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**SCREENING OF MENTHA CORDIFOLIA OPIZ BUFFER
CRUDE EXTRACT AS A PUTATIVE HIV-1
POST-TRANSLATIONAL PROTEASE INHIBITOR**

Alfredo, Jr AMOLONG Hinay. *Medical Laboratory Science, University of Immaculate Concepcion, Davao City, Philippines*

10.1136/bmjopen-2015-forum2015abstracts.108

Background In the Philippines, Vicroriano conducted a preliminary study showing the effect of Philippine local mint *Mentha cordifolia* Opiz on HIV-1 replication in latently infected cells, the findings provided the evidence that an anti-HIV activity is contained in the plant extract. However, which viral replication step was not elucidated. To expound the mechanism of inhibition of the Philippine mint leaf crude extract a preliminary study was done to specify anti-HIV-1 protease activity and

exclude other HIV-1 viral enzymes and other viral components.

Objectives In this study, it focused primarily on viral protease for which structural information is currently available. The study was on the basis of the backbone folds of the HIV-1 protease, starting with the folds display similarity to those of cellular protease -aspartic protease pepsin.

Methods ELISA based spectrophotometry was employed to determine the inhibitory effect of the plant crude extract against pepsin which is homologous to HIV-1 protease. Total Flavonoid Content was determined to elucidate the concentration of flavonoid in the plant extract that may be the putative phytochemical group responsible for the inhibition.

Result The result showed 93.27% inhibition of aspartyl protease pepsin that supports a putative action of the plant extract impedes the post-translational HIV-1 viral protease. The qualitative result of Cyanidin test shown in the study indicated the presence of flavonoids, most probably flavones, in the amount of 353.44 ± 2.1 mg/g Quercetin equivalent flavonoid. This phytochemical in the mint buffer extract may be the putative active group that is responsible in the inhibition of HIV-1 viral protease.

Conclusion The high inhibition percentage (%) of plant extract against aspartyl protease pepsin supports a putative action of the plant extract impedes the post-translational HIV-1 viral protease. And the phytochemical flavonoid in the mint buffer extract may be the putative active group that is responsible in the inhibition of HIV-1 viral protease.

REFERENCES

- 1 Singh KP, *et al.* Screening of *Adhatoda vasica* leaves as a putative HIV-protease inhibitor; Singh KP *et al.* Pepsin assay one of the easiest approach for prescreening of HIV-protease inhibitors; Victoriano, Ann Florence (2003). A preliminary study on the effect of *Mentha cordifolia* Opiz (Yerba Buena) crude extracts on HIV-1 Replication in latently infected cells.; Rege AA and Chowdhary AS (2013). Evaluation of Mangrove plants as putative HIV- protease inhibitors 2013