

Fast and Efficient Separation of PAHs

Ascentis® Express PAH HPLC Columns

Polycyclic aromatic hydrocarbons (PAHs) are carcinogenic compounds that are commonly found in the environment because of incomplete combustion of tobacco, tar, and fuels. Many regulatory methods exist for the analysis of these compounds in all kinds of samples, such as air, water, soil, and food. To analyze the trace PAHs in water, a highly sensitive method is needed.

Ascentis® Express PAH is a non-encapped trifunctional C18 bonded phase with proprietary manufacturing process designed on proven Fused-Core® technology to provide a fast and efficient separation of PAH compounds.

Ascentis® Express PAH delivers a method-specific, robust, high efficiency separation of 16 + 2 standard

PAH compounds with a resolution value of at least 1.5 in under 5 minutes for EPA.

Key benefits of Ascentis® Express PAH columns include:

- 2.7 µm Fused-Core® particle for reliable and high efficiency separations and lower column back pressure compared to sub-2 µm particles.
- Excellent suitability for UV, Fluorescence and MS detection
- Application-related Lot analysis and single column performance testing
- Pressure limit: 600 bar

Ascentis® Express PAH outperforms a fully porous particle (FPP) sub-2 µm column for a fast 5 min separation of method EPA 8310 + 2 demonstrating improved speed and resolution

Chromatographic Conditions:

Column: Ascentis® Express PAH, 2.7 µm, 5 cm x 4.6 mm, 90A

Part Number: 53539-U

Competitor Column: FPP 95 Å PAH, 1.8 µm, 4.6 x 50 mm

Mobile Phase A: Water B: Acetonitrile

Gradient:	Time	%B
	0.0	50
	4.0	100
	5.0	100
	5.01	50

Flow Rate: 1.8 mL/min

Ascentis® Express Column Pressure: 256 bar

FPP Column Pressure: 344 bar

Temperature: 30 °C

Detection: 280 nm

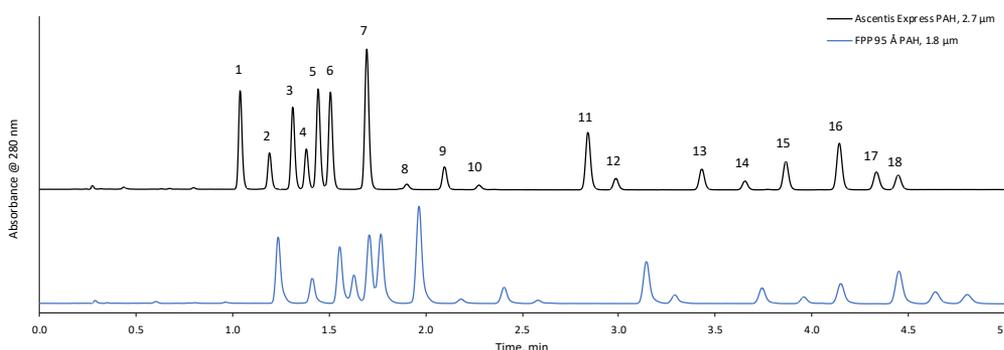
Injection Volume: 2 µL

Sample Solvent: Methanol

Data Rate: 100 Hz

Response Time: 0.025 sec.

Flow Cell: 1 µL



Peak Identities

1. Naphthalene
2. Acenaphthylene
3. 1-methylnaphthalene
4. 2-methylnaphthalene
5. Acenaphthene
6. Fluorene
7. Phenanthrene
8. Anthracene
9. Fluoranthene
10. Pyrene
11. Benzo[a]anthracene
12. Chrysene
13. Benzo[b]fluoranthene
14. Benzo[k]fluoranthene
15. Benzo[a]pyrene
16. Dibenzo[a,h]anthracene
17. Benzo[g,h,i]perylene
18. Indeno[1,2,3-c,d]pyrene

HPLC Separation of 18 PAH with UV detection:

Chromatographic Conditions:

