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DBT Sponsered Two Days National Conference on A Paradigm Shift for Emerging Paraphernalia in Advancement of Cancer Research

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GC- MS ANALYSIS: A VALUABLE TOOL IN CHEMICAL CHARACTERIZATION OF ESSENTIAL OILS

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Abstract

In last few years, there has been an increase in the use of aromatic medicinal plants and their essential oils in scientific research and industrial applications including nutritional, pharmaceutical, and cosmetic uses. Gas chromatography/mass spectrometry (GC/MS) is the most ubiquitous analytical technique for the identification and quantitation of organic substances in complex matrices like essential oils. Decades after it was firstly performed, the GC-MS technique provides unsurpassed advantages, such as the robustness and the availability of EI spectral libraries.The GC-MS is indispensable in the fields of environmental science, forensics, health care, medical and biological research, health and safety, the flavor and fragrances industry, food safety, packaging, and many others. At present, approximately 3000 essential oils are known, 300 of which are commercially important especially for the pharmaceutical, agronomic, food, cosmetic, and perfume industry. Terpenes in essential oils can be identified and quantified at picogram levels by GC-MS.Since it is impossible to identify some terpenes by mass spectrum only, the Adams library with retention times and Kovat's indices is the only terpene library that one can use to identify more than 95% of the components in common essentials oils with certainty.

Keywords: Aromatic Medicinal Plants, Gas chromatography, Mass Spectrometry. Essential Oils.

DEVELOPMENT OF NOVEL MULTITARGETING ANTICANCER DRUGS FROM PHYTOCHEMICALS

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Abstract

Objective: To determine the role of phytochemicals in chemoprevention of cancer.

Method: Cancer is the most life threatening health problem affecting people of all ages .According to WHO ten million cases and around 6 billion deaths are attributed to cancer per year globally and about 10-70% of human cancer mortality is attributed to diet.The NCI(National Cancer Institute) has identified around 35 plant based foods which have cancer preventive properties. In this context capsaicin, curcumin, diallysulfide, genitein are considered as potential alternative sources of safer chemicals which possess chemoprevention. Chemoprevention involves the use of chemical agents to inhibit, reverse or retard tumor genesis. Lee Wattenberg proposed chemopreventive agents in to blocking agents and suppressing agents. These inhibitory influences suppress the final steps of carcinogenesis.

Conclusion: Efficacy of chemotherapy now has significant limitation by the intrinsic and cancer cells develop resistance to anticancer drugs. Currently available synthetic anticancer drugs possess severe immunosuppression and mortality rate due to organ failure .The induction of apoptosis in a neoplastic cell without affecting normal cells of body is a key of taking phytochemicals and these modulate the molecular targets of cancer and induce cytoprotective enzymes and it detoxify an remove dangerous reactive substances formed by cancer inducing agents. Further exploration of anticancer potential of these agents may pave the way for the development of novel multitargeting anticancer drugs from phytochemicals.

Keywords: Phytochemicals, Carcinogenesis, Cytoprotective.

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