

**COSMOSIL**

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

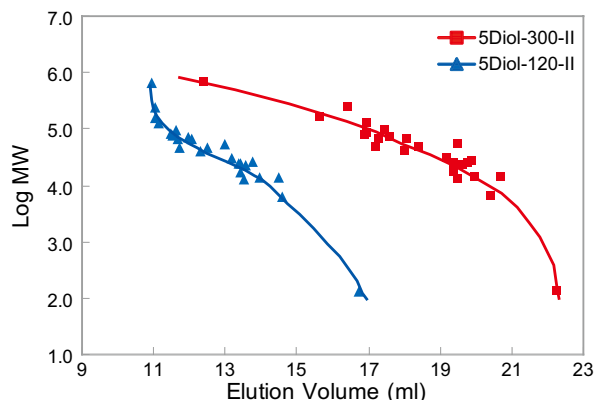
Packing Material	5Diol-120-II	5Diol-300-II	5Diol-1000-II
Silica Gel	High Purity Porous Spherical Silica <sup>(1)</sup>		
Average Particle Size	5 µm		
Average Pore Size	approx. 120Å	approx. 300Å	approx. 1000Å <sup>(2)</sup>
Stationary Phase	Diol Group		
Flow Rate	0.5-1.0 ml/min		
Pressure	20MPa or less		15Mpa or less
Sample MW (Protein)	5,000-100,000	10,000-700,000	-
Sample MW (Water Soluble Polymer)	300-30,000	500-300,000	50,000 - 500,000

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

(2) If you require pore sizes greater than 1000 Å, please contact us.

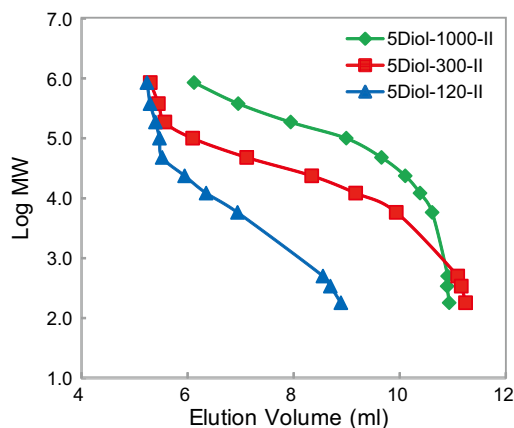
## Calibration Curve of Proteins

### 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 <sub>2</sub> SO <sub>4</sub>		
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		

