

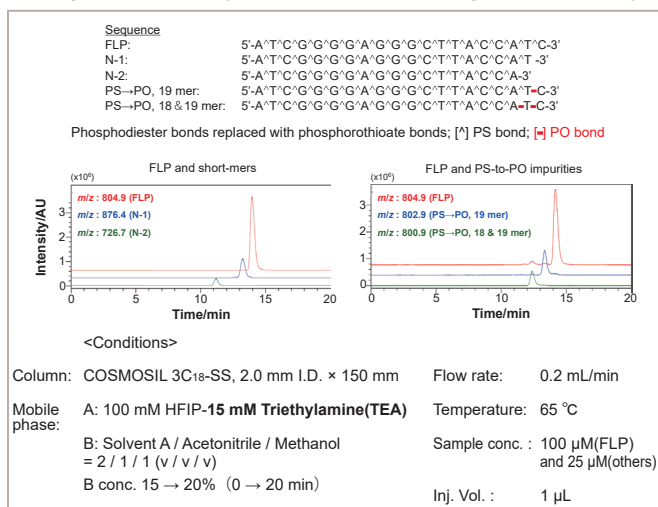
Perfecting Chemical Modification Technology

COSMOSIL 3C18-SS

COSMOSIL 3C18-SS is the product of perfecting our chemical modification and endcapping technology, enabling this column to withstand alkaline and acidic mobile phases. It also resists peak tailing, and with the 3 μm particle size, fast and efficient analysis is possible on conventional instruments. It is recommended as a general-use column, especially for method development in which the analysis conditions are uncertain.

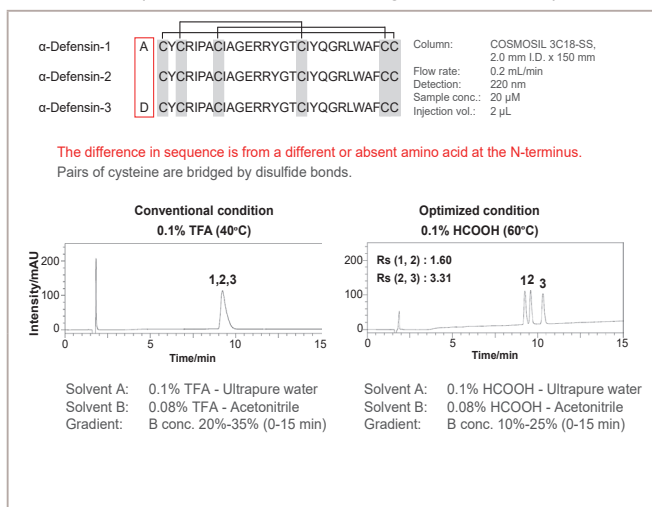
Applications

● Oligonucleotides (basic mobile phase, high temperature)



By using an alkaline mobile phase under high temperatures with LC-MS, impurities from the oligonucleotide synthesis process (short-mers and P-S to P-O conversion impurities) could be separated from the full-length product.

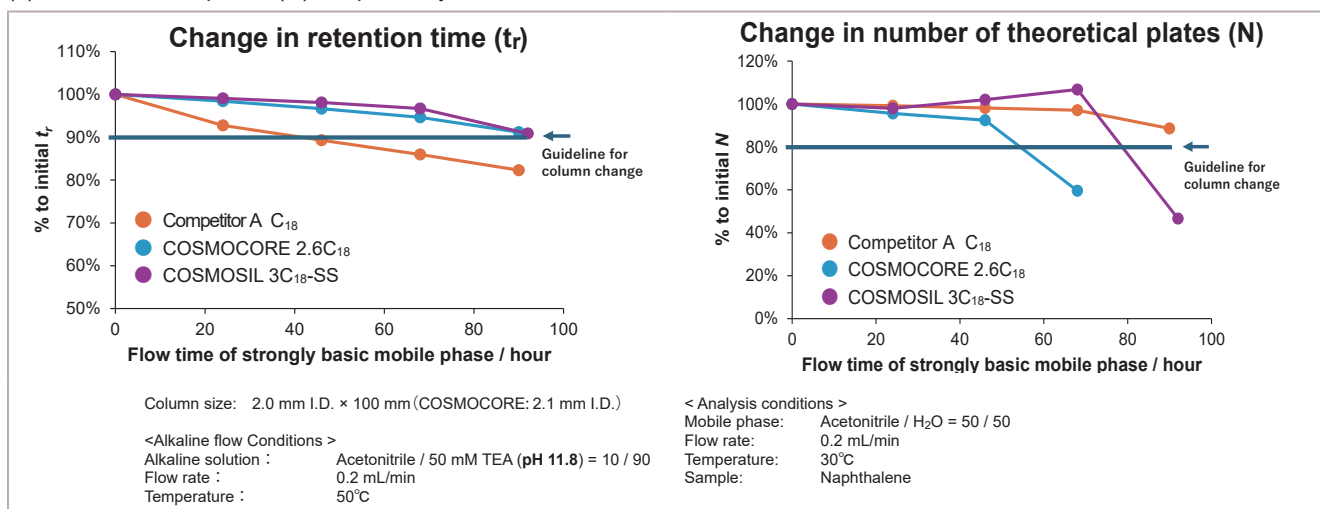
● Peptides (acidic mobile phase, high temperature)



Using standard peptide analysis conditions, these 3 structurally similar compounds (α -defensin) could not be separated. However, by changing the mobile phase additive to formic acid and increasing the temperature, resolution (R_s) of greater than 1.5 was achieved.

