

# High Purity Cell Isolation for Chimerism Analysis

## Fully Automated, High Purity Cell Isolation for Chimerism Labs

Lineage-specific chimerism analysis is an important tool for monitoring the outcome of allogeneic hematopoietic cell transplantations (allo-HCT). It involves investigating the presence of donor leukocytes in the host's peripheral blood or bone marrow within specific cell subsets. Performing lineage-specific chimerism analysis is becoming an increasingly common practice that offers several advantages over analyzing the entire leukocyte population.<sup>1,2</sup> Performing chimerism analysis requires sensitive and reliable techniques and ensuring that cross-contamination between samples does not occur is critical to the success of downstream chimerism analyses.

RoboSep™, the fully-automated cell separation platform, eliminates the risk of cross-contamination during cell separations by using individual separation magnets and disposable pipette tips to process each cell sample. Using EasySep™ column-free immunomagnetic cell separation reagents, RoboSep™ isolates highly purified cells from virtually any sample in as little as 25 minutes. Large routine laboratories worldwide rely upon RoboSep™ for high purity cell separation that enables clear and reliable downstream chimerism analysis.



 **RoboSep™ -S**

Learn more at [www.RoboSep.com](http://www.RoboSep.com)

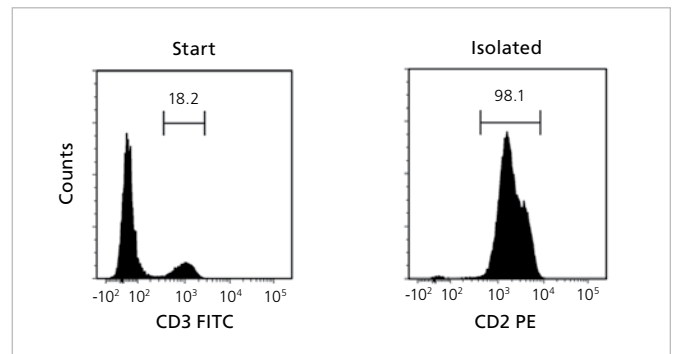
### Why Use RoboSep™ for Chimerism Analysis?

**HIGH PURITY.** Achieve purities of up to 99% in as little as 25 minutes with minimal hands-on time.

**VERSATILE.** Customize protocols for any cell type and sample source.

**EFFICIENT.** Isolate multiple cell subsets from a single, low-volume sample.

**NO CROSS-CONTAMINATION.** Maintain sample integrity: Samples are processed with individual magnets and pipette tips.



**Figure 1. EasySep™ HLA Whole Blood CD3<sup>+</sup> Positive Selection Kit (Catalog #17871)**

Starting with human whole blood, the CD3<sup>+</sup> cell content of the isolated fraction (as assessed by staining the start and isolated fractions with anti-CD3 or anti-CD2 antibodies, respectively) typically ranges from 96-99%. In the above example, the T cell content of the lysed whole blood start sample and the non-lysed final isolated fraction is 18.2% and 98.1% (gated on CD45), respectively.

