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Chemical composition and biological activities of essential oil of the Malaysian endemic Syzygium variolosum (King) Chantar. & J.Parn

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Abstract This study was designed to investigate the chemical composition of the essential oil of Syzygium variolosum (King) Chantar. & J.Parn. and their cytotoxicity, acetylcholinesterase, antityrosinase, and anti-inflammatory activities. In total, 32 chemical components were identified in the essential oil, which made up 98.9%. The essential oil is mainly composed of beta-elemene (20.2%), bicyclogermacrene (13.5%), viridiflorol (11.1%), globulol (8.6%), and selin-11-en-4 alpha-ol (5.3%). Acetylcholinesterase, antityrosinase, and anti-inflammatory activities were evaluated with the Ellman method, mushroom tyrosinase, and lipoxygenase enzymes, respectively, while cytotoxicity was assessed using an MTT assay. The results showed that essential oil gave significant percentage inhibition (I%: acetylcholinesterase 35.2%, antityrosinase 42.5%, lipoxygenase 48.6%). Furthermore, the essential oil exhibited cytotoxicity against three cancer cell lines, HepG2, MCF7, and A549, with IC50 values ranging from 90.2 to 95.2 mu g/mL. The current study highlights the potential of the use of essential oils as an alternative to the development of pharmaceutical antichemopreventives or cosmetics.

Keywords **Author Keywords:** Syzygium variolosum; essential oil; bicyclogermacrene; cholinesterase; tyrosinase; lipoxygenase

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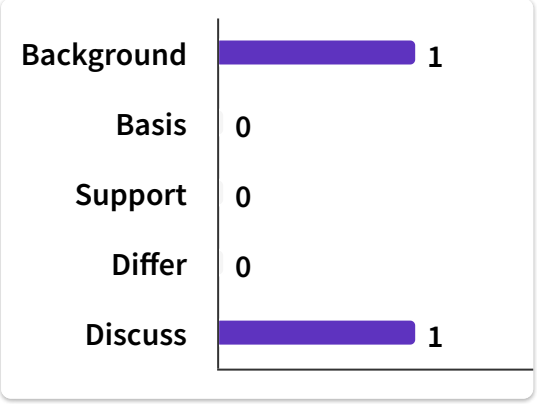
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