug, the presence of functional groups viz., aromatics, alkenes, aldehydes, ketones etc., are very important. Such functional groups will elicit the pharmacological effects in the body. To identify these functional groups in a drug the standardized method FTIR is used. If a drug's particle size is below 10 microns it will be easily absorbed by the immune system. HR-SEM is the standardized method to study the particle size of a drug. Also if the drug has heavy metals, it is highly poisonous drug. Such kind of drug will not be able to consume by the patients. So to evaluate the presence of heavy metals in any drugs ICPOES is used.

Materials and Methods

FTIR:

Sampling techniques:

There are a variety of techniques for sample preparation depending on the physical form of the sample to be analyzed.

Solid	:	KBr or Nujol mull method
Liquid	:	CsI / TIBr Cells
Gas	:	Gas Cells

Experimental Procedure: Done at SAIF, IIT Madras, Chennai – 36KBr Method

The Sample was grounded using – an agate mortar and pestle to give a very fine powder.

The finely powder sample was mixed with about 100 mg dried KBr salt.

The mixture was then pressed under hydraulic press using a dye to yield a transparent disc (measure about 13 mm diameter and 0.3mm in thickness), through which the beam of spectrometer passed.

HR-SEM:**Sample Preparation:**

Sample preparation can be minimal or elaborate for SEM analysis depending on the nature of the samples and the data required. Minimal preparation includes acquisition of a **OMAVANNI CHENDHURAM** that will fit into the SEM chamber. And it should be analyzed.

ICP OES:**Sample preparation:**

Solids cannot be analyzed directly. Such samples should be made into clear aqueous medium quantitatively. When acids are used to prepare solutions care should be taken. The concentration of the acids in the final provided solution should not be more than 2% v/v. highly acidic and organic solutions cannot be analyzed. As a guide line weigh exactly, around 200mg of substance and dissolve in 5mL of 5% of water or aquaregia or whatever acid to make 100mL of final solution. Make proper dilutions, if necessary. Free HF should not present in the final solution to be aspirated.

Ideal concentration is around 100 ppm of the element of interest. Total dissolved solids should be not more than 0.2% w/v in the final solution Very dilute solution may not give reliable results. Each element

has a detection limit. A minimum solution volume of 25 ml is necessary for analysis.

In ICP intensity of light emitted when the sample "sprayed or aspirated into an argon plasma" is measured at different wavelengths. The intensity of light at a given wavelength will be proportional to a particular elemental ion concentration. The intensity is calibrated with known standard concentration. For accurate quantitative results It is necessary to simulate the sample matrix condition with that of the standard. Each element generally will have many emission lines and the sensitivity is different for each of this wave length. When more than one element is present it is quite common that some emission lines interfere due to overlapping.

It is preferable to use plastic containers for sample handling and preserving samples for **ICP-OES** analysis. Glass containers can give problems especially when analyzing certain metal ions at low concentration. The samples of **OMAVANNI CHENDHURAM** was prepared.

Results and Discussion**FTIR Method:**

OMAVANNI CHENDHURAM contains **alcohol, phenol, alkynes, primary amines, nitro compounds, aliphatic amines, alkyl halides.**

