

**HRGC/HPLC/DIP-MASS SPECTROMETRY COMBINED SYSTEMS :
TRACE ANALYSIS IN TOXICOLOGY and FORENSICS**

HRGC/HPLC/DIP-MASS SPECTROMETRY COMBINED SYSTEMS: TOXICOLOGIC AND FORENSIC TRACE ANALYSIS

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HRGC/HPLC-MS COUPLINGS

HRGC/HPLC-MS couplings combine sinergetically:

- **The chromatographic separative potential (GC, HPLC and electrochromatography) with...**
- **The unequivocal molecular identification capacity of Mass Spectrometry,...**
- **To femtomole levels,...**
- **With great selectivity (through S.I.R),...**
- **From H₂ until biopolymers, in complex matrices.**

IN TOXICOLOGY AND FORENSICS

- **Alcohols and solvents,**
- **Drugs,**
- **Intoxications,**
- **Post mortem,...**

In:

- **Biological fluids (blood, urine, saliva, sweat, gastrical washing, etc..)**
- **Textiles (including hair)**

BASIC EXIGENCES IN TOXICOLOGICAL ANALYSIS :

- **Guaranteeing sample integrity (elimination of appliance/device formation)**
- **Rigorous manipulation of micro-samples, preparation and sample introduction into the analytical systems**
- **Rapidity and fiability in the qualitative and quantitative analysis**
- **Structure Identification of any substance at microtrace levels**

KONIK EQUIPMENTS DESIGNED FOR OPTIMAL ANALYSIS IN TOXICOLOGY AND FORENSICS

- **Konik HRGC 4000 B *Peak Power***
- **Konik HPLC KIS-20**
- **Konik K-MAS5 Multimode Autosampler (HS, P&T, SP μ E)**
- **Konik KMASS-11 Mass Spectrometer (K4000+K500+K-MAS5+KMASS-11)**

HRGC/HPLC-MS APPLICATIONS IN:

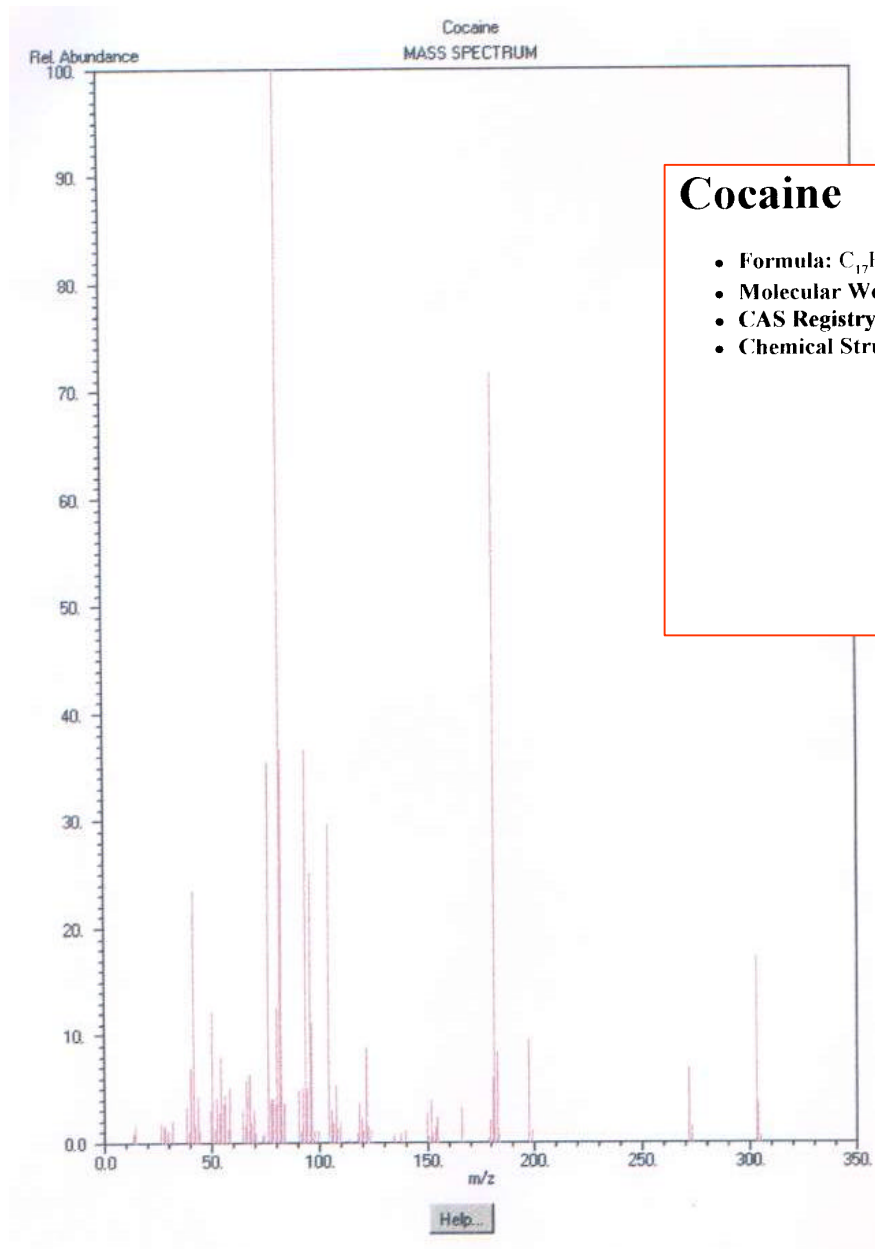
Toxicology and Forensics:

