



# MACSxpress® Technology

Untouched cell isolation directly from blood products



## MACSxpress® Isolation Technology

- ▶ Fast untouched cell isolation in 25 min
- ▶ No density gradient centrifugation
- ▶ Flexible sample volumes from 2–30 mL



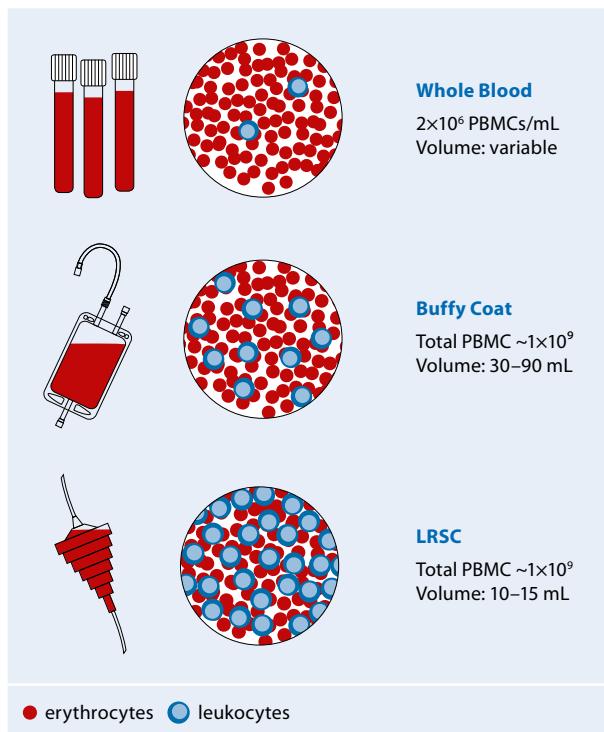
# MACSxpress® Technology

## The technology at a glance

With the new MACSxpress® Technology, unlabeled human leukocyte subsets can be isolated from sample volumes of up to 30 mL in a single tube. For whole blood, buffy coat, or leukocyte reduction system chamber (LRSC), MACSxpress Technology provides tailored cell isolation kits for various immune cell types. Excellent purities of up to 97% and recoveries of up to 80% can be achieved without the need for erythrocyte lysis.



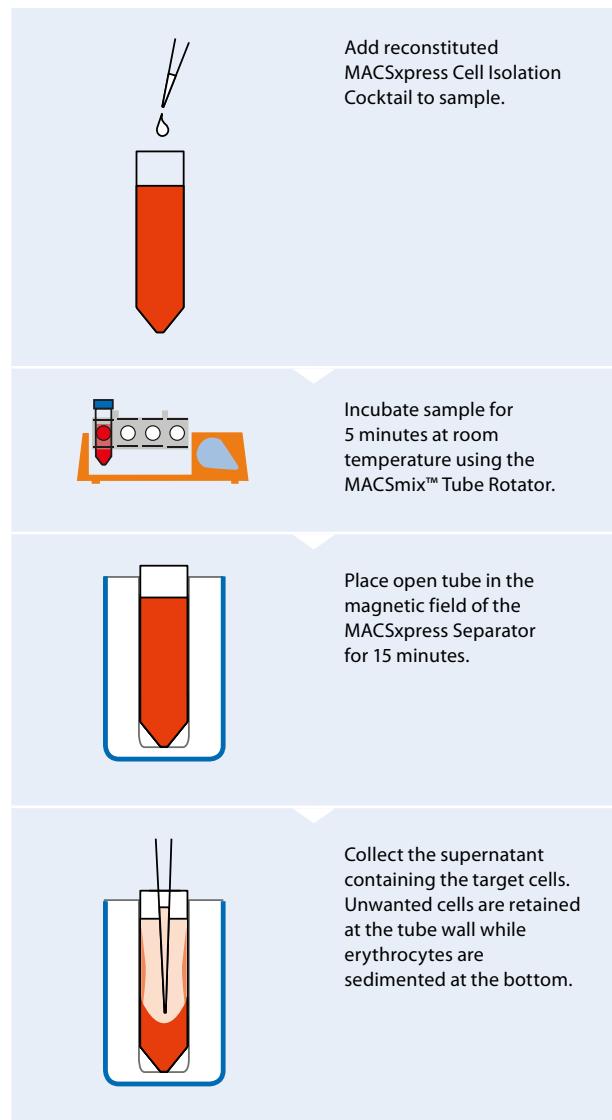
**Figure 1:** MACSxpress Cell Isolation versus density gradient centrifugation. A leukocyte subset isolation with MACSxpress takes less time than running a density gradient centrifugation.



