

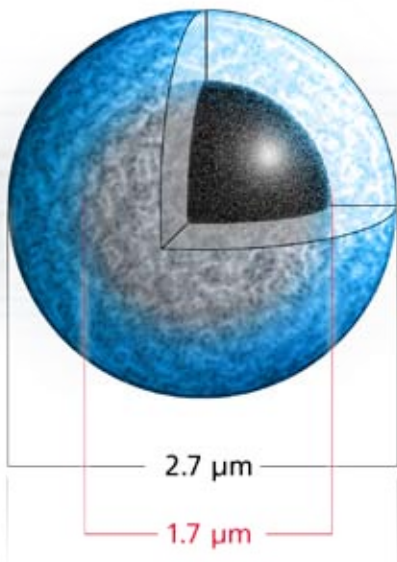
# Ascentis® Express F5 HPLC Columns

## Fused-Core® Technology Columns

Ascentis Express columns provide a breakthrough in HPLC column performance, as well as the benefits of sub 2 micron particles at much lower backpressure. Ascentis Express F5 brings together the highly efficient, robust 2.7 µm Fused-Core particle technology with F5 chemistry for the successful separation of polar and non-polar organic compounds.

The pentafluorophenylpropyl (PFP) stationary phase of Ascentis Express F5 provides a stable, reversed-phase packing with electron-deficient phenyl rings due to the presence of electronegative fluorines. In addition to forming  $\pi$ - $\pi$  and mildly steric interactions, F5 phases also retain compounds by polar interactions. As a result of having both polar and non-polar character, F5 phases can show dual-mode retention behavior, sometimes producing a “U-shaped” retention as a function of acetonitrile content of the mobile phase, with retention increasing at both low and high concentrations of ACN (reversed-phase and HILIC retention modes). Ascentis Express F5 can be used for basic, acidic, or neutral compounds with alternate selectivity from C18.

### Fused-Core Structure of Ascentis Express



For more information on **Ascentis Express HPLC Columns**, call our technical experts at 800-359-3041/814-359-3041 or visit [sigma-aldrich.com/express](http://sigma-aldrich.com/express)

### Key Benefits of Ascentis Express

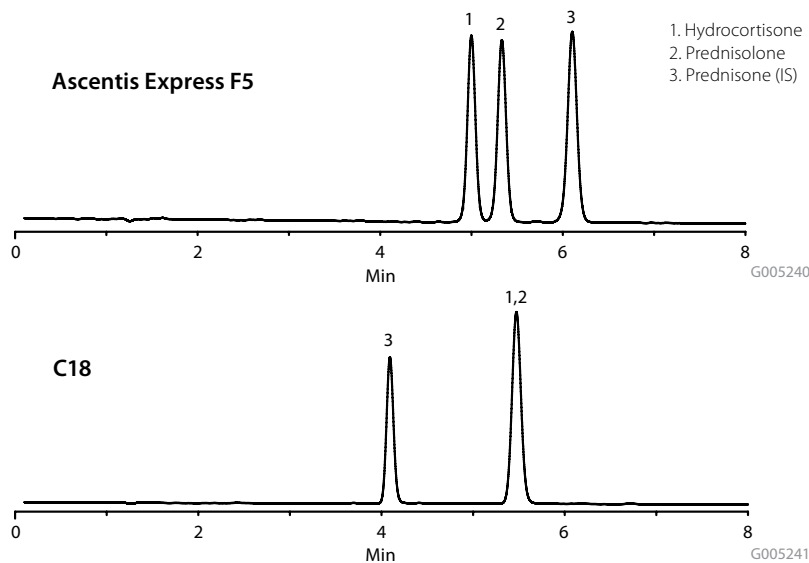
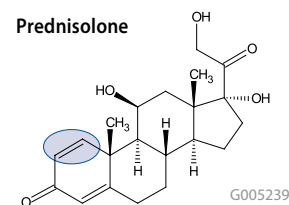
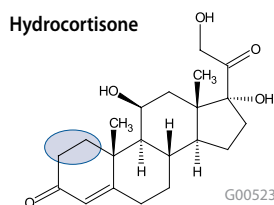
- Double the efficiency of 3 micron columns
- Same efficiency of sub 2 micron columns at half of the backpressure
- Rugged design capable of ultra high pressure operation

