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Bavachin from *Psoralea corylifolia* improves insulin-dependent glucose uptake through insulin signaling and AMPK activation in 3T3-L1 adipocytes

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The fruit of *Psoralea corylifolia* L (Fabaceae) (PC) known as “Bo-Gol-Zhee” in Korea has been used as traditional medicine. Extracts of PC have an anti-hyperglycemic effect by increasing plasma insulin levels and decreasing blood glucose and total plasma cholesterol levels in type 2 diabetic rats. In this study, we found that bavachin accumulated lipids during adipocyte differentiation. Consistently, bavachin activated gene expression of adipogenic transcriptional factors, proliferator-activated receptor (PPAR γ), and CCAAT/enhancer binding protein- α (C/EBP α). Bavachin also increased adiponectin expression and secretion in adipocytes. Moreover, bavachin increased insulin-induced glucose uptake by differentiated adipocytes and myoblasts. In differentiated adipocytes, we found that bavachin enhanced glucose uptake via GLUT4 translocation by activating the Akt and AMPK pathway in the presence or absence of insulin. These results suggest that bavachin from *Psoralea corylifolia* might have therapeutic potential for type 2 diabetes by activating insulin signaling pathways and AMPK.

Biography

Hyejin Lee has completed her PhD from Geonnam National University and Post-doctoral studies from Sookmyung Women's University. She is a Senior Researcher of College of Pharmacy and Research Center for Cell Fate Control, Sookmyung Women's University. She has published papers related to Obesity and Diabetes.

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