



Rat Cortical Stem Cells

ORDERING INFORMATION

Catalog Number: NSC001

Size: 1 vial, 3×10^6 cells

Cell Type: Rat Cortical Stem Cells at P0

Storage: Liquid nitrogen

Description

Rat primary cortical stem cells were isolated from the cortex of embryonic E14.5 Sprague-Dawley rats. Cells were cultured in a monolayer system (1, 2) in medium supplemented with N-2 Plus Media Supplement and human FGF basic (R&D Systems, Catalog # AR003 and 233-FB or 4114-TC, respectively). Cells were then harvested and cryopreserved. These cells are designated as passage 0 (P0) cells.

Rat cortical stem cells can be reliably passaged for a limited number of times *in vitro* before their multipotency is compromised. The number of passages is dependent on whether a monolayer or neurosphere culture system is used. P0 cells can be expanded for 3 passages using the monolayer system and for 4 passages using the neurosphere system.

Cells Provided

Rat Cortical Stem Cells - 3×10^6 cells.

Precautions

This product contains trace amounts of human transferrin and DMSO. The transferrin was tested at the donor level using an FDA licensed method and found to be non-reactive for anti-HIV-1/2 and Hepatitis B surface antigen. As no testing can offer complete assurance of freedom from infectious agents, these reagents should be handled as if capable of transmitting infection.

Protocol and Other Supplies Required

Review the Neural Stem Cell Expansion Kit protocols (Monolayer Plus system protocol, www.RnDSystems.com/go/RatCorticalMono and Neurosphere system protocol, www.RnDSystems.com/go/RatCorticalNeuro) to ensure all additional supplies required are in place before thawing the cells.

Storage

Store in liquid nitrogen for up to 1 year.

Thawing of Cryopreserved Cells

Review the following protocol in detail before thawing the cells. Correct thawing procedures are critical and must be followed.

1. Warm 20 mL of Completed NSC Base Media containing FGF basic in a 50 mL tube in a 37° C water bath.
2. Remove the cryovial containing the frozen rat cortical stem cells from the liquid nitrogen. Using a 2 mL pipette, immediately add 1 mL of fresh pre-warmed media to the vial by gently pipetting up and down. As cells begin to thaw, transfer the thawed portion into the pre-warmed media in the 50 mL tube. Repeat this process with the warmed media until all of the cells have thawed.

Note: Most of the frozen cells will be at the bottom of the cryovial. Rapid resuspension of frozen cells in warmed media during thawing is critical. Allowing cells to thaw slowly in the DMSO will dramatically reduce viability. Around 90% cell viability is expected from the freshly thawed cells when the appropriate thawing procedure is followed.

3. Seed cells at the appropriate density (*i.e.* $1.0 - 1.5 \times 10^6$ per 10 cm plate for monolayer expansion).
4. After the cells have attached to the plate (3 hours to overnight), replace the medium with fresh Completed NSC Base Media supplemented with FGF basic.

FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.

725944.2

NSC001 1 of 2

R&D Systems, Inc.
1-800-343-7475

9/10

Quality Control

Cells from this lot have been thawed and tested for their ability to proliferate using either a monolayer system (for 3 passages) or a neurosphere system (for 4 passages). Stem and progenitor cells expanded from the end of passage 3 (monolayer system) or passage 4 (neurosphere system) have been examined for Nestin expression. They were also tested for their ability to differentiate into astrocytes, neurons, and oligodendrocytes.

The cells tested negative for mycoplasma using the MycoProbe™ Mycoplasma Detection Kit (R&D Systems, Catalog # CUL001B). The cells also tested negative for microbial contamination.

Note: *Testing of the cells was performed using R&D Systems' Neural Stem Cell Expansion Reagents indicated in the protocols mentioned above. Performance of the cryopreserved cells cannot be guaranteed if reagents from other manufacturers are substituted.*

References

1. Johe, K.K. *et al.* (1996) *Genes & Development* **10**:3129.
2. Kim, J.H. *et al.* (2003) *Methods Enzymol* **365**:303.