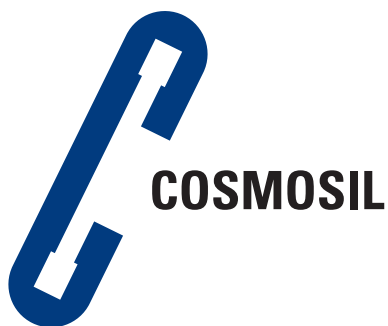




Gel Filtration Chromatography

COSMOSIL Diol-II

- Separate large hydrophilic molecules, such as proteins, polysaccharides and nucleic acids, by molecular size
- Reduce undesirable adsorption
- High pressure tolerance with silica gel-based packing material
- Different products cover a wide range of molecular weight

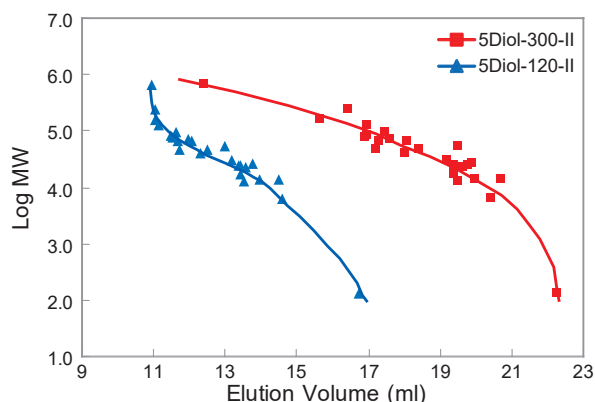
Material Characteristics

Packing Material	5Diol-120-II	5Diol-300-II	5Diol-1000-II	5Diol-2000-II
Silica Gel	High Purity Porous Spherical Silica ⁽¹⁾			
Average Particle Size	5 µm			
Average Pore Size	approx. 120 Å	approx. 300 Å	approx. 1000 Å	approx. 2000 Å
Stationary Phase	Diol Group			
Flow Rate	0.5-1.0 ml/min			
Pressure	20MPa or less		15Mpa or less	
Sample MW (Protein)	5,000-100,000	10,000-700,000	-	-
Sample MW (Water Soluble Polymer)	1,000-20,000	5,000-100,000	50,000 - 500,000	-

(1) With the silica-based gel, organic solvents, including methanol and acetonitrile, can be used.

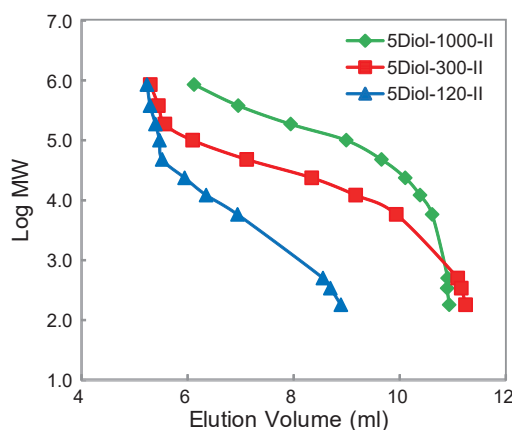
Calibration Curve of Proteins

Globular protein calibration curve



Column	COSMOSIL 5Diol-II 7.5 mm I.D. × 600 mm	
Mobile Phase	20 mmol/l Phosphate Buffer (pH 7.0)+100 mmol/l Na ₂ SO ₄	
Flow Rate	1.0 ml/min	
Temperature	30°C	
Detection	UV220nm	
Sample	M.W.	Sample M.W.
Thyroglobulin	660,000	Peroxidase 40,000
Catalase	250,000	Carbonic Anhydrase 30,000
Glucose Oxidase	160,000	α-Chymotrypsinogen A 25,700
Uricase	128,000	α-Chymotrypsin 25,200
Choline Oxidase	95,000	Trypsinogen 24,000
Transferrin	85,000	Trypsin(bovine) 23,300
Conalbumin	77,500	Myoglobin 17,000
Malate Dehydrogenase	70,000	Lysozyme 14,300
α-Glucosidase	68,500	Ribonuclease A 13,700
Albumin(BSA)	66,000	Cytochrome C 12,400
α-Amylase	52,500	Aprotinin 6,500
Fetuin	48,000	Gly-Gly 132
Albumin(Ovalbumin)	45,000	

