Product sheet

NCI-H23 Cells | 305044

General information

Description	This line was established from lung cancer tissue obtained from a 59-year-old black male lung adenocarcinoma patient prior to therapy. The cells carry the mutation of K-ras 12 and a mutation in the codon 246 (ATC →ATG, isoleucine -> methionine) of the p53 gene. The cells express C-myc, L-myc, v-src, v-abl, v-erb B, c-raf 1, Ha-ras, Ki-ras and N-ras RNAs. The cell line has a heterogeneous mRNA expression for PDGF A and B chain, transforming growth factor alpha and beta and the epidermal growth factor receptor (EGFR). NCI-H23 exhibits a 20-fold higher level of c-myc DNA amplification without detectable c-myc RNA amplification. The cells stain positive for keratins 5+8 and 18 and vimentin but negative for neurofilament. The cells are L-dopa decarboxylase-negative. The cells can form colonies in soft agarose with an efficiency of 9.7%.
Organism	Human
Tissue	Lung
Disease	Lung adenocarcinoma
Metastatic site	Not applicable (primary lung adenocarcinoma; no documented distant metastasis at time of line establishment)
Applications	Lung adenocarcinoma research; KRAS G12C mutant NSCLC biology; EGFR pathway analysis; c-Myc amplification studies; drug sensitivity (targeted agents, chemotherapy); NCI-60 panel research; PDGF/TGF-β signalling
Synonyms	NCI-H23, NCI.H23, NCI H23 , H-23, NCIH23

Characteristics

Age	51 years
Gender	Male
Ethnicity	African
Morphology	Epithelial
Cell type	Epithelial cells
Growth properties	Adherent

Regulatory Data

Citation	NCI-H23 (Cytion catalog number 305044)

NCI-H23 Cells | 305044

Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1547
GMO Status	No genetic modification; wildtype lung adenocarcinoma cell line. Somatic mutations (KRAS G12C, TP53 codon 246) are endogenous tumor-derived changes.

Biomolecular Data

Protein expression	Myc+, src+, abl+, erb+, ras+, sis -

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
Doubling time	38 hours
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 to 3
Seeding density	1 to 3 × 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	After thawing, plate the cells at 5 × 10^4 cells/cm^2 and allow at least 24 hours for adherence before the first medium change.

NCI-H23 Cells | 305044

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.