Data Sheet

Human iPSC-Derived Neural Progenitor Cells

Catalog No.	Size	Storage Conditions
CIPC-NWC001	> $1x10^6$ cells/Vial	Vapor phase of liquid nitrogen

• Description

Neural progenitor cells (NPCs) are versatile cells capable of self-renewal and generating various neuronal and glial cell lineages. Our Human iPSC-derived Neural Progenitor Cells (iNPCs) are differentiated from human induced pluripotent stem cell (iPSC) lines using a fully defined proprietary neural induction method. These iNPCs are thoroughly characterized through immunocytochemistry, targeting well-known NPC markers such as Nestin, SOX1, SOX2, and PAX6. They have also been validated for their ability to differentiate into multiple subtypes of neurons and glial cells.

• iPSC Line Background

Donor Status	Healthy
Gender	Male
Ethnicity	Hispanic
Age At Sampling	31
Tissue Source	Liver
Reprogramming Method	Retroviral expression of OCT4, SOX2, KLF4, and MYC genes

• Materials Required for Cell Culture

- Neural Progenitor Medium (STEMCELL Technologies, Cat. No. 05833)
- DMEM/F12 (Gibco, Cat. No. 11320033)
- Y-27632 (MCE, HY-10071)
- Matrigel (Corning, Cat. No. 354277)
- Accutase (STEMCELL Technologies, Cat. No. 07920)
- Cellbanker2 cryopreservation medium (ZENOAQ)
- Thermostat water bath
- Cell Culture Plates
- Cell Culture Incubator
- Biological Safety Cabinet

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• Preparation for thawing and passaging

1. For optimal viability, thaw the vial and start the culture immediately upon receipt. If storage is required, keep it in liquid nitrogen vapor, not at -80°C.

2. Preparing cell culture surfaces: Dilute Matrigel 1:100 with DMEM/F12, add enough to cover the surface of the plate, then incubate at 37°C for 1 hour.

• Thawing and maintenance

1. Quickly thaw the cells (< 2 minutes) in a 37°C water bath until only a few ice crystals left in the vial.

2. Sterilize the cryovial with 70% ethanol, then transfer the vial into a laminar flow hood.

3. Transfer the cells into a 15 mL centrifuge tube containing 9 mL pre-warmed DMEM/F12.

4. Centrifuge at 300 x g for 5 minutes, discard the supernatant.

5. Resuspend the pellet in 2 mL Neural Progenitor Medium with 10 μM Y-27632.

6. Perform cell count by a hemocytometer.

7. Seed at a seeding density of 100, 000 viable cells/cm^2 onto a pre-coated plate.

8. Incubate the plate at 37°C with 5% CO_2 overnight (< 24 hours), then replace the medium with Neural Progenitor Medium without Y-27632.

9. Change the medium every 2 days and passage the cells when they reach about 95% confluency.

• Passaging and cryopreservation

1. Passage the cells with Accutase and reseed cells at 100, 000 viable cells/cm^2 on pre-coated plates. It is not recommended to subculture cells for more than 5 generations.

2. For cell cryopreservation, Cellbanker2 cryopreservation medium is recommended.

• Permits & Restrictions

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