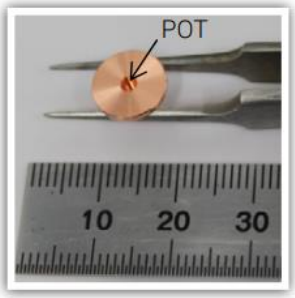
The rapid analysis of custard cream by using the ionRocket

EI-007

Background



In response to the growing interest in food safety, the rapid analysis tool has now been expanding its demand over the market. The thick sample which consists of much lipid, like custard cream, requires the pretreatment prior to the analysis. The analysis of this sort of sample is time-consuming and burdensome task for investigators. The ionRocket achieves the direct analysis of samples without any pretreatment and contributes to the rapid analysis that requires approximately 7 minutes.

Samples

4 different types of custard cream (3 from different cream puffs, 1 from cream bun.)

Methods

The analysis system was constructed with DART®-MS (Direct Analysis in Real Time- Mass Spectrometry) and the ionRocket (Temperature rising device). The sample quantity was about 10 mg and was put on the POT (See photo above). The system was operated to increase the temperature from room temperature (30℃) to 500℃ at the rising rate of 100℃ /min. The analysis duration was approximately 7 minutes

Results

The analysis result was showed in the 3D map by Mass++ (Figure 1).
The different tendency was detected between 4 different creams, which infers the variation of ingredients used in creams. The peak indicated with the star in the graph “Cream puff A” was also found in the graph “Cream puff C”, but not in B. Also, the same components indicated with the circle and the triangle were detected among all the cream puffs A, B and C, but differ in their amounts

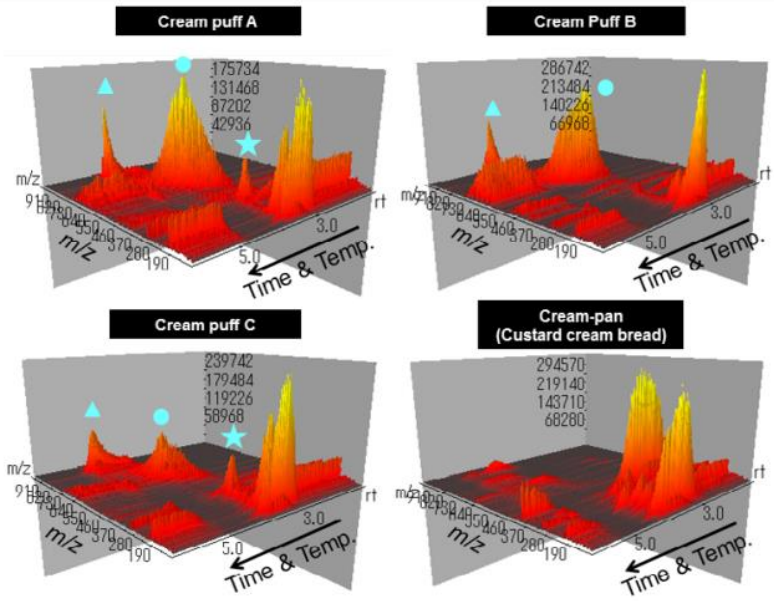


Figure 1. The 3D map of the analyzed result

ionRocket: Room temperature 100ºC/min 600ºC, DART®-SVP temperature: 400ºC, Ionization mode: DART®(+)

Target

Material analysis / Foreign material analysis

BioChromato
Mining ideas, Aiding laboratories

ionRocket

Web : https://biochromato.com/
Email : oversea@bicr.co.jp