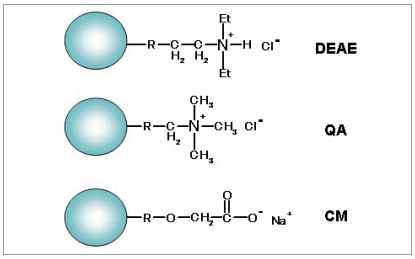
Product data sheet

Interchim Innovations

Interbiochrom - Biochromatography

Strong Anion Exchange Cellufine Q-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 Q-500 and Q-800 media are designed for the anion exchange chromatography of acidic proteins, peptides and other biomolecules. The resins are comprised of beaded spherical cellulose, functionalized with a quarternary amine (trimethy-laminoethyl). The pore size and structure of each media determines its respective applications. Cellufine Q-500 medium is ideal for molecules up to 500 kD, Q-800 is suitable for up to 1000 kD. The improved rigidity of Cellufine allows for high flow rates, and thus, rapid processing times, even in large diameter process scale columns.

Physical-Chemical Characteristics

	Q-500
Support	matrix cellulose
Particle shape	spherical
Particle diameter (µm)	53 – 125
Ion capacity (meq/g dry)	1.5
BSA capacity (mg/ml)	> 10
MW exclusion limit (kD)	500
pH stability range	2 - 12
Operating pressure	< 2 bar (29 psi)
Supplied	suspension in 20 % EtOH

Column Packing

1. Calculate volume required of the desired bed dimension.
2. Prepare a 40 – 60 % (v/v) slurry with the appropriate elution buffer (high salt). Allow to equilibrate at ambient temperature for one hour.
3. Gently stir or place under vacuum to degas.
4. With column outlet closed, carefully pour the slurry into the column. Depending on the volume, a filler tube may be necessary.
5. With the inlet open to release air, insert and affix the top adjuster. Assemble at the slurry interface.
6. Open the column outlet and begin pumping elution buffer at rate 10 % – 20 % greater than the operational flow rate.
7. After the bed stabilizes, close the column outlet. Then with the inlet open, reposition the end cell on top of the bed. Equilibrate with 10 column volumes of adsorption buffer before

sample loading

Operating Guidelines
General Operation

Typically, adsorption to Cellufine Anion Exchange medium occurs in relatively low ionic strength (e.g., < 0.1 M NaCl) in the pH range from 6.5 – 8.5. Under these conditions, negatively charged proteins will bind. Bound components are then resolved via either stepwise or linear gradient elution.

Recommended Buffers
Adsorption buffer : 0.02 M sodium phosphate or Tris-HCl (pH 8.0).
Elution buffer : 0.1 – 2 M sodium chloride in adsorption buffer.
(Other common buffer systems may be used.)
For additional information on protein purification, see References 1 and 2.

Sample Preparation and Loading
Prepare samples at a concentration of 1 – 20 mg/ml, in adsorption buffer. Remove insoluble material by centrifugation or microfiltration. If necessary, exchange sample buffer using dialysis, diafiltration or desalting chromatography.

Recommended Flow Rate : 50 – 200 cm/h.

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, 20 minutes

Regeneration and Depyrogenation
To regenerate a column, flush bed with 2 - 5 column volumes of 0.5 M NaOH, followed by several volumes of elution buffer. Then equilibrate as usual. If depyrogenation is required, wash the column with 2 - 5 column volumes of 0.5 M 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 storage for bulk and column (2 weeks or less) can be at a room temperature with 0.05 M 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. Janson, J. C. and Ryden, L., Protein Purification: Principles, High Resolution Methods and Applications. VCR Publications Inc., 23 rd Street, NY (1989)
2. Harris, E.L.V. and Anfgal, S., Protein Purification Methods: A practical Approach. New York: Oxford University Press, New York (1989).

Produit	Quantité	Référence
Cellufine Q-500	100 ml	675982327
Cellufine Q-500	500 ml	19907

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