



FTIR Characterization of Siddha Medicine Nannari Chooranam.

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ABSTRACT

Background: The *Nannari chooranam* is a herbal medicine used for treating Diabetes, Leucorrhoea, Thirst, Burning micturition, and used as tonic, diuretic, health promoter also^[1].

Objectives: To characterize the herbal drug “*Nannari chooranam*”

Materials and Methods : The ingredient used in this preparation is Nannari root. The drugs was prepared as per siddha literature *Gunapadam Mooligai vakuppu*. The drugs was analyzed by using FTIR Spectrum.

Result: Characterization plays a major role to identify the nature of the drug for standardization. FTIR characterization shows the presence of some functional group such as Carboxylic acids, amine salts, silicon, Esters, alkene, nitro compounds, alkyl aryl ether, tertiary alcohol, Fluoro compounds, Halo compounds, 1,2-disubstituted where identified in Siddha herbal formulation “*Nannari chooranam*”. This study forms the base for the pharmaceutical analysis of *Nannari chooranam* which will be followed by safety and efficacy studies later.

Conclusion: The instrumental analysis FTIR study for *Nannari chooranam* shows the presence of functional groups through the stretch and bends which responsible for its functional activity. It was to subject for further many studies to validate its efficacy and safety through proper standardization procedure. For its potency.

Keywords:

FTIR, Siddha drug, Herbal formulation, Functional group

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INTRODUCTION

The siddha system of medicine is mainly practised in the southern part of India as it originates from Tamilnadu. It is one of the earliest traditional medicine system in the world which treat not only the body but also the mind and the soul. According to siddha the five basic elements (*panchapoatham*) are present in all living and non-living things of the universe in various proportions. In the siddha system of medicine, all vital processes (physiological, biochemical-metabolic) have been classified under three functional heads namely *vali*, *azhal*, *Iyyam* (*Vaatham*, *Pitham*, *kabam*) are called three *uyir – thaathukal*. Siddha medicine was formulated to treat various disease are some modern analytical equipments are helpful to get knowledge regarding the traditional medicinal compound formulation.

Nannari chooranam is indicated as one of the best siddha medicine for its wide medicinal uses. In ancient days it is widely used as a drug of choice for treating Diabetes, Leucorrhoea, Thirst, Burning micturition, and used as tonic, diuretic, health promoter also^[1].

In this study, FTIR characterization was done for the herbal Siddha formulation "*Nannari chooranam* " to evaluate functional group. It is an excellent tool for quantitative analysis.

MATERIALS AND METHODS

Collection of raw materials

Nannari root was collected from surrounding places near Nagercoil.

Nannari chooranam is a siddha herbal formulation has the ingredients of ,

Siddha	Scientific name	Quantity
<i>Nannari</i>	Hemidesmusindicus ^{[2][3]} .	S.Q

Process of preparation

Purified the *Nannari* root by removing the outer skin and dried it completely. Then it is placed in iron mortar and powdered well^{[1],[4]}.

Then it was sieved through the thin clean white cloth. Finally *chooranam* was obtained and kept in an airtight container.

Dose

1 – 2gm

Adjuvant

Milk or hot water or sugar candy^[1]

Indication

Diabetes, Leucorrhoea, Thirst, Burning micturition, and used as tonic, diuretic, health promoter also^[1].

Details regarding the analysis

FTIR spectra were recorded at kalasalingam academy of research and education (International research center) Srivilliputhur.

FTIR Spectrum analysis

Fourier transform infrared spectroscopy it is an important and more advanced technique. It is used to identify the functional group to determine the quality and consistency of the sample material and can determine the amount of compound present in the sample.

In FTIR- infrared is passed from a source through a sample. This infrared is absorbed by the sample according to the chemical properties and some are transmitted. The spectrum that appears denotes the molecular absorption and transmission. It forms the molecular finger print of the sample. It is recorded as wavelength and the peaks seen in the spectrum indicate the amount of material present.

