

In an animal experiment, it was proved that a compound reduces blood glucose level.

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Now, it is said that one out of ten 40 years old and older adults are diabetics. Besides, number of “diabetics-to-be” in the 20's with higher blood glucose level than the standard level (70 – 109mg/dl) is increasing.

The causes for the increase are considered to be depletion, shortage of exercise, and irregular hours. It is understandable why diabetes is called a disease caused by luxurious life. There are two types of diabetes: Type 1 diabetes mellitus (insulin-dependent diabetes mellitus) and mild Type 2 diabetes (non-insulin dependent diabetes mellitus). Type 1 - A disease in which the body does not produce any insulin. The number of Type 1 diabetics account for 3 to 5 percent of whole diabetics. Type 2 - A metabolic disorder resulting from the body's inability to make enough, or properly use, insulin. Even if the body makes enough insulin, glucose is not taken into cells. As a result, glucose amount in blood increases. It is the most common form of the disease.

In order to be used smoothly in the body, glucose needs to be bonded with cell membrane that covers cells. But Type 2 diabetes is caused when glucose doesn't bond with cell membrane properly, or when it is not transported into cells and glucose remains in blood. Most of diabetics are categorized as Type 2.

Now, you understand the two types of diabetes. Let's move onto an experiment I have done.

Longer decoction of banaba leaves is more effective

I have been paying attention to the blood glucose reduction effect of banaba tea. I carried out an experiment on laboratory mice to elucidate the compounds contained in banaba leaves and the mechanism of the blood glucose reduction effect.

First, I divided the mice into two groups: Type 1 diabetes group and Type 2 diabetes group. We injected medication into them to make them diabetes artificially.

Then, we gave banaba extract to them and found only the blood glucose level of Type 2 mice was lowered. Accordingly, we continued the experiment focusing on Type 2 mice only.

We treated the banaba leaves given to the mice with the following procedure.

1. Decoct dried leaves with hot water.
2. Separate the extracted active substances by using chromatography.

As a result, two compounds, A and B, were gained.

Now, we divided the Type 2 diabetes mice into three groups and compared the each blood glucose reduction effect. The result of the experiment is as follows.

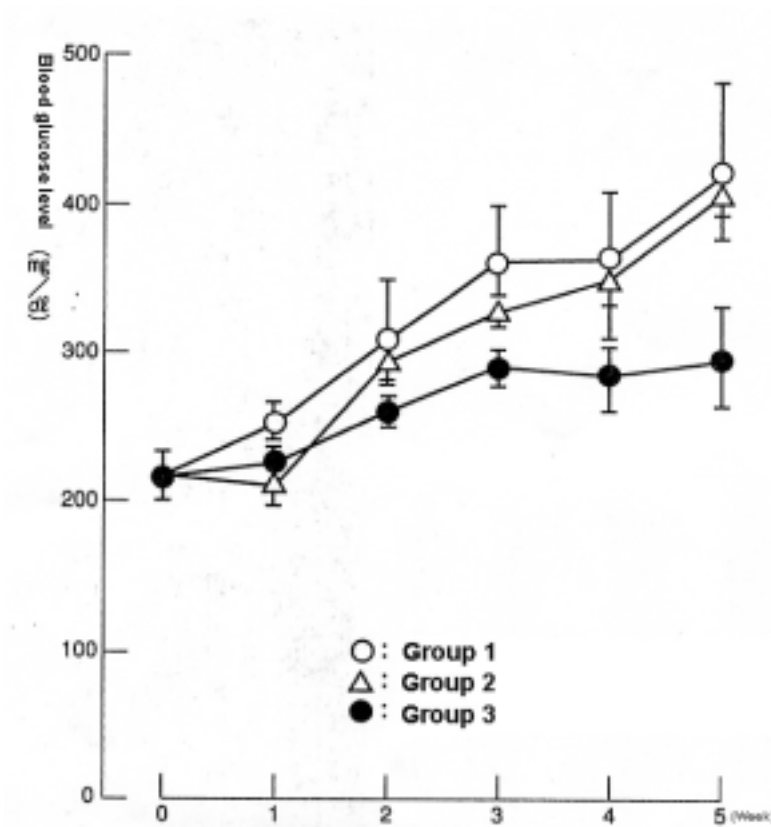
First, each group is given the following items mixed in their food.

- Group 1: cellulose which is not related to the extracted substances.

- Group 2: Compound A
- Group 3: Compound B

Then, the blood glucose level of the mice was measured.

Three weeks after the start of the experiment, changes were already observed. In Group 3, which was given compound B, increase of blood glucose level was inhibited (refer to the chart).



Moreover, we performed another experiment to examine more closely the blood glucose control activity of compound B. In this experiment, in the fourth week, Group 3 was given compound A and Group 2 was given compound B. Then, the blood glucose level of the mice in Group 2 started to be inhibited only after one week.

In this experiment, it was proved that compound B contained in banaba leaves had blood glucose reduction effect.

Unfortunately, I cannot say what compound B is here because it's still under examination.

How does compound B lower blood glucose level? It appears to have something to do with the fact that the blood glucose level of the mice dropped relatively soon after they took compound B.

Starch and sugar taken from meals are quickly degraded by digestive enzymes.

Normally, glucose is taken into cells and used effectively in the body. If glucose cannot be taken in properly, it stays in blood and the blood glucose level increases. This is the mechanism of Type 2 diabetes.

From the mechanism, a hypothesis comes up.

If the function of the digestive enzymes is inhibited, the degradation speed of starch and sugar

would be slowed down and glucose would be taken in little by little. As a result, blood glucose level falls.

Compound B contained in banaba is presumed to work directly to the digestive enzymes and inhibit quick degradation of starch/sugar into glucose.

I believe that the researches, which have done so far, show the effectiveness of the compounds contained in banaba leaves and I will continue to carry out further researches.

In this experiment on mice, the effect was seen by using considerable high concentration of banaba extract. Therefore, it can be said that the longer the banaba leaves are decocted, the more active substances are extracted.

When you drink banaba tea, I recommend you to decoct banaba leaves at least 20 – 30 minutes to get more advantageous effect.