INTERNATIONAL JOURNAL OF CURRENT RESEARCH IN CHEMISTRY AND PHARMACEUTICAL SCIENCES
(p-ISSN: 2348-5213: e-ISSN: 2348-5221)
www.ijcrcps.com
DOI: 10.22192/ijcrcps Coden: IJCROO(USA) Volume 5, Issue 6 - 2018

Research Article

DOI: http://dx.doi.org/10.22192/ijcrcps.2018.05.06.010

Standardization of *Brahmmiyaathi Chooranam* through Fourier Transform Infra-Red Spectroscopy

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Abstract

Though *Siddha* system of medicine is the earliest traditional system in India, the medical system fully depends upon concept of the nature of the drug. So the value and standardization of drug is very essential to get wider knowledge about the drug. Herbals are always having highly potent medicinal value. The *Brahmmiyaathi chooranam* is one of the best *siddha* herbal formulation indicated in *siddha* literatures for the management of upper respiratory tract infections like Phlegm, Sore throat and Hoarseness. This *siddha* herbal medicine is subjected into characterization through FTIR. The Characterization will help to determine the functional groups of the drug. The presence of some functional groups such as alkane, alkene, sulfonic acid, primary alcohol, aromatics and nitro compounds, halo compounds were identified in the *siddha* poly herbal formulation *Brahmmiyaathi chooranam.*

Keywords: Brahmmiyaathi chooranam, FTIR, Functional group.

Introduction

Siddha system of medicine is an illustrious traditional system of medicine followed by the people of Tamilnadu nowadays . *Siddha* system of medicine is founded by 18 siddhars who had achieved Eight *Siddhis*. *Siddha* is the word derived from the root word " siddhi '' which means " perfection" or " Eternal Bliss". *Siddha* medicines are consisting of plant origin, metals, minerals and animal products. The *Siddha* system is based on the specialized concept of integration and correlation between *Arusuvai* (6 types of taste), *Panchaboodham* and *Thiridhodam* (3 types of Humours). Based on these concepts, *siddha* medicine was formulated to treat various diseases. Though it is a system of medicine, *Siddha* system is guiding us to lead a perfect living in this world, Starting from the first day of birth to the last day of death.

Now a day's world population evolution towards herbal remedies for complete healing of such tragic ailments. Many herbs are used for their anti-histamine property and they always have highly potent medical value. The Brahmmiyaathi chooranam is the one of the best siddha formulation indicated in *siddha* literatures for the management of upper respiratory tract infections like Phlegm, Sore throat and Hoarseness. The aim of the article was to standardize the *siddha* poly herbal formulation *Brahmmiyaathi chooranam* through FTIR. The standardization of drug may be supportive for the researchers,academician and clinician to gain more confidence on these drugs and can be use clinically.

Materials and Methods

Ingredients :

The ingredients of *Brahmmiyaathi chooranam* are Dried Leaves of *Vallaarai* (*Centella asiatica*), *Vetpaalai* Seeds (*Wrightia tinctoria*), *Chukku* (*Zingiber officinale*), *Thippili* (*Piper longum*) and *Vasambu* (*Acorus calamus*) were bought from raw drug store in Nellai.

Preparation of *Brahmmiyaathi Chooranam* :

The raw drugs were authenticated and purified as per the methods prescribed in *siddha* literatures.

Take Equal part of purified Dried Leaves of *Vallaarai, Vetpaalai* Seeds, *Chukku, Thippili* and *Vasambu*. Both drugs made into fine powder form separately and mixed well.The powder passed through the sieve number 80. The drug was prepared as per the *siddha* literature ***"Kannusaamy Parambarai Vaithiyam".***

Details regarding the analysis:

FT-IR spectra was recorded at Arulmigu Kalasalingam University, Krishnankovil- Virudhunagar (dst), India. The Perkine Elmer Spectrum one Fourier Transform Infrared(FTIR) Specterometer was Used to derive the FT IR Spectra of *Brahmmiyaathi chooranam* in potassium Bromide (KBr) matrix with Scan rate of 5 scan per minute at the resolution 4cm in the Wave Number region 450-4000cm. FT-IR Spectra were used to determine the presence of the functional groups and bands in the *Brahmmiyaathi chooranam*. The recorded spectrum shows in figure.

