

STUDY ON THE ANTIMITOTIC EFFECT OF *SYZYGium OBLANCEOLATUM* C.B. ROB MERR STEM BARK EXTRACT THROUGH SEA URCHIN (*TRIPNEUSTES GRATILLA* LINN) EGG DIVISION AND CELL LINE EVALUATION

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BACKGROUND: *Syzygium oblanceolatum* C.B. Rob Merr (local name jampu salo) from the Myrtaceae family is a medicinal plant containing secondary metabolites with potential anticancer properties. This study aimed to evaluate the antimitotic activity of jampu salo stem bark extract using sea urchin (*Tripneustes gratilla* Linn) egg cell division as a model and to assess its cytotoxicity against cancer cell lines.

METHOD: Plant material was collected from Limapocoe Village, Maros Regency, South Sulawesi, and extracted with 96% ethanol, yielding 0.305%. The crude extract was fractionated into n-hexane, ethyl acetate, methanol, and ethanol fractions. Phytochemical screening confirmed the presence of alkaloids, flavonoids, tannins, and terpenoids, while steroids and saponins were absent.

RESULTS & DISCUSSION: Antimitotic testing demonstrated significant inhibition of sea urchin egg cell division, with a clear dose-dependent effect. The IC₅₀ values obtained were 0.216 µg/mL for ethanol extract, 0.268 µg/mL for ethyl acetate fraction, 0.318 µg/mL for methanol fraction, and 0.515 µg/mL for ethanol fraction, indicating very strong activity in the sub-µg/mL category. These results highlight the potency of jampu salo extract as an inhibitor of mitotic processes, supporting its potential as a source of bioactive compounds with anticancer relevance. Further cytotoxicity evaluation showed that in T47D cells, the ethanol extract exhibited limited effects at 500 µg/mL but reduced viability to 52.9% at 62.5 µg/mL. Stronger activity was observed in 4T1 cells, with cell viability decreasing to 67% at 500 µg/mL and 27% at 100 µg/mL, suggesting higher sensitivity. In comparison, doxorubicin as the positive control consistently demonstrated stronger cytotoxicity with lower IC₅₀ values.

CONCLUSION: Overall, these findings indicate that jampu salo possesses potent antimitotic activity and shows promise as a natural candidate for anticancer drug development.

KEYWORDS: *Syzygium oblanceolatum*; antimitotic activity; IC₅₀; cytotoxicity; natural anticancer agent