



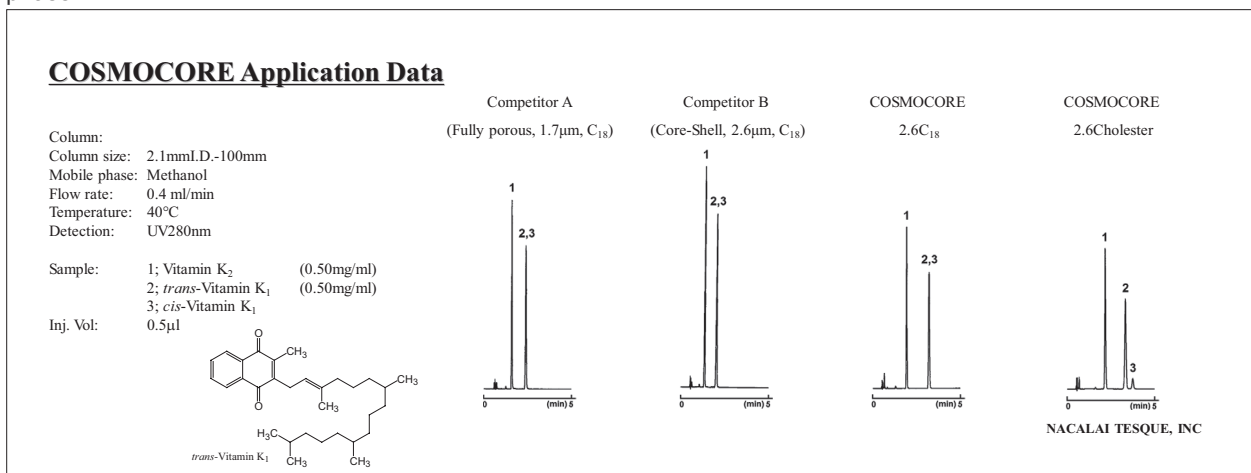
Core-Shell Particle for UHPLC resolution

COSMOCORE 2.6CHOLESTER

- Cholesterol-bonded reversed-phase core-shell column
- Use under the same condition as C₁₈ columns
- Better selectivity for cis-trans isomers, polyphenols, and natural products.

Comparison with C₁₈

COSMOCORE 2.6Cholester offers improved separation for cis-trans isomers than C₁₈ under typical reversed-phase mobile phase.



About Core-Shell 2.6Cholester Particles

COSMOCORE 2.6Cholester is packed with cholesterol-bonded 2.6 µm core-shell particles (Figure 1 and 2). It can achieve low pressure compared to fully-porous sub-2 µm columns (Figure 3).

