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Standardization of Poonaga Mezhugu by FTIR study

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Abstract

Siddha medicine is a unique one as it is not only a curative but also preventive and to achieve the healthy body and mind. Poonaga mezhugu is a classical Siddha medicine used in the treatment of Oligospermia, impotence, premature ejaculation and nervous weakness. **Aim:** The aim of the present study was to standardize the Siddha drug formulation of poonaga mezhugu. **Method:** poonaga mezhugu drug was to being standardized by Fourier Transform Infrared Spectroscopy (FTIR) and the result was noted. **Result:** The Instrumental analysis of FTIR study of Poonaga mezhugu shows the presene of functional groups such as Alcohol, Alkane, - lactone, Imine, Oxime, Nitro compound, Sulphonyl chloride, Phenol, Alkyl aryl ether, Tertiary alcohol, Primary alcohol, Hollow compound. **Conclusion:** The Instrumental analysis of FTIR study for Poonaga mezhugu shows the presence of functional groups which responsible for its biological activity. This evidence based data provide valuable information is helpful to standardization of poonaga mezhugu.

Keywords: Poonaga mezhugu, FTIR, Standardization, siddha.

Introduction

Siddha medicine is a unique one as it is not only a curative but also preventive and to achieve the healthy body and mind. The Siddha system of medicine was foundation by our siddhars. Siddhars were spiritual adepts who possessed the ashta Siddhis, or the eight supernatural powers. It is assumed that when the normal equilibrium of the three humours – Vatham, Pitham, and Kapam is disturbed, the disease will occur. The factors assumed to affect this equilibrium are environment, climatic conditions, diet, physical activities, and stress. The siddha drugs are neutralises the disturbed vatham, pitham and kapam. Though it is considered that the siddha formulations are always safe, scientific validation is essential nowadays because of our changing environmental condition. Some modern analytical equipment's are helpful to get knowledge regarding the traditional medicine compound formulations. Poonaga mezhugu is a siddha system of medicine used in the treatment of

Oligospermia, impotence, premature ejaculation and nervous weakness. FTIR standardization was done in this Siddha formulation Poonaga mezhugu to evaluate the functional group identification.

Materials and Methods

The Poonaga mezhugu is selected from the Siddha literature "Anuboga vaidya navaneetham" by Hakim P. Mohamed Abdulla Sahib

Ingredients:

Poonagam (*Lumbricus terrestris*),
Saathikai (*Myristica fragrans*),
Saathipathri (*Myristica fragrans*),
Mulangivithai (*Raphanus sativus*),
Agiragaram (*Anacyclus pyrethrum*)

Preparation of Drug:

This drug was prepared as per Siddha literature Anupoga vaidya navaneetham by Hakim P. Mohamed Abdulla Sahib

FTIR Analysis:

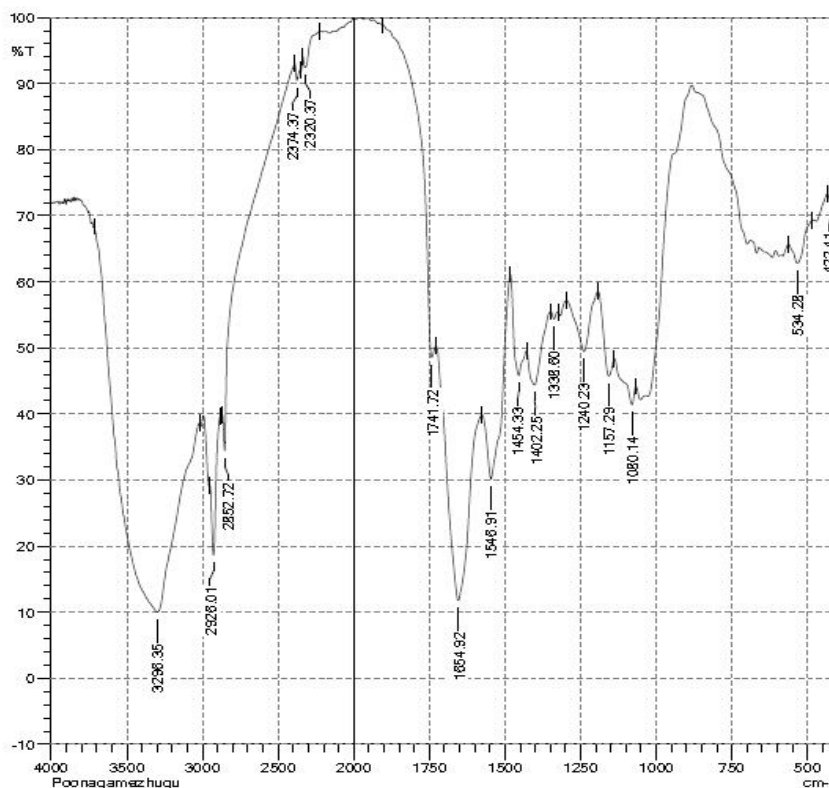
FTIR is an important and more advanced technique to identify the functional group. The spectrum that appears denotes the molecular absorption and transmission. It forms the molecular fingerprint of the sample. It is recorded as the wave length and the peaks seen in the spectrum indicates the amount of material present. The IR Tracker-100 –The new Fourier Transform Infrared Spectrophotometer for high sensitivity, High – resolution and high speed

applications was used to derive FTIR spectra of Poonaga mezhugu.

Results

FTIR instrumental analysis was done through IR Tracer 100. The tested drug was identified has peaks values. They are the functional groups present in the poonaga mezhugu. The table and the figure shows the presence of Alcohol, Alkane, - lactone, Imine, Oxime, Nitro compound, Sulphonyl chloride, Phenol, Alkyl aryl ether, Tertiary alcohol, Primary alcohol, Hollow compound are the functional groups which represents the peak values. It is the functional group and determines the amount of compounds present in the sample. These functional groups are responsible for the therapeutic effect of the drug.

FREQUENCY cm-1	BOND	FUNCTIONAL GROUP
3296.35	O-H	Alcohol
2926.01	C-H	Alkane
2852.72	C-H	Alkane
1741.72	C=O	- lactone
1654.92	C=N	Imine, Oxime
1546.91	N-O	Nitro compound
1402.25	S=O	Sulphonyl chloride
1338.60	O-H	Phenol
1240.23	C=O	Alkyl aryl ether
1157.29	C=O	Tertiary alcohol
1080.14	C=O	Primary alcohol
534.28	C-I	Hollow compound



Conclusion

The Instrumental analysis of FTIR study for Poonaga mezhugu shows the presence of functional groups such as Alcohol, Alkane, - lactone, Imine, Oxime, Nitro compound, Sulphonyl chloride, Phenol, Alkyl aryl ether, Tertiary alcohol, Primary alcohol, Hollow compound which responsible for its biological activity. This evidence based data provide valuable information is helpful for further studies to standardize its efficacy and safety through proper procedure for its potency.

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