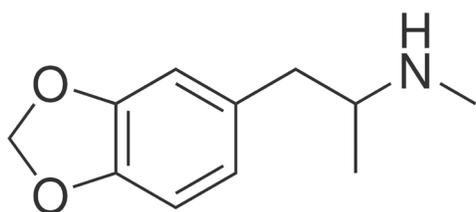
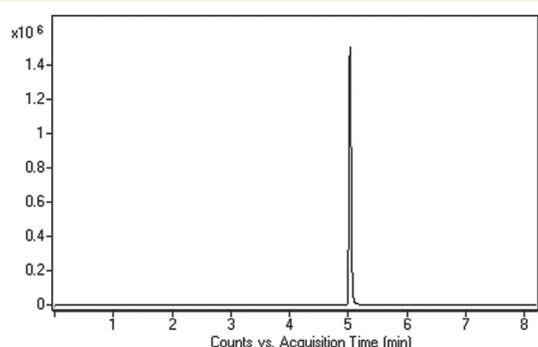


Analysis of MDMA in Plasma

Using phenyl hydride column



Note: The amphetamine derivative 3,4-methylenedioxymethamphetamine (MDMA), known also as Molly or Ecstasy, is often used or abused as a recreational drug. Because of a reported high inter-individual difference of its toxicity, sensitive analytical methods are needed. A urine test is a standard method to investigate drug abuse but the method has a very low diagnostic sensitivity and makes testing in plasma much more suitable.

Reference:

1. R. Kikura, Y. Nakahara, T. Mieczkowski, F. Tagliaro, *Forensic Sci. Int.* 84 (1997) 165-177.

Method Conditions

Column: Cogent Phenyl Hydride™, 4µm, 100Å

Catalog No.: 69020-05P-2

Dimensions: 2.1 x 50 mm

Mobile Phase: A: DI H₂O / 0.1% formic acid (v/v)
B: Acetonitrile / 0.1% formic acid (v/v)

Gradient:	time (min.)	%B
	0	10
	1	10
	6	90
	7	10

Post Time: 3 min

Flow rate: 0.4 mL/min

Injection vol.: 1µL

Sample: 50 µL of acetonitrile was mixed with 50 µL of plasma for protein precipitation. The samples were centrifuged (16000×g for 15 min), and the supernatant was filtered through a 0.45µm nylon syringe filter (MicroSolv Tech Corp.) and transferred to autosampler vials

Peak: (±)-3,4-Methylenedioxymethamphetamine, m/z 194.1176 [M+H]⁺

Detection: ESI - POS - Agilent 6210 MSD TOF mass spectrometer

t₀: 0.9 min

Discussion

Under the described conditions, MDMA was retained and eluted as a symmetrical peak. The sensitivity of the method is very good and comparable to that reported with GC-MS detection¹. Matrix effects were of minor extent and reproducible and hence should not compromise quantification. The method can be used for forensic research and clinical analysis.