Comparison of durability with basic mobile phase

When used with a harshly basic mobile phase, most C18 columns degrade quickly. The below graphs show the retention time (t_r) and theoretical plates (N), respectively, of the COSMOSIL 3C18-SS and two other columns under our accelerated test.

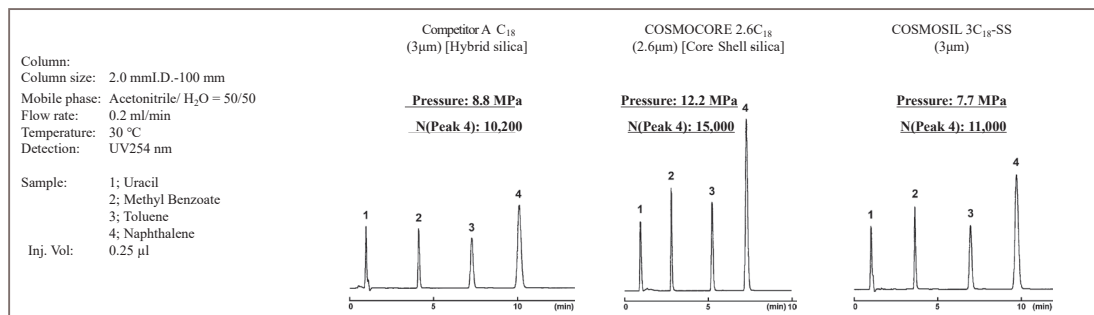


Under the highly basic mobile phase conditions above, COSMOSIL 3C18-SS showed high durability. This column can be used under harsh conditions, overcoming the limitations of conventional silica-based columns.

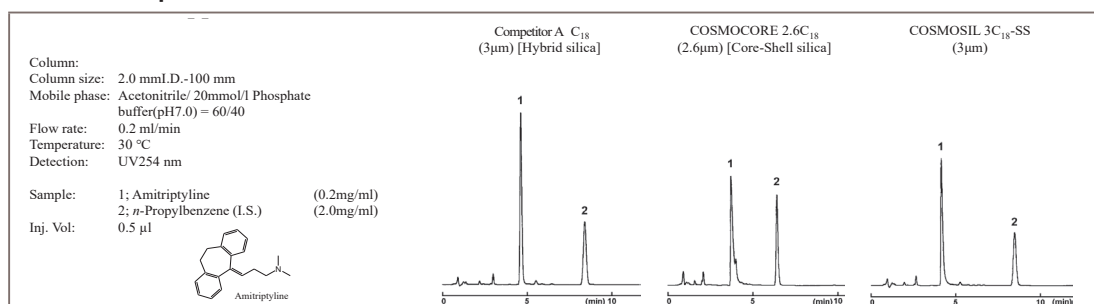
Comparison of separation performance

COSMOSIL 3C₁₈-SS was compared to hybrid silica and core-shell columns. Overall, COSMOSIL 3C₁₈-SS demonstrated high efficiency and low backpressure, in addition to sharp peaks even for basic and metal-coordination compounds.

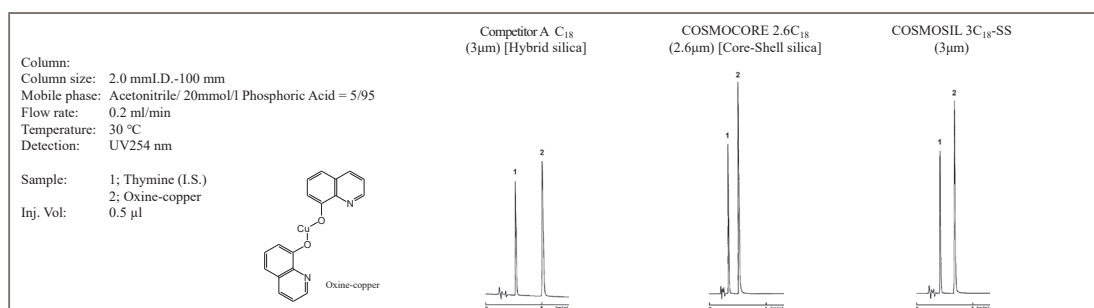
Retention behavior



Basic compound



Metal coordination compound



Basic properties

Packing material: 3C₁₈-SS

Silica gel	High-purity fully-porous spherical silica gel	Stationary phase	Octadecyl group
Average particle size	Approx. 3 µm	USP code	L1
Average pore size	Approx. 12 µm	Maximum pressure	30 MPa
Specific surface area	Approx. 300 m ² /g	Usable pH range	1 - 12 *

* For longest lifetime, pH 2-10 is recommended.

Ordering Information

● COSMOSIL 3C₁₈-SS (Particle size: 3 µm)

Packed Column

I.D. × Length (mm)	Product No.	I.D. × Length (mm)	Product No.	I.D. × Length (mm)	Product No.
2.0 × 50	22560-61	3.0 × 50	22548-41	4.6 × 50	22553-61
2.0 × 75	22542-01	3.0 × 75	22549-31	4.6 × 75	22554-51
2.0 × 100	22543-91	3.0 × 100	22550-91	4.6 × 100	22555-41
2.0 × 150	22546-61	3.0 × 150	22551-81	4.6 × 150	22558-11
2.0 × 250	22547-51	3.0 × 250	22552-71	4.6 × 250	22559-01

Guard Cartridge

I.D. × Length (mm)	Product No.
2.0 × 10 Cartridge*	22539-74
4.6 × 10 Cartridge*	22540-34

* Two cartridges included.
Cartridge holder required:
#11884-71 for 2.0 mm I.D.
#19989-71 for 4.6 mm I.D.

