Effect of Fullerenes on the Skin Barrier

Structure and function of the stratum corneum



Increased mRNA expression of TGase1 and filaggrin in human keratinocytes

TGase1

Fullerenes increase transglutaminase 1 (TGase1; cornified factor) mRNA expression.

Clinical tests have proven that fullerenes help in recovering skin barrier function.

Fullerenes increase cornified envelope formation and help maintain skin barrier function.



⇒The increase in filaggrin mRNA expression in RStreated cells was greater than that in control cells.

* RS: Radical Sponge®

Expression level (Control = 1) 1.6 1.4 1.2 1 0.8 0.6 0.4 0.2 0 RS (5%) control RS (0%') RS (5%) mean with SD *P < 0.05, N = 3 UVB (40 mJ/cm²)

⇒UVB irradiation decreased TGase-1 mRNA expression. However, RS application significantly increased TGase-1 mRNA expression.



significantly recover skin barrier function at 2 and 3days after application.

Data source: Prof. Maeda, Ph.D., Tokyo University of Technology

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