- Alcohol level in blood (ethanol, acetone, methanol, isopropanol,...)
- Amphetamines (metamphetamine, extasis, speed, ...)
- Anesthetics (lidocaine, procaine, tetracaine,...)
- Tricycles Antidepressives (diazepam, clorazepam,...)
- Barbituricals (pheno, alo, buta, pentobarbital,...)
- Cannabinoids (Δ 9-THC, THCA, ...)
- Cocaine (norcocaine,...)
- Solvents (bencene, toluene, ...)
- LSD (Lysergic acid)
- Opiates (heroine, morfine, methadone, codeine, ...)

OTHER RELATED APPLICATIONS :

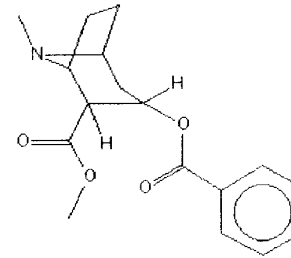
- **Anabolics and hormones (sport medicine, veterinary medicine,...)**
- **Diuretics (blood tonic/purifying medicine)**
- **Explosives (criminalistics, terrorism,...)**
- **Fires (criminalistics, insurances,...)**
- **Nicotine (insurances, civil responsibility,...)**
- **Environmental Toxics (industrial hygiene,...)**
- **Stimulants (caffeine, theobromine,...)**

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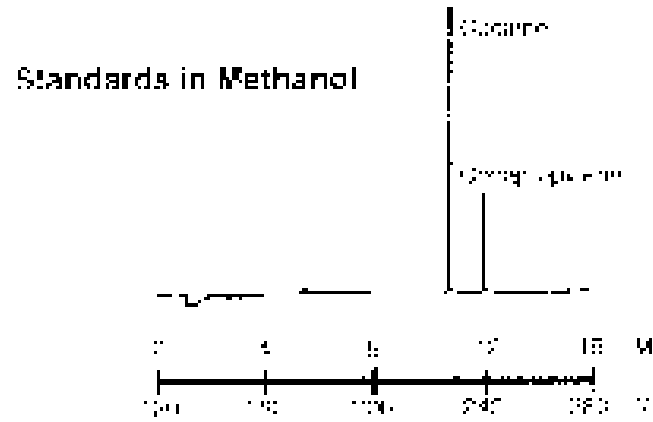


Cocaine

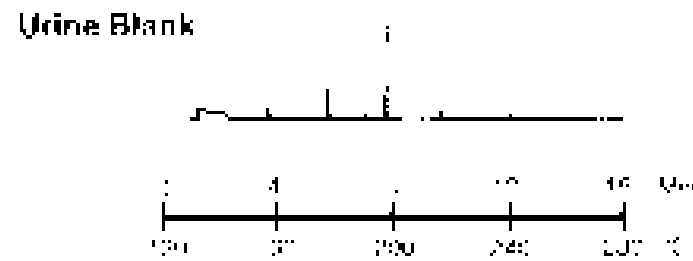
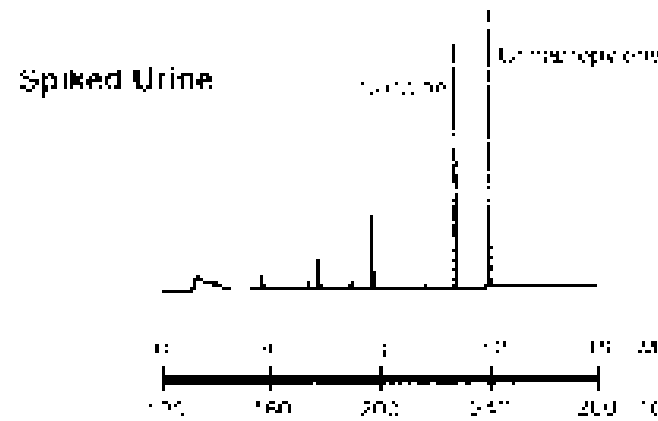
- Formula: $C_{17}H_{21}NO_4$
- Molecular Weight: 303.35
- CAS Registry Number: 50-36-2
- Chemical Structure:



