

Effects of Yogurt Supplemented with Fish Oil on Plasma Lipid and Glucose Concentrations, and Hepatic Lipid Contents in Mice

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The aim of this study is to clarify the effects of yogurt supplemented with fish oil on plasma lipid and glucose concentrations, and hepatic lipid contents in mice. Male Crlj:CD-1 (ICR) mice were fed five experimental diets for 12 weeks.

The experimental diets were as follows: without yogurt and fish oil (control diet); 10% (w/w) yogurt without fish oil (10% FO(-)); 10% yogurt with fish oil (10% FO(+)); 30% yogurt without fish oil (30% FO(-)); 30% yogurt with fish oil (30% FO(+)).

Plasma triacylglycerol concentrations in the 10% FO(+) and 30% FO(-) groups were significantly lower than that in the control diet group ($P < 0.05$ and $P < 0.05$, respectively). Plasma total cholesterol and phospholipid concentrations were significantly lower in the 30% FO(+) group than in the control diet group ($P < 0.005$). The concentrations tended to be lower with supplementation with fish oil. Plasma glucose concentrations in the 10% FO(+) and 30% FO(+) groups were significantly lower than those in the control diet group ($P < 0.005$ and $P < 0.01$, respectively). Hepatic triacylglycerol and total cholesterol contents in the 30% FO(+) group were significantly lower than those in the control diet group ($P < 0.05$ and $P < 0.005$, respectively). Plasma and hepatic 18:2n-6, 20:5n-3 and 22:6n-3 percentages in the FO(+) dietary groups tended to be higher when compared to the FO(-) dietary groups, while plasma and hepatic 20:4n-6 percentages in the FO(+) dietary groups tended to be lower when compared to the FO(-) dietary groups.

These results suggest that plasma triacylglycerol and glucose concentrations are effectively decreased by the intakes of yogurt supplemented with fish oil.