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Abstracts

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A Study on Neck Skin Physiology and Its Application to Development of Cosmetics

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The neck is a sun-exposed area. It seems to show the symptoms of photo-aging as well as facial skin in the elderly. However, the physiological study of neck skin has hardly been reported. We examined the change of skin physiological properties at a neck site with aging for 61 women (18 to 69 years old) compared with a cheek site. Water content in stratum corneum (SC) was higher, TEWL was lower and the turnover rate of SC judged from corneocyte area was slower at the neck site compared with the cheek site. Skin thickness was thinner, skin extensibility and elasticity were higher, skin grooves were deeper, and anisotropy of skin furrows was lower at the neck site than those at the cheek site. It was shown that the neck was also affected by sunlight but not so much as the cheek from the result of gelatinase activity detected in the tape stripped SC. Skin elasticity decreased with aging at the neck site as well as the cheek site. Fine wrinkles were remarkably increased in the direction of Langer's line with aging at the neck. Most skin physiological parameters at the neck showed the value between the cheek (heavily sun-exposed area) and back (not sun-exposed area) . From these results it was considered that not only intrinsic aging but also photo-aging affected the neck skin. We developed the prototype of cosmetics corresponding to neck skin physiology based on these results, and evaluated the effectiveness of the prototype product by a consumer test including skin measurement for 4 weeks. After treatment, water content increased, and it gave satisfaction in the skin color brightness, skin elasticity and skin texture improvements for almost all volunteers. It was concluded that the prototype product was useful in neck skin treatment.

Material Design Using Genetic Algorithms and Preparation of Innovative UV-Reflecting Composite

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Genetic algorithm (GA) , which is one of the methods that optimize the combination of factors, was applied to the design of a new cosmetic material. GA effectively gives an adequate solution especially when there are huge factors and infinite combinations among those individual factors. In this work, the UV-Reflecting composite that effectively reflects UV light and has high visible light transparency was chosen as the target material. From GA simulation, a blueprint of the composite was obtained as follows: The multiple layers on the core material (mica) should be 27 nm

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titanium dioxide, 42 nm silica, 33 nm titanium dioxide, and 115 nm silica (from the inner layer) . According to the results, the composite was prepared, and its cosmetic properties were evaluated. This composite showed both high UV reflection effect and good visible light transparency while having a smooth feeling on use, compared with the commercial ultra fine titanium dioxide.

Relationship between the Average Projected Area of Corneocytes and the Onset Age of Atopic Dermatitis in Childhood

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In childhood, atopic dermatitis typically begins around 2 to 6 months of age. It is thought that the skin barrier dysfunction as well as allergic disease is important in the mechanism of atopic dermatitis. However, there are few reports of the skin barrier function in childhood. So we examined the relationship between the longitudinal surveys of the skin barrier function through the average projected area of corneocytes (APAc) and clinical findings in children from one month to 12 months. As a result of examinations, APAc of cheek and upper arm in one-month-old children is the same as those in adults, and APAc of cheek and upper arm decreases by six months of age. These results suggest that the skin barrier function decreases before or after the onset age of atopic dermatitis during childhood. Moreover, we examined APAc of children aged 0-5 for one year in the same nursery. APAc of upper arm in atopic dermatitis or atopic disposition has a significant difference compared to that of the other subjects in December. Furthermore, it was shown that change of APAc in the children under medical treatment was correlated with clinical findings. In conclusion, it was thought that the APAc shown as the index of skin barrier dysfunction is associated with the onset age of atopic dermatitis in childhood.

From Age of Fast Beauty to Age of Slow Beauty, the Post-Modern Value

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Cosmetic behavior, in which there are make-up, skin care, body painting, bath, shampoo, tooth brushing, combing, haircut, nail care and so on, historically has never broken off. And it is a fact that there is no race in the earth which doesn't have cosmetic behavior. Cosmetic behavior has universality in time and space. Human beings is an animal that can live without cosmetic behavior. What have human beings been seeking for in cosmetic behavior? What have human beings been expressing by it? Through seeing some historical episodes of cosmetical behavior, we know that fast life, which began with modernization, brought us fast beauty. Fast beauty is standardized beauty, youth is indispensable for it. Therefore the immediate effect of keeping and seeking youth is requested from cosmetics. Opposite to fast beauty I suppose slow beauty as the standard value in the next social stage. Slow beauty is diversification of beauty value, expressed "beauty of each person and each age." The standard of beauty is not in each person but in each age of oneself. Beauty is acquired by everyday accumulation;we can realize different beauty with the accumulation of years. This is true aging.