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Kompatibilitas Galur Jamak Lactiplantibacillus plantarum DAD-13, FNCC 0250, DAN Lacticaseibacillus paracasei GMRMP-001 yang Ditumbuhkan dalam Medium Cair
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INTISARI

Lactiplantibacillus plantarum Dad-13, *Lactiplantibacillus plantarum* FNCC-0250, dan *Lacticaseibacillus paracasei* GMRMP-001 berpotensi dikembangkan sebagai kultur probiotik galur jamak. Namun, kompatibilitas antar galur serta aktivitas antibakteri belum diketahui. Penelitian ini bertujuan mengetahui kompatibilitas ketiga galur yang ditumbuhkan dalam medium cair dan aktivitas antibakterinya terhadap bakteri patogen. Kompatibilitas dievaluasi berdasarkan karakteristik pertumbuhan, uji *cross streak*, dan konfirmasi molekuler menggunakan rep-PCR, sedangkan aktivitas antibakteri diuji dengan metode difusi agar. Hasil penelitian menunjukkan bahwa seluruh galur mampu tumbuh dengan baik selama pertumbuhan. *Lactiplantibacillus plantarum* Dad-13 memiliki laju pertumbuhan spesifik tercepat sebesar 0,974 ± 0,043 jam^{-1}. Hasil uji *cross streak* dan *rep*-PCR menunjukkan bahwa ketiga galur kompatibel dan tetap bertahan setelah pertumbuhan. Seluruh galur menunjukkan aktivitas antibakteri terhadap *Escherichia coli* FNCC-0091, *Salmonella Typhimurium* FNCC-0050, dan *Staphylococcus aureus* FNCC-0047. Hasil penelitian menunjukkan bahwa ketiga galur memiliki kompatibilitas yang baik dan berpotensi dikembangkan sebagai kultur probiotik galur jamak.

Kata kunci: kompatibilitas, galur jamak, aktivitas antimikroba.

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ABSTRACT

Lactiplantibacillus plantarum Dad-13, *Lactiplantibacillus plantarum* FNCC-0250, and *Lacticaseibacillus paracasei* GMRMP-001 have potential for development as a multi-strain probiotic culture. However, their compatibility and antibacterial activity have not yet been fully evaluated. This study aimed to evaluate the compatibility of these three strains grown in liquid medium and to assess their antibacterial activity against pathogenic bacteria. Compatibility was evaluated based on growth characteristics, the cross-streak assay, and molecular confirmation using repetitive element sequence-based polymerase chain reaction (rep-PCR), while antibacterial activity was determined using the agar diffusion method. The results showed that all strains exhibited good growth during fermentation. *Lactiplantibacillus plantarum* Dad-13 showed the fastest specific growth rate (μ) of 0.974 ± 0.043 h^{-1}. The cross-streak assay and rep-PCR analysis confirmed that all three strains were compatible and remained detectable after co-culture growth. All strains exhibited antibacterial activity against *Escherichia coli* FNCC-0091, *Salmonella Typhimurium* FNCC-0050, and *Staphylococcus aureus* FNCC-0047. These findings indicate that the three strains are compatible and have potential for development as a multi-strain probiotic culture.

Keywords: compatibility, multi-strain, antibacterial activity.