



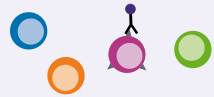
How to choose the perfect **MACS[®]** Column for your cell separation!



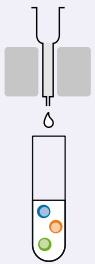


Positive selection

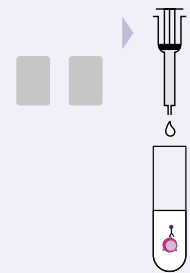
- + for most specific labeling
- + results in viable and functional cells
- + short procedure
- + excellent purity and recovery
- + ideal also for rare cell enrichment



Magnetic labeling
Target cells are magnetically labeled with MACS® MicroBeads.

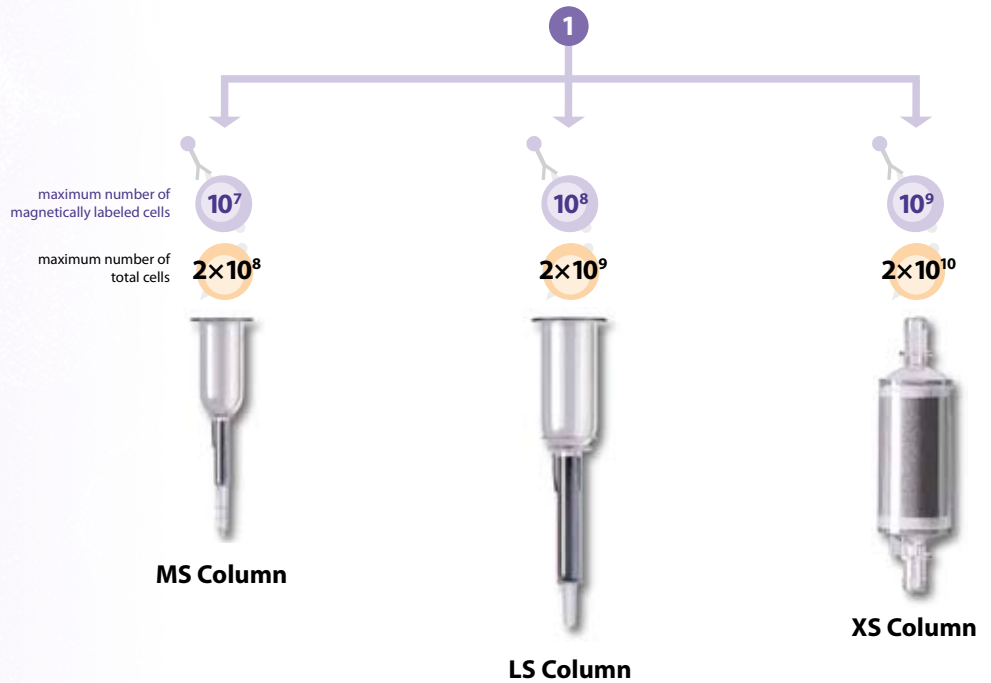


Magnetic separation
Cells labeled with MACS MicroBeads are retained on the MACS Column while unlabeled cells pass through.



Elution of the labeled cell fraction
The column is removed from the separator. The retained cells are eluted as the enriched, positively selected cell fraction.

- 1 How many cells do you separate?
- 2 Do you separate frequent or rare cells?



- 2 Separate rare cells by using two columns!

To achieve highest purity of rare target cells (frequency < 5% of total cells) use two columns subsequently: Separate the positive fraction of the first column over a freshly prepared second column.

Higher purity of positively selected cells can generally be achieved by using two columns successively.



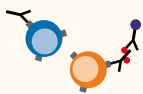
Tip: Large Cell Columns (not shown) are available for special applications. They can be used to separate plant cells, protozoa, or other large human and animal cells, e.g. megakaryocytes using CD61 MicroBeads or Langerhans cells from skin using CD1a MicroBeads.

