

Cranberry proanthocyanidins inhibit growth of tumor cells

Medical Studies/Trials

Published: Wednesday, 25-Jan-2006



New data shows that proanthocyanidins, or PACs, found in cranberries inhibit the growth of lung tumors and colon and leukemia cells in vitro.

That's according to a new study published in this month's issue of *The Journal of the Science of Food and Agriculture*. The study, led by University of Massachusetts Dartmouth researcher Catherine C. Neto, Ph.D., is one of the first studies to find that the cranberry's anti-cancer activity may come from the unique structure of its PACs. Cranberry's PACs contain a unique A-type structure, while most other fruit contains only the more-common B-type PACs.

Researchers prepared PAC-rich fractions from whole cranberry extract and worked with scientists at the University of Wisconsin to characterize their structures. They tested the fractions against eight tumor cell lines and screened for the effect on tumor growth. The fractions inhibited the proliferation of the tumor cell lines without inhibiting the growth of normal embryonic mouse cells.

"While previous studies have shown that cranberry extracts inhibit the proliferation of cancer cells, this is the first study to confirm that it's the cranberry PACs that are the active components," said Catherine C. Neto, Ph.D., Associate Professor, Department of Chemistry and Biochemistry at the University of Massachusetts Dartmouth. "This study is a significant step toward helping to establish a body of research that shows cranberry PACs may also work to prevent tumor cell growth in vivo."

Cranberry's PACs have a unique "anti-adhesion" mechanism known to protect the body from the harmful *E. coli* bacteria that cause UTIs. Earlier research shows that it's the A-type PACs in cranberry that are responsible for this anti-adhesion activity while the B-type PACs in other foods show minimal to no activity. Neto's study shows that the cranberry's anti-cancer activity is also due to its A-type PACs.

"In light of our findings and previously published studies, cranberries may inhibit the spread of cancer in a variety of ways," said Neto. "Further research is needed to determine the mechanisms associated with each of the cranberry's active phytochemicals."

In addition to helping prevent UTIs, other data has suggested that the unique A-type PACs found in cranberry may also prevent the adhesion of bacteria in the stomach and the mouth, with implications for the prevention of stomach ulcers and gum disease.