

GC-MS

APPLICATION NOTES

Qualitative analysis of a mixture of three types of drugs using Aludra GC-MS



GC-MS



Experimental

Instrumentation

The GBC Aludra Gas Chromatograph-Mass Spectrometer (GC-MS) was used.

Sample source

Provided by the Chinese Second Institute of the Ministry of Public Security.

Analysis conditions

Chromatography

Using an Equity-5 (30 m × 0.25 mm × 0.25 μm) quartz capillary column with a column pressure of 100 KPa and a column flow rate of 1 mL/min. Employed a split flow injection with a split ratio of 30:1 and an injection volume of 2 μL. The inlet port temperature was set at 250°C. The column oven temperature program started at 100°C and held for one minute, then increased at a rate of 10°C/min up to 270°C, which was held for five minutes.

Mass spectrometry

Employed an Electron Impact (EI) source with a source temperature of 200°C and an electron energy of 70 eV. A solvent delay of three minutes was applied. The scanning range was set from 44.5 u to 450 u, with a scanning cycle of 0.6 seconds, and an interface temperature of 250°C.

Results

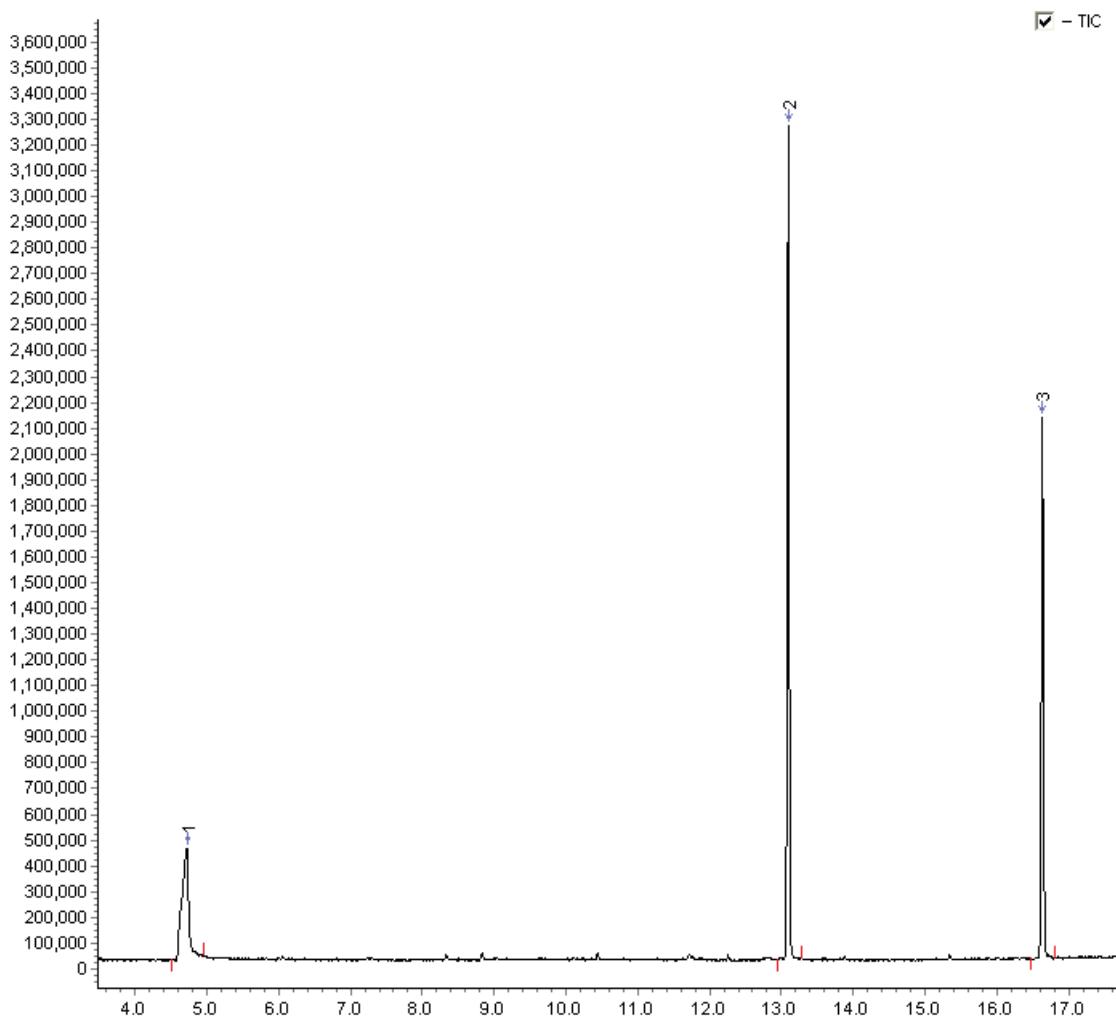


Figure 1: TIC of the three components

No.	Name	Retention Time	CAS Number	Molecular Formula	Molecular Weight
1	Methamphetamine	4.72	537-46-2	C ₁₀ H ₁₅ N	149
2	Ketamine	13.10	6740-88-1	C ₁₃ H ₁₆ ClNO	237
3	Cocaine	16.63	50-36-2	C ₁₇ H ₂₁ NO ₄	303

Mass spectra of the three components.

