

APPLICATION

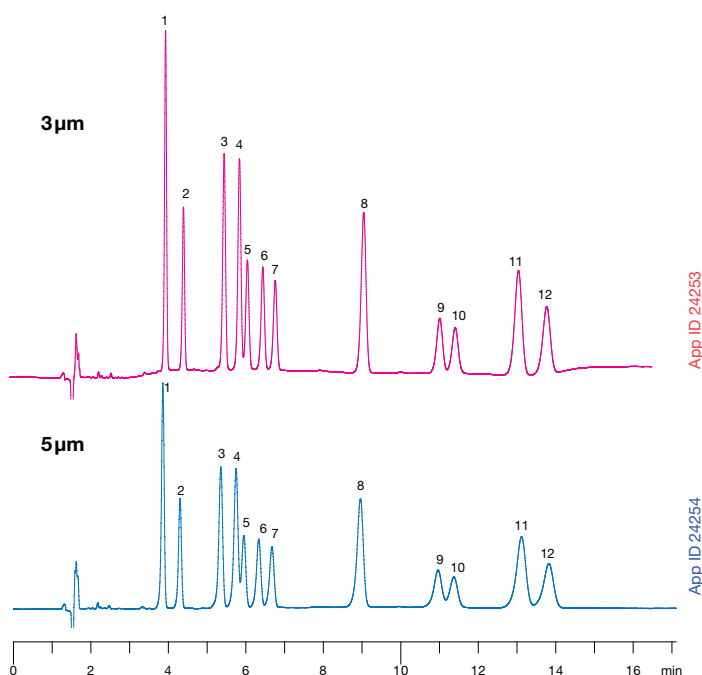
Separation of Twelve Major Cannabinoids using a Luna Omega Polar C18 in Two Particle Sizes: 3 μ m and 5 μ m

Morgan Kramer and Simon Lomas
Phenomenex, Inc., 411 Madrid Ave., Torrance, CA 90501 USA

Overview

In the United States cannabis has received increased attention in recent months with more states adopting a legalization approach over criminalization. As a result of this recent surge, there has been an elevated demand for scalable analytical and preparative LC methodology for the relevant compounds present in cannabis, known as cannabinoids. These compounds are the major targets and are responsible for the psychoactive and potentially therapeutic nature of cannabis. Therefore, monitoring the cannabinoid composition is an important step in evaluating the potency of cannabinoids in plants and consumables. Here we present a fast, efficient, and robust method for the separation of the twelve major cannabinoids in a single run. The Luna Omega Polar C18 stationary phase demonstrates a high degree of selectivity among cannabinoids while maintaining excellent resolution across multiple loads. This excellent loadability combined with direct scalability between particle sizes (1.6 μ m, 3 μ m, 5 μ m) allows for seamless transfer from UHPLC/UHPLC instrumentation to preparative LC systems for purification work.

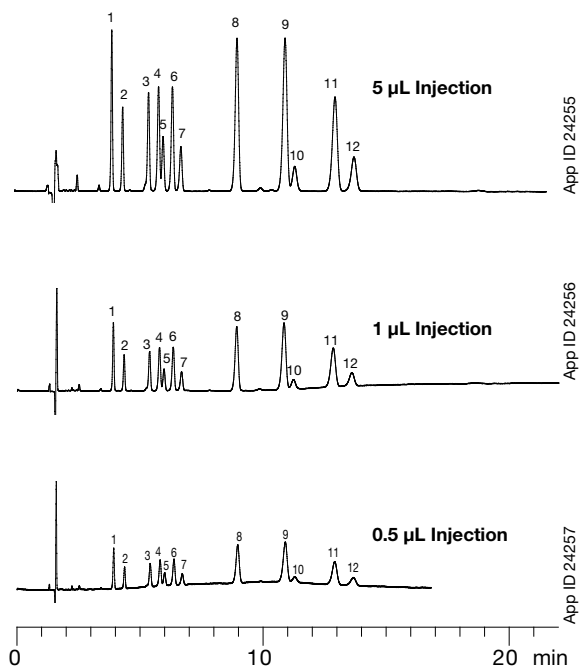
Figure 1.
Separation of 12 Cannabinoids on Luna Omega Polar C18 3 μ m and 5 μ m