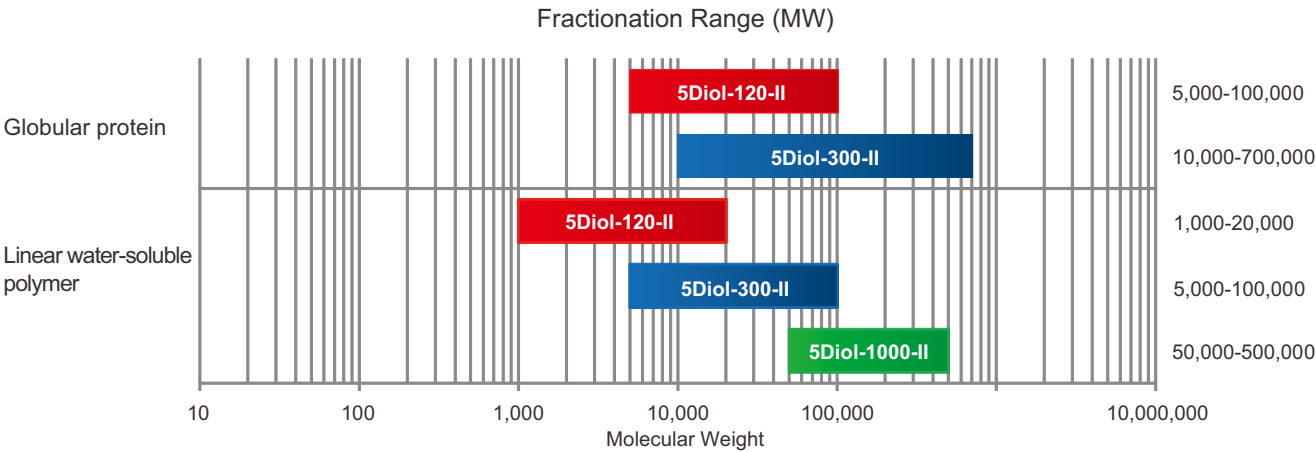
Linear pullulan calibration curve



Column	COSMOSIL 5Diol- II 7.5mmI.D.×300mm	
Mobile Phase	Water	
Flow Rate	1.0ml/min	
Temperature	30°C	
Detection	RI	
Sample	Linear pullulan	M.W.
1; P-800		853,000
2; P-400		380,000
3; P-200		186,000
4; P-100		100,000
5; P-50		48,000
6; P-20		23,700
7; P-10		12,200
8; P-5		5,800
9; Maltotriose		504
10; Maltose		342
11; Glucose		180

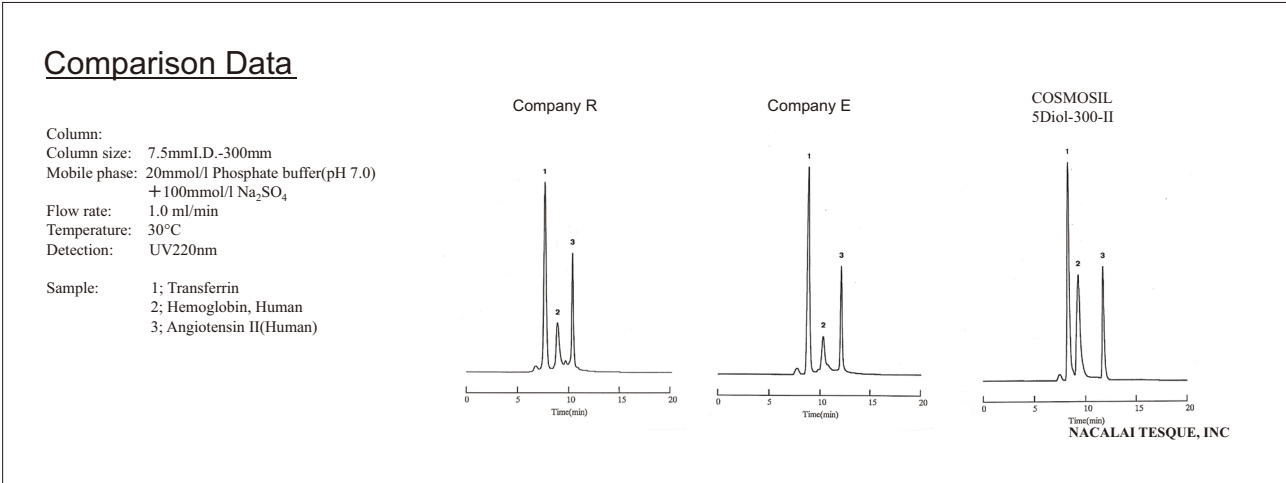
Molecular Weight Range

Globular molecules have smaller apparent size compared to linear molecules of the same weight. Therefore, globular molecules can be separated with smaller pores compared to linear molecules.



