



## Human Taste Buds Able to Detect Plant Toxins

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(NaturalNews) Scientists at the Monell Chemical Senses Center report that the ability to perceive the bitter taste of vegetables is a combination of taste genes and the presence of naturally-occurring toxins in a given vegetable. The study appears in the September 19 issue of Current Biology.

Scientists have always assumed that the ability to sense bitterness evolved as a defense mechanism to detect potentially harmful toxins in plants. This study provides support for this hypothesis by establishing that variants of the bitter taste receptor TAS2R38 can detect glucosinolates, a class of compounds with potentially harmful physiological actions, in natural foods. **Glucosinolates are considered anti-thyroid because they inhibit the uptake of iodine into the thyroid which increases the risk of goiter and decreases the levels of thyroid hormones, hence they have come to be collectively known as goitrogens. The thyroid converts iodine into thyroid hormones which are essential for protein synthesis and for regulating the body's metabolism. The ability to taste glucosinolates and then avoid them could be a selective advantage to the "over 1 billion people who are at risk for thyroid insufficiency".**

"The findings show that our taste receptors are capable of detecting toxins in the natural setting of the fruit and vegetable plant matrix," said senior author Paul Breslin, a Monell sensory scientist.

Thirty five healthy adults were selected for the study and placed in one of three categories depending on genotype (hTAS2R38 gene). These groups were: 1) sensitive to the bitter tasting chemical PTC, 2) Insensitive to the bitter taste of PTC and 3) Showed intermediate sensitivity.

Each subject was then given a variety of vegetables, some containing glucosinolates while others did not. Examples of the glucosinolate-containing vegetables include watercress, broccoli, bok choy, kale, kohlrabi, and turnip; while the non-glucosinolate foods included radicchio, endive, eggplant and spinach. Subjects with the sensitive receptor rated the glucosinolate-containing vegetables as 60% more bitter than did subjects with the insensitive form. The other vegetables were rated equally bitter by the two groups, demonstrating that variations in the hTAS2R38 gene has specificity to foods containing glucosinolate toxins.

"The sense of taste enables us to detect bitter toxins within foods, and genetically-based differences in our bitter taste receptors affect how we each perceive foods containing a particular set of toxins," summarizes Breslin. Breslin notes, "The contents of the veggies are a double-edged sword, depending



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summarizes Dr. Smith. Dr. Smith notes, "The contents of the veggies are a double-edged sword, depending upon the physiological context of the individual eating them. Most people in industrialized cultures can and should enjoy these foods. In addition to providing essential nutrients and vitamins, many are reported to have anti-cancer properties."

Reference:

Article adapted by Medical News Today from original press release.

The article did not mention that there are ways to get the benefits of these vegetables without the goitrogenic effects. The first and I believe best way is via lacto-fermentation (fermenting with live lactobacillus). The fermentation converts the glucosinolates to harmless substances. Fermentation retains all the cancer-inhibiting properties of these vegetables, retains all the vitamin and mineral content and at the same time actually makes certain enzymes and more vitamins, especially the B vitamins and Vitamin

K. The second method is cooking, preferably light steaming. Again, this converts the glucosinolates to harmless compounds.

## About the author

Patty Donovan was in a wheelchair and could only walk around her house with a cane. She was on over 20 medications. When told to "take the morphine, get in the wheelchair and learn to live with it" by a neurosurgeon, she knew her life had to change. She is now almost a fanatic when it comes to healing through the use of "whole foods" and natural remedies. Since that time, she has spent countless hours researching nutrition and alternative health. After spending 30 years in the allopathic health care industry in both pharmacy and as an RN, she brings a unique perspective to Natural News readers. Since committing to this new life style, she no longer uses even a cane, has gotten off over 20 medications, lost over 50lbs and returned to work.

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