

Ingredients in Labrador tea that affect how our bodies store fatⁱ

Purpose

In previous lab tests, we found that Labrador tea had some effect on how fat cells multiply and store fats. In this study, Meriem tried to identify exactly which ingredients in the plant produce this effect.

The theory behind the study

We know that being obese raises people's risk of getting diabetes. Yet one theory about diabetes says that it is partly caused by a person not being able to make *enough* fat cells to store all the calories they are taking in. Instead, some kinds of fats (called free fatty acids) accumulate in muscle cells and liver, and this helps create insulin resistance. According to this theory, things that help fat cells to reproduce and store fats would actually help with diabetes. Some of the standard diabetes drugs—including Rosiglitazone (Avandia)—work on this principle. They act on a pathway called "PPAR γ " that has to do with how our bodies handle fats and sugars.

In our past studies, we noticed that several of the Cree plants helped fat cells to reproduce in lab dishes, like Avandia does. In particular, Labrador tea seemed to have as much effect as Avandia. In the current study, we wanted to find out which ingredients in Labrador tea are doing this.

Results

We found three ingredients in Labrador tea that seem to affect how fat cells reproduce in the lab. These are called (+) Catechin, (-) Epicatechin, and Quercetin. (These ingredients are also found in other plants. For instance, we know that green tea contains (+) Catechin.) In our tests, we found that the effect on fat cells varied with how strong a dose we used. Sometimes we got an effect at high doses, and the opposite effect at low doses. We also notice that these ingredients work much better in combination than alone.

These results suggest that some of the ingredients in Labrador tea could indeed help with diabetes. It would be worth keeping on with studies of this plant.

ⁱ This is a simplified summary of a more technical report by Meriem Ouchfoun, Jose Guerrero-Analco, Lina Musallam, Ammar Saleem, John Arnason, Louis Martineau and Pierre Haddad, titled "A combination of Catechin, Epicatechin and Quercetin underlies the *in vitro* adipogenic action of *Rhododendron groenlandicum*, an anti-diabetic medicinal plant of the East James Bay Cree pharmacopeia."