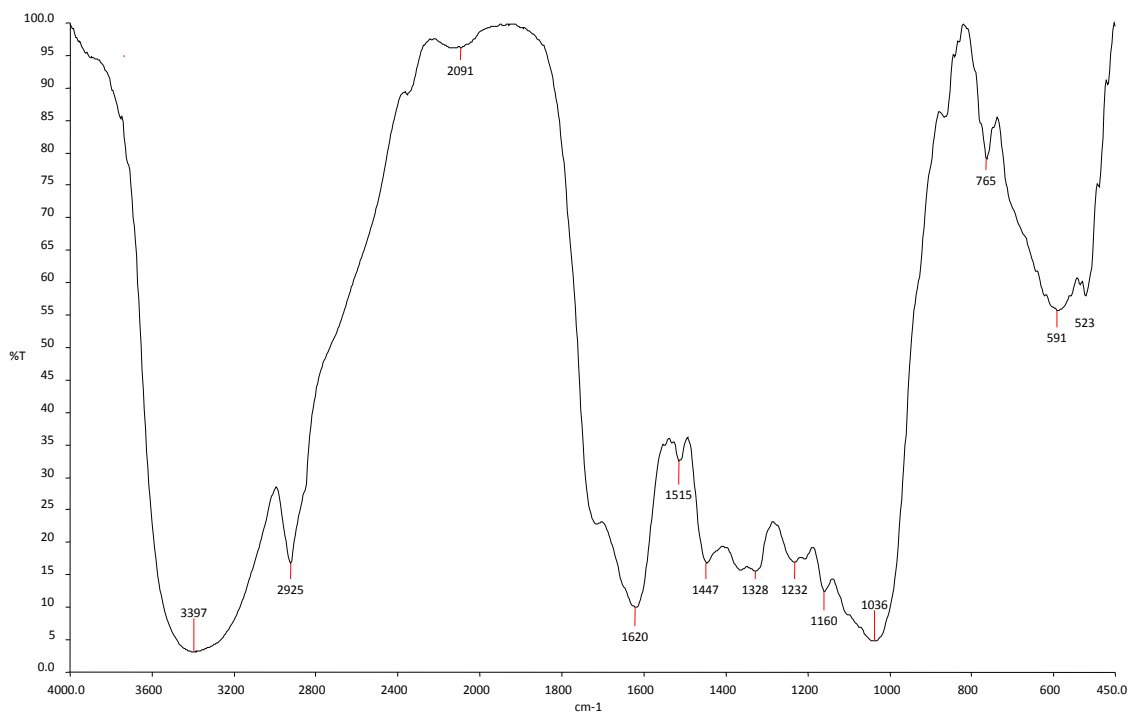
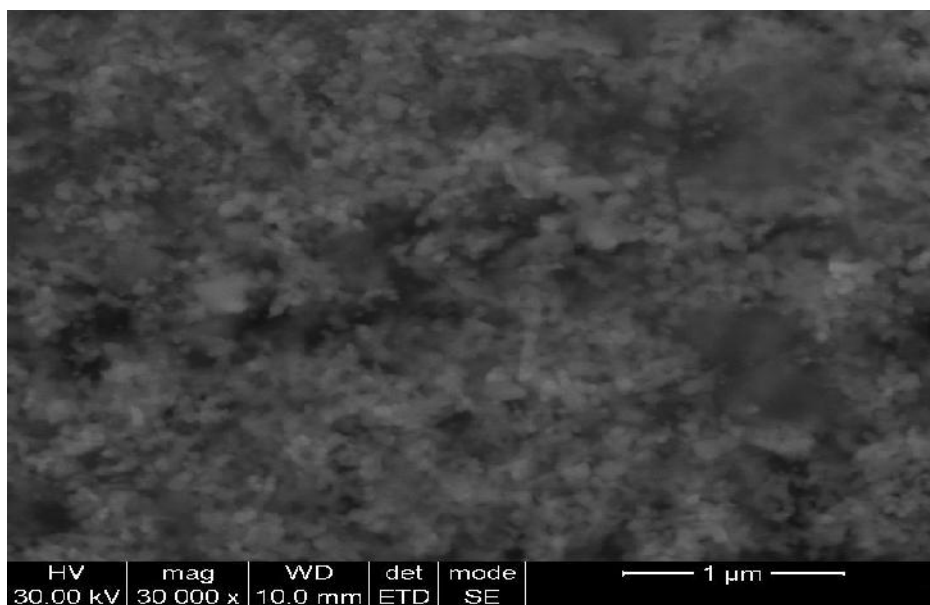


