

有機酸-アミン複合体を用いた新規縮毛矯正剤の開発

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Development of New Hair Straightening Agents Using Organic Acid-Amine Complexes (¹Faculty of Maritime Science, Kobe University, ²Graduate School of Maritime science, Kobe University, ³Technology and Innovation, Kobe University, ⁴Oriental Chemical Co.,Ltd., ⁵B.Products Taco) ○Hinako Tabuchi, Sotaro Sato, Hiroki Hotta, Yoshio Tsujino, Yoshitomo Ikuta, Yoshinobu Tanaka

Many people have problems with their hair, such as frizzy hair found in Africans, and wavy hair due to aging. In order to straighten such hair and to take care of hair aging, we have discovered a new functional composite with high practicality, which is composed from cysteamine and fumaric acid (CF), and developed a hair straightening technology using this composite. In this study, we analyzed CF using HPLC. As a result, the effective ingredient was found to be 2-(2-Aminoethylthio)succinic acid. In addition, the hair straightener with 10% thioglycolic acid as the first agent and 2% hydrogen peroxide as the second agent was used as a blank, and the comparison was made by straightening African human hair with the blank and the addition of 0.5% CF (Fig. 1). As a result, it was confirmed that the hair became more straight compared to the blank experiment. In addition, when the hair was observed under a microscope before and after treatment with CF, it was confirmed that the twists were removed. The evaluation of physical properties such as tensile strength will be reported as well.

Keywords: Hair Science; Hair straightening; Fumaric acid; Cysteamine; LC-MS

アフリカ人に多く見られる縮れ毛や、加齢（エイジング）に伴うくせやうねりなど髪に悩める人は多い。このような毛髪を矯正するため、また毛髪のエイジングをケアするため我々はシステアミンとフマル酸を原料とする実用性の高い新規機能性成分（CF）を発見し、その成分を用いた縮毛矯正技術を開発した。本研究では、HPLCを用いてCFの分析を行った。その結果、有効な成分として2-(2-アミノエチルチオ)コハク酸が含まれることが分かった。また、1剤に10%のチオグリコール酸、2剤に2%の過酸化水素を用いた縮毛矯正剤をブランクとして、ブランクと0.5%のCFを加えたものでアフリカ人毛を処理して比較を行った（Fig. 1）。その結果、ブランクに比べてよりストレートになる様子が確認できた。さらに、CFで処理する前後の顕微鏡観察から、ねじれがとれる様子が確認できた。引張強度などの物理的特性の評価も合わせて報告する。



Fig. 1 Comparison of
(a) blank and (b) CF
for hair straightening