

Angelica keiskei Extract Improves Insulin Resistance and Hypertriglyceridemia in Rats Fed a High-Fructose Drink

(明日葉抽出物は高フルクトース摂取ラットにおけるインスリン抵抗性と高トリグリセリド血症を改善する)

Angelica keiskei is a traditional herb peculiar to Japan and abundantly contains vitamins, dietary fiber and such polyphenols as chalcone. We investigated in the present study the effect of *A. keiskei* on insulin resistance and hypertriglyceridemia in fructose-drinking rats as a model for the metabolic syndrome. Male Wistar rats were given a 15% fructose solution as drinking water for 11 weeks. Fructose significantly increased the levels of serum insulin and triglyceride (TG) compared with the control level. Treatment with an ethanol extract of *A. keiskei* (AE) significantly reduced the levels of blood glucose (-16.5%), serum insulin (-47.3%), HOMA-R(-56.4%) and TG (-24.2%). A hepatic gene analysis showed that fructose reduced the expression of the genes related to fatty acid β -oxidation and high-density lipoprotein (HDL) production. Treatment with AE enhanced the expression of the acyl-CoA oxidase 1 (ACO1), medium-chain acyl-CoA dehydrogenase (MCAD), ATP-binding membrane cassette transporter A1 (ABCA1) and apolipoprotein A1 (Apo-A1) genes. These results suggest that AE improved the insulin resistance and hypertriglyceridemia of the fructose-drinking rats.