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<0.005 and P<0.01, 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.