Dynamic Chiropractic

VITAMINS / SUPPLEMENTS

Hoodia Gordonii - Let the Buyer Beware

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On November 21, 2004, "60 Minutes" did a story on a plant found in the southern region of the African continent called *Hoodia Gordonii*. Its apparent ability to reduce appetite is what interested the producer of the show. In 1963, South African National Laboratory scientists (the Council for Scientific and Industrial Research) began a study of the foods consumed by the indigenous people of the Kalahari Desert, generally known as Bushmen and specifically known as the San People. Upon testing various foods consumed by the Bushmen, they found one that caused marked weight loss in lab animals. In 1995, the appetite-reducing compound was isolated. The process to isolate it was patented and the rights were sold to a British company, Phytopharm.

The compound was a steroidal glycoside known as P57AS3, commonly referred to as P57. In 1998, Phytopharm signed a sublicensing agreement with the pharmaceutical giant Pfizer. Together, they were able to synthesize P57. However, the process was so expensive that Phytopharm scientists determined the best way to deliver large quantities of this product to market was to sell it in food form. Because it was unfeasible to produce this compound synthetically for release as a pill or capsule, Pfizer elected to end its Hoodia contract with Phytopharm. In the late 1990s, Phytopharm (after heated discussions), agreed to share any Hoodia profits with the native San People (Bushmen) of the Kalahari. Recently, Phytopharm joined with another large company, Unilever, and plans to introduce Hoodia Gordonii to the mass market in 2008. Although the Bushmen eat the plant raw, Phytopharm has found that Hoodia can be processed into powders and food bars and still retain its activity.

There are 20 varieties of Hoodia, but so far, only Gordonii has been proven to have weight-loss properties. Needless to say, the publicity caused a host of others to jump into the business; one can find many companies selling Hoodia products on the Internet. Some claim that other strains of Hoodia also have weight-loss properties. This has yet to be proved (or disproved) in a scientific study.

Hoodia is a succulent that looks like a cactus; it has been described as a somewhat bitter-tasting cucumber. It is now a protected species in South Africa and Namibia. Hoodia Gordonii is also found in Angola and Botswana. Illegal harvesting and exports of wild Hoodia have occurred in South Africa, Namibia, and Botswana. There has also been some legal harvesting in Botswana and South Africa. The San Bushmen remove the skin and spines and have consumed it for generations for a variety of uses, including appetite suppression, thirst reduction, hemorrhoids, hypertension, diabetes, tuberculosis, stomach pain, and indigestion.

Like many succulents, Hoodia Gordonii is slow-growing. It takes around five years for the plant to flower. When this happens, the active compound is present and the plant can be harvested. Although Phytopharm and Pfizer spent over $20 million before realizing it was too expensive to synthesize the active ingredient for mass market, a host of previously unknown and little-known companies all claim to have Hoodia supplements that work. Some of these products may contain concentrates of the right part of the right species of Hoodia to suppress one's appetite. Testing by Phytopharm has revealed that many of the products contain little or no P57 and that some products are not even Hoodia.

Research

Phytopharm did one study in 2001 that is quoted or paraphrased on virtually every Web site that sells Hoodia. This was a proprietary study. It was not submitted to a peer-reviewed journal, but instead, was issued as a press release. Eighteen obese people took either the P57 compound or a placebo twice a day for 15 days. The results showed that there was a significant reduction in the amount of calories consumed by those subjects who took the P57 compound. By the 15th day, those on the P57, eating whenever they were hungry, consumed up to 1,000 calories less than they had prior to the study. Even though this was not released in peer-reviewed format, the results were impressive enough for Phytopharm to spend millions of dollars to learn how to best farm Hoodia. They have purchased large parcels of land in the Kalahari and are now growing a huge amount of Hoodia. Because it takes five years for the plant to mature and be ready for harvest, the company has set a goal to start sales in 2008. It is interesting to note that none of the many companies hawking Hoodia on the Internet has given its product (and look-alike placebos) to any neutral research facility for any independent studies to see if what they are selling works. I did find one company that posted an open-label study of seven obese patients who lost 6, 8, 11, 10, 10, 10 and 7 pounds, respectively, over 28 days by taking two capsules of their product daily.[1]

Mechanism of Action

The Internet is also full of various theories on mechanisms of action. As with everything else concerning this compound, there is very little scientific research in this area. However, there is a paper[2] which showed that P57 could increase ATP by 50 percent to 150 percent in neurons located in the hypothalamus, which in turn suppressed appetite, either by a central hypothalamic action or as a trigger for the hypothalamus to send satiety signals to other areas in the body. Although many Web sites state that Hoodia causes glucose to bind to receptors or proteins in the hypothalamus, there is no evidence of this occurring, according to the authors of the above-mentioned study.

The "Let the Buyer Beware" part of my title is my gut reaction after looking at numerous Hoodia Web sites. Something tells me Phytopharm has more data it is not sharing, since after spending $21 million with Pfizer, it is spending millions more farming this plant in anticipation of a huge demand when the first harvest begins in 2007. It should be interesting to see if Hoodia is another flash in the pan, or if it will be the first major product of the 21st century that has a real chance to combat the worldwide obesity epidemic.

1. www.nutrilab.com/slimcactus/study.
2. MacLean DB, Luo LG. Increased ATP production in the hypothalamus may signal for energy-sensing of satiety: studies of the anorectic mechanism of a plant steroidal glycoside. *Brain Research*, September 10, 2004;1020(1-2):1-11.

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