

ABSTRACT

SITI FUJI RAHMI LUTFIAH. 2025. **ETNOBOTANI AND IN SILICO STUDY OF RED LEHO KI GROWTH (*Saurauia cauliflora*) AS ANTIINFLAMMATORY GUIDE FOR BIOLOGICAL STUDY SOURCE.** Department of Biology Education. Faculty of Teacher Training and Education. Siliwangi University.

Inflammation is a biological response to infection or injury that can cause complications if left untreated. Nonsteroidal anti-inflammatory drugs are often used but have side effects if long-term use, thus requiring alternative drugs based on natural ingredients. Red ki leho (*Saurauia cauliflora*) is traditionally used by the people of Sukamukti Village as a medicine for wounds and swelling. However, its anti-inflammatory potential has not been scientifically tested. This study aims to examine the ethnobotanical utilization of this plant and explore its potential as an anti-inflammatory agent through an *in silico* approach with *molecular docking* techniques. Based on the results of the study, analysis of physicochemical properties showed that all compounds fulfill Lipinski's law and have potential as anti-inflammatory drug candidates. The results of pharmacokinetic analysis show that the test compounds that have high absorption activity are Dodecanoic acid, 3-hydroxy-, Ethyl iso-allocholate, 9,12-Octadecadienoic acid, methyl ester, (E, E)-, 11,13-Dihydroxy-tetradec-5-ynoic acid, methyl ester, except Tetraacetyl-d-xylonic nitrile has low absorption activity. The results of toxicity analysis showed that three compounds, namely Ethyl iso-allocholate (5000 mg/kg), 11,13-Dihydroxy-tetradec-5-ynoic acid, methyl ester (3881 mg/kg), and Dodecanoic acid, 3-hydroxy- (4820 mg/kg), belonged to the mild toxic category (level 5). The other two compounds, 9,12-Octadecadienoic acid, methyl ester (20,000 mg/kg) and Tetraacetyl-d-xylonic nitrile (7000 mg/kg), are classified as practically non-toxic (level 6). Four of the five compounds did not have hepatotoxicity, mutagenicity, carcinotoxicity, immunotoxicity and cytotoxicity. However, Ethyl iso-allocholate was detected to have potential carcinotoxicity. Ethyl iso-allocholate compound has a binding affinity of -8.4 kcal/mol better than *ibuprofen* -6.4 kcal/mol with RMSD 1.b 0.00 and RMSD u.b 0.00

Keywords: Ethnobotany, *In silico*, Ki leho Merah, *Saurauia cauliflora*, Anti-inflammatory, Biology Learning Resources.