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- Highest proanthocyanidin cranberry extract available
- Treats urinary tract infections
- Inhibits adhesion of bacteria
- Whole berry extract

Cranberry Juice Compounds Provide UTI Treatment Alternative

By: Wai Lang Chu

11/09/2006 - Compounds in cranberry juice may provide a viable alternative to antibiotics that treat urinary tract infections (UTIs) especially for combating E. coli bacteria that have become resistant to conventional treatment.

The news comes as welcome relief for those that suffer from UTIs, which each year affect eight million people, mostly women, the elderly and infants resulting in \$1.6 - \$1.3 billion in health care costs.

Until now, scientists have not understood exactly how cranberry juice prevents UTIs and other bacterial infections, though they have suspected that compounds in the juice somehow prevent bacteria from adhering to the lining of the urinary tract.

The new findings reveal how the compounds interfere with adhesion at the molecular level. The results of this new research by scientists at Worcester Polytechnic Institute (WPI) demonstrated that a group of tannins (called proanthocyanidins) found primarily in cranberries affect E. coli in three ways, all of which prevent the bacteria from adhering to cells in the body, a necessary first step in all infections.

Previous work by the team, led by Terri Camesano, associate professor of chemical engineering at WPI, and graduate students Yatao Liu and Paola Pinzon-Arango, showed that **chemical changes caused by cranberry juice also created an energy barrier that keeps the bacteria from getting close to the urinary tract lining in the first place.**

The new work, presented on Sunday, September 10th at the annual meeting of the American Chemical Society (ACS) in San Francisco, showed that cranberry juice could transform E. coli bacteria in even more radical ways. The researchers grew E. coli over extended periods in solutions containing various concentrations of either cranberry juice or tannins.

Over time, the normally rod-shaped bacteria became spherical - a transformation that has never before been observed in E. coli. The E. coli bacteria, all of which fall

into a class called gram-negative bacteria, began behaving like gram-positive bacteria - another never-before-seen phenomenon. Since gram-negative and gram-positive bacteria differ primarily in the structure of their cell membranes, the results suggest that the tannins in cranberry juice can alter the membranes of E. coli.

A final, more preliminary result meeting suggests that E. coli bacteria exposed to cranberry juice appear to lose the ability to secrete indole, a molecule involved in a form of bacterial communication called quorum sensing. E. coli use quorum sensing to determine when there are enough bacteria present at a certain location to initiate a successful infection.

"We are beginning to get a picture of cranberry juice and, in particular, the tannins found in cranberries as, potentially potent antibacterial agents," Camesano said.

"These results are surprising and intriguing, particularly given the increasing concern about the growing resistance of certain disease-causing bacteria to antibiotics."

New Roots Cranberry 107X has the strongest proanthocyanidin content available by using whole berries to extract tannins, concentrating over 64 grams of cranberry per capsule.



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HEART SMART OLIVE OIL



They may smoke more than Americans and their health care system is far from perfect, but Mediterranians usually live longer than their North American counterparts, and they have some of the world's lowest rates of heart disease and cancer. The secret may be their olive-oil-drenched diet.

Scores of scientific studies in the past decade have shown that olive oil, which is high in monounsaturated fat - the "good" fat - may prolong life by combating coronary heart disease and different types of cancer. No wonder the Greek physician Hippocrates, known as the father of medicine, is said to have referred to olive oil as "the great therapeutic." For 4,000 years in the Mediterranean cultures, olive oil has served as everything from money to medicine.

Today 99 percent of all olive oil is produced in the countries that rim the Mediterranean Sea. It is the only vegetable oil that can be created simply by pressing the raw material - in this case, olives. The quality of the oil depends on the amount of processing involved. Extra virgin olive oil is considered the best. This oil from the first pressing of the olives is the least processed.

Once considered an "ethnic food" in North America, olive oil experienced rapid popularity growth in the 1980s. Today we import more than 50 million gallons (189 million liters) annually. Recently, the Food and Drug Administration credited olive oil with decreasing the risk of coronary heart disease.

Up to 80 percent of olive oil is made up of monounsaturated fatty acids, which resist oxidation (the process by which fatty acids are degraded) better than polyunsaturates. Monounsaturated fatty acids help keep HDL (so-called good cholesterol) levels up and LDL, ("bad" cholesterol) down.

In addition, the presence of phenols, tocopherols, squalenes and other natural antioxidants in olive oil also prevent the formation of certain free radicals.

The Best of Both Worlds

With all these great benefits of olive oil, how can we bring it up a notch?....Add phytosterols. Esterified phytosterols blend magnificently with food oils making them an ideal way to supplement them. New Roots Heart Smart Olive Oil contains one gram of phytosterols per 15 ml. This oil may be used in salads, soups, baking or anywhere as a substitute for other oil with the exception to high heat frying. The taste is quite appetizing with a slight nutty flavor which also makes it easy for simple supplementing.

What are Phytosterols?

Phytosterols, also known as plant sterols, are a natural component of plants that play an important role in cell membrane integrity. Structurally, plant sterols are similar to cholesterol except for the substitutions on the sterol side chain at the C24 position. Phytosterols are not synthesized in humans, are poorly absorbed, and are

excreted faster from the liver than cholesterol, which explains their low abundance in human blood and tissues. More than 40 plant sterols have been identified in nature, but beta-sitosterol, campesterol and stigmasterol are the most abundant. Stanols are saturated sterols, produced by hydrogenating sterols. There is epidemiological evidence indicating a reduced incidence of cardiovascular disease (CVD), benign prostatic hyperplasia and other chronic conditions in populations consuming diets rich in plant sterols¹⁻⁵.

