

SCIENTIFIC BREAKTHROUGHS ON UNIQUE BOTANICALS

THE APPLICATIONS AND BENEFITS OF BOTANY



açaí



broccoli



tumeric
flower



cranberries

WHEN I STEPPED OFF THE PLANE IN Mumbai, India for a four-week training course, it was if I had traveled through time and entered a place that had been left in the dust by the modern world. As I caravanned north toward Meherabad, the adventure of learning something new took on a whole new meaning.

Plant wisdom

Due to the remoteness of this area and the lack of modern health facilities, dependence on plants for medicine is very high. One of my teachers lives in Meherabad for six months out of the year, where she instructs local medical practitioners on herbal applications for orphaned AIDS children. Pharmaceutical drugs rarely find their way to these children due to trafficking and theft, so medical staff rely on traditional methods for healing.

Out of the total 422,000 reported flowering plants in the world, more than 50,000 are used for medicinal purposes. In India, more than 43 percent of the total flowering plants are reported to be of medicinal importance. In India, there is extensive documentation in ancient text on the utilization of plants for medicinal use. Many important modern-day drugs owe their existence to the traditional knowledge on the medicinal uses of plants. Even today this area holds more hidden treasure, as almost 80 percent of the human population in developing countries depend on plant resources for health care. In the interior areas of the western Himalayas, plants become the only source of medicine and well-being.

Discoveries in plant biochemistry

As the world becomes more complicated and the modern health care system continues to fall short, the return to traditional plant medicine is on the rise, a trend that is also visible in skin care. Science is beginning to break through with many astounding studies on the medicinal application of plants and their abilities to prompt the body to produce whatever is necessary for repair and survival.

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The balance between oxidative stress and antioxidants in your body and on the skin may be one of the key indicators of your overall health. This balance has also led to an amazing discovery involving a specific constituent found in many domestic and foreign plants. It is important to note that the studies conducted on botanicals are done so with the use of raw plant material and that is not to be confused with cosmetic grade herbal extracts, which are compounded and extracted with manmade ingredients, such as alcohol or propylene glycol. It

is entirely incorrect to use these studies on cosmetic grade herbal extracts and apply them to cosmetic grade herbal extracts. The ratio of botanicals in cosmetic grade ingredients is around 25 to 60 percent. Cosmetic grade herbal extracts contain a lower ratio of plant material and generally have a manmade preservation system.

Paul Talalay, M.D., a clinical pharmacologist in Baltimore, MD, and a group of scientists from Johns Hopkins University conducted a study on oxidative stress that focused on the potential chemo-protective effects of certain vegetable varieties. Chemo-protection refers to an increase in the body's natural defense against chemicals.

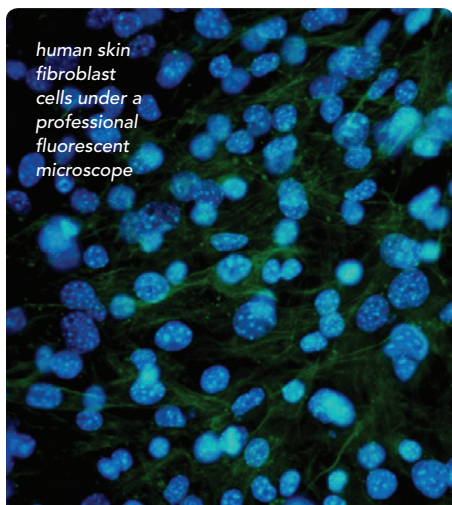
The beneficial constituent found in several plant varieties is called sulforaphane. Sulforaphane induces enzymes, including quinone reductase and the antioxidant glutathione S-transferase, which can detoxify carcinogens and prevent toxic electrophiles from damaging DNA. Sulforaphane can be found in many Indian plants such as ashwagandha and turmeric. It is also found in dark berries like cranberry and acai. The actual study conducted by Johns Hopkins University researchers was based on broccoli seeds and sprouts, which also contain sulforaphane.

This study generated the debate about direct and indirect antioxidants, and the following were some of their findings:

- Direct antioxidants, like vitamins C, E and beta-carotene, neutralize only one free radical molecule at a time, and are consumed in the process.

continues

BY ANNE C. WILLIS



human skin fibroblast cells under a professional fluorescent microscope

SCIENTIFICALLY SPEAKING

Electrophile: a molecule that has a positively charged center, which reacts with electron-rich centers such as those that exist in DNA, and causes damage. Many cancer-causing chemicals are electrophiles or are converted to electrophiles.

Glutathione (GSH): a naturally occurring peptide, this serves as a biological redox agent or coenzyme, and is present in very high concentrations in cells. It is the principal protective natural antioxidant that protects cells against oxidative damage. Glutathione has hundreds of functions in the body. The five main benefits of GSH include the following:

- It is the body's master antioxidant.
- It is an immune system booster and balancer.
- It enhances the detoxification of pollutants, chemicals and other toxins.
- It regenerates mitochondria at the cellular level to promote energy.
- It has an anti-aging effect on cells.

- Direct antioxidants work together with Phase I enzymes to activate or deactivate oxidants.
- Indirect antioxidants induce or boost the activity of the Phase 2 enzymes, which detoxify free radicals. These enzymes act as a defense mechanism, triggering broad-spectrum antioxidant activity that neutralizes many free radicals.
- The indirect antioxidant effects are long lasting, triggering an ongoing process that may last for days.

el. The long-term effects of advanced technology used in current skin care solutions are limited in performance and potentially damaging to the skin and the body.

The return to traditional skin care is becoming vital as we seek solutions that aid in the prevention and recovery of aging, oxidative stress and skin cancers. As modern research begins to break through with many astounding studies that expand our understanding of medicinal plants, we find our-

AS MODERN RESEARCH BEGINS TO BREAK THROUGH WITH MANY ASTOUNDING STUDIES THAT EXPAND OUR UNDERSTANDING OF MEDICINAL PLANTS, WE FIND OURSELVES AT A UNIQUE CROSSROADS BETWEEN THE APPLICATIONS OF TRADITIONAL VERSUS CONVENTIONAL THERAPIES.

Natural defense

Dr. Talalay's research gives our generation a unique insight into the biochemistry of plant constituents and further validates the complexity of our biological responses to nature. His research not only provides a more viable approach in combating oxidative stress than that of direct antioxidants like vitamin C and E, it also supports the theory that our bodies are capable of producing natural defense against chemicals if given the right resources. In addition, this study challenges us to think beyond neutralizing free radicals by demonstrating the importance of detoxifying free radicals and triggering broad-spectrum antioxidant activity.

Skin conditions are becoming far more complicated as the body's resistance to the outside world is compromised. Though contemporary skin care formulas offer clients convenience and immediate results, they do not work in harmony with the complex biochemistry that initiates repair on a cellular lev-

els at a unique crossroads between the applications of traditional versus conventional therapies. Our goal, as we set the foundation for new skin care formulas and solutions, should encompass the whole body and the intricate wisdom of plants. ■



Anne C. Willis, a licensed esthetician and massage therapist, has more than 30 years of experience in the skin care industry. She is the founder of

De La Terre Skincare, and a worldwide leader in holistic and medical skin therapies. Willis is also an accredited skin care instructor and the director of *Oncology Skin Therapeutics™*. She co-authored *The Esthetician's Guide to Working With Physicians*.