

# Analysis of Disinfectant (Triclosan) by Mass Detector

Chromaster 5610 MS Detector is a mass detector with new concept, designed for LC users, and it is different from conventional mass spectrometers. This time, the analysis example of triclosan is introduced here. Triclosan is used as a disinfectant for general bacteria in wide range of products including health care products such as medicated soap and toothpaste and plastic and fabric products such as children's toys. No complex condition setting is required for 5610 MS Detector and thus, mass information can be obtained and a calibration curve can be generated with the operability equivalent to that for UV detectors.



5610 MS Detector

## LC-MS Analysis of Triclosan

### Analytical Conditions

Table 1 Conditions for MS Detector Setting

Ionization method	ESI
Ionization mode	Negative
Ionization voltage	2300 V
Measurement mode	SIM ( $m/z$ 288.6)

Table 2 Analytical Conditions for HPLC

Column	LaChrom II C18 (1.9 $\mu$ m) 3.0 mm I.D. x 100 mm
Mobile phase	CH <sub>3</sub> OH
Flow rate	0.3 mL/min (1:50 spirit)
Column temperature	40°C
Detection wavelength	UV 286 nm
Injection vol.	10 $\mu$ L

### LC-MS Analysis

Triclosan was dissolved in methanol. In the mass spectrum,  $[M+H]^-$  ion peak was detected at  $m/z$  288.6 (Figure 2). Figure 1 shows the results from the analyses of triclosan (10 ng/mL) by UV and mass detectors. In a conventional HPLC system, the flow channel is split for the connection with a mass detector. In the SIM chromatogram of triclosan, the sensitivity was found to be equivalent to that obtained by UV detection. The calibration curve for the concentration range of 10 – 100 ng/mL is also shown in Figure 3.

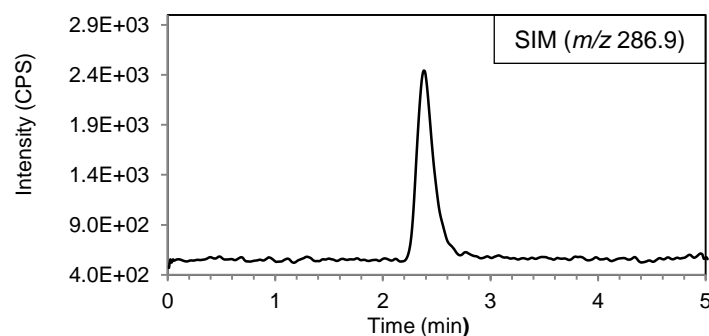
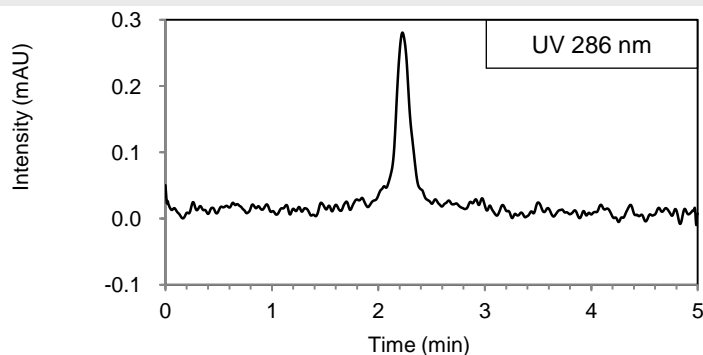


Figure 1 Chromatogram of Triclosan (10 ng/mL)

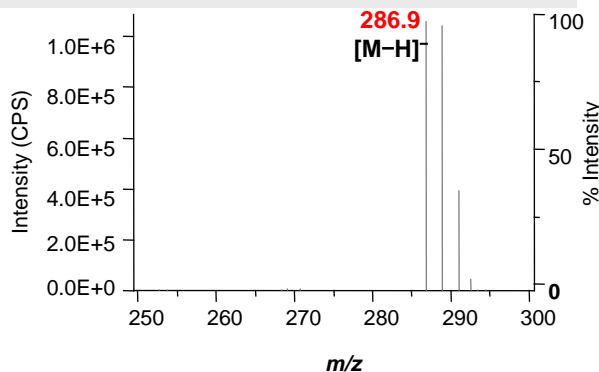


Figure 2 Mass Spectrum of Triclosan

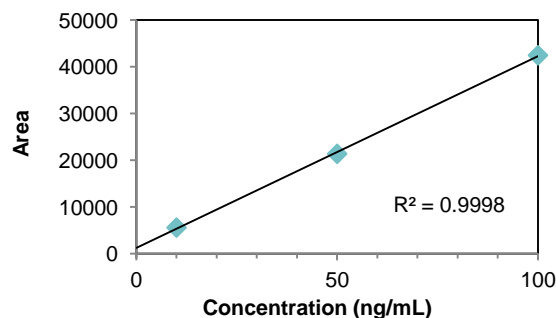


Figure 3 Calibration Curve Based on SIM Chromatograms

<Main system configuration> 5110 Pump, 5210 Autosampler, 5310 Column Oven, 5420 UV-VIS Detector, 5610 MS Detector

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