Product sheet

NCI-H226 Cells | 305091

General information

Description	The NCI-H226 cell line is derived from a human non-small cell lung carcinoma (NSCLC), specifically squamous cell carcinoma, and is a robust model for studying NSCLC pathogenesis and therapeutic responses. Characterized by its epithelial morphology, NCI-H226 has been utilized extensively in preclinical research focusing on squamous differentiation and apoptosis. This cell line has been pivotal in elucidating the mechanisms of squamous differentiation, particularly the formation of cross-linked envelopes (CLEs) and the role of transglutaminase activity, both of which are markers of terminal differentiation. One key finding associated with NCI-H226 is its response to agents such as suramin, which induces differentiation and apoptosis without necessarily inhibiting cell proliferation. Studies have demonstrated that suramin can stimulate involucrin expression, enhance cytosolic transglutaminase activity, and induce CLE formation in a protein synthesis-independent manner. These effects make NCI-H226 an ideal system for investigating therapeutic agents that exploit cellular differentiation pathways to combat resistant NSCLC. NCI-H226 has also been included in broader cancer research efforts, such as the NCI-60 drug screening program, providing insights into its pharmacological profiles and its utility in high-throughput drug screening. This cell lines genetic and phenotypic stability further solidify its importance in cancer research and therapeutic development.
Organism	Human
Tissue	Lung
Disease	Pleural epithelioid mesothelioma
Synonyms	NCI-H226, NCI.H226, NCI H226, H-226, HUT-226, HUT 226, NCIH226

Characteristics

Gender	Male
Ethnicity	European
Morphology	Epithelial
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	NCI-H226 (Cytion catalog number 305091)

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Biosafety level	1

Expression / Mutation

Handling

Culture Medium	RPMI 1640, w: 2.1 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	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.
Split ratio	1:2 to 1:4
Fluid renewal	2 to 3 times per week
Freeze medium	CM-1 (Cytion catalog number 800100)

Handling of cryopreserved cultures

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.

Quality control / Genetic profile / HLA

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.