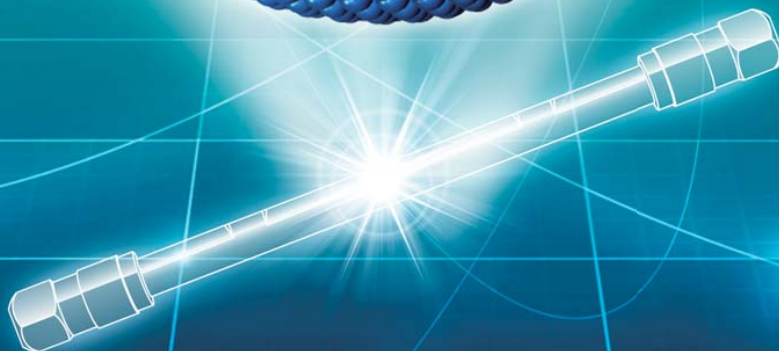
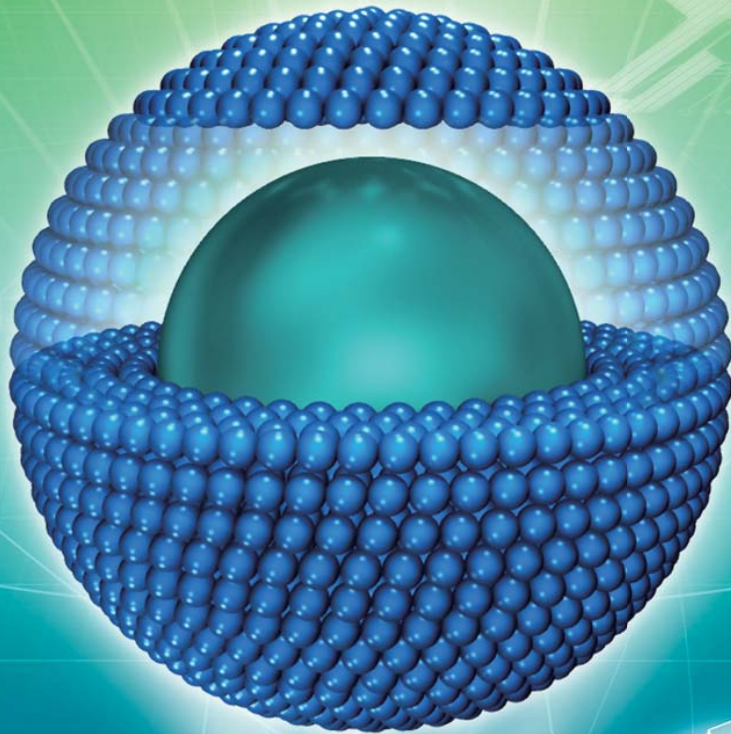


# COSMOCORE

*Increased loading capacity*  
*Excellent pH stability (1.5-10)*





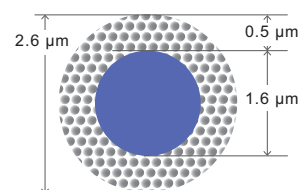
## COSMOCORE 2.6C<sub>18</sub>

### Features

- *Ultra-high performance LC results with conventional HPLC equipment*
- *Same number of theoretical plates as sub-2  $\mu\text{m}$  columns with half the back pressure*
- *Increased loading capacity*
- *Excellent pH stability (1.5-10)*

### About Core-Shell Particles

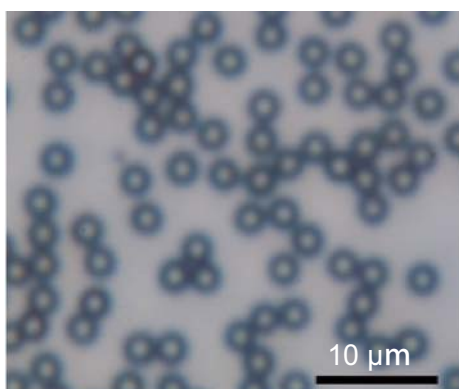
Core-shell particles consist of a nonporous core inside a porous shell. By using these core-shell particles, one can achieve sharper peaks compared to fully porous silica gel particles of the same diameter. In other words, core-shell particles can deliver the same results as smaller fully porous particles with greatly reduced backpressure.



