Datasheet

PowerStem ESPro1

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 ESPro1	**Serum-free, chemically defined medium for the cultivation of mouse embryonic stem cells, Kit (Basal Medium + 2 Supplements) for 500 ml**	**ST04-77010K**	**500 ml**

Product description

PowerStem ESPro1 is an easy to use serum-free medium for cultivation of embryonic stem cells of mice (mES-cells). These pluripotent cells are derived from blastocysts and they can be established to a permanent cell culture. After injection into blastocysts in chimeras, they can form all tissues, including germ cells. In PowerStem ESPro1, the mES-cells largely maintain their undifferented state and can be integrated into the germ line.

Content

PowerStem ESPro1 medium consists of:

- PowerStem ESPro1 basal medium (450 ml, Cat. No. ST04-77010B)
- PowerStem ESPro1 growth supplement, (50 ml, Cat. No. ST04-7701GS) which is added at the time of use.
- PowerStem ESPro1 LIF supplement, (1ml, Cat. No. ST04-7701LS) which is added at the time of use.

Storage conditions

- PowerStem ESPro1 basal medium: store in the dark at 2-8° C
- PowerStem ESPro1 growth supplement: store in the dark at -20° C
- PowerStem ESPro1 LIF supplement: store in the dark at -20° C

PowerStem ESPro1 basal medium, PowerStem ESPro1 growth supplement and PowerStem ESPro1 LIF supplement are guaranteed stable for 12 months when properly stored. PowerStem ESPro1 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 ESPro1 contains purified proteins, lipids, salts, amino acids, trace elements, attachment factors, hormones and growth factors in an optimized formulation. PowerStem ESPro1 is fully chemically defined and contains no peptones or hydrolysates.

Please note: Supplemented PowerStem ESPro1 contains LIF in a concentration of 10 µg/L. If higher levels of LIF are required for your experimental setting, please add additional LIF to the medium.

Suitability

Serum-free cultivation of embryonic stem cells of mice (mES-cells), while maintaining the undifferentiated state. PowerStem ESPro1 is especially designed for the serum-free generation of knockout-mice from genetically modified mES-cells. PowerStem ESPro1 has also been proven to support the serum-free cultivation and expansion of tumor progenitor cells.

PAN Seratech GmbH – Am Gewerbepark 13 – 94501 Aidenbach – GERMANY
www.pan-seratech.com – phone +49-8543-601630 – fax +49-8543-601649

Special Advantages

PowerStem ESPro1 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.). Following injection into blastocysts, they can form all tissues in chimeras. Therefore it is possible to generate animals whose genome has been manipulated previously in a cell culture (e.g. knock-out / knock-in mice).

Preparation of PowerStem ESPro1 medium:

PowerStem ESPro1 basal medium requires supplementation with PowerStem ESPro1 growth supplement and PowerStem ESPro1 LIF supplement. Thaw PowerStem ESPro1 supplements before use. The thawed material should be used immediately or aliquoted and stored at -20° C.

To obtain 500 ml PowerStem ESPro1 complete medium please add 50 ml of thawed PowerStem ESPro1 growth supplement and 1ml PowerStem ESPro1 LIF supplement to 450 ml of PowerStem ESPro1 basal medium.

PowerStem ESPro1 complete medium (basal medium with supplements) 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 180g 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 ESPro1, 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 PowerStem ESPro1
- Incubate the cells in the usual way in an incubator at 37° C and 5% CO_2.
- Feed cells with fresh PowerStem ESPro1 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.