Press Release

June 16, 2008

KOSÉ Anti-aging Research Confirms Ability of Cacao Seed Extract to Inhibit in Down-regulation of Fibrillin Expression Caused by Ultraviolet Rays

A joint research project of KOSÉ Corporation and Dr. Hiroshi Wachi, Associate Professor of the Clinical Chemistry Center of the Hoshi University Faculty of Pharmaceutical Science, has discovered that an extract of cacao seeds reduces the down-regulation in the expression of fibrillin that occurs when skin is exposed to ultraviolet rays. KOSÉ plans to use this discovery to create new products.

Elastic fiber is a one of the extra cellar matrix found in the skin that plays a key role of skin elasticity. As skin on the face and neck that have the much amount of exposure to the sun, tend to lose its elasticity that occur with aging. These suggested that cause of wrinkles and sagging of skin As part of its anti-aging research activities, KOSÉ focused its attention to a protein called fibrillin (a one of the microfibril) that is the key to the assembly of elastic fiber.

Erastic fibers are formed through the deposition and cross-linking of a protein called tropoelastin through a process that uses the fiber-shaped fibrillin in a manner similar to scaffolding. Fibrillin is expression by dermal fibroblasts. However its key role in the assembly of elastic fibers, fibrillin has not been reported about the ultraviolet rays irradiation. And the mechanism is not clear by which daily exposure to ultraviolet rays causes the skin to wrinkle and sag. For this purpose, joint research with Hoshi University was conducted to examine in fibrillin expression and the formation of fibrillin fiber that occur when dermal fibroblasts are exposed to ultraviolet rays.

We hypothesized that abnormal metabolism of skin is caused by exposure to ultraviolet rays (UV-A) during normal daily activities. Then, we studied that the same level of ultraviolet rays exposed to dermal fibroblasts. These study confirmed that ultraviolet rays decreased the fibrillin expression. Furthermore, repeated UV-A exposed cause to accumulation of fibrillin fiber The reduction of fibrillin expression and abnormal accumulation probably cause the skin to lose its flexibility by blocking the stretching and contraction of elastin.

In the further study, we confirmed that an extract of cacao seeds (Theobroma cacao L.) can be inhibited the down-regulation in fibrillin expression and the change in the shape of the fibers. In other words, cacao seed extract may be able to reduce the changes in elastic fiber that occur when skin is exposed to ultraviolet rays.

We announced in March 2008 at the 128th meeting of The Pharmaceutical Society of Japan. KOSÉ plans to use this technology in a new skin care product that will be launched in September 2008 using our luxury brand COSME DECORTE .

Figure 1 Reduction in fibrillin production due to cacao seed

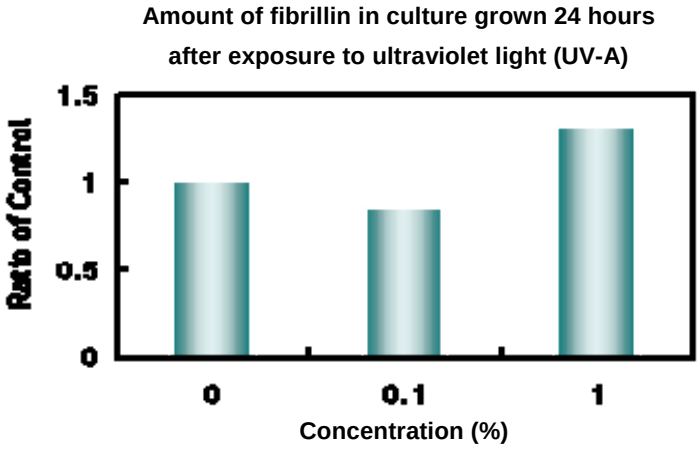
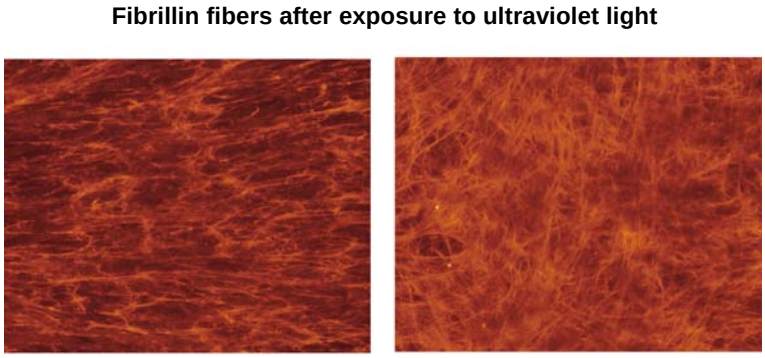


Figure 2 Effect of cacao seed extract on synthesis of fibrillin fibers



Cacao seed extract with no additives

Cacao seed extract with additives