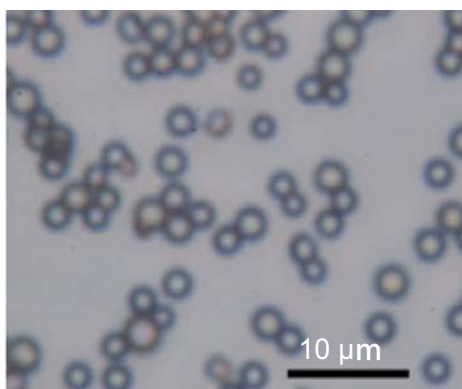
Schematic diagram of a silica particle

### Uniform Particle Size Distribution Compared to 1.7 $\mu\text{m}$ Particles

Compared to fully porous particles, core-shell particles have a more uniform particle diameter, therefore core-shell particles can be packed in the column more uniformly to minimize sample diffusion.



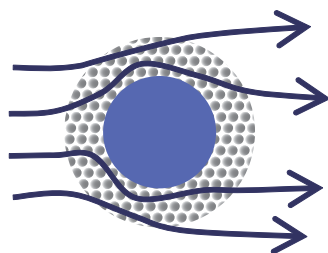
COSMOCORE 2.6C<sub>18</sub> (200x)



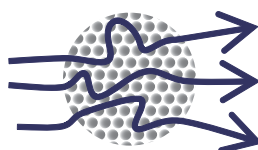
Fully porous 1.7  $\mu\text{m}$  particles (200x)

### Mass Transfer Equivalent to Fully Porous sub-2 $\mu\text{m}$ Particles

Mass transfer refers to the time it takes for a sample molecule to enter and leave a particle. In general, lower mass transfer time corresponds to less diffusion and sharper peaks. Even though COSMOCORE 2.6C<sub>18</sub> has a larger particle diameter than fully porous sub-2  $\mu\text{m}$  particles, the mass transfer characteristics are similar.



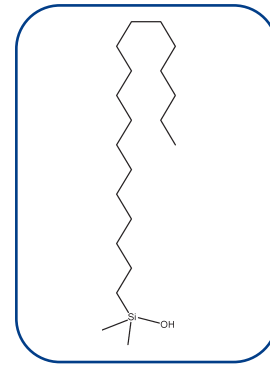
COSMOCORE 2.6C<sub>18</sub>



Fully porous sub-2  $\mu\text{m}$  particle

## Specifications

2.6C <sub>18</sub>	
Silica gel	Core-shell type silica
Average particle size	2.6 µm
Core average diameter	1.6 µm
Average pore size	approx. 90 Å
Specific surface area	approx. 150 m <sup>2</sup> /g
Stationary phase	Octadecyl group
Bonding type	Polymeric
Main interaction	Hydrophobic interaction
Endcapping treatment	Yes
Carbon load	approx. 7%
Usable pH range	1.5-10
Maximum pressure	60MPa

