

EFFECTIVE ISOLATION OF MONONUCLEAR CELLS

Lymphoprep™ Density Gradient Medium

Lymphoprep™ is a ready-made, density gradient medium recommended for the isolation of mononuclear cells from peripheral blood, cord blood, and bone marrow. Widely used in published research for more than 40 years, Lymphoprep™ can be used in a simple and rapid centrifugation procedure developed by Bøyum¹. This method takes advantage of the differences in density between the various leukocytes and the density gradient medium. Because granulocytes and erythrocytes have a higher density than mononuclear cells (monocytes and lymphocytes), they easily sediment through the Lymphoprep™ layer during centrifugation.

Why Use Lymphoprep™?

- Ready-to-use, sterile, endotoxin-tested solution manufactured by a GMP-compliant and ISO-certified company
- Same density (1.077 g/mL) and chemical composition as Ficoll-Paque™
- Easily works with SepMate™ tubes to isolate PBMCs in just 15 minutes
- Widely used in published research for more than 40 years

Lymphoprep™ is a reliable alternative to other commercial density gradient media, shown to generate preparations equivalent in composition and quantity of mononuclear cell types² (Figure 1). It has the same density as Ficoll-Paque™ (Table 1) and can be seamlessly substituted into experiments without changing existing protocols. Lymphoprep™ is also compatible with RosetteSep™ immunodensity depletion cocktails and can easily be paired with SepMate™*, a tube containing a unique insert that facilitates the isolation of mononuclear cells or specific cell types by providing a barrier between the density gradient medium and the sample layer (Figure 2). Using SepMate™ and Lymphoprep™ together can greatly increase the speed and efficiency of peripheral blood mononuclear cell (PBMC) isolation and may result in superior cell recovery and cell functionality compared to the traditional Ficoll™-based isolation technique³.

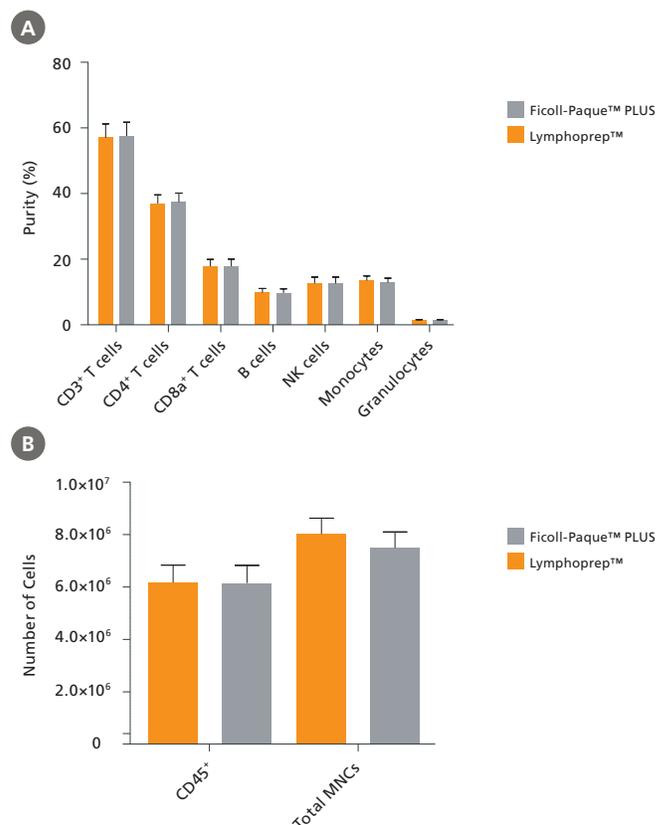


Figure 1. Purity and Recovery of Cells from Whole Blood When Using Lymphoprep™ Is Comparable to Using Ficoll-Paque™ PLUS

(A) Density gradient centrifugation of peripheral whole blood using Lymphoprep™ results in similar cell purity of mononuclear cells including T cells, B cells, NK cells and monocytes compared to Ficoll-Paque™ PLUS. (B) The recovery of total mononuclear cells and CD45⁺ cells is also similar. (n = 5, Mean ± SD).