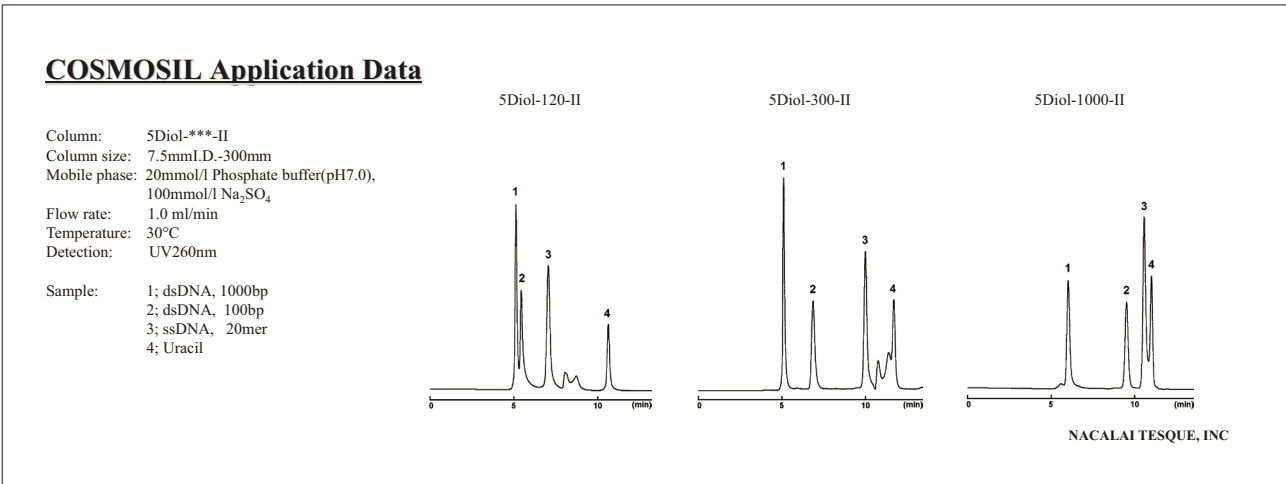
Comparison Data

COSMOSIL Diol-II demonstrates high performance compared to other companies' columns.



Application

DNA

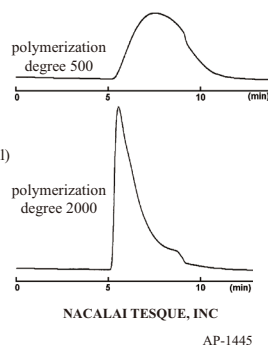


● Polyvinyl Alcohol

COSMOSIL Application Data

Column: 5Diol-300-II
Column size: 7.5mmI.D.-300mm
Mobile phase: H₂O
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI

Sample: Polyvinyl Alcohol (10mg/ml)
Inj.Vol.: 10μl

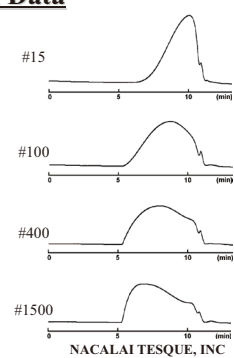


● Methyl Cellulose

COSMOSIL Application Data

Column: 5Diol-1000-II
Column size: 7.5mmI.D.-300mm
Mobile phase: H₂O
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI

Sample: Methyl Cellulose (5mg/ml)
Inj.Vol.: 20μl

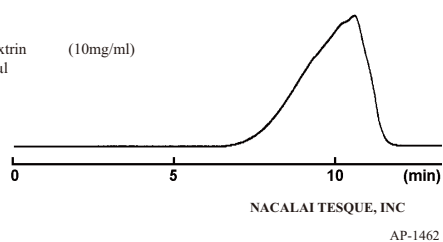


● Dextrin

COSMOSIL Application Data

Column: 5Diol-300-II
Column size: 7.5mmI.D.-300mm
Mobile phase: H₂O
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI

Sample: Dextrin (10mg/ml)
Inj.Vol.: 10μl

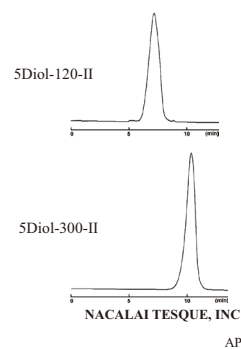


● Inulin

COSMOSIL Application Data

Column: 5Diol-***-II
Column size: 7.5mmI.D.-300mm
Mobile phase: H₂O
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI

