Study of discrimination among natural brown colorants so-called flavonoid type
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Jun Kita a), Osamu Miura a), Koichi Takahashi a), Tokuyuki Hirame b), Hiroyuki Ikebe b), Teruhisa Okabe c), Satoshi Wakisaka c), Koichi Nakashima d), Koji Nishiyama d), Yoko Ishimoto d), Kazuyoshi Kurosaki e), Hiromichi Takeda e), Yasushi Harikae e), Takeshi Chujyo f), Kenichi Shimomura g), Masahiko Yoneta b), Hideaki Uehara b), Akihiro Kuriyama b)

a) OCI Co., Ltd. b) Kiriya Chemical Co., Ltd. c) Glico Nutrition Co., Ltd. d) San-Ei Gen F.F.I., Inc. e) Semba Tohka Industries Co., Ltd. f) Taisho Technos Co., Ltd. g) Daiichikasei Co., Ltd. h) Mitsui Sugar Co., Ltd. i) Yaegaki Bio-industry, Inc.

Abstract
Cacao, persimmon, kaoliang, onion, tamarind and chicory colors are natural brown colorants which are so-called flavonoid type, but the structures of their major coloring components remain unclear. Since they have similar coloring characteristics, it is difficult to discriminate each other. In this paper, we develop discrimination analysis among the six colorants mentioned above and caramel color.

Test samples were provided from eight manufactures of their natural brown colorants and Japan Caramel Industrial Association. The discrimination study was performed focusing on the following color reactions, UV measurements and detection of several specific components containing the seven colorants: vanillin reagent reaction (qualitative analysis), HPLC-UV detection of 5-hydroxymethylfurfural (5-HMF), GC-FID detection of 4-methylimidazol (4-Mel), UV absorbance of hydrolysate by hydrochloric acid in butanol, HPLC-UV detection of theobromine, iron (II) sulfate reagent reaction (qualitative analysis), UV absorbance of supernatant of 80% ethanol solution and detection of sulfur dioxide. The results revealed that combination of these eight tests enable us to discriminate the seven colorants.

Keywords: brown, flavonoid, colorant, discrimination method, food additive

Ⅰ緒言
本研究は、第4版「既存添加物自主規格」（一社）日本食品添加物協会編集・発行に設定されている褐红色ラノイド系着色料（カカオ色素、カキ色素、クーロー色素、クオリヤン色素、シアナット色素、タマネギ色素、タマリンド色