MabCaptureC Affinity Matrix

Catalog Numbers 1963662250, 196366201L, 196366205L

Pub. No. MAN0026023 Rev. A.0

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from thermofisher.com/support.

Product description

The MabCaptureC Affinity Matrix is a high flow, agarose-based chromatography resin that can be used for cost-effective purification of monoclonal IgG. The ligand binds the CH2-CH3 interface of the Fc domain of IgG and shows cross binding to a subpopulation of scFv's and Fab fragments that contain a VH3 domain. The ligand is immobilized on 75 µm agarose beads with a rigid, but open pore structure. The caustic stability of the ligand enables cleaning of the resin with 200 mM NaOH after every run. If needed, 400 mM NaOH can be applied after every fifth or tenth run for additional cleaning.

Contents and storage

Table 1 MabCaptureC Affinity Matrix

Cat. No.	Amount	Storage
1963662250	250 mL	Room temperature for < 2 weeks, long-term storage at 2–8°C.
196366201L	1 L	
196366205L	5 L	

Product advantages

The MabCaptureC Affinity Matrix offers:

- High binding capacity: ≥50 g/l at 4.8 minutes of residence time
- Alkali stability: >100 cycles at 0.2 M NaOH after every run
- Uniform bead size for superior performance characteristics

Specifications

Ligand	MabCaptureC Affinity Ligand
Binding specificity	IgG
Matrix and particle size	Epoxide-activated agarose, 75 µm
Dynamic binding capacity	≥50 g of IgG/L of matrix (10% breakthrough at 4.8 minutes residence time)
Shipping solution	20% (v/v) ethanol

Conditions for use

Parameter	Conditions for use
Equilibration buffer	50 mM Tris, 125 mM NaCl or PBS, pH 7.0–7.5
Elution buffer	100 mM citric acid, pH 3.0–3.5
Strip buffer	Any of the following: • 0.2 M acetic acid • 0.2 M citric acid • 0.2 M phosphoric acid
Flow rate	50–300 cm/h
Pressure limit	≤ 3 bar
Cleaning solution	One of the following: • 0.2 M NaOH after each run • 0.4 M NaOH after every 5th or 10th run as needed
Storage solution	20% (v/v) ethanol
Operating and storage temperatures	• **Operating**: 2–25°C • **Short-term storage**: Room temperature • **Long-term storage**: 2–8°C

Flow characteristics

The high flow, agarose-based matrix provides a rigid but open pore structure. This results in an increased ability to operate at high flow velocities at process-scale when compared to softer, cross-linked agarose resins with similar porosity.

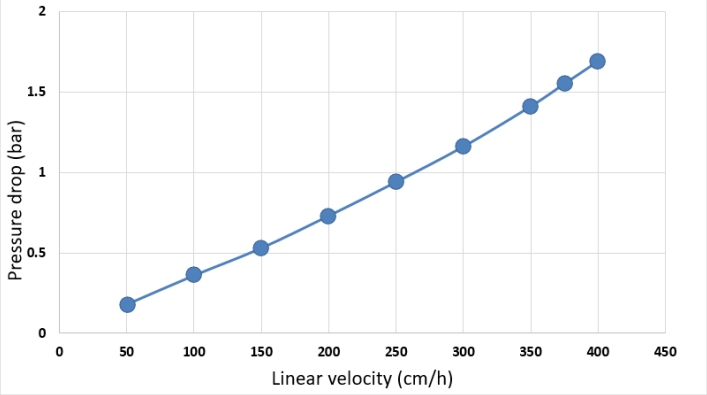

Figure 1 Pressure flow curve of the 75 µm base bead packed in a 30 cm diameter column at 20 cm bed height; <2 bar pressure drop at 400 cm/h linear velocity.

Lower flow rates result in longer contact time of the load with the affinity matrix and drives the binding capacity (Figure 2). We recommend residence times of at least 5 minutes.

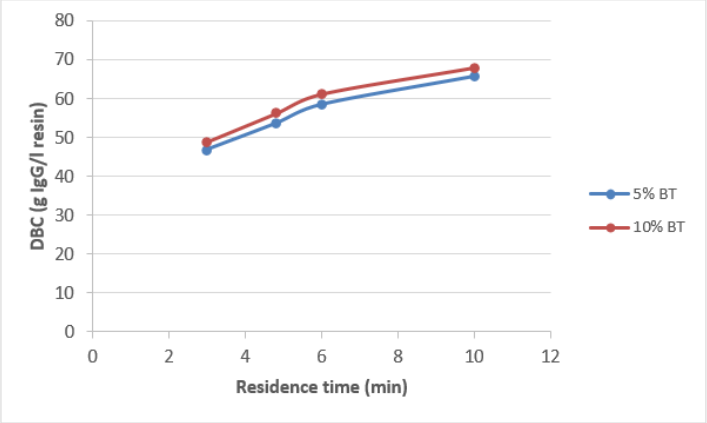

Figure 2 The dynamic binding capacity of the resin at different residence times measured with frontal analysis at 5 and 10% breakthrough using 5 g/L polyclonal IgG solution as a load.

