

APPLICATIONS

Demonstrating the Luna[®] Omega C18's Reproducibility, Scalability – HPLC to UHPLC – 1.6 μm , 3 μm , and 5 μm

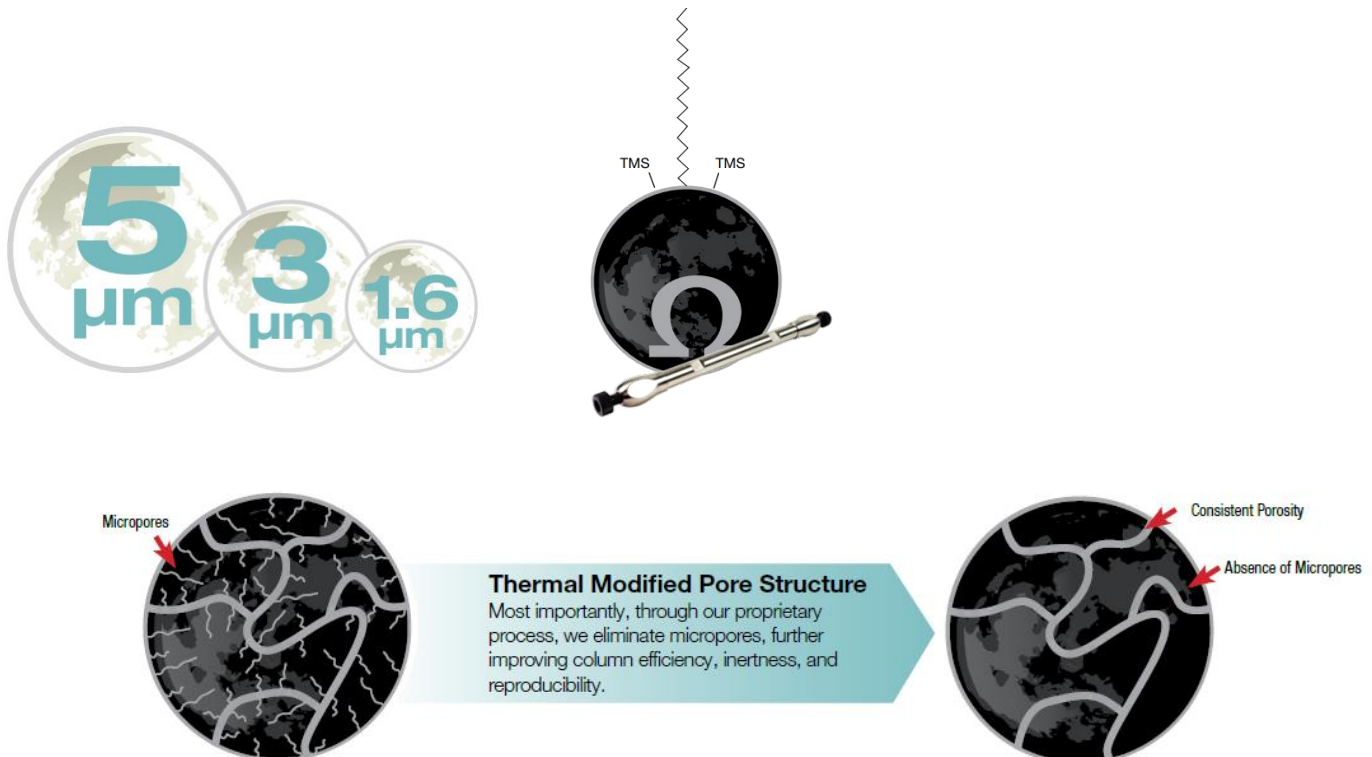
Zeshan Aqeel, J Preston, and Simon Lomas
Phenomenex, Inc., 411 Madrid Ave., Torrance, CA 90501 USA

Overview

The use of sub-2 μm particle technology and UHPLC equipment allows for the fast development of high performing methods, however the backward compatibility with low-pressure HPLC equipment is essential. This type of method portability allows for multiple workflows and system flexibility. The Luna Omega particle and phase was engineered to have scalable selectivity between the three different available particle sizes 1.6 μm , 3 μm , and 5 μm . In this application, a representative pharmaceutical QC system suitability standard mix was injected across the three available particle sizes at corresponding dimensions and on the same instrument. Three batches for each particle were compared to demonstrate reproducibility from batch-to-batch and column-to-column.