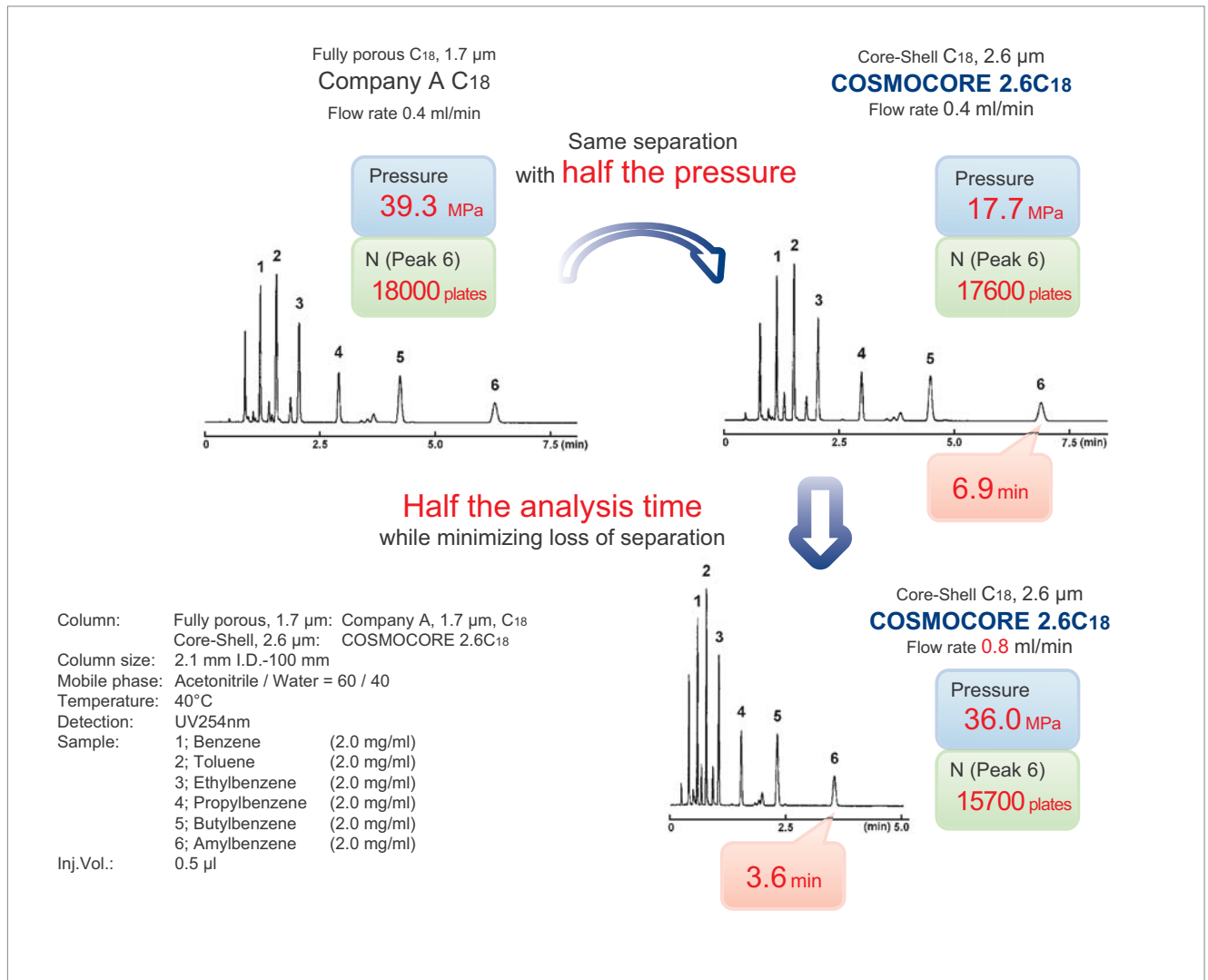


Bonded phase structure

## Same performance and lower back pressure compared to sub-2 µm particles

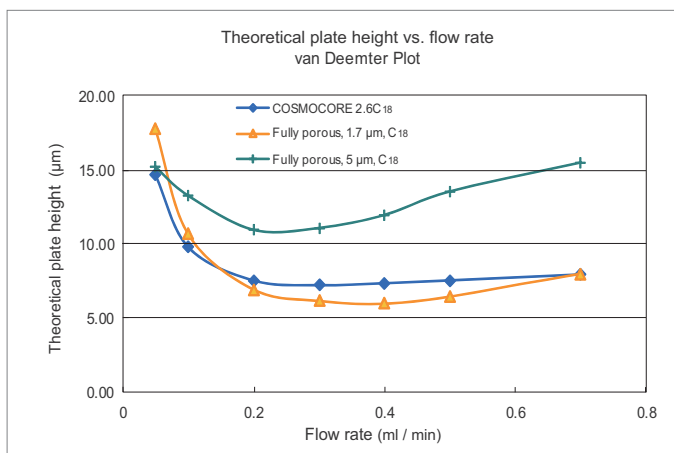
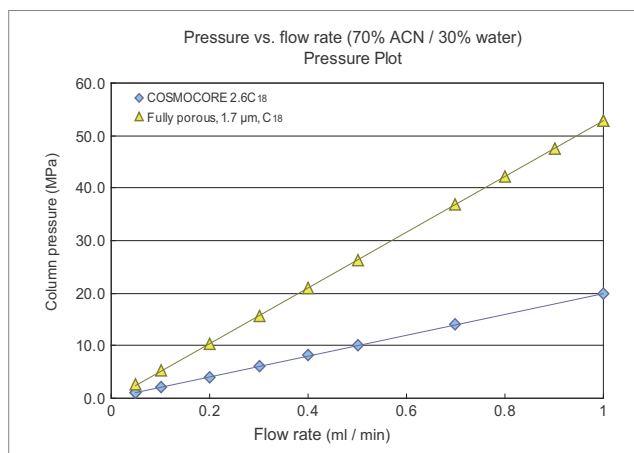
### • Reduced Back Pressure

