

Nutrient in cruciferous vegetables slowed cancer cell growth

By David Stauth
Correspondent

CORVALLIS — One of the first clinical studies to look at the effect of sulforaphane on breast tissues of women diagnosed with breast cancer showed that this compound was well tolerated and slowed the growth of cancer cells, especially at early stages.

Sulforaphane is a compound found in broccoli and many other cruciferous vegetables, and it has long shown evidence of value in cancer prevention, researchers say.

This research suggests it may ultimately play a role in slowing cancer growth as well — along with other proven approaches such as surgery, radiation and chemotherapy.

The findings have been published in the journal *Cancer Prevention Research* by scientists from Oregon State University and the Oregon Health & Science University.

“Our original goal was to determine if sulforaphane supplements would be well tolerated and might alter some of the epigenetic mechanisms involved in cancer,” said Emily Ho, a professor in the

OSU College of Public Health and Human Sciences.

“We were surprised to see a decrease in markers of cell growth, which means these compounds may help slow cancer cell growth,” said Ho, a co-author on the study. “This is very encouraging. Dietary approaches have traditionally been thought to be limited to cancer prevention, but this demonstrated it could help slow the growth of existing tumors.”

When better understood and studied, it’s possible that sulforaphane or other dietary compounds may be added to traditional approaches to cancer therapy, whether to prevent cancer, slow its progression, treat it or stop its recurrence, said Ho, who is also the endowed director of the Moore Family Center for Whole Grain Foods, Nutrition and Preventive Health, and a principal investigator with OSU’s Linus Pauling Institute.

This research was done with 54 women with abnormal mammograms who were scheduled for a breast biopsy and were studied in a double-blind, randomized, placebo-controlled trial. They received either a placebo or



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Researchers say sulforaphane, a compound found in broccoli sprouts, may be beneficial in cancer prevention.

supplements that provided sulforaphane. The amount of sulforaphane they received would equate to about one cup of broccoli sprouts per day, if eaten as a food.

A number of studies in the past have found that women with a high intake of cruciferous vegetables — such as broccoli, cauliflower, cabbage or kale — have a decreased risk of breast cancer. Research has also shown that sulforaphane, which is found at the

highest levels in such foods, can modulate breast cancer risk at several stages of carcinogenesis and through different mechanisms.

In particular, sulforaphane appears to inhibit histone deacetylases, or HDACs, which in turn enhances the expression of tumor suppressor genes that are often silenced in cancer cells.

The intake of sulforaphane in this study did, in fact, reduce HDAC activity, as well

as cancer cell growth.

Additional studies are needed to evaluate dose responses, work with larger populations, and examine the responses of other relevant molecular targets to either foods or supplements containing sulforaphane, researchers said. Some other studies have also suggested that different types of broccoli extract preparations may be more bioavailable for uses of this type.

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