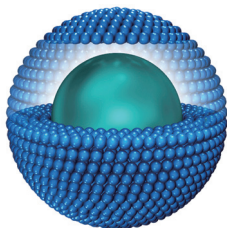


Figure 1: Core-Shell Particle

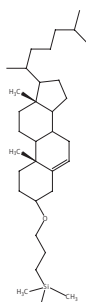


Figure 2: Bonded Cholesterol Stationary Phase

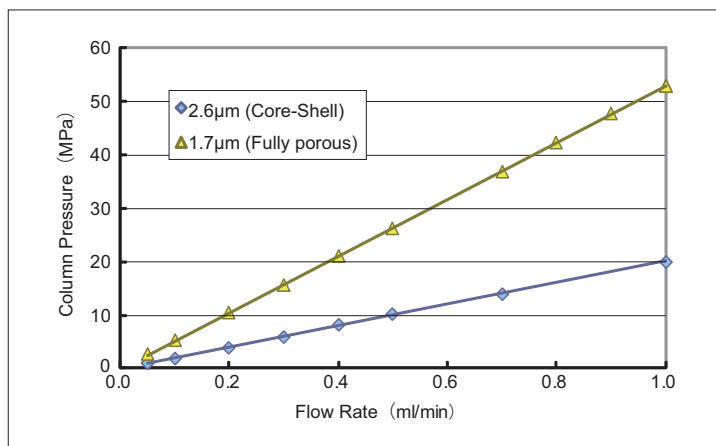
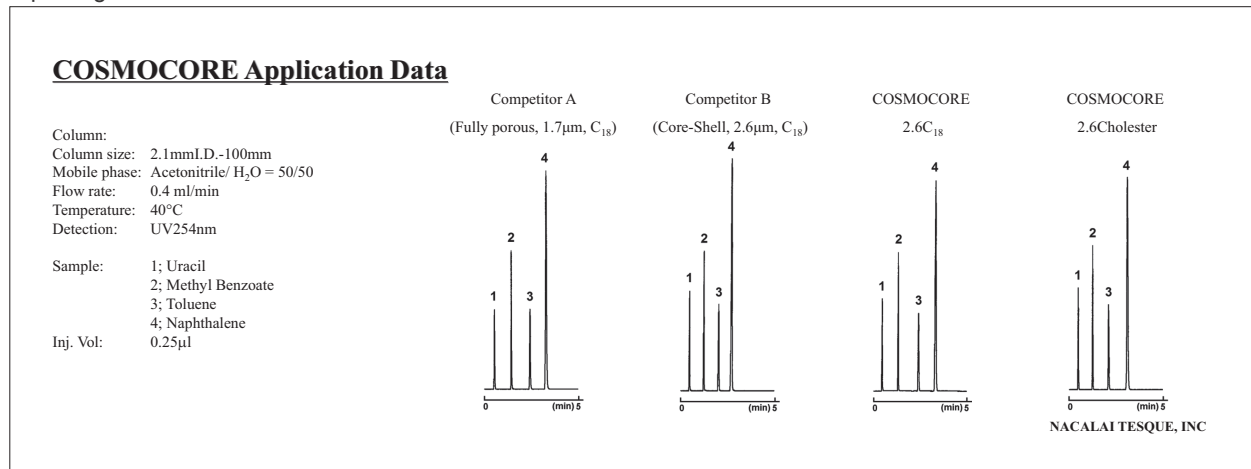


Figure 3: Comparison of Column Pressure

Column size 2.1mmI.D.-100mm, Mobile Phase Acetonitrile/Water=70/30, Temperature: 40°C

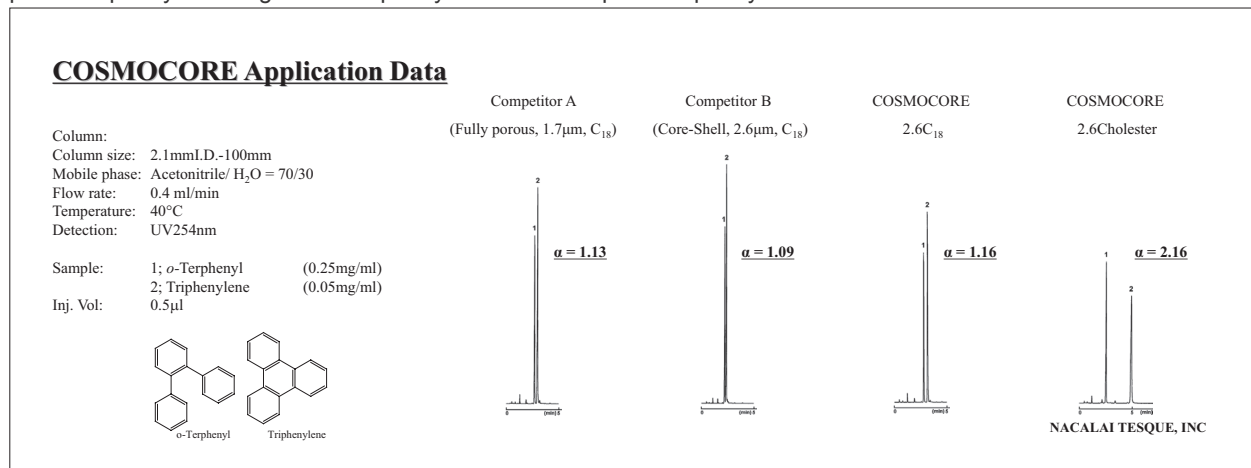
Separation Properties

COSMOCORE 2.6Cholester has the same hydrophobicity as C₁₈. It is not necessary to change the analytical conditions when replacing C₁₈ Columns with COSMOCORE 2.6Cholester.