COSMOCORE 2.6C<sub>18</sub> maintains the same performance as sub-2 µm particles with half the back pressure.



## Reduced Back Pressure and Faster Analyses

COSMOCORE 2.6C<sub>18</sub> delivers performance equivalent to sub-2 μm particles at faster flow rate and analysis time while maintaining a lower back pressure. COSMOCORE can also be used in longer column size to gain additional resolution.

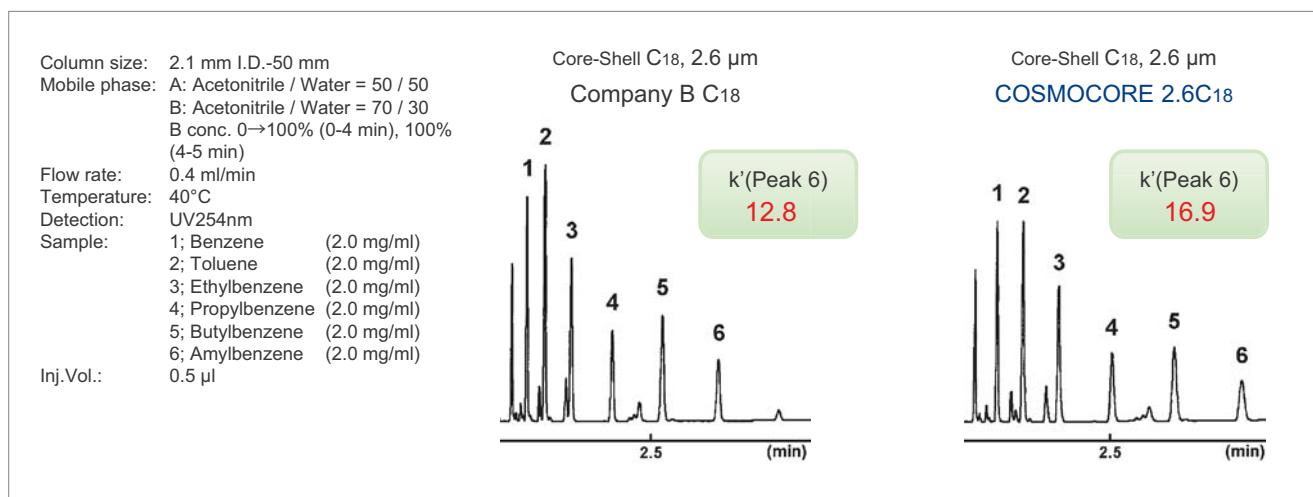


Condition  
 Column size: 2.1 mm I.D. - 50 mm,  
 Mobile phase: Acetonitrile / Water = 70 / 30,  
 Temperature: 40°C,  
 Sample: Amylbenzene

