

HSF (SV40) Cells | 305338

General information

Description

The HSF(SV40) immortalized cell line refers to cells that have been genetically modified to express the Simian Virus 40 (SV40) large T-antigen (T-Ag), which facilitates cellular immortalization. SV40 T-Ag is a potent oncoprotein that interacts with critical tumor suppressor proteins, such as p53 and retinoblastoma protein (Rb), leading to the inactivation of their tumor-suppressive functions. This interaction disrupts normal cell cycle control mechanisms, allowing cells to bypass senescence and proliferate indefinitely.

Due to their immortalized nature and the critical involvement of SV40 T-Ag in their transformation, HSF(SV40) cells are widely used in cancer research, particularly in studies related to viral oncogenesis, cell cycle regulation, and therapeutic interventions targeting molecular chaperones and tumor suppressor pathways. Their use provides valuable insights into the interplay between viral oncoproteins and host cell regulatory networks, paving the way for the development of targeted cancer therapies.

Organism

Human

Metastatic site

Not applicable (normal splenic fibroblast; SV40-immortalized)

Applications

SV40 oncogenesis; p53/Rb tumor suppressor biology; cell cycle regulation; fibroblast biology; cancer biology

Characteristics

Morphology

Fibroblast-like

Cell type

Fibroblast

Growth properties

Adherent

Regulatory Data

Citation

HSF(SV40) (Cytion catalog number 305338)

Biosafety level

1

NCBI_TaxID

9606

CellosaurusAccession

Not assigned

GMO Status

GMO-S1: This HSF fibroblast line contains an SV40 T-antigen construct enabling immortalization for dermal and connective tissue studies. This classification applies only within Germany and may differ elsewhere.

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Biomolecular Data

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO ₃ , w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
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Supplements	Supplement the medium with 10% FBS
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Dissociation Reagent	Accutase
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Doubling time	approx. 24 to 36 hours
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Subculturing	Wash with PBS, add Accutase (8–10 min RT), resuspend, centrifuge 300×g 3 min, reseed.
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Split ratio	1 to 3
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Seeding density	1 to 3 × 10 ⁴ cells/cm ²
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Fluid renewal	2 to 3 times per week
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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.
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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.

Quality Control & Molecular Analysis

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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.