Phytosterols: Mechanism of Action

Phytosterols have been shown to inhibit the uptake of both dietary and endogenously-produced (biliary) cholesterol from the intestine. There are several proposed mechanisms by which phytosterols decrease serum cholesterol levels. One of them suggests that cholesterol in the intestine, already marginally soluble, is precipitated into a non-absorbable state in the presence of added phytosterols. The main theory is based upon the fact that cholesterol must enter bile-salt and phospholipid-containing mixed micelles in order to pass through intestinal cells and be absorbed into the blood stream. Cholesterol absorption is a very important physiological mechanism that is not limited to dietary cholesterol intake. Both dietary cholesterol (~300 mg/day) and recirculating biliary cholesterol (~1000 mg/day) mix in the intestine and are partially absorbed. Failure to reabsorb intestinal cholesterol is the principal means of cholesterol elimination from the body. **Studies show that phytosterols compete with and displace cholesterol from mixed micelles which ultimately inhibits cholesterol absorption from 25-50%⁶.**

Phytosterol Form When Supplementing

When supplementing phytosterols, the physical form is an important factor. The efficacy of phytosterols in lowering circulating lipid concentrations has been scientifically shown for both unsaturated and saturated phytosterols. However, with respect to free (i.e. unesterified) versus esterified phytosterols, the matrix and emulsification are important in order to observe an effect^{2,7}. **Previous research has revealed that for optimal efficacy, supplemented phytosterols must be dissolved in a fat (lipid) matrix. Phytosterols are lipophilic and are best transported and absorbed in a lipid base.** If supplemented in a non-fat matrix, phytosterols may not fully disperse or solubilize in the gut digesta before absorption, limiting their ability to reduce cholesterol absorption^{7,8}.



HEART SMART

ORGANIC EXTRA VIRGIN OLIVE OIL

With Phytosterols

Current & Recommended Intakes

Current Mean Intakes²:

Western Diet.....0.08-0.15 g/day
Vegetarian/Asian Diet.....0.35-0.40 g/day

Adult Recommended Intakes²:

Supplement.....1.5-2.0 g/day

Note: Intake of more than 2.5 g/day of phytosterols produces little additional LDL lowering effects and therefore is not recommended².

Safety of Phytosterol Supplementation

In 2000, the US Food and Drug Administration granted generally recognized as safe (GRAS) status to phytosterols and authorized a health claim that foods containing phytosterol/stanol may reduce the risk of coronary heart disease. Phytosterols are safe and well tolerated, and can be taken with a wide variety of other supplements. There have also been no reported adverse interactions of phytosterol/stanol intakes with other medication².

Phytosterols & Nutrition Research

Cardiovascular Disease Risk

Phytosterol supplementation may reduce CVD risk primarily through its ability to significantly lower serum LDL and total cholesterol levels. Scientific evidence shows that consuming 1.5-2.0 g/day of phytosterols decreases LDL cholesterol levels by 8-15%, and based on epidemiological data and trials with cholesterol-lowering drugs, long-term use could be expected to reduce the incidence of ischemic heart disease by about 12 to 20% over 5 years, and by 20% over a lifetime².

Reduction of Cancer Risk

Several studies suggest a protective role of phytosterols, especially beta-sitosterol, in the development of colon, prostate, and breast cancer⁹. The possible mechanisms by which phytosterols may offer this protection include effects on membrane structure and function of tumor and host tissue, signal transduction pathways that regulate tumor growth and apoptosis, immune function of the host, and cholesterol metabolism by the host⁹.

Effects on the Absorption of Fat Soluble Vitamins & Precursors

A nutritional concern of phytosterol supplementation is the associated reduced absorption of some fat soluble vitamins. Lipophilic carotenoids and tocopherols are known to be associated with LDL particles, and plant sterols reduce plasma LDL-cholesterol levels. In clinical research, however, after adjusting for lower LDL-cholesterol concentrations following plant sterol supplementation, vitamin E concentrations were no

longer found to be significantly lowered but concentrations of beta-carotene were still reduced by 8-19%. Clinical studies have also indicated that increased dietary carotenoid intake when consuming plant sterols effectively protected against any decrease in plasma carotenoid levels^{2,3}.

References

1. Jones PJ, Raeini-Sarjaz M. *Nutr Rev* 2001;59:21-24.
2. Katan MB, Grundy SM, Jones P, Law M et al. *Mayo Clin Proc* 2003;78:965-978.
3. Law M. *BMJ* 2000; 320: 861-864.
4. Wong NC. *Can J Cardiol* 2001;17:715-721.
5. Lichtenstein AH, Deckelbaum RJ. *Circulation* 2001;103:1177-1179.
6. Moreau RA, Whitaker BD, Hicks KB. *Prog Lipid Res* 2002;41: 457-500.
7. Jones PJ, Vanstone CA, Raeini-Sarjaz M, St-Onge MP. *J Lipid Res* 2003;44:1713-1719.
8. Denke MA. *Am J Clin Nutr* 1995;61:392-396.
9. Awad AB, Fink CS. *J Nutr* 2000;130:2127-2130.



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