



**COSMOSIL**

Gel Filtration Chromatography

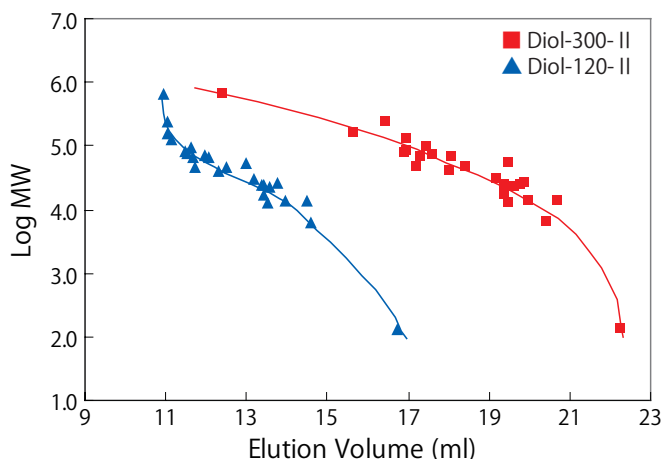
# COSMOSIL Diol-II

- Ideal for the size-based separation of proteins and water soluble polymers
- Reduce undesirable adsorption

## Material Characteristics

Packing Material	5Diol-120-II	5Diol-300-II
Silica Gel	High Purity Porous Spherical Silica	
Average Particle Size	5 $\mu\text{m}$	
Average Pore Size	approx. 120Å	approx. 300Å
Stationary Phase	Diol Group	
Object Substance	Protein and Water Soluble Polymer	
Flow Rate	0.5-1.0 ml/min	
Selection of Pore Size (Proteins)	5,000-100,000	10,000-700,000
Selection of Pore Size (Water Soluble Polymer)	300-30,000	500-300,000

## Calibration Curve of Proteins



Column COSMOSIL 5Diol-II 7.5mm I.D. x 600mm  
 Mobile phase 20mmol/l Phosphate Buffer (pH 7.0) +100mmol/l Na<sub>2</sub>SO<sub>4</sub>  
 Flow rate 1.0ml/min  
 Temperature 30 °C

Sample	MW	Sample	MW
Thyroglobulin	660,000	Peroxidase	40,000
Catalase	250,000	Carbonic Anhydrase	30,000
Glucose Oxidase	160,000	$\alpha$ -Chymotrypsinogen A	25,700
Uricase	128,000	$\alpha$ -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
$\alpha$ -Glucosidase	68,500	Ribonuclease A	13,700
Albumin (BSA)	66,000	Cytochrome C	12,400
$\alpha$ -Amylase	52,500	Aprotinin	6,500
Fetuin	48,000	Gly-Gly	132
Albumin (Ovalbumin)	45,000		

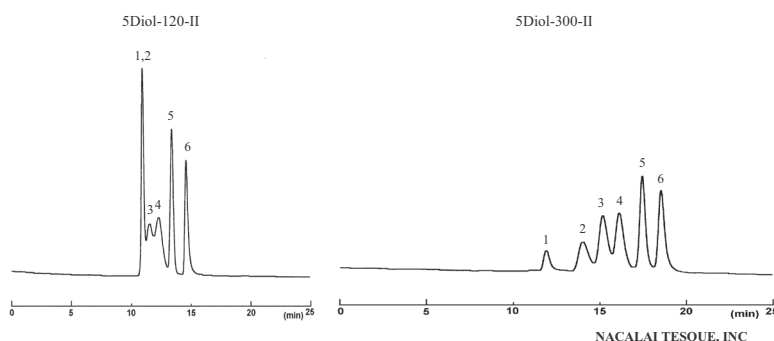
## Separation of Standard Proteins

COSMOSIL Diol-II series are available in two different pore sizes, Diol-120-II and Diol-300-II. Combination of these two columns enables separation of a wide MW range of samples.

