

Indonesian *Micromelum minutum* Leave Extracts and Their Cytotoxic Activities Toward Breast Cancer Cell Lines

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Abstract. Isolation and identification of compounds and pharmacological activity of *Micromelum minutum* grown in some countries has been done, but *M. minutum* from Indonesia has not been studied yet, either phytochemically or pharmacologically. The objective of this study was to determine the cytotoxic activity of Indonesian *M. minutum* leave extracts toward MCF-7 and 4T1 breast cancer cell lines. The leaves were obtained from *M. minutum* grown in Bantimurung National Park, Bulusaraung, South Sulawesi. They were macerated gradually in hexane, ethyl acetate, and methanol. The cytotoxic activity of the obtained extracts was determined by MTT assay. The extraction yielded hexane (HEM), ethyl acetate (EEM), and methanol (MEM) extracts of 2.65, 6.12, and 6.49%, respectively. HEM was the most active extract, with IC₅₀ values of 148 and 87 µg/mL on MCF-7 and 4T1 cells, respectively, followed by EEM (185 and 170 µg/mL). MEM possessed weak potency, with an IC₅₀ value of 384 µg/mL on MCF-7 cells, and was not toxic toward 4T1 cells. Therefore, HEM is important to be further investigated for its active constituents.

Keywords: breast cancer cells; cytotoxic; extract; Indonesia; *Micromelum minutum*.