Table of characteristic IR Absorptions

Frequency, cm-1	Functional Group
3640-3610 (s, sh)	-
3500-3200 (s,b)	+
3400-3250(m)	-
3330-3270 (m)	-
3100-3000 (n,s)	-
3100-3000 (s)	-
3000-2850 (m)	+
2830-2695 (m)	-
2260-2210 (m)	-
2260-2100 (v)	-
1760-1665 (w)	-
1760-1690 (s)	-
1750-1725 (s)	-
1740-1720 (s)	-
1730-1715 (s)	-
1715 (s)	-
1710-1665 (s)	-
1680-1640 (s)	-
1650-1580(m)	+
1600-1585 (m)	-
1550-1475 (m)	+
1500-1400 (s)	-
1470-1450 (m)	+
1370-1350 (m)	-
1360-1290 (m)	-
1335-1250 (m)	+
1320-1000 (s)	-
1300-1150 (s)	-
1250-1020 (m)	-
1000-650 (m)	-
950-910 (s)	-
910-665 (m)	-
900-675 (s,b)	-
850-550 (s)	+
725-720 (m)	-
690-515 (m)	+

m= medium, w= weak, s=strong, n=narrow, b=broad, sh=sharp

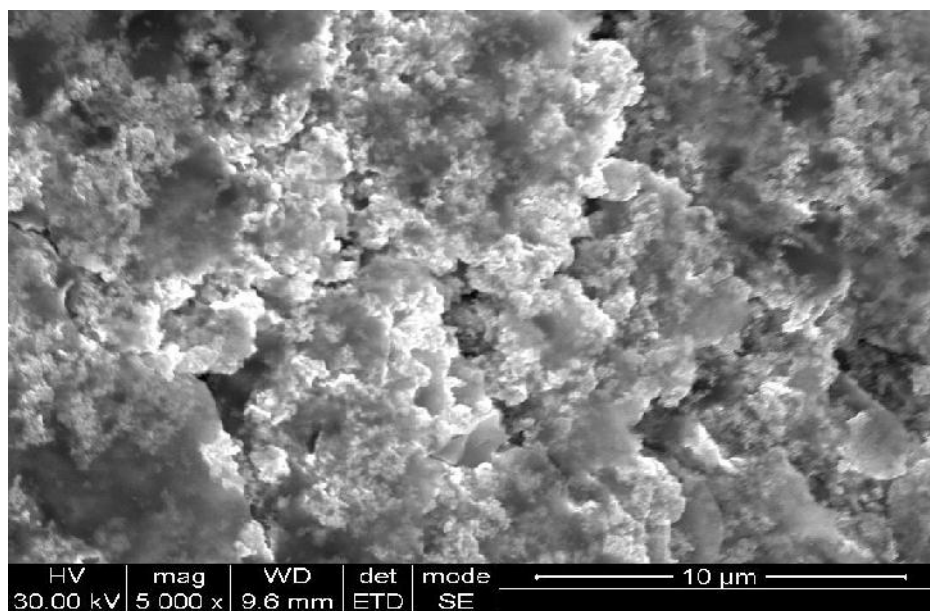
SEM Analysis



Inference :

The OMAVANNI CHENDHURAM show the particle size about 1μm at 30000x magnification

Amorphous in nature
Irregular Morphology



Inference :

The OMAVANNI CHENDHURAM show the particle size about 10μm at 5000 x magnification

Amorphous in nature
Irregular Morphology

**SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY
IITM, CHENNAI-36**

PERKIN ELMER OPTIMA 5300 DV ICP-OES

Sample ID	Elements symbol	Wavelength (nm)
Al	396.152	BDL
As	188.979	BDL
Ca	315.807	05.004mg/L
Cd	228.802	BDL
Cu	327.393	BDL
Fe	238.204	BDL
Hg	253.652	04.871 mg/L
K	766.491	01.124mg/L
Mg	285.213	BDL
Na	589.592	01.257 mg/L
Ni	231.604	BDL
Pb	220.353	BDL
P	213.617	15.24 mg/L
S	180.731	15.011 mg/L

BDL- Below detection limit

OMAVANNI CHENDHURAM contains calcium, mercury, potassium, sodium, phosphorus and sulphur.

Summary and Conclusion

From the above results, I conclude that the drug Omavanni Chenduram is the best drug for the consumption of patients. Because it consists of alcohol, phenol, alkynes, primary amines, nitro

compounds, aliphatic amines, alkyl halides. The presence of such compounds will elicit the pharmacological effects. Also the particle size is about 1-10 micron as well as it contains enough amount of minerals. It is not poisonous. So the drug Omavanni Chenduram is the effective as well as non toxic drug.

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