

APPLICATIONS

Luna Omega C18 Batch-to-Batch Comparison and Results with a Representative QC Suitability Sample

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

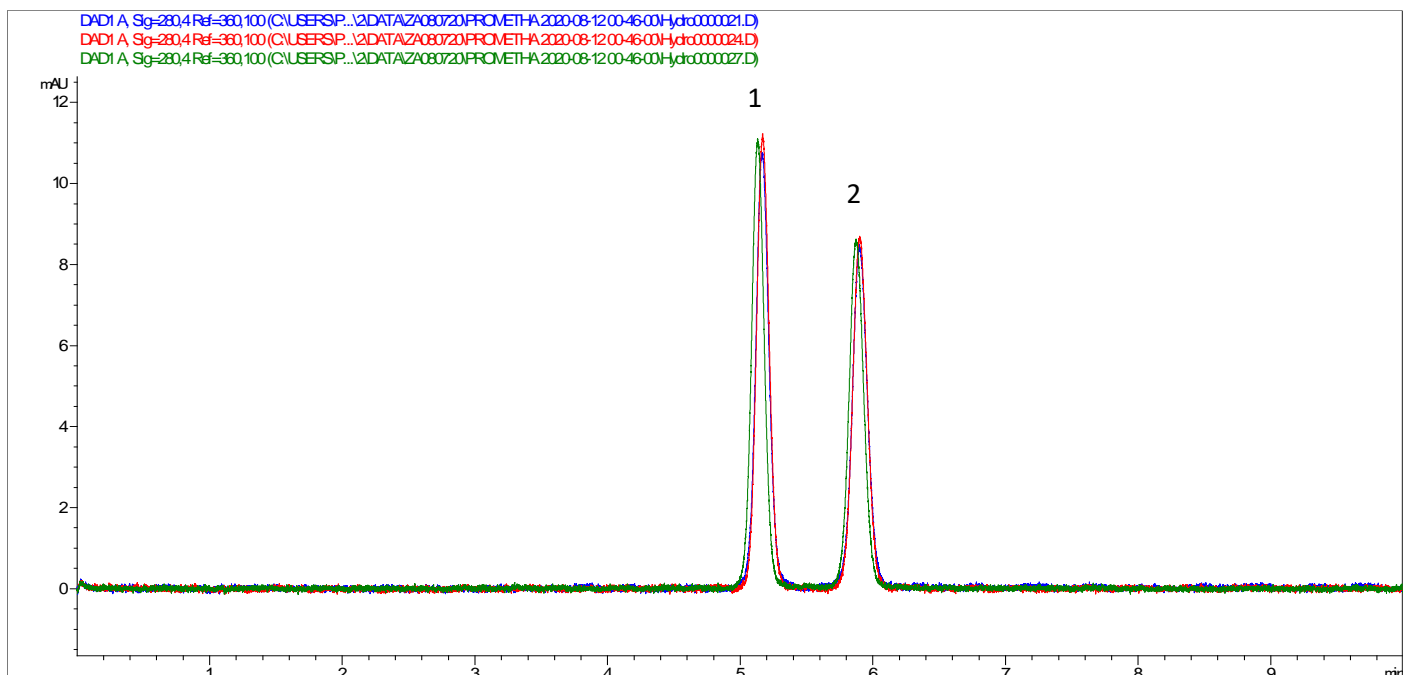
Overview

Within routine analysis environments, system suitability procedures and mixtures are necessary to ensure repeatable results. The Luna Omega C18 was engineered to be and is our most reproducible fully porous C18. This HPLC and UHPLC fully scalable column comes in three different particles sizes and a variety of dimensions, including micro LC (0.3 and 0.5 mm ID). The versatility of this reproducible platform can bring both performance and selectivity to any LC system. In this application, we demonstrate Luna Omega C18's consistency in batch-to-batch reproducibility with a representative Pharmaceutical system suitability standard of trimethoprim and related compound diaveridine. The LC conditions were consistent with accepted methods for the analysis of trimethoprim within a QC environment. The Luna Omega C18 demonstrated consistent batch-to-batch and column-to-column reproducible results in line with expectations.

