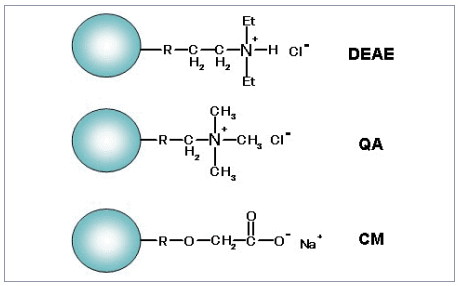
Cation Exchange
Cellufine C-500



Cellufine is the liquid chromatography media for the purification of proteins, enzymes and other bio-active substance. Since it is made from spherical cellulose particles having high chemical stability, high mechanical strength and bio-compatibility, it is suitable for the production in pharmaceutical and food industry. And the leaking from this matrix is much less than that from the synthetic polymer media.

Description

Cellufine C-500 media manufactured by Chisso are designed for the cation exchange chromatography of basic proteins and other biomolecules. The resins are comprised of beaded spherical cellulose, functionalized with carboxymethyl (CM). Cellufine C-500 medium is ideal for the chromatography of proteins molecular weight up to 500 kD. The superior rigidity of Cellufine gels allows for high flow rates, and thus rapid processing times, even in large diameter process scale columns.

Physical-Chemical Characteristics

	C-500
Support matrix	cellulose
Particle shape	spherical
Particle diameter (µm)	53 – 125
Ion capacity (meq/g dry)	1.1
MW exclusion limit (kD)	500
pH stability range	1 - 13
Operating pressure	< 2 bar (29 psi)
Supplied	suspension in 20 % EtOH

Column Packing

1. Slurry the appropriate volume in 2 – 3 volumes of elution buffer (high salt) and allow to equilibrate at ambient temperature for one hour.
2. Gently stir or place under vacuum to degas.
3. With column outlet closed, carefully pour the slurry into the column. If necessary, fit column with a filler tube to accommodate the entire slurry volume.
4. Attach upper end cell to column, then pump 10 column volumes of elution buffer at a flow rate 20 % – 50 % greater than the operational flow rate.
5. After flushing, remove filter tube and reattach end cell to the column tube.
6. Equilibrate with 10 – 15 column volumes of adsorption buffer in preparation for sample loading.

Operating Guidelines

General Operation
Typically, adsorption to Cellufine Cation Exchange medium occurs in relatively low ionic strength (e.g., below 0.1 M NaCl) in the pH range from 5.0 – 7.0. Under these conditions, proteins with neutral or net positive charge will bind. Bound components are then resolved by stepwise elution with buffers containing progressively higher salt concentration or by elution with a linear salt gradient.

Sample Preparation and Load
Prepare sample by centrifugation or microfiltration to remove insoluble material. Samples should be prepared to a concentration of 1 – 20 mg/ml, in binding buffer or at a comparable conditions of ionic strength and pH. If necessary, exchange sample buffer using dialysis, diafiltration or desalting chromatography.

Recommended Buffers
Adsorption buffer : 0.02 – 0.05 M sodium acetate (pH 5.5)
Elution buffer : 0.1 – 2.0 M sodium chloride in adsorption buffer.
Other common buffer systems may be used. For additional information on chromatographic methods of protein purification, see References.

Chemical and Physical Stability
Stable in :

- Most salts (NaCl, (NH4)2SO4, etc.)
- Most detergents (SDS, Tween®, Chaps, etc.)
- < 0.5 M NaOH
- Autoclavable : 121°C at 1 bar (14.5 psi) for 20 minutes

Flow Rate
The recommended linear velocity range for Cellufine C-500 media is 50 – 200 cm/h.

Regeneration and Depyrogenation
To regenerate a column, flush bed with 2 - 5 column volumes of 0.5 N NaOH, followed by several volumes of elution buffer. Then equilibrate as usual. If the column needs to be pyrogen free, wash the column with 2 to 5 column volumes of 0.5 N NaOH followed by several column volumes of pyrogen free elution buffer. Monitor the pyrogen levels in the column eluate during a blank gradient elution prior to reusing the column.

Storage
Short term (2 weeks or less), bulk and column can be stored at a room temperature with 0.05 N NaOH. Longer storage should be in neutral buffer containing 0.02 % sodium azide or 20 % ethanol, at 4 – 8°C. Do not freeze.

Shelf Lifetime : 5 years

References
1. Harris, E.L.V. and Angal, S., Protein Purification Methods: A practical Approach. New York: Oxford University Press, 1989.
2. Janson, J.-C. and Ryden, L., Protein Purification: Principles, High Resolution Methods, and Applications. 2nd ed. New York: John Wiley & Sons, Inc., 1998

Produit	Quantité	Référence
Cellufine C-500 53-125 µm	**100 ml**	**675983327**
Cellufine C-500 53-125 µm	**500 ml**	**19865**

for research use only, not intended for diagnostic use.

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