

Isolation and Antimicrobial Activities of Lactic Acid Bacteria Originated From Indonesian Local Goat's Colostrum

Title	Isolation and Antimicrobial Activities of Lactic Acid Bacteria Originated From Indonesian Local Goat's Colostrum
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Abstract	<p>The objectives of this study were to isolate lactic acid bacteria (LAB) from Indonesian local goat colostrum and to characterize their suitable properties for bacteriocin production. LAB was isolated from goat colostrum. The characterization of LAB was carried out based on the shape, colony dispersal, and catalase test. For antimicrobial activity, LAB was tested by a well diffusion method followed by an antimicrobial activity test against pathogenic bacteria <i>B. cereus</i>, <i>E. coli</i>, <i>S. aureus</i> and <i>S. typhimurium</i>. A total of 8 strains of LAB were successfully isolated from goat colostrum and coded CT1 to CT8. All the isolates were rod-shaped, single or paired colonies, negative catalase, and glucose fermenting LAB. The isolates consist of four <i>L. casei</i>, two <i>L. brevis</i> or <i>L. plantarum</i>, one <i>L. rhamnosus</i>, and one, <i>L. paracasei</i>. CT3 isolate has 84% similarity with <i>L. plantarum</i> and 14.3% with <i>L. brevis</i> 1 while CT8 isolate is 71% similar to <i>L. brevis</i> 1 and 28.9% to <i>L. plantarum</i>. Purity evaluation showed that CT3 and CT8 were <i>L. plantarum</i>. Well diffusion test showed that all LAB strains possess very solid resistances, with diameters over 17 mm, against <i>B. cereus</i>, <i>E. coli</i>, <i>S. aureus</i> and <i>S. typhimurium</i>. The average inhibitory resistance against <i>B. Cereus</i>, <i>E. coli</i>, <i>S. aureus</i> and <i>S. typhimurium</i> was 17.68 mm, 19.38, 19.30 and 19.03 mm, respectively. LAB isolated from Indonesian local goat colostrum are potential candidates for bacteriocin-producing bacteria.</p>
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