

Analysis of Disinfectant (IPBC) 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 3-Iodo-2-propynyl N-Butylcarbamate (IPBC) is introduced here.

IPBC is said to have disinfectant effects on fungi such as mold and it is used as antiseptic and antifungal agents for wood and also as a termite controlling agent. The operability of 5610 MS Detector is as good as that of HPLC detectors. Therefore, it is easy to perform the operation from the direct sample solution introduction for the mass confirmation to the SIM-based quantitative analysis with the connection to HPLC.



5610 MS Detector

LC-MS Analysis of IPBC

Analytical Conditions

Table 1 Conditions for MS Detector Setting

Ionization method	ESI
Ionization mode	Positive
Ionization voltage	2300 V
Measurement mode	SIM (m/z 282.0)

LC-MS Analysis

Figure 1 shows the structure of IPBC. IPBC was dissolved in methanol for the analysis. Figure 2 shows the mass spectrum of IPBC. The $[M+H]^+$ ion peak was detected at m/z 282.0. Figure 3 shows the chromatogram obtained when IPBC (1 μ g/mL) was analyzed in SIM mode by using this ion as the target ion.

Table 2 Analytical Conditions for HPLC

Column	LaChrom II C18 (1.9 μ m) 3.0 mm I.D. x 100 mm
Mobile phase	CH ₃ OH
Flow rate	0.3 mL/min (1:50 split)
Column temperature	40°C
Detection wavelength	UV 225 nm
Injection vol.	10 μ L

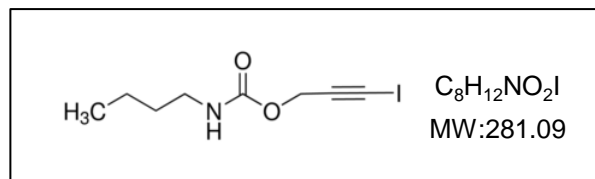


Figure 1 Structural Formula of IPBC

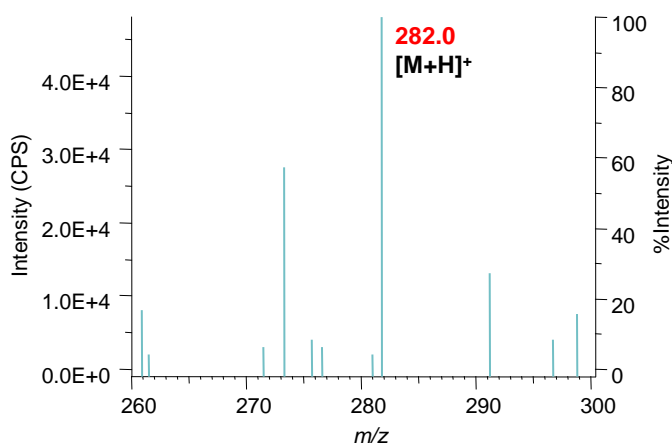


Figure 2 Mass Spectrum of IPBC

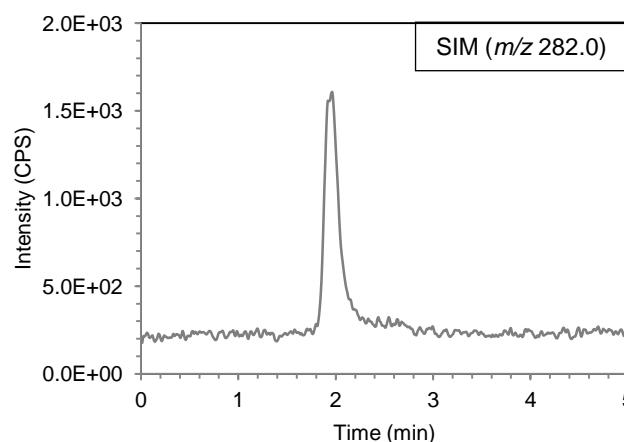


Figure 3 SIM Chromatogram of IPBC

<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.