

## Intisari

### ISOLASI BAKTERI ASAM LAKTAT DARI BAKASANG DAN UJI AKTIVITAS ANTIBAKTERI SUPERNATAN BEBAS SEL PADA BAKTERI PENGHASIL HISTAMIN

Bakteri asam laktat (BAL) dikenal mampu menghasilkan metabolit sekunder yang memiliki sifat bakterisidal. Penelitian ini bertujuan untuk melakukan isolasi BAL dan uji aktivitas supernatan bebas selnya/ *cell free supernatant* (CFS) terhadap bakteri penghasil histamin. BAL diisolasi dari produk Bakasang menggunakan medium selektif MRSA dan diinkubasi selama 24 jam suhu 37°C pada kondisi aerobik. Koloni tunggal BAL kemudian di fermentasi pada medium MRSB selama 48 jam suhu 37°C hingga *full growth* dan supernatannya dipisahkan dengan sentrifugasi. Pengujian aktivitas antibakteri supernatant bebas sel diawali dengan memanaskan pada suhu 100°C selama 3 menit, kemudian diatur pH-nya hingga netral. Uji aktivitas antibakteri dilakukan dengan metode *disk diffusion* dan makrodilusi terhadap bakteri penghasil histamin *Morganella morganii* TK7, *Citrobacter freundii* CK1, dan *Klebsiella* sp CK13.2. Hasil isolasi BAL berhasil mendapatkan 12 isolat. Hasil uji aktivitas antibakteri dengan metode *disk diffusion* dari 12 isolat yang berhasil diisolasi menunjukkan tidak ada aktivitas antibakteri. Pengujian kedua dengan metode makrodilusi dan memberikan hasil penghambatan terbedar CFS isolat GMBK 2.7 sebesar 98% terhadap *Morganella morganii* TK7, sebesar 99% terhadap *Citrobacter freundii* CK1, 84% terhadap *Klebsiella* sp. CK13.2. Hasil penelitian menunjukkan CFS isolat GMBK 2.7 berpotensi untuk dimanfaatkan sebagai antibakteri terhadap bakteri penghasil histamin.

Kata kunci: bakasang, bakteriosin, bakteri asam laktat, histamin

## **Abstract**

### **ISOLATION OF LACTIC ACID BACTERIA FROM BAKASANG AND ANTIBACTERIAL ACTIVITY ASSAY OF CELL-FREE SUPERNATANT ON HISTAMINE FORMING BACTERIA**

Lactic acid bacteria (LAB) are known to be able to produce secondary metabolites that have bactericidal activity. This study aims to isolate LAB and test the activity of cell free supernatant (CFS) against histamine-producing bacteria. LAB was isolated from Bakasang using MRSA selective medium and incubated for 24 hours at 37°C under aerobic conditions. LAB was then fermented in MRSB medium for 48 hours at 37°C until full growth. The cell free supernatant was prepared by centrifugation and heated at 100°C for 3 minutes followed by. pH adjustment to neutral and tested for its antibacterial activity. Antibacterial activity test was carried out by disk diffusion and macrodilution methods against histamine-producing bacteria *Morganella morganii* TK7, *Citrobacter freundii* CK1, and *Klebsiella* sp CK13.2. The isolation of LAB successfully obtained 12 isolates. The results of the antibacterial activity test using the disk diffusion method from 12 isolated isolates showed no antibacterial activity. However, the second test using the macrodilution method showed that CFS from GMBK 2.7 exhibit 98% inhibition against *Morganella morganii* TK7, 99% against *Citrobacter freundii* CK1, and 84% against *Klebsiella* sp. CK13.2. This results showed that CFS from GMBK 2.7 had a potential to be used as an antibacterial against histamine-producing bacteria.

Key words: bakasang, bakteriocin, histamine, lactic acid bacteria