

Baicalin and its aglycone: a novel approach for treatment of metabolic disorders.

Fang P^{1,2}, Yu M¹, Shi M², Bo P^{3,2}, Gu X⁴, Zhang Z⁵.

Author information

- 1 Department of Physiology, Hanlin College, Nanjing University of Chinese Medicine, Taizhou, 225300, Jiangsu, China.
- 2 Jiangsu Key Laboratory of Integrated Traditional Chinese and Western Medicine for Prevention and Treatment of Senile Diseases, Medical College, Yangzhou University, Yangzhou, 225001, China.
- 3 Department of Endocrinology, Clinical Medical College, Yangzhou University, Yangzhou, 225001, Jiangsu, China.
- 4 Department of Pathology, Clinical Medical College, Yangzhou University, Yangzhou, 225001, Jiangsu, China.
- 5 Department of Endocrinology, Clinical Medical College, Yangzhou University, Yangzhou, 225001, Jiangsu, China. zwzhang@yzu.edu.cn.

Abstract

BACKGROUND: The current strategies for prevention and treatment of insulin resistance and type 2 diabetes are not fully effective and frequently accompanied by many negative effects. Therefore, novel ways to prevent insulin resistance and type 2 diabetes are urgently needed. The roots of *Scutellaria radix* are commonly used in traditional Chinese medicines for prevention and treatment of type 2 diabetes, atherosclerosis, hypertension, hyperlipidemia, dysentery, and other respiratory disorders. Baicalin and baicalein are the major and active ingredient extracts from *Scutellaria baicalensis*.

METHODS: A comprehensive and systematic review of literature on baicalin and baicalein was carried out.

RESULTS: Emerging evidence indicated that baicalin and baicalein possessed hepatoprotective, anti-oxidative, anti-dyslipidemic, anti-lipogenic, anti-obese, anti-inflammatory, and anti-diabetic effects, being effective for treating obesity, insulin resistance, non-alcoholic fatty liver, and dyslipidemia. Besides, baicalin and baicalein are almost non-toxic to epithelial, peripheral, and myeloid cells.

CONCLUSION: The purpose of this study is to focus on the therapeutic applications and accompanying molecular mechanisms of baicalin and baicalein against hyperglycemia, insulin resistance, type 2 diabetes, hyperlipidemia, obesity, and non-alcoholic fatty liver, and trying to establish a novel anti-obese and anti-diabetic strategy.

KEYWORDS: Baicalein; Baicalin; Diabetes; Insulin resistance; Obesity