### Key Benefits of F5

- Retains bases more and hydrophobic compounds less than C18
- Reversed phase, HILIC, and 100% aqueous applications
- Ideal for the separation of closely related compounds

### Comparison of C18 and F5 for the Separation of Closely Related Steroids

columns: Ascentis Express F5 (53590-U) and Ascentis Express C18 (53827-U), 10 cm x 4.6 mm, I.D., 2.7 µm particle size  
 mobile phase A: water  
 mobile phase B: methanol  
 mobile phase ratio: A:B 50:50, v/v  
 flow rate: 0.8 mL/min  
 temp: 35 °C  
 pressure: ~2400 psi  
 det.: UV at 240 nm  
 inj.: 5 µL  
 sample: 10 µg/mL each in 90:10 water:methanol



# Ordering Information

## Analytical Ascentis Express Columns

ID (mm)	Length (cm)	C18	C8	Phenyl-Hexyl	HILIC	RP-Amide	F5
2.1	2	53799-U	53795-U	53798-U	—	53797-U	53592-U
2.1	3	53802-U	53839-U	53332-U	53933-U	53910-U	53566-U
2.1	5	53822-U	53831-U	53334-U	53934-U	53911-U	53567-U
2.1	7.5	53804-U	53843-U	53335-U	53938-U	53912-U	53568-U
2.1	10	53823-U	53832-U	53336-U	53939-U	53913-U	53569-U
2.1	15	53825-U	53834-U	53338-U	53946-U	53914-U	53571-U
3.0	3	53805-U	53844-U	53341-U	53964-U	53915-U	53574-U
3.0	5	53811-U	53848-U	53342-U	53967-U	53916-U	53576-U
3.0	7.5	53812-U	53849-U	53343-U	53969-U	53917-U	53577-U
3.0	10	53814-U	53852-U	53345-U	53970-U	53918-U	53578-U
3.0	15	53816-U	53853-U	53346-U	53972-U	53919-U	53579-U
4.6	3	53818-U	53857-U	53347-U	53974-U	53921-U	53581-U
4.6	5	53826-U	53836-U	53348-U	53975-U	53922-U	53583-U
4.6	7.5	53819-U	53858-U	53351-U	53977-U	53923-U	53584-U
4.6	10	53827-U	53837-U	53352-U	53979-U	53929-U	53590-U
4.6	15	53829-U	53838-U	53353-U	53981-U	53931-U	53591-U

## Capillary Ascentis Express Columns

Length (cm)	I.D. (µm)	Cat. No.
<b>C18</b>		
5	75	53982-U
15	75	54219-U
5	100	53985-U
15	100	54256-U
5	200	53989-U
15	200	54261-U
5	300	53992-U
15	300	54271-U
5	500	53998-U
15	500	54273-U
<b>C8</b>		
5	75	53983-U
15	75	54229-U
5	100	53987-U
15	100	54260-U
5	200	53991-U
15	200	54262-U
5	300	53997-U
15	300	54272-U
5	500	53999-U
15	500	54275-U

### Trademarks

Ascentis – Sigma-Aldrich Biotechnology LP  
Fused-Core – Advanced Materials Technology Inc.

## Ascentis Express Guard Columns



### Universal Guard Holder

Description	Cat. No.
Holder w/EXP Titanium Hybrid Ferrule -- cartridge not included with holder	53500-U

### Ascentis Express Guard Cartridges

Description	I.D. (mm)	Pkg. Size	Cat. No.
C18	2.1	3	53501-U
C18	3.0	3	53504-U
C18	4.6	3	53508-U
C8	2.1	3	53509-U
C8	3.0	3	53511-U
C8	4.6	3	53512-U
RP-Amide	2.1	3	53514-U
RP-Amide	3.0	3	53516-U
RP-Amide	4.6	3	53519-U
HILIC	2.1	3	53520-U
HILIC	3.0	3	53521-U
HILIC	4.6	3	53523-U
Phenyl-Hexyl	2.1	3	53524-U
Phenyl-Hexyl	3.0	3	53526-U
Phenyl-Hexyl	4.6	3	53531-U
F5	2.1	3	53594-U
F5	3.0	3	53597-U
F5	4.6	3	53599-U

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