

Anti-cancer effects of broccoli ingredient explained

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Light has been cast on the interaction between broccoli consumption and reduced prostate cancer risk. Researchers writing in BioMed Central's open access journal *Molecular Cancer* have found that sulforaphane, a chemical found in broccoli, interacts with cells lacking a gene called PTEN to reduce the chances of prostate cancer developing.

Richard Mithen, from the Institute of Food Research, an institute of BBSRC, worked with a team of researchers on Norwich Research Park, UK, to carry out a series of experiments in human prostate tissue and mouse models of [prostate cancer](#) to investigate the interactions between expression of the PTEN gene and the anti-cancer activity of sulforaphane.

He said, "PTEN is a tumour suppressor gene, the deletion or inactivation of which can initiate prostate [carcinogenesis](#), and enhance the probability of [cancer progression](#). We've shown here that sulforaphane has different effects depending on whether the PTEN gene is present".

The research team found that in cells which express PTEN, dietary intervention with SF has no effect on the development of cancer. In cells that don't express the gene, however, sulforaphane causes them to become less competitive, providing an explanation of how consuming broccoli can reduce the risk of prostate cancer incidence and progression. According to Mithen, "This also suggests potential therapeutic applications of sulforaphane and related compounds".

More information: The dietary isothiocyanate sulforaphane modulates gene expression and alternative gene splicing in a PTEN null preclinical murine model of prostate cancer, Maria H. Traka, Caroline A. Spinks, Joanne F. Doleman, Antonietta Melchini, Richard Y. Ball, Robert D. Mills and Richard F. Mithen, Molecular Cancer (in press), www.molecular-cancer.com/

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