



# COSMOSIL HILIC HPLC Columns

A New Stationary Phase for Hydrophilic Interaction Chromatography



**Excellent Retention  
for Highly Polar Analytes  
Enhanced Hydrophilic Interaction  
Unique Anion-exchange Mechanism**

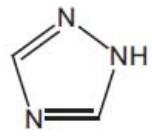
# COSMOSIL HILIC HPLC Column

Hydrophilic Interaction Chromatography (HILIC) is a useful alternative to reversed phase chromatography for separation of highly polar compounds, which are either weakly retained or not retained on traditional reversed phase columns.

COSOSIL HILIC is a new column for hydrophilic interaction chromatography with Triazole bonded silica packing material. The main retention mechanism is the partitioning of the polar analytes between the polar stationary and the mobile phase containing a high concentration of water miscible organic solvent. It also shows a weak electrostatic interaction between the analytes and the stationary phase. Non-modified silica column is often used in HILIC mode. However, the separation and peak shape for acidic compounds are problematic. The positively charged triazole bonded stationary phase provides better separation for acidic compounds compared to a non-modified silica column.

## • Physical Characteristics

Silica Gel	High Purity Spherical Silica
Stationary Phase	Triazol
Average Particle Size	5 $\mu$ m
Average Pore Size	120 Å
Surface Area	300m <sup>2</sup> /g



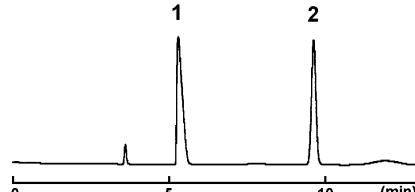
Triazole

## • Comparison with Aqueous type C18 column

AQ type C18 column



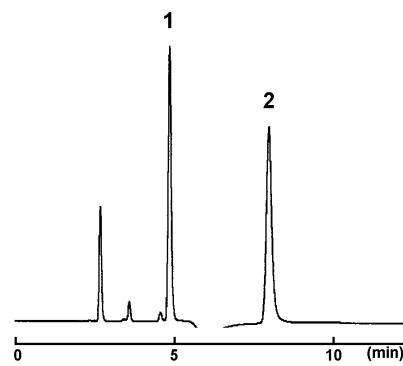
AQ type C18 column  
with Ion Pair Reagent



Mobile phase:  
20mmol/l phosphate buffer(pH2.5)

Mobile phase: 20mmol/l phosphate buffer(pH2.5)  
Ion pair: 5mmol/l Sodium 1-Octanesulfonate

