Insight Medical Publishing

JOURNAL OF ORGANIC & INORGANIC CHEMISTRY

Chemical constituents and antimicrobial activities of petroleum ether extract of Salvia officinalis L. leaves on certain pathogenic microorganisms

Alaa Ali Elamin

Abdullatif Alhamad University of Technology, Sudan

Abstract

The origin in Salvia officinalis (Lamiaceae) is a wild plant belongs to Mediterranean region .Since it is important and famous use become farm by wide spread in the entire world and in flowering sunny conditions. Salvia plant traditionally used, proved to be very effective for treatment of various infections and diseases and newly in modern medicine because it contains estrogen, phenolic acids, flavonoids, resin, saponins, silica, tannins, volatile oils. This research aims at assessing the anti– microbial effect of Salvia leaves Petroleum ether extract on certain microbes. The fine powder of the Salvia leaves was extracted with using petroleum ether and soxhlet technique. Preliminary phytochemical screening was carried out on extract of Salvia leaves which revealed the presence of sterols, volatile oils, triterpenes, alkaloid, 2- deoxy sugar flavone aglycone, anthraquinones and carbohydrates as the main natural components.

The antimicrobial effect of Salvia leaves has been investigated in order to test their activity against four bacterial strains, *Escherichia coli, Pseudomonas aeruginosa* (Gram -ve) and *Bacillus subtilis, Staphylococcus aureus* (Gram + ve) and two fungal strains Candida albicans, Aspergillus niger in (50, 25, 12.5. 6.5) mg /ml concentrations. Petroleum ether extract showed a strong and superior anti- bacterial activity against four species E.coli, S.aureus, P.aeruginosa, B.subtilis respectively. The results were revealed that E.C (Gram -ve bacteria) has a high sensitivity. For this reason pet-ether extract was further subjected to column fractionation chromatography and thin layer chromatography resulting in the separation of 14 fractions. The column fractions F1, F2, F3 and F4 of petroleum ether extract were further subjected to subsequent fractionation and purification by analytical and preparative Thin- layer chromatography resulting in the isolation of four pure compounds which were identified and characterized by spectroscopic methods (infra-red (IR) and Ultra Violet (UV). In solving the chemical nature of active petroleum ether extract components, the extracts investigated by gas chromatographic mass spectroscopic analysis (GC/MS), GC-MS technique,and 94 components were recorded. The components identified are alphatic and aromatic hydrocarbons, monoterpenes, diterpenes triterpenes, sesquiterpenes, fatty acids, vitamins and steroids. The major components were Eucahyptol (20.04%), Camphor (10.99%), Coumarine, Beta.-Pinene, Thujone (0.62%), Borneol, 8-allyl-7-hydroxy-6-eth, Vitamine A aldehyde, Limonene-1,2-epoxide(fr.1), Ledol, Caryophyllene, 3- Cyclohexene-1-methanol,.alpha., Naphthalene, Bornyl acetate, Tridecane, Dodecane, D-Limonene, Undecane.

Biography

Alaa El-Amin has completed her MSc at the age of 26 years from Alneelain University. She is working in Department of Chemistry at Abdullatif Alhamad University of Technology, Sudan. She has 2 publications in analytical and organic chemistry. She has many projects in organic chemistry especially in natural products. She is a member of Organization for Women in Science for the Developing world (OWSD) and Coordinator at Sudanese Women Science Organization (SWSO).

3rd International Conference on Organic Chemistry | July 23,2020,

Citation: Alaa Ali Elamin, Chemical constituents and antimicrobial activities of petroleum ether extract of Salvia officinalis L. leaves on certain pathogenic microorganisms, Organic Chemistry Congress 2020, 3rd International Conference on Organic Chemistry, July 23, 2020, pp.04