

Anticancer Effects of *Eurycoma longifolia*, *Nigella sativa* and *Hibiscus sabdariffa* on Ovarian Cancer Cells

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ABSTRACT

*Eurycoma longifolia*, *Nigella sativa* and *Hibiscus Sabdariffa* are widely used as herbal remedies and natural supplements. It would be interesting to examine the effects of extracts from these natural products on significant cancers affecting the local health scene. Ovarian cancer is the most lethal of all gynaecological malignancies and it is the top four cancers among women in Malaysia. The current study is designed to investigate the effects of *Eurycoma longifolia*, *Nigella sativa* and *Hibiscus sabdariffa* on ovarian cancer cell line (Caov-3) in comparison with cisplatin, the current drug used in treatment regimes. The appropriate half maximal inhibitory concentration (IC<sub>50</sub>) of each extracts will be selected through MTT (3-[4,5-dimethylthiazol-2-yl]-2,5-diphenyl tetrazolium bromide) assays and the morphological changes in the nucleus indicating cellular apoptosis will be assessed by Hoechst 33258 staining methods. The evaluation of apoptosis with Annexin V-PE/7-AAD and their effects on cell cycle profile with Propidium Iodide (PI) will be performed via flow cytometry. Real-time PCR will be conducted to detect the gene expression of pro-apoptotic, Bcl-2 and anti-apoptotic, Bax. Apoptosis evaluation will be further confirmed by the detection of DNA fragmentation through TUNEL assay. This work is currently in progress to obtain the IC<sub>50</sub> value. It is expected that *Eurycoma longifolia*, *Nigella sativa* and *Hibiscus sabdariffa* extracts have cytotoxic effects on ovarian cancer cell and could be new alternatives in treating ovarian cancer.

KEYWORDS: *Eurycoma longifolia*, *Nigella sativa*, *Hibiscus sabdariffa*, Ovarian Cancer, Apoptosis

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