LC-UV Conditions

Column: Luna Omega 3 μ m Polar C18
Luna Omega 5 μ m Polar C18
Dimensions: 150 x 4.6 mm
Part No.: 00F-4760-E0
00F-4754-E0
Mobile Phase: A: Water with 0.1 % Formic Acid
B: Acetonitrile with 0.1 % Formic Acid (A:B 25:75)
Flow Rate: 1 mL/min
Temperature: 22 $^{\circ}$ C
Detection: UV @ 230 nm
Analytes: 1. Cannabidivarinic Acid (CBDVA)
2. Cannabidivarin (CBDV)
3. Cannabidiolic Acid (CBDA)
4. Cannabigerolic Acid (CBGA)
5. Cannabigerol (CBG)
6. Cannabidiol (CBD)
7. Tetrahydrocannabivarin (THCV)
8. Cannabinol (CBN)
9. Delta-9-Tetrahydrocannabinol (THC)
10. Delta-8-Tetrahydrocannabinol (THC)
11. Cannibichromene (CBC)
12. Delta-9-Tetrahydrocannabinolic Acid (THCA-A)

Figure 2.
Various Loads of 12 Cannabinoids on Luna Omega 3 μ m Polar C18



APPLICATION

Luna[®] Omega Ordering Information

5 µm Minibore and MidBore™ Columns (mm)								SecurityGuard™ Cartridges (mm)
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	50 x 3.0	100 x 3.0	150 x 3.0	4 x 2.0*
Polar C18	00A-4754-AN	00B-4754-AN	00D-4754-AN	00F-4754-AN	00B-4754-YO	00D-4754-YO	00F-4754-YO	AJO-7600 for ID: 2.0 - 3.0 mm

5 µm Analytical Columns (mm)					SecurityGuard Cartridges (mm)
Phases	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	4 x 3.0*
Polar C18	00B-4754-E0	00D-4754-E0	00F-4754-E0	00G-4754-E0	AJO-7601 for ID: 3.2-8.0 mm

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: +86 400-606-8099
f: +86 (0)22 2532-1033
phen@agela.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
indiaiinfo@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

www.phenomenex.com

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

Mexico
t: 01-800-844-5226
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

3 µm Minibore Columns (mm)						SecurityGuard Cartridges (mm)
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	4 x 2.0*	
Polar C18	00A-4760-AN	00B-4760-AN	00D-4760-AN	00F-4760-AN	AJO-7600	for ID: 2.0-3.0 mm

3 µm MidBore Columns (mm)					SecurityGuard Cartridges (mm)
Phases	50 x 3.0	100 x 3.0	150 x 3.0	4 x 2.0*	
Polar C18	00B-4760-YO	00D-4760-YO	00F-4760-YO	AJO-7600	for ID: 2.0-3.0 mm

3 µm Analytical Columns (mm)						SecurityGuard Cartridges (mm)
Phases	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	4 x 3.0*	
Polar C18	00B-4760-E0	00D-4760-E0	00F-4760-E0	00G-4760-E0	AJO-7601	for ID: 3.2-8.0 mm

1.6 µm Microbore Columns (mm)			
Phases	50 x 1.0	100 x 1.0	150 x 1.0
Polar C18	00B-4748-A0	00D-4748-A0	00F-4748-A0

1.6 µm Minibore Columns (mm)					SecurityGuard ULTRA Cartridges [†]
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
Polar C18	00A-4748-AN	00B-4748-AN	00D-4748-AN	00F-4748-AN	AJO-9505 for ID: 2.1 mm

[†] SecurityGuard ULTRA Cartridges require holder, Part No.: AJO-9000

^{*} SecurityGuard Analytical Cartridges require holder, Part No.: KJO-4282



If Luna analytical columns do not provide at least an equivalent separation as compared to a competing column of the same particle size, similar phase and dimensions, return the column with comparative data within 45 days for a FULL REFUND.

Terms and Conditions

Subject to Phenomenex Standard Terms and Conditions, which may be viewed at <http://www.phenomenex.com/TermsAndConditions>.

Trademarks

MidBore and SecurityGuard are trademarks and Luna is a registered trademark of Phenomenex.

SecurityGuard is patented by Phenomenex. U.S. Patent No. 6,162,362

CAUTION: this patent only applies to the analytical-sized guard cartridge holder, and does not apply to SemiPrep, PREP or ULTRA holders, or to any cartridges.

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