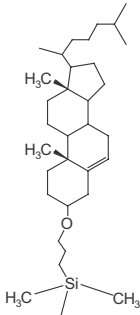
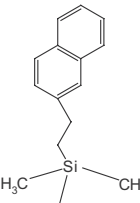
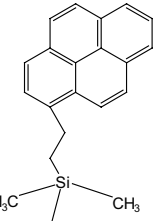

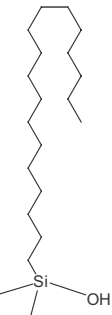




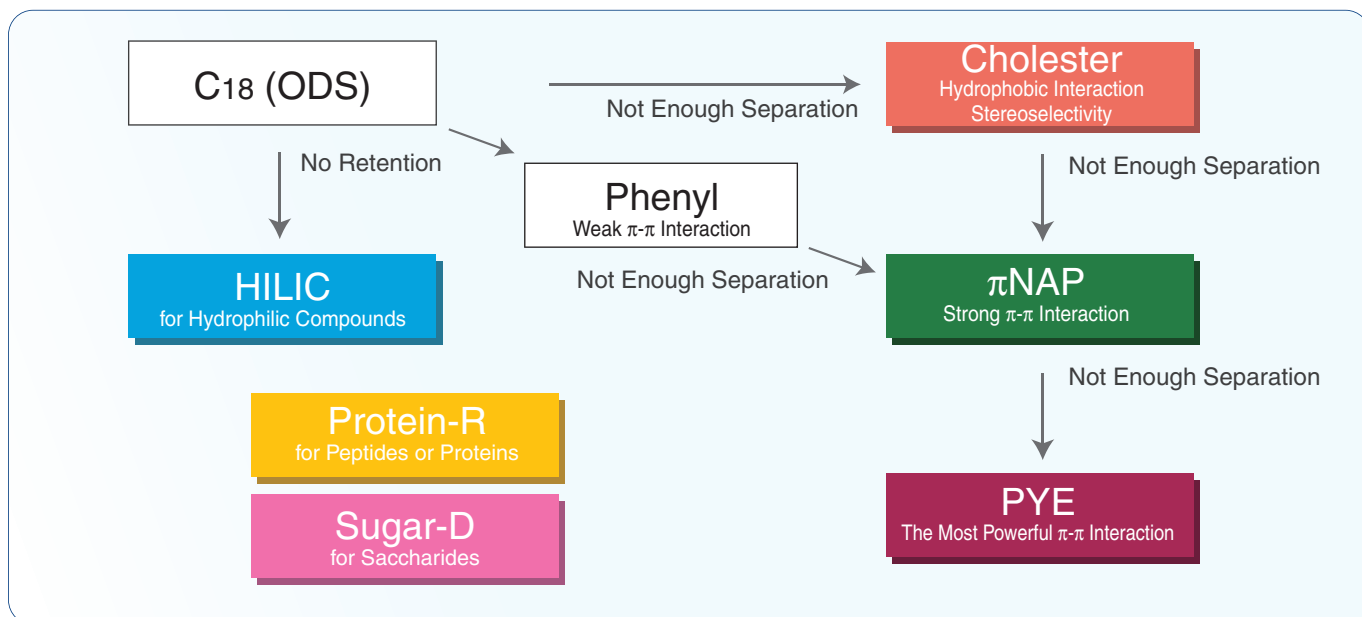
**COSMOSIL**

# High Performance Liquid Chromatography COSMOSIL Special Columns

## Material Characteristics

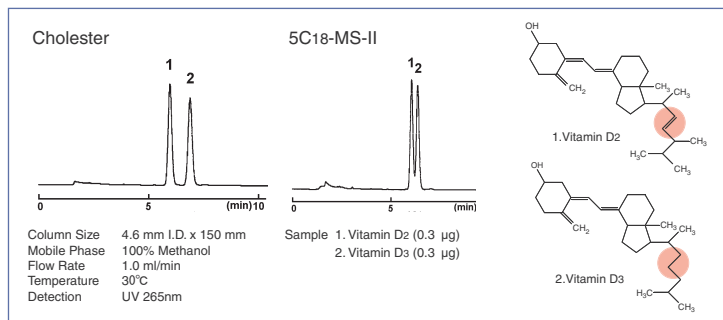
	Cholester	$\pi$ NAP	PYE	HILIC	Protein-R	Sugar-D
Silica Gel	High Purity Porous Spherical Silica					
Average Particle Size	5 $\mu$ m					
Average Pore Size	approx. 120 Å			approx. 300 Å		---
Stationary Phase	 Cholesteryl Group	 Naphtylethyl Group	 Pyrenylethyl Group	 Triazole	 Octadecyl Group	Secondary/Tertiary Amine
Main Interaction	Hydrophobic Interaction Molecular Shape Selectivity	Hydrophobic Interaction $\pi$ - $\pi$ Interaction	Hydrophobic Interaction $\pi$ - $\pi$ Interaction Stereoselectivity Charge-transfer Interaction	Hydrophilic Interaction	Hydrophobic Interaction	---
Carbon Content	approx. 20%	approx. 11%	approx. 18%	---	---	---
Features	<ul style="list-style-type: none"> <li>- Specialty for structural isomers</li> <li>- Usable under the same condition as C18</li> </ul>	<ul style="list-style-type: none"> <li>- Stronger <math>\pi</math>-<math>\pi</math> interaction than phenyl column</li> </ul>	<ul style="list-style-type: none"> <li>- The most powerful <math>\pi</math>-<math>\pi</math> interaction</li> </ul>	<ul style="list-style-type: none"> <li>- Suitable for highly polar compounds</li> <li>- Ion-pair reagent is not required</li> </ul>	<ul style="list-style-type: none"> <li>- High recovery rate</li> <li>- Acid-resistant</li> </ul>	<ul style="list-style-type: none"> <li>- High durability</li> <li>- Low absorption</li> <li>- Suitable for quantitative analysis</li> </ul>

