

3T6-Swiss albino Cells | 400104

General information

Description

The 3T6-Swiss albino cell line originates from the tissue of Swiss albino mice, specifically developed for a broad range of virological and oncological research purposes. This fibroblast cell line is known for its susceptibility to various viruses, including murine sarcoma viruses, making it an invaluable tool in the study of viral oncogenesis and the transformational properties of oncogenes in a controlled environment. The robustness of 3T6-Swiss albino cells in culture allows for detailed genetic manipulation and analysis, facilitating advanced genetic studies that seek to understand the intricacies of cancer progression and viral infection mechanisms.

In addition to its applications in virology, the 3T6-Swiss albino cell line is frequently used in pharmacological research. Its responsiveness to pharmaceutical agents makes it a suitable model for drug screening and toxicity testing. Researchers utilize these cells to examine the cellular responses to new compounds, evaluating their efficacy and safety before proceeding to more complex in vivo studies. The genetic stability of the 3T6-Swiss albino cell line over multiple passages supports consistent experimental results, which is crucial for the development of reliable therapeutic strategies.

Organism Mouse

Tissue Embryonic

Applications This cell line is an optimal choice for transfection.

Synonyms 3T6 Swiss Albino, Swiss 3T6, NIH 3T6, 3T6, GM05862

Characteristics

Age Embryo

Morphology Fibroblast-like

Cell type Fibroblast

Growth properties Adherent

Regulatory Data

Citation 3T6-Swiss albino (Cytion catalog number 400104)

Biosafety level 1

NCBI_TaxID 10090

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CellosaurusAccession CVCL_0601

Biomolecular Data**Tumorigenic** No**Viruses** Negative for ectromelia virus (mousepox).**Virus susceptibility** Herpes simplex, Vaccinia, Pseudorabies, Vesicular Stomatitis (Indiana)**Reverse transcriptase** Negative**Products** Collagen, hyaluronic acid**Ploidy status** Karyotyping results revealed an unstable range of 78-81. A significant portion (21%) of the cells contained a terminal centromere on a large chromosome, and another 21% comprised minuscule chromosomes.**Handling****Culture Medium** Ham's F12, w: 1.0 mM stable Glutamine, w: 1.0 mM Sodium pyruvate, w: 1.1 g/L NaHCO₃ (Cytion article number 820600a)**Supplements** Supplement the medium with 10% FBS**Dissociation Reagent** Accutase**Subculturing** Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.**Seeding density** 1×10^4 cells/cm² will result in a confluent monolayer within 5 days.**Fluid renewal** Every 3 to 4 days**Post-Thaw Recovery** After thawing, plate the cells at 5×10^4 cells/cm² and allow the cells to recover from the freezing process and to adhere for at least 48 hours.

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Freeze medium

As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

Thawing and Culturing Cells

1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
2. Upon receipt, either store the cryovial immediately at temperatures below -150°C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required.
3. For immediate culturing, swiftly thaw the vial by immersing it in a 37°C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains.
4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
5. Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently.
6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
7. Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth.
8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

Incubation Atmosphere

37°C, 5% CO₂, humidified atmosphere.

Shipping Conditions

Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately -78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.

Storage Conditions

For long-term preservation, place vials in vapor-phase liquid nitrogen at about -150 to -196 °C. Storage at -80 °C is acceptable only as a short interim step before transfer to liquid nitrogen.

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Quality Control & Molecular Analysis

Sterility

Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods.

To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.