

Study supports prostate cancer benefits of tocotrienols

By Lorraine Heller, 30-Jul-2010

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The link between Vitamin E and cancer benefits has received extra backing from a new study, which found that a mix of different forms of the vitamin helped prevent prostate tumor growth in mice.

Published in the August issue of *Nutrition and Cancer*, the study found that tumor protection increased with higher doses of a d-mixed tocotrienol complex.

"Mixed tocotrienols inhibited prostate tumor growth in TRAMP mice without any signs of toxicity," wrote the researchers from Rutgers, The State University of New Jersey.

There are eight forms of vitamin E: four tocopherols (alpha, beta, gamma, delta) and four tocotrienols (alpha, beta, gamma, delta). The complex used in the current study was the Tocomin branded blend supplied by Carotech, which contains D- α -tocotrienol (12–14%), D- β -tocotrienol (1%), D- γ -tocotrienol (18–20%), D- δ -tocotrienol (4–6%), and D- α -tocopherol (12–14%).

Tramp model

Around 40 mice were used in the study, divided into three treatment groups and two control groups. The researchers chose to use the transgenic adenocarcinoma mouse prostate (TRAMP) mouse model because of its close resemblance to the various stages of human prostate cancer.

All animals followed the same diet, but the three treatment groups also received 0.1, 0.3, or 1 percent mixed tocotrienols designed to deliver dosages of around 1.7, 5.2, and 17.1 mg, respectively, of D- γ -tocotrienol/day. The tocotrienol diet was followed for 24 weeks.

Mice were all eight weeks old at the start of the study. Regular weight checks and health monitoring throughout the study period found all animals to be in a good health condition with no significant change observed in body weights among mice fed the Tocomin diet or the normal diet.

Fewer tumors

The researchers report that after their study period, mice in the Tocomin-supplemented group had a significantly lower occurrence of prostate tumors compared to the control.

Tests revealed that 38, 33 and 22 percent of mice in the 0.1, 0.3 and 1 percent Tocomin-diet groups respectively developed palpable tumors. This compared to 73 percent in the control group mice.

In addition, mixed tocotrienols were found to suppress the progression of high-grade prostatic neoplastic lesions to fully developed tumors by modulating the cell cycle and affecting the expression of proapoptotic proteins.

The researchers concluded that their findings *"further support the potential use of tocotrienols as prostate cancer chemopreventive agents in humans."*

Source: *Mixed Tocotrienols Inhibit Prostate Carcinogenesis in TRAMP Mice*
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Authors: Barve, Avantika , Khor, Tin Oo , Reuhl, Kenneth , Reddy, Bandaru , Newmark, Harold and Kong, Ah-Ng

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