

## ABSTRACT

Anggita Dwi Ayu Lestari. 24020220140086. **Potential of Lactic Acid Bacteria Isolate from Jaruk Tigarun Fermented Food, South Kalimantan City as Probiotic Candidate.** Under the guidance of Arina Tri Lunggani and Nurhayati.

Probiotic bacteria are beneficial in maintaining the balance of gut flora and combating diarrhea caused by intestinal pathogens. Lactic acid bacteria (LAB) are a group of Gram-positive bacteria that play a crucial role in gut health. LAB have the ability to metabolize various types of sugars and produce lactic acid as the primary product during fermentation. Tigarun fruit is a traditional food originating from Kalimantan that contains lactic acid bacteria. The research aims to: (1) obtain lactic acid bacteria isolates from fermented Tigarun fruit, (2) characterize lactic acid bacteria isolates obtained from fermented Tigarun fruit, and (3) determine the antibacterial activity of lactic acid bacteria isolates in the fermentation of Tigarun fruit. To conduct this research, various tools and materials were used, including laboratory equipment such as autoclaves, laminar airflow hoods, microscopes, and spectrophotometers. Materials included various types of growth media, solutions, and samples of Tigarun fruit. The research methods included steps such as sterilization and media preparation, rejuvenation of Tigarun fruit sample cultures, isolation of lactic acid bacteria, bacterial characterization through Gram staining and catalase tests, and the establishment of working and stock cultures. In addition, LAB isolates were also tested for viability under low pH conditions and their antibacterial abilities against *E. coli* and *S. aureus*. The research results show that the lactic acid bacteria isolates from the fermented food Jaruk Tigarun have significant potential as probiotic candidates, especially in combating pathogens such as *Staphylococcus sp.* and *Escherichia coli*. These findings open up opportunities for further development in clinical applications and the food industry.

*Keywords: Probiotic Bacteria, Lactic Acid Bacteria, Fermented food, Tigarun Fruit, Staphylococcus sp., and Escherichia coli.*



