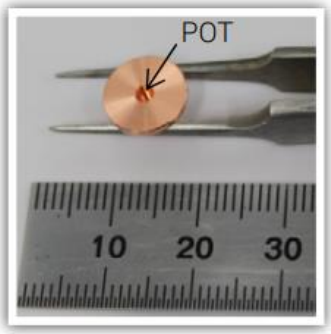
The analysis application of soy sauce by ionRocket-DART®-MS

EI-012

Background



Soy sauce is a major condiment in Japan. There are many kinds of soy sauce. Sashimi soy sauce is one kind and is suitable for Sashimi. Sashimi soy sauce was brewed twice, so it takes longer time to produce than standard soy sauce. The ionRocket is a thermal desorption device for DART®-MS (Direct Analysis in Real Time - Mass Spectrometry). The sample was heated by ionRocket from room temperature up to 600℃. In this application, we used the ionRocket to analyze soy sauce.

Samples

Two types of soy sauce: Standard grade and Sashimi (Commercial items)

Methods

ionRocket was mounted on DART®-MS. The 2 µL sample was placed into the POT. The temperature was raised by the ionRocket from room temperature to 600℃ by 100℃ /min. The total run time was about 7 min.

Results

The analysis results of standard and Sashimi soy sauce were shown in Figure 1 and 2. The tendencies in the heat map were different.

The same kinds of ions were observed in the mass spectra in RT 3.1 min. In the standard grade soy sauce, the intensities of m/z 116 and 118 were the same level, however in Sashimi soy sauce were not.

In the mass spectrum of Sashimi soy sauce at RT 6.0 min, many ions were observed than that of standard grade soy sauce.

This differences would be caused by difference in brewing method.

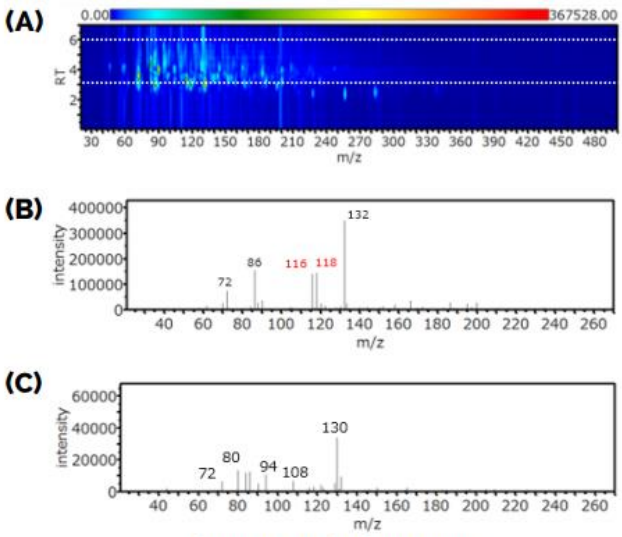


Figure 1. Standard soy sauce

(A) Heat map (B) The mass spectrum at RT 3.1 min
(C) The mass spectrum at 6.0 min

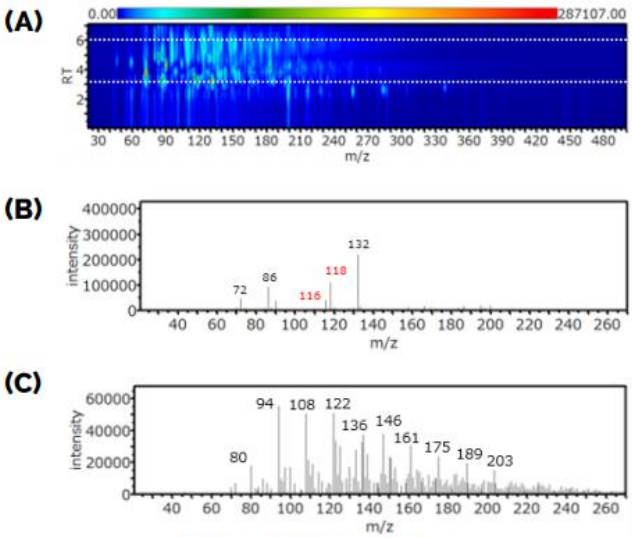


Figure 2. Sashimi soy sauce

(A) Heat map (B) The mass spectrum at RT 3.1 min
(C) The mass spectrum at 6.0 min

Target

Food/Quality Control (QC)/Research and Development (R&D)

BioChromato
Mining ideas, Aiding laboratories

ionRocket

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