

APPLICATION

Drugs of Abuse Analysis by GC/MS using a Zebron™ ZB-5MS_{PLUS}™ GC Column

Matt Trass and Tim Anderson
Phenomenex, Inc., 411 Madrid Ave., Torrance, CA 90501 USA

Overview

This application note describes the GC/MS analysis of 23 drugs of abuse from various compound classes such as amphetamines, benzodiazepines, cannabinoids, and other illicit drugs. The specially deactivated Zebron ZB-5MS_{PLUS} GC column provides excellent separation of peak shape for accurate drugs of abuse analysis.

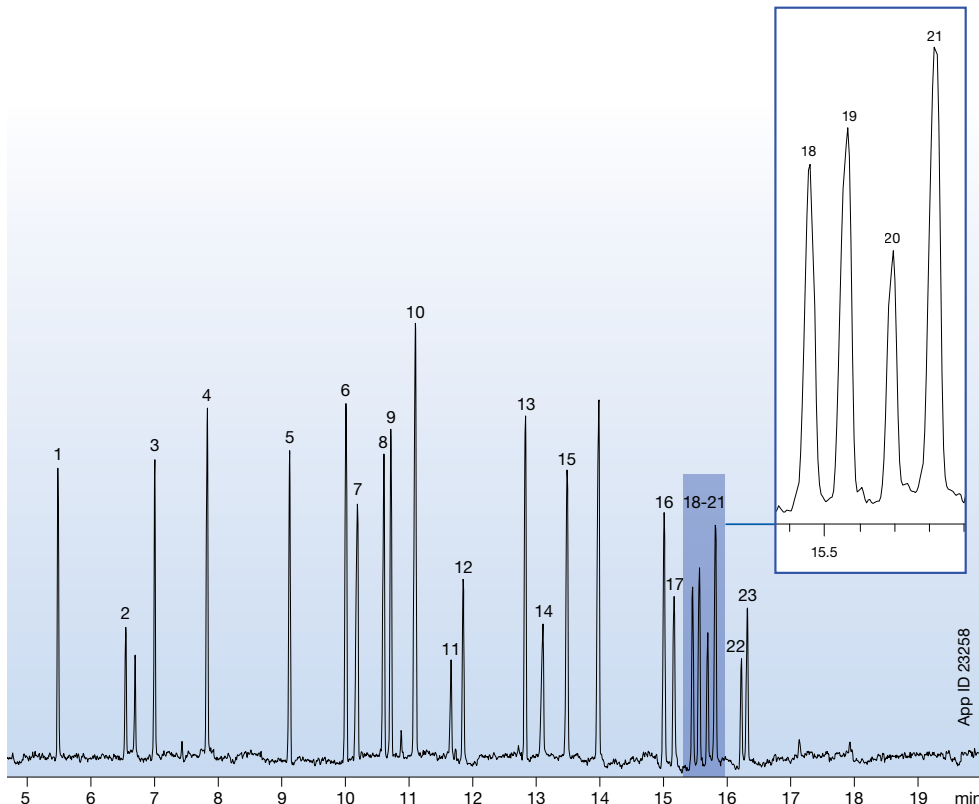
Conditions

Column: Zebron ZB-5MS_{PLUS}
Dimensions: 30 meter x 0.25 mm x 0.25 μm
Part No.: 7HG-G030-11
Injection: Splitless @ 250 °C, 1 μL
Carrier Gas: Helium @ 1.4 mL/min (constant flow)
Oven Program: 70 °C for 1 min to 150 °C @ 30 °C/min to 320 °C @ 10 °C/min for 5.5 min
Detection: MSD @ 250 °C; 45–450 amu
Note: Analytes are 25 ppm in Methanol

Analytes

- | | |
|--------------------|------------------------------|
| 1. Nicotine | 13. Topiramate |
| 2. MDA | 14. Cocaine |
| 3. MDMA | 15. Cocaethylene |
| 4. MDA | 16. CBD |
| 5. Meperidine | 17. Codeine |
| 6. Benzamphetamine | 18. Ethylmorphine |
| 7. Glutethimide | 19. Diazepam |
| 8. PCP | 20. Hydrocodone |
| 9. Doxylamine | 21. Δ-9-Tetrahydrocannabinol |
| 10. Tramadol | 22. 6-MAM |
| 11. Procaine | 23. Oxycodone |
| 12. Methadone | |

