

April 11, 2011

Ingredients in Pitcher plant that could reduce blood sugar levelsⁱ

Purpose

In this study, we tried to identify the ingredients in Pitcher plant that help to lower blood sugar levels.

Background

Aboriginal peoples across North America have long used Pitcher plant. It has been used to treat fever, TB, urinary problems and other conditions.

In our earlier lab tests, Pitcher plant seemed to have a lot of potential to help with diabetes. The plant seemed to

- help muscle cells take in sugar
- help the liver make less sugar

Both of these things could lower blood sugar levels. In this study, we tried to find out which ingredients in the plant do these good things.*

Results

Ingredients that affect blood sugar levels

We tested for which ingredients in the plant help muscle cells to take in sugar (as insulin does). Eventually, the search narrowed to 11 ingredients. Of these, ingredients #6, 8, and 11 seemed to be the ones that help cells to store more sugar. Our earlier tests had already shown that ingredient 11 does this. But this is the first time anyone has shown that ingredients 6 and 8 can help cells to take in sugar.

* We think Pitcher plant also contains ingredients that protect nerve cells against damage from sugar. However, we did not look for those ingredients in this study.

We also found a completely new ingredient in the plant—one that no one has described before. We tested this new ingredient and another in the same family to see if they help liver cells to make less sugar. Both ingredients seem to do this.

These results suggest that Pitcher plant contains several different healing ingredients that could help with diabetes in different ways. Some ingredients seem to act on how muscles take in sugar, while others could reduce how much sugar the liver makes. Now we are even more interested than before in seeing if Pitcher plant could be used to treat diabetes. The next step would be to see if we get the same results in live animals.

Other ingredients in the plant

In the course of this work, we also identified some of the other ingredients in the Pitcher plant. We found nine known ingredients, and seven that no one has described before. Although these ingredients had no effect on blood sugars, plant scientists are always interested when someone finds a completely new ingredient. Also, it helps us evaluate if the plant is safe to take (it is). So we wrote a second paper that describes what these new ingredients look like.

ⁱ This is a plain-language summary of two articles by Asim Muhammad and others called “Antidiabetic principles of *Saraccenia Purpurea* (Pitcher plant) used traditionally by the Eeyou Istchee Cree First Nation” and “New phytochemical constituents of *Sarracenia purpurea* (Pitcher Plant)” (File numbers FRP029-5-07 and FRP028-5-06, versions of March 29, 2011).