COSMOSIL HILIC  
without Ion Pair Reagent

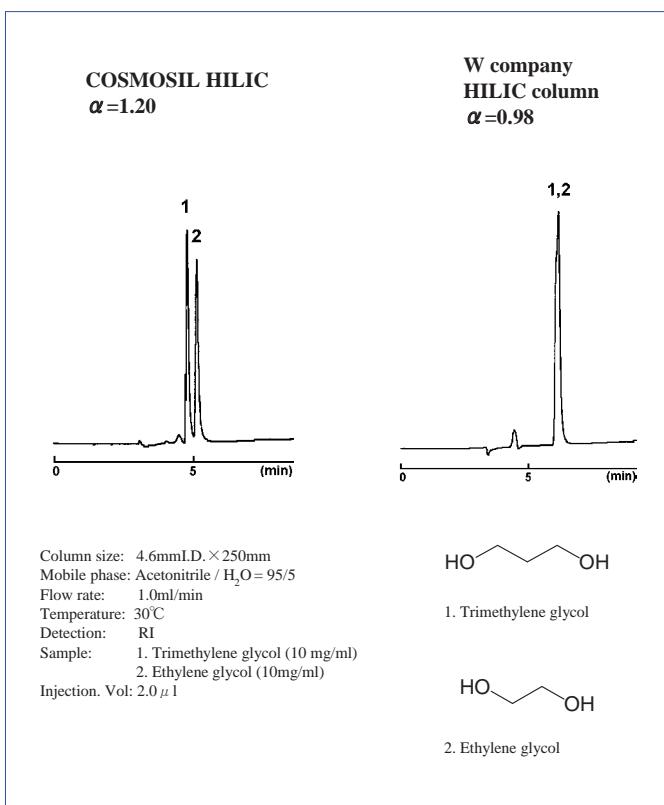


Mobile phase:  
Acetonitrile/10mmol/l CH<sub>3</sub>COONH<sub>4</sub> = 60/40

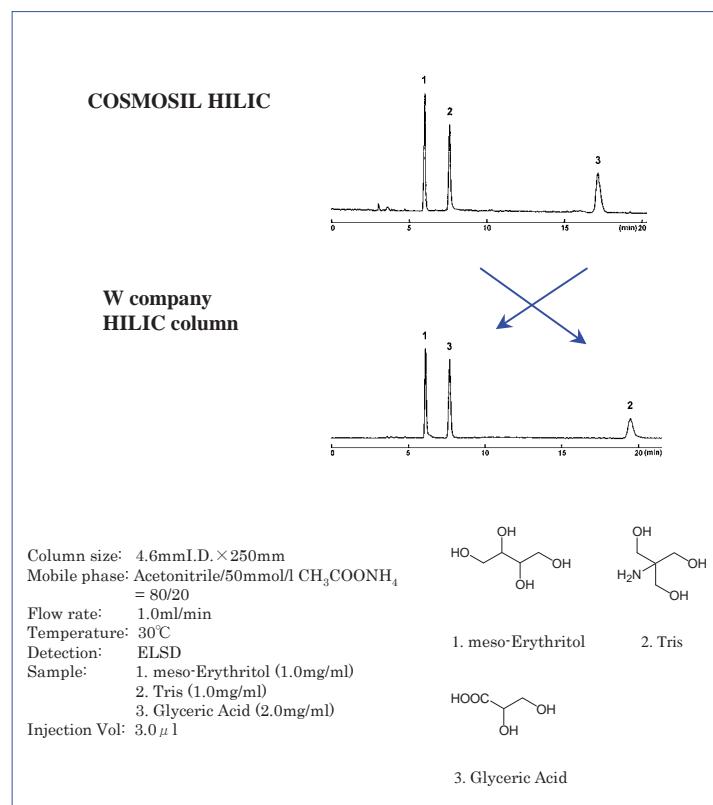
Column size: 4.6mmI.D. × 250mm Flow rate: 1.0ml/min  
Temperature: 30°C Detection: UV210nm  
Sample: 1. Glycine, 2. Glycylglycine

