

Chromatographic analysis of phytochemicals from *Parthenium hysterophorus* and *Argemone mexicana* using thin layer chromatography and liquid chromatography-Mass spectrophotometry and biological applications

Jyotsna Jaiswal and Bechan Sharma
University of Allahabad, India

Plants hold immense capacity to cure serious illness because of the presence of various phytochemicals with strong medicinal properties. Identification of novel therapeutic agents as new drugs for alleviation of the human suffering from viral diseases is of prime concern. The presence of various phytochemicals in the plant extracts of *P. hysterophorus* and *Argemone mexicana* in the leaves, flowers and fruits were analyzed by using Thin Layer Chromatography (TLC) technique. The colored spots present in TLC plates corresponded to different phytochemicals present in the extracts. Liquid Chromatography-Mass Spectrometry (LC-MS) is a technique involved in the separation of delicate and complex mixture, whose constituents are not fully known. The extracts of *P. hysterophorus* extract prepared in aqueous medium at room temperature displayed the presence of various compounds having different molecular mass. The LCMS analysis demonstrated the presence of 28 different compounds including 1,3 Azulenedicarbonitrile, 2-amino-6-bromo, Selenolo[2,3-b]pyridine-2-carboxylic acid, 3-hydroxy-, ethyl ester, Selenolo[2,3-b]pyridine-2-carboxylic acid, ethyl ester, 7-oxide, phenol, 2-nitro-4-[(trifluoromethyl)sulfonyl] and 4-Nitrophenyl trifluoromethane sulfonate etc. LC-MS analysis of the *A. mexicana* leaves extract prepared in aqueous medium at high temperature the presence of various compounds including 7 different compounds such as 3H-1,2,4-Triazole-3-thione, 2,4-dihydro-4-cyclohexyl-5-((2-methyl-1H-indol-3-yl)methyl), 1-Azacycloheptane-1-thiocarboxylic acid 2-[1-[1-isoquinolinyl]ethylidene]hydrazide, 1-Dichloromethyl(dimethyl)silyloxydodecane etc. LC-MS analysis of the *A. mexicana* fruit extracts prepared in ethyl acetate medium at high temperature contained 269 compounds. Some chemical and biochemical properties of these extracts have also been determined, which indicated their strong antioxidant and antimicrobial activities. The results would be discussed.

Biography

Jyotsna Jaiswal is pursuing her PhD in Biochemistry from University of Allahabad, India. She works under Prof. B Sharma and studied exploration of the plant based principals as Anti-HIV agents and other infectious agents. During the course of research, she have learnt to prepare plant extracts in different solvents, phytochemical characterization assays of these extracts, analysis of their free radical quenching abilities by DPPH assay, spectrophotometric analysis of different phytochemicals present in the extracts, assessment of their antioxidative potential in xenobiotics intoxicated rats and evaluation of their antimicrobial and antiHIV activities. Her research interests are virology, pharmacology and microbiology. She have learnt several biochemical/biotechnological techniques including UV-visible double bean spectrophotometry, SDS-PAGE, DNA/RNA extraction, purity check and quantification, enzyme activity assays, protein estimation and microbiology/biotechnology techniques. She has published three research article and two review article.

Received: January 25, 2023; **Accepted:** January 26, 2023; **Published:** January 30, 2023