

ABSTRACT

Najwa Nabilla Valentineu, 24020222140071. ***Exploration and Screening of Glucoamylase-Inhibiting Endophytic Bacteria from Several Plants in the KHDTK Wanadipa*** (under the guidance of Sri Pujiyanto)

Medicinal plants known to have antidiabetic properties include papaya, mango, guava, and soursop. Ethyl acetate extracts of endophytic bacteria from plants from which endophytic bacteria have been isolated may lead to the discovery of glucoamylase inhibitors. Endophytic bacteria are microbes that grow within plant tissues without causing disease. The study aims to isolate endophytic bacteria from (papaya, mango, guava, and soursop), to determine the macroscopic and microscopic morphological characteristics of the obtained endophytic bacterial isolates, to identify endophytic bacterial isolates with potential as glucoamylase inhibitors, to analyze the concentrations exhibiting high glucoamylase inhibitory activity, and to identify the bioactive compounds formed. The research method began with the isolation of endophytic bacteria growing on (papaya, mango, guava, and soursop), followed by macroscopic and microscopic characterization of the endophytic bacteria. Growth curves were observed, followed by initial screening for glucoamylase inhibitors using the TLC method. Quantitative screening was performed using DNS reagent. The isolate with potential as an inhibitor was JR1, which originated from guava plants. The concentration of the ethyl acetate extract of endophytic bacteria had a significant effect on glucoamylase inhibitory activity, with the highest value of 96.53% observed at a concentration of 10%. The ethyl acetate extract of endophytic bacteria contains bioactive compounds such as indole, oleic acid, and palmitic acid.

Keywords: Antidiabetic, Endophytic Bacteria, Glucoamylase, Inhibitor, Secondary Metabolite