Datasheet

PowerStem ESPro2

Chemically defined medium for the serum-free cultivation of mouse embryonic stem cells (mES-cells) and tumor progenitor cells

Product	Description	Catalogue-No.	Size
PowerStem ESPro2	**Serum-free, chemically defined medium for the cultivation of mouse embryonic stem cells or tumor progenitor cells, Kit (Basal Medium + 2 Supplements) for 500 ml**	**ST04-77020K**	**500 ml**

Product description

PowerStem ESPro2 is an easy to use serum-free medium for cultivation and expansion of embryonic stem cells of mice (mES-cells). PowerStem ESPro2 is especially designed to proliferate and expand mouse ES-cells without differentiation. To differentiate the proliferated mouse ES-cells into different cell types the relevant protocols and differentiation factors can be used.

Content

PowerStem ESPro2 medium consists of:

- PowerStem ESPro2 basal medium (425 ml, Cat. No. ST04-77020B)
- PowerStem ESPro2 growth supplement, (75 ml, Cat. No. ST04-7702GS) which is added at the time of use
- PowerStem ESPro2 LIF supplement, (1 ml, Cat. No. ST04-7702LS) which is added at the time of use

Storage conditions

- PowerStem ESPro2 basal medium: store in the dark at 2-8° C
- PowerStem ESPro2 growth supplement: store in the dark at -20° C
- PowerStem ESPro2 LIF supplement: store in the dark at -20° C

PowerStem ESPro2 basal medium, PowerStem ESPro2 growth supplement and PowerStem ESPro2 LIF supplement are guaranteed stable for 12 months when properly stored. PowerStem ESPro2 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 ESPro2 contains purified proteins, lipids, salts, amino acids, trace elements, attachment factors, hormones and growth factors in an optimized formulation. PowerStem ESPro2 is fully chemically defined and contains no peptones or hydrolysates. **Please note:** Supplemented PowerStem ESPro2 contains LIF in a concentration of 10µg/L. If higher levels of LIF are required, please add additional LIF to the medium.

Suitability

PowerStem ESPro2 is especially designed for the serum-free cultivation of murine embryonic stem cells (mES cells), while maintaining the undifferentiated state. PowerStem ESPro2 is suitable for the serum-free generation of knockout-/knockin-mice from genetically modified mES-cells. PowerStem

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ESPro2 has also been proven to support the serum-free cultivation and expansion of murine tumor progenitor cells.

Special Advantages

PowerStem ESPro2 allows the cultivation and expansion of mouse embryonic stem cells (mES-cells) under serum-free conditions. It is fully defined in its composition and thus enables constant and comparable experimental conditions resulting in highly reproducible data. The mES-cell culture can be established without the usual feeder layer (primary fibroblasts), cells show a high proliferation rate and largely retain an undifferentiated state. By adding specific differentiation factors, mES-cells can differentiate in vitro to the desired cell types (e.g. nerve cells, muscle cells, endothelial cells, etc.).

Preparation of PowerStem ESPro1 medium:

PowerStem ESPro2 basal medium requires supplementation with PowerStem ESPro2 growth supplement and PowerStem ESPro2 LIF supplement. Thaw PowerStem ESPro2 supplements before use. The thawed material should be used immediately or aliquoted and stored at -20° C. To obtain 500 ml PowerStem ESPro2 complete medium please add 75 ml of thawed PowerStem ESPro2 growth supplement and 1 ml PowerStem ESPro2 LIF supplement to 425 ml of PowerStem ESPro2 basal medium. PowerStem ESPro2 complete medium (basal medium with supplement) is stable for 1 month when stored in the dark at 2-8° C.

Instructions for Use

- Prepare gelatine-coated plates by covering them with a 0.2% gelatine solution for at least 10 min in the incubator.
- mES-cells should always be kept at a relatively high cell density to maintain their pluripotency.
- The subculture is best carried out from a sub-confluent culture (70%-80% confluence).
- Individual colonies should not touch each other.
- Too dense growth promotes the differentiation of cells and thus may cause the loss of pluripotency.
- Trypsinate mES-cells in the usual procedure (e.g. 0.25% trypsin solution).
- Once the cells have become round and detach from the surface (the process can be speeded at 37° C), resuspend them in DPBS by thoroughly pipetting up and down several times and centrifuge for 5 min at 180x g at room temperature.
- Evacuate supernatant sterile and remove.
- Resuspend cell pellet in DPBS by pipetting up and down several times.
- A good dissociation of the cells is important, the goal being to obtain single cells or very small aggregates of only 2-3 cells. Larger cell clumps should not remain.
- Due to the serum-free formulation of PowerStem ESPro2, there is no trypsin inactivating effect of FBS; use trypsin- inhibitor to stop trypsin activity.
- Count cells and plate them on gelatine-coated culture dishes in supplemented PowerStem ESPro2
- Incubate the cells in the usual way in an incubator at 37° C and 5% CO_2.
- Feed cells with fresh PowerStem ESPro2 every second day.
- The cells should be split at ratios between 1:4 and 1:8 depending on the growth rate.
- **Please note:** For differentiation studies LIF supplement must be omitted.

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.