Molecular Shape Selectivity

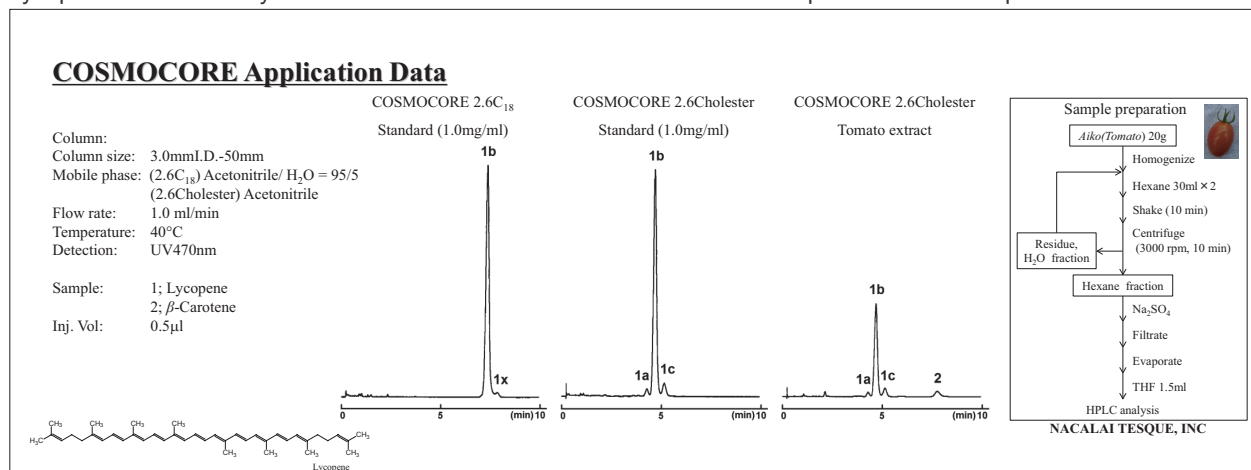
COSMOCORE 2.6Cholester has excellent shape selectivity due to its structural rigidity. COSMOCORE 2.6Cholester retains planar Triphenylene longer than Triphenylene stereoscopic o-Terphenyl.



Applications

Separation of natural components (Tomato components)

Lycopene exists in many cis-trans isomers. COSMOCORE 2.6Cholester separates these compounds better than C₁₈.



● Separation of Catechin

COSMOCORE Application Data

Column: COSMOCORE 2.6Cholesterol
 Column size: 2.1mmI.D.-50mm
 Mobile phase: A; Acetonitrile/ 0.1% H₃PO₄ = 10/90
 B; Acetonitrile/ 0.1% H₃PO₄ = 40/60
 B conc. 0→100% 3min Linear gradient
 Flow rate: 0.6 ml/min
 Temperature: 30°C
 Detection: UV280nm

Sample:
 1; (-)-Gallic acid
 2; Caffeoyl
 3; (-)-Epigallocatechin(-)-EGC
 4; (-)-Catechin(-)-C
 5; (-)-Epigallocatechin(-)-EC
 6; (-)-Epigallocatechin Gallate(-)-EGCG
 7; (-)-Gallic acid Gallate(-)-GCG
 8; (-)-Epigallocatechin Gallate(-)-ECG
 9; (-)-Catechin Gallate(-)-CG

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Data courtesy of a customer

● Apply to LC/MS

COSMOCORE Application Data

Column: COSMOCORE 2.6Cholesterol
 Column size: 3.0mmI.D.-50mm
 Mobile phase: Acetonitrile
 Flow rate: 1.0 ml/min
 Temperature: 40°C
 Detection: APCI-MS, Positive, SIM

Sample: Tomato extract
 1; Lycopene
 2; β-Carotene

Inj. Vol: 0.5µl

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◆ Scaling Up from Analytical to Preparative Separation

COSMOCORE 2.6Cholesterol has the same functional group as the fully-porous COSMOSIL Cholesterol 5 µm silica packing material. Therefore, the separation pattern in COSMOCORE 2.6Cholesterol is maintained when scaling up to preparative separation with 5 µm COSMOSIL Cholesterol.

