Datasheet

PowerStem iPS1

Special medium for the serum-free cultivation of induced pluripotent stem cells (iPSC)

Product	Description	Catalogue-No.	Size
PowerStem iPS1	**Serum-free medium for the cultivation of human induced pluripotent stem cells Kit (Basal Medium + Supplement) for 500 ml**	**ST04-77130K**	**500 ml**

Product description
PowerStem iPS1 is a specialized serum-free medium for the 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 Matrigel™, Vitronectin, or Fibronectin retain a normal karyotype and a stable proliferating rate.

Content
PowerStem iPS1 medium consists of:
• PowerStem iPS1 basal medium (500 ml, Cat. No. ST04-77130B)
• PowerStem iPS1 growth supplement (5 ml, Cat. No. ST04-77130S), which is added at the time of use.

Storage conditions and stability:
• PowerStem iPS1 basal medium: store in the dark at 2-8° C
• PowerStem iPS1 growth supplement: store in the dark at -20° C

PowerStem iPS1 basal medium and PowerStem iPS1 growth supplement are guaranteed stable for 1 year when properly stored. PowerStem iPS1 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 iPS1 contains purified proteins, lipids, salts, amino acids, trace elements, attachment factors, hormones and growth factors in an optimized formulation. PowerStem iPS1 is free of animal-derived components.

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

Special Advantages
PowerStem iPS1 allows the cultivation and expansion of iPS cells under serum-free conditions. It provides constant and comparable experimental conditions resulting in highly reproducible data. The iPS cells can be cultivated without feeder layers (primary fibroblasts), they show a high proliferation rate and largely retain their undifferentiated state. By adding specific differentiation factors, iPS cells can be differentiated in vitro to the desired cell types (e.g. neurons, muscle cells, endothelial cells, etc.).

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Preparation of PowerStem iPSC1 medium:
PowerStem iPS1 basal medium requires supplementation with PowerStem iPS1 growth supplement. Thaw PowerStem iPS1 growth supplement before use. The thawed material should be used immediately or aliquoted and stored at -20° C. To obtain 500 ml PowerStem iPS1 complete medium please add 5 ml of thawed PowerStem iPS1 growth supplement to 500 ml of PowerStem iPS1 basal medium. PowerStem iPS1 complete medium (basal medium with growth supplement) is stable for 1 month when stored in the dark at 2-8° C.

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 iPS1 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 iPS1 and plate directly on Vitronectin- or Matrigel™-coated plate or flask.
- 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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