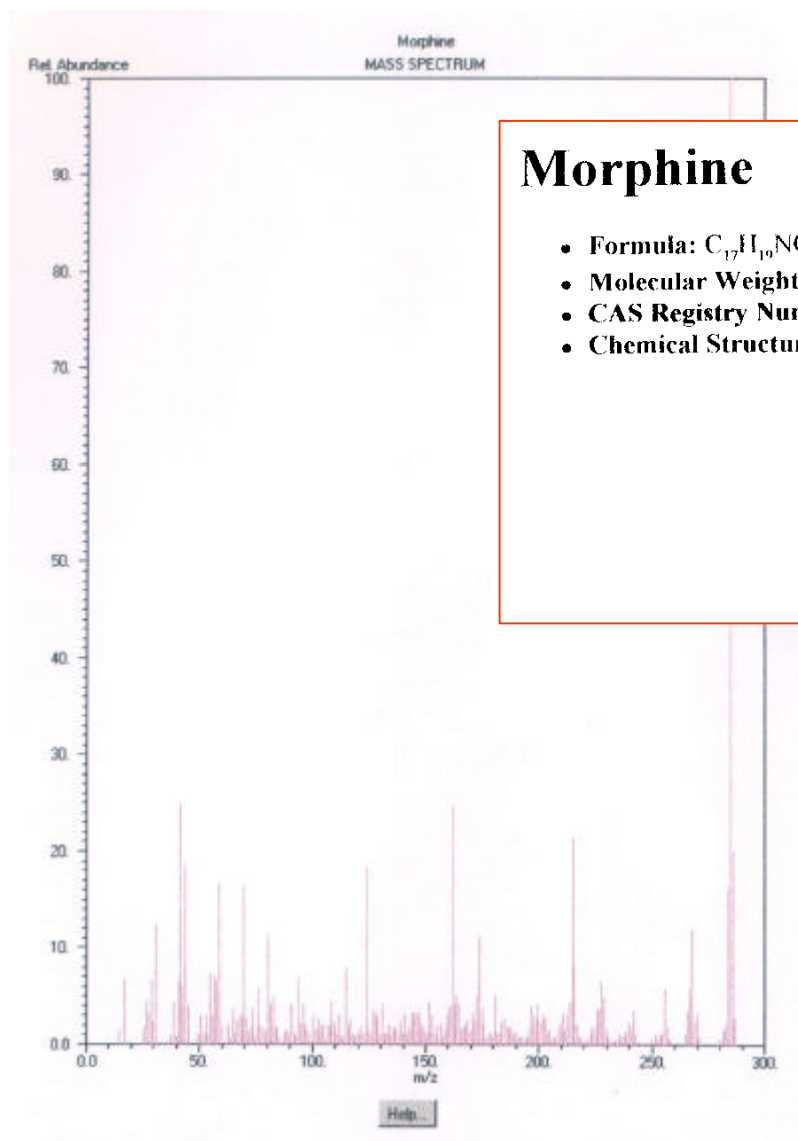
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COCAINE
IN URINE

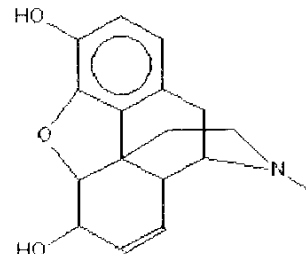


MORPHINE

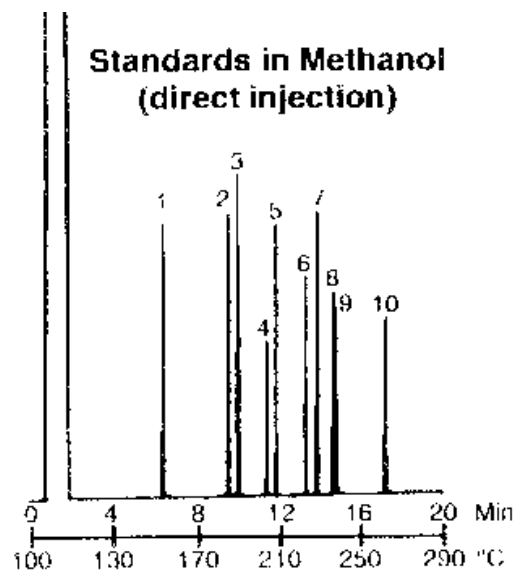


Morphine

- Formula: $C_{17}H_{19}NO_3$
- Molecular Weight: 285.34
- CAS Registry Number: 57-27-2
- Chemical Structure:

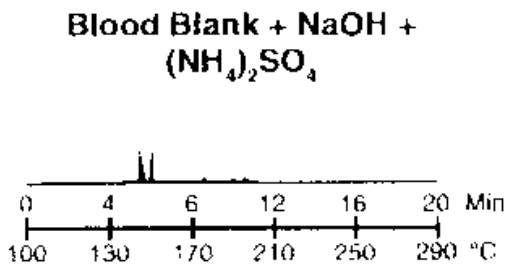
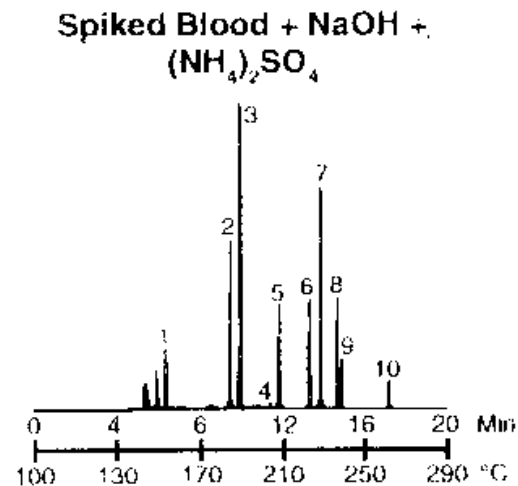
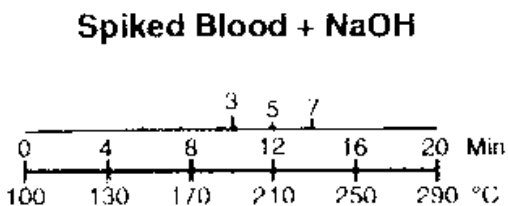


