

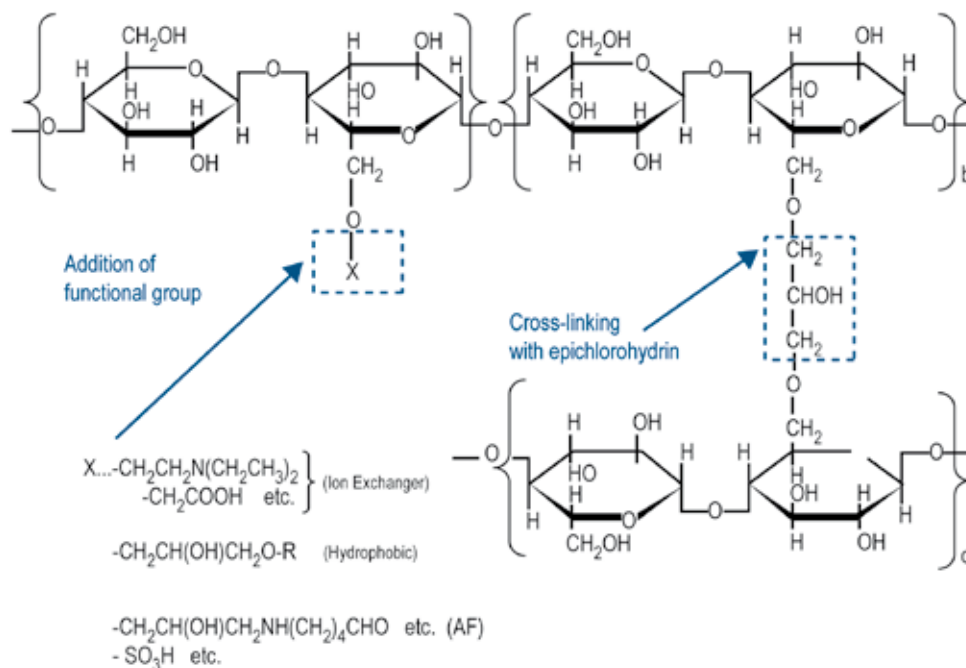
Biochromatography - Ion Exchange

Cellufine[®], cellulose based support

Cellufine[®] is a cellulose based liquid chromatography support suited to a diverse range of purification techniques i.e. Ion Exchange, Affinity, Hydrophobic interaction and Gel Filtration. It is made from spherical cellulose particles which exhibit high chemical stability, mechanical strength and bio-compatibility. The matrix suffers much less from leaking than synthetic polymer media and provides inherent structural benefits for the purification of proteins, enzymes and other bio-active substances

The Cellufine[®] range within this catalog has been established for the majority of purification applications. Custom made supports are available such as ion exchange media manufactured from larger particles and affinity based products with ligands of choice. Cellufine[®] is suitable for use in pharmaceutical production processes and the food industry due in part to its ability to manage large sample volumes and the absence of animal extracts within the product.

- High alkali stability, suited to washing and regeneration
- Mechanical strength : high flow rate & fast separation
- Low cost, effective separations and recovery



Activated Cellufine structure

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Cellufine[®], cellulose based support

Adsorption						Partition	
Ion Exchange		Affinity		Hydrophobic Interaction		Gel Filtration	
For capturing & intermediate purification of proteins, peptides & enzymes		For high specificity separations of a wide range of molecules		For purification of proteins and enzymes		For purifications of biomolecules and proteins by molecular size	
DEAE Weak Anion		Virus & Heparin Binding Proteins					
Cellufine A-200	44-105 µm	Cellufine Sulfate	44-105 µm	Cellufine Butyl	53-125 µm	Cellufine GCL-2000	53-125µm
Cellufine A-500	53-125 µm			Cellufine Octyl	53-125 µm	MW 50 - 3000 kDa	
Cellufine A-800	53-125 µm			Cellufine Phenyl	53-125 µm		
QA Strong Anion						For salt and solvent removal, and buffer exchange	
Cellufine Q-500	53-125 µm	Endotoxin Removal				Cellufine GH-25	44-105 µm
		Cellufine Etclean L	53-125 µm				
CM Weak Cation		Cellufine Etclean S	44-105 µm				
Cellufine C-500	53-125 µm	IMAC Metal Binding Molecules					
		Cellufine Chelate	125-210 µm				
		Molecules with Thiols & EPO					
		Cellufine PB	125-210 µm				
		Activated Supports					
		Cellufine Amino	125-210 µm				
		Cellufine Formyl	125-210 µm				

