Penapisan Aktivitas Antibakteri Isolat Bakteri Asam Laktat dari Tape dan Kefir = Screening for Antibacterial Activity of Lactic Acid Bacteria Isolates from Fermented Tape and Kefir

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Abstrak

Bakteri asam laktat merupakan kelompok bakteri yang sering ditemukan pada makanan fermentasi. Bakteri asam laktat seperti Lactobacillus diketahui memiliki aktivitas antibakteri terhadap bakteri pathogen dan dapat berperan sebagai agen probiotik. Penelitian yang telah dilakukan sebelumnya oleh Wang (2022) dan Andika (2022) menunjukan adanya aktivitas antibakteri dari filtrat tape ketan hitam dan kefir serta berhasil mengisolasi 13 isolat bakteri asam laktat. Tujuan penelitian ini adalah untuk melakukan penapisan aktivitas koagulasi susu serta aktivitas antibakteri dari masing-masing isolat bakteri asam laktat yang telah berhasil diisolasi dari tape ketan hitam dan kefir. Dari penapisan aktivitias antibakteri tersebut kemudian dipilih isolat terpilih yang kemudian dilakukan uji antibiosis. Sebanyak 13 isolat bakteri asam laktat telah berhasil dilakukan penapisan aktivitas kogulasi susu dan aktivitas antibakteri. Semua isolat bakteri asam laktat menunjukkan dapat mengkoagulasi susu. Kemudian berdasarkan penapisan aktivitas antibakteri didapatkan 3 isolat terpilih dengan kode isolat TM2, KNB2, dan KNB4 dengan nilai Indeks Aktivitas (IA) zona bening tertinggi disetiap perlakuan bakteri uji. Ketiga isolat terpilih tersebut kemudian dilakukan uji antibiosis. Hasil uji antibiosis dari filtrat fermentasi isolat terpilih (TM2, KNB2, dan KNB4) dengan menggunakan medium standar de Man Rogosa Sharpe Broth (MRSB) menunjukkan terdapat aktivitas antibiosis terhadap semua bakteri uji dan ketiga isolat tersebut berpotensi sebagai agen probiotik.
.....Lactic acid bacteria are a group of bacteria that are often found in fermented foods. Lactic acid bacteria such as Lactobacillus are known to have antibacterial activity against pathogenic bacteria and can act as probiotic agents. Previous research by Wang (2022) and Andika (2022) showed that there was antibacterial activity from fermented black glutinous rice and kefir filtrate and succeeded in isolating 13 isolates of lactic acid bacteria. The purpose of this study was to screen the coagulation activity of milk and the antibacterial activity of each lactic acid bacteria isolated from fermented black glutinous rice and kefir. From the screening of antibacterial activity, selected isolates then subjected to an antibiosis test. A total of 13 isolates of lactic acid bacteria has been successfully screened for milk coagulation activity and antibacterial activity. All isolates of lactic acid bacteria showed the ability to coagulate milk. Then based on the antibacterial activity screening, 3 selected isolates were selected with the isolate codes TM2, KNB2, and KNB4 with the highest clear zone Activity Index (IA) value in each treatment of the test bacteria. The three selected isolates were then subjected to an antibiosis test. Antibiosis test results from the fermented filtrate of selected isolates (TM2, KNB2, and KNB4) using standard de Man Rogosa Sharpe Broth (MRSB) medium showed that there was antibiosis activity against all tested bacteria and the three isolates had the potential as probiotic agents.