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1. Ethyl aminobenzoate
2. Pilocaine
3. Lidocaine
4. Procaine
5. Mepivacaine
6. Tetracaine
7. Bupivacaine
8. *p*-(butylamino)benzoic acid
2-(diethylamino)ethyl ester
9. Benoxinate
10. Dibucaine

ANESTHESICS IN BLOOD

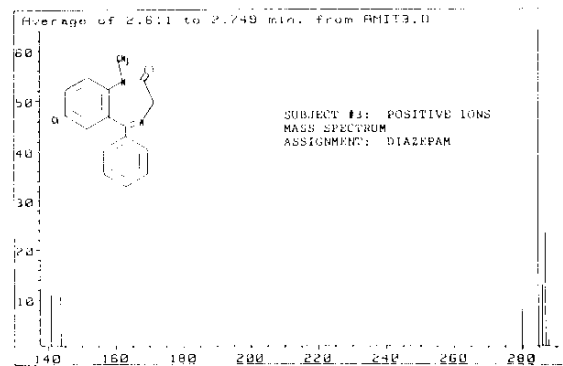
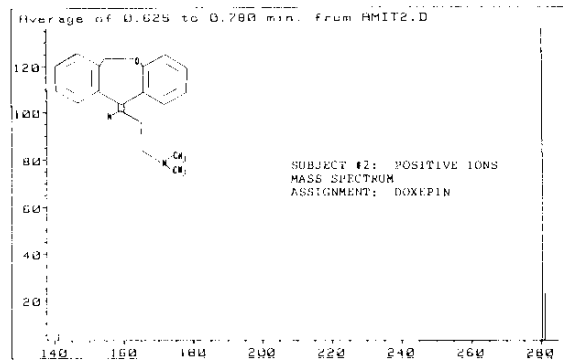
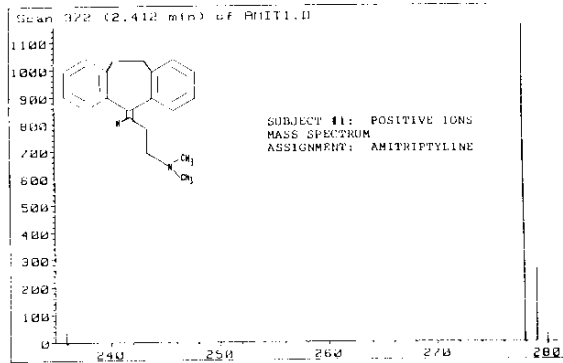


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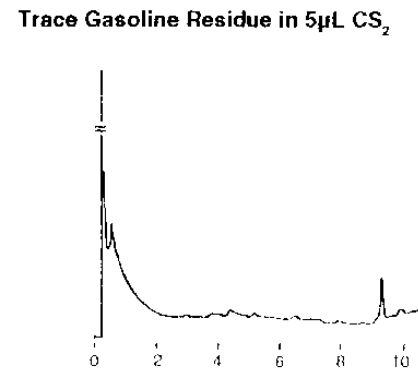
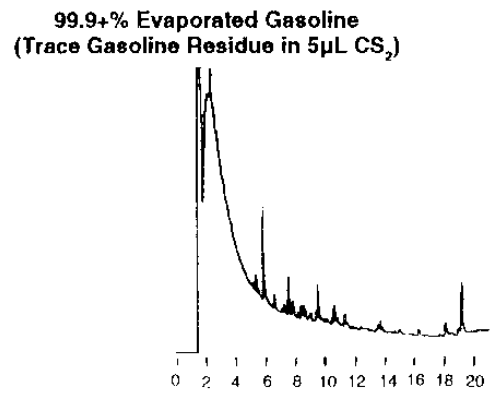
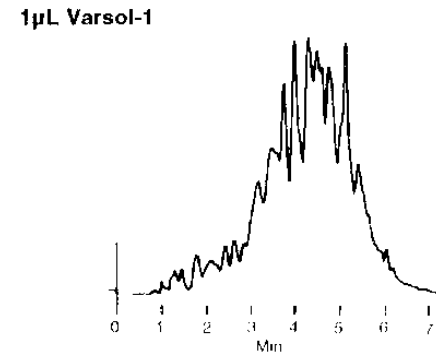
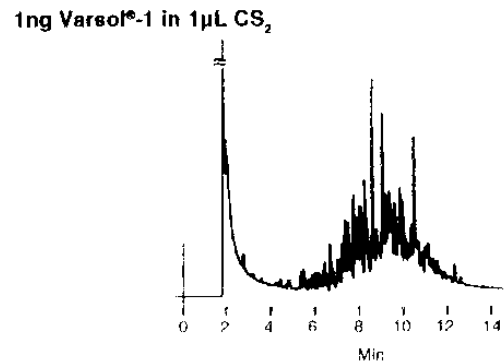
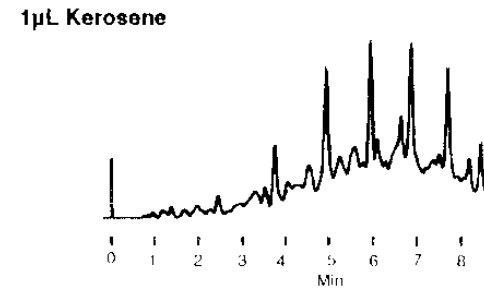
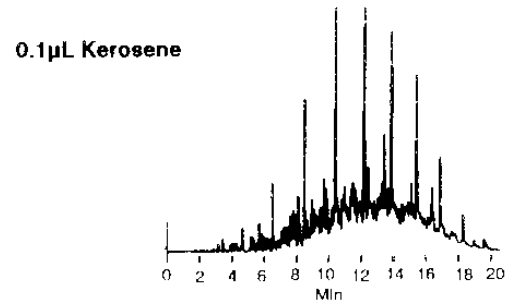
Chromatography + SpeKtrometry
Analytical Solutions + Control

