

Size exclusion chromatography columns

Size exclusion chromatography is a liquid chromatographic technique which separates solute molecules according to their size in solution. The column is packed with porous particles and separation takes place as a result of the differential solute distribution outside and within the pores of the packing material. Solute molecules which are larger than the pores of the packing material will be excluded and therefore will elute first and have a lower retention time than the smaller one. The CQP series columns based on a hydrophilic polymer are designed for analysis of water soluble polymers such as oligosaccharides and PEG, etc.

Column list

● CQP series

MCI GEL™ column	USP	Column dimensions	Packing materials		Theoretical plates number [TP/column]	Exclusion limit [PEG]
			Particle size [μm]	Pore size [nm]		
MCI GEL™ CQP06	L25	7.5mm I.D. ×600mm	10	12	10000	~1×10 ³
MCI GEL™ CQP10	L38	7.5mm I.D. ×600mm	10	20	6000	~1×10 ⁴
MCI GEL™ CQP30	L37, L38	7.5mm I.D. ×600mm	10	60	6000	~1×10 ⁶

● Guard columns

MCI GEL™ column	Column dimensions
MCI GEL™ CQP06G	4.0mm I.D. ×50mm
MCI GEL™ CQP10G	4.0mm I.D. ×50mm
MCI GEL™ CQP30G	4.0mm I.D. ×50mm

Application data of CQP series

Fig. 4-4 Calibration curve

Conditions
 Column : MCI GEL™ CQP06
 MCI GEL™ CQP10
 MCI GEL™ CQP30
 7.5mm I.D. ×600mm
 Eluent : H₂O
 Flow rate : 1.0 ml/min
 Column temp. : ambient
 Detection : RI
 Sample : PEG 100μl inj.

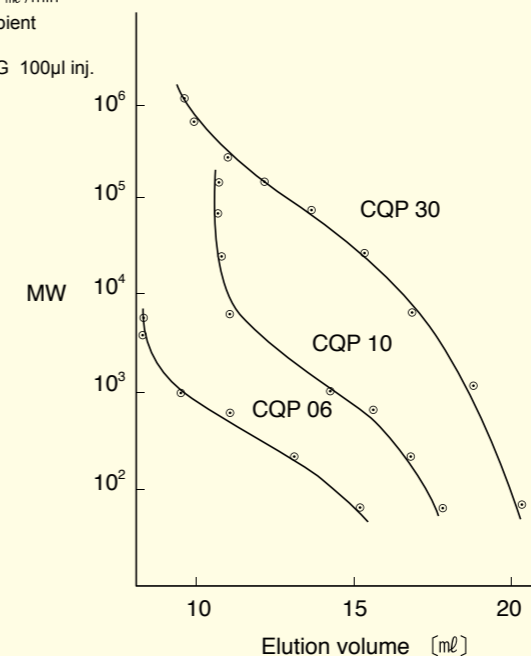


Fig. 4-5 Separation of PEG mixture

Conditions
 Column : MCI GEL™ CQP30 7.5mm I.D. ×600mm
 Eluent : H₂O
 Flow rate : 1.0 ml/min
 Column temp. : 25°C
 Detection : RI
 Sample : 1. PEG 145,000
 2. 40,000
 3. 6,000

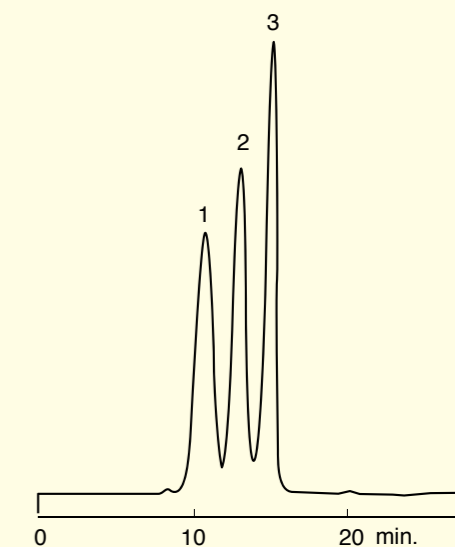


Fig. 4-6 Separation of protein mixture

Conditions
 Column : MCI GEL™ CQP30 7.5mm I.D. ×600mm
 Eluent : 14mM Tris-HClO₄ buffer
 Flow rate : 1.0 ml/min
 Column temp. : ambient
 Detection : 280nm
 Sample : 1. Ferritin (MW440,000)
 2. Ovalbumin (MW43,000)
 3. Myoglobin (MW17,500)
 4. Cytochrome c (MW12,400)

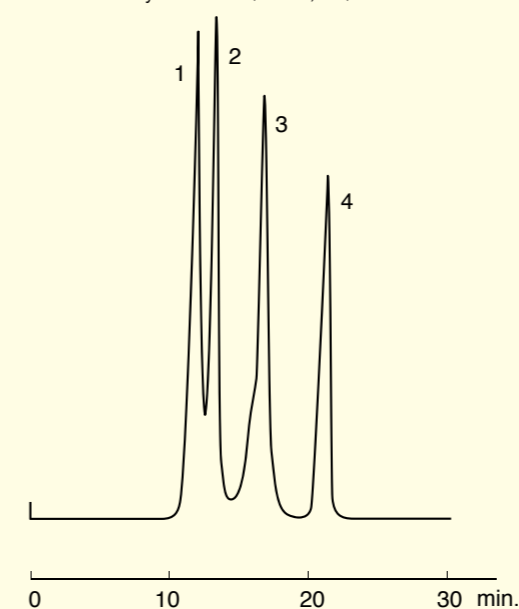


Fig. 4-7 Separation of gluconic acid and glucose

Conditions
 Column : MCI GEL™ CQP06 7.5mm I.D. ×600mm
 Eluent : H₂O
 Flow rate : 0.8 ml/min
 Column temp. : ambient
 Detection : RI
 Sample : 1. 5% Gluconic acid
 2. 5% Glucose

