

Application Data Sheet

No.28

GCMS

Gas Chromatograph Mass Spectrometer

Analysis of a Benzodiazepine-Based Drug Using GC-MS

Benzodiazepine drugs are commonly used in sleeping aids and tranquilizers, and sometimes in crimes or suicide. Therefore, these chemical substances are often analyzed by forensic laboratories for criminal or academic investigations. This datasheet shows the results from using GC-MS to measure 9 types of benzodiazepine drugs.

Analysis Conditions

Table 1: Analysis Conditions

GC-MS	:GCMS-QP2010 Ultra	
Column	: Rxi®-5Sil MS (30 mL, X 0.25 mmI.D., df=0.25 µm, Shimadzu GLC P/N:13623)	
Glass insert	:Silanized splitless insert (P/N: 221-48876-03)	
[GC]		[MS]
Vaporization chamber temperature : 260°C		Interface temperature : 280°C
Column oven temperature : 60°C (2min) -> (10°C/min) -> 320°C (10min)		Ion source temperature : 200°C
Injection mode : Splitless		Solvent elution time : 2.0 min
Sampling time : 1 min		Measurement mode : Scan
High pressure injection method: 250 kPa (1.5 min)		Mass range : m/z 35-600
Carrier gas : Helium		Event time : 0.3 sec
Control mode :Linear velocity (45.6 cm/sec)		Emission current : 150 µA (high sensitivity)
Purge flow rate :3.0 ml/min		
Sample injection quantity :1.0 µL		

