Ginseng Berry Suppresses Metabolic Syndrome Induced by High-Fructose Diet in Rats

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Abstract

This study was conducted to investigate the inhibitory effect of 70% ethanol extract of ginseng berry on the metabolic syndrome induced by high-fructose diet according to the degree of maturity of ginseng berry in the male Sprague-Dawley rats.

Five week old Sprague-Dawley male white rats were divided into four groups. AIN-76A diets were fed in the control (Cont) group and 60% high-fructose diet in the metabolic syndrome induced group (HF). The extract groups divided into 2; one was administered 200 mg/kg/day of mature ginseng berry extract and the other the immature berry one in the metabolic syndrome model. The experiment was carried out for 8 weeks. The ginseng berry extract was orally administered from the 5th week of high-fructose diet.

The high-fructose diet increased body weight, blood pressure, epididymal fat weight, liver weight, kidney weight, levels of insulin, total cholesterol, triglyceride, LDL-cholesterol, C-reactive protein (CRP), leptin and aorta thickness of the animal model, but ginseng berry extracts administration reduced these changes. These results suggest that the ginseng berry has an excellent preventive effect on the metabolic syndrome by improving obesity, dyslipidemia, blood sugar and blood pressure in an animal model induced by high-fructose diet. Therefore, ginseng berry is expected to be a good ingredient for novel health food to prevent the metabolic syndrome.

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Keywords: *ginseng berry, high-fructose, metabolic syndrome*

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Biography

Young-Eun Lee is a Professor of Department of Food and Nutrition at Wonkwang University. She received her PhD degree in Food Science from Iowa State University in USA . She served as an Editor-in-Chief of Journal of Medicinal Food(SCI indexed since 2008) from 2013 to 2015, the President of Korean Society of Food Culture(2014~2015) and the Vice-president of Korea Federation of Women's Science and Technology Associations(2016~2017).