

Ocimum Basicillicum

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Abstract:

The use of medicinal and their photochemical compositions with known anti-microbial properties can be a great significance in therapeutics. In this research work the aqueous of leaves of ocimum Basillium was screened against E-coli. The FTIR spectrum of Ocimum Basicillicum is taken at IIT, Chennai and frequencies are assigned from the spectrum. The existence of Flavaniod lies between 2500-2900cm⁻¹ is identified which good antimicrobial action against the diseases has caused by bacteria. The presences of other nutrients like amino acids, carbohydrates proteins lipid phosphate are identified. The antibacterial activities are compared with standard antibiotics. Our results clearly indicate that Ocimum Basicillicum plant has good antimicrobial properties with no side effects in medical treatment than other well known antibiotics.

INTRODUCTION:

We know that leaves of some plants (Medicinal) contain antibacterial organic compounds and nutrients which are used in medical diagnosis and subsequent therapy. The presence of antibacterial compounds and nutrients in these plants should be known before using them in medicinal practice. Here FTIR Technique is used as a tool to identify the important antibacterial compounds and nutrients and their antibacterial effects are confirmed by disk diffusion test subsequently.

The recent application FTIR spectroscopy is not only used to find the composition of various constituents in medicinal plants and antibacterial compounds but also used as a tool to identify them precisely from their absorption spectra. In the present work, spectroscopic Technique (FTIR) is used to study the biological composition of different antibacterial organic compounds (Complexes) and nutrients present in Ocimum Basillium(Black tulasi) and subsequently its antibacterial effects are verified by disk diffusion test

KEY WORDS

Antimicrobial, antibacterial diagnosis, therapy, E-Coil, P-aeruginosa, B-Subtillis & S.aereus flavanoids, terpenoids alkaloids, antibiotics.

EXPERIMENTAL

The leaves of Ocimum Basicillicum (Black Tulasi) are collected from a farm and are analysed by air dry technique to remove moisture using KBr as matrix and KSCN as solution. Sample is dried over 30 minutes in order to eliminate the absorption spectra of water and then FTIR spectrum of the sample is recorded over the region 4000-400cm Using BRUKER MODEL IFS66V Double beam FTIR spectrometer, at IIT Chennai. The spectrometer has been base line corrected and is normalized in the absorbance mode to acquire identical data.

TABLE1

Clearly predicts the presence of protein in this sample, since it gives a strong absorption band in the IR region (3429cm)

The presence other protein compounds and lipid phosphate are identified by absorption bands listed in SI.NO.2,3,4,5 & 7.

The presence of glucose is identified by the strong absorption band in the region(1095cm)

RESULTS AND DISCUSSION:

From the FTIR spectrum, the presence of nutrients like proteins, glucose and lipids phosphate and antibacterial compounds are identified by the strong absorption bands in the IR region. Their antibacterial activities are confirmed by disk diffusion test. The existence of flavanoids which shows a peak lie between 2500cm⁻¹ and 3000cm⁻¹. This flavanoids plays a vital role in antibacterial and antimicrobial activities.

CONCLUSION:

FTIR spectrum is used as a special tool to identify the nutrients and antibacterial compounds present in the sample. It is superior than other tests because most of the nutrients and antibacterial compounds are identified by a single spectrum containing selective absorption bands. The antibacterial activities of this sample are also tested by disk diffusion method.

