

### Analysis of Preservatives (2): Dehydroacetic Acid, Sorbic Acid, Benzoic Acid

The Chromaster 5610 MS Detector is a mass detector based on a new concept, designed for LC users and simpler to use than conventional mass spectrometers. Preservatives are added to maintain the freshness of food products by suppressing the growth of bacteria and preventing rotting<sup>1)</sup>. For this study, three preservatives (dehydroacetic acid, sorbic acid, and benzoic acid) were separated by using a HILIC column and detected by both a UV detector and the Chromaster 5610 MS Detector. The results are presented here. By confirming the retention time and mass spectrum of the target component, a more reliable analysis is possible.



5610 MS Detector

<sup>1)</sup> Bunseki, Masakazu Horie, p.124 (2009)

## Analysis of 3 Preservatives by LC-MS

### Analytical Conditions

Table 1 MS Detector Settings

Ionization method	ESI
Ionization mode	Negative
Ionization voltage	2100 V
Measurement mode	Scan ( $m/z$ 100-200)

Table 2 Conditions for HPLC Analysis

Column	Inertsil HILIC (3 $\mu$ m) 4.6 mm I.D. x 250 mm (GL Sciences, Inc.)
Mobile phase	CH <sub>3</sub> CN / 10 mmol/L CH <sub>3</sub> COONH <sub>4</sub> in water = 90 / 10
Flow rate	1.0 mL/min (split ratio = 1:250)
Injection vol.	10 $\mu$ L (100 mg/L each)
Detection wavelength	230 nm

### LC-MS Analysis

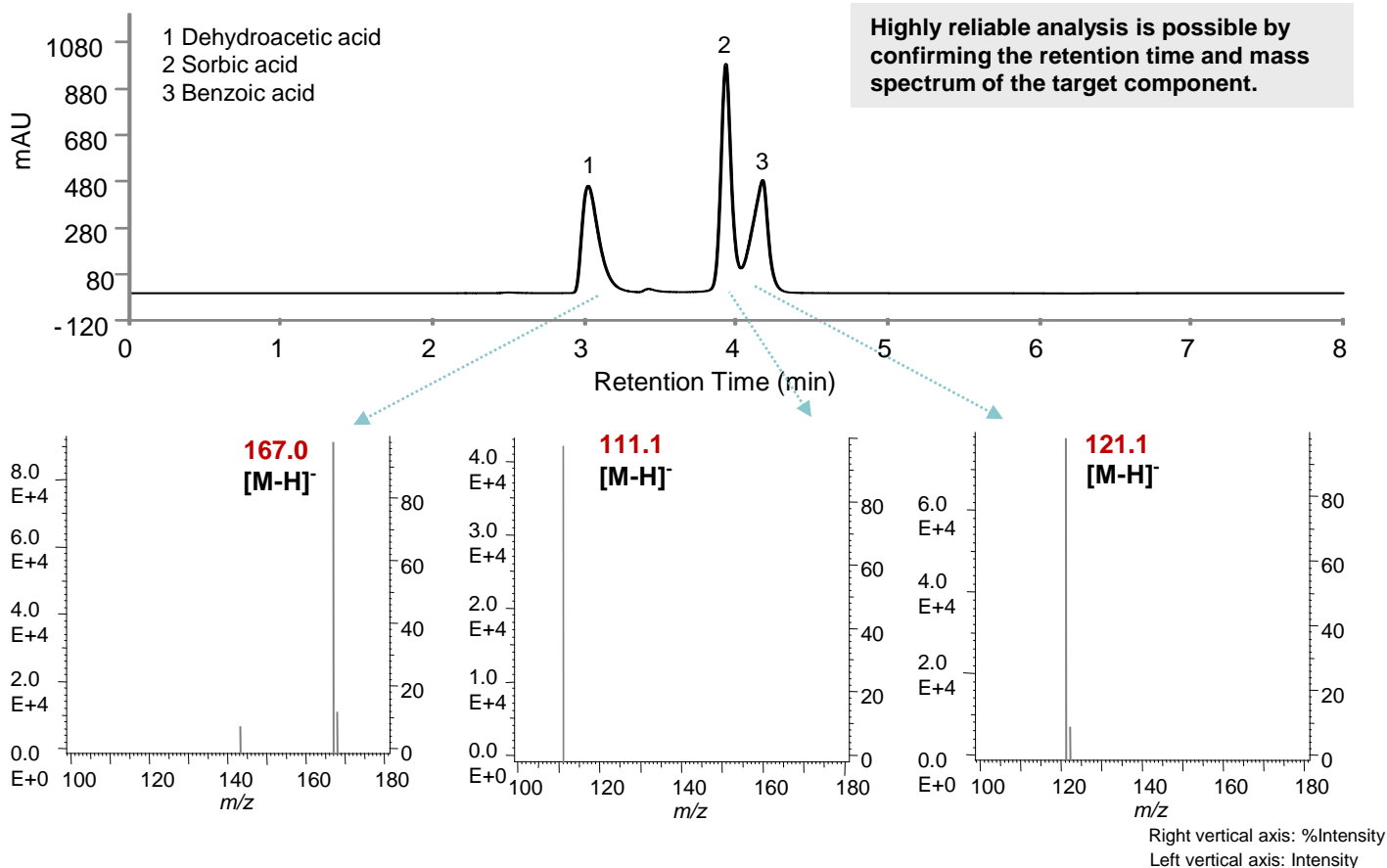


Figure 1 UV Chromatogram (Top) and Mass Spectra (Bottom) of 3 Preservatives

\*The data introduced here was provided by Kita-ku Public Health Center, Tokyo.

<Main system configuration> Chromaster 5110 Pump, 5210 Autosampler, 5310 Column Oven, 5410 UV Detector, 5610 MS Detector

NOTE: These data are an example of measurement; the individual values cannot be guaranteed.