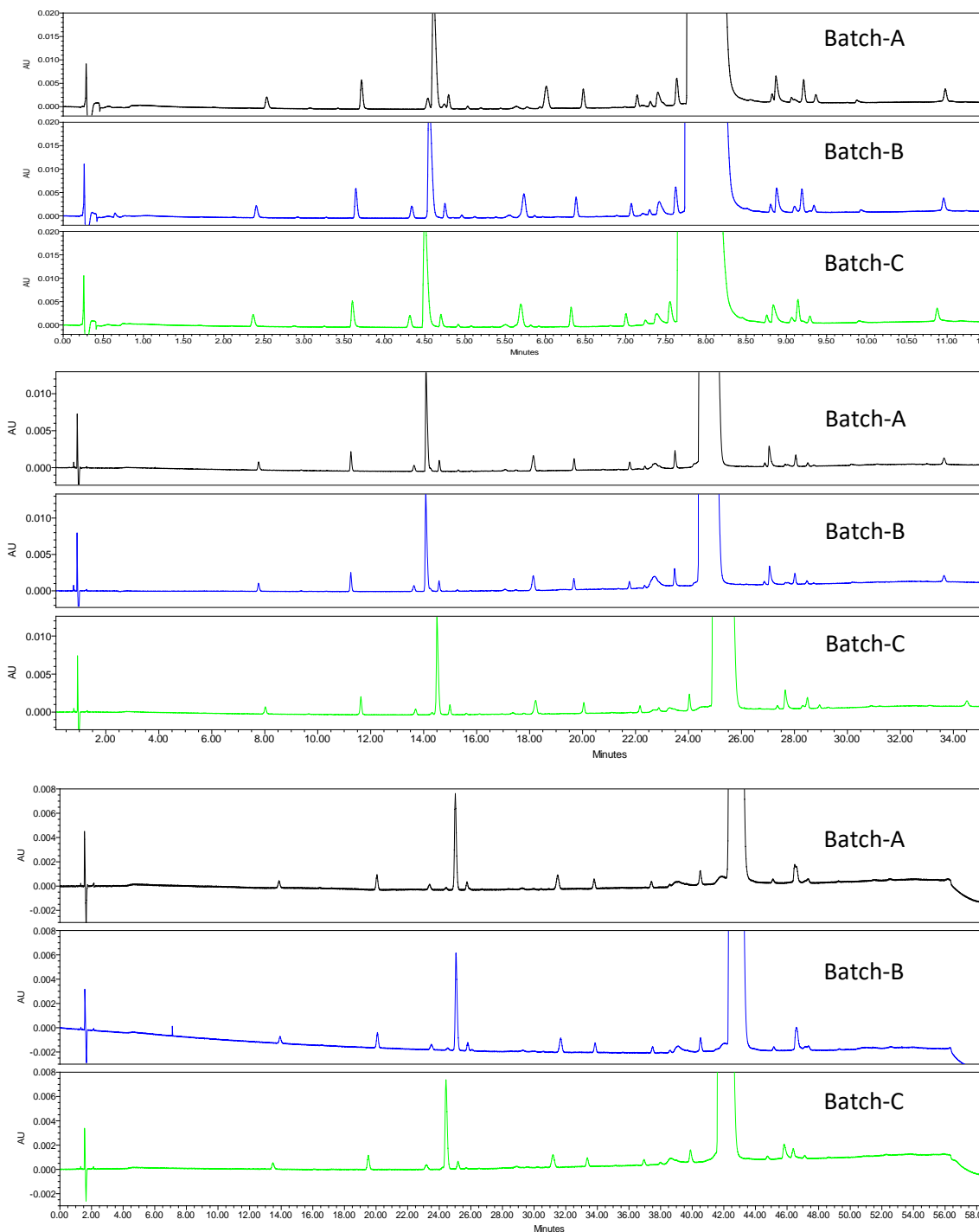
LC Conditions

Column: Luna Omega 1.6 μm C18
Luna Omega 3 μm C18
Luna Omega 5 μm C18
Dimension: 50 x 2.1 mm
150 x 4.6 mm
250 x 4.6 mm
Part No.: [00B-4742-AN](#)
[00F-4784-E0](#)
[00G-4785-E0](#)
Mobile Phase: A: Water with 0.1 % Formic Acid
B: Acetonitrile with 0.1 % Formic Acid
Gradient: See Chromatogram for Scaled Gradient
Flow Rate: See Chromatogram for Scaled Flow Rate
Temperature: 30 °C
Detector: UV @ 254 nm
Injection Volume: 1 μL or 5 μL of (5 mg/mL)
Sample: Chlorhexidine and Related Substances



Overview

The representative standard was a complex mixture of chlorhexidine and related substances standard dissolved in water with 0.1 % formic acid. A 1 μ L injection volume of 5 mg/mL standard solution was used in all examples. The instrument used was a Waters[®] ACQUITY[®] I-Class.