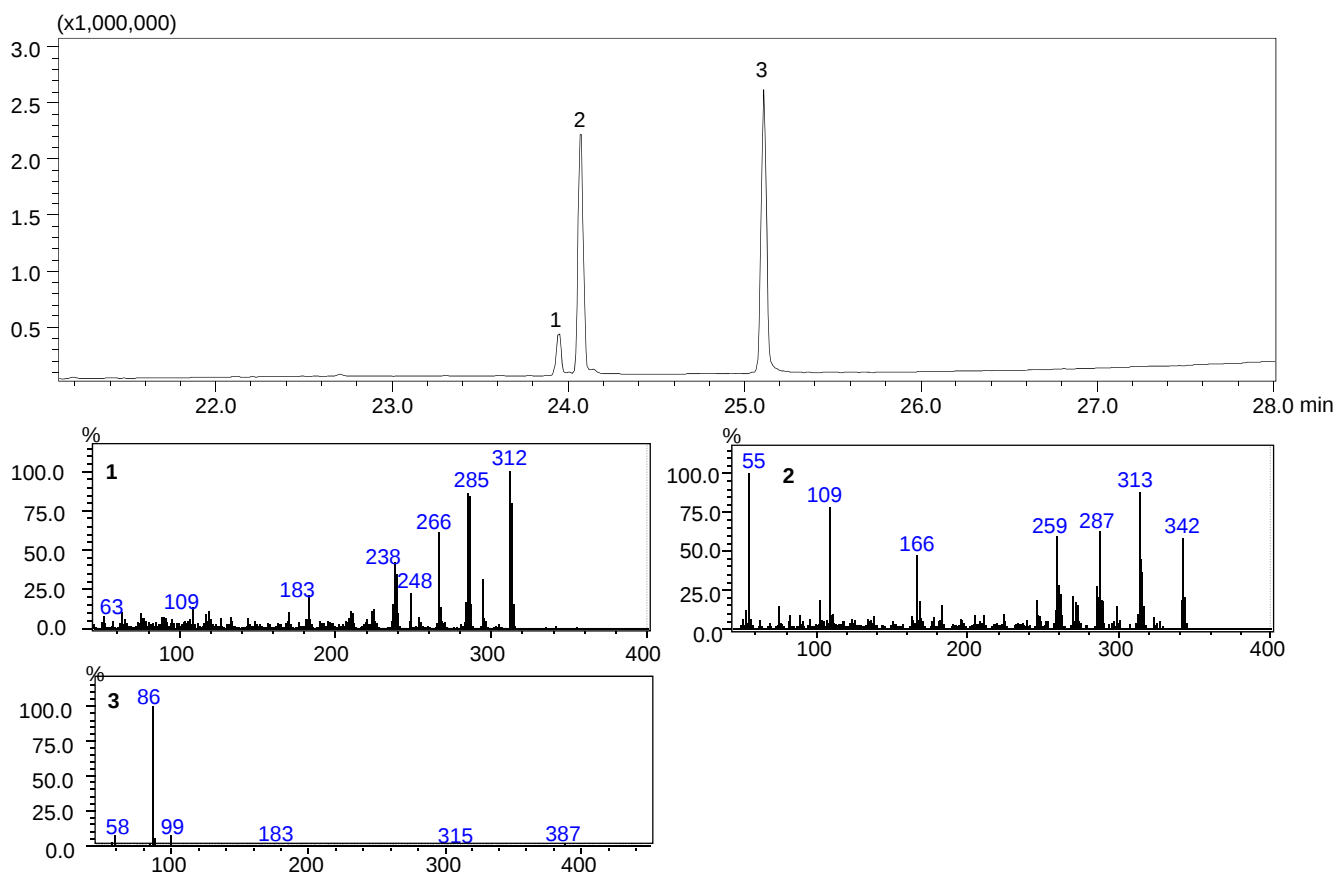


Fig. 1: Total Ion Current Chromatogram and Mass Spectra
1: Flunitrazepam, 2: Flutoprazepam, 3: Flurazepam