*SepMate™-15 (IVD; Catalog #85415, #85420) and SepMate™-50 (IVD; Catalog #85450, #85460) are available in Australia, Canada, Europe, and the United States of America, where they are registered as In Vitro Diagnostic (IVD) devices for the isolation of mononuclear cells from human whole blood, cord blood, and bone marrow by density gradient centrifugation. These products are also available in China where they are considered non-medical devices by the China Food and Drug Administration (CFDA), and should therefore be used as general laboratory equipment. SepMate™ tubes are sterilized by irradiation.

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Table 1. Comparison of Lymphoprep™ and Ficoll-Paque™ Products

	FICOLL-PAQUE™ PLUS	FICOLL-PAQUE™ PREMIUM	LYMPHOPREP™
Density	1.077 ± 0.001 g/mL	1.077 ± 0.001 g/mL	1.077 ± 0.001 g/mL
Contains	<ul style="list-style-type: none"> Ficoll™ PM400 (sucrose-polymer) Sodium diatrizoate 	<ul style="list-style-type: none"> Ficoll™ PM400 (sucrose-polymer) Sodium diatrizoate 	<ul style="list-style-type: none"> Polysaccharide Sodium diatrizoate
Sample Sources	Whole Blood, Cord Blood, Bone Marrow	Whole Blood, Cord Blood, Bone Marrow	Whole Blood, Cord Blood, Bone Marrow
Sterile, Ready-to-Use Solution	✓	✓	✓
Endotoxin Tested	✓	✓	✓*
Quality Management System	✗	Certified to ISO 13485	Manufactured by a GMP-compliant and ISO-certified company

* Endotoxin level for Lymphoprep™ is typically less than or equal to 0.13 EU/mL and is available on the Certificate of Analysis by request.

Typical Lymphoprep™ and SepMate™ Protocol

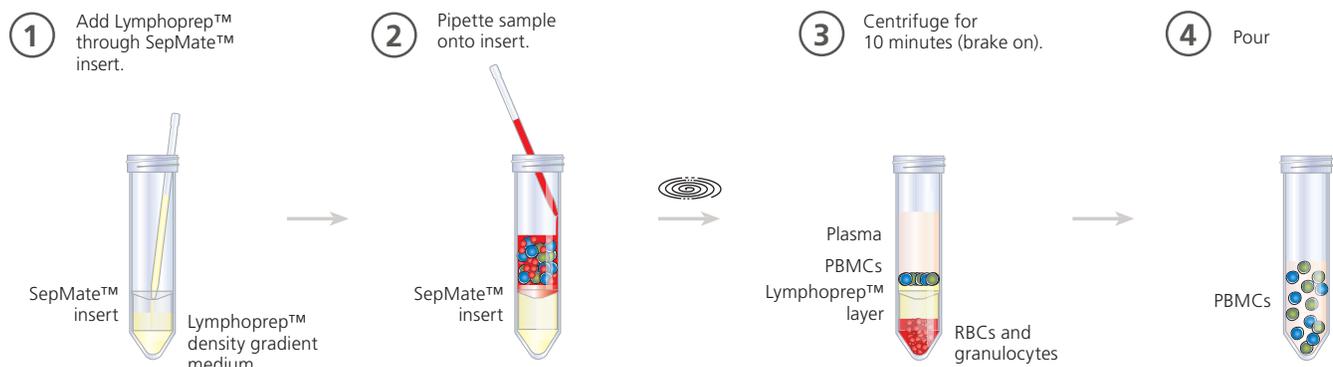


Figure 2. Lymphoprep™ Density Gradient Medium Is Fully Compatible with SepMate™ Tubes

Product Information

PRODUCT	DENSITY	SIZE	CATALOG #
Lymphoprep™	1.077 g/mL	250 mL	07801
		500 mL	07851
		4 x 250 mL	07811
		6 x 500 mL	07861

References

- Bøyum A. (1968) Scand J Clin Lab Invest Suppl. 97(7)
- Yeo C et al. (2009) Regen Med. 4(5): 689–96
- Grievink HW et al. (2016) Biopreserv Biobank. 14(5): 410–5

For more information on Lymphoprep™ and SepMate™, or for additional related products, including RosetteSep™ and cell isolation kits, antibodies, and other density gradient media, visit www.cellseparation.com.

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