### Comparison of separation property

Column: 7.5mm I.D.-600mm  
 Column size: 7.5mm I.D.-600mm  
 Mobile phase: 20mmol/l Phosphate buffer (pH 7.0) +100mmol/l Na<sub>2</sub>SO<sub>4</sub>  
 Flow rate: 1.0 ml/min  
 Temperature: Room temperature  
 Detection: UV220nm

Sample: 1; Thyroglobulin  
 2; Glucose Oxidase  
 3; Conalbumin  
 4; Peroxidase  
 5; Myoglobin  
 6; Aprotinin

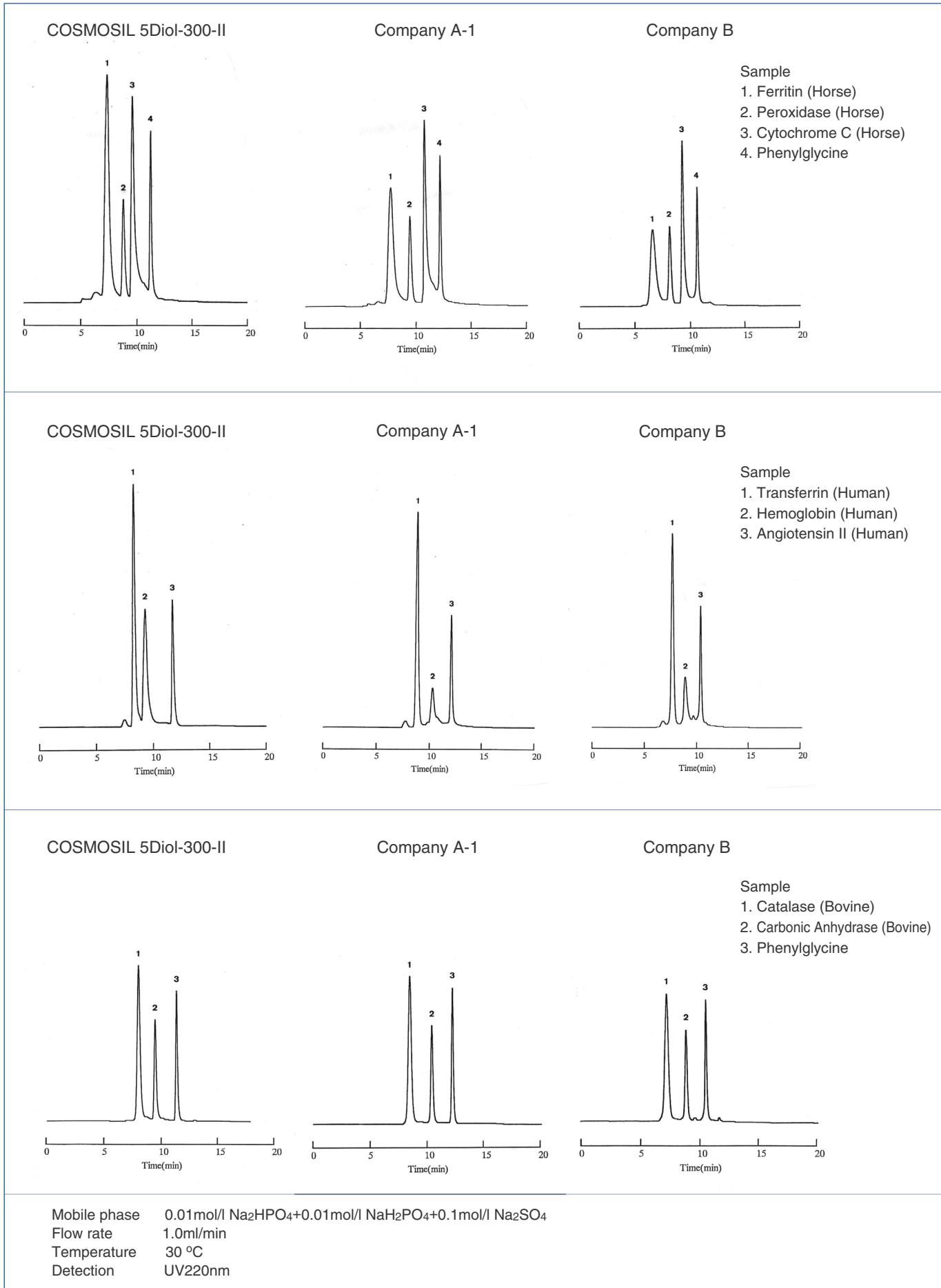


NACALAI TESQUE, INC

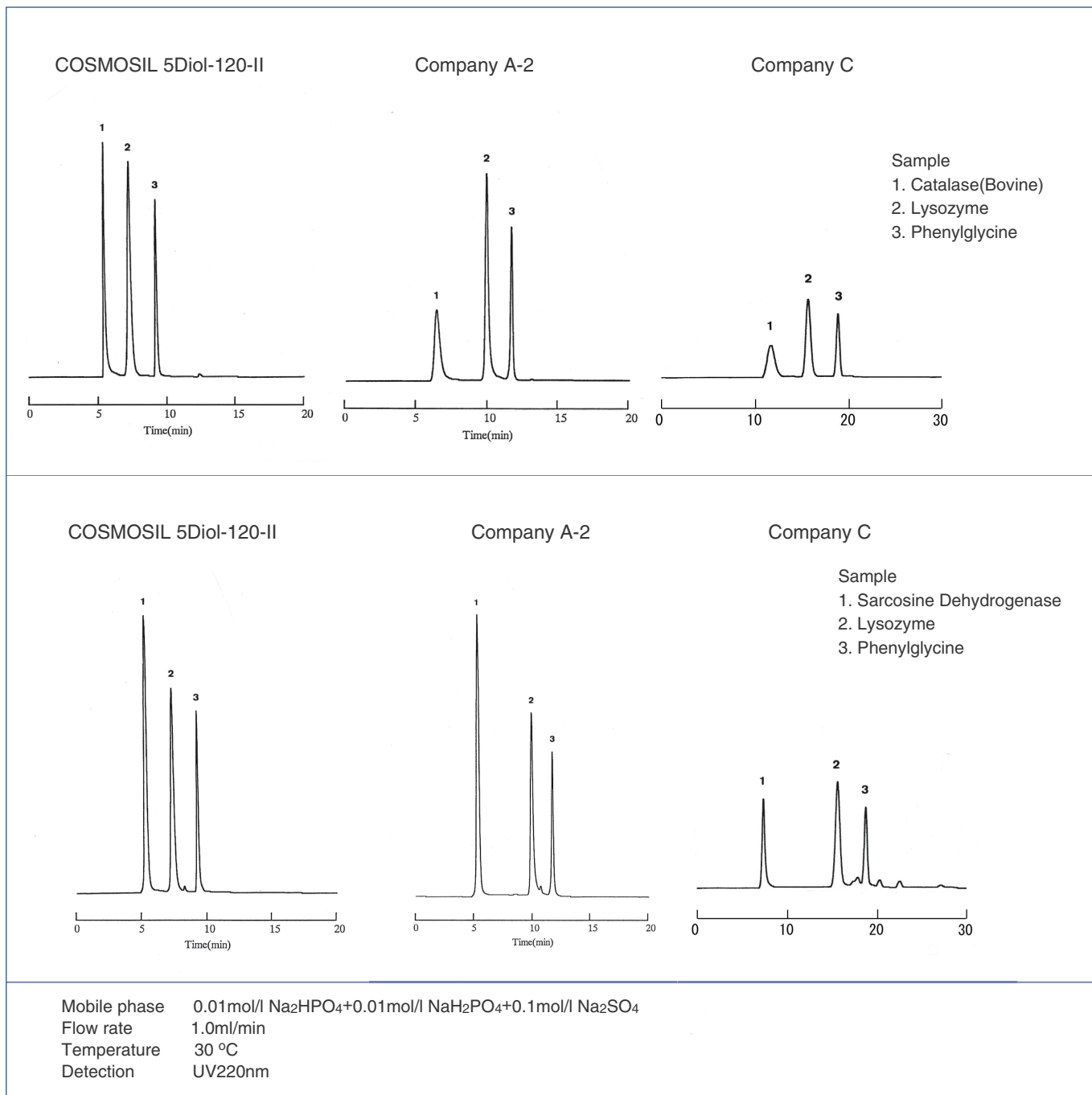
## Comparison with Competitors' Columns

COSMOSIL Diol-II series shows excellent separation compared to competitors' columns.