### References

1. Childs R, et al. Blood. 94(9): 3234-3241, 1999
2. Urbano-Ispizua A, et al. Blood. 97:383-387, 2001

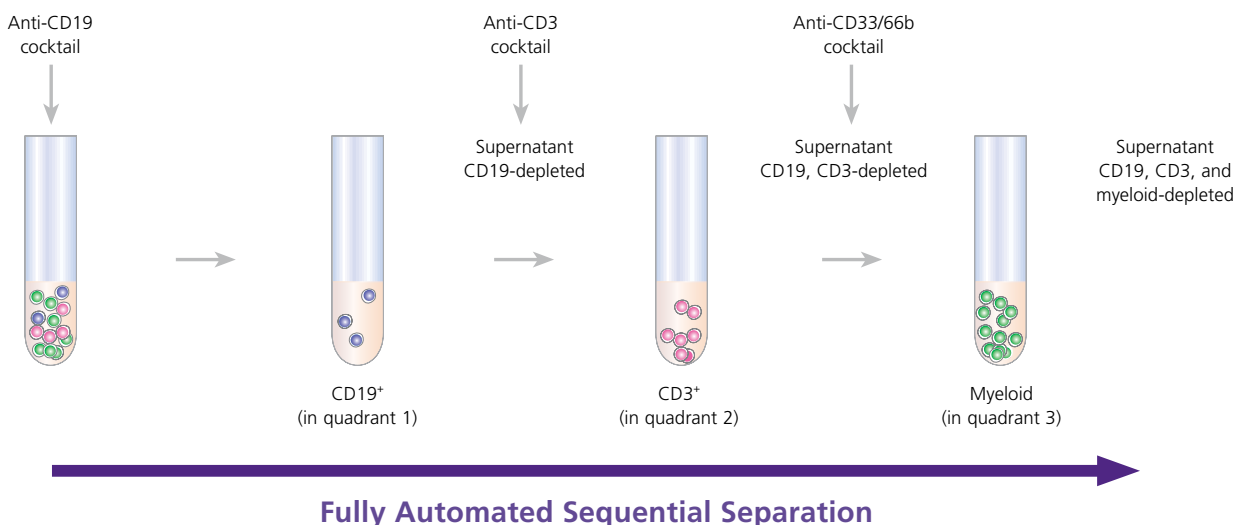
# High Purity Cell Isolation for Chimerism Analysis

## Application

### Fully Automated Separation of Multiple Cell Types from a Single Sample

Because chimerism analysis is typically performed on small blood samples, analysis of purified cell subsets often requires isolation of more than one cell type from a single starting sample. Sequential separation protocols from RoboSep™ can isolate up to four highly-enriched cell types from a single, undivided blood sample. Cells are recovered with high purity and in sufficient quantities for downstream flow cytometry and DNA analyses.

**Figure 2.** RoboSep™ sequential separation of B cells, T cells, and myeloid cells from a single sample.



## Cell Separation Products for Chimerism Analysis

CELL TYPE	EASYSEP™ / ROBOSEP™ (POS. SELECTION)			ROSETTESEP™ (NEG. SELECTION)
	Selection Marker	Whole Blood <sup>1</sup>	MNC <sup>2</sup>	Whole Blood <sup>1</sup>
T Cells	CD3	17871	17851	15271, 15271HLA <sup>3</sup>
B Cells	CD19	17874	17854	–
	CD19/ CD20	18184HLA	–	–
Myeloid Cells	CD15	17881	18651	15272, 15272HLA <sup>3</sup>
	CD33	17885	–	
	CD33/66b	17884	–	
Granulocytes	CD66b	17882	–	–
Monocytes	CD14	17878	17858	–
NK Cells	CD56	17875	17855	–
Hematopoietic Progenitor Cells	CD34	18086	–	–

For automated cell isolation EasySep™ kits are available as RoboSep™ Reagent kits (RF).

1. Kit also works on other red blood cell containing samples (i.e. cord blood, buffy coat).
2. Kit works on mononuclear cells (MNCs) isolated from peripheral blood or bone marrow. MNC: Mononuclear Cell.
3. This kit has been CE-marked as a Class I IVD product in the European Union according to the 98/79/EC In Vitro Diagnostic Device Directive and complies with its requirements.

Copyright © 2017 by STEMCELL Technologies Inc. All rights reserved including graphics and images. STEMCELL Technologies & Design, STEMCELL Shield Design, Scientists Helping Scientists, EasySep and RoboSep are trademarks of STEMCELL Technologies Canada Inc. All other trademarks are the property of their respective holders. While STEMCELL has made all reasonable efforts to ensure that the information provided by STEMCELL and its suppliers is correct, it makes no warranties or representations as to the accuracy or completeness of such information.

STEMCELL TECHNOLOGIES INC.'S QUALITY MANAGEMENT SYSTEM IS CERTIFIED TO ISO 13485. PRODUCTS ARE FOR RESEARCH USE ONLY AND NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES UNLESS OTHERWISE STATED.