Product sheet

MHH-ES1 Cells | 300136

Renseignements généraux

Description	The MHH-ES1 cell line is derived from a patient with Ewing sarcoma, a highly aggressive bone and soft tissue cancer predominantly affecting children and young adults. This cell line is a valuable model for studying the molecular mechanisms underlying Ewing sarcoma, particularly the role of the EWSR1-FLI1 fusion gene, which is characteristic of this cancer type. The fusion gene results from a translocation between chromosomes 11 and 22, leading to the production of an oncogenic transcription factor that drives tumorigenesis. MHH-ES1, like other Ewing sarcoma cell lines, is utilized to investigate the pathways influenced by EWSR1-FLI1, including alterations in cell proliferation, differentiation, and apoptosis. Researchers use the MHH-ES1 cell line to evaluate the efficacy of various therapeutic agents targeting pathways critical for Ewing sarcoma survival and proliferation. For example, it is instrumental in testing small molecule inhibitors, RNA interference, and CRISPR-Cas9 gene editing techniques aimed at disrupting the EWSR1-FLI1 fusion gene or its downstream effectors. Additionally, MHH-ES1 serves as a model to study resistance mechanisms to conventional chemotherapy and to identify novel biomarkers for early diagnosis and treatment response monitoring in Ewing sarcoma patients.
Organism	Human
Tissue	Bone
Disease	Ewing's Sarcoma
Metastatic site	Ascites
Synonyms	MHH-ES-1, MHHES1

Caractéristiques

Age	12 years
Gender	Male
Ethnicity	Turkish
Morphology	Small round cells
Growth properties	Adherent, clusters

Données réglementaires

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Citation	MHH-ES1 (Cytion catalog number 300136)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1411

Données biomoléculaires

Manipulation

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
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 to 2 x 10^4 cells/cm^2
Fluid renewal	Every 3 to 5 days
Post-Thaw Recovery	After thawing, plate the cells at 5 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 hours.
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% CO_2, 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.

Contrôle de la qualité et analyse moléculaire

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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.