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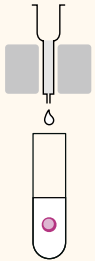


Depletion

- + for removal of unwanted cell populations
- + if no specific antibody is available for target cells
- + if binding of a minimal amount of antibody to target cells is not desired
- + if specific subsets are to be isolated subsequently by means of positive selection

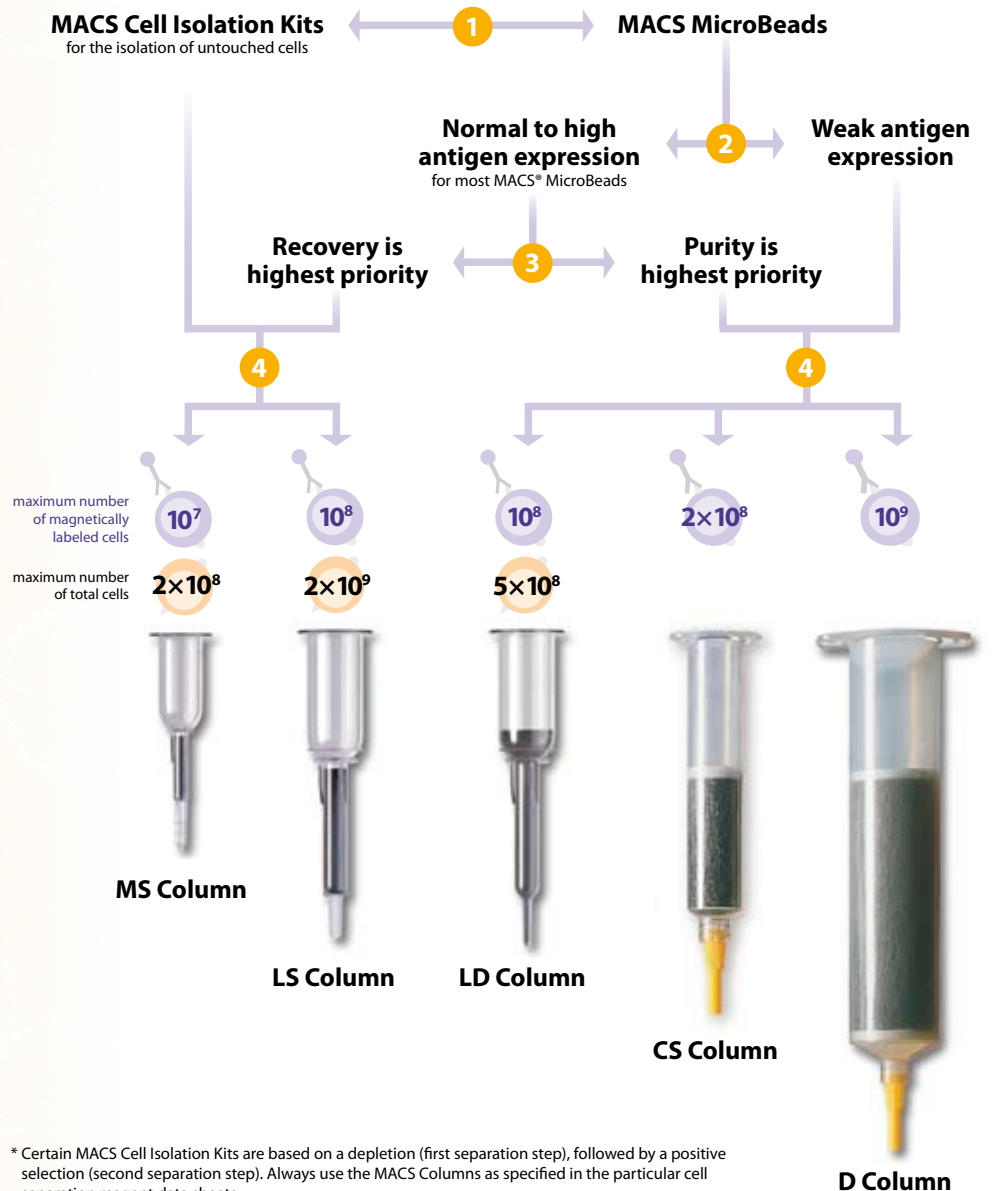


Magnetic labeling
Non-target cells are magnetically labeled with a cocktail of biotinylated antibodies and MACS® Anti-Biotin MicroBeads.



