

Percoll PLUS/Percoll

Percoll™ PLUS is a silica-based colloidal medium for cell separation by density gradient centrifugation. The silica particles of the medium are covalently coated with silane, providing product stability and long shelf life. The silane coating also provides low osmolality and toxicity, as well as low viscosity. Percoll PLUS is sterile and has low levels of endotoxins, making it well-suited for cell separation in clinical research applications. Cell separation with the medium is performed under gentle conditions, facilitating the isolation of a variety of cells, subcellular particles, and viruses where preservation of viability and morphological integrity is important. The low toxicity of Percoll PLUS ensures that removal of the medium from separated cellular particles is not usually necessary.

After adjustment, Percoll PLUS forms iso-osmotic gradients within the density range of 1.0 to 1.3 g/ml. This density range is especially useful since most cells, subcellular particles, and viruses have a buoyant density of 1.0 to 1.2 g/ml in Percoll PLUS.

Percoll PLUS offers:

- Low endotoxin levels (max. 2 EU/ml)
- Percoll PLUS is sterile and can be re-sterilized by autoclaving even after iso-osmotic adjustment
- Absence of toxicity for cells and very low chemical reactivity
- Low osmolality: Percoll PLUS can easily be adjusted with physiological saline, other balanced salt solutions, or cell culture media, to give gradients that are iso-osmotic throughout
- Low viscosity resulting in rapid formation of gradients and particle separation at low centrifugal forces

Specifications for Percoll PLUS are shown in Table 1.

Percoll PLUS gradients

Percoll PLUS can be used in density centrifugation applications for the isolation and purification of cells, subcellular particles, and viruses down to ~70S. The medium offers both high



Fig 1. Percoll PLUS provides reliable separation of cells, subcellular particles, and viruses by density gradient centrifugation.

resolution and biological compatibility. The low intrinsic osmolality and viscosity are particularly useful when isolating organelles where maintenance of membrane integrity is important.

Table 1. Percoll PLUS specifications

| | |
|-------------------------------|--|
| Composition | Colloidal silica sol with covalently linked silane |
| Density | 1.130 ± 0.005 g/ml |
| Osmolality | < 30 mOsm/kg H ₂ O |
| Viscosity | < 15 cP at 20°C |
| pH | 9.4 ± 0.5 at 20°C |
| Carbon content in dry residue | 4.0–5.5% |
| Endotoxin activity max. | 2 EU/ml |
| Shelf life | 5 yr |

Percoll PLUS can be used to produce preformed, continuous or discontinuous gradients. Under moderate centrifugal force, the colloidal particles that comprise Percoll PLUS sediment to form smooth, continuous density gradients. This property can be exploited in either fixed-angle or vertical rotors.



The medium is also suited to applications where high-speed centrifugation is required. In this case, the sample can be pre-mixed with the medium and subsequently separated on the continuous gradient formed *in situ*. Thus, gradient formation and sample separation can be achieved in one step. All experiments described in the literature using Percoll can also be performed with Percoll PLUS.

Percoll

Percoll is a silica-based colloidal medium for cell separation by density gradient centrifugation (see Percoll specifications in Table 2). The silica particles of the medium are coated with polyvinylpyrrolidone (PVP), which gives low osmolality and low viscosity. Cell separation with Percoll is performed under gentle conditions, facilitating the isolation of a variety of cells, subcellular particles, and viruses. Iso-osmotic Percoll gradients can be formed within the density range of 1.0 to 1.3 g/ml. This density range is optimized for separation of most cells, subcellular particles, and larger viruses, which have a buoyant density of 1.0 to 1.2 g/ml in Percoll.

Percoll offers:

- Low osmolality: Percoll can easily be adjusted with physiological saline, cell culture medium, or sucrose to give gradients that are iso-osmotic throughout
- Low viscosity resulting in rapid formation of gradients and particle separation at low centrifugal forces
- Support through extensive research use: Thousands of publications on Percoll in scientific journals
- Formation of either continuous preformed or self-generated gradients by centrifugation at moderate speeds
- Percoll is sterile and when undiluted can be re-sterilized by autoclaving

For contact information for your local office, please visit,
www.gelifesciences.com/contact

www.gelifesciences.com/cellprep

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Table 2. Percoll specifications

| | |
|------------------|--|
| Composition | Colloidal silica sol with nondialyzable PVP coating, 15–30 nm diameter beads |
| Density | 1.130 ± 0.005 g/ml |
| Conductivity max | 1.0 mS/cm |
| Osmolality | max 25 mOsm/kg H ₂ O |
| Viscosity | 10 ± 5 cP at 20°C |
| pH | 9.0 ± 0.5 at 20°C |
| Shelf life | 5 yr |

Ordering information

| Product | Pack Size | Code No. |
|--------------|-----------|------------|
| Percoll PLUS | 250 ml | 17-5445-02 |
| | 1 l | 17-5445-01 |
| Percoll | 250 ml | 17-0891-02 |
| | 1 l | 17-0891-01 |

Related products

| | | |
|----------------------|------------------|------------|
| Ficoll™ PM400 | 100 g | 17-0300-10 |
| | 500 g | 17-0300-50 |
| Ficoll-Paque™ PLUS | 6 × 100 ml | 17-1440-02 |
| | 6 × 500 ml | 17-1440-03 |
| Ficoll-Paque PREMIUM | 6 × 100 ml | 17-5442-02 |
| | 6 × 500 ml | 17-5442-03 |
| Density Marker Beads | 1 kit (10 vials) | 17-0459-01 |

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