Product sheet

H-MESO-1 Cells | 300186

General information

Description	H-MESO-1 cells are a human mesothelioma cell line derived from a patient with malignant pleural mesothelioma, a type of cancer that develops from the cells lining the lungs' or abdomen's protective lining. This cell line is extensively used in oncological research to study the biology, pathogenesis, and therapeutic strategies for mesothelioma. H-MESO-1 cells retain several characteristics of mesothelial cells, making them a relevant model for investigating mesothelioma. They exhibit epithelioid morphology, which is one of the common histological types of mesothelioma. These cells are particularly useful for exploring the molecular pathways involved in mesothelioma development, including cell cycle regulation, apoptosis resistance, and the role of asbestos and other environmental factors in inducing mesothelioma. In research, H-MESO-1 cells have been employed to study the interaction between mesothelioma cells and the immune system, especially considering the impact of immune checkpoint molecules and the tumor microenvironment on tumor growth and immune evasion. This cell line is also valuable for testing the efficacy of new drugs and novel immunotherapeutic approaches aimed at targeting specific pathways implicated in mesothelioma progression. Moreover, H-MESO-1 cells are used to investigate the genetic and epigenetic alterations characteristic of mesothelioma, providing insights into potential biomarkers for early diagnosis and targets for therapeutic intervention. The cell line's responsiveness to chemotherapeutic agents and its ability to form tumors in xenograft models make it a crucial tool in developing and validating new treatment modalities for mesothelioma.
Organism	Human
Tissue	Lung
Disease	Pleural Mesothelioma
Synonyms	H-Meso-1, HMESO-1, HMeso-1, HMeso1, HMESO1, H-Meso, HMESO, Hmeso, Hmeso

Characteristics

Age	35 years
Gender	Male
Ethnicity	Caucasian
Morphology	Epithelial-like

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Growth properties	Adherent

Regulatory Data

Citation	H-MESO-1 (Cytion catalog number 300186)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_5759

Biomolecular Data

Tumorigenic	Yes, in nude mice

Handling

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	1×10^4 cells/cm^2
Fluid renewal	Every 5 to 7 days
Post-Thaw Recovery	After thawing, plate the cells at 5×10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 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% 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.

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.