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Potent HIV-1 Reverse Transcriptase Activity β -caryophyllene: A Novel Terpenoid Component Isolated from *Terminalia chebula* Ritz

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Introduction: Reverse transcriptase (RT) is a viral enzyme and one of the main targets for drugs against human immunodeficiency virus (HIV). The aim of this study was to evaluate β -caryophyllene, a novel tannin component isolated from *Terminalia chebula* Ritz against HIV-1 Reverse Transcriptase.

Methods: The crude extracts were prepared from dried seeds of *Terminalia chebula* in methanol by maceration method and isolated a novel terpenoid component by using column chromatography and HPLC. *In Vitro* HIV-1 RT inhibition activity was determined by HIV-1 RT capture elisa test.

Results: Isolated compound was identified as terpenoid, β -caryophyllene and a novel compound. The anti-HIV activity was tested with PBMC and β -caryophyllene showed HIV reverse transcriptase inhibitory activity and it was more effective than standard drug AZT. In PBMC cells, at 75 μ M, β -caryophyllene inhibited >89% of HIV-1 RT with IC₅₀ 12 μ M. The positive control (AZT) inhibited >85% of HIV-1 RT.

Conclusion: Such studies will provide the solid biological foundation for translational research, which is needed to evaluate the *In Vivo* activity of a β -caryophyllene novel terpenoid component.

Keywords: HIV-1, β -caryophyllene, Terpenoid, *Terminalia chebula*

Biography

Dr. Estari Mamidala is an Assistant Professor in Infectious Diseases Research Lab, Department of Zoology, Kakatiya University, India.

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