## Higher retention and loading capacity than competitors' core-shell columns

### Retention

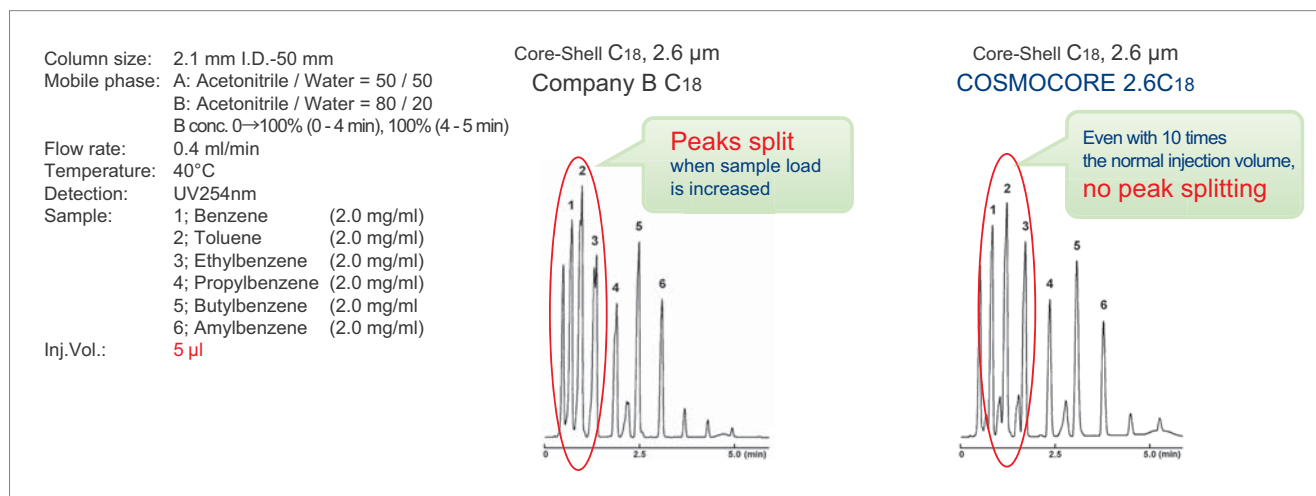
COSMOCORE 2.6C<sub>18</sub> features high retention and better separation compared to other core-shell columns.





## • Higher Loading Capacity

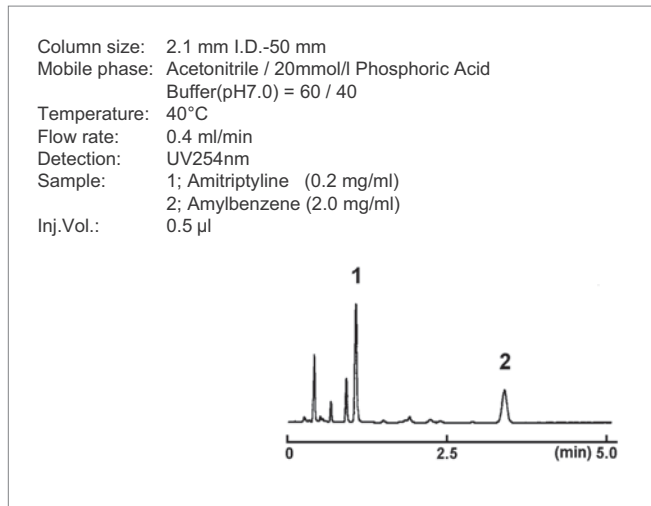
In general, core-shell particles have less surface area and less bonded phase than fully porous particles. COSMOCORE 2.6C<sub>18</sub>, however, with a large amount of bonded phase, exhibits both high retention and high loading capacity. When injecting 5-10 times more sample volumes in the trace component analysis, COSMOCORE minimizes peak splitting due to the sample over loading.



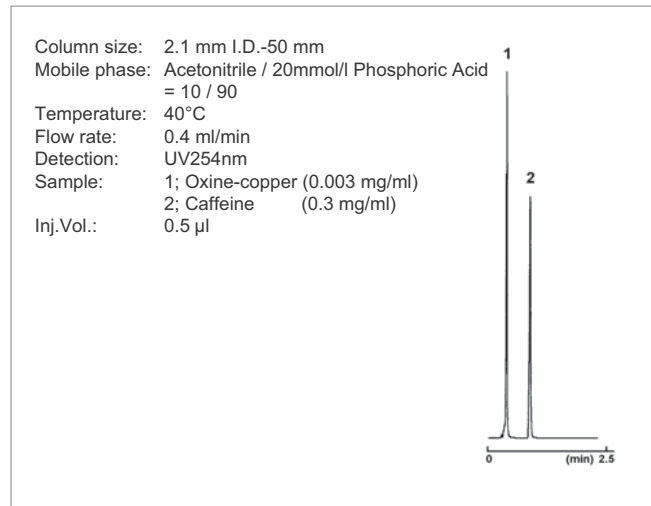
## ◆ Sharp Peaks with Many Types of Compounds

COSMOCORE 2.6C<sub>18</sub> features a special end capping treatment that effectively shields residual silanol groups, yielding sharp peaks for basic compounds and metal coordination complexes.