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GASTRICAL PURGING

**HRGC/HPLC/DIP-MASS SPECTROMETRY COMBINED SYSTEMS :
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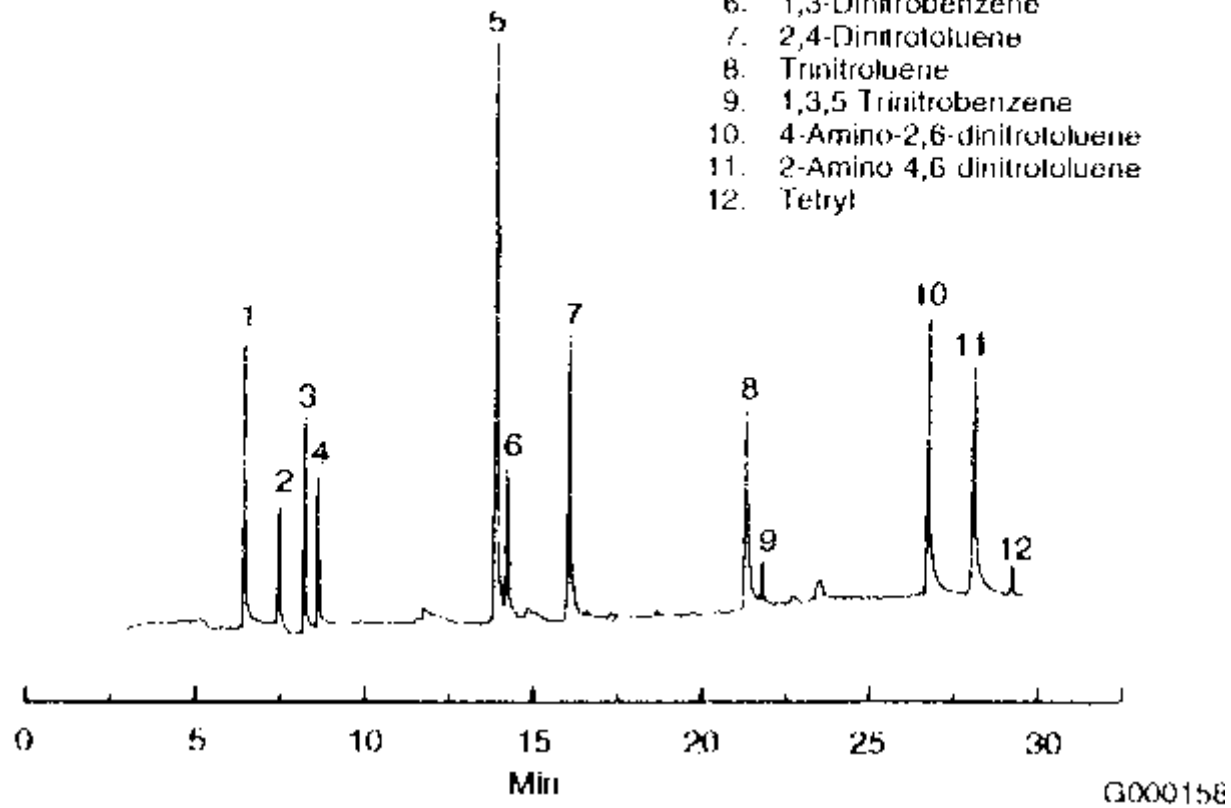


FIRE (WASTES)

HRGC/HPLC/DIP-MASS SPECTROMETRY COMBINED SYSTEMS :
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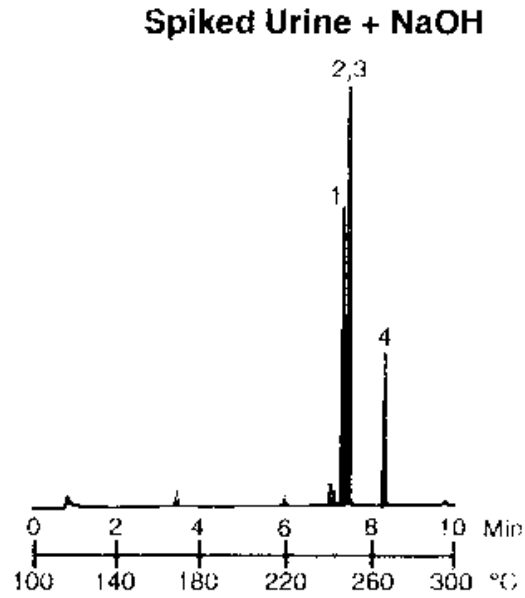
- 1 Nitrobenzene
- 2 2-Nitrotoluene
- 3 3-Nitrotoluene
- 4 4-Nitrotoluene
- 5 2,6 Dinitrotoluene
- 6 1,3-Dinitrobenzene
- 7 2,4-Dinitrotoluene
- 8 Trinitoluene
- 9 1,3,5 Trinitrobenzene
- 10 4-Amino-2,6-dinitrotoluene
- 11 2-Amino 4,6 dinitrotoluene
- 12 Tetryl

