

**POTENTIAL OF SHALLOT SKIN WASTE (*ALLIUM CEPA* L)
AS AN ANTI-INFLAMMATORY AND PREVENTION OF
LEUCOCYTOSIS IN THE LUNGS OF ELECTRONIC SMOKERS
USING THE *IN VIVO* METHOD AND *IN SILICO* APPROACH**

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ABSTRACT

This study examines the potential of shallot skin waste (*Allium cepa* L.) as an anti-inflammatory agent and leucocytosis prevention in the lungs of e-cigarette smokers using the *in vivo* methods and *in silico* approaches. Shallot skin contains bioactive compounds, including flavonoids, which play an important role in inhibiting leukocyte accumulation and inflammation. The extract was made using the maceration method with 96% ethanol and tested phytochemically. The phytochemical analysis showed that shallot skin contain flavonoid up to 26.705 ppm. The *in silico* approach identified the apigenin compound with a binding affinity value of -10 kcal/mol against the target Protein Kinase C gamma (PRKCG), which showed strong anti-inflammatory activity. *In vivo* tests were carried out on male mice with various doses of extract (100 mg/kgBW, 200 mg/kgBW, 400 mg/kgBW), showing a significant decrease in the number of leukocytes, especially at a dose of 400 mg/kgBW. These results indicate that shallot skin extract can prevent leucocytosis caused by e-cigarette smoke. This study contributes to the development of natural-based therapies for the treatment of lung inflammation, especially in e-cigarette users. Further research is needed to confirm the safety and effectiveness of this extract in clinical trials.

Keywords: *Shallot skin, antiinflammation, leucocytosis, flavonoid, e-cigarette*