Representative Chromatogram of 28 Drugs of Abuse by GC/MS



APPLICATION

Ordering Information

Zebron™ ZB-5MSPLUS™ GC Columns

Length (mm)	ID (mm)	Film (µm)	Temp Limits (°C)	Part No.	Part No.	Part No.
					with 5 m Guardian™	with 10 m Guardian™
15	0.25	0.25	-60 to 325/350	7EG-G030-11	—	—
20	0.18	0.18	-60 to 325/350	7FD-G030-08	—	—
	0.18	0.36	-60 to 325/350	7FD-G030-53	—	—
30	0.25	0.25	-60 to 325/350	7HG-G030-11	7HG-G030-11-GGA	7HG-G030-11 -GGC
	0.25	0.50	-60 to 325/350	7HG-G030-17	—	7HG-G030-17-GGC
	0.25	1.00	-60 to 325/350	7HG-G030-22	—	—
	0.32	0.25	-60 to 325/350	7HM-G030-11	—	—
	0.32	1.00	-60 to 325/350	7HM-G030-22	—	—
60	0.25	0.25	-60 to 325/350	7KG-G030-11	—	—



If Phenomenex products in this technical note do not provide at least an equivalent separation as compared to other products of the same phase and dimensions, return the product with comparative data within 45 days for a FULL REFUND.

Australia

t: +61 (0)2-9428-6444
f: +61 (0)2-9428-6445
auiinfo@phenomenex.com

Austria

t: +43 (0)1-319-1301
f: +43 (0)1-319-1300
anfrage@phenomenex.com

Belgium

t: +32 (0)2 503 4015 (French)
t: +32 (0)2 511 8666 (Dutch)
f: +31 (0)30-2383749
beinfo@phenomenex.com

Canada

t: +1 (800) 543-3681
f: +1 (310) 328-7768
info@phenomenex.com

China

t: +86 (0)20 2282-6668
f: +86 (0)20 2809-8130
chinainfo@phenomenex.com

Denmark

t: +45 4824 8048
f: +45 4810 6265
nordicinfo@phenomenex.com

Finland

t: +358 (0)9 4789 0063
f: +45 4810 6265
nordicinfo@phenomenex.com

France

t: +33 (0)1 30 09 21 10
f: +33 (0)1 30 09 21 11
franceinfo@phenomenex.com

Germany

t: +49 (0)6021-58830-0
f: +49 (0)6021-58830-11
anfrage@phenomenex.com

India

t: +91 (0)40-3012 2400
f: +91 (0)40-3012 2411
indiainfo@phenomenex.com

Ireland

t: +353 (0)1 247 5405
f: +44 1625-501796
eireinfo@phenomenex.com

Italy

t: +39 051 6327511
f: +39 051 6327555
italiainfo@phenomenex.com

Luxembourg

t: +31 (0)30-2418700
f: +31 (0)30-2383749
nlinfo@phenomenex.com

Mexico

t: 001-800-844-5226
f: 001-310-328-7768
tecnicomx@phenomenex.com

The Netherlands

t: +31 (0)30-2418700
f: +31 (0)30-2383749
nlinfo@phenomenex.com

New Zealand

t: +64 (0)9-4780951
f: +64 (0)9-4780952
nzinfo@phenomenex.com

Norway

t: +47 810 02 005
f: +45 4810 6265
nordicinfo@phenomenex.com

Puerto Rico

t: +1 (800) 541-HPLC
f: +1 (310) 328-7768
info@phenomenex.com

Spain

t: +34 91-413-8613
f: +34 91-413-2290
espinfo@phenomenex.com

Sweden

t: +46 (0)8 611 6950
f: +45 4810 6265
nordicinfo@phenomenex.com

United Kingdom

t: +44 (0)1625-501367
f: +44 (0)1625-501796
ukinfo@phenomenex.com

USA

t: +1 (310) 212-0555
f: +1 (310) 328-7768
info@phenomenex.com

All other countries Corporate Office USA

t: +1 (310) 212-0555
f: +1 (310) 328-7768
info@phenomenex.com

Terms and Conditions

Subject to Phenomenex Standard Terms and Conditions which may be viewed at www.phenomenex.com/TermsAndConditions.

Trademarks

Zebron, Guardian, and 5MSPLUS are trademarks of Phenomenex.

© 2015 Phenomenex, Inc. All rights reserved.

www.phenomenex.com

Phenomenex products are available worldwide. For the distributor in your country, contact Phenomenex USA, International Department at international@phenomenex.com