Sample: Inulin from Dahlia Tubers (10mg/ml)
Inj.Vol.: 10μl

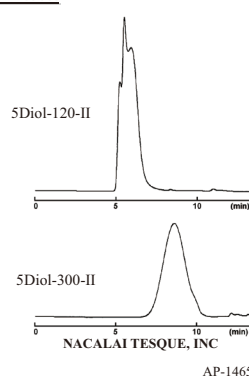


● Laminarin

COSMOSIL Application Data

Column: 5Diol-***-II
Column size: 7.5mmI.D.-300mm
Mobile phase: H₂O
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI

Sample: Laminaran from Eisenia Bicyclis (5.0mg/ml)
Inj.Vol.: 20μl

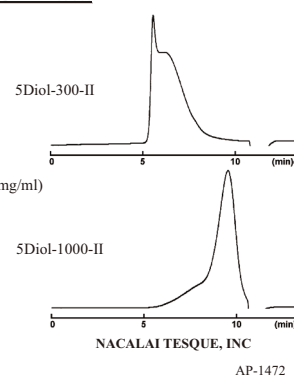


● Gum Arabic

COSMOSIL Application Data

Column: 5Diol-***-II
Column size: 7.5mmI.D.-300mm
Mobile phase: 100mmol/l Na₂SO₄
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI

Sample: Acacia [Gum Arabic] (10mg/ml)
Inj.Vol.: 10μl



Ordering Information

● Analytical (Particle Size: 5 µm)

COSMOSIL 5Diol-120-II Packed Column

Column Size I.D. x Length (mm)	Product Number
7.5 x 300	38050-51
7.5 x 600	38051-41

COSMOSIL 5Diol-120-II Guard Column

Column Size I.D. x Length (mm)	Product Number
7.5 x 50	38049-91

COSMOSIL 5Diol-300-II Packed Column

Column Size I.D. x Length (mm)	Product Number
7.5 x 300	38053-21
7.5 x 600	38054-11

COSMOSIL 5Diol-300-II Guard Column

Column Size I.D. x Length (mm)	Product Number
7.5 x 50	38052-31

COSMOSIL 5Diol-1000-II Packed Column

Column Size I.D. x Length (mm)	Product Number
7.5 x 300	13338-71

COSMOSIL 5Diol-1000-II Guard Column

Column Size I.D. x Length (mm)	Product Number
7.5 x 50	13337-81

COSMOSIL 5Diol-2000-II Packed Column

Column Size I.D. x Length (mm)	Product Number
7.5 x 300	19976-31

Other Products for Protein Separation (Particle Size: 5 µm)

Reversed Phase

COSMOSIL Protein-R Packed Column

Column Size I.D. x Length (mm)	Product Number
4.6 x 150	06526-21
4.6 x 250	06527-11

COSMOSIL 5C₁₈-AR-300 Packed Column

Column Size I.D. x Length (mm)	Product Number
4.6 x 150	37913-81
4.6 x 250	37914-71

COSMOSIL 5C₈-AR-300 Packed Column

Column Size I.D. x Length (mm)	Product Number
4.6 x 150	37953-61
4.6 x 250	37954-51

COSMOSIL 5C₄-AR-300 Packed Column

Column Size I.D. x Length (mm)	Product Number
4.6 x 150	37958-11
4.6 x 250	37959-01

COSMOSIL 5Ph-AR-300 Packed Column

Column Size I.D. x Length (mm)	Product Number
4.6 x 150	37963-31
4.6 x 250	37964-21

Hydrophobic Interaction

COSMOSIL 5HIC Packed Column

Column Size I.D. x Length (mm)	Product Number
4.6 x 50	04263-21

Ion Exchange

Ion Exchange Mode	Product Name	Application	Column Size I.D. x Length (mm)	Product Number
Anion-exchange Type	COSMOGEL IEX Type Q	For Purification	4.6 x 50	06266-31
	COSMOGEL IEX Type Q-N	For Ultra-fast Analysis	4.6 x 30	06264-51
	COSMOGEL IEX Type Q-N	For Precise Analysis	4.6 x 100	06258-41
Cation-exchange Type	COSMOGEL IEX Type S	For Purification	4.6 x 50	06252-01
	COSMOGEL IEX Type S-N	For Ultra-fast Analysis	4.6 x 30	06251-11
	COSMOGEL IEX Type S-N	For Precise Analysis	4.6 x 100	06250-21
Amphoteric Ion-exchange Type	COSMOGEL IEX Type M	For Purification	4.6 x 50	06248-71
	COSMOGEL IEX Type M-N	For Precise Analysis	4.6 x 100	06244-11

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

