Effect of two beans varieties of Phaseolus vulgaris in hamster lipid metabolism

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Common beans are widely consumed in Brazil. Carioca and black beans are the varieties of Phaseolus vulgaris most consumed on Southwest. It is well described that some legumes, as soy and cowpea beans, have hypocholesterolaemic effects. To test cholesterol-lowering properties of carioca and black beans, a biological assay was conducted. Golden Syrian hamsters, 21 days old, weighing 60 ± 4g, were housed individually under 12 h light-dark cycle in a temperature-controlled environment, with free access to food and water. After 6 days of adaptation, four animals were killed to determine the basal levels of blood lipids. The remaining (n = 27) were randomly assigned to three distinct groups (n = 9). Each group received a hypercholesterolaemic diet (13.5 % coconut oil and 0.1 % cholesterol) and similar amounts of proteins (18 %), carbohydrates (42%), fiber (16 %), vitamins and minerals to suit the animal requirements. The only difference between groups was protein source: casein for control group, and the others received carioca or black bean whole seed flour (66%) plus 7.5 % of casein. After 21 days, the euthanasia occurred. Results showed that plasma total cholesterol and LDL concentration of beans groups, were not significantly lower than those of the casein group. On the other hand, paired t-Student test showed a significant (p > 0.05) increase of HDL cholesterol in the beans groups compared to the casein group: 40 % for carioca bean, and 24 % black bean. Although, there was no cholesterol-lowering effect, the HDL increase deserves further investigation.