It is recommended that you optimize each of your specific processes to achieve the best conditions for process time, binding capacity, and elution efficiency.

Guidelines for use with chromatography systems

For optimal matrix performance, optimize the conditions in the following procedure for your application.

1. Equilibrate the matrix with 10 column volumes (CVs) of equilibration buffer.
2. Determine the volume of sample to load based on the dynamic binding capacity, concentration of the target molecule, and the column size. Optimum loading is at physiological pH. Avoid acidic conditions, which decrease binding efficiency.
3. Load the sample on the column.
4. Wash the sample with 5–10 CVs of equilibration buffer. To optimize washing efficiency, you can add NaCl to the equilibration buffer (up to 1.0 M).
5. Elute with 3–5 CVs of elution buffer.
6. Re-equilibrate the column in equilibration buffer.
7. Strip the column with 0.2M acetic acid, citric acid, or phosphoric acid.
8. Clean the column with 0.2 M NaOH after every run.

   Note: If needed, clean the column with 0.4 M NaOH after every 5th or 10th run.
9. Re-equilibrate the column in equilibration buffer to prepare the column for another purification run.
10. If the column will not be used immediately, store the matrix according to the storage parameters provided in “Conditions for use” on page 1.

Cleaning guidelines

Typical cleaning procedures for the MabCaptureC Affinity Matrix are acidic stripping, followed by caustic cleaning. The column can be cleaned after every run with 0.2 M NaOH. If needed, the column can be cleaned with 0.4 M NaOH after every 5th or 10th run if additional cleaning is needed.

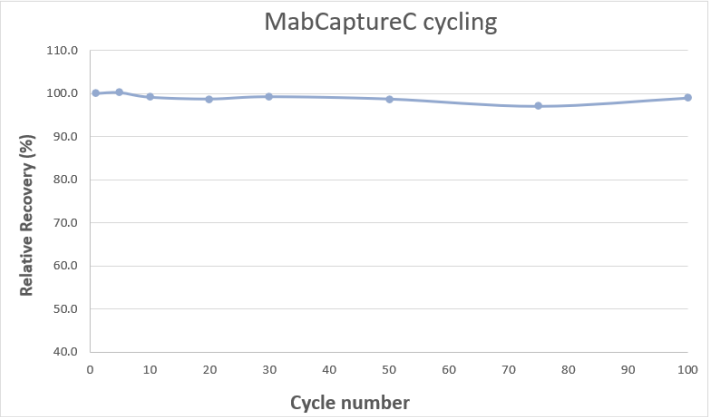

Figure 3 Cycling study of MabCaptureC Affinity Matrix during 100 cycles of 15 minutes contact time with 0.2M NaOH. Dynamic binding capacity is tested with CHO produced monoclonal antibody feed with a titer of 3 g/L. After 100 cycles the residual binding capacity was 98% compared to the start value.

Regulatory Support File

A Regulatory Support File (RSF) is available for the resin. It contains detailed information about the resin and the manufacturing process. Contact your local sales representative to obtain access.

Supporting products

The MabCaptureC Affinity Matrix is also available in prepacked column formats:

- **RoboColumn™ format**—For high throughput resin screening and process development. These columns are small chromatography columns that are provided in 8-column strips. The columns are useful for fully automated and parallel chromatographic separations using a robotic liquid handling platform.
- **Mini-Chrom format**—For bench-scale resin screening, process development, and sample preparation.

To detect leached ligand from the MabCaptureC Affinity Matrix, standard leakage ELISA kits for recombinant versions of Protein A can be used.

Product	Size	Cat. No.
MabCaptureC Robocolumn	200 µL	5943662200
	600 µL	5943662600
MabCaptureC Minichrom Column	1 mL	5943662001
	5 mL	5943662005

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  - Safety Data Sheets (SDSs; also known as MSDSs)

  Note: For SDSs for reagents and chemicals from other manufacturers, contact the manufacturer.

Limited product warranty

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Revision history: Pub. No. MAN0026023

Revision	Date	Description
A.0	27 December 2021	New document for the MabCaptureC Affinity Matrix (Cat. No. 1963662250).