**NOVEL PROBIOTIC FORMULATION FOR MANAGING CHOLESTEROL: CLINICAL INVESTIGATION OF BSH-ACTIVE LACTOBACILLUS REUTERI NCIMB 30242 YOGURT AND CAPSULE FORMULATIONS IN HYPERCHOLESTEROLEMIC ADULTS**

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Cholesterol lowering efficacy of BSH-active Lactobacillus reuteri NCIMB 30242 in yogurt and capsule formulations were evaluated in hypercholesterolemic adults in two clinical studies. In the first study, a total of 114 subjects completed a double-blind, placebo-controlled, randomized, parallel-arm, multi-center study. Over the intervention period, subjects consuming L. reuteri NCIMB 30242 yogurts attained significant reductions in LDL-C of 8.92% (P=0.016), TC of 4.81%, (P=0.031), and non-HDL-C of 6.01% (P=0.029) over placebo, and a significant absolute change in apoB-100 of -0.19 (P=0.049) mmol/l. Serum TG and HDL-C concentrations were found unchanged. In a second study, 127 subjects completed similar multi-center study consuming L. reuteri NCIMB 30242 in oral capsules. The treatment resulted in significant reductions in serum LDL-C of 11.64% (P<0.001), TC of 9.14%, (P<0.001), non-HDL-C of 11.30% (P<0.001), and apoB-100 of 8.41% (P=0.002) with no adverse effect. The ratios of LDL-C/HDL-C and apoB-100/apoA-1 were significantly reduced by 13.39% (P=0.006) and 9.00% (P=0.026) relative to control at the study endpoint respectively. Serum concentrations of TG and HDL-C were unchanged. Serum hs-CRP and plasma fibrinogen were also significantly reduced by 1.05 mg/l (P=0.005) and 14.25% (P=0.004) relative to control at the study endpoint respectively. Mean plasma deconjugated bile acids increased by 1.00 nmol/l (P=0.025) from baseline relative to placebo, whereas campesterol and sitosterol were decreased by 41.5% and 40.7% respectively. These results show that L. reuteri NCIMB 30242 can be used to reduce serum LDL-cholesterol, likely by inhibiting cholesterol absorption, and indicates its potential as an adjunctive therapy for the treatment of hypercholesterolemia.