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Properties of lactobacillus fermentation products formed using medium containing rice ingredient as a main component

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[Aim] Viscous polysaccharide kefiran is produced by *L. kefiranofaciens*. We developed a kefiran mass production technique by culture using medium containing rice ingredient as a main component. Physiological functions, including improvement in lipid metabolism, and their action mechanisms were investigated using the lactobacillus fermentation products obtained by this technique and purified kefiran.

[Method] Improvement in lipid metabolism and suppression of elevated blood pressure were investigated by administering kefiran and the kefiran-containing lactobacillus fermentation products for 30 days to SHRSP/Hos rats fed a high-fat diet.

[Results and Discussion] Dose-dependent improvement in lipid metabolism and suppression of elevated blood pressure were observed in kefiran and kefiran-containing lactobacillus fermentation products administration groups. As a result of the histopathological examination of the brain, aorta, and coronary artery, lipid deposition in the tunica intima of the basilar artery and the aortic arch was observed in the control group; mural thrombus adhesion and fibrin thrombi were observed at the aortic arch and within the coronary artery, respectively. The lesions of the test substance administration group were mild, and were found in a small number of animals. These results suggest the possibility that kefiran and kefiran-containing lactobacillus fermentation products can be used as functional food materials for the prevention and improvement of lifestyle-related diseases. A further investigation is currently being conducted on the action mechanisms of the improvement effects in lipid metabolism.