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Effect of lactic acid bacteria intake on the health of dam and infant mice

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We examined the effects of the ingestion during pregnancy and lactation of a high-fat diet, a low-calcium diet, and *Lactobacillus paracasei* NFRI 7415 (LAB) on the health of murine dams and infants. Two experiments were performed. In experiment 1, we divided 15 pregnant 9-wk-old mice into three equal groups receiving the control diet, a high-fat diet (HD), or an HD+LAB (HDL) diet during the pregnancy and lactation period. Within 24 hr of birth, the litters were culled to 10 pups each and nursed by their dams until weaning. After weaning, the liver T-cho concentration in the HDL group of pups was significantly lower than that of the HD group ($p<0.05$), suggesting that intake of *Lb. paracasei* has a positive effect on infant helth. In experiment 2, we divided 20 pregnant 9-wk-old mice into four equal groups receiving the control diet (C), a low-calcium diet (- Ca), a C+LAB (CL) diet, or a -Ca+LAB (-CaL) diet during the pregnancy and lactation period. Within 24 hr of birth, the litters were culled to 10 pups each and nursed by their dams until weaning. After weaning, the dams' body weights and the dietary intake in the C and the CL groups were significantly higher than those of the -Ca and -CaL groups ($p<0.05$). The bone mass of the CL group dams was increased compared to those in the other groups. We speculate that the absorption of calcium by *Lb. paracasei* NFRI 7415 may be enhanced by a sufficient intake of calcium during pregnancy and lactation.

Biography

Akie Sato has completed her PhD in Nutrition from Seitoku University. She currently works as a Teaching Assistant at the Department of Human Nutrition, Seitoku University.

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