



Green Tea

Stock #1096-6 (60 capsules)

Green tea, made from the unfermented leaves of *Camellia sinensis*, has been used to promote good health and prevent disease throughout Asia for centuries. Green tea provides antioxidant, anti-cancer, anti-tumor, anti-cholesterolemic, immunostimulant, antimicrobial, stimulant and anticariogenic (resists tooth decay) properties.^{1,2}

Green tea contains compounds known as polyphenols that function as antioxidants, combat bacteria and cancer, inhibit the oxidation of LDL (low-density lipoprotein) cholesterol, and provide many additional health benefits. Research shows that the polyphenols found in green tea—catechins and gallic acid, including EGCG (epigallocatechin-3 gallate)—are powerful antioxidants that directly scavenge free radicals. In fact, researchers from the University of Kansas reported that EGCG's antioxidant power is twice as strong as resveratrol (found in grapes, red wine and other foods). Green tea polyphenols, particularly EGCG, are also antimutagenic and may help protect against tumor development by decreasing the occurrence of chromosome alterations resulting from exposure to mutagens,

and by directly binding with carcinogens (cancer-causing agents). Furthermore, evidence shows that green tea polyphenols can inhibit the action of potential carcinogens such as nitrosamines, polycyclic aromatic hydrocarbons and heterocyclic amines.¹⁻⁶

Recent research shows that the main green tea polyphenol EGCG inhibits the activity of the enzyme urokinase, which is necessary for cancer cell growth—EGCG attaches itself to urokinase, thus preventing it from invading healthy cells and forming tumors. Laboratory experiments have also shown that EGCG kills cancer cells through apoptosis—also known as “programmed cell death,” whereby cancerous cells are induced to commit suicide while healthy cells remain unharmed. The combination of multiple actions suggests that green tea is a powerful intervention in both the prevention and treatment of various cancers.^{1,2,7}

Several studies suggest that green tea drinkers have a lower risk of gastrointestinal cancers, along with significantly reduced risks of esophageal and stomach cancers. For example, a large-scale study conducted by Columbia University, Shanghai Cancer Institute and the U.S. National Cancer Institute, involving over 900 individuals with newly diagnosed cancers of the colon, pancreas and rectum, found that those with a greater consumption of green tea (1 cup weekly for 6 months or more) exhibited a lower risk of cancer. There is also some indication that reduced cancer risks may be higher for women than men.^{2,3,8}

In addition, a review of 15 studies on green tea was conducted by scientists at the University of Texas Center for Alternative Medicine Research in Cancer. The review results showed that over half of the studies confirmed green tea's protective effects against the development of bladder, colorectal, esophageal, gastric, lung, pancreatic and stomach cancers. However, one study reported an increased risk of death from pancreatic cancer if more than 5 cups of green tea were consumed daily.^{2,9}

Green tea also provides antibiotic activity against a wide range of bacteria, including *Vibrio cholerae*, *Salmonella typhimurium*, *Salmonella typhi* (all of which are associated with bacteria-induced diarrhea), as well as the antibiotic-resistant and potentially fatal *Staphylococcus aureus*. The polyphenols EGCG and epicatechin provide their bacteriocidal effects by directly damaging bacterial membranes. In addition, green tea catechins exhibit protozoacidal and virucidal (including influenza and HIV) properties. Thus, green tea may prove beneficial for individuals exposed to infectious organisms and for those with immunodeficiency syndromes—green tea can help to prevent infection and combat related fatigue.^{1,2,10,11}

In addition, researchers reported in the prestigious medical journal *The Lancet* that green tea prevented the oxidation of LDL cholesterol better than equivalent concentrations of vitamin C, thereby displaying greater protection against the development of arteriosclerosis and heart disease. Green tea has also been shown to prevent abnormal blood clotting, reduce high blood pressure and increase levels of HDL (good) cholesterol. A Japanese study of over 1,300 men who consumed green tea daily, found that higher consumption of green tea was directly related to reduced total cholesterol and triglyceride levels and increased HDL levels. There was also evidence to suggest that green tea may offer protection against liver disorders.^{2,9,12,13}

Furthermore, in vitro research has discovered that EGCG and other green tea catechins are potent inhibitors of 5-alpha-reductase, an enzyme associated with the development of benign prostatic hyperplasia (BPH) and prostate cancer.^{1,14}

References:

- 1 Alschuler ND, L. "Green tea: Healing tonic." *American Journal of Natural Medicine*; 1998, 5(8): 28-31.
- 2 Knight, J. "Reading the tea leaves." *Herbs For Health*; 1998, 3(2): 41-45.
- 3 Webb PhD, D. "Lower Risk of Colorectal and Pancreatic Cancers Seen in Green Tea Drinkers." *HerbalGram*; 1998, 44:17-18.
- 4 Bu-Abbas, A., et. al. "Marked antimutagenic potential of aqueous green tea extracts: mechanism of action." *Mutagenesis*; 1994, 9(4): 325-331.
- 5 Hayatsu, H., et. al. "Suppression of genotoxicity of carcinogens by (-)-epigallocatechingallate." *Preventative Medicine*; 1992, 21(3): 370-376.
- 6 Taniguchi, S. "Effect of (-)-epigallocatechin gallate, the main constituent of green tea, on lung metastasis with mouse B16 melanoma cell lines." *Cancer Letters*; 1992 65(1): 51-54.
- 7 Ahmad, N., et. al. "Green tea constituent epigallocatechin-3-gallate and induction of apoptosis and cell cycle arrest in human carcinoma cells." *Journal of the National Cancer Institute*; 1997, 89(24): 1881-1886.
- 8 Ji, B.T., et. al. "Green tea consumption and the risk of pancreatic and colorectal cancers." *International Journal of Cancer*; 1997, 70(3): 255-258.
- 9 Mindell PhD, E. *Earl Mindell's Supplement Bible*. NY, NY: Fireside, 1998.
- 10 Nakayama, M., et. al. "Inhibition of the infectivity of influenza virus by tea polyphenols." *Antiviral Research*; 1993, 21(4): 289-299.
- 11 Shetty, M., et. al. "Antibacterial activity of tea (*Camellia sinensis*) and coffee (*Coffea arabica*) with special reference to *Salmonella typhimurium*." *Journal of Communicable Diseases*; 1994, 26(3): 147-150.
- 12 Imai, K. & Nakachi, K. "Cross sectional study of effects of drinking green tea on cardiovascular and liver diseases." *British Medical Journal*; 1995, 310(6981): 693-696.
- 13 Miura, S., et. al. "Effects of various natural antioxidants on the Cu(2+)-mediated oxidative modification of low density lipoprotein." *Biological & Pharmaceutical Bulletin*; 1995, 18(1): 1-4.
- 14 Liao, S. & Hiipakka, R.A. "Selective inhibition of steroid 5 alpha-reductase isozymes by tea epicatechin-3-gallate and epigallocatechin-3-gallate." *Biochemical and Biophysical Research Communication*; 1995, 214(3): 833-838.