NCI-H82

300442

GENERAL INFORMATION

Description

The NCI-H82 cell line was derived by A.F. Gazdar and associates in 1978 from the pleural fluid of a patient with small cell cancer of the lung. The morphology of the original tumor was not characteristic of SCLC. The line is a biochemical and morphological variant of SCLC that expresses neuron specific enolase and the brain isoenzyme of creatine kinase. It does not have detectable levels of L-DOPA decarboxylase or bombesin. The cells produce an abnormally sized p53 mRNA (3.7 kb). C-myc DNA sequences are amplified about 25 fold, and there is a 24 fold increase in c-myc RNA relative to normal cells. The cells are reported to express functional ANP receptors, but treatment with ANP does not alter their growth pattern. The cells stain positively for neurofilaments and vimentin. There is expression of v-fes, v-fms, Ha-ras, Ki-ras, N-ras and c-raf 1 mRNAs.

Tissue	Lung
Disease	Lung small cell carcinoma
Metastatic site	Pleural effusion

Synonyms

- NCI-H-82
- H82
- H-82
- NCI H82
- NCIH82
- H82sclc

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Suspension
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Tumourigenic	Yes, forms transplantable tumors with non-typical SCLC histology in nude mice

Karyotype

This is a near triploid human cell line. The modal chromosome number is 58, occurring at 44% with polyploidy at 3%. Each cell had two copies of a normal x chromosome. The Y chromosome was not detected in Q banded preparations.

IDENTIFIERS

Citation

NCI-H82 (Cytion catalog number 300442)

NCBI TaxID	9606

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Cellosaurus	CVCL_1591

EXPRESSION AND SUSCEPTIBILITY

Receptors expressed

Insulin-like growth factor II receptor (IGF II), atrial natriuretic peptide (ANP)

Protein expression

P53 positive

Isoenzymes

G6PD, B, PGM1, 1-2, PGM3, 1-2, ES-D, 1, Me-2, 1, AK-1, 1, GLO-1, 1, Phenotype Frequency Product = 0.0082

HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS

Subculturing

Maintain cultures by periodically adding or replacing the medium. Initiate cultures with a density of 5 x 10^5 cells/ml and keep the cell concentration within the range of 3 x 10^5 to 1 x 10^6 cells/ml for optimal growth.

Fluid renewal	2 to 3 times per week

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Donor age	41 years
Ethnicity	Caucasian

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes