

PubMed  Search

Display Settings: Abstract



[J Ethnopharmacol.](#) 2005 Jan 4;96(1-2):295-301.

## **An extract of *Syzygium aromaticum* represses genes encoding hepatic gluconeogenic enzymes.**

[Prasad RC](#), [Herzog B](#), [Boone B](#), [Sims L](#), [Waltner-Law M](#).

Department of Molecular Physiology and Biophysics, Vanderbilt University School of Medicine, Nashville, TN 37232, USA.

### **Abstract**

Insulin action is impaired in diabetic patients, which leads to increased hepatic glucose production. Plants and herbs have been used for medicinal purposes, including the treatment of diabetes, for centuries. Since dietary management is a starting point for the treatment of diabetes, it is important to recognize the effect of plant-based compounds on tissues that regulate glucose metabolism, such as the liver. In a recent study, several herbs and spices were found to increase glucose uptake into adipocytes, an insulin-like effect. Our data reveal that ***Syzygium aromaticum*** (L.) Merrill and Perry (Myrtaceae) (commonly referred to as clove) extract acts like insulin in hepatocytes and hepatoma cells by reducing phosphoenolpyruvate carboxykinase (PEPCK) and glucose 6-phosphatase (G6Pase) gene expression. Much like insulin, clove-mediated repression is reversed by PI3K inhibitors and N-acetylcysteine (NAC). A more global analysis of gene expression by DNA microarray analysis reveals that clove and insulin regulate the expression of many of the same genes in a similar manner. These results demonstrate that consumption of certain plant-based diets may have beneficial effects for the treatment of diabetes and indicate a potential role for compounds derived from clove as insulin-mimetic agents.

PMID: 15588682 [PubMed - indexed for MEDLINE]

**Publication Types, MeSH Terms, Substances, Grant Support**

**LinkOut - more resources**