Waters™

應用手冊

Analysis of Drugs of Abuse Using XBridge Shield RP_{18}

Waters Corporation

For forensic toxicology use only.

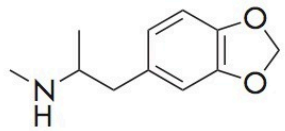
This is an Application Brief and does not contain a detailed Experimental section.

Abstract

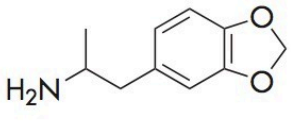
This application brief highlights the analysis of drugs of abuse using Bridge Shield RP_{18} Columns.

Introduction

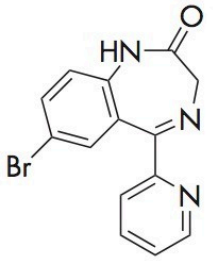
Benzodiazepines, such as clonazepam, bromazepam, lorazepam and flunitrazepam area class of drugs with sedative, hypnotic, anxiolytic, anti-convulsant, amnestic, and muscle relaxant properties. They are considered minor tranquilizers and have a high potential for abuse. MDA is the parent drug of MDMA, also known as Ecstasy. They are commonly abused, amphetamine – derived recreational drugs.



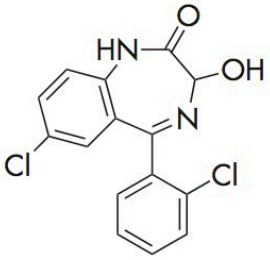
1. MDMA



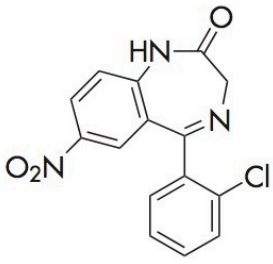
2. MDA



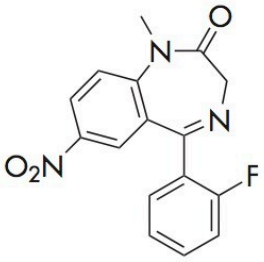
3. Bromazepam



4. Lorazepam



5. Clonazepam



6. Flunitrazepam

Experimental

Test Conditions

Columns:	XBridge Shield RP_{18} 4.6 X 100 mm, 3.5 µm p/n: 186003044
Mobile phase A:	H_2O
Mobile phase B:	ACN
Mobile phase C:	100 mM NH_4HCO_3, pH 9.6
Flow rate:	0.6 mL/min
Injection volume:	10 µL
Sample Concentration and Diluent:	10 µg/mL in H_2O
Temp.:	40 °C
Sampling Rate:	5 points /second
Detection:	UV @ 210 nm
Time Constant:	1.0
Needle Wash:	5/95 MeOH/H_2O
Instrument:	Alliance 2695 with 2996 PDA

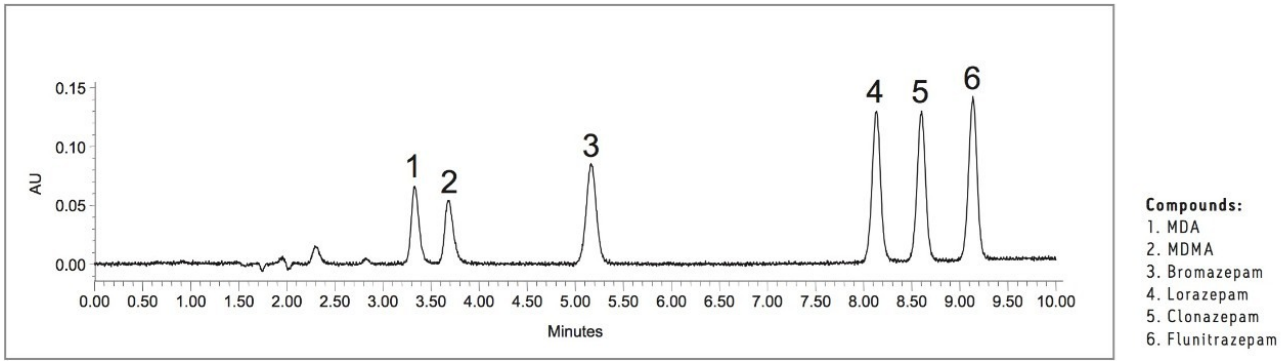
System Suitability Parameters

	Retention Time (min)	USP Tailing Factor	Width at 4.4%	USP Resolution
MDA	3.32	0.98	0.181	
MDMA	3.66	1.21	0.190	2.14
Bromazepam	5.16	1.05	0.223	8.28
Lorazepam	8.13	0.97	0.209	16.68
Clonazepam	8.60	0.97	0.209	2.81
Flunitrazepam	9.14	0.98	0.208	3.28

Gradient

Time(min)	%A	%B	%C
0	63	32	5
3	63	32	5
7	45	50	5
9	45	50	5
10	63	32	5
12	63	32	5

Results and Discussion



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