Column: Ascentis Express PAH, 2.7 µm, 10 cm x 3.0 mm, 90A

Part Number: 53535-U

Mobile Phase A: Water B: Acetonitrile

Gradient: Time %B
0.0 50
8.0 100
10.0 100

Flow Rate: 0.77 mL/min

Initial Back Pressure: 263 bar

Temperature: 30 °C

Detection: 280 nm

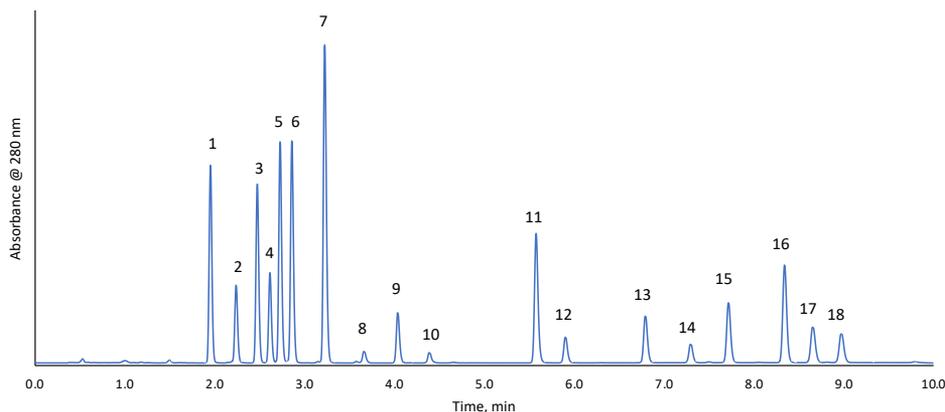
Injection Volume: 2 µL

Sample Solvent: Methanol

Data Rate: 100 Hz

Response Time: 0.025 sec.

Flow Cell: 1 µL



Rapid Separation of 18 PAH with UV and Fluorescence detection:

Chromatographic Conditions:

Column: Ascentis Express PAH, 2.7 µm, 5 cm x 4.6 mm, 90A

Mobile Phase A: Water B: ACN

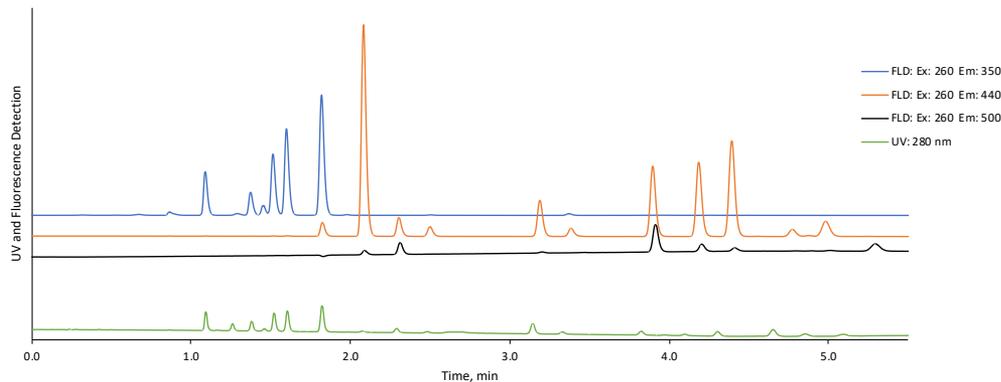
Gradient: Time %B
0.0 50
4.0 100
6.0 100
6.01 50

Flow Rate: 1.8 mL/min

Injection: 0.3 µL

Temperature: Ambient

Detection: FLD: Ex: 260/ Em: 350
350/440/500 UV: 280 nm



Ordering Information

Ascentis® Express PAH, 2.7 µm

Length (mm)	ID (mm)	Cat. No.
50 X	2.1	53513-U
100 X	2.1	53532-U
150 X	2.1	53533-U
50 X	3	53534-U
100 X	3	53535-U
150 X	3	53538-U
50 X	4.6	53539-U
100 X	4.6	53540-U
150 X	4.6	53541-U
250 X	4.6	53550-U

Ascentis® Express PAH Guard columns, 2.7 µm

Length (mm)	ID (mm)	Cat. No.
5 X	2.1	53551-U
5 X	3	53555-U
5 X	4.6	53556-U
Guard column holder		53500-U

To place an order or receive technical assistance

Order/Customer Service: [SigmaAldrich.com/order](https://www.sigmaaldrich.com/order)

Technical Service: [SigmaAldrich.com/techservice](https://www.sigmaaldrich.com/techservice)

Safety-related Information: [SigmaAldrich.com/safetycenter](https://www.sigmaaldrich.com/safetycenter)

MilliporeSigma
400 Summit Drive
Burlington, MA 01803

[SigmaAldrich.com](https://www.sigmaaldrich.com)

© 2021 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved. MilliporeSigma, the vibrant M, Ascentis, and Supelco are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners. Detailed information on trademarks is available via publicly accessible resources.