LC Conditions

Column: Luna® Omega 5 µm C18
Dimension: 250 x 4.6 mm
Part No.: [00G-4785-E0](#)
Mobile Phase: Buffer solution (10 mM Sodium Perchlorate solution in water, adjusted with phosphoric acid to pH 3.6) and methanol (7:3)
Flow Rate: 1.3 mL/min
Temperature: 30 °C
Detector: UV @ 280 nm
Injection Volume: 20 µL
Sample: 1. Diaveridine (5 µg/mL)
2. Trimethoprim (10 µg/mL)

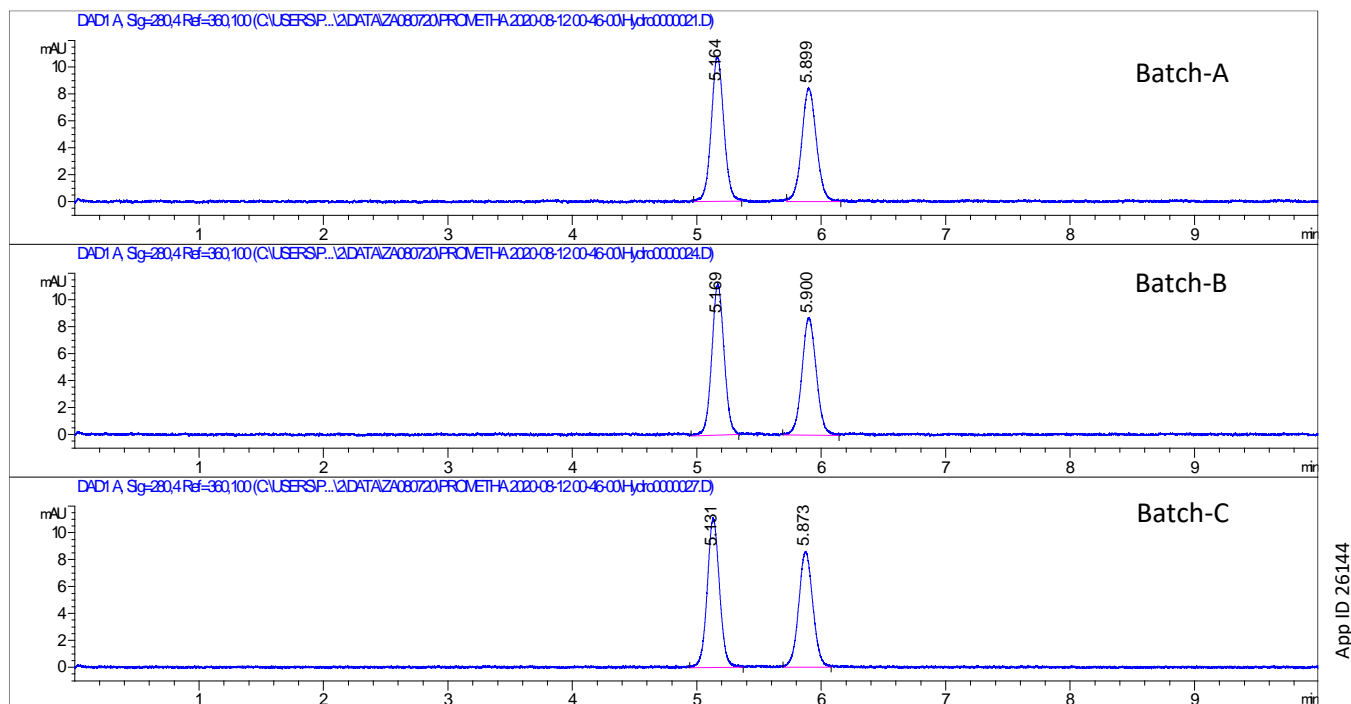
Luna Omega 5 µm C18 Three Batch Overlay:



App ID: 26099

Results and Conclusion

This overlay was generated at the same time and using the same standard mixture of trimethoprim (10 µg/mL) and diaveridine (5 µg/mL) dissolved in *Mobile Phase*. A 20 µL injection volume was used in all examples. The same Agilent® Binary 1260 instrument and chromatographic conditions were used in all batch comparisons.



App ID 26144

Method Summary and Mean Results

N=3	Time	Area	Height	Area%	Symmetry
Diaveridine	5.15	77.2	11.0	52.58	0.90
Trimethoprim	5.89	69.7	8.6	47.45	0.90

Column	Luna® Omega 5 µm C18
System Suitability Diaveridine Average Rt	5.15 min
System Suitability Trimethoprim Average Rt	5.90 min
System Suitability Trimethoprim Average Rs	3.75
System Suitability Trimethoprim Average Peak Height	8.6
System Suitability Trimethoprim Average Peak Area	69.7
System Suitability Trimethoprim Rt RSD (n=3)	0.21 %
System Suitability Peak Area Percent RSD (n=3)	0.42 %
Backpressure (Bar)	206

Conclusion

The Luna Omega C18 performed to expectations and provided consistent results, batch-to-batch and column-to-column for this reference QC mixture. The fully scalable selectivity allows method development flexibility and UHPLC to HPLC method portability. This enables initial investigation to be done with the 1.6 µm particle size for UHPLC screening and development, and then later seamlessly scaled to the 3 and 5 µm dimensions for routine or QC environments. The Luna Omega C18 is a fully porous HPLC and UHPLC particle solution that can provide high performance on any system.

APPLICATIONS

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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
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