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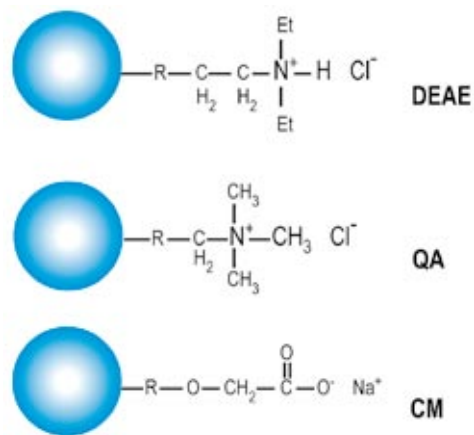
Cellufine™ DEAE, QA, CM

- Spherical particles exhibiting high mechanical strength
- Choice of several pore sizes
- Hydrophilic
- DEAE (A), QA (Q) anion exchange and carboxymethyl (C) cation exchange
- Pre-swollen
- Virtually no shrinkage or swelling
- Resistant to 0.5M NaOH
- Stable in organic solvents
- Autoclavable (121 °C for 30 minutes)
- Passes USP V tests (A-500, C-500)

Benefits

- High flow rates allowing rapid chromatography and direct scale-up
- Allows optimum capacity matched to molecular weight
- Low non-specific binding
- Optimal functionality selection
- Easy packing
- Easy large scale operation
- Easy regeneration and depyrogenation
- Allows alternative cleaning regimes
- Sterilizable
- Non toxic
- Regulatory support

Product	P/N	Qty
Cellufine A-200 DEAE 44-105 mm	676980327 19611	100 ml 500 ml
Cellufine A-800 DEAE 53-125 mm	673980327 19800	100 ml 500 ml
Cellufine A-500 DEAE 53-125 mm	675980327 19805	100 ml 500 ml
Cellufine C-500 CM 53-125 mm	675983327 19865	100 ml 500 ml
Cellufine Q500 QA 53-125 mm	675982327 19907	100 ml 500 ml



Biochromatography - Ion Exchange

Hydrocell DEAE, QA, CM, SP

Hydrocell columns are based on the coating of the neutral hydrophilic layer on the rigid macroporous polystyrene-divinylbenzene (PS-DVB) matrix, followed by chemical immobilization of the polymer chains of bonded phase on the hydrophilic surface. The packings do not have weak ester or amide linkages found in other polymeric gels. Their chemical and physical stability allow rapid equilibration and fast clean-up using high salt, HCl, NaOH or organic solvents.

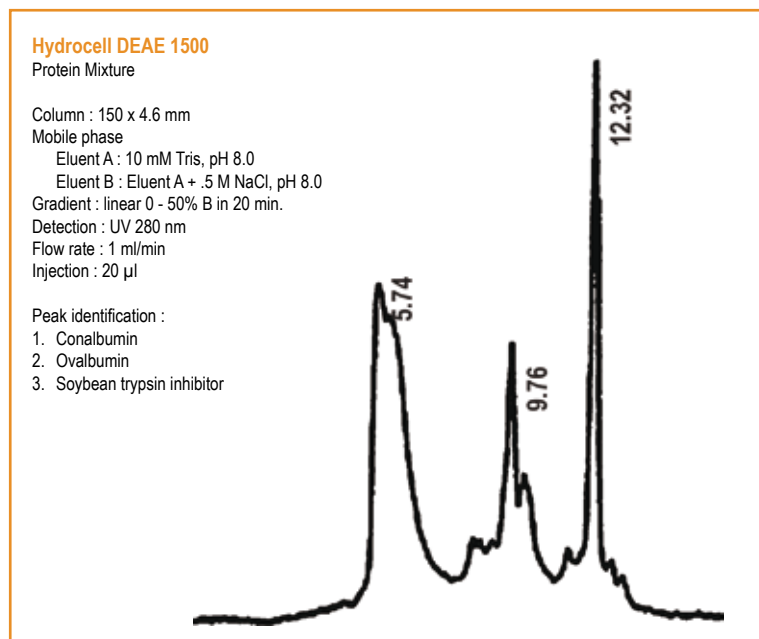
Unlike some columns where hydrophobic retention can complicate ion exchange chromatography by producing irreversible adsorption, Hydrocell ion exchangers are very hydrophilic. Elution of proteins can be achieved with buffers of moderate ionic strength, typically less than 0.5M NaCl, in 15 minutes at a flow rate of 1.0 ml / minute and with a pH range of 1 to 14 & pressure limit of 4000 psi. Hydrocell columns are therefore ideal for the separation and analysis of a wide range of biological materials. Hydrocell ion exchange columns are particularly suitable for proteins, peptides, oligonucleotides, DNA fragments and other biomolecule separations.

