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Unusual combination therapy shows promise for preventing prostate cancer, researchers find

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Combining a compound from broccoli with an antimalarial drug prevents prostate cancer in mice, University of Pittsburgh Cancer Institute (UPCI) researchers discovered.

The National Cancer Institute-funded research will be published in the Oct. 1 issue of the journal *Cancer Research*. It is the first such study to show the effectiveness of the combined treatment and provides compelling evidence for human clinical trials.

"Men with prostate cancer suffer significant impairments in quality of life, not only from the disease itself, but also from the treatments," said senior author Shivendra Singh, Ph.D., professor in Pitt's Department of Pharmacology & Chemical Biology. "Because the predominant risk factors for prostate cancer, such as age, race and genetics, cannot be avoided, there is a great need for preventative treatments for those most at risk."

Cruciferous vegetables, such as broccoli, watercress and cabbage, are associated with a lower risk of prostate cancer. The phytochemical sulforaphane in cruciferous vegetables is believed to be responsible.

When scientists tested sulforaphane in the lab, they found it works to prevent early-stage prostate cancer, but not late-stage. Dr. Singh and his colleagues hypothesized that this was due to a cellular mechanism called

autophagy, which limits the ability of drugs to destroy cancer.

The antimalarial drug chloroquine inhibits autophagy. When chloroquine and sulforaphane were given to mice predisposed to prostate cancer, only 12 percent of the mice developed late-stage prostate cancer, compared to half in the control group.

"These results are very promising, but I do not recommend that men take chloroquine while eating broccoli in an attempt to prevent prostate cancer," said Dr. Singh. "Certainly eating broccoli and other cruciferous vegetables is good for you, but chloroquine can have side effects, and it has not been tested in humans for the purpose of preventing prostate cancer."

More information: cancerres.aacrjournals.org/con … CAN-13-0755.abstract

Provided by University of Pittsburgh Medical Center