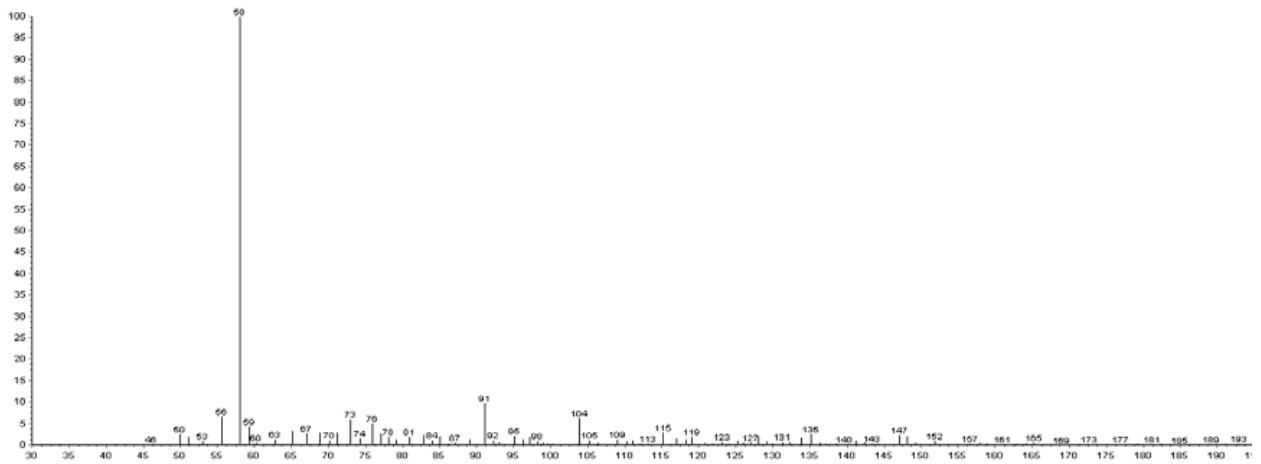


Figure 2: Methamphetamine (similarity 91%)

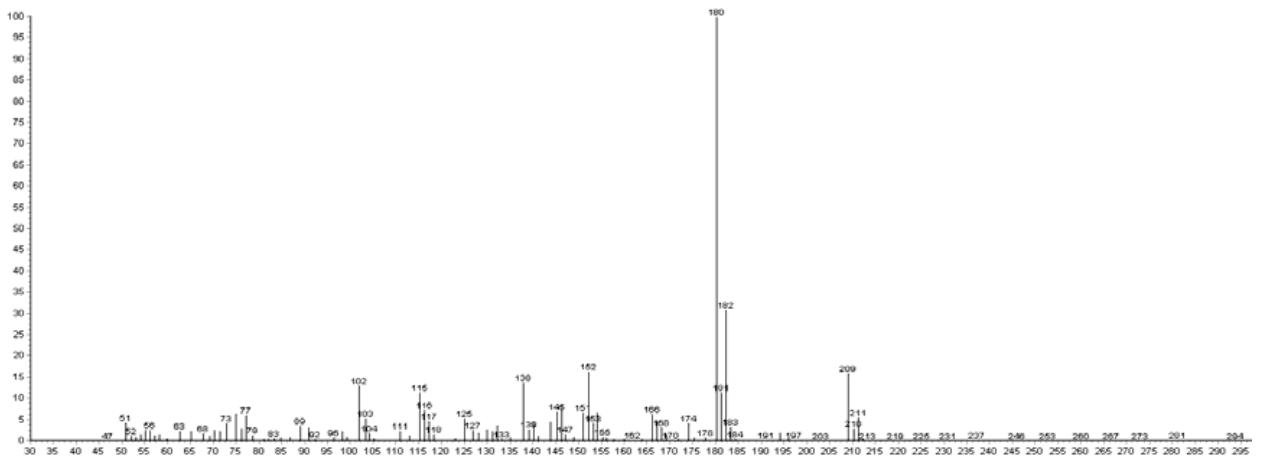


Figure 3: Ketamine (similarity 97%)

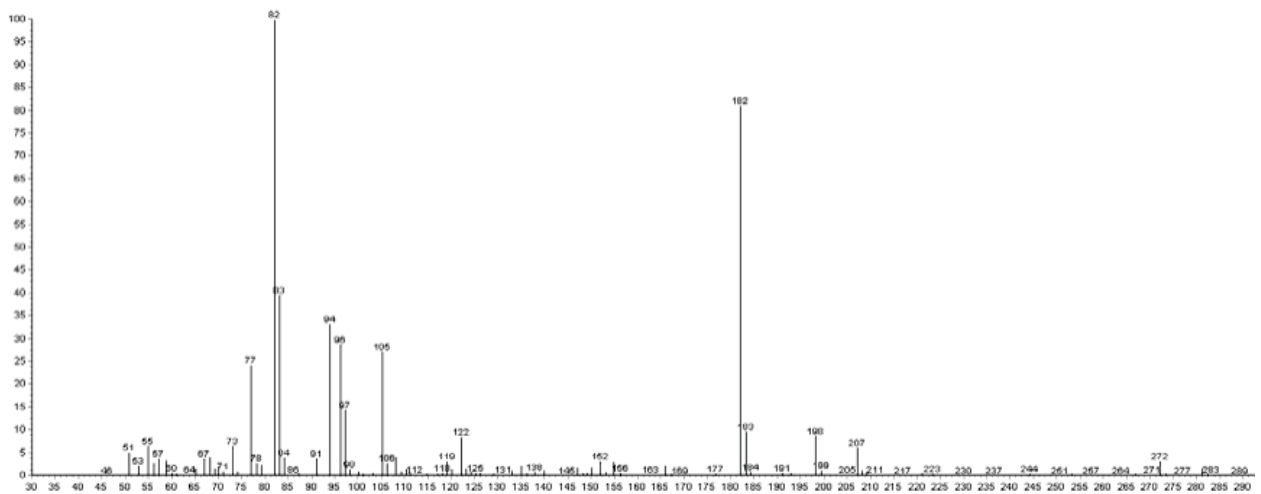


Figure 4: Cocaine (similarity 94%)