

〈教育セミナー〉

エイジングケア 2007—シミ・シワの皮膚科学から化粧品開発まで—

シワと Solar Elastosis とエラスチン

多島新吾

**Wrinkles, Solar Elastosis and Elastin**

Shingo TAJIMA

**Abstract**

Long-standing UV exposure causes the accumulation of degenerated elastic fibers in the dermis (actinic elastosis) which is a histological marker of photo-aging. The molecular mechanism by which the degenerated elastic fibers accumulate in the dermis has been studied and includes three possible theories, 1) role of leukocyte elastase inhibitor (elafin), 2) advanced glycation end product (AGE) modification of elastin molecule, 3) racemization of aspartic acid residue of elastin molecule. Leukocyte-derived elastase inhibitor (elafin) was found to (1) colocalize with elastic fiber accumulations in the dermis, (2) bind to elastin molecule via transglutaminase *in vitro*, (3) be induced by UVA irradiation, and (4) protect elastin molecule from elastolytic degradation. On the other hand, genetic disorders of elastin molecule, cutis laxa and middermal elastolysis causing a histological disappearance of elastic fibers show marked wrinkles suggesting an association between wrinkle formation and abnormal elastin metabolism.

**Key words:** wrinkle, solar elastosis, elafin, elastin.