**Figure 2:** Starting materials for MACSxpress Isolation Kits.

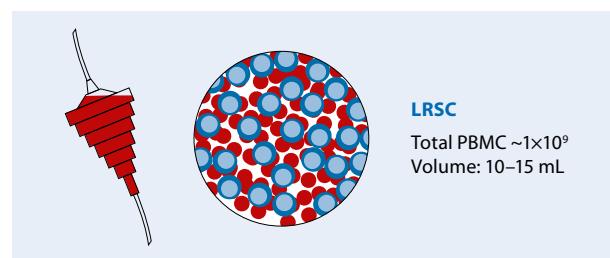
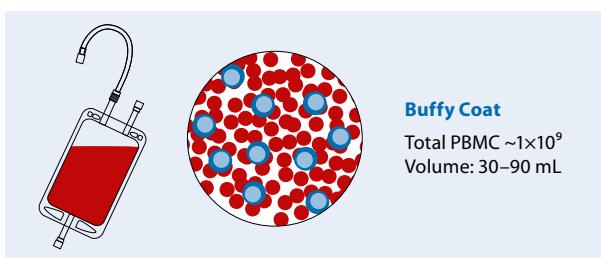
## How it works

MACSxpress enables isolation of untouched immune cells directly from blood and blood products without density gradient centrifugation. It is based on micro-sized MACSxpress Beads which remove non-target cells by immunomagnetic depletion using the MACSxpress Separator, a powerful permanent magnet. Simultaneously, erythrocytes are sedimented at the tube bottom yielding untouched target cells of high purity.



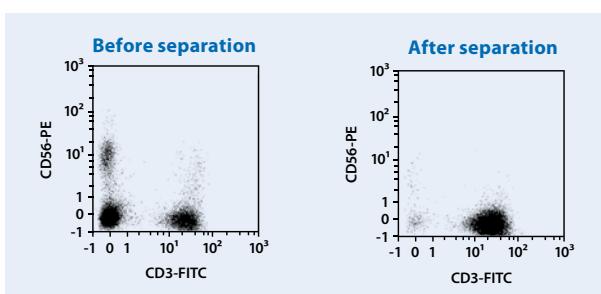
**Figure 3:** Principle of MACSxpress Technology. Isolation of cells directly from blood and blood products in only 25 min.

# Untouched isolation directly from buffy coat, LRSC, or whole blood



## MACSxpress® Buffy Coat Isolation Kits

With the MACSxpress® Buffy Coat Isolation Kits, you can isolate immune cells from a buffy coat. An entire buffy coat, the waste product of a blood donation, is split over three tubes and can be processed simultaneously in only 25 min. Untouched target cells are immediately available for downstream processing. With the MACSxpress Buffy Coat Starting Kit, including one MACSxpress Buffy Coat Kit of choice, a MACSmix™ Tube Rotator, and three MACSxpress Separators, isolating large amounts of cells from a buffy coat is easy and fast.

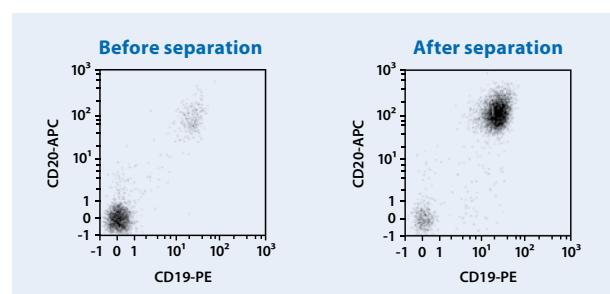


**Figure 4:** Pan T cells were isolated from a buffy coat sample using the MACSxpress Buffy Coat Pan T Cell Isolation Kit, a MACSmix Tube Rotator, and MACSxpress Separator.

Product	Order no.
MACSxpress Buffy Coat Starting Kit	130-120-186
MACSxpress Buffy Coat Pan B Cell Isolation Kit, human	130-120-002
MACSxpress Buffy Coat Pan T Cell Isolation Kit, human	130-120-001
MACSxpress Buffy Coat CD4 T Cell Isolation Kit, human	130-120-003

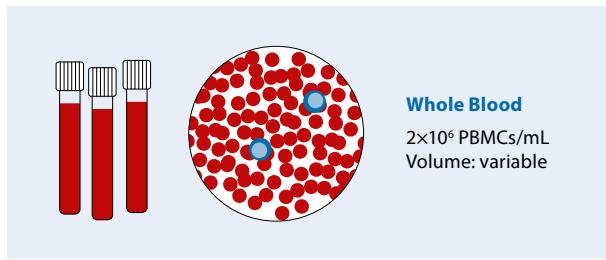
## MACSxpress® LRSC Isolation Kits

LRSCs, also known as buffy cones, are used in routine plateletpheresis procedure for depletion of unwanted leukocytes. As LRSCs contain high concentrations of leukocytes, they are an ideal starting material for MACSxpress® LRSC Isolation Kits. An entire LRSC sample can be processed over two tubes simultaneously, in as little time as 25 min. The MACSxpress LRSC Starting Kit consists of one MACSxpress LRSC Isolation Kit of choice, a MACSmix Tube Rotater, and two MACSxpress Separators for convenient isolation of untouched immune cells from LRSC.



