4.8 Emergency Testing Method for Acute Drug Overdose using DI/CI/MS - GCMS

•Explanation

With mass spectrometry using direct sample introduction (DI), the analysis of mixed samples is difficult because the GC separation stage is not used, but it is effective for analysis of compounds that easily heat decompose and compounds with high boiling points. If the compound has been purified in advance, the structure can be confirmed quickly without having to make a derivative of it, as is the case with GC.

The structure and molecular weight of such a compound can be confirmed using a combination of electron-impact ionization (EI) and chemical ionization (PCI) methods.

•Analytical Conditions

Instrument	: GCMS-QP1000 (with PCI/DI)
– MS –	
Ionization Box Temp.	: 250˚C (EI), 200˚C (PCI)
Ionization Method	: EI/CI (Reaction gas: Isobutane)
Scan Range	: m/z 35-450 (EI)
	m/z 70-450 (PCI)
Scan Interval	: 2sec
DI Temp.	: 40˚C – 40˚C/min-270˚C (10min)

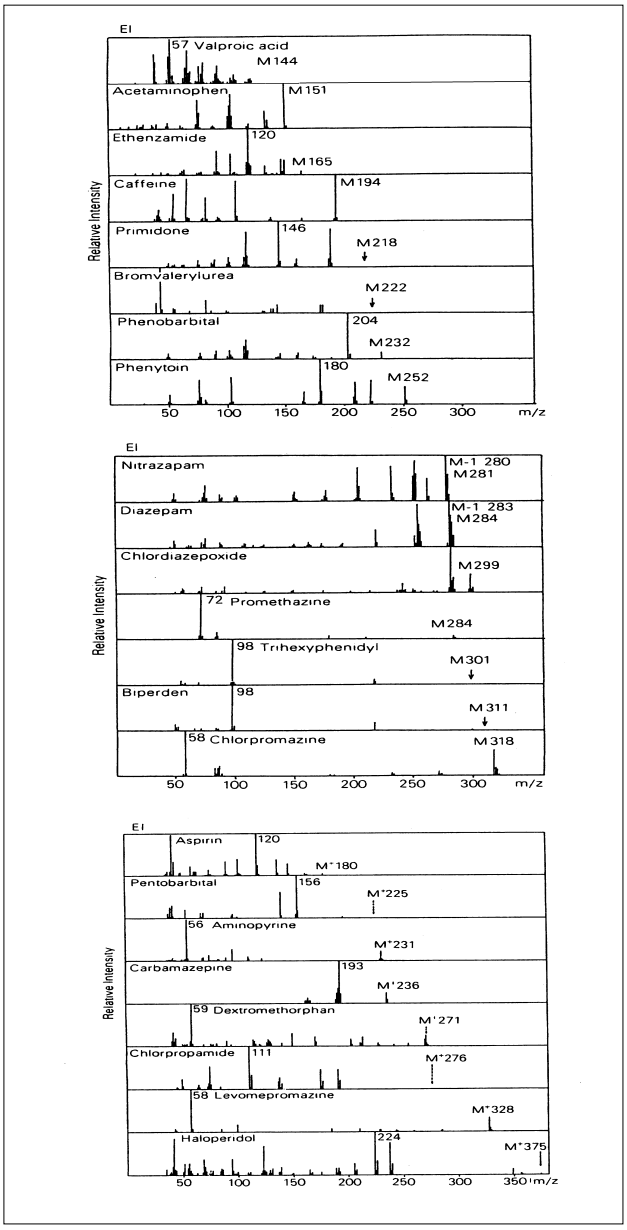

Fig. 4.8.1 EI spectrum of standard drug

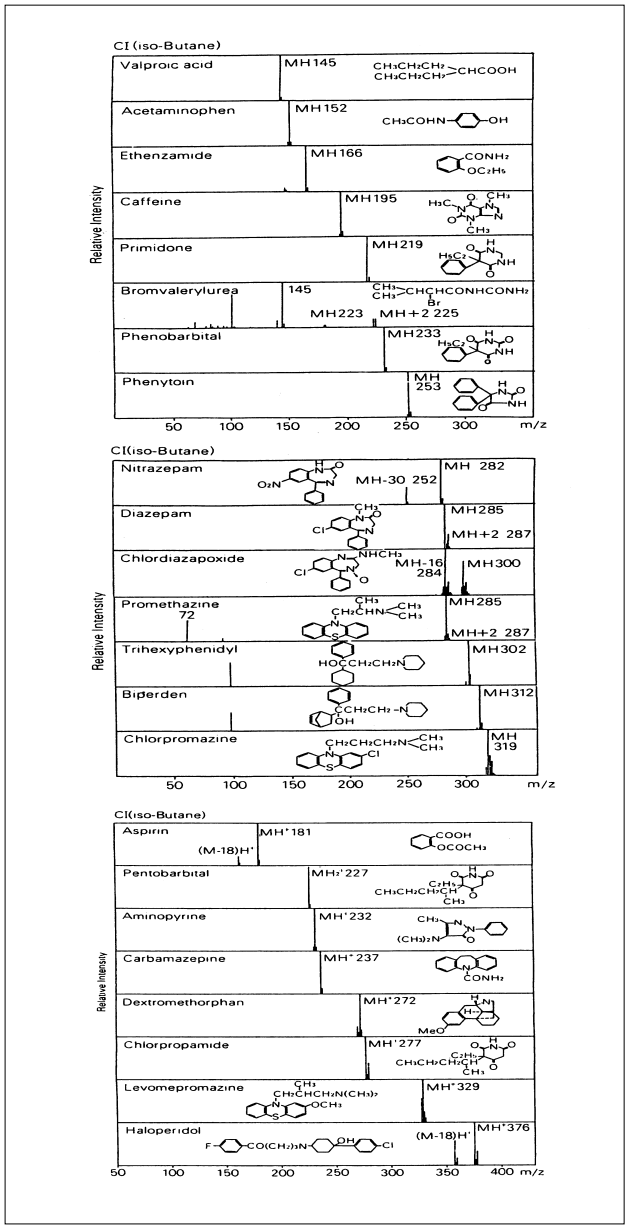

Fig. 4.8.2 CI spectrum of standard drug