Datasheet

PowerStem iPS2

Pure grade chemically defined medium for the serum-free cultivation of human induced pluripotent stem cells (iPSC)

Product	Description	Catalogue-No.	Size
PowerStem iPS2	**Serum-free and chemically defined medium for cultivation of induced pluripotent stem cells Kit (Basal Medium + Supplement) for 500 ml**	**ST04-77140K**	**500 ml**

Product description

PowerStem iPS2 is a specialized serum-free, chemically defined medium for cultivation and expansion of human induced pluripotent stem cells (iPS cells). Human induced pluripotent stem cells have the capacity to differentiate into all of the somatic cell types and therefore hold great promise for regenerative medicine. Even after long-term culture, cells maintained on Vitronectin or Matrigel™ retain a normal karyotype and a stable proliferation rate.

Content

PowerStem iPS2 medium consists of:

- PowerStem iPS2 basal medium (500 ml, Cat. No. ST04-77140B)
- PowerStem iPS2 growth supplement (5x 1ml, Cat. No. ST04-77140S), which is added at the time of use.

Storage conditions and stability:

- PowerStem iPS2 basal medium: store in the dark at 2-8° C
- PowerStem iPS2 growth supplement: store in the dark at -20° C

PowerStem iPS2 basal medium and PowerStem iPS2 growth supplement are guaranteed stable for 12 months when properly stored. PowerStem iPS2 complete medium (basal + supplement) 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 iPS2 contains purified and recombinant proteins, lipids, salts, amino acids, trace elements, attachment factors, hormones and growth factors in an optimized formulation. PowerStem iPS2 is chemically defined and contains no animal-derived components.

Please note: PowerStem iPS2 growth supplement contains a high amount of growth factors. To avoid freeze-thaw cycles, the growth supplement is provided as 5 x 1ml aliquots.

Suitability

Serum-free cultivation of human induced pluripotent stem cells (iPS cells), while maintaining an undifferentiated state.

Special Advantages

PowerStem iPS2 allows the cultivation and expansion of iPS 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 iPS cells can be cultivated without primary fibroblast feeder layers, they show a high proliferation rate and largely retain their undifferentiated state. By adding

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specific differentiation factors, iPS cells can be differentiated in vitro to the desired cell types (e.g. neurons, muscle cells, endothelial cells, etc.)

Preparation of PowerStem iPS2 medium:

PowerStem iPS2 basal medium requires supplementation with PowerStem iPS2 growth supplement. Thaw PowerStem iPS2 growth supplement before use. The thawed material should be used immediately. To obtain 500 ml PowerStem iPS2 complete medium please add 5 ml of thawed PowerStem iPS2 growth supplement to 500 ml of PowerStem iPS2 basal medium. PowerStem iPS2 complete medium (basal medium with growth supplement) is stable for 1 month when stored in the dark at 2-8°C. It is recommended to prepare only the amount of medium needed, e.g. 100 ml PowerStem basal medium + 1 ml PowerStem growth supplement.

Instructions for Use

- Prepare Vitronectin-coated plates by covering them with a Vitronectin solution for 2 h at room temperature. Recommended final concentration of Vitronectin: 1-2 µg/cm^2. For single cell cloning, Matrigel™ matrix can be used. The recommended dilution is 1:40. The matrix should be prepared according to the manufacturer's instructions.
- The starter culture must be a high quality culture with a high density of undifferentiated cells. (Please note: initial cultures of iPS cells may show some differentiation in lower passage.)
- The time of subculture is critical. Do not passage the cells too early, they will plate poorly and differentiate. The cultures need to grow to near-confluence (<90%).
- Individual colonies should not touch each other.
- Too dense growth promotes differentiation of cells and thus the loss of pluripotency.
- Use 0.5 mM EDTA solution for passaging.
- Aspirate the medium, wash cells 2x with DPBS w/o Ca and Mg.
- Add 1 to 2 ml 0.5 mM EDTA to cover the cells.
- Leave for 4-8 minutes at room temperature (or at 37° C to speed up the process). When the cells start to round up and separate or colonies detach, carefully aspirate EDTA solution.
- Add 2-5 ml of iPS2 culture medium and gently collect cells with a 5 ml pipette avoiding bubbles. Do not try to recover residual cells or colonies by mechanical means.
- Put cell suspension into conical tube and centrifuge for 5 min at 300x g at room temperature.
- Re-suspend cells in PowerStem iPS2 and plate directly on Vitronectin- or Matrigel™-coated plate.
- The cultures should be fed every day; 2 ml of medium for a 6-well or 5 ml for a T-25

Please note:
iPS cells grown in culture are exposed to a constant selection pressure of proliferation vs. differentiation.

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.

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