### • COSMOSIL 5Diol-300-II



• COSMOSIL 5Diol-120-II

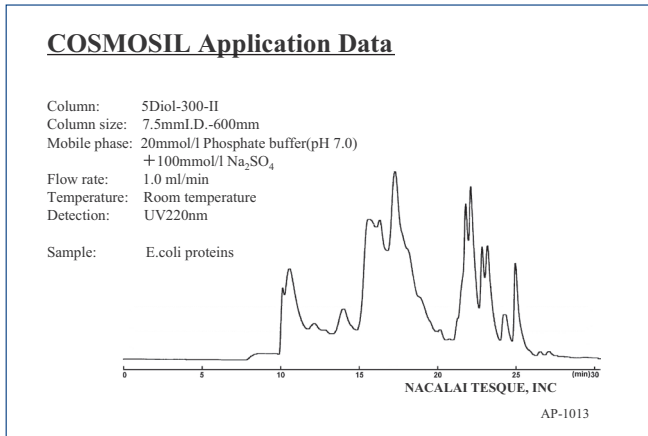


• Material Characteristics' Comparison with Competitors' Columns

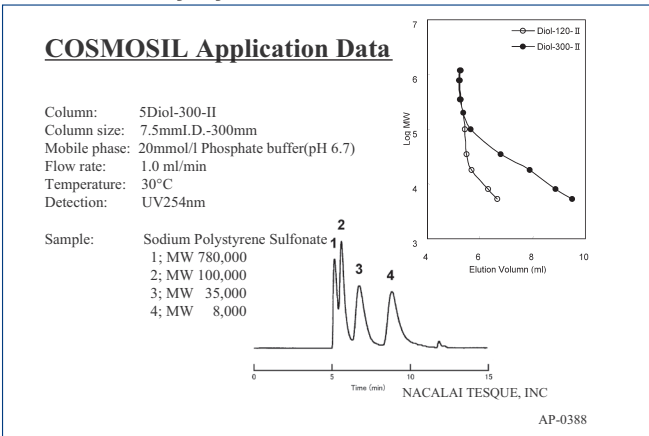
Column	Gel	Average Particle Size	Average Pore Size	Column Size	Chart Speed
COSMOSIL 5Diol-300-II	Silica Gel	5 µm	approx. 300 Å	7.5 mm I.D. x 300 mm	5 mm/min
Company A-1	Silica Gel	5 µm	250 Å	7.8 mm I.D. x 300 mm	5 mm/min
Company B	Silica Gel	5 µm	250 Å	7.8 mm I.D. x 300 mm	5 mm/min
COSMOSIL 5Diol-120-II	Silica Gel	5 µm	approx. 120 Å	7.5 mm I.D. x 300 mm	5 mm/min
Company A-2	Silica Gel	5 µm	125 Å	7.8 mm I.D. x 300 mm	5 mm/min
Company C	Polymer	-	-	10 mm I.D. x 300 mm	2.8 mm/min

