

In vitro HIV-1 Reverse Transcriptase Inhibition by Alkaloids Isolated from Leaves of *Ecliptaalba*

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Background: The current treatment modality for HIV/AIDS is HAART (Highly active anti-retroviral therapy) but this treatment is not an ultimate cure to HIV/AIDS. Therefore there is need to develop inexpensive alternative anti-HIV/AIDS therapy. Different parts of *Ecliptaalba* crude extracts are used traditionally for the treatment of several diseases of liver, skin, stomach and sexually transmitted infections.

Objective: The objective of this study is to isolate alkaloid from *E. Alba* leaves for their activities against HIV-1 reverse transcriptase.

Methods: Collected leaves of *E. Alba* were extracted with different solvents and the purity of isolated alkaloids was checked by TLC and qualitative phytochemical analysis and total alkaloids were quantified. Peripheral Blood Mononuclear Cells (PBMCs) isolated from healthy donors by *ficoll-hypaque density gradient centrifugation method*. Cell viability test was performed on all crude extracts by MTT assay against PBMC and HIV-1 RT inhibition activity was determined by HIV-1 Reverse Transcriptase (p66) Capture ELISA.

Results: In the HIV-1 reverse transcriptase assay, the isolated alkaloid showed 89% of HIV-1 reverse transcription with IC_{50} of 5 $\mu\text{g}/\text{ml}$. MTT assay revealed that, the alkaloid isolated from *E. Alba* had no cytotoxic activity (IC_{50} values higher than 100 $\mu\text{g}/\text{ml}$). Characterization of important biologically-active alkaloid from *E. Alba* plant will certainly be helpful in protecting and treating various viral diseases in human beings.

Conclusion: The results of the present study support the medicinal usage of the alkaloid isolated from the leaves of *E. Alba* can be used as antiviral agents and can be subjected to characterize the therapeutic drugs and undergo further pharmacological screening that can be used as sources for new drugs.

Keywords: *Ecliptaalba*, alkaloid, HIV-1 reverse transcriptase, MTT assay, PBMCs.

Biography:

Dr. Estari Mamidala completed his B.Sc in Kakatiya University and did post graduation in Zoology in Department of Zoology, Kakatiya University, India. He did his Ph.D in the same University on 'HIV prevalence in rural areas and understanding of its pathogenesis'. He attended 32 national and international conferences and presented papers and he published 28 research publications in reputed journals and doing his post-doctoral research. He received Rapid Grant Young Investigator Award and also received DST-Young Scientist project from DST, India at the time his post doctoral research. He did vaccine trial on SIV at Department of Microbiology, Emory University, Atlanta, USA during his post-doctoral research.