

## **New Study Shows Tea Extract Protects Skin; White Tea Extract Reveals Anti-cancer, Anti-aging Properties**

ScienceDaily (Jan. 30, 2003) — Cleveland (January 27, 2003) -- Scientists at University Hospitals of Cleveland and Case Western Reserve University have proven that ingredients in white tea are effective in boosting the immune function of skin cells and protecting them against the damaging effects of the sun. The discovery that white tea extract protects the skin from oxidative stress and immune cell damage adds another important element in the battle against skin cancer.

Elma Baron, MD, is Director of the Skin Study Center at UHC and CWRU. "We found the application of white tea extract protects critical elements of the skin's immune system," Dr. Baron says. "Similar to the way oxidation causes a car to rust, oxidative stress of the skin causes a breakdown in cellular strength and function. The white tea extract protects against this stress. This study further demonstrates the importance of researching how plant products can actually protect the skin." Dr. Baron worked with Seth Stevens, MD, principal investigator for the study.

As part of the study, scientists applied a white tea extract cream to one patch of skin on the subject's buttock (skin that is not ordinarily exposed to much sunlight), while another area was left unprotected. Both areas were then exposed to artificial sunlight. Researchers then reapplied the white tea extract to the area previously coated. Three days later the scientists compared the patches of skin on a cellular level.

Here's what they looked for: In the immune system, the Langerhans cells in the outer layer of the skin (epidermis) are the outermost reach of the immune system, and are the first to recognize foreign agents. They are the sentinel cells or watchdog cells, essential in detecting germs and mutated proteins produced by cancerous cells; but, because of their location, the Langerhans cells are very sensitive to damage by sunlight. Scientists in the study found the white tea extract protected against the Langerhans cell obliteration that was observed in the sun-exposed skin not treated with the extract. The investigators then tested whether the preserved immune system cells in the white tea extract-protected skin would still function properly after exposure to sunlight; they discovered the immune function was indeed restored by the extract. They also found that the DNA damage that can occur in cells after exposure to sunlight was limited in the skin cells protected by the white tea extract.

Researchers believe that white tea extract's anti-oxidant properties are the reason the extract was effective; if so, it also suggests that the agent may provide anti-aging benefits. The same process of oxidative stress in skin cells that leads to immune system damage can also promote skin cancer and photo damage, such as wrinkling or mottled pigmentation.

Kevin Cooper, MD, is chairman of the department of dermatology at UHC and CWRU. "We know that younger skin tends to be able to resist the oxidative stress associated with exposure to the destructive rays of sunlight. The white tea extract also appears to build the skin's resistance against stresses that cause the skin to age."

The results offer promise in the battle against skin cancer, the most common form of cancer in the United States with more than one million new cases diagnosed every year.

The Skin Study Center at UHC and CWRU has studied the benefits of another form of tea that has protective effects. Researchers found that ingredients in green tea decreased the direct effects of sunburn. This newest study is the first of its kind involving white tea. White and green teas contain the highest amounts of antioxidants of all tea varieties, but white tea is actually the least processed form of tea and is rarely used in consumer products.

This study was funded by Origins Natural Resources, a division of The Estee Lauder Companies (ELC).

*Adapted from materials provided by [University Hospitals Of Cleveland](#).*

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