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Research Article

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FTIR characterization of siddha medicine 'Velvanga Parpam'

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Abstract

The traditional use of Siddha medicine has received attention by the scientific community for its high therapeutic value. The Siddha medicine 'Velvanga Parpam' is therapeutically used to treat various diseases like paralysis, arthritis, hemorrhoids. FTIR spectrum analysis is very helpful nowadays to identify the presence of functional groups. The Siddha medicine 'Velvanga Parpam' was subjected into characterization through FTIR. The FTIR peaks of 'Velvanga Parpam' constitute some functional groups such as carboxylic acids, alkane, alkyne, anhydride, fluoride, aromatic, chloride, bromide. These analyses may form a platform for further research work on Siddha medicine 'Velvanga Parpam.

Keywords: Siddha, Velvanga parpam, FTIR, Functional groups.

Introduction

Siddha system is one of the most traditional system of medicine which was developed by the Siddhars. The World Health Organization (WHO) estimates that about 80% of the populations living in the both developed and developing countries rely almost exclusively on traditional system of medicine for their primary health needs. The Siddhars did various research works on mother nature and formulated excellent medicines prepared from plants, animals and minerals. Among the herbo-mineral preparations, parpam is acclaimed medicinal form obtained by repeated incineration of purified metal along with juices of medicinal plants. FTIR spectrum analysis is very helpful nowadays to identify the presence of functional groups. The Siddha medicine 'Velvanga Parpam' was subjected into FTIR characterization to create fingerprints for standardization of this drug.

Materials and Methods

Details regarding the sample:

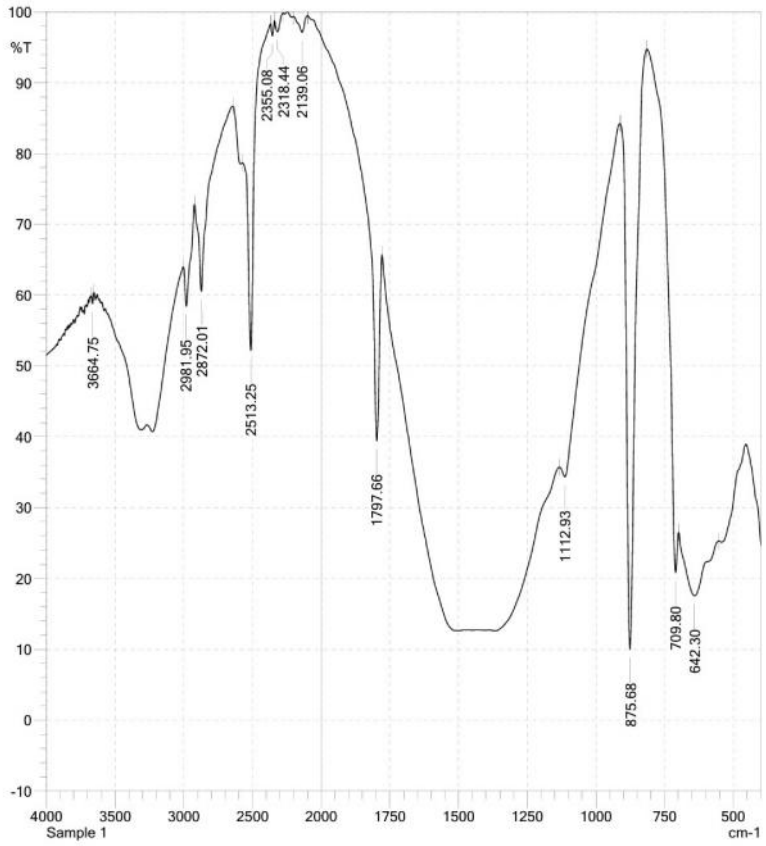
The drug 'Velvanga Parpam' was prepared as per the Siddha literature 'Chikicharatna deepam' for the treatment of paralysis, arthritis, hemorrhoids. The ingredients of the drug are Velvangam (Elemental tin), Poovarasampattai chooranam (*Thespesia populnea*).

Details regarding the analysis:

FTIR spectra were recorded at IRC at Kalasalingam University, Tamilnadu. The Perkine Elmer spectrum one FTIR spectrometer was used to derive the FTIR spectra of 'Velvanga Parpam' in Potassium Bromide (KBr) matrix with scan rate of 5 scan per minute at the resolution 4cm-1 in the wave number region 450-4000 cm-1. The samples were grounded to fine powder

using agate motor and pestle and then mixed with KBr. They were then pelletized by applying pressure to prepare the spectrum (the size of specimen about 13mm diameter and 0.3mm in thickness) to record the FTIR spectra under standard conditions. The FTIR spectra were used to determine the presence of functional groups and bands in the 'Velvanga Parpam'.

Results



Wave number	Vibrational modes of Velvanga Parpam in IR region	Functional groups
3664	OH	Water
2981	C-H	Alkane
2872	C-H	Alkane
2513	0-H	Carboxylic acid
2355	-	Unknown compound
2318	-	Unknown compound
2139	C≡C	Alkyne
1797	C=O	Anhydride
1112	C-F	Fluoride
875	C-H	Aromatic
709	C-Cl	Chloride
642	C-Br	Bromide

Discussion

In the FTIR spectrometer analysis, the sample of 'Velvanga Parpam'exhibits the peak value shows in Table 1 at the wave number of 3644, 2981, 2872, 2513, 2355, 2318, 2139, 1797, 1112, 875, 709, 642 having OH, C-H, O-H, C≡C, C=O, C-F, C-Cl, C-Br. This indicates the presence of some organic functional groups such as alkane, carboxylic acid, alkyne, anhydride, fluoride, aromatic, chloride, bromide.

Conclusion

Some organic functional groups such as alkane, alkyne, carboxylic acid, anhydride, fluoride, aromatic, chloride, bromide were identified in Siddha medicine 'Velvanga Parpam'. These functional groups have more significance for its medicinal property. If clinical trial and further research work would be carried out followed by these finding, it will be highly beneficial to the medical world.

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