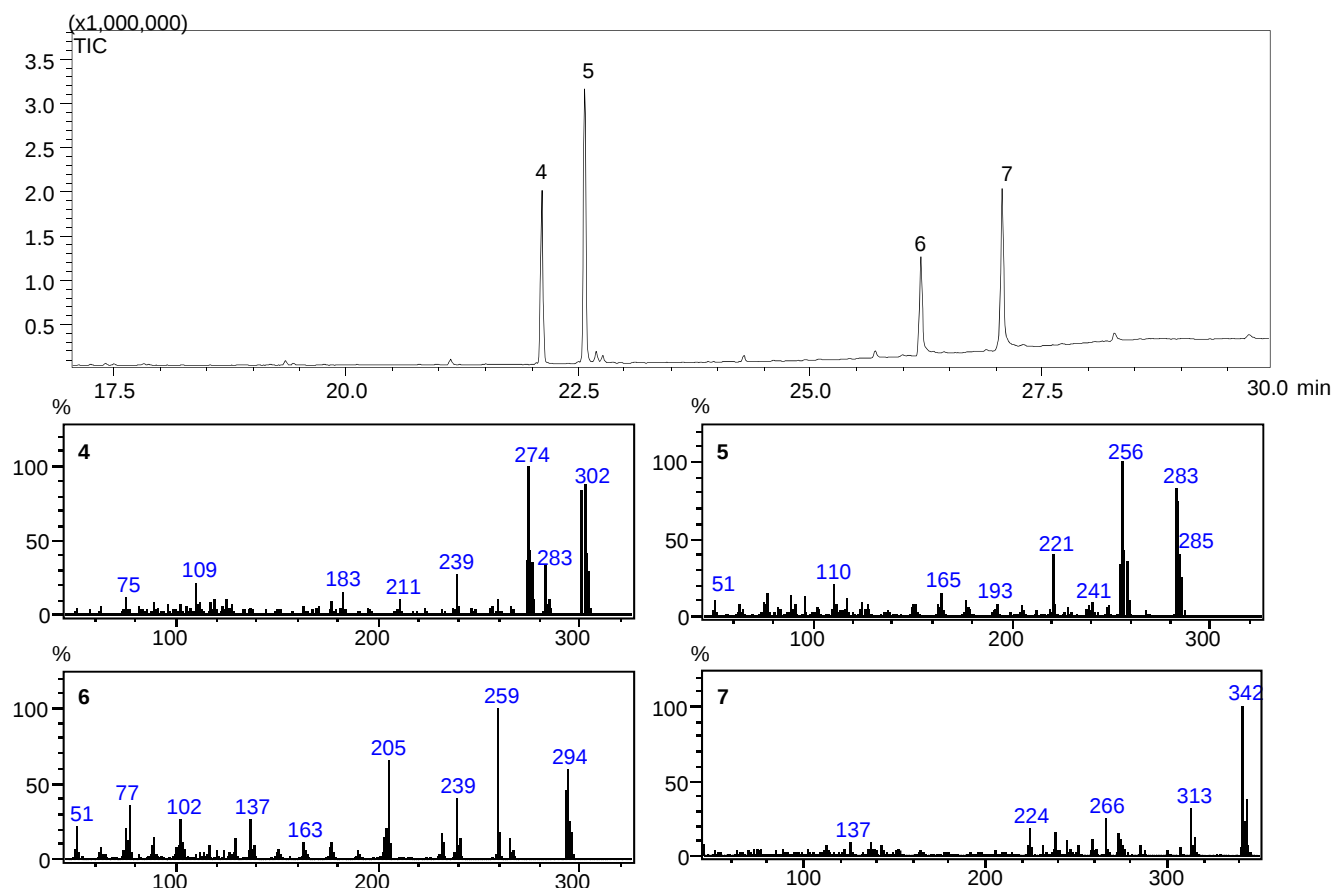


Fig. 2: Total Ion Current Chromatogram and Mass Spectra
4: Fludiazepam, 5: Diazepam, 6: Estazolam, 7: Etizolam

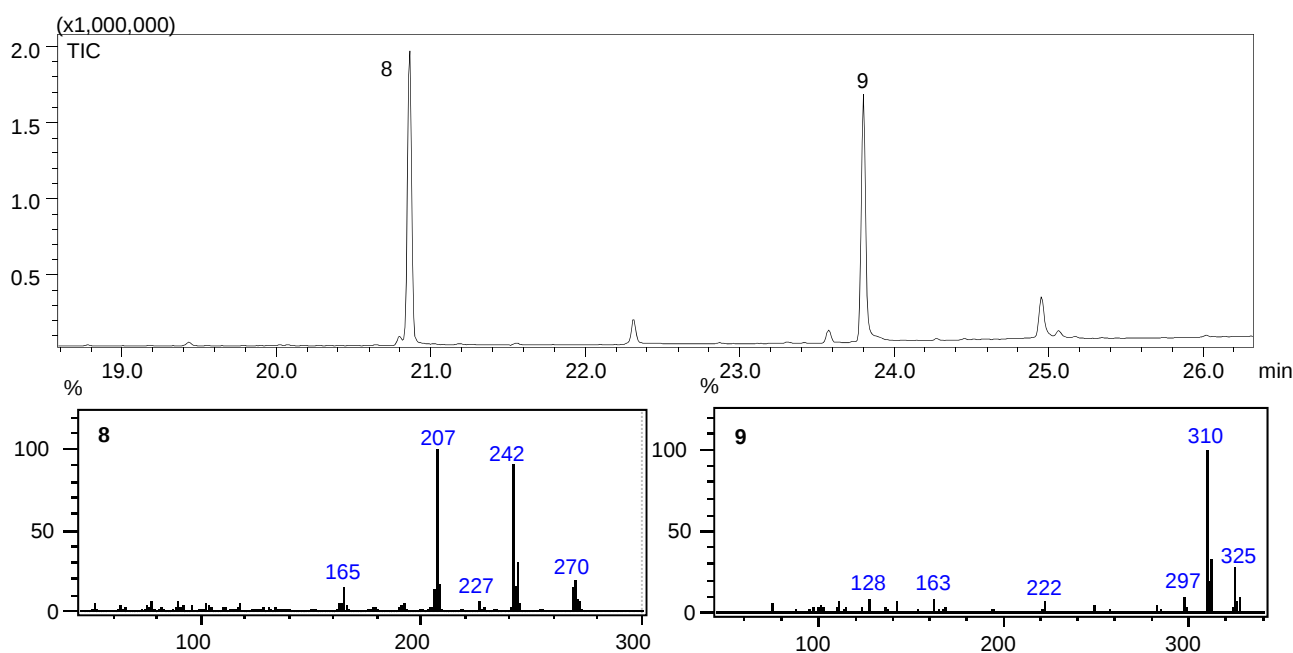


Fig. 3: Total Ion Current Chromatogram and Mass Spectra
8: Medazepam, 9: Midazolam



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