

Polyphenols in red wine and green tea halt prostate cancer growth

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In what could lead to a major advance in the treatment of prostate cancer, scientists now know exactly why polyphenols in red wine and green tea inhibit cancer growth. This new discovery, published online in *The FASEB Journal*, explains how antioxidants in red wine and green tea produce a combined effect to disrupt an important cell signaling pathway necessary for prostate cancer growth. This finding is important because it may lead to the development of drugs that could stop or slow cancer progression, or improve current treatments.

"Not only does SphK1/S1P signaling pathway play a role in prostate cancer, but it also plays a role in other cancers, such as [colon cancer](#), [breast cancer](#), and gastric cancers," said Gerald Weissmann, MD, editor-in-chief of *The FASEB Journal*. "Even if future studies show that drinking red wine and green tea isn't as effective in humans as we hope, knowing that the compounds in those drinks disrupts this pathway is an important step toward developing drugs that hit the same target."

Scientists conducted in vitro experiments which showed that the inhibition of the sphingosine kinase-1/sphingosine 1-phosphate (SphK1/S1P) pathway was essential for green tea and wine polyphenols to kill prostate cancer cells. Next, mice genetically altered to develop a human prostate cancer tumor were either treated or not treated with green tea and wine polyphenols. The treated mice showed reduced tumor growth as a result of the inhibited SphK1/S1P pathway. To mimic the preventive effects of polyphenols, another experiment used three groups of mice given drinking water, drinking water with a green tea compound

known as EGCg, or drinking water with a different green tea compound, polyphenon E. Human [prostate cancer cells](#) were implanted in the mice and results showed a dramatic decrease in tumor size in the mice drinking the EGCg or polyphenon E mixtures.

"The profound impact that the antioxidants in red wine and green tea have on our bodies is more than anyone would have dreamt just 25 years ago," Weissmann added. "As long as they are taken in moderation, all signs show that [red wine](#) and [green tea](#) may be ranked among the most potent 'health foods' we know."

More information: Leyre Brizuela, Audrey Dayon, Nicolas Doumerc, Isabelle Ader, Muriel Golzio, Jean-Claude Izard, Yukihiko Hara, Bernard Malavaud, and Olivier Cuvillier. The sphingosine kinase-1 survival pathway is a molecular target for the tumor-suppressive tea and wine polyphenols in prostate cancer. [doi:10.1096/fj.10-160838](https://doi.org/10.1096/fj.10-160838)

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