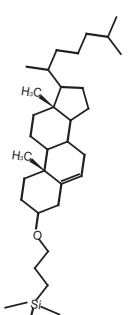
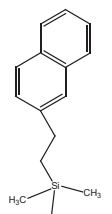
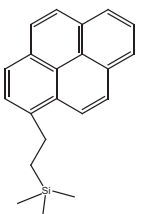

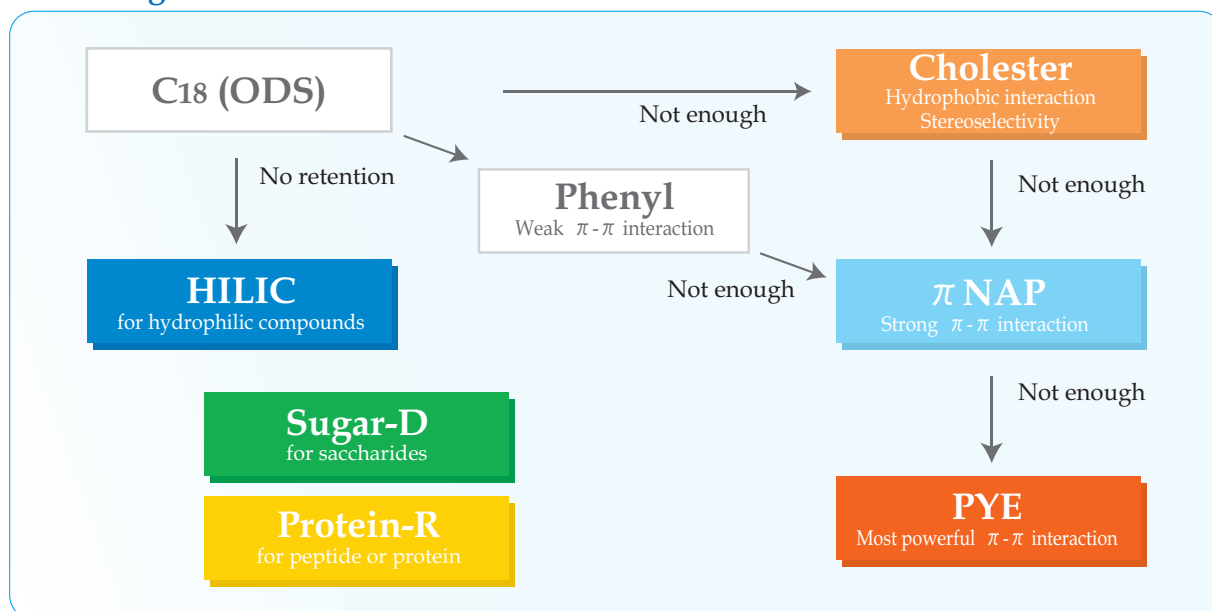


# COSMOSIL Special Columns

## Material characteristics

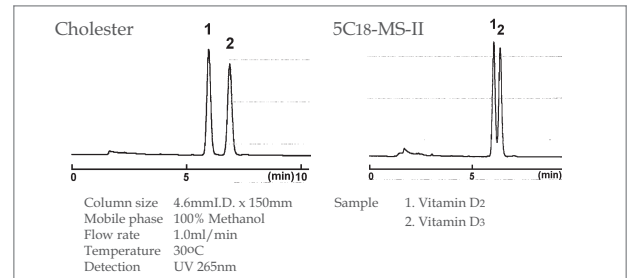
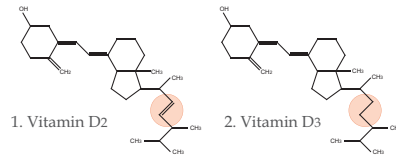
Packing material	Cholester	$\pi$ NAP	PYE	HILIC	Sugar-D
Silica gel	high purity porous spherical silica				
Average particle size	5 $\mu$ m				
Average pore size	approx. 120 Å				---
Specific surface area	approx. 300m <sup>2</sup> /g				---
Stationary phase	 Cholesteryl group	 Naphthylethyl group	 Pyrenylethyl group	 Triazole	Secondary/Tertiary amine
Main interaction	Hydrophobic interaction Molecular shape selectivity	Hydrophobic interaction $\pi$ - $\pi$ interaction	Hydrophobic interaction $\pi$ - $\pi$ interaction Stereo selectivity Charge-transfer interaction	Hydrophilic interaction	---
End capping treatment	near-perfect treatment				
Carbon content	approx. 20%	approx. 11%	approx. 18%	---	---
Feature	- Usable under condition the same as C18	- Stronger $\pi$ - $\pi$ interaction than phenyl column	- Most powerful $\pi$ - $\pi$ interaction	- Suitable for non-retaining in C18 columns - Ion-pair reagent is not required	- High durability - Low absorption - Suitable for quantitative analysis

## Selection guide



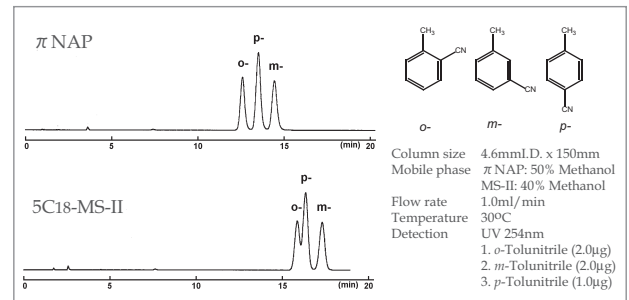
## COSMOSIL Cholester

COSMOSIL Cholester is a new silica based RP column which employs a cholestery bonded phase. Cholester provides enhanced selectivity over traditional C<sub>18</sub> materials and greater performance in separating isomers or other closely related compounds. Cholester is ideal for method development and serves as an excellent alternative to traditional C<sub>18</sub> columns.



