

ABSTRAK

Hiperkolesterolemia ialah suatu keadaan yang dimana konsentration kolesterol di dalam darah melampaui batas biasanya. Bakteri Asam Laktat dapat digunakan sebagai terapi alternatif kemampuan untuk menurunkan kadar kolesterol. Tujuan dari penelitian ini adalah untuk mengetahui apakah *Lactobacillus casei* dapat menurunkan kolesterol secara *In Vitro*. Prosedur penelitian aktivitas antimikroba dilakukan dengan metode disc paper, uji ketahanan terhadap pH asam, garam empedu dan pengurangan kolesterol dilakukan dengan metode spektrofotometer. Uji aktivitas antimikroba isolat *Lactobacillus casei* menunjukkan aktivitas zona hambat terhadap bakteri *E. coli* sebesar 28,5 mm dan *S. aureus* sebesar 33,2 mm. Uji ketahanan terhadap pH asam sebesar 45,42%. Uji ketahanan terhadap garam empedu cukup tinggi yaitu 55,39%, penurunan kadar kolesterol secara *in vitro* cukup baik yaitu 82,20%. Kontrol positif pengurangan kolesterol oleh simvastatin adalah 56,89%. Kesimpulan yang diperoleh dari penelitian ini adalah bahwa probiotik isolat *Lactobacillus casei* dapat menurunkan kadar kolesterol.

Kata kunci : Kolesterol, Bakteri Asam Laktat, *Lactobacillus casei*

ABSTRACT

Hypercholesterolemia is a condition in which the concentration of cholesterol in the blood exceeds normal limits. Lactic acid bacteria can be used as an alternative therapy ability to lower cholesterol levels. The purpose of this study was to find out whether *Lactobacillus casei* can lower cholesterol *in vitro*. The research method of antimicrobial activity was carried out by disc paper method, resistance test to acidic pH, bile salts and cholesterol reduction was carried out by spectrophotometer method. Antimicrobial activity test of *Lactobacillus casei* isolate showed inhibition zone activity against *E. coli* bacteria by 28.5 mm and *S. aureus* by 33.2 mm. Resistance test to acidic pH of 45.42%. The resistance test to bile salts is quite high at 55.39%, the reduction in cholesterol levels *in vitro* is quite good at 82.20%. The positive control of cholesterol reduction by simvastatin was 56.89%. The conclusion obtained from this study is that probiotic isolate of *Lactobacillus casei* can lower cholesterol levels.

Keywords : Cholesterol, Lactic Acid Bacteria, Lactobacillus casei