

The Effects of *Lactobacillus plantarum* BSL and *Lactobacillus rhamnosus* R23 on the Blood Lipid Profile of Streptozotocin-Induced Diabetic Rats

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Previous studies showed that intake of some lactic acid bacteria was able to inhibit the progression of diabetes mellitus by reducing blood glucose level and associated symptoms, for example, the lipid profile. The objective of this study was to investigate the effect of *Lactobacillus plantarum* BSL and *Lactobacillus rhamnosus* R23 isolated from different sources (sauerkraut and breast milk, respectively), on the blood lipid profile of diabetic rats. Diabetic rats were prepared by inducing rats using streptozotocin (40 mg/kg BB). The rats were divided into four groups (n=6), non-diabetic rats that received only normal diet (negative control), diabetic rats that received normal diet and phosphate buffer saline (PBS) as positive control and diabetic rats that received normal diet and *L. plantarum* BSL or *L. rhamnosus* R.23. During 30 day periods, the amount of food intake and the body weight gain of rats were measured. On day 30, all rats were sacrificed and lipid profiles of rats were determined by CHOD-PAP enzymatic method. The results showed that administration of *Lactobacillus plantarum* BSL and *Lactobacillus rhamnosus* R23 decreased the total cholesterol and total trygliceride of rats' serum. *L. plantarum* BSL increased HDL-c, but *L. rhamnosus* R23 decreased HDL-c. Administration of *Lactobacillus plantarum* BSL and *Lactobacillus rhamnosus* R23 also reduced the ratios of TC: HDL-c, TG: HDL-c, and LDL-c: HDL-c which are normally used as a predictor of cardiovascular diseases (CVD). These results suggest that *Lactobacillus plantarum* BSL and *Lactobacillus rhamnosus* R23 are potential as probiotic to improve blood lipid profiles in diabetic condition and developed as functional foods.

Keywords: *Lactobacillus plantarum*, *Lactobacillus rhamnosus*, diabetic rats, blood lipid profile