

### NEW TECHNOLOGY COULD MAKE ANTIOXIDANTS IN SKIN CARE PRODUCTS MORE EFFECTIVE

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#### OVERVIEW:

While antioxidants have been used as active ingredients in skin care products for years because of their anti-aging abilities, effectively adding these natural ingredients to skin care products has its challenges. Advances in plant stem cell technology provide a new way to extract antioxidants from plants in their purest and most stable form, which can help products more successfully treat the signs of aging.

#### AMERICAN ACADEMY OF DERMATOLOGY EXPERT

Information provided by Doris Day, MD, FAAD, a board-certified dermatologist and clinical assistant professor of dermatology at the New York University Langone Medical Center in New York, N.Y.

#### POPULAR BOTANICAL ANTIOXIDANTS

Currently, there are a number of botanical antioxidants being used as ingredients in skin care products to improve the appearance of aging skin. The cosmeceutical industry spends many resources searching for plants with the best antioxidants. Dr. Day explains some of the properties unique to the following popular botanical antioxidants, but cautions that more research is needed to confirm these benefits are effectively provided through skin care products:

- **Berry extracts** – Berry extracts from raspberries, blueberries and strawberries have become an area of intense research in the cosmetic industry because they contain high levels of anthocyanins, a new category of strong antioxidants with anti-inflammatory abilities. Wild berries typically contain higher levels of the active ingredients than berries grown on farms.
- **Soy** – Soybeans are a rich source of isoflavones, which function as phytoestrogens (a group of chemicals found in plants that can act like the hormone estrogen). Topical estrogens have been found to increase skin thickness and promote collagen production.

#### PLANT STEM CELLS COULD IMPROVE ANTI-AGING PRODUCTS

Scientists have noted that plants have evolved over time to protect themselves from the damaging effects of oxidation (the main cause of skin aging in humans), which occurs following sun exposure, and they are trying to apply this concept to skin care products. Currently, the antioxidants found in certain plants are included in many anti-aging skin care products, but the plant materials are taken from plants that are grown outdoors and, as a result, can contain contaminants such as pesticides, heavy metals and fungal toxins. Additionally, the variation in soil condition, weather and the use of fertilizers makes it difficult to control the concentration of antioxidants in plants grown outdoors.

New research is focusing on how to use plant stem cells to eliminate the contaminants from the plant and control the concentration of ingredients in the plant. The stem cells can be taken from the berries, leaves, stems, twigs or roots, but the leaves are most commonly used because of their high level of antioxidants.

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Through this new technology, all contaminants are removed from outdoor plant materials through a sterilization process in order for the plant stem cells to provide better quality ingredients. Then, the stem cells are cultured under controlled laboratory conditions. As a result, the stem cells contain a purer and more consistent level of antioxidants that can be extracted and added to anti-aging products.

**AMERICAN ACADEMY OF DERMATOLOGY EXPERT ADVICE:**

“Cosmetic manufacturers put a large amount of resources into developing safe products with quality ingredients, which is why there are so many excellent skin care products available,” said Dr. Day. “Future research will help further determine which botanical antioxidants provide maximum anti-aging benefits and set the foundation for the next generation of skin care products.”

**DR. DAY’S SKIN CARE TIPS**

- Practice proper sun protection daily by using a broad-spectrum sunscreen with a Sun Protection Factor (SPF) of 30 or greater, seeking shade and wearing protective clothing.
- Exfoliate the skin to improve a dull appearance. The frequency of exfoliation depends on skin type (e.g., dry skin should be exfoliated less frequently, as it is important not to over-strip the skin of its protective outer layer). Dr. Day noted that it is especially important to wear sunscreen and/or protective clothing after exfoliating because it makes the skin even more vulnerable to sun damage.
- Eat foods rich in antioxidants, which can help protect against premature aging and skin cancer. For example, a Mediterranean diet that contains foods such as olive oil, fruits, vegetables and nuts provides more antioxidants compared to a diet based largely on processed foods.
- The old adage “beauty comes from within” still holds true, as the skin reflects a healthy body and mind at any age.
- If you are concerned about aging skin, see a board-certified dermatologist for advice tailored to your skin type.

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**Kara Jilek**  
(847) 240-1701  
[kjilek@aad.org](mailto:kjilek@aad.org)

**Allison Sit**  
(847) 240-1746  
[asit@aad.org](mailto:asit@aad.org)

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