Results

FTIR Spectrum Analysis:

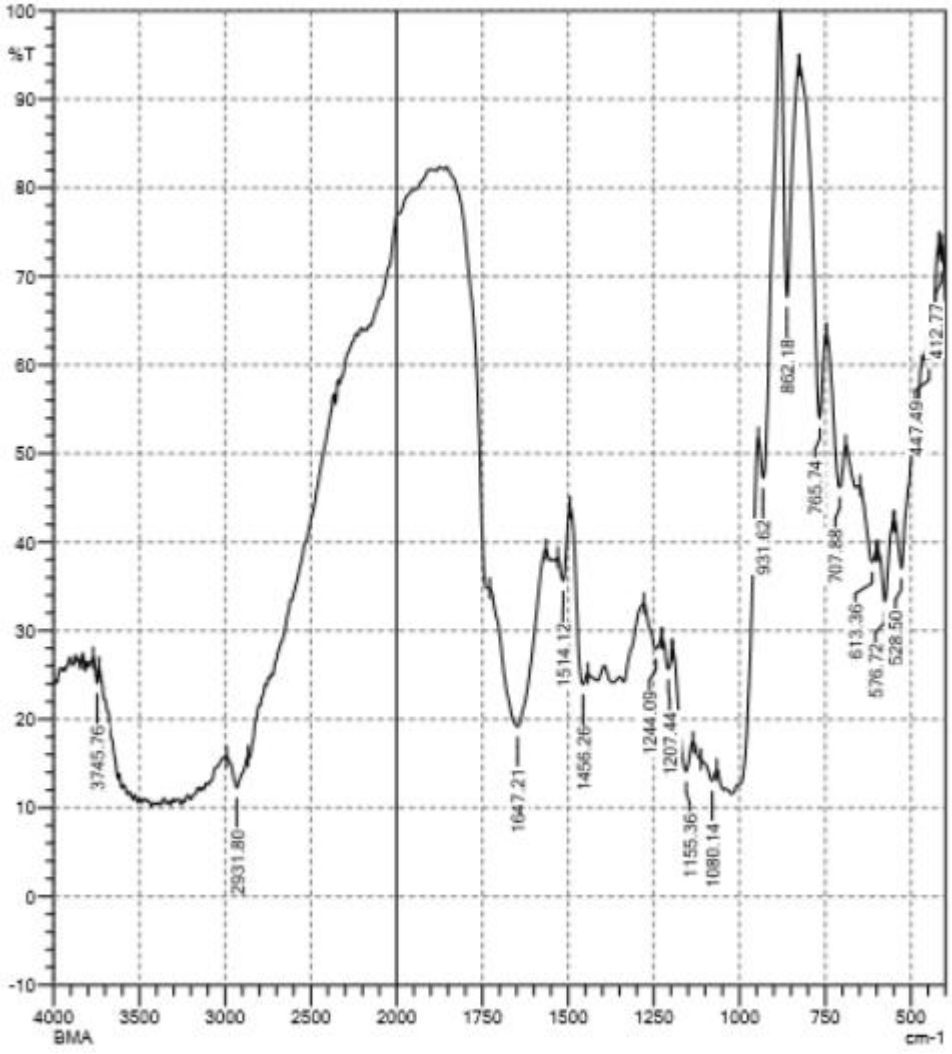

Image of FTIR Spectrum

FTIR data interpretation of *BMC*

Wave number (cm-1)	Vibrational modes of *BMC* in IR region	Functional Group
2931.80	C-H Stretching	Alkane
1647.21	C=C Stretching	Alkene
1514.12	N-O Stretching	Nitro Compound
1155.36	S=O Stretching	Sulfonic acid
1080.14	C-O Stretching	Primary alcohol
931.62	C-H Out of plane bending	Alkene
862.18	C-H Out of plane bending	Aromatic
576.72	C-Br Stretching	Halo Compound

Discussion

In FT-IR Spectra analysis, this sample *Brahmmiyaathi chooranam* was identified to have 8 peak values at 2931.80, 1647.21, 1514.12, 1155.36, 1080.14, 931.62, 862.18, 576.72 having respectively C-H, C=C, N-O, S=O, C-O, C-H, C-H, C-Br. This indicates the presence of some organic functional group such as Alkane, Alkene, Nitro compound, Sulfonic acid, Primary alcohol, Aromatic and Halo compound. The presence of Alkanes, Nitro compounds indicates that the drug can be used to treat against infectious conditions. The presence of other functional group in *Brahmmiyaathi chooranam* are also responsible for their therapeutic function.

Conclusion

In this paper, above results from the FTIR – Characterization helps to standardize the *siddha* poly herbal formulation "*Brahmmiyaathi chooranam"* regarding its functional groups. The Scientific analysis of our Traditional medicines through FTIR will get the knowledge of the drug actions. These results may form the base for further structural finding of this poly herbal drug "*Brahmmiyaathi chooranam".*

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Access this Article in Online

Website: www.ijcrcps.com

Subject: Siddha Medicine

Quick Response Code

DOI: 10.22192/ijcrcps.2018.05.06.010

How to cite this article:
Jansi Bharathi A.P, Kingsly.A, Essakypandian.G, Antony Duraichi.R. (2018). Standardization of *Brahmmiyaathi Chooranam* through Fourier Transform Infra-Red Spectroscopy. Int. J. Curr. Res. Chem. Pharm. Sci. 5(6): 48-50.
DOI: http://dx.doi.org/10.22192/ijcrcps.2018.05.06.010