App ID 26092

App ID 26080

App ID 26084

Luna Omega 1.6 μ m C18
50 x 2.1 mm

Time	B%
0	2
0.5	2
10.5	35
11.5	35
12	2
14	2

Injection Vol.: 1 μ L
Flow Rate: 0.5 mL/min

Luna Omega 3 μ m C18
150 x 4.6 mm

Time	B%
0	2
1.5	2
31.5	35
34.5	35
36	2
42	2

Injection Vol.: 5 μ L
Flow Rate: 2.0 mL/min

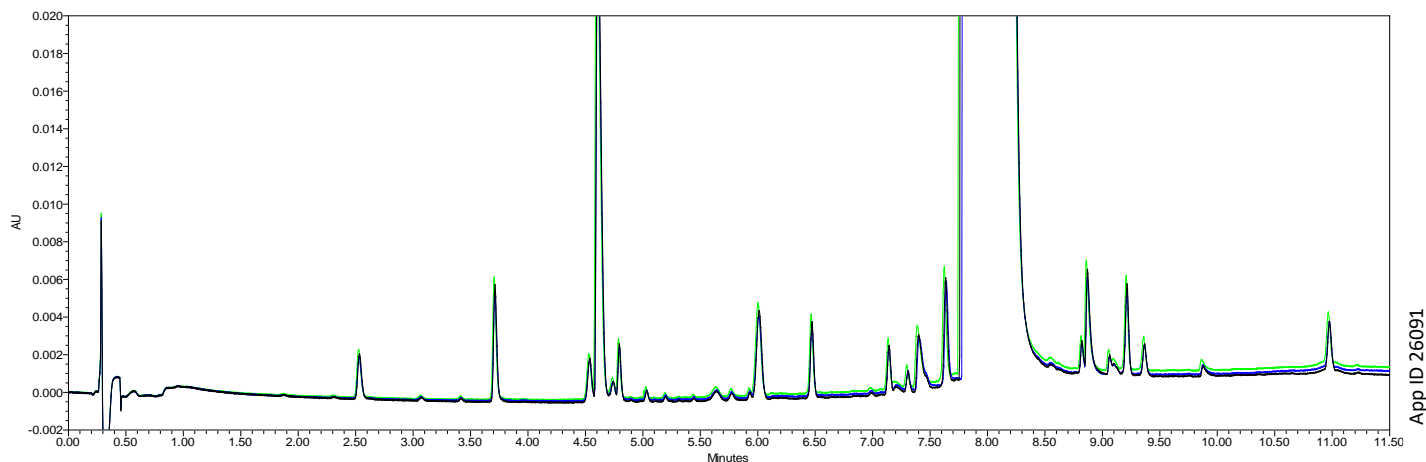
Luna Omega 5 μ m C18
250 x 4.6 mm

Time	B%
0	2
2.5	2
52.5	35
55	35
57.5	2
62.5	2

Injection Vol.: 5 μ L
Flow Rate: 2.5 mL/min



Three batch overlay on Luna Omega 1.6 μ m C18 – Chlorhexidine



App ID 26091

Conclusion

Luna® is one of the most recognized HPLC brands on the market, delivering high efficiency, ruggedness, reproducibility, and dependability for a wide range of analyses. Luna Omega builds upon this legacy with an innovative yet rugged UHPLC and HPLC silica particle architecture, designed and manufactured by Phenomenex based on our unique applied knowledge, invention, and customer experience.

The Luna Omega C18 is a fully porous HPLC and UHPLC particle solution that can provide high performance on any system. Its particle portfolio is reproducibly scalable and was designed for method portability and flexible workflow to fit the analytical demands of the method no matter where the testing has to happen. In this example, a complex system suitability pharmaceutical standard was injected across three batches of each particle size available for Luna Omega C18 under HPLC and UHPLC conditions. The Luna Omega C18 is a great HPLC and UHPLC reproducible starting point with high-performance selectivity and portable particle size availability.



APPLICATIONS

Need a different column size or sample preparation format?

No problem! We have a majority of our available dimensions up on www.phenomenex.com, but if you can't find what you need right away, our super helpful Technical Specialists can guide you to the solution via our online chat portal www.phenomenex.com/LiveChat.

Australia

t: +61 (0)2-9428-6444
auinfo@phenomenex.com

Austria

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

Belgium

t: +32 (0)2 503 4015 (French)
