

Muhammad Hasan Basri Nasution (163307010060), Shafira Ramadhani (163307010059), 2019. (*Isolation, Characterization And Antibacterial Activities Of Lactic Acid Bacteria Isolated From Batak's Spesial Food "Dali Ni Horbo"*). Supervisor : Edy Fachrial, S.Si., M.Si. Fakultas Kedokteran. Universitas Prima Indonesia.

ABSTRACT

Lactic Acid Bacteria (LAB) are gram-positive bacteria that are rod or round in shape, do not form spores, do not have cytochromes. BAL can be isolated from fermented food products. LAB is useful to inhibit the growth of pathogenic bacteria so that it has the potential as an antibacterial. The purpose of this study is to isolate traditional Dali Ni Horbo foods from continuing with characterization, antimicrobial testing, and sensitivity testing for some antibiotics. From the results of the study, the number of colonies obtained was $2,4 \times 10^7$ CFU/mL. 6 isolates were randomly selected, ranging from UPDH1, UPDH2, UPDH3, UPDH4, UPDH5, and UPDH6 isolates. From the results of biochemical characterization, tests showed gram-positive and catalase-negative. In the antibiotic sensitivity test using 6 antibiotics amoxicillin (AML), erythromycin (E), oxacillin (OX), ofloxacin (OFX), cefotaxime (CTX), and gentamicin (CN) results showed that all the isolates are resistant to CTX. In UPDH1 isolates, they were resistant to AML and OX. In UPDH3, UPDH5, and UPDH6 were resistant to AML, and UPDH4 isolates were resistant to E, OFX, CTX, CN, and OX. The antimicrobial test uses the disk diffusion method and uses *E.coli* and *S.aureus* bacteria. In the UPDH2 isolate, there was an inhibition zone of 6,7 mm and UPDH5 and UPDH6 were found in the inhibition zone of 7,6 mm and 8,5 mm against *E. coli*. Inhibition zones against *S. aureus* in UPDH1, UPDH2, UPDH5 and UPDH6 were found to be inhibited zones of 13,5 mm, 9,0 mm, 12,1 mm and 12 mm respectively. In the above results, conclusions can be obtained as a potential source of probiotics.

Keywords: Antibiotics, Antimicrobials, Lactic Acid Bacteria.

Muhammad Hasan Basri Nasution (163307010060), Shafira Ramadhani (163307010059), 2019. (*Isolasi, Karakterisasi Dan Aktivitas Antibakteri Bakteri Asam Laktat Yang Di Isolasi Dari Makanan Khas Batak “Dali Ni Horbo”*). Dosen Pembimbing : Edy Fachrial, S.Si., M.Si. Fakultas Kedokteran. Universitas Prima Indonesia

ABSTRAK

Bakteri Asam Laktat (BAL) adalah bakteri gram positif yang berbentuk batang atau bulat, tidak membentuk spora, tidak mempunyai sitokrom. BAL bisa di isolasi dari makanan produk dari hasil fermentasi. BAL berguna untuk menghambat pertumbuhan bakteri patogen sehingga berpotensi sebagai antibakteri. Tujuan dari penelitian ini adalah mengisolasi dari makanan tradisional Dali NI Horbo dilanjutkan dengan mengkarakterisasi, uji antimikroba, dan uji sensitivitas terhadap beberapa antibiotik. Dari hasil penelitian jumlah koloni yang diperoleh yaitu sebanyak $2,4 \times 10^7$ CFU/mL. 6 isolat dipilih secara acak meliputi mulai dari isolat UPDH1, UPDH2, UPDH3, UPDH4, UPDH5, dan UPDH6. Dari hasil uji karakterisasi biokimia menunjukkan gram positif dan katalase negatif. Pada uji sensitivitas antibiotik menggunakan 6 antibiotik amoksisilin (AML), eritromisin (E), oksasilin (OX), oflaksasin (OFX), cefotaksim (CTX), dan gentamisin (CN) diperoleh hasil yaitu semua isolat resisten terhadap CTX. Pada isolat UPDH1 resisten terhadap AML dan OX. Pada UPDH3, UPDH5, UPDH6 resisten terhadap AML, dan isolat UPDH4 resisten terhadap E, OFX, CTX, CN, dan OX. Uji antimikroba menggunakan metode difusi cakram dan menggunakan bakteri *E.coli* dan *S.aureus*. Pada isolat UPDH2 didapati zona hambat 6,7 mm dan UPDH5 dan UPDH6 didapati zona hambat 7,6 mm dan 8,5 mm terhadap *E.coli*. Zona hambat terhadap *S.aureus* pada UPDH1, UPDH2, UPDH5 dan UPDH6 didapati zona hambat secara berturut 13,5 mm, 9,0 mm, 12,1 mm dan 12 mm. Pada hasil diatas didapatkan kesimpulan berpotensi sebagai salah satu sumber probiotik.

Kata Kunci: Antibiotik, Antimikroba, Bakteri Asam Laktat, Dali Ni Horbo.