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## Effects of guava leaf extract on glucose and lipid homeostasis in diet-induced insulin-resistant C57BL/6J mice

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With the changes in the life style of individuals, diabetes mellitus and obesity are both became common disease in this century. Previous studies indicated that metabolic syndrome associated with the incidence of type-2 diabetes mellitus. It is estimated that 552 million will be diagnosed with diabetes mellitus by the year 2030. Thus, the cure and prevention of diabetes mellitus is important. In this study, the effects of aqueous guava leaf extract (GvEx) on insulin resistance were evaluated in diet induced insulin-resistant mice. Low (50 mg/kg), middle (150 mg/kg) and high (450 mg/kg) oral dose of GvEx were administrated to the high-fructose-high-fat fed insulin-resistant C57BL/6J mice. Our results showed that administration of high dose GvEx significantly enhanced the glucose tolerance, insulin sensitivity and increased the serum adiponectin content. Triglyceride and total cholesterol contents of blood and liver were all significantly decreased after treatment with GvEx. Further, western blot analysis revealed that high dose GvEx significantly enhanced the levels of peroxisome proliferator-activated receptor (PPAR)- $\gamma$  and adiponectin in adipose tissue, as well as enhancing the phosphorylation of the AMP-activated protein kinase and PPARs in both liver and skeletal muscle tissues. In addition, the protein levels of phosphorylated protein kinase B and glucose transporter were also induced in liver and skeletal muscle tissues. In conclusion, GvEx can improve the disturbed glucose and lipid homeostasis in diet-induced insulin-resistant C57BL/6J mice.

### Biography

Wen-Dee Chiang has completed his PhD from Clemson University, USA. He is the Professor of Food Science Department and the Dean of Agriculture College at Tunghai University, Taichung, Taiwan. He has published more than 43 papers in reputed journals and has been serving as a Reviewer for many international reputed journals.

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