

Contents

CS Columns for VarioMACS, SuperMACS or SuperMACS II and accessories. Sterile packed. Capacity: 2×10^8 magnetically labeled cells.

Applications

- Depletion of cells labeled with MACS MicroBeads.
- Magnetic separation of biological material labeled with MACS MicroBeads.

Storage of MACS Separation Columns

Store CS Columns dry, protected from light. Do not use after expiration date.

Instrument and Reagent Requirement

Magnetic cell separators VarioMACS, SuperMACS or SuperMACS II.
 Adapter for CS and D Columns in combination with SuperMACS II.
 MACS MicroBeads for magnetic labeling of the cells.
 Buffer: phosphate buffered saline supplemented with 2 mM EDTA and 0.5 % bovine serum albumin.

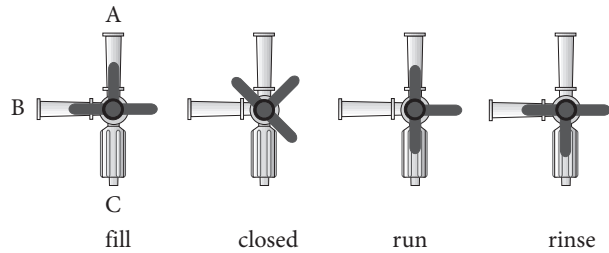
How to Use MACS CS Columns

CS Columns have been developed for depletion of magnetically labeled human and animal cells out of a heterogeneous cell suspension with VarioMACS, SuperMACS or SuperMACS II. They can be used to separate different biological material including plant cells, bacteria, cell organelles or proteins. The column has a hydrophilic coating that allows rapid filling with most buffers. Various running buffers may be used with the Depletion Column. The suitability of a specific buffer has to be tested experimentally. By passing the material through the column, the suspension is depleted of magnetically labeled material.

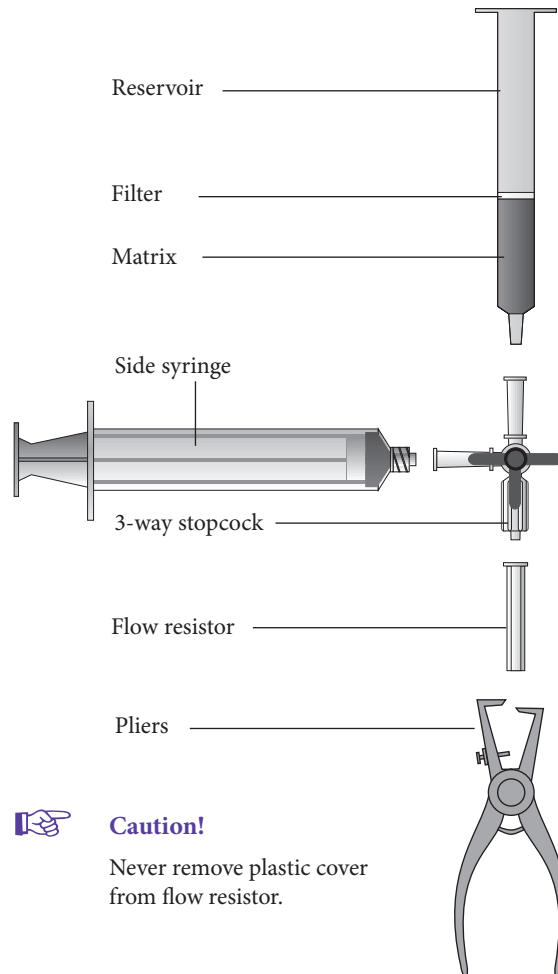
Protocol for Cell Separation Using CS Columns

1. Assembly and Preparation of the Depletion Column

3-way stopcock positions



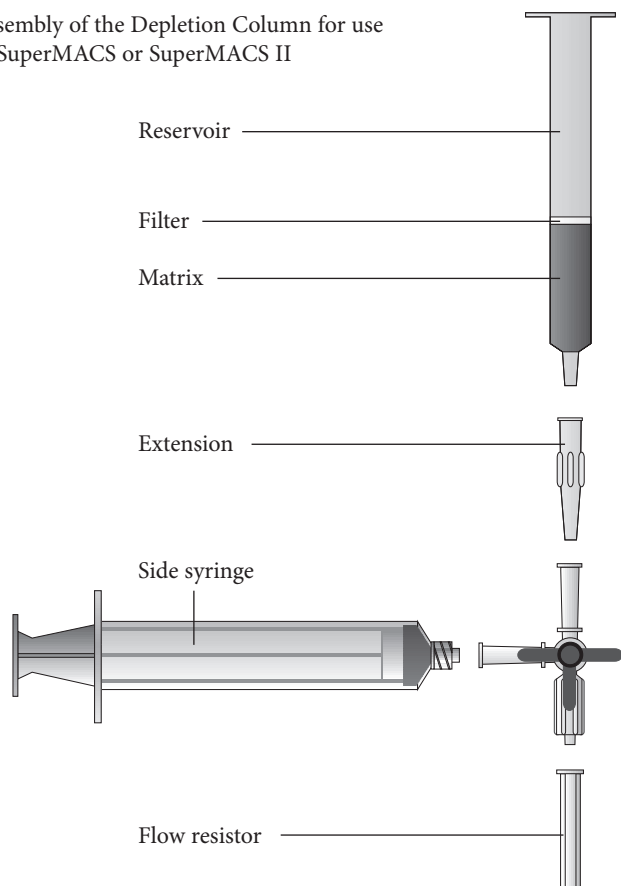
Assembly of the Depletion Column for use in VarioMACS



Caution!