Features

- Highly cross-linked PS-DVB beads w/ 10 μm particles
- Pore size : 500 Å (DEAE, QA,CM and SP 1500) - 1000Å (DEAE, QA,CM and SP 3000).

Coated with neutral, hydrophilic layer

- Weak Anion Exchanger: DEAE 1500 and 3000 :
Weak anion separations can be achieved over a pH range of 3 to 9
- Strong Anion Exchanger: QA 1500 and 3000 :
Strong anion separations can be achieved over a pH range of 3 to 11
- Weak Cation Exchanger: CM 1500 and 3000 :
Weak cation separations can be achieved over a pH range of 5 to 12
- Strong Cation Exchanger: SP 1500 and 3000 :
Strong cation separations can be achieved over a pH range of 3 to 12.



Biochromatography - Ion Exchange

Hydrocell DEAE, QA, CM, SP

Column Size	DEAE 1500	QA 1500	CM 1500	SP 1500
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Stainless Steel Columns

Capillary

50 x 0.1 mm	012-23DE	012-23QA	012-23CM	012-23SP
150 x 0.1 mm	014-23DE	014-23QA	014-23CM	014-23SP
50 x 0.3 mm	032-34DE	032-34QA	032-34CM	032-34SP
150 x 0.3 mm	034-34DE	034-34QA	034-34CM	034-34SP

Microbore

50 x 1.0 mm	12-34DE	12-34QA	12-34CM	12-34SP
150 x 1.0 mm	14-34DE	14-34QA	14-34CM	14-34SP
50 x 2.1 mm	22-34DE	22-34QA	22-34CM	22-34SP
150 x 2.1 mm	24-34DE	24-34QA	24-34CM	24-34SP
250 x 2.1 mm	26-34DE	26-34QA	26-34CM	26-34SP

Analytical

50 x 4.6 mm	32-34DE	32-34QA	32-34CM	32-34SP
150 x 4.6 mm	34-34DE	34-34QA	34-34CM	34-34SP
250 x 4.6 mm	36-34DE	36-34QA	36-34CM	36-34SP
75 x 7.8 mm	43-34DE	43-34QA	43-34CM	43-34SP
150 x 7.8 mm	44-34DE	44-34QA	44-34CM	44-34SP
250 x 7.8 mm	46-34DE	46-34QA	46-34CM	46-34SP
150 x 10 mm	54-34DE	54-34QA	54-34CM	54-34SP
250 x 10 mm	56-34DE	56-34QA	56-34CM	56-34SP

Preparative

150 x 21 mm	64-44DE	64-44QA	64-44CM	64-44SP
250 x 21 mm	66-44DE	66-44QA	66-44CM	66-44SP
150 x 50 mm	74-44DE	74-44QA	74-44CM	74-44SP

PEEK Columns

50 x 4.6 mm	32-34DEP	32-34QAP	32-34CMP	32-34SPP
150 x 4.6 mm	34-34DEP	34-34QAP	34-34CMP	34-34SPP
250 x 4.6 mm	36-34DEP	36-34QAP	36-34CMP	36-34SPP
75 x 7.5 mm	43-34DEP	43-34QAP	43-34CMP	43-34SPP
150 x 7.5 mm	44-34DEP	44-34QAP	44-34CMP	44-34SPP

Column Size	DEAE 1500	QA 1500	CM 1500	SP 1500
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Guard Columns and Column Repair Gels

Analytical

Cartridge Kits (Holder & 2 Cartridges)				
20 x 4 mm	34DE-GCK1	34QA-GCK1	34CM-GCK1	34SP-GCK1
10 x 2 mm	34DE-GCK2	34QA-GCK2	34CM-GCK2	34SP-GCK2

Cartridges (2)

20 x 4 mm	34DE-C1	34QA-C1	34CM-C1	34SP-C1
10 x 2 mm	34DE-C2	34QA-C2	34CM-C2	34SP-C2

Preparative

Cartridge Kits (Holder & 2 Cartridges)				
	34DE-PGC	34QA-PGC	34CM-PGC	34SP-PGC

Cartridges (2)

	34DE-PC	34QA-PC	34CM-PC	34SP-PC
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Repair Gels (1 g)

	34DE-G	34QA-G	34CM-G	34SP-G
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Hydrocell SP3000

Column: 4.6 x 50 mm

Mobile Phase:

Eluent A: 20 mM Potassium Phosphate, pH 6.0

Eluent B: Eluent A + 0.5 M NaCl, pH 6.0

Gradient: Linear 0-100% B in 20 minutes

Detection: UV 280 nm

Flow Rate: 1 ml/min

Injection: 20 µL

Peak Identification:

1. Chymotrypsinogen A
2. Cytochrome C
3. Lysozyme

