

## ABSTRACT

NOVITA NOER FITRIANDINI. 2023. ***ETHNOBOTANY AND IN SILICO STUDY OF THE GALANGAL PLANT (*Kaempferia Galanga L.*) CANDIDATE HERBAL MEDICINE FOR ASTHMA IN SUKAHURIP VILLAGE AS A BIOLOGY LEARNING RESOURCE.*** *Biology Education Department, Faculty of Teacher Training and Education, Siliwangi University, Tasikmalaya.*

*The galangal plants as medicinal plants have a high chance of development, one of which is to treat asthma. One of the villages with its typical medicinal plants in the form of galangal is Sukahurip Village. This study aims to determine the ethnobotany and in silico *Kaempferia galanga L.* as a candidate for asthma herbal medicine. This qualitative research was carried out in April–June 2023 using phenomenological methods, through observation, semi-structured interviews with respondent determination using purposive sampling techniques, in silico analysis, and documentation studies. Data analysis is carried out through reduction, data presentation, and verification. The results of ethnobotanical research there are 16 uses of galangal plants as traditional medicine using various ways of processing and use. Four of them overcome bruises, aches, coughs & colds, and asthma. The GCMS test results of galangal rhizomes contained 48.6% ethyl *p*-methoxycinnamate (EPMS) compounds which were then analyzed in silico as test compounds with atropine comparison ligands, native tiotropium ligands, and AChM<sub>3</sub> receptors. The results showed EPMS meets the Lipinski Rule of Five, relatively safer, not a mutagen, non-toxic to the liver, and has a safer level of toxicity (class 6) than atropine (class 4). EPMS has a higher binding affinity value (-5.7 kcal/mol) than atropine (-6.9 kcal/mol), and tiotropium (-7.9 kcal/mol). However, EPMS has one amino acid residue and the same type of bond as atropine, namely SER C:226, so it can be concluded that EPMS compounds have the same biological abilities as atropine comparison ligands.*

**Keywords:** *Asthma; Ethyl *p*-methoxycinnamate (EPMC); Receptor AChM<sub>3</sub>; The Galangal Plant.*