

The effects of soybean protein-derived hydrolysate on lipid metabolism in rats fed a high cholesterol diet

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Abstract

This study was performed to investigate the effects of the peptic undigested fraction derived from soybean protein hydrolysate (UDSP) on lipid metabolism in rats fed a cholesterol-enriched diet (1%). Eighteen male Wistar rats weighing 205-235 g were randomly divided into three groups: the control group (20% casein), U2 (18% casein + 2% UDSP), and U5 group (15% casein + 5% UDSP). After 4 weeks, rats were sacrificed, and the lipid profiles of the plasma, liver, and feces were determined. Body weight gain, daily food intake, and liver weight showed no differences among the groups, but the feeding efficiency ratio in the U5 group was significantly lower than that in the other groups ($P < 0.05$). There were no changes in plasma cholesterol, LDL-C, HDL-C, and liver cholesterol levels in each group. However, the U5 group showed a significantly lower VLDL-C compared to the control and U2 groups. In addition, the plasma and liver TG content were lower in the U2 and U5 groups than in the control group ($P < 0.05$). Moreover, the fecal bile acid and total neutral steroid excretions were higher in the U2 and U5 groups ($P < 0.05$) compared to the control group.