## Selection Guide



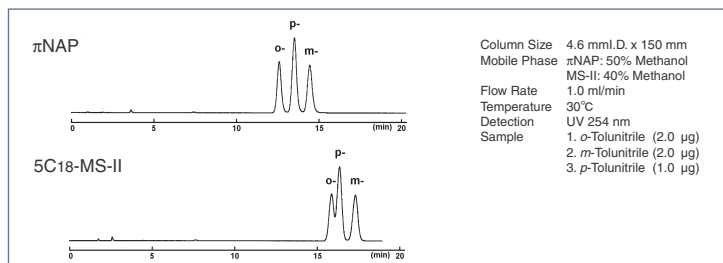
## COSMOSIL Cholester

COSMOSIL Cholester is a reversed phase HPLC column with Cholesteryl bonded silica packing material, which provides equivalent hydrophobicity like that of traditional ODS columns. However, Cholester offers strong stereoselectivity for hydrophobic compounds to yield unique and reproducible separation patterns following the same analytical conditions used with other ODS columns.



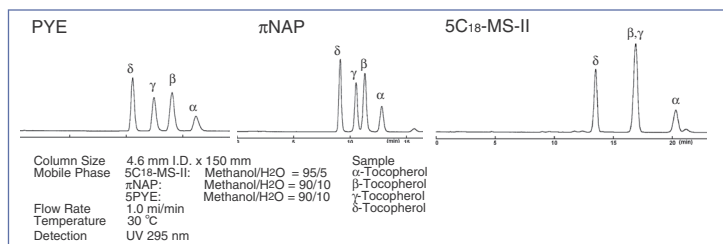
## COSMOSIL πNAP

COSMOSIL πNAP 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 separation of compounds such as positional isomers that are difficult to analyze with alkyl group bonded materials.



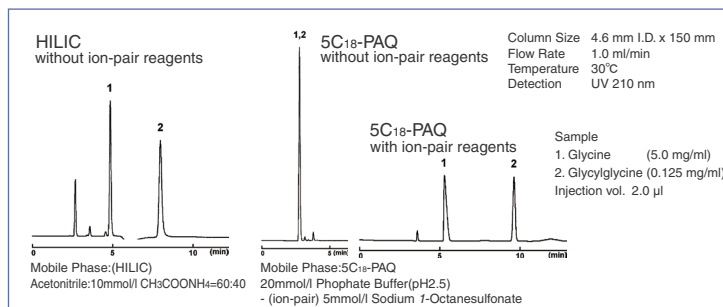
## COSMOSIL PYE

COSMOSIL PYE column is a reversed phase column with 2-(1-Pyrenyl) ethyl groups bonded silica packing material. This column utilizes π-π interactions originating from the planar pyrene ring structure to separate structural isomers.



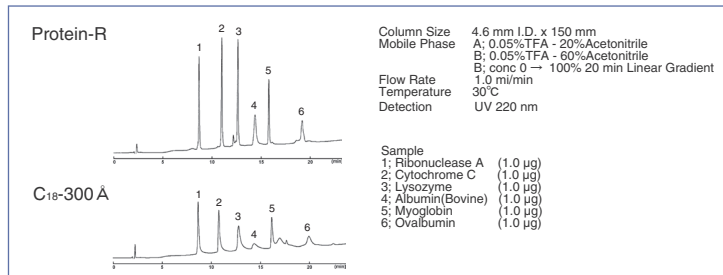
## COSMOSIL HILIC

COSMOSIL HILIC is a column for hydrophilic interaction chromatography with Triazole bonded silica packing material. Without using ion-pair reagent it 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.



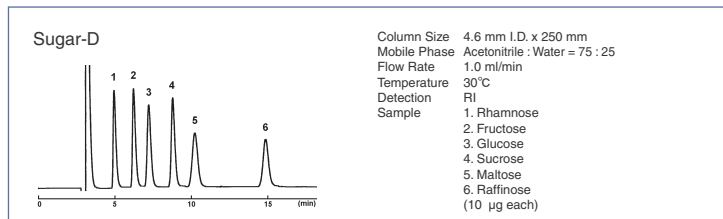
## COSMOSIL Protein-R

COSMOSIL Protein-R is a reversed phase HPLC column designed specifically for protein and peptide separation. COSMOSIL Protein-R provides significantly improved peak shapes, high recovery rate and outstanding stability at low pH, which are often problematic for the separation of proteins and peptides with conventional C<sub>18</sub>-300Å and C<sub>4</sub>-300Å columns.



## COSMOSIL Sugar-D

COSMOSIL Sugar-D is a novel HPLC column with proprietary secondary/tertiary amino group bonded phase designed for saccharide separation. Conventional aminopropyl bonded stationary phases used for liquid chromatographic analysis of mono- and oligosaccharides have shortcomings such as tailing and adsorption of certain saccharides and low durability (short active life) of these columns. These problems are addressed and solved by COSMOSIL Sugar-D columns, which offer better (sharper) separation and much improved durability.



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