ABSTRACT

SHELLY RAHMANIA. Cyclooxygenase-2 Inhibition of Mixture Extract of Suruhan (Peperomia pellucida) and Red Ginger (Zingiber officinale) in Inflammation. Under the direction of SULISTIYANI and HUSNAWATI.

Peperomia pellucida and Zingiber officinale were known to have anti-inflammatory activity, yet there was no further research to verify their inhibition in inflammatory process. The aim of this research is to test the potency of mixture extract of suruhan (Peperomia pellucida) and red ginger (Zingiber officinale) as anti-inflammation through in vitro inhibition of cyclooxygenase-2 enzyme. Anti-inflammatory effect was analyzed with ELISA (Enzyme Linked Immunosorbent Assay) and spectrophotometry method at wavelength 412 nm. Maximum inhibition of Peperomia pellucida extract against cyclooxygenase-2 was 48% at 100 μg/mL, Zingiber officinale extract inhibition was 44% at 300 μg/mL, and for mixture extract inhibition was 15% at 175 μg/mL. Mixture extract of Peperomia pellucida and Zingiber officinale showed lower inhibitory potency to cyclooxygenase-2 compared to their single extracts. Cytotoxicity test with Brine Shrimp Lethality Test method showed that Peperomia pellucida extract, Zingiber officinale extract, and mixture extract of both plants have a cytotoxicity effect with each LC₅₀ values are 339, 591, and 728 μg/mL. Phytochemical test showed that each extract contains flavonoid, phenolic, alkaloid, and tannin. Saponin and steroid were contained only in Peperomia pellucida extract and terpenoid was contained only in Zingiber officinale extract. Rendement extract of Peperomia pellucida is 24% and Zingiber officinale is 21%.

Keywords: Inflammation, suruhan extracts, red ginger extracts, cyclooxigenase-2