**Figure 5:** Pan B cells were isolated from an LRSC sample using the MACSxpress LRSC Pan B Cell Isolation Kit, a MACSmix Tube Rotator, and MACSxpress Separators.

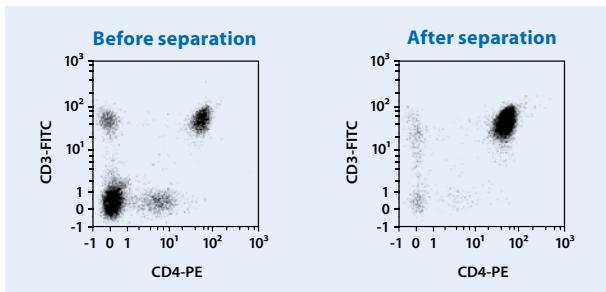
Product	Order no.
MACSxpress LRSC Starting Kit	130-120-192
MACSxpress LRSC Pan B Cell Isolation Kit, human	130-119-998
MACSxpress LRSC Pan T Cell Isolation Kit, human	130-119-997
MACSxpress LRSC CD4 T Cell Isolation Kit, human	130-120-000



## MACSxpress® Whole Blood Isolation Kits

For numerous applications, fresh whole blood is the starting material of choice. With MACSxpress® Whole Blood Isolation Kits, target cells can be isolated in an untouched manner in just 25 min. Together with the MACSxpress Separator magnet, immune cells can be processed from sample volumes ranging from 2 mL to 30 mL. Using the MACSxpress Whole Blood Isolation Kit of choice, a MACSmix™ Tube Rotator, and a MACSxpress Separator, you can start your cell isolation right away.

Product	Order no.
MACSxpress Whole Blood Starting Kit	130-101-319
MACSxpress B Cell Isolation Kit, human	130-098-190
MACSxpress B-CLL Cell Isolation Kit, human	130-104-445
MACSxpress Pan B Cell Isolation Kit, human	130-104-444
MACSxpress Naive B Cell Isolation Kit, human	130-098-186
MACSxpress CD4 T Cell Isolation Kit, human	130-098-195
MACSxpress CD4 Memory T Cell Isolation Kit, human	130-106-770
MACSxpress CD8 T Cell Isolation Kit, human	130-098-194
MACSxpress Pan T Cell Isolation Kit, human	130-098-193
MACSxpress Treg Isolation Kit, human	130-109-557
MACSxpress Eosinophil Isolation Kit, human	130-104-446
MACSxpress Erythrocyte Depletion Kit, human	130-098-196
MACSxpress Neutrophil Isolation Kit, human	130-104-434
MACSxpress NK Cell Isolation Kit, human	130-098-185



**Figure 6:** CD4<sup>+</sup> T cells were isolated from a whole blood sample using the MACSxpress Whole Blood CD4 T Cell Isolation Kit, a MACSmix Tube Rotator, and a MACSxpress Separator.

# Hardware for seamless MACSxpress® Cell Isolation

## MACSxpress® Separator

The MACSxpress® Separator contains a powerful permanent magnet that induces a strong magnetic field within the tubes. The magnetically labeled cells will adhere to the wall of the tube while the aggregated erythrocytes are sedimented at the bottom. While the tube is still inside the MACSxpress Separator, the supernatant, containing the non-labeled target cells, can be pipetted into a fresh tube, ready for any downstream application.

The MACSxpress Separator contains an integrated LED for more comfortable sample pipetting. It is compatible with 5 mL, 15 mL, and 50 mL tubes ensuring highest flexibility.

## MACSmix™ Tube Rotator

The MACSmix™ Tube Rotator is a versatile instrument for gentle cell mixing. It operates with rechargeable batteries or mains operation and is suitable for a temperature range of 2–42 °C. The MACSmix Tube Rotator provides effective overhead sample mixing in various tube sizes ranging from 0.5 mL to 50 mL. The device operates at three different speeds or at set intervals ensuring optimal mixing.



