

Targeting the Dermal Matrix for Skin Anti-Aging

Siming Chen*, Yong Zhuang, Lisa Di Natale, Anthony Gonzalez and John Lyga
Avon Products, USA

Cutaneous aging is a complex process involving a series of cellular and extracellular matrix events. The dermal matrix of the skin plays a pivotal role during this process. Studies by us and other investigators have consistently found that dermal matrix progressively degrades throughout a person's life. The manifestation of this progressive reduction of dermal matrix is the loss of skin elasticity, which may in turn lead to gradual appearing and/or deepening of facial lines, wrinkles and increased sagging.

It was postulated that enhancing dermal matrix protein production, assembly and stabilization can contribute to improve facial volume and firmness over time, thereby slowing down the appearance of skin aging. To investigate this possibility, a screen of synthetic substances and medicinal herbs was conducted to identify cosmetically acceptable substances that can influence the production and stabilization of dermal matrices. We identified a substance that showed strong stimulatory effect on dermal matrix components, such as Collagen and Hyaluronic acid in an in vitro model. Subsequently, a placebo controlled clinical split-face study, which was assessed by bio-instruments, showed that a 4-week of treatment of panelists with this substance could improve skin firmness as well as other skin conditions. Examination of skin biopsies with the treatment of this substance revealed the increased epidermal thickness in addition to dermal matrix improvement. To elucidate the mechanism of action of this substance, we conducted gene array study. In this presentation, our findings from both in vitro and in vivo studies will be shown and discussed.

Biography:

Dr. Siming Chen is a Fellow of Avon Products in Suffern, NY, where she leads R&D efforts in translating and implementing scientific discoveries, substantiating claims, and managing the cell biology laboratory. Dr. Chen's primary research focus is on anti-aging skin biology and pigmentation. Prior to joining Avon, Dr. Chen was a Research Associate in Weill Medical College of Cornell University, investigating molecular mechanisms of retinoid on stem cell growth and differentiation, early embryo development and cancer. Dr. Chen has numerous publications, and received multiple achievement awards, including two R&D Chairman Awards of Avon. Dr. Chen holds 10 US Patents.