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ABSTRACT SUBMISSION

Title: Isolation, identification and anti-cancer activity of minor alkaloids from *Triclisia subcordata* Oliv

Abstract No. 0037

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Abstract

Triclisia subcordata Oliv (Menispermeaceae) is an African medicinal plant traditionally used for the treatment of various diseases, including cancer. This study aims to isolate and identify minor alkaloids present in this plant and assayed their anticancer activities. Isochondodendrine (**1**) and 2′-norcocsuline (**2**) as two minor alkaloids together with the abundant cycleanine (**3**) [1] were isolated and identified by mass spectrometry and nuclear magnetic resonance spectroscopy. Both isochondodendrine and 2′-norcocsuline exhibited potent in vitro cytotoxicity in four ovarian cancer cell lines (A2780, Igrov-1, Ovcar-8, and Ovcar-4) with IC_{50} range of 3.5 - 17 M and 0.8 - 2.9 μM by use of sulforhodamine B dye assay, respectively. The IC_{50} in cell growth assays using normal human ovarian epithelial cells were 10.5±1.2 μM and 8.0±0.2 μM for isochondodendrine and 2′-norcocsuline, respectively. These alkaloids showed greater potencies for the cancer cells compared to normal cells. Apoptosis induction of these alkaloids was studied by caspase activity assay, western blot, and flow cytometry. They induced apoptosis in ovarian cancer cells by activations of caspases 3/7, cleavage of PARP, increase in $subG_1$ cell cycle phase and increase in both early and late apoptotic cells. Therefore, isochondodendrine and 2′-norcocsuline are among the less abundant in *T. subcordata,* which also contribute to its cytotoxic activity and can be potential hit compounds for future development for the treatment of ovarian cancer.

[1] Uche FI, Drijfhout F, McCullagh J, Richardson A, Li WW (2016) Cytotoxicity effects and apoptosis induction by bisbenzylisoquinoline alkaloids from *Triclisia subcordata*. Phytother. Res. 30, 1533-1539

Supporting *Figure 1 BBIQ.png*

Permission Yes

Approval Confirm

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Bursary supporting *Figure 1 BBIQ.png*

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