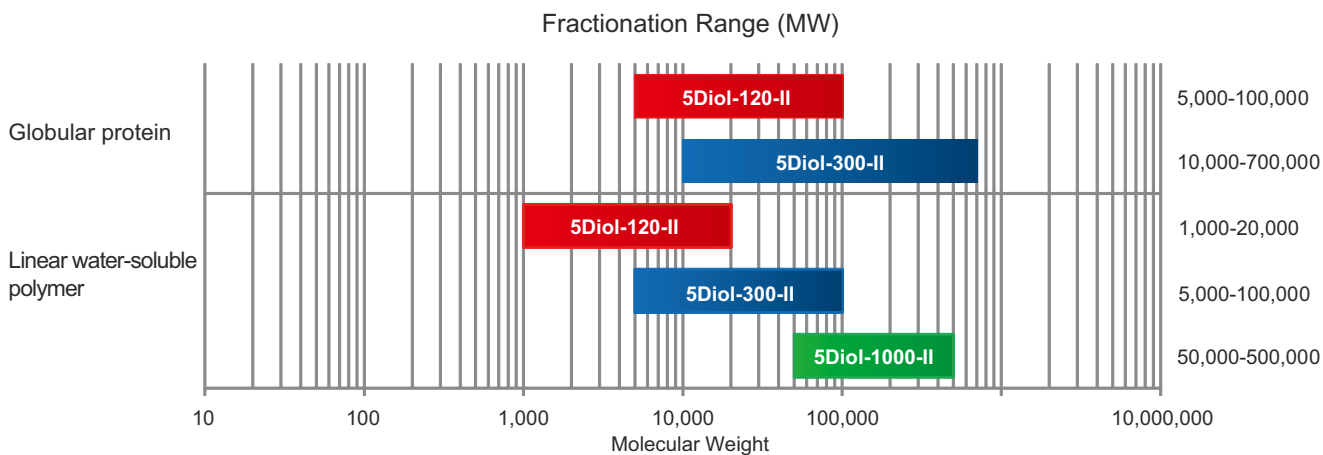
### Linear pullulan calibration curve



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

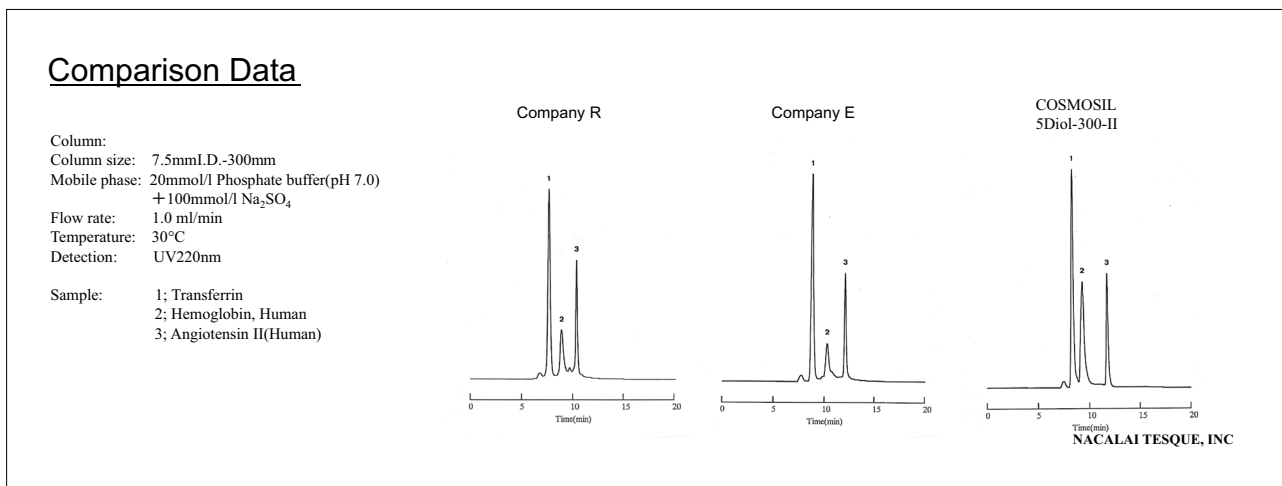
## Molecular Weight Range

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.



