
INTERNATIONAL JOURNAL OF CURRENT RESEARCH IN BIOLOGY AND MEDICINE

ISSN: 2455-944X

www.darshanpublishers.com

DOI:10.22192/ijcrbm

Volume 3, Issue 5 - 2018

Original Research ArticleDOI: <http://dx.doi.org/10.22192/ijcrbm.2018.03.05.016>

Standardization of Siddha formulation “*Kamalai Mathirai*”

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Abstract

Most of the traditional systems of medicines are effective but they lack of standardization. So, there is a need to develop a standardization technique. Central council of research in siddha has given preliminary guidelines for standardizing these conventional formulations for the uniformity of batches in production of herbal formulations it is necessary to develop methods for evaluation. “*Kamalai mathirai*” is one of the best siddha formulation indicated in siddha literatures for the management of hepatic diseases. Though this formulation is being used in clinical practice. Scientific documentation to standardize this drug is essential now a days. So, the siddha formulation “*Kamalai Mathirai*” is subjected into characterization using FTIR.

Keywords: Siddha medicine, standardization, FTIR.

Introduction

Herbals are widely used in traditional medicines. Various medicinal compounds were identified in herbals. Those are always considered as safe with great medicinal value.

The Pharmaceutical principles of siddha medicines is a specialized one. Many modern drugs are causing hepatotoxicity now a days. Various herbals such as Athimathuram, Mutchanganverpattai etc.... having the property of hepato protective. Mathiraigal (Tablets) are known to be effective in very small doses. Usually a few milligrams. Their periods are very long. In siddha text mathiraigal are expiring upto 1 year.

Kamalai mathirai is a herbal siddha formulation which was indicated as a good drug to treat jaundice. It is taken orally one tablet twice a day with milk. There is no scientific foot prints are available regarding this formulation. Characterization studies of FTIR carried out to standardize this formulation.

Experimental Section

Details regarding the sample

“*Kamalai Mathirai*” is a herbal Siddha formulation in the classical siddha literature “*Gunapadamooligai*” authored by C.S. Murugesamuthaliyar (Pg.No.15). The ingredients of *Kamalai mathirai*, **Athimathuram**, **Mutchanganverpattai (Rootbark)**, **Lemonjuice**. The drug was prepared as per the text.

Details regarding the FT-IR analysis

FT-IR spectra were recorded at IIT Madras. The Perkin Elmer spectrum one Fourier Transform Infrared (FTIR) spectrometer was used to derive the

FTIR spectra of *Kamalai mathirai* in Potassium Bromide (KBr) Matrix with scan rate of 5 scan per minute at the resolution 4cm^{-1} in the wave number region $450\text{-}4000\text{ cm}^{-1}$ and the emission lines have been indexed by using the standard reported values.

Results

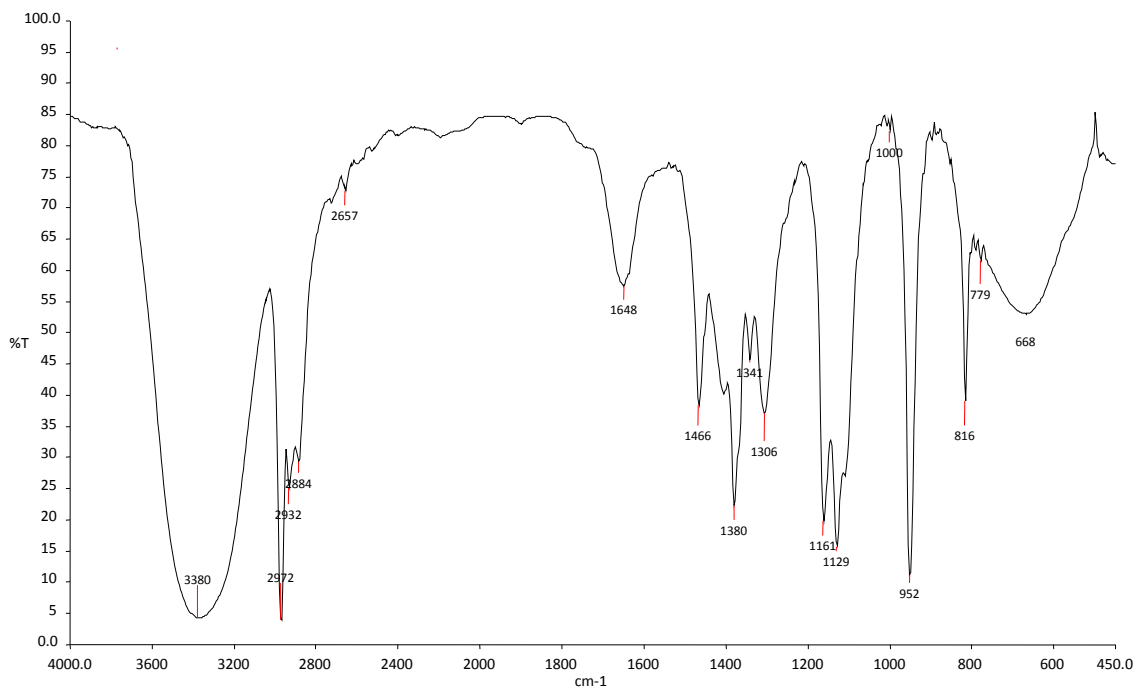


Fig.1 : FTIR Spectra of “Kamalai Mathirai”

Table – 1 FTIR Interpretation of “Kamalai Mathirai”

Absorption peak Cm^{-1}	Bond	Type of bond functional group
3380	N-H Stretch	$1^\circ, 2^\circ$ amines, amides
2972	OH Stretch	Carboxylic acid
2932	CH Stretch	Alkanes
2884	CH Stretch	Alkanes
2657	HC=O; CH Stretch	Aldehyde
1648	C=C Stretch	Alkanes
1466	CH bend	Alkanes
1341	CH rock	Alkanes
1306	CO stretch	Alcohol, Carboxylic acid
1161	CN Stretch	Aliphatic amines
1129	CO Stretch	Alcohol, Carboxylic acid

Discussion

In the FTIR spectra analysis, this *Kamalai mathirai* Showed the association of functional groups and 11 effective peaks were obtained between 4000cm⁻¹ to 450 cm⁻¹. The results of FTIR spectra analysis are presented in figure ` and table 1 which exhibits the peak value at 3380, 2972, 2932, 2884, 2657, 1648, 1466, 1341, 1306, 1161, 1129 having N-H stretch , OH stretch, CH stretch CH stretch, HC=O; CH stretch, C=C stretch CH bend, CH rock, CO stretch, CN stretch CO stretch. This indicates the presence of some organic funtional groups such as Amine groups, Alkane groups, Aldehydes, Alcohols were identified in the siddha medicine "*Kamalai Mathirai*".

Conclusion

The study clearly indicates the major portion of the compounds. Scientific validation of traditional medicine through standardization will provide the knowledge regarding the mechanism of the drug action. FTIR characterization on siddha drug "*Kamalai mathirai*" creates the finger prints to standardize this drug. These results may form the base for further structural determination of this siddha formulation.

Acknowledgments

We wish to thank IIT Madras, and specially thank to The Principal, Government Siddha Medical College, Palayamkottai for their full support to complete this study.

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How to cite this article:

Praba M, Selvaraj S, Thiruthani M. (2018). Standardization of Siddha formulation "*Kamalai Mathirai*". Int. J. Curr. Res. Biol. Med. 3(5): 75-77.

DOI: <http://dx.doi.org/10.22192/ijrbm.2018.03.05.016>