

〈原 著〉

化粧品科学の立場から見たSodium hyaluronateに関する研究 〔第 I 報〕物理化学的性質について

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Studies on Sodium Hyaluronate from the Viewpoint of Cosmetic Science [I] Tests on Physico-chemical Properties

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Abstract

From its chemical structure, it was speculated that sodium hyaluronate (HA) would have some interesting properties suitable for cosmetic applications. The physical properties of this natural polymer have been investigated by physicochemical techniques.

1. Water-absorbing and water-holding tests

HA was less water-absorbing than sodium pyrrolidone carboxylate (PCA) and glycerine but more water-holding than glycerine and sorbitol. Accordingly, it was concluded that HA would be a more effective moisturizer than low-molecular water-holding agents now widely used in cosmetics.

2. Film strength and elasticity tests

Various films which were derived from water-soluble polymers such as HA, polyvinyl pyrrolidone (PVP), polyvinyl alcohol (PVA), carboxymethyl cellulose (CMC) and gelatin, were tested by the stretching apparatus. Each sample gave complex result under each humidity condition. Of the samples tested, HA gave the highest values of strength and elasticity under all test conditions.

3. Surface slipping resistance test

For detecting enhanced smoothness due to the application of water-soluble polymers on the skin, the slip resistance values were measured with the slip resistance instrument. Smoothing effect was clearly detected with HA but not with gelatin or sodium chondroitin sulfate (CS).

It is suggested, therefore, that the application of HA on the skin will give a desirable cosmetic effects.