Product sheet

MET-5A Cells | 305269

General information

Description	The MET-5A cell line is derived from mesothelial cells of the pleura in a human adult and is often used in research related to mesothelioma, a type of cancer affecting the mesothelial lining of the lungs, abdomen, and heart. These cells are crucial for studying the biology, pathogenesis, and treatment of mesothelioma, particularly in understanding how environmental factors such as asbestos exposure lead to the development of this cancer. MET-5A cells are also used to explore the mechanisms of cellular transformation, tumor progression, and the cellular responses to various chemotherapeutic agents. MET-5A cells exhibit a typical epithelial morphology and retain characteristics of normal mesothelial cells, including the expression of mesothelial markers such as cytokeratin and vimentin. These cells are responsive to inflammatory stimuli and can be used to study the inflammatory processes involved in mesothelioma pathogenesis. Researchers employ MET-5A cells to investigate the genetic and molecular alterations associated with mesothelioma, as well as to test the efficacy and toxicity of potential therapeutic compounds. The relevance of MET-5A cells in modeling mesothelial cell biology and their role in mesothelioma research makes them an essential tool for advancing our understanding and treatment of this aggressive cancer.
Organism	Human
Tissue	Lung, pleura
Synonyms	MeT-5A, MeT 5A, MeT5A, Met5A, MET5A, Mesothelial cells transfected with pRSV-T 5A

Characteristics

Age	Adult
Gender	Male
Morphology	Epithelial
Cell type	Mesothelial cell
Growth properties	Adherent

Regulatory Data

Citation	MET-5A (Cytion catalog number 305269)
Biosafety level	1

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NCBI_TaxID	9606
CellosaurusAccession	CVCL_3749
GMO Status	GMO-S1: This human mesothelial cell line (MET-5A) contains an SV40 T-Antigen construct introduced via plasmid transfection, enabling immortalization. The construct is stably integrated into mesothelial cells. This classification applies only within Germany and may differ elsewhere.

Biomolecular Data

Protein expression	Vimentin, keratins, SV40 T antigen
Tumorigenic	No
Viruses	Transformant: Simian virus 40 (SV40)

Handling

Culture Medium	Medium 199, w: 1.5 g/L NaHCO3
Supplements	Supplement the medium with 15% FBS, 15 mM HEPES, 1% ITS+ The trace elements at the following final concentrations: H2SeO3 0.3869 mg/L (Selenious acid) MnCl2×4H20 0.0198 mg/L (Manganese chloride) Na2SiO3×9H20 14.2100 mg/L (Sodium silicate) (NH4)6Mo7O24×4H20 0.1236 mg/L (Ammonium molybdate) NH4VO3 0.0585 mg/L (Ammonium vanadate) NiSO4×6H20 0.0131 mg/L (Nickle sulfate) SnCl2×2H20 0.0113 mg/L (Tin Chloride)
Dissociation Reagent	Accutase

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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.
Fluid renewal	2 to 3 times per week
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.