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Anti-diabetic effect of centipede grass extracts by activating PPARγ

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Peroxisome proliferator-activated receptors (PPARs) are nuclear receptors that plat key roles in regulation of metabolic homeostasis. The purpose of the present study was to determine the action mechanism the anti-diabetic effect of the Centipedegrass extracts (CGE) in 3T3-L1 adipocyte and high-fat diet model mice through the regulation of PPARγ. Treatment with 100 μg/ml CGE significantly increased the uptake of 2-NBDG in 3T3-L1 adipocyte. We found that the transcriptional activity of PPARγ was increased by CGE. However, CGE did not alter the transcription levels of PPARγ. In addition, we determined phosphorylation and expression levels of other molecules for glucose metabolism, such as IRS-1, Akt, and Glut4. The CGE increased both the phosphorylation and expression levels of these proteins in a time- and concentration-dependent manner. The CGE improved the glucose tolerance observed in the HFD fed mice. This study shows that the CGE exerted an anti-diabetic effect by targeting PPARγ signaling in 3T3-L1 adipocyte. In addition, the CGE improved the glucose tolerance and abnormal increase in body weight observed in the HFD fed mice without toxicity. Therefore, the CGE should be useful for preventing and treatment Diabetes. Further studies are needed to determine what contained single compound from the CGE exerts the anti-Diabetes effect both *in vitro* and *in vivo*.

Biography

Chul-Hong Park currently works at Korea Atomic Energy Research Institute (KAERI), Advanced Radiation Technology Institute (ARTI) in Jeongeup, Republic of Korea.

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