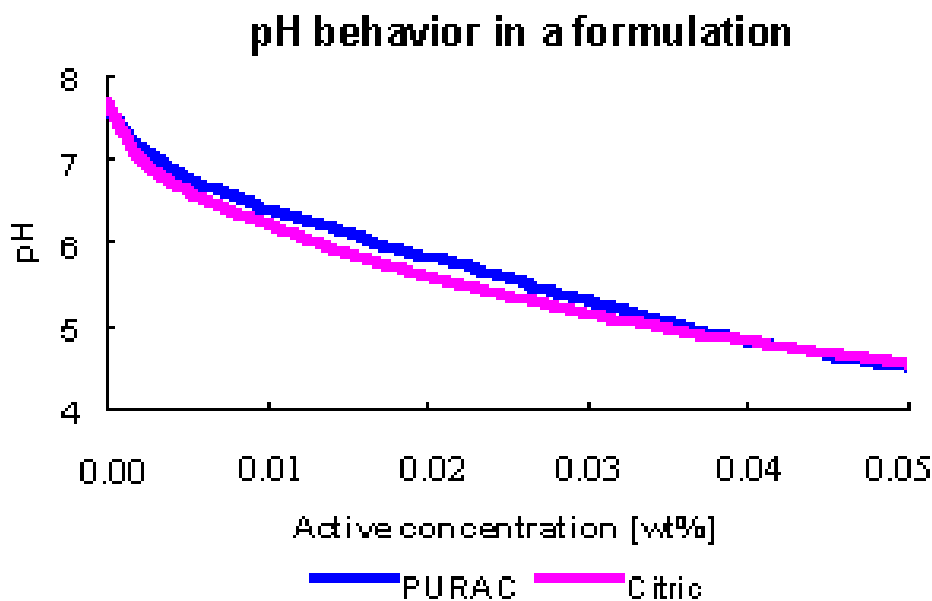


Lactic acid and citric acid

for pH regulation of cosmetic products and to increase ceramid levels

Lactic acid is a very suitable and efficient pH-regulator for a wide variety of products such as shampoos, creams, lotions and soap bars. **L(+)-lactic acid is naturally present in both the human skin and hair and is milder than other organic acids that might be used for this function.** When lactic acid is used to **adjust the pH of a cosmetic product**, it provides not only pH regulation, but also additional features such as **moisturizing and bacteriostatic properties**. This makes it possible to combine different functions in a single product, thus reducing the number of raw materials necessary in the formulation.



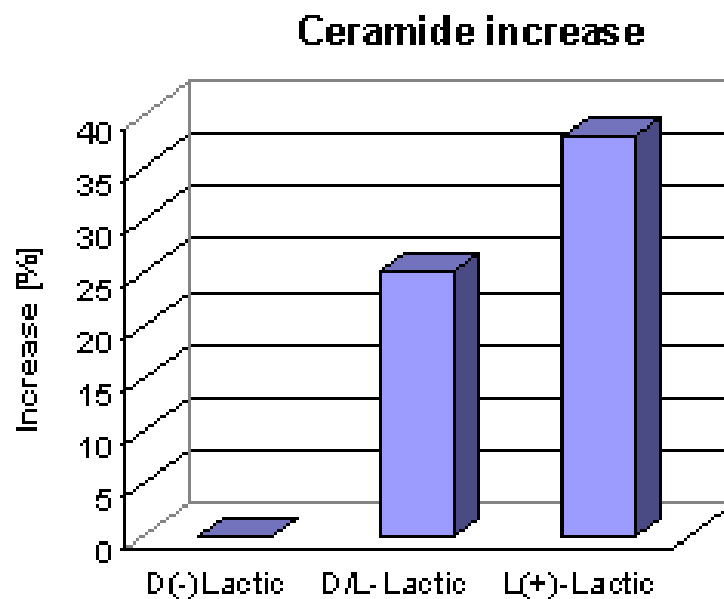
The effectiveness of **lactic acid (purac) as a pH-regulator is very similar to that of citric acid**. The graph shows the pH behaviour of L(+)-lactic acid and citric acid in a 10% sodium lauryl ether sulphate solution.

Lactates increase ceramide level

In recent decades, our knowledge of the composition of human skin - and especially of the stratum corneum - has been increasing. It has become clear that ceramides, a group of complex lipids formed in the skin, play a crucial role in the skin barrier's function.

Maintaining or increasing the ceramide levels in the skin via topical applications has proven to be effective. Since not all biochemical pathways have been completely identified, studies have been carried out to discover or to check potential active compounds. A recent study has shed some new light on the effect of lactates in this respect (A. Rawlings et al.).

A. Rawlings et al. checked the effect of different isomers on the synthesis of ceramide in the skin after topical application over a four-week period. The D(-) form showed no increase, the racemic a 25% increase and the L(+) form a 38% increase in ceramide levels (see graph).



Source: Rawlings et al. - Arch. Dermatol. Res. (1996) 288: 383 - 390

Ceramides are known to improve the barrier function of the skin - that is, the skin's ability to protect the body against undesirable influences from the environment.

Skin treated with different lotions was also checked for transepidermal water-loss (TEWL) after being challenged with sodium lauryl sulphate. Here it was found that the skin treated with L(+)-lactic acid had a lower TEWL, which indicates that the barrier function of the skin had improved.

Bron: www.purac.com