## Application Data

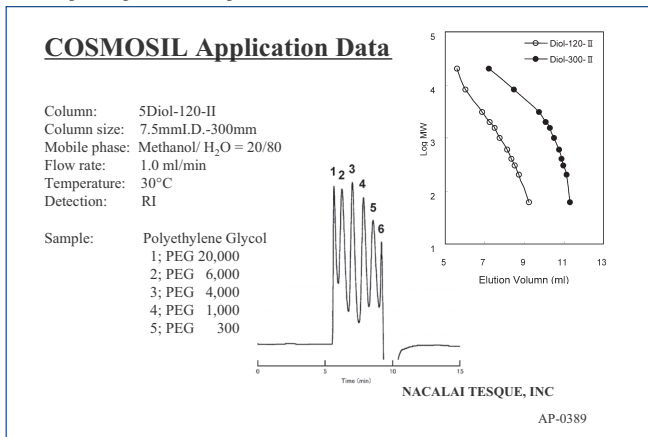
### • E. Coli Proteins



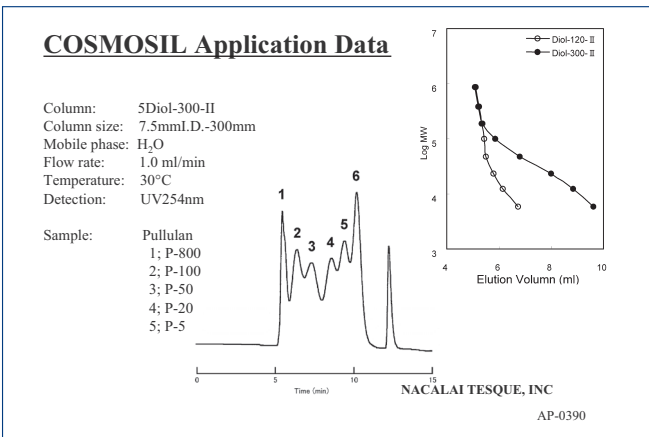
### • Sodium Polystyrene Sulfonate



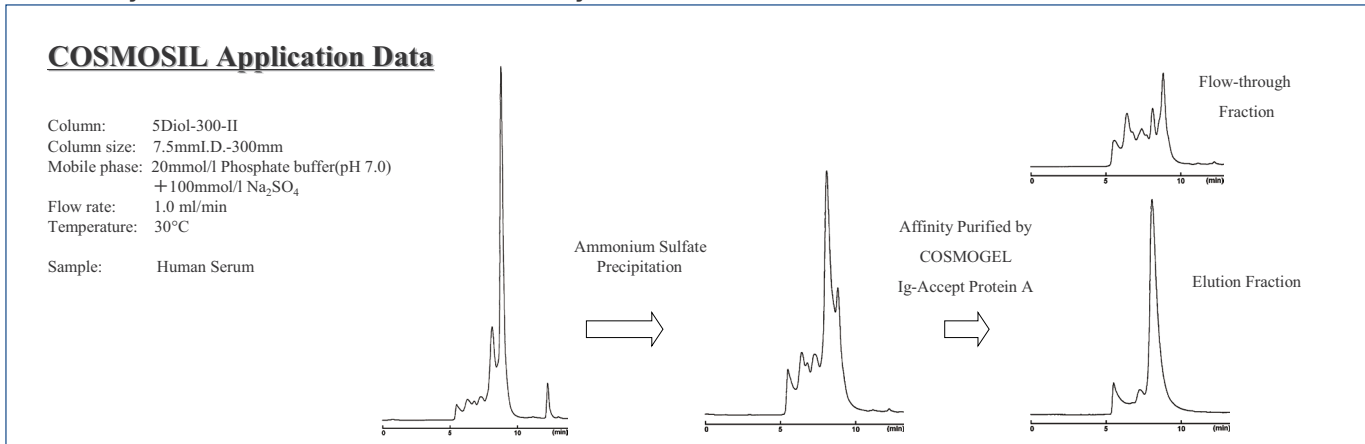
### • Polyethylene Glycols



### • Pullulan



### • Antibody Purification from Human Serum by Gel Filtration Column



## Ordering Information

### • COSMOSIL 5Diol-120-II

	Column Size	Product Number
Packed Column	7.5 mm I.D. x 300 mm	38050-51
	7.5 mm I.D. x 600 mm	38051-41
Guard Column	7.5 mm I.D. x 50 mm	38049-91

### • COSMOSIL 5Diol-300-II

	Column Size	Product Number
Packed Column	7.5 mm I.D. x 300 mm	38053-21
	7.5 mm I.D. x 600 mm	38054-11
Guard Column	7.5 mm I.D. x 50 mm	38052-31

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