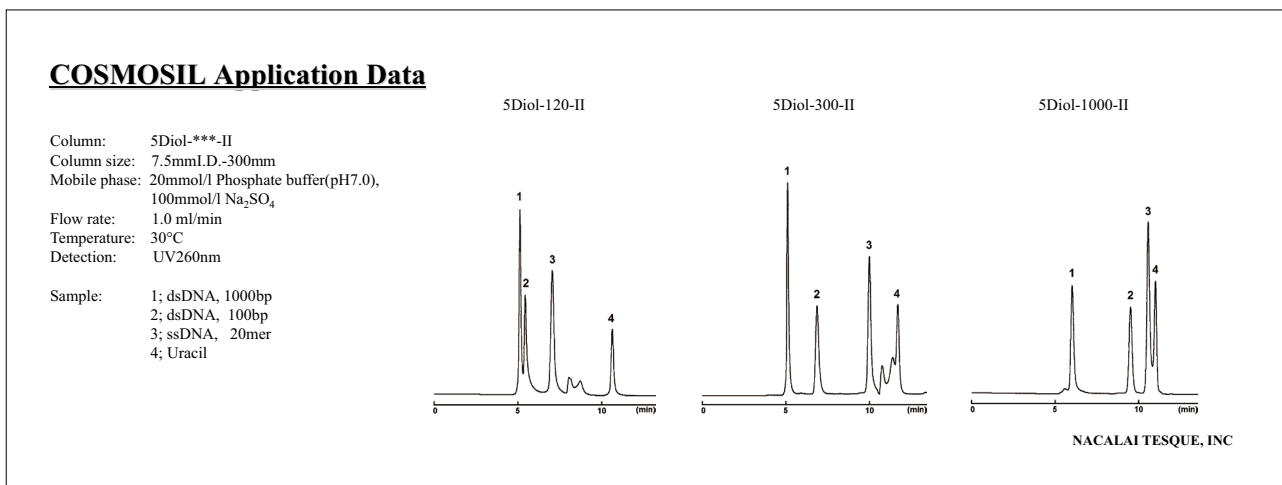
## Comparison Data

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

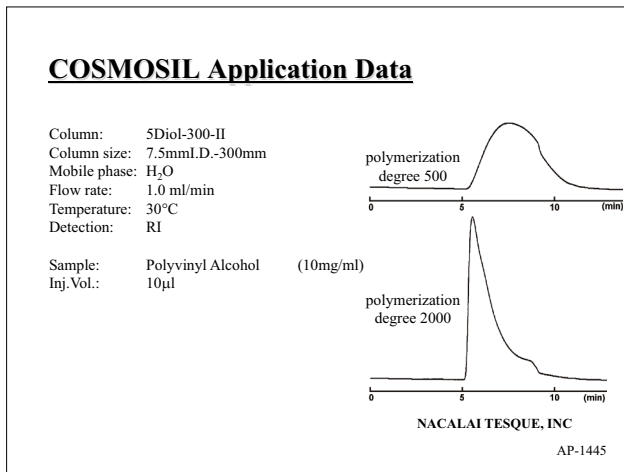


## Application

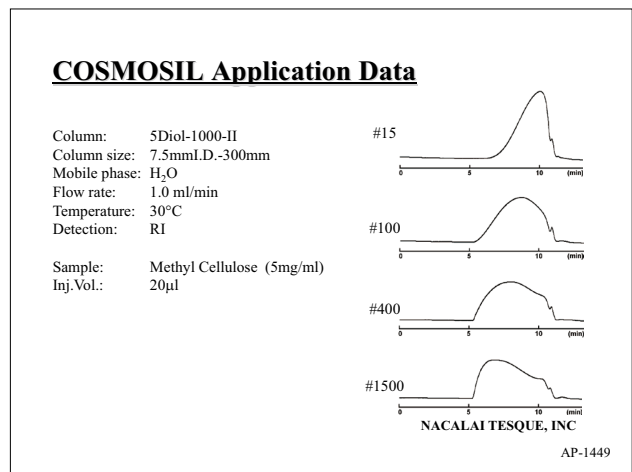
### • DNA



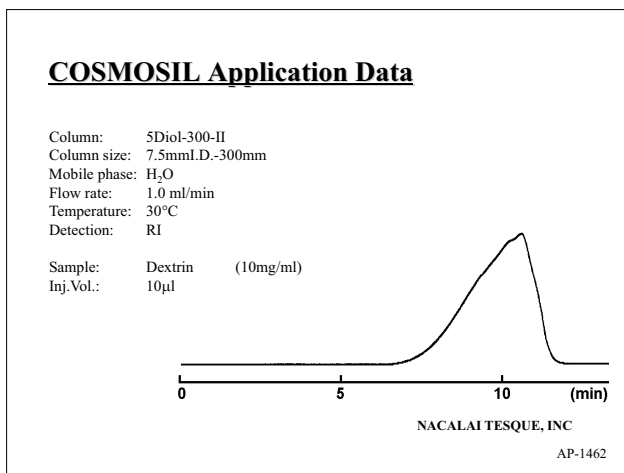
● Polyvinyl Alcohol



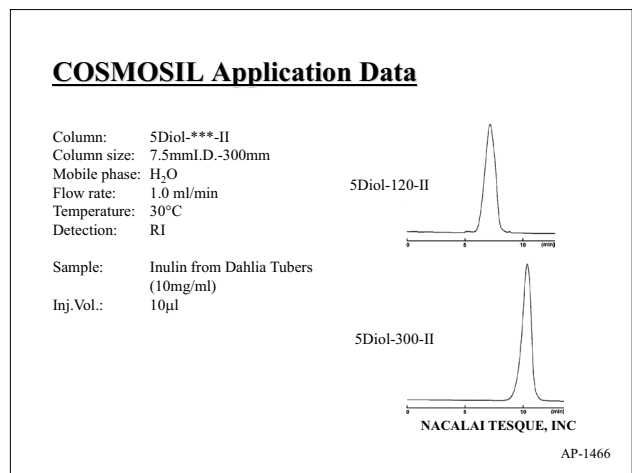
● Methyl Cellulose



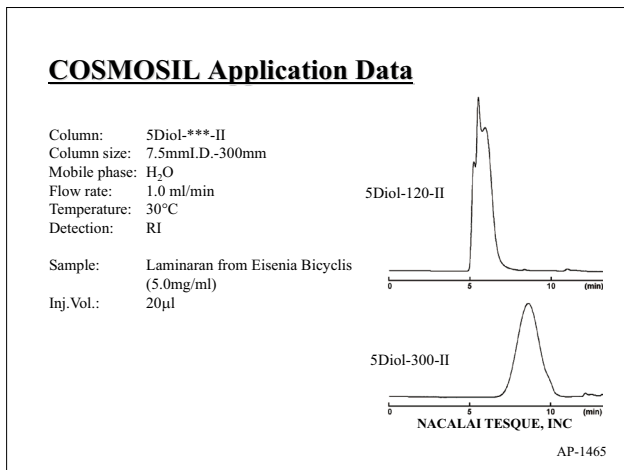
● Dextrin



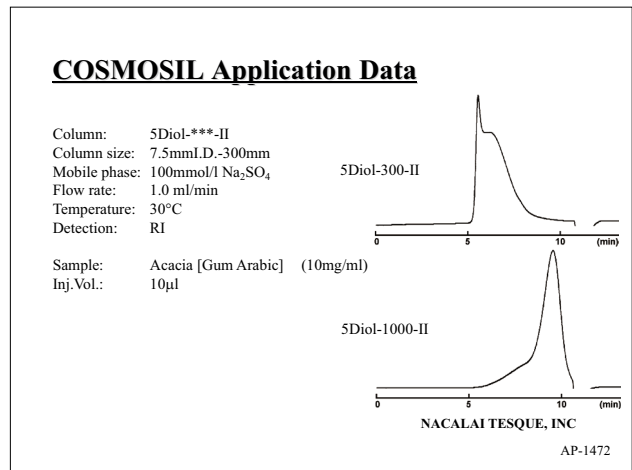
● Inulin



● Laminarin



● Gum Arabic



## 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

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

### Reversed Phase

#### COSMOSIL 5C<sub>18</sub>-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 5C<sub>8</sub>-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 5C<sub>4</sub>-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.

