

The Effect of Nepodin-Enrich Plant on Dyslipidemia and Hyperglycemia in High-Fat Diet-Induced Obese C57BL/6J Mice

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Abstract : A high-fat diet (HFD) induces excessive fat accumulation in white adipose tissue (WAT), which increases metabolic disorders such as obesity, dyslipidemia and type 2 diabetes. Many plants are known to have effects that improve metabolic disorders. Therefore, the aim of this present study is to investigate the effect of nepodin-enrich plant extract on dyslipidemia, hyperglycemia in high fat diet-induced C57BL/6J mice. Male C57BL/6J mice were randomly divided into two groups, and fed HFD (20% fat, w/w) or HFD supplemented with nepodin-enrich plant extract (NPE 0.005%, w/w) for 16 weeks. Body weight and food intake were measured every week. And we also analysed metabolic rates (respiratory quotient), blood glucose level, and plasma high-density lipoprotein (HDL)-cholesterol, free fatty acid, apolipoprotein (apo) A-1 and apo B levels. Food intakes and body weights were not different between NPE group and HFD group, while plasma apo B, free fatty acid levels, and blood glucose concentration were significantly decreased in NPE group than in HFD group. Furthermore, plasma apo A and HDL-cholesterol levels in NPE group were remarkably increased than in HFD group. Metabolic rates (respiratory quotient) were significantly increased in NPE group than in HFD group. These results indicate that NPE can alleviate dyslipidemia, hyperglycemia. Further studies are required to identify the effects of NPE on metabolic disorders.

Keywords : dyslipidemia, hyperglycemia, metabolic disorders, nepodin enrich plant extract

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