ANTIBACTERIAL ACTIVITIES OF CRUDE EXTRACTS OF SPICE ILLICICUM VERUM FRUITS (CHINESE STAR ANISE) ON FOOD SPOILAGE STRAINS OF E. COLI O157:H7

USHA MASIH, S.M.A. NAQVI

Department of Botany, Mata Jija Bai Govt. Girls P.G. College, Indore (M.P.)
1. Department of Botany, Islamia Karimia Science College Indore (M.P.)

ABSTRACT

The in-vitro antibacterial activity of crude acetone, ethanol, methanol, cold water and hot water extract of spice Star Anise fruits were examined against four food spoilage gram-negative strains of Escherichia coli O157:H7 (E. coli ATCC 43888, E. coli ATCC 25922, E. coli ATCC 8739 and E. coli ATCC 43895) bacteria, by disc diffusion and agar well diffusion method. Minimum Inhibitory Concentration (MIC) of spice evaluated to compare the efficacy of different extracts to extend the shelf life of cooked food. It has been observed that all the strains of E. coli showed intermediate inhibition by the various extracts of Star Anise with inhibition zones in the range of 8.5mm to 21mm for all but one of the Star Anise extracts namely hot water to which these bacteria were observed to be resistant.

Minimum inhibitory concentration results of four gram-negative bacteria are indicative of the high efficacy (all predominantly within the range of MIC=0.78mg/ml to 1.56mg/ml) as an antibacterial agent. The relatively low MIC values obtained contradict the effectiveness of Star Anise against E. coli ATCC 25922 implying that the extracts may possess antibacterial activity capable of inhibiting growth of these bacteria and can be used for cooked food preservation to extend shelf life of food.

KEYWORDS - Antibacterial, crude extracts, Spice, Illicium verum, Minimum inhibitory concentration, Food preservation.
The Study of Tuberculosis Diagnosis by ELISA Test in Different Tuberculosis Patient

Ragini Shrimali, Usha Masih, Dr. Naqvi, Dr. Chitnis
Email: raganidashore@gmail.com

Abstract:
Respective analysis of 12 TB. patients has been carried out on the serum samples of TB patients by IgG and IgM TB. ELISA kit.

- Collects 12 TB. Patients serum samples which are diagnosed by the AFB fluorescence microscopy or MGIT BACTEC culture or TB. Polymerase chain reaction.
- Tuberculosis diagnosis by Elisa Test in deferent Tuberculosis patient
- Kit sensitivity analysis

Sera from 12 positive confirmed cases of TB. Which confirmed by Fluorescence AFB microscopy or BACTEC culture or TB PCR were included in the study and sensitivity analysis of Elisa kit.

Elisa Kit:
- IgG kit sensitivity = 31.14%
- IgM kit sensitivity = 78.6%

Conclusion: Sensitive of IgG Elisa Kit is low comparison to the IgM Elisa kit, and efficiency.

Key words: ELISA, IgG, IgM, Tuberculosis, sensitivity.
Antimicrobial Activity of Illicium Verum (Star anise) when Tested Against four gram-negative Food Spoilage Bacteria

Masih Usha and Sharma Shobha
Department of Botany, Mata Jija Bai Govt. Girls P.G College, Indore, MP, INDIA

Abstract: The present study was aimed at investigating the potential of culinary spice commonly known as Illicium verum (Star-Anise) against four gram-negative food spoilage bacterial strains of Escherichia coli O157:H7 namely E. coli ATCC 43888, E. coli ATCC 25922, E. coli ATCC 8739 and E. coli ATCC 43895. Analysis of the results of sensitivity tests (disc and agar well diffusion assay) indicated each of the bacteria to be completely inhibited, intermediately inhibited or completely resistant towards spice extracts. The formation of zones of inhibition present where inhibition had occurred indicated that the spice tested was effective as an antimicrobial agent when screened. Zones of absolute-inhibition greater than 15 mm in diameter were obtained during positive agar well and disc diffusion assaying with antibiotic tetracycline used as the antimicrobial agent of choice. Inhibition zones observed to be in the upper limit range (pertaining to the study) of 18 mm in diameter and in some instances demonstrated antimicrobial effectiveness greater than that exhibited by the positive control tetracycline (15 mm). The observations of such inhibition amongst the spices were comparatively significant and demonstrated the potential use of this spice as antimicrobial agents with an efficacy that can be compared to that of the already recognized and widely used antibiotic, tetracycline. The minimum inhibitory concentration (MIC) was successfully determined for this spice extracts (Acetone, Ethanol, Methanol, Hot water and Cold water). The reactions observed during MIC determination were confirmatory of the antimicrobial activity present in the extracts of spice. Analyses of the results conclude that the active compounds present in the selected spices were effective against tested microbial species. This observation demonstrated that spice can be used for food preservation. This could in the future be an alternative preservative to chemical preservative for the microbial food spoilage strains investigated. Active compounds also analyzed in selected spices. Phytochemical qualitative test performed for alkaloids, tannins, phlobatansins, saponins, flavonoids, terpenoids and cardiac glycosides for the spice.

Keywords: Antimicrobial, Star-anise, Extracts, Food spoilage bacterial strains, Food preservation Phytochemical.