

PowerStem HE2

Complete Medium for Serum-free Cultivation
of Human Hematopoietic stem cells

Product	Description	Catalogue-No.	Size
PowerStem HPSC	Serum-free medium for the cultivation of human hematopoietic stem cells, Kit (Basal Medium + 2 Supplements) for 500 ml	ST04-77450K	500 ml

Product description

PowerStem HPSC is a specialized serum-free medium for the cultivation and expansion of human hematopoietic stem cells (HPSC) and cells of myeloid lineage in suspension culture. Hematopoietic stem cells are CD34⁺, which are the earliest hematopoietic stem cells identifiable in bone marrow, peripheral blood and neonatal cord blood. By adding one or more differentiation factors or changing culturing conditions, HPSC can be induced to differentiate into different types of hematopoietic lineage cells.

Content

PowerStem HPSC medium consists of:

- PowerStem HPSC basal medium (486 ml , P04-77450B)
- PowerStem HPSC growth supplement, (12,5 ml, P04-7745S1) which is added at the time of use.
- PowerStem HPSC cytokine supplement, (1 ml, P04-7745S2) which is added at the time of use.

Storage conditions and stability:

- PowerStem HPSC basal medium: store in the dark at 2-8° C
- PowerStem HPSC growth supplement: store in the dark at -20° C
- PowerStem HPSC cytokine supplement: store in the dark at -20° C

PowerStem HPSC basal medium, PowerStem HPSC growth supplement and PowerStem HPSC cytokine supplement are guaranteed stable for 12 months when properly stored. PowerStem HPSC complete medium (basal + supplements) is stable for 1 month when stored in the dark at 2-8°C. We do not recommend using the complete medium beyond 1 month.

Composition

PowerStem HPSC contains purified proteins, lipids, salts, amino acids, trace elements, hormones and growth factors in an optimized formulation. PowerStem HPSC is fully chemically defined and contains no FBS or any other animal derived components.

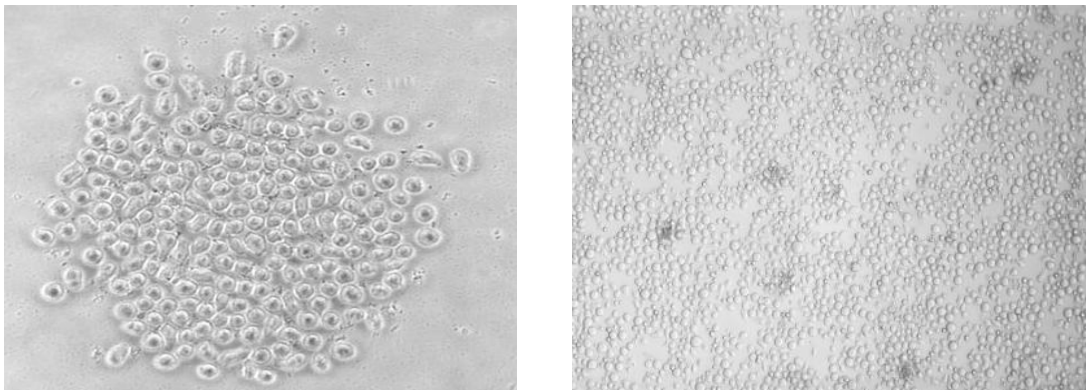
Suitability

Serum-free cultivation and expansion of human hematopoietic CD34+ stem cells from bone marrow, peripheral blood and neonatal cord blood.

Special Advantages

PowerStem HPSC allows the cultivation and expansion of human hematopoietic CD34+ stem cells and cells of myeloid lineage under serum-free conditions. It is fully defined in its composition and thus

enables constant and comparable experimental conditions with easily reproducible results. The hematopoietic stem cells can be cultivated without stromal cells, they show a high proliferation rate and largely retain their undifferentiated state. By adding specific differentiation factors, hematopoietic cells can be differentiated in vitro to different types of hematopoietic lineage cells.



Hematopoietic stem cells from neonatal cord blood in PowerStem HPSC

Preparation of PowerStem HPSC medium:

PowerStem HPSC basal medium requires supplementation with PowerStem HPSC growth supplement and PowerStem HPSC cytokine supplement. Thaw PowerStem HPSC supplements before use. The thawed material should be used immediately or aliquoted and stored at -20° C. To obtain 500 ml PowerStem HPSC complete medium please add 12,5 ml of thawed PowerStem HPSC growth supplement and 1 ml PowerStem cytokine supplement to 486 ml of PowerStem HPSC basal medium. PowerStem HPSC complete medium (basal medium with supplements) is stable for 1 month when stored in the dark at 2-8° C.

Instructions for Use

Expansion

- Prepare mononuclear cells (e.g. PBMC) with Pancoll human (P04-60500). For further enrichment of CD34⁺ cells use e.g. MiniMACS (Miltenyi) or comparable systems according to the manufacturer's instructions.
- CD34⁺ cells were seeded at an initial density of 2x10⁴ cells/ml in PowerStem HPSC complete medium at 37°C in an incubator with 5% CO₂/95% air atmosphere.
- An initial lag phase of about 3 days is observed, because the majority of hematopoietic stem cells are in a quiescent (G₀) state.
- Replace spent medium with fresh complete medium every 3-4 days.

Differentiation

- Erythropoietin (EPO) and Interleukin 6 (IL-6) stimulate the differentiation of CD34⁺ hematopoietic cells into red blood cell precursors (BFU-E cells, burst forming unit erythroid).
- For the development of BFU-E cells add EPO 10 U/ml and IL-6 10 µg/ml (final concentration) to the cell culture

Technical support

For technical support, questions or remarks please contact your local PAN-Seratech partner or the technical department of PAN-Seratech via email (info@pan-seratech.com) or phone +49-8543-601630.

FOR RESEARCH USE ONLY! Not approved for human or animal diagnostic or therapeutic procedures.