

## **Evaluation of Indonesian mangrove *Xylocarpus granatum* leaves ethyl acetate extract as potential anticancer drug**

### **ABSTRACT**

Local *Xylocarpus granatum* leaves were extracted by ethyl acetate solvent and characterized by TLC fingerprinting and 2D <sup>1</sup>H NMR spectroscopy to contain phenolic compounds as well as several organic and amino acids as metabolic byproducts, such as succinic acid and acetic acid. Traces of flavonoids and other non-categorized phenolic compounds exhibited intermediate antioxidant activity (antioxidant IC<sub>50</sub> 84.93 ppm) as well as anticancer activity against HeLa, T47D, and HT-29 cell lines; which the latter being most effective against HT-29 with Fraction 5 contained the strongest activity (anticancer IC<sub>50</sub> 23.12 ppm). Extracts also behaved as a natural growth factor and nonlethal towards brine shrimps as well as human adipose-derived stem cell hADSC due to antioxidative properties. A stability test was performed to examine how storage conditions factored in bioactivity and phytochemical structure. Extracts were compared with several studies about *X. granatum* leaves extracts to evaluate how ethnogeography and ecosystem factored on biologically active compounds. Further research on anticancer or antioxidant mechanism on cancer cells is needed to determine whether the extract is suitable as a candidate for an anticancer drug.

**Keyword:** *Xylocarpus granatum* leaves; Biodiversity; Indonesia; Natural product