RESULTS

The results are plotted in image and table .1

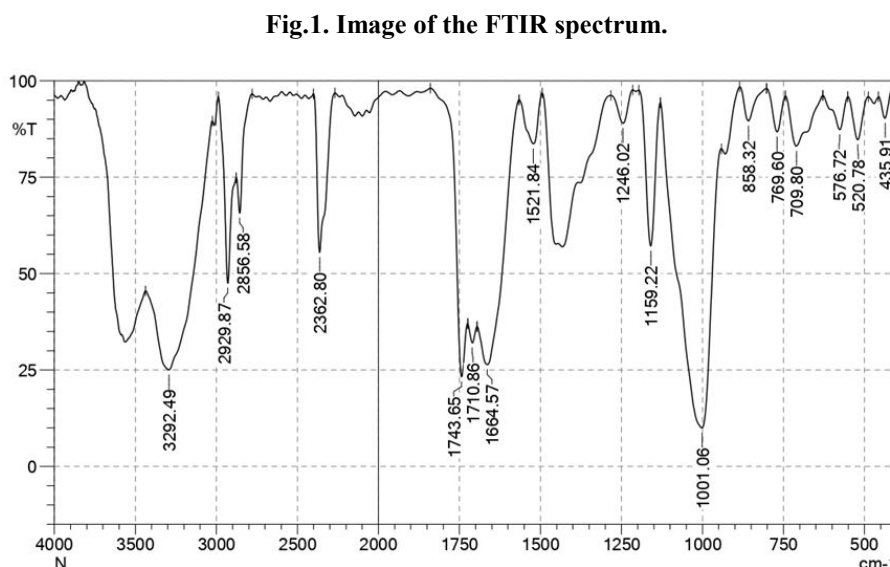


Table.1: FTIR Data interpretation of Nannari chooranam

Wave number	Vibrational modes of SAMPLE In IR region	Functional groups
3292.49	O-H Stretching	Carboxylic acid
2929.87	N-H Stretching	Amine salts
2856.58	N-H Stretching	Amine salts
2362.80	Si-H Stretch	Silicon
1743.65	C=O Stretching	Esters
1710.86	C=O Stretching	Carboxylic acid
1664.57	C=C Stretching	Alkene
1521.54	N-O Stretching	Nitro compound
1246.02	C-O Stretching	Alkyl aryl ether
1159.22	C-O Stretching	Tertiary alcohol
1001.06	C-F Stretching	Fluoro compounds
858.32	C-Cl Stretching	Halo compounds
769.60	C-H bending	1,2-disubstituted
709.80	C=C bending	Alkene
576.72	C-Br Stretching	Halo compounds
520.78	C-I Stretching	Halo compounds
435.91	C-I Stretching	Halo compounds

RESULTS

In FT-IR spectra analysis, this sample *Nannari chooranam* exhibits the peak value at 3292.49, 2929.87, 2856.58, 2362.80, 1743.65, 1710.86, 1664.57, 1521.54, 1246.02, 1159.22, 1001.06, 858.32, 769.60, 576.72, 520.78, 435.91 having O-H stretching, N-H stretching, Si-H stretching, C=O stretching, N-O stretching, C-O stretching, C-F stretching, C-Cl stretching, C-H stretching, C-H bending, C=C bending, C-Br stretching, C-I stretching.

This indicates the presence of some organic functional groups such as Carboxylic acids, amine salts, silicon, Esters, alkene, nitro compounds, alkyl aryl ether, tertiary alcohol, Fluoro compounds, Halo compounds, 1,2-disubstituted.

The presence of alkanes protects against bacteria and fungal infections. likewise the presence of other these identified functional groups in the medicinal compound are also responsible for their therapeutic function.

CONCLUSION

Nowadays it is very essential to validate the traditional formulations to get various knowledge regarding the science behind those formulations. The FTIR characterization findings of Nannari chooranam helps to standardize

this drug. Pharmacological and clinical trial have to be carried out on this formulation. These results will help in structural identification of this drug and further research on this drug.

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CONFLICT OF INTEREST : None declared

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