t: +32 (0)2 511 8666 (Dutch)
beinfo@phenomenex.com

Canada

t: +1 (800) 543-3681
info@phenomenex.com

China

t: +86 400-606-8099
cninfo@phenomenex.com

Denmark

t: +45 4824 8048
nordicinfo@phenomenex.com

Finland

t: +358 (0)9 4789 0063
nordicinfo@phenomenex.com

France

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

Germany

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

India

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

Ireland

t: +353 (0)1 247 5405
eireinfo@phenomenex.com

Italy

t: +39 051 6327511
italiainfo@phenomenex.com

Luxembourg

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

Mexico

t: 01-800-844-5226
tecnicomx@phenomenex.com

The Netherlands

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

New Zealand

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

Norway

t: +47 810 02 005
nordicinfo@phenomenex.com

Poland

t: +48 22 104 21 72
pl-info@phenomenex.com

Portugal

t: +351 221 450 488
ptinfo@phenomenex.com

Singapore

t: +65 800-852-3944
sginfo@phenomenex.com

Spain

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

Sweden

t: +46 (0)8 611 6950
nordicinfo@phenomenex.com

Switzerland

t: +41 (0)61 692 20 20
swissinfo@phenomenex.com

Taiwan

t: +886 (0) 0801-49-1246
twinfo@phenomenex.com

United Kingdom

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

USA

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

🌐 **All other countries/regions**
Corporate Office USA
t: +1 (310) 212-0555
info@phenomenex.com

www.phenomenex.com

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

BE-HAPPYTM
guarantee

Your happiness is our mission. Take 45 days to try our products. If you are not happy, we'll make it right.

www.phenomenex.com/behappy

Terms and Conditions

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

Trademarks

Luna is a registered trademark of Phenomenex. Waters and ACQUITY are registered trademarks of Waters Technologies Corporation. Phenomenex is not affiliated with Waters Corporation.

FOR RESEARCH USE ONLY. Not for use in clinical diagnostic procedures.

© 2020 Phenomenex, Inc. All rights reserved.