Details of Technology



Name of Technology	Antidiabetic effect of 6-methylsulfinylhexyl isothiocyanate (6MITC) in <i>Wasabia japonica</i> Matum.	Life Science
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Key words	diabetes, <i>Wasabia japonica</i> , isothiocyanate	

What kind of technology is this?

Outline

The research output gives us the expectation that 6MITC, a component of *Wasabia japonica* can alleviate the disease condition deficient of insulin like diabetes or prevent the occurrence of such condition by inhibiting gluconeogenesis in the liver due to the insulin-like action.

The number of people with diabetes occupies 5% to 6% in the developed country population and it is expected that the number of the people with diabetes still continues to increase. In diabetes, blood glucose is increased because of deficient insulin activity. Under this disease condition, unnecessary gluconeogenesis occurs in the liver to cause an increase in blood glucose. In order to examine the anti-diabetic effect of 6MITC, a component of *Wasabia japonica*, rat liver-derived cultured cells were treated with a certain drug to induce gluconeogenesis (the insulin-deficient condition like diabetes). In the treatment of such cells with 6MITC (15μ M), the gene expression of PEPCK and G6Pase, rate-limiting enzymes for gluconeogenesis and the release of glucose to the culture medium were inhibited and the potency was almost the same as that of insulin (10 nM).

What are its applications?

Although it is necessary to confirm and investigate the effect in the animal experiments etc., it can be considered that 6MITC is used for the development of functional foods and drugs with the therapeutic or preventive effect on diabetes and as a leading compound of novel pharmaceuticals.

Related patents	Japanese Patent Laid-Open No. 2008-247805
Related materials	The 61st annual meeting of Japanese Society of Nutrition and Food Science, Abstract.