Traditional Medicine-2013
OMICS Group Conferences
Accelerating Scientific Discovery
International Conference and Exhibition on
Traditional & Alternative Medicine
December 9-11, 2013 Hyderabad, India

Chemical fingerprint profile and antibacterial studies on *Piper longum* Linn

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Abstract

Ascertaining authenticity is the first important step to assess the quality of plant medicine. Each medicinal plant contains certain characteristic phytochemical constituents. Therefore constituents including their respective chemical ratios can be analyzed for authentication. The plant Piper longum Linn. was screened for secondary metabolites. Standardization of the solvent system and qualities and quantities required to get maximum separation of individual secondary metabolites was done. Piperidine was used as a marker compound. A HPTLC method for the separation of the active constituents has been developed and TLC of these extracts on silica gel precoated aluminium plates of Merck by automatic TLC applicator and using solvent gradient system was performed. The methodology showed excellent separation of secondary metabolites. The in vitro antibacterial activity was performed by Agar ditch, Agar disc diffusion and Agar well diffusion method. The phytochemical extracts obtained after confirmation with HPTLC were examined for anti microbial activity against the pathogens infecting the respiratory tract i.e. Staphylococcus aureus, Streptococcus pyogenes and Klebsiella pneumoniae. In addition powder was tested for its minimum inhibitory concentration and further solvent fractions were tested for the zone of inhibition. Klebsiella pneumonia was the most resistant bacteria, while Staphylococcus aureus was the most susceptible.

Key words: Anti-bacterial activity, HPTLC, Piper longum Linn., secondary metabolites.

Biography

Dr. Aparna Amit Saraf, is selected as Associate Professor in Botany at The Institute of Science, Mumbai. She has teaching experience of 17 years at Post Graduate level. She has 14 publications in International Journals and presented her work in 8 International & 10 National conferences. She is a recognised Ph.D. guide at the University of Mumbai. She has to her credit two “Best Paper Presentation Award” at National Conferences.