COSMOCORE Application Data

	COSMOCORE 2.6Cholesterol (2.1mmI.D.-100mm)	COSMOSIL Cholesterol (5 µm) (4.6mmI.D.-250mm)	COSMOSIL Cholesterol (5 µm) (10mmI.D.-250mm)
Column:			
Column size:			
Mobile phase:	Methanol	Methanol	Methanol
Flow rate:	(2.1mmI.D.) 0.4 ml/min (4.6mmI.D.) 1.0 ml/min (10.0mmI.D.) 5.0 ml/min		
Temperature:	40°C		
Detection:	UV280nm		
Sample:	1; <i>trans</i> -Vitamin K ₁ 2; <i>cis</i> -Vitamin K ₁	Sample conc.; 1.0mg/ml Inj.Vol. ; 0.5µl	Sample conc.; 20mg/ml Inj.Vol. ; 3.0µl
		Sample conc.; 1.0mg/ml Inj.Vol. ; 3.0µl	Sample conc.; 20mg/ml Inj.Vol. ; 10µl
			Sample conc.; 20mg/ml Inj.Vol. ; 50µl

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◆ The number of reference for COSMOSIL Cholesterol Bonded Stationary Phase

The number of COSMOSIL Cholesterol reference has grown to over 100 since its introduction in 2005.
 (Reference Search: Google Scholar, as of July 2014)

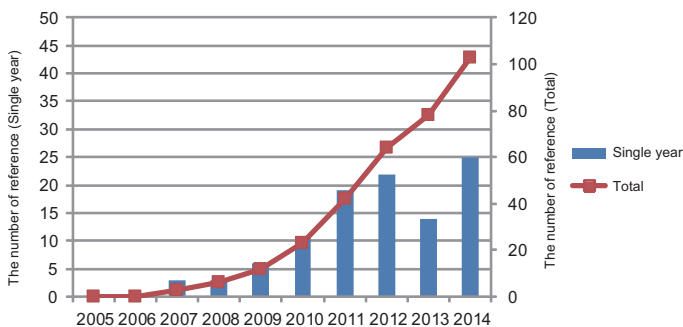


Figure 1: The number of reference of COSMOSIL Cholesterol and 2.5Cholesterol

Specifications

Packing Material	COSMOCORE 2.6Cholester	COSMOCORE 2.6C ₁₈	COSMOSIL 5Cholester
Silica gel	Core-shell type silica gel		High purity porous spherical silica
Average particle size	2.6µm		5µm
Average pore size	approx. 90 Å		approx. 120 Å
Specific surface area	approx. 150m ² /g		approx. 300m ² /g
Stationary phase	Cholesteryl Group	Octadecyl group	Cholesteryl Group
Endcapping treatment	Yes		
Usable pH range	2 - 7.5	1.5 - 10	2 - 7.5
Maximum puressure	60MPa		20MPa

Ordering Information

COSMOCORE 2.6Cholester Packed Column

Column Size	Product Number	Column Size	Product Number	Column Size	Product Number
2.1 mm I.D. x 30 mm	12858-91	3.0 mm I.D. x 30 mm	12863-11	4.6 mm I.D. x 30 mm	12869-51
2.1 mm I.D. x 50 mm	12859-81	3.0 mm I.D. x 50 mm	12864-01	4.6 mm I.D. x 50 mm	12870-11
2.1 mm I.D. x 75 mm	12860-41	3.0 mm I.D. x 75 mm	12866-81	4.6 mm I.D. x 75 mm	12871-01
2.1 mm I.D. x 100 mm	12861-31	3.0 mm I.D. x 100 mm	12867-71	4.6 mm I.D. x 100 mm	12872-91
2.1 mm I.D. x 150 mm	12862-21	3.0 mm I.D. x 150 mm	12868-61	4.6 mm I.D. x 150 mm	12873-81
				4.6 mm I.D. x 250 mm	12875-61

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

Related Products

COSMOSIL 5Cholester Column

Column Size	Product Number
4.6 mm I.D. x 150 mm	05976-61
4.6 mm I.D. x 250 mm	05977-51
10.0 mm I.D. x 250 mm	05979-31
20.0 mm I.D. x 250 mm	05982-71

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