Never remove plastic cover from flow resistor.

Assembly of the Depletion Column for use in SuperMACS or SuperMACS II



- When using in combination with the **SuperMACS**, move the gap of the SuperMACS to approximately 1.7 cm width using the side wheel.
 - When using in combination with the **SuperMACS II**, insert column into the mounted Adapter for CS and D Columns and move Column Adapter into the magnetic field by turning the handle (for details, see "SuperMACS II Data Sheet" or "Instructions for Use").
 - Fill the column upright from the bottom with buffer from the syringe until the buffer reaches the reservoir.
 - Turn the 3-way stopcock to position "run" and rinse column by filling from the top with buffer. Allow buffer to run into the column. Then add more buffer. Rinse with a total of 60 ml buffer.
 - Choose a flow resistor (see table) and cut off the tip of the plastic sheath with the pliers supplied with the VarioMACS, SuperMACS or SuperMACS II. Leaving the plastic sheath in place for safety, attach the flow resistor to port C of the 3-way stopcock.
- Caution!** Never remove plastic sheath from flow resistor.
- (Optional) Turn the stopcock to position "rinse" and flush out the air from the flow resistor. Turn the stopcock in position "run". The column is now ready for separation. Please make sure that the column does not run dry by turning the 3-way stopcock to position "closed".

2. Depletion of Cells

- Apply your magnetically labeled cell suspension in appropriate volume of buffer (up to 10^8 cells per 500 μ l) onto the column with the respective flow resistor attached (flow resistor for depletion, see table). Allow cell suspension to penetrate the matrix.
- Wash the column by filling from top with 20-30 ml buffer. Collect the effluent as the negative fraction that is depleted of the magnetically labeled cells. Please make sure that the column does not run dry by turning the 3-way stopcock to position "closed".

Important Notes

- ▲ Never use a flow resistor without plastic cover.
- ▲ Recommended buffer is PBS supplemented with 2 mM EDTA and 0.5 % BSA. Other buffers have to be tested for their flow conditions. Do not use buffers with too high a viscosity.
- ▲ Fill column properly avoiding air bubbles. Small air bubbles underneath the flow stop device can be neglected.
- ▲ Do not store column after filling. Do not re-use columns.
- ▲ The column contains a biocompatible hydrophilic coating. This coating is washed out during the filling process.
- ▲ Columns can be cooled just prior to use by passing 2–3 column volumes of ice-cold buffer through it.
- ▲ The number of cells loaded onto the CS Column can be up to 10^8 per 500 μ l.
- ▲ Prevent aggregates or clumps in sample, resuspend material carefully before separation. Filter cells through 30 μ m nylon mesh or Pre-Separation Filter (# 130-041-407) to remove clumps.
- ▲ When working with anti-coagulated blood or buffy coat, dilute before separation with buffer.

Depletion Column	CS
Matrix Volume	6.3 ml
Reservoir Volume	6.5 ml
Maximum Capacity: retained cells total cells	2×10^8 10^9
Flow Rate [ml/min]: Depletion Positive Selection	23G: 1.5 22G: 3.0 21G: 3.5 20G: 7.0
Rinse Volume	60 ml
Wash Volume	30 ml
Elution Volume	30 ml

- Remove the yellow cap from the column. When using in combination with SuperMACS or SuperMACS II, attach column extension to the column. Attach 3-way stopcock to the column or the column extension at port A.
- Fill the supplied syringe with buffer and attach to port B of the 3-way stopcock. Leave the syringe attached during separation, except when refilling with buffer.
- Turn 3-way stopcock to position "fill".
- Place assembled column into the magnetic field of MACS separator with 3-way stopcock in adjustment and secure with the lever.

- ▲ Do not use MACS Columns in combination with magnetic beads other than MACS MicroBeads. Magnetic forces in the column are very high and may damage biological material if other beads are used.
- ▲ If the buffer does not flow well, there may be an air bubble in the flow resistor. Switch the stopcock to "rinse", flush the needle with buffer from the side syringe, switch the stopcock back to "run" and continue the run. The needle may also become blocked by cell clumps, which means the needle has to be replaced.
- ▲ As an alternative to CS Columns, LD Columns (# 130-042-901) can be used for most efficient depletion of up to 10^8 magnetically labeled cells from up to 5×10^8 total cells.

Warranty

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