

Health Benefits

Health Information

Dietary Agents in Red Chile Pepper Linked to Cancer Prevention

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PITTSBURGH, April 19, 2005 – Two new studies suggest that vegetables such as broccoli and spices like red chile pepper, may provide a cancer-fighting benefit by slowing or preventing the growth of cancerous tumor cells. The findings, being presented at the annual meeting of the American Association for Cancer Research held April 16 to 20 at the Anaheim Convention Center in Anaheim, Calif., looked at the effect of these dietary agents on cancers that have extremely poor prognoses despite advances in surgery and other therapies. “In our studies, we decided to look at two particular cancers – ovarian and pancreatic – with low survival rates, to ascertain the contribution of diet and nutrition to the development of these cancers. We discovered that red chili pepper and broccoli appear to be effective inhibitors of the cancer process,” said Sanjay K. Srivastava, Ph.D., lead investigator and assistant professor, department of pharmacology, University of Pittsburgh School of Medicine. “The contribution of diet and nutrition to cancer risk, prevention and treatment has been a major focus of research in recent years because certain nutrients in vegetables and dietary agents appear to protect the body against diseases such as cancer.”

The first study, abstract number 2469, looked at the chemotherapeutic potential of capsaicin, the “hot” ingredient in red chile pepper that is often associated with antioxidative and anti-inflammatory activities, and found that it exhibited anticancer activity against pancreatic cancer cells. Pancreatic cancer is one of the most aggressive cancers with an extremely poor prognosis. Dr. Srivastava and colleagues treated human pancreatic cells with capsaicin and found that it disrupted the mitochondrial function resulting in the release of cytochrome c, which induced apoptosis, or programmed cell death, in the cancerous cells without affecting normal pancreatic cells. “Our results demonstrate that capsaicin is a potent anticancer agent, induces apoptosis in cancer cells and produces no significant damage to normal pancreatic cells, indicating its potential use as a novel chemotherapeutic agent for pancreatic cancer,” said Dr. Srivastava.