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**EFFECT OF *Lactobacillus bulgaricus* AND
Streptococcus thermophilus ON SERUM LIPID PROFILE AND
TOTAL PROTEIN CONCENTRATION IN GUINEA PIGS**

A PROJECT REPORT PRESENTED BY

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to the Board of Study in Biochemistry and Molecular Biology of the

POSTGRADUATE INSTITUTE OF SCIENCE

*In partial fulfillment of the requirement
for the award of the degree of*

MASTER OF SCIENCE IN CLINICAL BIOCHEMISTRY

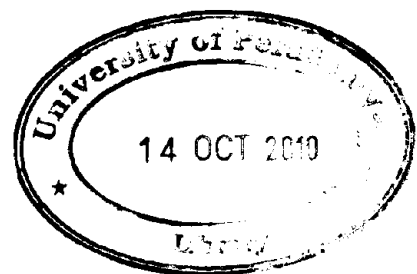
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This study was carried out to see the effects of feeding probiotic bacteria (*Lactobacillus bulgaricus* and *Streptococcus thermophilus*) on serum lipid profile in guinea pigs under Sri Lankan conditions.

Twelve female guinea pigs at the age of eight weeks were randomly divided into two groups, the test and control. Culture of *L.bulgaricus* and *S.thermophilus* with 1.76×10^9 and 1.5×10^8 colony forming units respectively, were fed to each animal in test group daily, for seven days and half the concentration for another seven days. Control group was fed with same volume of distilled water. Feed intake, water intake were measured daily and the body temperature, body weight were recorded weekly. Serum total cholesterol, serum triglycerides, HDL cholesterol, total protein levels were measured after 2 weeks of probiotic feeding and one week after termination of the treatment in both groups. Serum total cholesterol, serum triglycerides and HDL cholesterol were measured using RANDOX commercial kits. Total protein levels were measured using BIOLABO reagents.

After 2 weeks of probiotic feeding the total cholesterol level of test group was significantly lower ($p < 0.01$) than the control group. It was about 30% lower than control group and the concentration of total cholesterol in test group increased slightly with the termination of probiotic supplementation. It was 13% greater than control group one week after termination of probiotic feeding.

The serum triglyceride concentration tended to be lower in test group than control group after 2 weeks and 3 weeks although these changes were not statistically

significant. Difference of HDL cholesterol between treatment group and control group after 2 weeks were not appreciably significant though it was significantly higher than control group after 3 weeks ($p < 0.05$).

Total protein concentration, weight gain, food intake, water intake and body temperature in probiotic fed Guinea pigs were not different ($p > 0.05$) to that of the control group of animals.

According to these results, it is clear that live probiotics significantly reduced the serum total cholesterol of guinea pig during the treatment period. Total cholesterol concentration increased gradually with the termination of treatment. This experiment did not show a significant effect of probiotics on serum total protein concentration.