

CHROMATOGRAPHY

Macro-Prep[®] High S Support

- Excellent IgG binding capacity
- High flow rates at moderate pressures

Achieve High Productivity Using Macro-Prep High S Cation Exchange Support

Summary

Ion exchange chromatography is one of the most widely used techniques for protein purification. Macro-Prep High S support is a strong cation exchanger containing sulfonate functional groups and is ideal for purifying basic and neutral proteins and peptides.

Macro-Prep High S support is an excellent choice for rapid purification. This methacrylate copolymer bead provides high-resolution separations at very high flow rates (Figure 1).

Changes in pH or ionic strength of the buffer do not cause shrinking or swelling of the support. The superior mechanical and chemical stability of Macro-Prep High S support make it a preferred choice over other sulfonate cation exchangers on the market.

Properties of Macro-Prep High S Support

Type of support	Strong cation exchanger
Functional group	-SO ₃ ⁻
Typical dynamic binding capacity*	≥49 IgG/ml
Nominal particle size	50 μm
Nominal pore diameter	1,000 Å
Recommended maximum linear flow rate	3,000 cm/hr
Autoclavability	30 min at 121°C
pH stability	1–10
Regeneration	in 1–2 M NaCl/KCl or 70% ethanol

* Determined with human IgG.

Chemical Compatibility of Macro-Prep High S Support

1% SDS	Yes
8 M guanidine-HCl	Yes
1 N HCl	Yes
100% ethanol	Yes

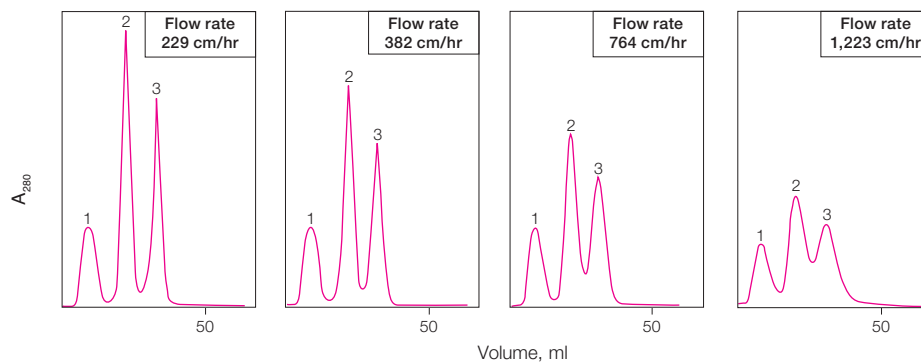


Fig. 1. Effect of flow rate on separation and peak symmetry. A 5 ml sample (1.4 mg/ml) of myoglobin (peak 1), ribonuclease A (peak 2), and cytochrome c (peak 3) was run on a 1 x 13 cm (8.7 ml) column at each of the indicated flow rates. The buffer was 20 mM potassium phosphate, pH 8.0, with a gradient of 0–1 M KCl over 75 ml.



Chemical Stability

Macro-Prep High S ion exchange media is stable in most aqueous solutions commonly used in purification of biomolecules. Macro-Prep media will withstand treatment in solutions of acid, detergents, chaotropic agents, and pH <10 while retaining full functional performance. Routine cleaning or operation of Macro-Prep High S media above pH 10 is not recommended. Macro-Prep ion exchange media should not be sanitized or stored in NaOH.

Recommended Procedure

Macro-Prep High S support is easy to use. Rinse the support with 2–3 bed volumes of distilled water and equilibrate in running buffer. Samples are loaded in low-salt buffer, such as 20–50 mM acetate or phosphate, at a pH that is at least 1 pH unit below the isoelectric point of the protein of interest. Proteins can be eluted with an increasing salt (0–1 M NaCl or KCl) or pH gradient. Elution is followed by cleaning and regeneration steps of choice. For more detailed information, refer to the instruction manual.

Technical Assistance

Regulatory support files are available upon request to companies entering into clinical trials. Bio-Rad Laboratories is an ISO 9001 registered corporation. For additional information and technical assistance, contact your local Bio-Rad office. In the USA and Canada, call 1-800-424-6723.

Visit us on the Web for more information on Bio-Rad's complete line of process chromatography supports and other products for life science research and production. Go to www.bio-rad.com and click on the Process Separations tab on the top menu bar.

Ordering Information

Catalog #	Description
158-0030	Macro-Prep High S Support, 25 ml
156-0030	Macro-Prep High S Support, 100 ml
156-0031	Macro-Prep High S Support, 500 ml
156-0032	Macro-Prep High S Support, 5 L
156-0033	Macro-Prep High S Support, 10 L

Larger volumes are available on request.



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