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Inhibition of human immunodeficiency virus type 1 (HIV-1) reverse transcriptase by the selected plant extracts

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The acquired immunodeficiency syndrome (AIDS) has been rapidly spreading in many countries and is a world-wide public health problem. Despite the beneficial effects of the antiretroviral drugs in improving the quality of life of HIV/AIDS patients, the development of virus resistance is a continuing problem. The aim of the present study was to evaluate the HIV reverse transcriptase inhibitory activity of selected Madhuca indica plant extracts. Collected plant material were dried, powdered and extracted by maceration with using different solvents. Peripheral Blood Mononuclear Cells (PBMCs) were collected from the blood of healthy volunteers, by ficol-Hypaque density gradient centrifugation method. The HIV reverse transcriptase enzyme inhibition due to each extract was determined using HIV RT inhibition assay. The hexane and chloroform extracts obtained highest yield (4.5%) when compared to other Solvent extracts. More than 50% of cell viability was observed in all crude extracts. Except chloroform extract, remaining all extracts shows 93% cell viability at 0.02 mg/ml concentration. More than 50% inhibition of HIV-RT shows from 0.03 to 1 mg/ml concentrations of all extracts. IC50 value of chloroform and methanol extracts of M. indica are more than 100 mg/ml. In conclusion, from the testing of M. indica medicinal plant showed a high HIV-1 RT inhibitory effect. Further experiments on purification of this compound would also be necessary.

Biography

Graduated in Basic Science, did M.Sc. (Zoology) in 2000 from Kakatiya University, Warangal, India. Joined as Faculty as Assistant Professor in 2007 at Department of Zoology, Kakatiya University, Warangal, Andhra Pradesh, India. Life member in Indian Society of Toxicology & in Indian Science Congress Association, Calcutta. Completed three Major Research Projects sanctioned by various funding agencies. Awarded 'Bharat Shiksha Ratna Award'and 'Bharat Jyoti Award', New Delhi. Recently awarded DST-SERB Young Scientist Award. Having 12 years of Teaching and Research Experience. Published 59 research publications in reputed journals. Attended and presented research papers more than forty at conferences/seminars.

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