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Research Article

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Standardization of "Kungiliya Parpam" through Fourier Transform Infrared Spectroscopy

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Abstract

Herbals play a vital role in the treatment of many diseases in humans. Most of the traditional systems of medicine are effective but theyhave lack standardization. So there is a need to develop standardization technique. The plant parts are used as a remedy against various ailments in combination with other ingredients. The concept of single herbs as therapeutic agents is widely recoginized now a days. In traditional siddha system of medicine there is a concept known as " yeghamooligaiprayogam" (yega – single, mooligai – herb and prayogam – application) which deals with single herbs and their clinical application. FTIR Characterization was carried out for the siddha herbals formulation "kungiliyaparpam" to indentify its functional groups .The FTIR peaks of kungiliyaparpam constitute some functional group such as alcohol, phenol, amines, carboxylic acid ,ether, anhydrids, bromide, iodide. If further research will found based on this research work, help to utilize the medicinal effect of this siddha drug clinically in a safe manner.

Keywords: Kungiliyaparpam, FTIR, Siddha herbal formulation.

Introduction

Siddha system is one of the most conservative medical system in the world. Herbal medicines contribute a lot to cure many diseases. Herbals medicines are they hope for the people all over the world now to get proper safe remedy from the diseases. In siddha system of medicine the diagnostic methodology is based on three humours namely vatham, pitham and kapham. **Shorearobusta (sal)** has been commonly used in indian traditional medicine. **Shorearobusta** commonly called as sal tree**. Shorearobusta** is an important forest tree species in north and north – eastern India.

The traditional system of medicine have become significantly more popular all over the globe because of the curative property,less toxic and minimal side effects.Herbal medicine also called botanical medicine (or) phytomedicine refers to the use of plant 's seeds,berries, roots ,leaves, bark, flower, resin for medicinal purposes.Standardization of herbal formulation is an essential factor in order to assess the quality, purity, safety and efficacy of drug based on the concentration of their active principles. " Kungiliyaparpam" is indicated as one of the best drug in siddha medicine for its wide medicinal uses. In

ancient days it is widely used as a drug of choice for the treatment of vellai (leucorrhoea), neerchurukku (painful micturition), neerkkattu (stranguary), vettai (gonorrhoea), moothiranaalaazharchi (inflammation of the urogenital tract), seedhabedhi (dysentery) and pramegam.

Materials and Methods

The medicine " kungiliyaparpam" has been purchased from SKM Siddha and Ayurveda company (India) Limited and used and such for the present study. FTIR is an important and more advanced technigue to identify the functional group. The spectrum that appears denotes the molecular absorption and transmission. It is recorded as the wavelength and the peaks seen in the spectrum indicates the amount of material present.

Details Regarding The FTIR Analysis

The perkine Elmer spectrum one Fourier Transform Infrared (FTIR) spectrometer was used to derive the FTIR spectra of " kungiliyaparpam" in potassium Bromide (KBR) matrix with scan rate of 5 scan per minute at the resolution 4cm1 in the wave number region 450 – 4000 cm1. The samples were grounded to fine powder using agate motor and pestle and the mixed with KBR.FTIR spectra were used to determine the presense of the functional groups and bands in the kungiliyaparpam. The recorded spectrum Analysis.

Results

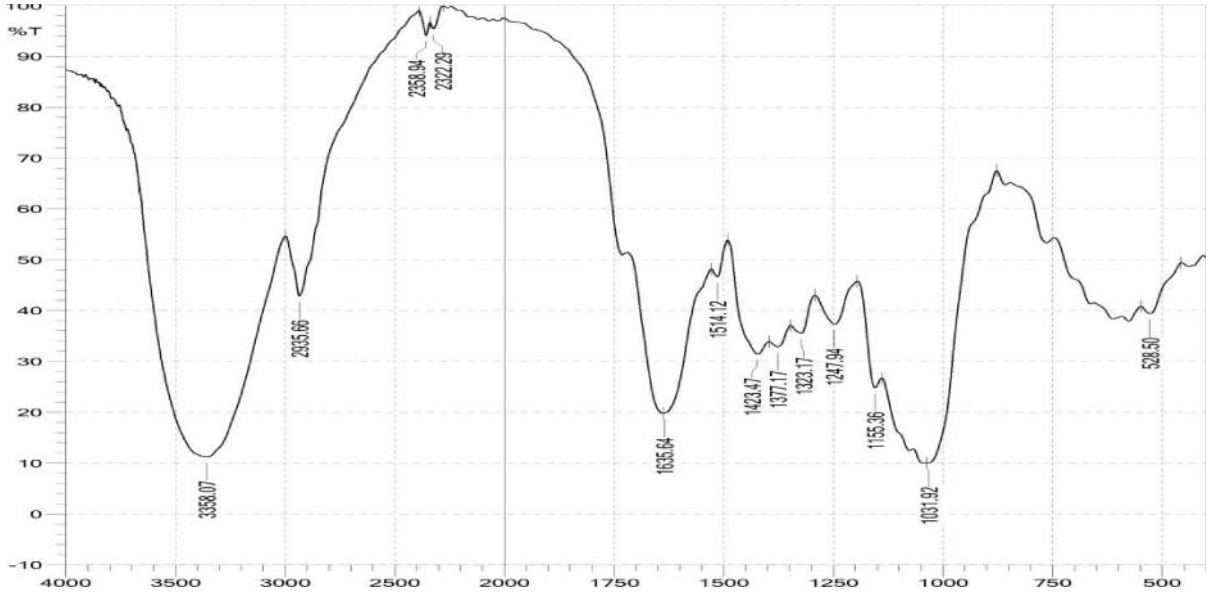

Figure 1 Fourier Transform Infra-Red Spectroscope (FT-IR)

Table 1 FT – IR Interpretation

Wavenumber Range(cm1)	Bond	Type of Vibration
3358	O-H	H – bonded
2935	C-H	Alkane
2358	-	-
2322	-	-
1635	C=O	Amide
1514	N=O	Nitro (R – NO2)
1423	C-H	-CH3
1377	C-H	-CH3
1323	C-N	Amines
1247	C-N	Amines
1155	C-O	Alcohols, esters, ethers, carboxylic acid, anhydrides.
1031	C-O	Alcohols, esters, ethers, carboxylic acid, anhydrides.
528	C-X	Bromide, Iodide.

Discussion

In the FTIR spectra analysis , this kungiliyaparpam showed the association of functional groups and 13 effective peaks werw obtained between 4000 cm1 to 450 cm1. The results of FTIR spectra Analysis are presented in figure 1 and table 1 which exhibits the peak value at 3358, 2935, 2322, 1635, 1514, 1423, 1377, 1323, 1247, 1155, 1033 and 528 cm1 having O-H stretch, C-H stretch, C=H stretch, NO2 stretch, C-H stretch, C-H stretch, C-N stretch, C-N stretch, C-O stretch, C-O stretch C-X stretch. This peak indicates the presense of some organic functional groups such as Alcohol, Phenols, Amines, Esters, Ethers, Carboxylic acid ,Anhydrids, Bromide, Iodide.

Conclusion

The present study clearly indicates the major portion of the compounds. Scientific validation of traditional madicines through standardizarion will provide the knowledge regarding the mechanism of drug " kungiliyaparpam" creates the fingerprints to standardize this drug. These results may from the base for further structural determination of this siddha formulation.

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