

PERIPHERAL BLOOD LEUKOPAKS

To Streamline Your Large-Scale Studies



Leukopaks are enriched leukapheresis products containing a variety of immune cells, including T cells, B cells, natural killer (NK) cells, monocytes, and more. Compared to whole blood and buffy coat, a full-size leukopak contains much higher concentrations of leukocytes per volume—typically greater than 9 billion cells in an average volume of < 200 mL. This makes leukopaks an ideal source of human primary cells when large numbers of cells are required from a single donor, especially for researchers working on adoptive cell therapy, T cell receptor (TCR) sequencing, and immunotherapy development.

STEMCELL Technologies offers both fresh and frozen normal leukopaks—collected in transfer bags using stringent and consistent protocols, and are offered in full, half, quarter, and tenth sizes. Each full-sized leukopak is produced from ~2 - 3x blood volumes using the Spectra Optia® Apheresis System, with acid-citrate-dextrose solution A (ACDA) as the anticoagulant.

A key factor for efficient, high-quality cell-based research is working with a reliable supplier who understands and supports your specific requirements. STEMCELL accommodates changing customer needs with personalized service, customizable products, flexible services, and help with regulatory compliance. Discover our range of ethically sourced leukopaks to streamline your research.

Why Use Human Peripheral Blood Leukopaks from STEMCELL?

- Choose cells that are more physiologically representative of cells in vivo.
- Access donor samples collected using regulatory authority-approved consent forms and protocols.
- Start your experiments on your schedule without being restricted by the availability of tissue.
- Obtain large numbers of single-donor leukocytes, including PBMCs, T cells, and more.
- Reduce time spent collecting and culturing primary cells.



RESOURCES

Leukopak Processing Protocol
www.stemcell.com/LeukopakProcessing



RESOURCES

Frequently Asked Questions on Primary Cells
www.stemcell.com/PrimaryCellsFAQs

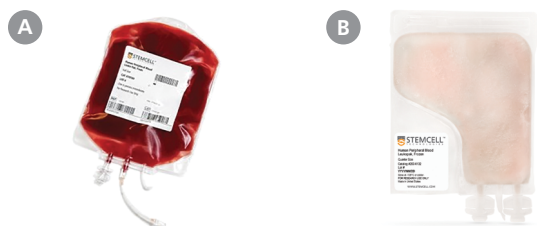


Figure 1. (A) Fresh and (B) Frozen Human Peripheral Blood Leukopak - Full-Size

(A) Fresh Leukopak ([Catalog #70500](#)) and (B) Frozen Leukopak ([Catalog #200-0130](#)) from a normal donor containing peripheral blood mononuclear cells (PBMCs) enriched using the Spectra Optia® Apheresis System.

Fresh Leukopaks*

[Fresh leukopaks](#) are typically used to study the functions of white blood cells within a short period of time after collection, as they contain viable and functional white blood cells that can be used immediately without loss of viability or functionality. Fresh leukopaks are available in full, half, quarter, and tenth sizes. STEMCELL's recent stability study suggests that fresh leukopaks can be stored at 2 - 8°C for up to 5 days post-apheresis.

Fresh leukopaks sourced from donors diagnosed with a specific autoimmune disease, hematological cancer, or solid tumor cancer are also available in full sizes. Fresh mobilized leukopaks mobilized with granulocyte colony-stimulating factor (G-CSF), plerixafor or combo (G-CSF + Plerixafor) are also available in full sizes.

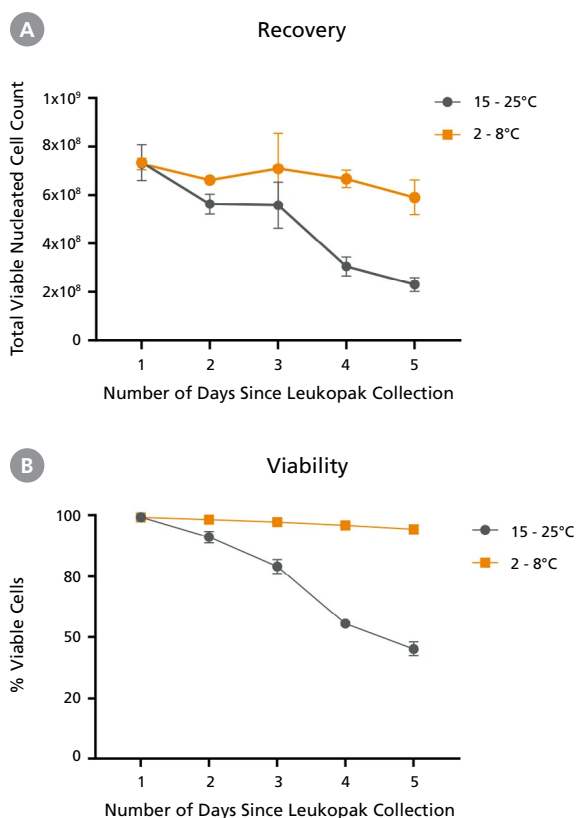


Figure 2. Recovery of Viable Cells Is Higher When Leukopaks Are Stored at Fridge Temperature Compared to Room Temperature

Stability of fresh leukopaks was evaluated after storage for up to 5 days after collection, at a refrigerated temperature (FT; 2 - 8°C) or at room temperature (RT; 15 - 25°C). Full leukopaks were collected from three unique donors, then divided into ten equally sized fractions and stored at FT or RT (n = 5 at each temp, per donor). Over the following 5 days, one 1/10th leukopak fraction was processed from each condition daily, to identify changes in cellular composition and functionality that may have occurred during storage. (A) Viable cell yield and (B) percentage cell viability were determined daily, following red blood cell (RBC) lysis of leukopak fractions. By Day 5 after collection, leukopak fractions stored at RT showed a 68% loss of viable cells and an accompanying 54% decrease in cell viability. Conversely, those stored at FT showed a much less pronounced 19% decrease of viable cells and just 5% decrease in viability over the 5 days. All data points represent average ± standard deviation values from leukopak fractions of 3 unique donors.