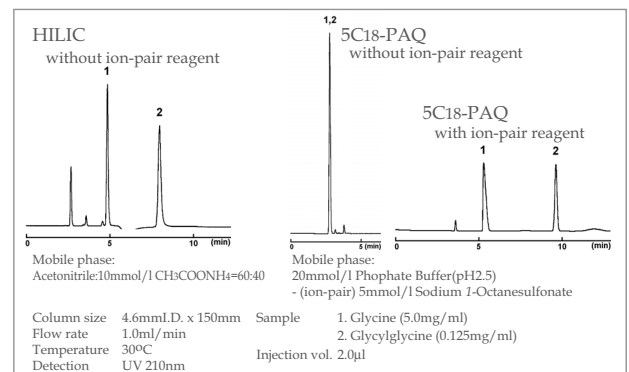
## COSMOSIL π NAP

Separation of unsaturated compounds on conventional reversed phase columns such as C<sub>8</sub> and C<sub>18</sub> is often problematic. Phenyl stationary phases are commonly used for these compounds because they form π-π interactions and show different selectivity from conventional alkyl phases. However, the π-π interactions on phenyl stationary phases are moderate, and the separation for some unsaturated compounds are still insufficient. COSMOSIL π NAP is a Reversed Phase HPLC Column with naphthylethyl group bonded silica packing material. The naphthylethyl group is composed of two fused aromatic rings and forms strong π-π interactions with unsaturated compounds. This column offers improved selectivity for structural isomers that exhibit differences in saturation.



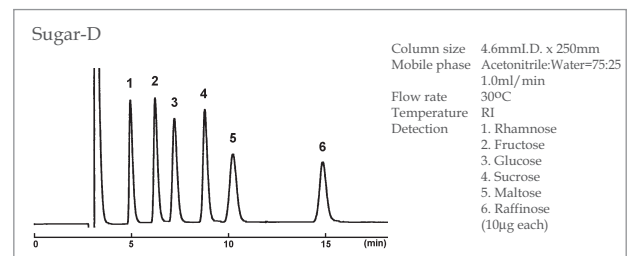
## COSMOSIL HILIC

COSMOSIL HILIC is a new column for hydrophilic interaction chromatography with Triazole bonded silica packing material. The hydrophilic interaction chromatography is a variation of normal phase chromatography where a polar stationary phase is used with a mobile phase which contains a high concentration of organic solvent and a low concentration of aqueous eluent. The main retention mechanism is the partitioning of the polar analytes between the polar stationary and the non-polar mobile phase. As it is also called "aqueous normal phase", the elution order is similar to that of normal phase and the sample elution is in the order of increasing hydrophilicity. Without using ion-pair reagent COSMOSIL HILIC retains highly polar analytes that would not be retained in reversed phase chromatography. It also shows a weak anion-exchange mechanism with the positively charged stationary phase, thus acidic compound is strongly retained.



## COSMOSIL Sugar-D

Conventionally Aminopropyl bonded stationary phases are used for liquid chromatographic analysis of mono- and oligosaccharides. General shortcomings of the conventional Aminopropyl bonded phases are tailing and adsorption of certain saccharides and general low durability (short active life) of these columns. These problems are addressed and solved by the novel COSMOSIL Sugar-D, resulting in better (sharper) separation and much improved durability. In addition COSMOSIL Sugar-D is useful in the separation of highly hydrophilic compounds which are not retained in conventional octadecyl (ODS) bonded stationary phases.



## COSMOSIL Application data / Chromatogram Index

COSMOSIL application data is now available on our website. The online version includes more than **1,000** application data using COSMOSIL columns. The online data is searchable by name of sample and column type. And COSMOSIL Chromatogram Index is also available. This index includes more than **5,700** single compound elution profiles. If you have any questions regarding the application data or separations of compounds not listed here, please feel free to e-mail us at info.intl@nacalai.co.jp.

**COSMOSIL Chromatogram Index**

Sample: Otsu-cappor  
CAS No.: [10880-28-6]  
Molecular formula: C<sub>17</sub>H<sub>12</sub>O<sub>2</sub>N<sub>2</sub>O  
Column: 5C<sub>18</sub>-MS-II  
Column size: 4.6mm I.D. x 150mm  
Mobile phase: acetonitrile:20mM phosphate buffer (pH 2.5):10:90  
Flow rate: 1.0 ml/min  
Temperature: 30°C  
Detection: UV 254nm  
Absorption: 0.16 au  
Sample conc: 0.66 mg/ml  
Injection volume: 0.5 μl  
Retention time: 4.65 min  
Capacity factor: 1.36

0      5 (min)

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