Red wine ingredient resveratrol stops breast cancer growth

29 September 2011

Cheers! A new research report appearing in the October 2011 issue of The *FASEB Journal* shows that resveratrol, the "healthy" ingredient in red wine, stops breast cancer cells from growing by blocking the growth effects of estrogen. This discovery, made by a team of American and Italian scientists, suggests for the first time that resveratrol is able to counteract the malignant progression since it inhibits the proliferation of hormone resistant breast cancer cells. This has important implications for the treatment of women with breast cancer whose tumors eventually develop resistance to hormonal therapy.

"Resveratrol is a potential pharmacological tool to be exploited when breast cancer become resistant to the hormonal therapy," said Sebastiano Andò, a researcher involved in the work from the Faculty of Pharmacy at the University of Calabria in Italy.

To make this discovery, Andò and colleagues used several breast cancer cell lines expressing the estrogen receptor to test the effects of resveratrol. Researchers then treated the different cells with resveratrol and compared their growth with cells left untreated. They found an important reduction in cell growth in cells treated by resveratrol, while no changes were seen in untreated cells. Additional experiments revealed that this effect was related to a drastic reduction of estrogen receptor levels caused by resveratrol itself.

"These findings are exciting, but in no way does it mean that should people go out and start using red wine or resveratrol supplements as a treatment for breast cancer," said Gerald Weissmann, M.D., Editor-in-Chief of The FASEB Journal. "What it does mean, however, is that scientists haven't finished distilling the secrets of good health that have been hidden in natural products such as red wine."

More information: Francesca De Amicis, Francesca Giordano, Adele Vivacqua, Michele Pellegrino, Maria Luisa Panno, Donatella Tramontano, Suzanne A. W. Fuqua, and Sebastiano Andò. Resveratrol, through NF-Y/p53/Sin3/HDAC1 complex phosphorylation, inhibits estrogen receptor ? gene expression via p38MAPK/CK2 signaling in human breast cancer cells. FASEB J. 2011 25:3695-3707; doi:10.1096/fj.10-178871

Provided by Federation of American Societies for Experimental Biology