

## ABSTRACT

Indah Sekar Devi. 24020120120006. **Antibacterial Activity of Brown Oyster Mushroom (*Pleurotus pulmonarius*) Fraction using the Resazurin Method against Pathogenic Bacteria.** Under the guidance of Anto Budiharjo and Rizki Rabeca Elfirta.

*Antimicrobial resistance* (AMR) is a disease that occurs due to the inability of drug to paralyze or kill bacteria. Various exploratory efforts to find new antibiotics have been carried out, one of which is by using natural materials such as brown oyster mushrooms as a source of antibiotics. This study aims to find the most effective type of fraction and IC<sub>50</sub> value from *Pleurotus pulmonarius* which shows antibacterial activity. This research used a liquid-liquid fractionation method with three types of solvents of increasing polarity, namely aquadest, ethyl acetate, and n-hexane, so that yield values were obtained of  $0.29 \pm 0.01^a$  for aquadest,  $0.02 \pm 0.00^a$  for ethyl acetate, and  $0.01 \pm 0.00^b$  for n-hexane. The method used for the antibacterial test was *Resazurin Microtiter Assay* (REMA) to find the inhibition value and IC<sub>50</sub> value through linear regression analysis, then a one-way ANOVA statistical test was carried out with Tukey's advanced test to find out which groups had significant differences. The result obtained were that antibacterial activity was found from the brown oyster mushroom fraction against five test bacteria (*Escherichia coli*, *Propionibacterium acnes*, *Staphylococcus aureus*, *Bacillus subtilis*, and *Pseudomonas aeruginosa*). The highest activity was found in the ethyl acetate fraction with IC<sub>50</sub> values of  $0.03 \pm 0.02^a$  mg/ml for *Propionibacterium acnes*,  $0.30 \pm 0.02^a$  mg/ml for *Pseudomonas aeruginosa*,  $5.46 \pm 1.17^c$  mg/ml for *Staphylococcus aureus*, and  $2.11 \pm 0.27^b$  mg/ml for *Bacillus subtilis*.

*Keywords: antibacterial, resazurin, fractionation, Pleurotus pulmonarius, Propionibacterium acnes*