Magnetic separation
The non-target cells are retained on a MACS Column. The target cells pass through the column and are collected as the enriched, unlabeled fraction, depleted of non-target cells.

- 1 Do you use MACS® Cell Isolation Kits* or MACS MicroBeads?
- 2 Is the antigen expression normal to high or weak?
- 3 Which is your priority: purity or recovery?
- 4 How many cells do you separate?



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MACS[®] Cell Separation Columns

| Column type | Composition | MACS [®] Separator | Capacity max. magnetically labeled cells | Capacity max. total cells | Order no. |
|----------------------|---------------------------------------|--|--|------------------------------|-------------|
| MS | 25 columns | MiniMACS [™] Separator OctoMACS [™] Separator | 10 ⁷ | 2×10 ⁸ | 130-042-201 |
| MS plus tubes | 25 columns 75 tubes (5 mL) | VarioMACS [™] Separator ¹ SuperMACS [™] Separator ² | 10 ⁷ | 2×10 ⁸ | 130-041-301 |
| LS | 25 columns | MidiMACS [™] Separator QuadroMACS [™] Separator | 10 ⁸ | 2×10 ⁹ | 130-042-401 |
| LS plus tubes | 25 columns 75 tubes (13 mL) | VarioMACS Separator ¹ SuperMACS Separator ² | 10 ⁸ | 2×10 ⁹ | 130-041-306 |
| XS | 5 columns including accessories | SuperMACS Separator ² | 10 ⁹ | 2×10 ¹⁰ | 130-041-202 |
| Large Cell | 25 columns 25 flow resistors (23G) | MiniMACS Separator OctoMACS Separator | 10 ⁷ | 2×10 ⁸ | 130-042-202 |
| LD | 25 columns | MidiMACS Separator QuadroMACS Separator VarioMACS Separator ¹ SuperMACS Separator ² | 10 ⁸ | 5×10 ⁸ | 130-042-901 |
| CS | 25 columns including accessories | VarioMACS Separator SuperMACS Separator ^{3,4} | 2×10 ⁸ | | 130-041-305 |
| D | 5 columns including accessories | SuperMACS Separator ³ | 10 ⁹ | | 130-041-201 |
| autoMACS | 5×2 columns | autoMACS [™] Separator | 2×10 ⁸ | 4×10 ⁹ | 130-021-101 |

To choose the optimal autoMACS Program for your cell separation, refer to the autoMACS User Manual.

¹ Column Adapter is required for use with VarioMACS Separator.

² Column Adapter is required for use with SuperMACS or SuperMACS II Separator.

³ Column Adapter is required for use with SuperMACS II Separator.

⁴ Column Extensions are required for use with SuperMACS or SuperMACS II Separator.

MACS[®] Technology – Gold standard in cell separation

A MACS[®] Column placed in the magnetic field of a MACS Separator creates a high gradient magnetic field strong enough to retain cells labeled with minimal amounts of MACS MicroBeads.

MACS[®] Column Technology

- Gentle to cells
- Thorough rinsing procedure
- Convenient for working under sterile conditions
- Efficient separation of frequently occurring cells as well as rare cells
- Flexible separation strategy:
Positive selection, depletion, or subset sorting
Manual or automated separation

MACS[®] MicroBeads

- Small (Ø 50 nm) superparamagnetic particles
- Coupled to highly specific antibodies
- Short incubation times
- Non-toxic and biodegradable
- No bead detachment required:
Labeled cells can go straight to
flow cytometric analysis, cell culture,
or other downstream applications.

