

Instructions

MabPolish Selection Kit

Seven different mixed-mode and shelled mixed-mode chromatography resins are prepacked to 1 ml ready to use columns for screening purpose. The column design provides fast, simple and easy separations in a convenient format.

The columns can be operated with a syringe, peristaltic pump or common liquid chromatography system such as ÄKTA™ when suitable tubing adaptors are used.

Please read these instructions carefully before using the columns.

Intended use

The columns are intended for research use only and shall not be used in any clinical or *in vitro* procedures for diagnostic purposes.

Safety

For use and handling of the product in a safe way. Each resin is stored in suitable preservatives to prevent microorganisms from growing. Proper PPE (e.g. gloves and goggles) must be used to handle the columns.

Product description

Column characteristics

The columns are made of biocompatible polypropylene and polyethylene that does not interact with biomolecules.

The columns are delivered in sealed plastic bags with identical stop plug to each end.

Table 1. Characteristics of column hardware

Column volume (CV)	1 ml
Column dimensions	6.2 × 33 mm
Column hardware pressure limit	5 bar (0.5 MPa)

Note: *The pressure over the packed bed varies depending on a range of parameters such as the characteristics of the chromatography medium, sample/liquid viscosity and the column tubing used.*

Properties of MabPolish resins

Table 2. MabPolish resins included in the kit

Resin name	Brief description
MabPolish Type I	Anion mixed-mode resin, good to remove a broad range of host cell proteins at lower pH (e.g. 4 to 5) containing mild salts.
MabPolish Type II	Mixed-mode resin good to remove Mab aggregates at low to neutral pH.
MabPolish Type III	Mixed-mode resin good to remove host cell proteins and Mab aggregates at wider pH and salt concentrations.
MabPolish DUO 150A	Anion mixed-mode resin having size-exclusion shell preventing molecules greater than 150 KDa from diffusing in.
MabPolish DUO 150C	Cation mixed-mode resin having size-exclusion shell preventing molecules greater than 150 KDa from diffusing in.

The general properties of the resins see resin data sheets.

Operation

The column can be operated with a syringe, peristaltic pump or a chromatography system. Suitable tubing adaptors are required (contact Us for further information).

We recommend scouting the parameters among loading capacity, flow velocity, binding pH, binding ionic strength, regeneration procedures etc.

In general, balancing the degree of component separation against process throughput is the major consideration when optimizing a method. Besides, for the purification of instable or shearing-force sensitive molecules, the operational condition needs be optimised to balance the throughput and the possible damage to the target molecule.

Purification

The recommended flow rate is 0.2 to 1 ml/min.

- 1 Fill the syringe or pump tubing with binding buffer. Follow the flow direction. Remove the top stop plug and connect the column to the syringe (with the provided connector), or pump tubing, "drop to drop" to avoid introducing air into the column.
- 2 Remove the stop plug at the column outlet.
- 3 Wash out the preservative and equilibrate the column with 5 - 10 column volumes of binding buffer. For MabPolish Type I, use 1 column volume 0.7 M HCl then 5 – 10 column volume of equilibration buffer.

- 4 Apply the sample, using a syringe fitted to the luer connector or by pumping it onto the column.
- 5 Wash with 5 to 10 column volumes of binding buffer or until no material appears in the effluent.
- 6 Elute with 5 to 10 column volumes of elution buffer using a continuous or step gradient.
- 7 The purified fractions can be desalted.

Regeneration

Part or all of the following regeneration steps could be conducted to a column in reverse flow format: 2M acetic acid following with 2M NaCl following with 1M NaOH following with 2M NaCl following with equilibration buffer.

Storage

Wash the column with 5 column volumes of 20% ethanol at reduced flowrates such as 0.2 ml/min. Store the column in 20% ethanol at 4°C to 30°C. Alternatively, wash the column with 0.04% sodium hydroxide and store at 4°C. Regular check of the column performance is recommended.



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