



## Analysis of Drugs of Abuse Using XBridge Shield RP<sub>18</sub>

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Waters Corporation



*For forensic toxicology use only.*

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

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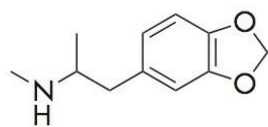
## Abstract

This application brief highlights the analysis of drugs of abuse using Bridge Shield RP<sub>18</sub> Columns.

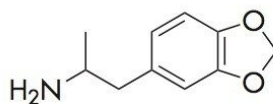
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## Introduction

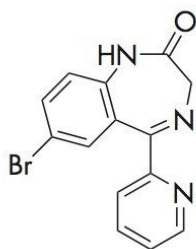
Benzodiazepines, such as clonazepam, bromazepam, lorazepam and flunitrazepam are a class of drugs with sedative, hypnotic, anxiolytic, anti-convulsant, amnesic, and muscle relaxant properties. They are considered minor tranquilizers and have a high potential for abuse. MDA is the parent drug of MDMA,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



1. MDMA



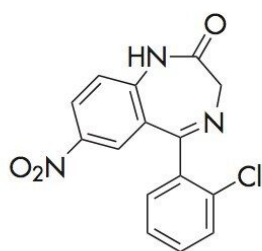
2. MDA



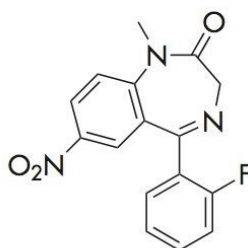
3. Bromazepam



4. Lorazepam



5. Clonazepam



6. Flunitrazepam

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## Experimental

### Test Conditions

Columns:

XBridge Shield RP<sub>18</sub> 4.6 X 100 mm, 3.5 µm p/n:  
186003044

Mobile phase A:

H<sub>2</sub>O

Mobile phase B:

ACN

Mobile phase C:	100 mM NH <sub>4</sub> HCO <sub>3</sub> , pH 9.6
Flow rate:	0.6 mL/min
Injection volume:	10 µL
Sample Concentration and Diluent:	10 µg/mL in H <sub>2</sub> O
Temp.:	40 °C
Sampling Rate:	5 points /second
Detection:	UV @ 210 nm
Time Constant:	1.0
Needle Wash:	5/95 MeOH/H <sub>2</sub> O
Instrument:	Alliance 2695 with 2996 PDA

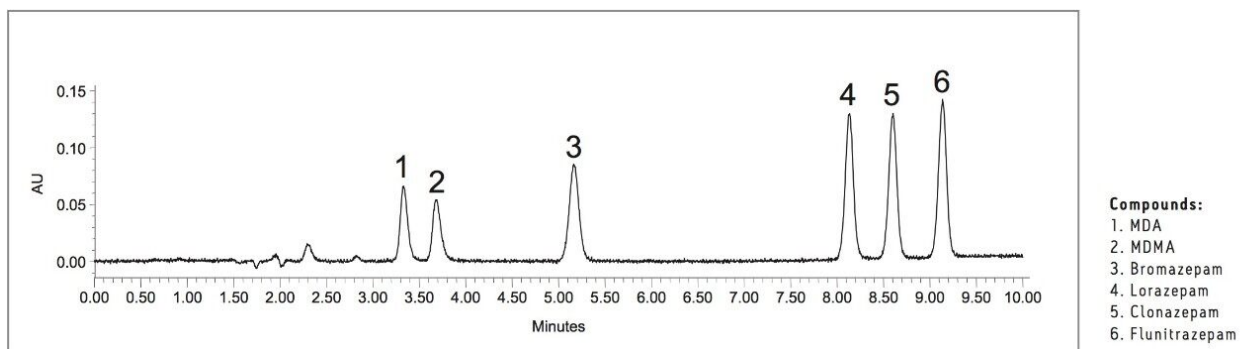
### System Suitability Parameters

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