Unless otherwise specifically indicated, all Miltenyi Biotec products and services are for research use only and not for therapeutic or diagnostic use. MACS is a registered trademark of Miltenyi Biotec GmbH; autoMACS, MidiMACS, MiniMACS, OctoMACS, QuadroMACS, SuperMACS, and VarioMACS are trademarks of Miltenyi Biotec GmbH.

MACS® Separator Starting Kits

MiniMACS™ and MidiMACS™ Separators – the indispensable team

| | |
|---|--|
| MiniMACS Starting Kit (130-090-312) | 1 MiniMACS™ Separation Unit; 1 MACS® MultiStand 25 MS Columns; 1 MACS Cell Separation Reagent of choice* |
| MidiMACS Starting Kit (130-042-301) | 1 MidiMACS™ Separation Unit; 1 MACS MultiStand 25 LS Columns; 1 MACS Cell Separation Reagent of choice* |
| LD MidiMACS Starting Kit (130-090-329) | 1 MidiMACS Separation Unit; 1 MACS MultiStand 25 LD Columns; 1 MACS Cell Separation Reagent of choice* |
| Mini & MidiMACS Starting Kit (130-042-501) | 1 MiniMACS Separation Unit; 1 MidiMACS Separation Unit 1 MACS MultiStand; 25 MS Columns; 25 LS Columns 1 MACS Cell Separation Reagent of choice* |
| Mini & MidiMACS Starting Kit (MS, LD) (130-091-632) | 1 MiniMACS Separation Unit; 1 MidiMACS Separation Unit 1 MACS MultiStand; 25 MS Columns; 25 LD Columns 1 MACS Cell Separation Reagent of choice* |



OctoMACS™ Separator – for multiple sample processing

| | |
|---|--|
| OctoMACS Starting Kit (130-042-108) | 1 OctoMACS™ Separation Unit 1 MACS MultiStand 25 MS Columns 1 MACS Cell Separation Reagent of choice* |
|---|--|



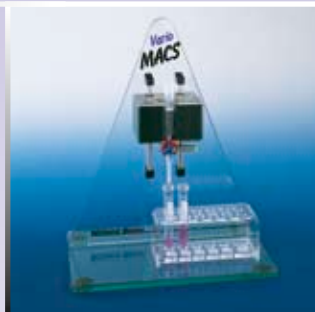
QuadroMACS™ Separator – for multiple sample processing

| | |
|---|--|
| QuadroMACS Starting Kit (130-091-051) | 1 QuadroMACS™ Separation Unit 1 MACS MultiStand 25 LS Columns 1 MACS 15 mL Tube Rack 1 MACS Cell Separation Reagent of choice* |
|---|--|



VarioMACS™ Separator – the flexible separation unit

| | |
|--|---|
| VarioMACS Starting Kit (130-043-102) | 1 VarioMACS™ Separation Unit 1 VarioMACS glass stand with height adjustable mounting for the magnet 1 Adapter for MS Columns 1 Adapter for LS and LD Columns 25 MS Columns plus tubes, 25 LS Columns plus tubes, 25 LD Columns, and 25 CS Columns 1 MACS Acrylic Tube Rack; 1 pair of pliers 1 MACS Cell Separation Reagent of choice* |
|--|---|



SuperMACS™ II Separator – ideal for very large cell samples

| | |
|---|--|
| SuperMACS II Starting Kit (130-044-103) | 1 SuperMACS™ Separation Unit mounted on a stainless steel stand 1 Adapter for MS, LS, and LD Columns 1 Adapter for XS Columns 1 Adapter for CS and D Columns 25 MS Columns plus tubes, 25 LS Columns plus tubes, 5 XS Columns, 25 LD Columns, 25 CS Columns, and 5 D Columns; 100 Column Extensions 1 MACS Acrylic Tube Rack; 1 pair of pliers 4 MACS Cell Separation Reagents of choice* |
|---|--|



* Please indicate the order number of the cell separation reagent when ordering a Starting Kit. Large-scale cell separation reagents are not included in this offer.

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