



## **Mushroom Research Related to Cancer**

### Overview

A team of researchers at City of Hope have determined that white button mushrooms may help prevent breast cancer by suppressing estrogen production in the body.

Shiuan Chen, Ph.D., director of the Division of Tumor Cell Biology and co-director of the Breast Cancer Program at City of Hope, is leading this research on white button mushrooms.

### Past Research Findings

According to Dr. Chen's research of the extracts of seven vegetables, mushrooms contained the high levels of conjugated linoleic acid, a compound previously shown to have anticancer properties. Mice that were fed mushrooms showed a 58% reduction in breast tumor growth, according to Chen's research.

City of Hope researchers investigated these initial findings further because the lab studies showed that ingredients in the mushrooms suppressed the effects of a natural protein in the body called aromatase. Blocking aromatase is a key way that physicians reduce circulating estrogen levels among postmenopausal patients. Approximately 75 percent of postmenopausal women with breast cancer have tumors that depend on estrogen to grow.

### Current Research Activities

City of Hope researchers are speeding the research about mushrooms' cancer-fighting properties from labs to human clinical trials. Human clinical trials are currently underway at City of Hope.

The goal of the trials is to be able to offer breast cancer patients a way to reduce cancer risk or to slow cancer growth through a diet of mushrooms.

### Funding

The California Breast Cancer Research Program, the American Institute for Cancer Research and the National Institutes of Health all helped support the studies. The Mushroom Council recently donated \$560,000 to support clinical trials at City of Hope.

### Background on City of Hope

City of Hope is a leading research, treatment and education institution for cancer, diabetes and other life-threatening diseases. Named one of "America's Best Hospitals" in cancer by *U.S. News & World Report*, City of Hope has pioneered numerous lifesaving procedures that have advanced cancer treatment worldwide.

A growing number of lifesaving cancer therapies are based on research pioneered by City of Hope scientists, including the drugs Herceptin, Rituxan, Avastin and Erbitux. Herceptin is used in the treatment of breast cancer.