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參展科別	醫學與健康科學
作品名稱	Investigating Novel Methods to Reduce Cholesterol Levels
得獎獎項	三等獎
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Abstract

An increase in blood cholesterol contributes to cardiovascular diseases, the number one cause of death worldwide. Statins are currently the most effective in reducing cholesterol levels and treating patients with high cholesterol. However, these pharmaceutical agents have been shown to cause several side effects, prompting the need for a more natural solution to increasing cholesterol levels. Hence, a study was conducted to investigate the ability of lactic acid bacteria in the removal of cholesterol, explore the mechanism for the removal of cholesterol by lactic acid bacteria, and examine the effectiveness of kidney beans and sunflower seeds in inhibiting HMG-CoA reductase in the cholesterol biosynthesis pathway. Results showed that *Lactobacillus plantarum* was the most effective in reducing cholesterol levels and that the mechanism for cholesterol removal included both the binding to cell wall and active uptake into cells. Sunflower seeds and kidney beans were also shown to be effective in inhibiting HMG-CoA reductase, with sunflower seeds having 100% inhibition of the enzyme, similar to pravastatin, a commercial cholesterol reducing drug, and kidney beans having comparable percentage inhibition of the enzyme compared to pravastatin.

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To study the effect of Lactobacillus and natural products on the lower cholesterol levels. The results indicated that Lactobacillus has better effect on the reducing cholesterol level than natural products.

However, the effect needs to be validated in the animal or human.