EXPLOSIVES

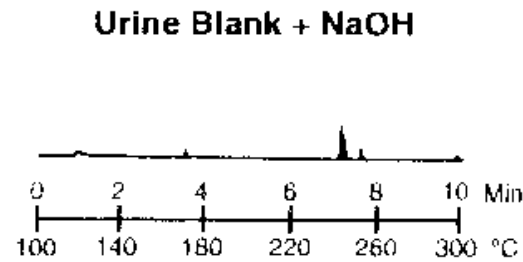
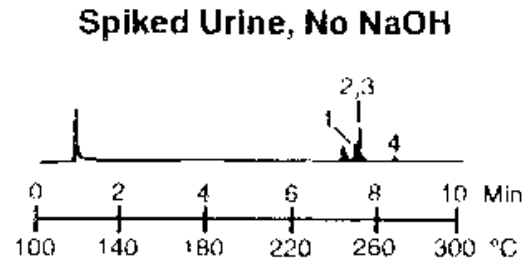


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TRICYCLICS ANTIDEPRESSIVES IN URINE



1. Amitriptyline
2. Imipramine
3. Trimipramine
4. Chlorimipramine

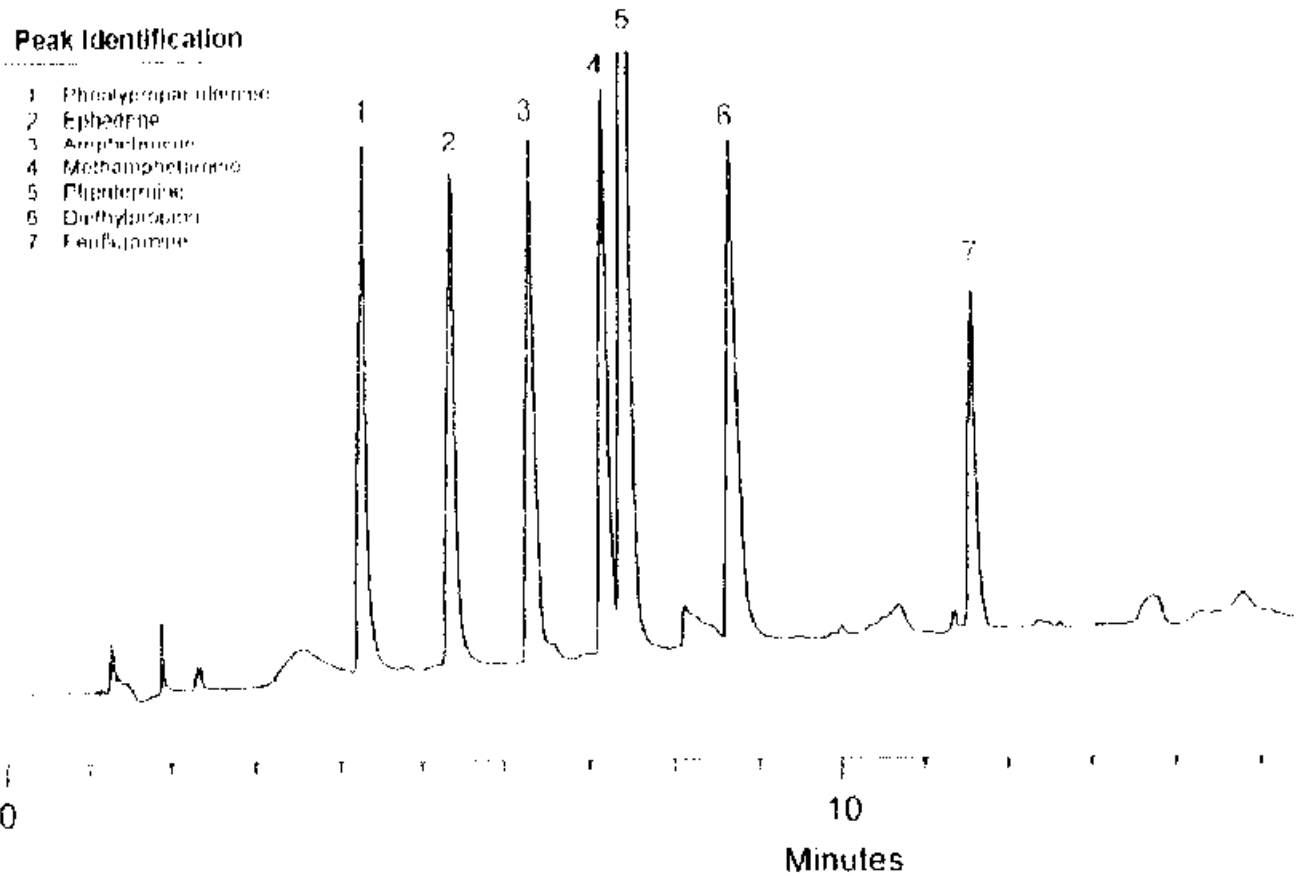


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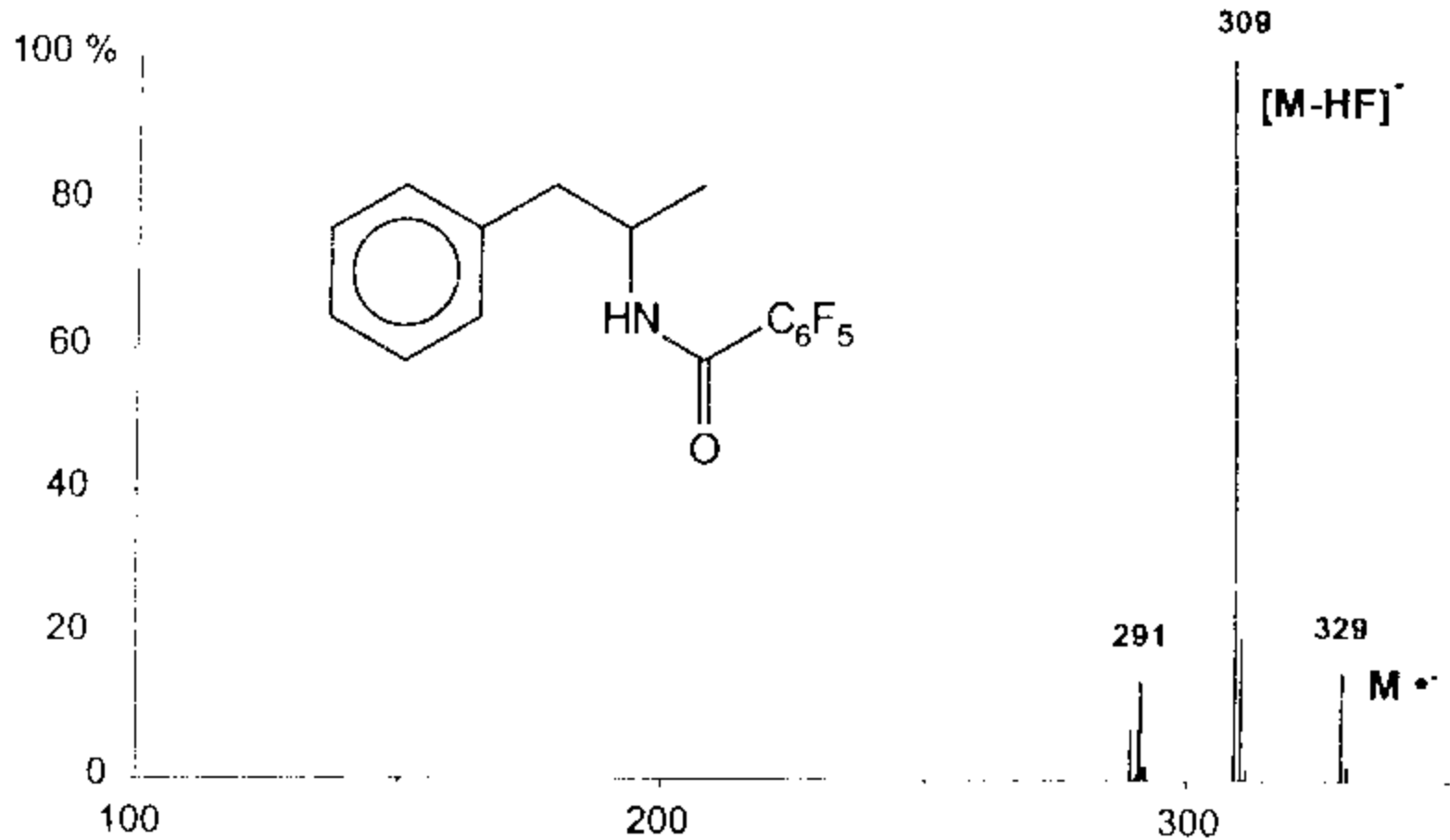
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Khromatography + SpeKtrometry
Analytical Solutions + Control