- Comparison with Non-modified silica based HILIC column

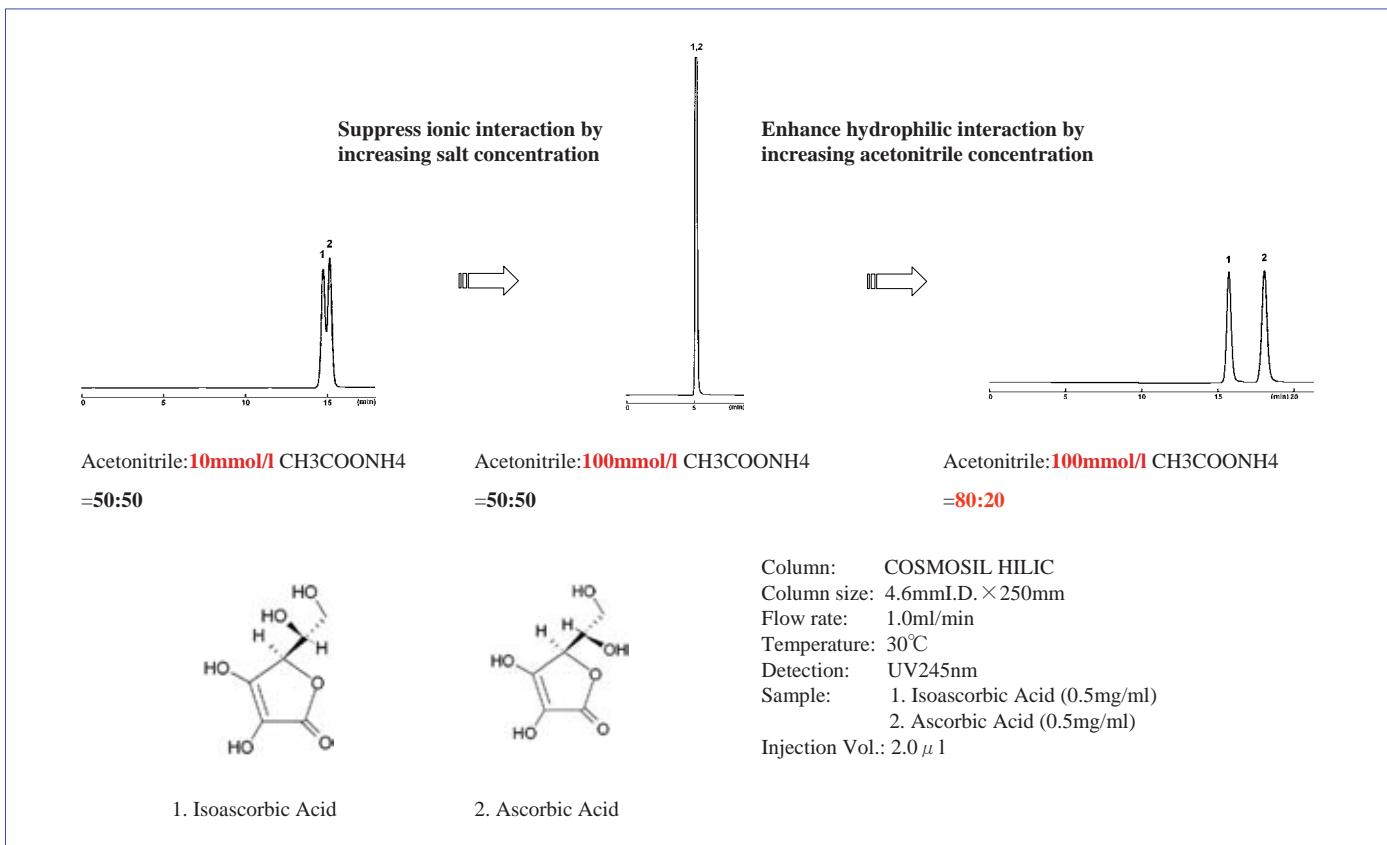
### Enhanced Hydrophilic Interaction



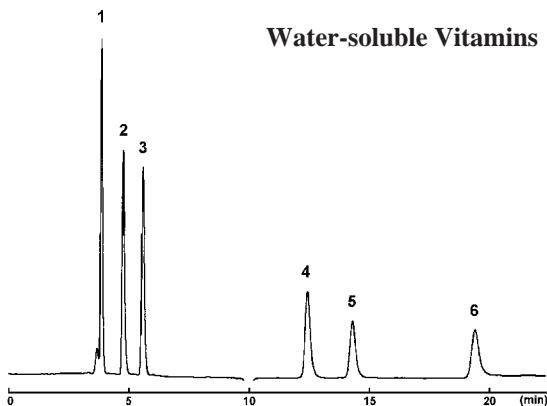
### Unique Anion-exchange Mechanism



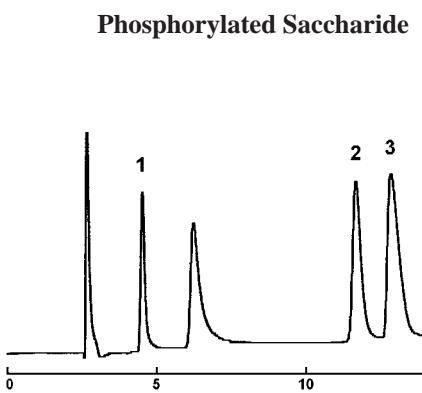
- Effect of mobile phase: the retention can be controlled by changing the composition of mobile phase.



• Applications



Column size: 4.6mmI.D.×250mm  
 Mobile phase: Acetonitrile/100mmol/l  $\text{CH}_3\text{COONH}_4$  = 80/20  
 Flow rate: 1.0ml/min  
 Temperature: 30°C  
 Detection: UV220nm  
 Sample:  
 1. Nicotinamide (0.25mg/ml)  
 2. Pyridoxine (Vitamin B<sub>6</sub>) (0.50mg/ml)  
 3. Riboflavin (Vitamin B<sub>2</sub>) (0.50mg/ml)  
 4. Nicotinic Acid (0.25mg/ml)  
 5. D - Pantothenic Acid (6.25mg/ml)  
 6. L(+) - Ascorbic Acid (1.75mg/ml)  
 Injection Vol.: 0.5  $\mu$ l



Column: COSMOSIL HILIC  
 Column size: 4.6mmI.D.×250mm  
 Mobile phase: Acetonitrile / 20mmol/l Phosphate buffer (pH7) = 60/40  
 Flow rate: 1.0ml/min  
 Temperature: 30°C  
 Detection: RI  
 Sample:  
 1. Glucose (2mg/ml)  
 2.  $\alpha$ -D-Glucose-1-phosphate (10mg/ml)  
 3. D-Glucose-6-phosphate (10mg/ml)  
 Injection Vol.: 5.0  $\mu$ l

• Ordering Information

Product	Cat. No.	Size	Price(US\$)
COSMOSIL HILIC Guard Column	07055-61	4.6mm I.D.x 10mm	250.00
COSMOSIL HILIC Guard Column	07058-31	10mm I.D.x 20mm	440.00
COSMOSIL HILIC Guard Column	07854-91	20mm I.D. x 20mm	950.00
COSMOSIL HILIC Guard Column	07873-41	20mm I.D. x 50mm	1,300.00
COSMOSIL HILIC Guard Column	07874-31	28mm I.D. x 50mm	2,500.00
COSMOSIL HILIC Packed Column	07869-11	1.0mm I.D. x 150mm	420.00
COSMOSIL HILIC Packed Column	07870-71	1.0mm I.D. x 250mm	490.00
COSMOSIL HILIC Packed Column	07052-91	2.0mm I.D.x 50mm	350.00
COSMOSIL HILIC Packed Column	07054-71	2.0mm I.D.x 150mm	420.00
COSMOSIL HILIC Packed Column	07489-91	2.0mm I.D.x 250mm	490.00
COSMOSIL HILIC Packed Column	07871-61	3.0mm I.D. x 150mm	420.00
COSMOSIL HILIC Packed Column	07872-51	3.0mm I.D. x 250mm	490.00
COSMOSIL HILIC Packed Column	07056-51	4.6mm I.D.x 150mm	420.00
COSMOSIL HILIC Packed Column	07057-41	4.6mm I.D.x 250mm	490.00
COSMOSIL HILIC Packed Column	07059-21	10mm I.D.x 250mm	1,200.00
COSMOSIL HILIC Packed Column	07060-81	20mm I.D.x 250mm	2,400.00
COSMOSIL HILIC Packed Column	07875-21	28mm I.D. x 250mm	4,600.00

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