Safer suntans through science

September 26 2006

An organic compound that creates a realistic beachy glow while inducing a natural sun block effect in your skin may be just around the corner, as scientists at the University of Kentucky are testing a treatment that enhances melanin production in animal models.

"We are in the process of evaluating forskolin, a derivative of the plant Pletranthus barbatus, for safety when applied to the skin. We know it stimulates melanin, but we need to know that it does so without adverse effect. So far, results are promising," said Dr. John D'Orazio of the UK Department of Pediatrics,the Markey Cancer Center and the Graduate Center for Toxicology.

Many people use sunless tanning products to achieve a tan look without risking the UV damage that causes skin cancer and wrinkles. However, sunless tanners currently on the market use a chemical that dyes skin a brown or orange shade. With no sun protection, skin remains vulnerable to burns and damage. Some people become frustrated with the tricky application of sunless tanners (as anyone who has ever left the house with orange knees and elbows can attest) and either give up entirely, or turn to the sun and tanning beds. Getting a tan either by sitting out in the sun or in a tanning bed currently comes with the bad side effects of ultraviolet radiation, namely sun spots, skin thickening and skin cancer. This new approach uses a lotion that fools the skin into thinking it has been out in the sun (causing natural tanning to happen) without the bad side effects of UV light.

Even those who do not desire a tanned look and use copious amounts of

sun block may be at risk of skin cancer, as sun blocks require constant re-application, fade as they are exposed to sunlight, and often protect only against UVB rays, not the UVA rays blamed for some skin cancers and photo-aging of skin.

People with more melanin in their skin have darker skin that is naturally more resistant to sun damage because the melanin which is actually part of the epidermis acts as a wonderful natural sunscreen against all kinds of UV radiation. The compound being tested at the University of Kentucky actually stimulates skin to produce more of its own melanin.

The result is not only a biologically authentic, natural-looking tan, but also increased protection from the sun. Although all of the work thus far has been done in an animal model of "humanized skin", D'Orazio and his team showed that the skin of a pale individual can be made to mimic the sun-resistant skin of another with a naturally darker complexion. Effects are temporary and last only as long as the lotion is applied, so people could build up their melanin production in advance of prolonged sun exposure such as a trip to the beach. Researchers are touting this approach as a novel way to protect individuals from cancer-causing sun damage.

"What is exciting to us as scientists and physicians is the possibility of reducing skin cancer by making skin more impervious to UV damage. The cosmetic effect does have a lot of people excited and that's great too. If this keeps even one person from going to a tanning bed and increasing their risk for skin cancer, then it will serve its purpose," said D'Orazio.

Source: University of Kentucky