

〈原 著〉

ヒアルロン酸の分子量と保湿能

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Molecular Weights of Hyaluronic Acid and Moisturizing Effects

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Abstract

Cosmetic products containing hyaluronic acid are now popular in Japan, because of its excellent moisturizing effects. However, the molecular weight of hyaluronic acid used in products is various. An attempt to evaluate the moisturizing activity, thus, is made in three molecular weights of hyaluronic acid, that is, 100,000, 260,000 and 1,210,000 at the same O/W type cream vehicle containing 40% glycerol and 0.1% hyaluronic acid. The 40% glycerol cream is used as a control.

The 4 test materials are applied to the fixed sites in a cyclic fashion on the flexor surface of forearms in 9 healthy female volunteers. Water content of the horny layer is estimated by the electrical impedance with the HF impedance meter Model IB-35S (IBS Co., Hamamatsu), and transepidermal water loss (TWL) is measured with the evaporimeter EP1 (Servo AB, Stockholm). The measurements are made just before the experiment starts, 1 week and 2 weeks after the commencement, and 2 days after topical applications are stopped.

Results obtained are the following:

1. No suppressing effects of TWL were found in all materials.
2. Moisturizing effects were seen at sites where the test materials were applied. Moisturizing activity of 1,210,000 molecular weight hyaluronic acid is significantly superior than those of the other 3 materials. Moisturizing activities were paralleled to the molecular weight of hyaluronic acid.

Key words: hyaluronic acid, molecular weight, glycerol, TWL, moisturizing effect