

TREATMENT OF TYPE 2 DIABETES BY A NOVEL MEDICAL FOOD

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GLYCEMICON

Background

Type 2 diabetes and its associated consequences such as heart or kidney problems are a growing health and economic problem. New possibilities for treatment or prevention of diabetes type 2 are highly desirable.

Overweight and obesity are intimately related to diabetes as evidenced by the 80 to 85% risk of obese individuals to develop type 2 diabetes. Being overweight gradually causes the body to lose its responsiveness to insulin.

A novel Medical Food

Excess fat gradually causes the body to lose its responsiveness to insulin, the hormone that mediates efficient blood glucose uptake into cells in a healthy human being. Becoming resistant to the effect of insulin reduces the body's ability to maintain normal blood glucose levels. Consequently, many overweight and obese people whose glucose levels appear normal are already in progress of developing pre-diabetes and subsequently type 2 diabetes. Researchers from ETH Zurich have identified the retinoid orphan receptor gamma ($ROR\gamma$) as a modulator of fat composition. Increased levels of this protein in human adipose tissue indicate a higher risk for developing insulin resistance and type 2 diabetes. In line, complete loss of $ROR\gamma$ in mice protects the animals from the development of insulin resistance on a high fat diet regimen. Characteristic for the fat tissue of $ROR\gamma$ knockout mice is the high number of small and functioning adipocytes compared to control mice that are resistant to insulin (Fig. 1 left).

The researchers have recently founded the ETH spin-off Glycemicon to further develop the technology. Their aim is to promote healthy fat and normal blood glucose by suppressing the activity of $ROR\gamma$ - the same/natural mechanism that might be used by infants to build their fat depots. Glycemicon has licensed the technology from ETH Zurich.

www.glycemicon.com

