

The antimicrobial and antiHIV-1RT properties of *Parthenium hysterophorus* leaves extract

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Statement of the Problem: The Human Immunodeficiency Virus (HIV) infection causes Acquired Immuno-Deficiency Syndrome (AIDS), a disease posing threats to humans, especially when its early detection and effective therapy is lacking. Since the currently available antiretroviral regimen to treat AIDS are laced with severe side effects and induce drug resistant variants of virus, it is required to explore safe and novel plant-based molecules with immense therapeutic potential. The traditional application of ethnomedicines to treat different diseases is the best substitute of synthetic drugs.

Methodology & Theoretical Orientation: Suitable procedures have been used for the extraction of bioactive molecules from the Indian weed, *Parthenium hysterophorus*, their qualitative analysis and quantitative chemical characterization of herbal molecules by GC-MS and assessment of their activities against microbial growth and replication of HIV-1 catalyzed by Reverse Transcriptase (HIV-1RT).

Findings: The results suggested that the plant extracts were potentially acting as antimicrobials and were able to significantly inhibit the activity of HIV-1RT.

Conclusion: The results from this study suggested that the herbal molecule(s) from *P. hysterophorus* may be developed as a new NNRTI against HIV-1RT to arrest HIV-1 infection.

Biography

Bechan Sharma is presently working as a Professor and Head, Department of Biochemistry, University of Allahabad, Allahabad, India. His research interests include Molecular Biology of HIV/AIDS, Free radical Biology, Tropical Diseases, Enzyme technology, Drug development and Biochemical Toxicology. He has received number of Awards/ Honors and successfully completed numerous important Academic/ Administrative Assignments. With 36 years of teaching / research experience, he has carried out several research projects and published over 230 research papers, 8 books and one US patent on HIV-1 genome structure based antiHIV-1 drugs design to his credit. He has supervised 18 PhDs and 7 PDFs. He is a member/life member of several national/international scientific societies and attended numerous symposia/conferences in India and abroad. He is Chief-Editor/Associate Editor/Executive Editor and Member Editorial Board / Reviewer of over 170 peer-reviewed International.

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