Product	Order no.
MACSxpress Separator	130-098-308
MACSmix Tube Rotator	130-090-753

► [miltenyibiotec.com/macsxpress](http://miltenyibiotec.com/macsxpress)



Miltenyi Biotec

**Germany/Austria/  
Switzerland**

Miltenyi Biotec GmbH  
Friedrich-Ebert-Straße 68  
51429 Bergisch Gladbach  
Germany  
Phone +49 2204 8306-0  
Fax +49 2204 85197  
macs@miltenyibiotec.de

**USA/Canada**

Miltenyi Biotec Inc.  
2303 Lindbergh Street  
Auburn, CA 95602, USA  
Phone 800 FOR MACS  
Phone +1 530 888 8871  
Fax +1877 591 1060  
macs@miltenyibiotec.com

**Australia**

Miltenyi Biotec  
Australia Pty. Ltd.  
Unit 16A, 2 Eden Park Drive  
Macquarie Park NSW 2113  
Australia  
Phone +61 2 8877 7400  
Fax +61 2 9889 5044  
macs@miltenyibiotec.com.au

**Benelux**

Miltenyi Biotec B.V.  
Sandfortdreef 17  
2333 ZZ Leiden  
The Netherlands  
macs@miltenyibiotec.nl

**Customer service**

**The Netherlands**

Phone 0800 4020120

Fax 0800 4020100

**Customer service Belgium**

Phone 0800 94016

Fax 0800 99626

**Customer service Luxembourg**

Phone 800 24971

Fax 800 24984

**China**

Miltenyi Biotec Technology & Trading (Shanghai) Co., Ltd.  
Rooms 2303 and 2309  
No. 319, Xianxia Road  
Changning District  
200051 Shanghai, P.R. China  
Phone +86 21 62351005  
Fax +86 21 62350953  
macs@miltenyibiotec.com.cn

**France**

Miltenyi Biotec SAS  
10 rue Mercoeur  
75011 Paris, France  
Phone +33 1 56 98 16 16  
Fax +33 1 56 98 16 17  
macs@miltenyibiotec.fr

**Italy**

Miltenyi Biotec S.r.l.  
Via Paolo Nanni Costa, 30  
40133 Bologna  
Italy  
Phone +39 051 6 460 411  
Fax +39 051 6 460 499  
macs@miltenyibiotec.it

**Japan**

Miltenyi Biotec K.K.  
Nittsu-Eitai Building 5F  
16-10 Fuyuki, Koto-ku,  
Tokyo 135-0041, Japan  
Phone +81 3 5646 8910  
Fax +81 3 5646 8911  
macs@miltenyibiotec.jp

**Nordics and Baltics**

Miltenyi Biotec Norden AB  
Scheelevägen 17  
223 70 Lund  
Sweden

macs@miltenyibiotec.se

**Customer service Sweden**

Phone 0200-111 800

Fax 046-280 72 99

**Customer service Denmark**

Phone 80 20 30 10

Fax +46 46 280 72 99

**Customer service**

**Norway, Finland, Iceland,  
and Baltic countries**

Phone +46 46 280 72 80

Fax +46 46 280 72 99

**Singapore**

Miltenyi Biotec Asia Pacific Pte Ltd.  
100 Beach Road  
#28-06 to 28-08 Shaw Tower  
Singapore 189702  
Phone +65 6238 8183  
Fax +65 6238 0302  
macs@miltenyibiotec.com.sg

**South Korea**

Miltenyi Biotec Korea Co., Ltd  
Arigi Bldg. 8F  
562 Nonhyeon-ro  
Gangnam-gu  
Seoul 06136, South Korea  
Phone +82 2 555 1988  
Fax +82 2 555 8890  
macs@miltenyibiotec.co.kr

**Spain**

Miltenyi Biotec S.L.  
C/Luis Buñuel 2  
Ciudad de la Imagen  
28223 Pozuelo de Alarcón (Madrid)  
Spain  
Phone +34 91 512 12 90  
Fax +34 91 512 12 91  
macs@miltenyibiotec.es

**United Kingdom**

Miltenyi Biotec Ltd.  
Almac House, Church Lane  
Bisley, Surrey GU24 9DR, UK  
Phone +44 1483 799 800  
Fax +44 1483 799 811  
macs@miltenyibiotec.co.uk

[www.miltenyibiotec.com](http://www.miltenyibiotec.com)

Miltenyi Biotec provides products and services worldwide. Visit [www.miltenyibiotec.com/local](http://www.miltenyibiotec.com/local) to find your nearest Miltenyi Biotec contact.

Unless otherwise specifically indicated, Miltenyi Biotec products and services are for research use only and not for therapeutic or diagnostic use.

MACS, the MACS logo, MACSxpress, and MACSmix are registered trademarks or trademarks of Miltenyi Biotec GmbH and/or its affiliates in various countries worldwide.  
Copyright © 2018 Miltenyi Biotec GmbH and/or its affiliates. All rights reserved.