

## Benefits of White Tea

"White tea" refers to a specific form of tea in which the leaves and buds are simply steamed and dried. In this sense, white tea represents the least processed form of tea, since green, oolong and black teas undergo withering before various degrees of oxidation. White tea also contains a higher proportion of buds, which are covered with fine 'silvery' hairs that impart a light white/grey color to the tea. White tea brews to a pale yellow/light red color, and has a slightly sweet flavor with no 'grassy' undertones sometimes associated with green tea.

In recent years researchers tested four types of white tea for their ability to inhibit mutations in bacteria, and subsequently examined the protective properties in a rat colon cancer model. In the former studies using bacteria, white teas were generally more effective than green tea in inhibiting mutagenicity (mutagenicity is a result of unrepaired/misrepaired DNA damage and an early step in the process leading to cancer). White teas contained many of the expected polyphenols, some of which were present at higher concentrations than in green tea brewed under the same conditions. Other constituents, such as caffeine, also were present at higher levels in white tea.

Rats were given white tea (tea was brewed for 5 min, using 2g/100ml hot water) in the drinking water for up to 8 weeks. A second group was given the equivalent amount of caffeine alone. In weeks 3 and 4, animals were given a carcinogen from cooked meat ("PhIP"). After 2 weeks of treatment, and prior to PhIP dosing, enzyme changes were detected in the liver, white tea being slightly more effective in this regard than caffeine alone. Overall, the altered enzyme profiles, and profiles of metabolites excreted in the urine, suggested that the carcinogen was more rapidly metabolized and detoxified. At the end of the study, rats given white tea had significantly fewer PhIP-induced pre-cancerous lesions in the colon (called aberrant crypt foci, or ACF). However, rats given caffeine alone also had fewer ACF.

This data is highly preliminary, and cannot be extrapolated to human cancer prevention or treatment. They indicate that white tea, like other forms of tea, can block the DNA damage caused by some compounds using a test tube assay with bacteria as indicator organisms. The animal studies scored pre-cancerous changes in the colon, not actual tumors, and raised the possibility that any potential extra 'benefit' from white tea (versus other teas) might simply be related to higher caffeine levels. Finally, animal studies in which inhibition of colon tumor formation has been demonstrated cannot be simply extrapolated to protection in people. LPI researchers are now planning further studies with white tea in animal models (rats, mice, trout), and in a pilot human trial.

## References

<http://lpi.oregonstate.edu/new/whitetea.html>