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### Potent HIV-1 Reverse Transcriptase Activity $\beta$ -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  $\beta$ -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,  $\beta$ -caryophyllene and a novel compound. The anti-HIV activity was tested with PBMC and  $\beta$ -caryophyllene showed HIV reverse transcriptase inhibitory activity and it was more effective than standard drug AZT. In PBMC cells, at 75  $\mu$ M,  $\beta$ -caryophyllene inhibited >89% of HIV-1 RT with IC<sub>50</sub> 12  $\mu$ 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  $\beta$ -caryophyllene novel terpenoid component.

**Keywords:** HIV-1,  $\beta$ -caryophyllene, Terpenoid, *Terminalia chebula*

#### Biography

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