

## ABSTRACT

Halida Nur Isna Fahira. 24020221130033. **Antioxidant Test, Detection of Bioactive Compounds, and Molecular Identification of Lactic Acid Bacteria Isolated from *Dali ni Horbo***. Under the guidance of Arina Tri Lunggani dan Siti Nur Jannah.

Lactic acid bacteria are gram-positive, rod-shaped or coccus-shaped, catalase negative, and resistant to low pH. Lactic acid bacteria are used for the fermentation process so that a fermented product is produced. *Dali ni Horbo* is a typical food of the Batak tribe which is the result of fermentation of buffalo milk by lactic acid bacteria. The study aimed to test antioxidant activity, detection of bioactive compounds, and molecular identification of lactic acid bacteria isolated from *Dali ni Horbo*. The methods in this study include the characterization of 10 lactic acid bacteria isolates from *Dali ni Horbo* microscopically and macroscopically, antioxidant tests using the DPPH method, FT-IR and GC-MS analysis, molecular identification using PCR (Polymerase Chain Reaction) and DNA sequencing. The results of the experiments were obtained in the antioxidant activity test of all isolates having antioxidant activity with DNH 6.1 isolate being the most effective in inhibiting free radicals. The antioxidant compounds detected with FTIR are suspected to be antioxidant compounds of the flavonoid group. The results of the GC-MS analysis found that compound that have antioxidant activity is Hexadecanoic acid, methyl ester. Molecular identification performed on DNH 6.1 isolates showed that the isolate was closely related to *E. faecalis* with percent identity 98.60%.

*Key words: Lactic Acid Bacteria, Dali ni Horbo, DPPH, FTIR, GC-MS, Molecular Identification*