### • Basic compounds

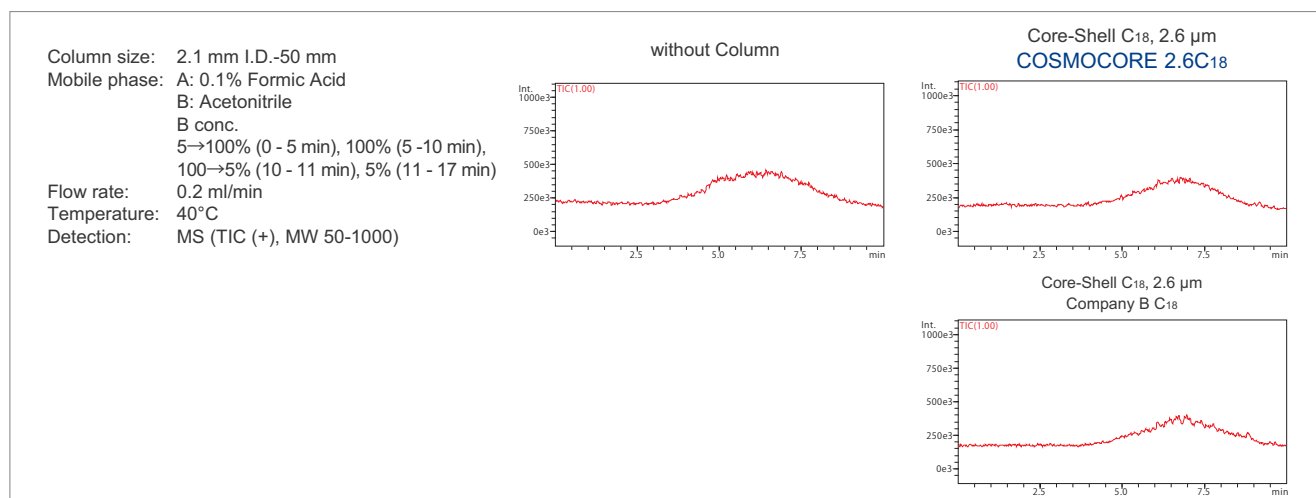


### • Metal coordination complexes



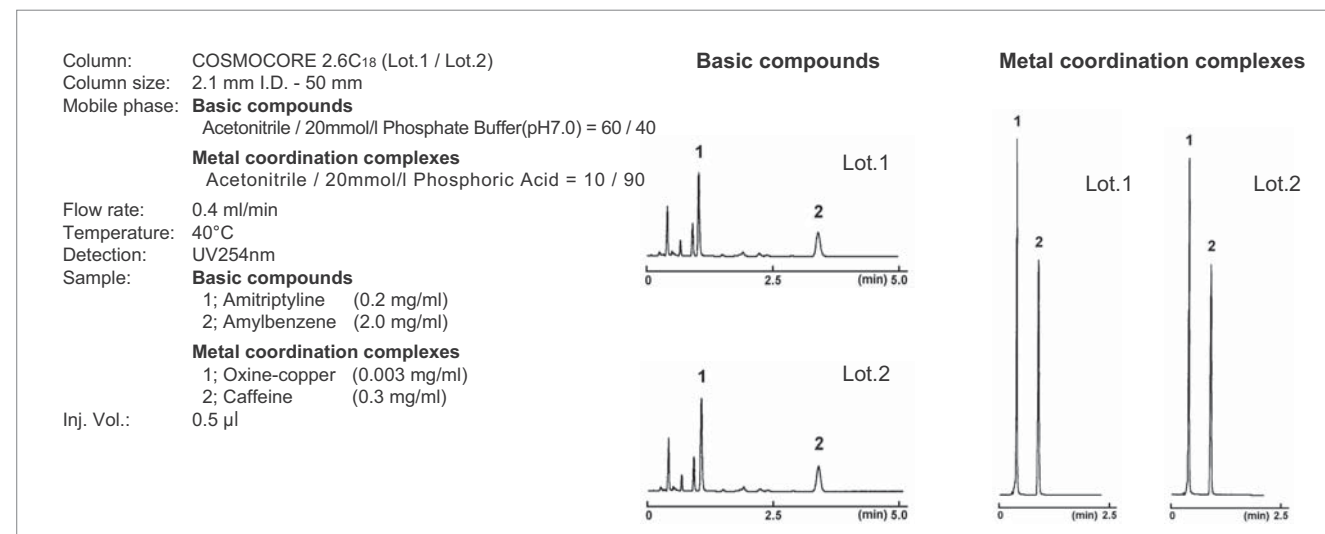
## Low Bleed - Suitable for LC-MS

COSMOCORE 2.6C<sub>18</sub> has low column bleed and consequently low MS noise level.



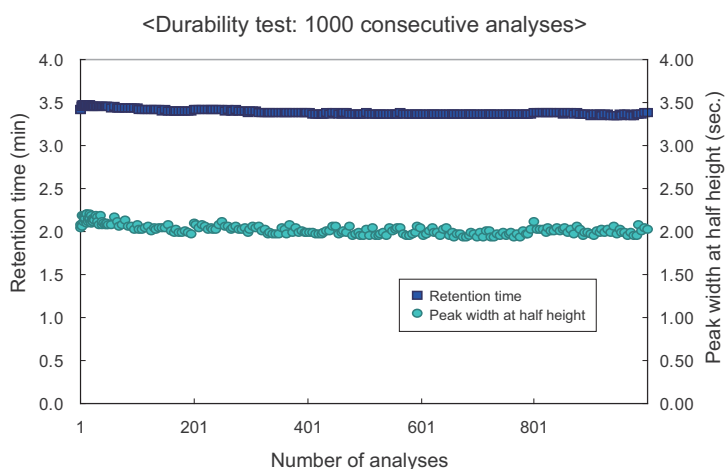
## Differences between Lots

COSMOCORE 2.6C<sub>18</sub> has great lot-to-lot reproducibility.



## Durability Test

COSMOCORE 2.6C<sub>18</sub> exhibits high durability. There is no significant deterioration in retention or peak shape, after 1,000 injection of amitriptyline.



Column: COSMOCORE 2.6C<sub>18</sub>  
 Column size: 2.1mm I.D.-50mm  
 Mobile phase: A: 0.1% TFA / Water  
 B: 0.1% TFA / Acetonitrile  
 B conc. 5→90%(0-3 min), 90→5%(3-3.01 min), 5%(3.01-6 min)  
 Flow rate: 0.4 ml/min  
 Temperature: 40°C  
 Detection: UV236nm  
 Sample: Amitriptyline (0.2 mg/ml)  
 Inj. Vol: 1.0 µl

## Ordering Information

### • COSMOCORE 2.6C<sub>18</sub> Column

Column Size	Product Number	Column Size	Product Number	Column Size	Product Number
2.1 mm I.D. x 30 mm	12632-31	3.0 mm I.D. x 30 mm	12611-01	4.6 mm I.D. x 30 mm	12601-31
2.1 mm I.D. x 50 mm	12631-41	3.0 mm I.D. x 50 mm	12609-51	4.6 mm I.D. x 50 mm	12600-41
2.1 mm I.D. x 75 mm	12630-51	3.0 mm I.D. x 75 mm	12608-61	4.6 mm I.D. x 75 mm	12599-91
2.1 mm I.D. x 100 mm	12614-71	3.0 mm I.D. x 100 mm	12607-71	4.6 mm I.D. x 100 mm	12598-01
2.1 mm I.D. x 150 mm	12612-91	3.0 mm I.D. x 150 mm	12602-21	4.6 mm I.D. x 150 mm	12597-11
				4.6 mm I.D. x 250 mm	12596-21

COSMOCORE's connector is the same type as Waters UPLC Columns.  
 Other sizes may be available.

For research use only, not intended for diagnostic or drug use.



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