

## 味認識装置による既存添加物苦味料及び関連苦味化合物の品質評価

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多田敦子<sup>a)</sup>、杉本直樹<sup>a)</sup>、小林義和<sup>b)</sup>、濱田ひかり<sup>b)</sup>、石附京子<sup>a)</sup>、  
秋山卓美<sup>a)</sup>、伊藤裕才<sup>a,e)</sup>、川原信夫<sup>c)</sup>、山崎 壮<sup>d)</sup>、穂山 浩<sup>a)</sup>

- a) 国立医薬品食品衛生研究所  
b) 株式会社インテリジェントセンサーテクノロジー  
c) 独立行政法人 医薬基盤研究所  
d) 実践女子大学  
e) 現所属：共立女子大学

## Qualitative evaluation of natural bittering food additives and related bittering compounds using a taste sensing system

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Atsuko Tada<sup>a)</sup>, Naoki Sugimoto<sup>a)</sup>, Yoshikazu Kobayashi<sup>b)</sup>, Hikari Hamada<sup>b)</sup>, Kyoko Ishizuki<sup>a)</sup>,  
Takumi Akiyama<sup>a)</sup>, Yusai Ito<sup>a,e)</sup>, Nobuo Kawahara<sup>c)</sup>, Takeshi Yamazaki<sup>d)</sup>, Hiroshi Akiyama<sup>a)</sup>

- a) National Institute of Health Sciences  
b) Intelligent Sensor Technology, Inc.  
c) National Institute of Biomedical Innovation  
d) Jissen Women's University  
e) Current affiliation: Kyoritsu Women's University

## Abstract

The applicability of a taste sensing system was assessed by evaluating the taste qualities of 9 natural bittering food additives, 22 bittering reagents and 3 astringent reagents. The intensities of 10 taste factors for each sample were calculated from data collected from 6 artificial lipid membranes attached to the taste sensing system. The intensity of the taste factor with the highest absolute value for each sample was assigned a value of 100, and the intensities of the other taste factors for the same sample were provided as relative percentage values. The relative percentage values were plotted on radar charts for each sample, and the taste qualities of the samples were compared based on the radar chart patterns. The taste quality of samples was roughly classified into five types based on their taste quality patterns. Taste quality type appears to be characterized by the chemical structure of the bittering substance, since samples containing similar bittering constituents showed similar taste quality patterns. In addition, principal component analysis (a multivariate analysis) using the relative percentage values of 10 taste factors for each sample clearly classified the five types of taste qualities of bittering substances.

This study demonstrated the applicability of the taste sensing system to evaluate the taste qualities of natural bittering food additives and bittering reagents. The results suggest that the chemical structure types of unidentified bittering constituents in bittering substances can be estimated using the taste sensing system to evaluate taste qualities. These results should also be useful to evaluate the taste qualities of other commercially available bittering products as well as food additives.

Keywords: 食品添加物、苦味料、味認識装置  
food additive, bittering substance, taste sensing system

## I 緒言

古くから食品添加物として用いられてきた天然物は、食品衛生法が改正されて1995年より既存添加物名簿<sup>1)</sup>に記載さ

れたもののみが食品添加物として使用できるようになった。既存添加物名簿に記載された天然由来の食品添加物(既存添加物)には苦味料として用いられるものがあるが、多くは植物の水またはアルコールによる抽出物であり、いずれも多

連絡先：〒158-8501 東京都世田谷区上用賀1-18-1 国立医薬品食品衛生研究所 食品添加物部 多田敦子

Corresponding author: Atsuko Tada, Division of Food Additives, National Institute of Health Sciences,  
1-18-1 Kamiyoga, Setagaya-ku, Tokyo 158-8501, Japan