

The effect of novel sphingolipids derivatives for their cosmetic effects

*Dr. Mike Farwick,
Evonik Goldschmidt GmbH, Essen*

Dry, thin and sagging skin is among the most common complaints of women over the age of 50. This is due to reduced protective, preventative and regenerative aspects of aged skin. Aged skin is manifested by reduced stratum corneum (SC) moisturization, and although transepidermal water loss (TEWL) is known to be normal or to be improved with age, the epidermal barrier repair capacity after removing the superficial layers of the barrier by tape stripping is significantly impaired.

Epidermal changes that occur with aging include the premature expression of involucrin and the decline in transglutaminase-1 and filaggrin levels. These changes can impact SC formation and maturation. An age-related decline in the activity of the rate-limiting enzymes for ceramide, cholesterol and fatty acid synthesis has been reported; namely serine palmitoyltransferase, hydroxymethyl-glutarylcoenzyme-A reductase, and acetylcoenzyme-A carboxylase. All of these proteins participate in the production of a fully functional SC.

Clearly, significant epidermal changes occur in aging skin that are responsible for its reduced protective, repair and regeneration capacity. The purpose of the presented work was to evaluate novel sphingolipids derivatives for their effects as epidermal cell signalling molecules that aid epidermal repair and regeneration.

