# Nutrients in certain vegetables may provide cancer-fighting benefit

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Chemicals in cruciferous vegetables, such as broccoli, watercress, cabbage and cauliflower, appear to not only stop human prostate cancer cells from growing in mice but also may cut off the formation of blood vessels that "feed" tumors, says a University of Pittsburgh Cancer Institute study. The study, abstract number 4200, is being presented today at the annual meeting of the American Association for Cancer Research, April 14-18, at the Los Angeles Convention Center.

"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," said Shivendra Singh, Ph.D., lead investigator and professor of pharmacology and urology at the University of Pittsburgh School of Medicine. "From epidemiologic data, we know that increased consumption of vegetables reduces the risk for certain types of cancer, but now we are beginning to understand the mechanisms by which certain vegetables like broccoli may help our bodies fight cancer and other diseases."

Dr. Singh's study is based on phytochemicals, called isothiocyanates (ITCs), found in several cruciferous vegetables and generated when vegetables are either cut or chewed. His laboratory has found that phenethyl-ITC, or PEITC, is highly effective in suppressing the growth of human prostate cancer cells at concentrations achievable through dietary intake.

The current study follows previous research in which Dr. Singh's laboratory found that mice grafted with human prostate tumors that received a small amount of PEITC daily for 31 days had significantly reduced tumor size when compared to a control group of mice. Now the researchers have shown that treating cells in culture with PEITC inhibits angiogenesis, a process that plays an important role in the growth and spread of cancer by forming new blood vessels that pass oxygen and nutrients to tumor cells.

"Angiogenesis is a major issue in cancer metastases," said Dr. Singh. "Our results provide promising preliminary evidence that constituents of many edible cruciferous vegetables may slow down, or even halt, this process."

Source: University of Pittsburgh