GE Healthcare
Life Sciences

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

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