〈教育セミナー〉
(皮膚と毛髪の色の科学)

ヘアカラーにおける発色の機構と色の見え方

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Color Development Mechanism and Appearance in Vision with Hair Coloring Products

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Abstract

Appearance in vision with hair coloring products is controlled primarily by following three factors ; 1) hue of hair dyes which are generated in hair, 2) bleaching of melanin pigment in hair, and 3) surface reflection, back-surface reflection and light scattering which are subject to structural change derived from hair damage. This review provides concise commentaries on each factor. Concerning the first factor, the hue of hair dyes is determined by combination pattern of precursors and couplers, which are oxidative dye intermediates and which are coupled with each other to form the colored dye in the hair *via* oxidative coupling reaction. Secondary, the melanin bleaching is also important especially for the people having relatively darker hair to enjoy any lighter color of hair than their original one. Alkaline H_2O_2 effectively promotes the melanin bleaching by facilitating a dissolution reaction of melanin granules, which is followed by a consequent reaction of melanin pigment bleaching. Finally, daily hair care behavior as well as the hair coloring procedure generates pores in hair tissues and the pores cause loss of hair shine *etc*. The specific combination of an organic acid such as malic acid and an organic solvent can repair the pores and then preferable optical characteristics of the hair can revive.

Key words: hair coloring, dye, melanin, pore, malic acid.