Frozen or Cryopreserved Leukopaks*

[Frozen leukopaks](#) are ideal for assays requiring a large number of cells for experiments conducted over extended periods of time as they are cryopreserved and stored long term at a subzero temperature (normally ≤ -135°C). At STEMCELL, frozen leukopaks are processed shortly after collection, following stringent protocols, and cryopreserved in [CryoStor® CS10](#)—preserving quality and ensuring optimal cell viability and purity post-thaw. Frozen leukopaks are available in full, half, quarter, and tenth sizes.

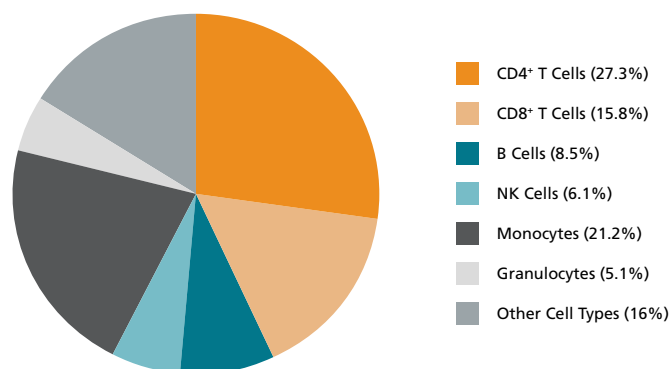


Figure 3. Mean Percentages of Cell Subpopulations in a Leukopak

Representative chart showing the average frequencies of major immune subsets in leukopak products, as measured by flow cytometry prior to cryopreservation. Values shown are mean percentages of total viable leukocytes present in a leukopak (n ≥ 30).



RESOURCES

Fresh Leukopak Stability Study
www.stemcell.com/LeukopakStabilityStudy

*Certain fresh or cryopreserved products are only available in select territories. Please contact your Sales representative or Product and Scientific Support (techsupport@stemcell.com) for further information.

Peripheral Blood Products*

Peripheral blood is an abundant source of immune cells, including granulocytes, monocytes, and lymphocytes. Choose from a range of large-scale cell sources including fresh mobilized leukopaks, whole blood, fresh or frozen PBMCs, ready-to-use isolated subsets, plasma, serum, and more.

For a complete listing of primary cells products, including mobilized peripheral blood products and cultured cells, and workflow solutions for cell-based assays, please visit: www.stemcell.com/PrimaryCells.



RESOURCE

Webinar: Leukopak Processing:
Tips & Tricks for Streamlined Cell Isolation
www.stemcell.com/LeukopakWebinar



PRODUCT

ThawSTAR® CB Automated Thawing System
<https://www.stemcell.com/ThawstarCB>



PRODUCT

Easy 250 EasySep™ Magnet
<https://www.stemcell.com/easy250magnet>

Product Information

Leukopaks¹

Description	Anticoagulant	Quantity	Catalog #
Fresh Peripheral Blood Leukopak ²⁻⁵	ACDA ⁶	Tenth Size	200-0092
		Quarter Size	70500.2
		Half Size	70500.1
		Full Size	70500
Frozen Peripheral Blood Leukopak	ACDA ⁶	Tenth Size	200-0470
		Quarter Size	200-0132
		Half Size	200-0131
		Full Size	200-0130

1. High-resolution HLA typing and CMV status are available upon request.
2. Fresh products are only available in select territories. Please contact Product and Scientific Support (techsupport@stemcell.com) for further information.
3. A full-size leukopak typically contains $1.1 \pm 0.3 \times 10^{10}$ cells and has a volume of approximately 120 mL.
4. Fresh leukopak products are shipped by default in certified refrigerated packaging capable of holding a constant internal temperature range of 2 - 8°C for a period of up to 48 hours.
5. Fresh mobilized leukopaks are also available in certain regions. Please contact Product and Scientific Support (techsupport@stemcell.com) for further information.
6. ACDA - Acid Citrate Dextrose Solution A.

*Certain fresh or cryopreserved products are only available in select territories. Please contact your Sales representative or Product and Scientific Support (techsupport@stemcell.com) for further information.

Copyright © 2023 by STEMCELL Technologies Inc. All rights reserved including graphics and images. STEMCELL Technologies & Design, STEMCELL Shield Design, and Scientists Helping Scientists are trademarks of STEMCELL Technologies Canada Inc. CryoStor and ThawSTAR are registered trademarks of BioLife Solutions, 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.

PRODUCTS ARE FOR RESEARCH USE ONLY AND NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES UNLESS OTHERWISE STATED. FOR ADDITIONAL INFORMATION ON QUALITY AT STEMCELL, REFER TO WWW.STEMCELL.COM/COMPLIANCE.