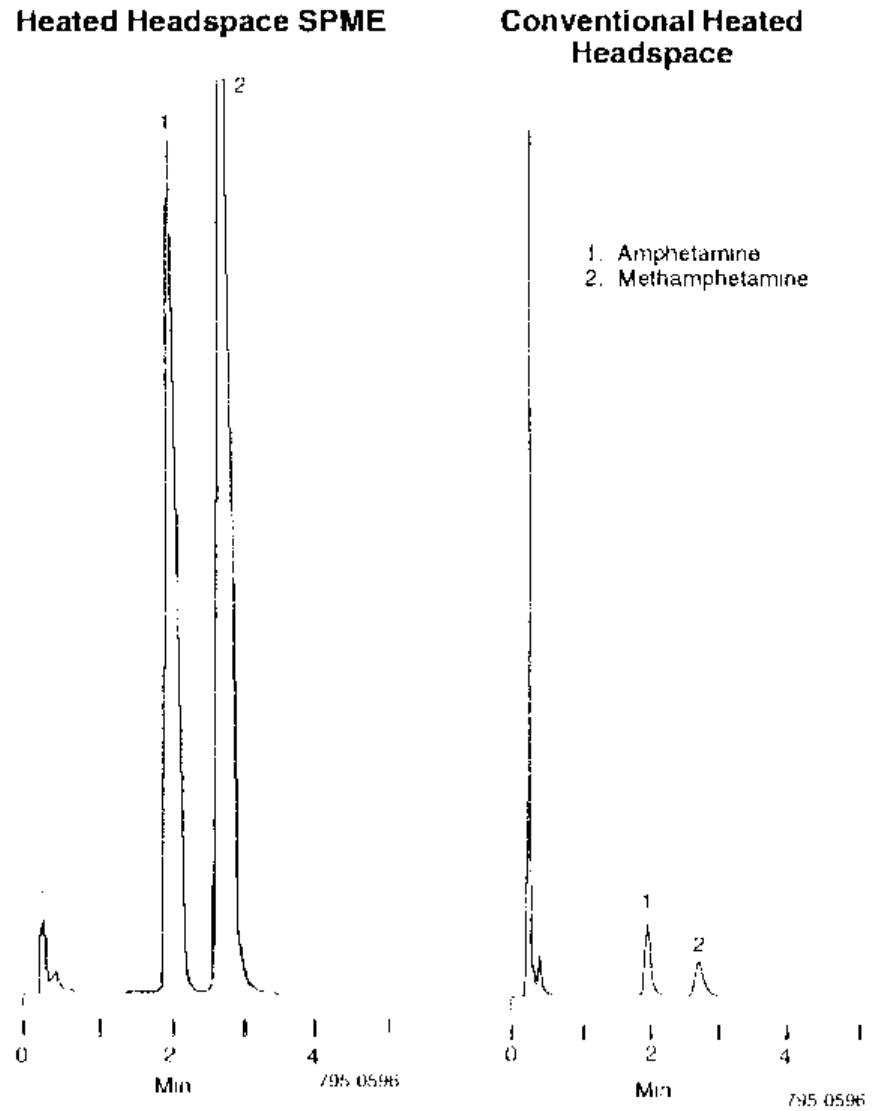
AMPHETAMINES



AMPHETAMINE (TRACE LEVEL)

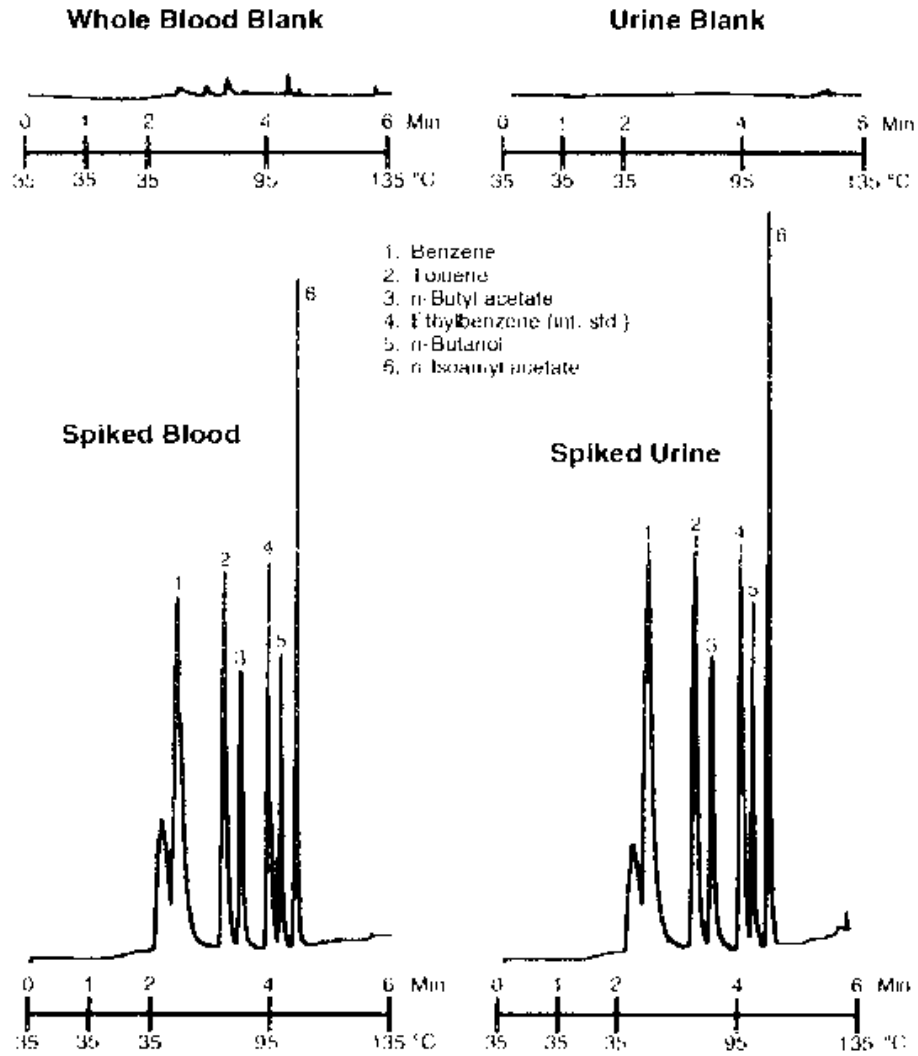


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AMPHETAMINES IN URINE

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SOLVENTS IN BLOOD and URINE

796 0282 0285

ALCOHOL IN BLOOD

