

Ficoll-Paque™ PLUS

Ficoll-Paque PLUS is a sterile, ready-to-use aqueous medium for density gradient centrifugation. The medium consists of a mixture of Ficoll™ PM400 and sodium diatrizoate at a density of 1.077 g/ml. Ficoll-Paque PLUS is QC-tested to ensure low levels of endotoxins. The medium was developed for large- or small-scale purification of mononuclear cells from human peripheral blood, using a simple and rapid centrifugation technique developed by Boyum (1, 2). Protocols for purifying mononuclear cells from sources other than human peripheral blood have also been developed (3–6).

Ficoll-Paque PLUS offers:

- Low levels of endotoxin.
- Complete QC package to assure reliability.
- Reliable isolation of lymphocytes with representative proportions of T and B cells.
- Greater than 90% lymphocyte viability.
- Rapid isolation with a recovery of 60% ±20% of the lymphocytes present in the original blood sample.
- Sterile aqueous medium.
- Stable for at least 3 yr under appropriate storage conditions.

Ficoll-Paque PLUS is a recognized standard in laboratories worldwide for the isolation of mononuclear cells for analytical research studies.

Applications

Ficoll-Paque PLUS is optimized for the isolation of mononuclear cells from human peripheral blood. However, the medium can be adapted for the isolation of human lymphocytes from other sources, including abdominal, amniotic, and pleural fluids (3–6), as well as bone marrow (7, 8). Separation of normal human peripheral blood by the recommended protocol typically yields a lymphocyte preparation with:



Fig 1. Ficoll-Paque PLUS is a sterile density gradient centrifugation medium for separation of mononuclear cells from human blood.

- 60% ±20% recovery of the lymphocytes present in the original blood sample.
- 95% ±5% mononuclear cells.
- > 90% viability of the separated cells.
- 3% ±2% granulocytes.
- 5% ±2% red blood cells.
- < 0.5% of the total platelets of the original blood sample.

The density of Ficoll-Paque PLUS (1.077 g/ml) is optimized for the isolation of mononuclear cells from human blood. If a density other than 1.077 g/ml is required for optimal separation, GE Healthcare offers density gradient media of densities 1.073 g/ml (Ficoll-Paque PREMIUM 1.073), and 1.084 g/ml (Ficoll-Paque PREMIUM 1.084). An alternative is to use Percoll™ or Percoll PLUS, which are ideal for density gradient centrifugation when other densities are preferred. Iso-osmotic gradients in the density range of 1.0 to 1.3 g/ml are possible with Percoll products, allowing improved yield and purity. Furthermore, Ficoll-Paque PLUS and Percoll products have been used in combination to isolate defined subpopulations of blood cells.



Specifications

Density	1.077 + 0.001 g/ml
Stability	Stable for 3 yr if stored between 4°C and 30°C and protected from direct light.
Endotoxins	Contains < 0.12 EU/ml.

References

1. Boyum, A. *Scand. J. Clin. Lab. Invest.*, 21 Suppl. **97**, 77 (1968).
2. Boyum, A. *Scand. J. Clin. Lab. Invest.*, 21 Suppl. **97**, 31 (1968).
3. Minami, R. *et al. Acta Cytol.* **22**, 584 (1978).
4. Elequin, T. T. *et al. Acta Cytol.*, **21**, 596 (1977).
5. Katz, L. L. and Lukeman, J. M. *Amer. J. Clin. Pathol.* **74**, 18 (1980).
6. Chang, H. C. *et al. In Vitro* **17**, 81 (1981).
7. Arkin, S. *et al. Blood* **77**, 948 (1991).
8. Deguchi, Y. and Kehrl, J. H. *Blood* **78**, 323 (1991).

Ordering information

Product	Pack size	Code no.
Ficoll-Paque PLUS	6 × 100 ml	17-1440-02
	6 × 500 ml	17-1440-03

Related products

Ficoll PM400	100 g	17-0300-10
	500 g	17-0300-50
	5 kg	17-0300-05
Ficoll-Paque PREMIUM 1.073	6 × 100 ml	17-5446-52
Ficoll-Paque PREMIUM 1.084	6 × 100 ml	17-5446-02
Percoll PLUS	250 ml	17-5445-02
	1 l	17-5445-01
Percoll	250 ml	17-0891-02
	1 l	17-0891-01
	6 × 1 l	17-0891-09

For local office contact information, visit: www.gelifesciences.com/contact

www.gelifesciences.com/cellprep

GE Healthcare Bio-Sciences AB
Björkgatan 30
751 84 Uppsala
Sweden



GE, imagination at work, and GE monogram are trademarks of General Electric Company.

Ficoll, Ficoll-Paque, and Percoll, are trademarks of GE Healthcare Companies.

Percoll PLUS is protected by the following patents and equivalent patents and patent applications in other countries, which are licensed to GE Healthcare from Dendreon Corporation: US patent number 4,927,749, US patent number 4,927,750, Canadian patent number 1,338,492, Japanese patent number 2,628,509, US patent number 5,789,148, US patent number 6,015,843 and European patent number 1,047,635. A free, non-transferable license to use this product for density gradient separation purposes under the above mentioned patent rights accompanies the purchase of the product from a GE Healthcare company and its licensed distributors, but any use of Percoll PLUS or any other organosilicized colloidal silica particle-based separation media to enrich, purge or isolate cells for active immunotherapy for oncology applications shall be excluded from such license.

© 2005–2011 General Electric Company—All rights reserved.

First published 2005

All goods and services are sold subject to the terms and conditions of sale of the company within GE Healthcare which supplies them. A copy of these terms and conditions is available on request. Contact your local GE Healthcare representative for the most current information.

GE Healthcare Bio-Sciences AB
Björkgatan 30, 751 84 Uppsala, Sweden

GE Healthcare Europe GmbH,
Munzinger Strasse 9, D-79111 Freiburg, Germany

GE Healthcare UK Ltd
Amersham Place, Little Chalfont, Buckinghamshire, HP7 9NA, UK

GE Healthcare Bio-Sciences Corp
800 Centennial Avenue, P.O. Box 1327, Piscataway,
NJ 08855-1327, USA

GE Healthcare Japan Corporation
Sanken Bldg. 3-25-1, Hyakunincho, Shinjuku-ku,
Tokyo 169-0073, Japan