Product sheet

NCI-H82 Cells | 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.
Organism	Human
Tissue	Lung
Disease	Lung small cell carcinoma
Metastatic site	Pleural effusion
Synonyms	NCI-H-82, H82, H-82, NCI H82, NCIH82, H82sclc

Characteristics

Age	41 years
Gender	Male
Ethnicity	Caucasian
Morphology	Epithelial-like
Growth properties	Aggregates in suspension. The cells grow in very large aggregates, which are the only viable cell population in the culture.

Identifiers / Biosafety / Citation

Citation	NCI-H82 (Cytion catalog number 300442)
Biosafety level	1

Expression / Mutation

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
Tumorigenic	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.

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
Subculturing	Maintain cultures by periodically adding or replacing the medium. Initiate cultures with a density of 2 x 10^5 cells/ml and keep the cell concentration within the range of 1 x 10^5 to 1 x 10^6 cells/ml for optimal growth.
Split ratio	A ratio of 1:2 to 1:5 is recommended
Fluid renewal	2 to 3 times per week
Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)

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. Optionally, skip centrifugation but remove any remaining freezing medium after 24 hours.
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.

CLS Cell Lines Service

STR profile

CSF1PO: 11
D13S317: 8
D16S539: 12
D5S818: 12
D7S820: 10,13
TH01: 9,9.3
TPOX: 11
vWA: 14
D3S1358: 17
D21S11: 28,30
D18S51: 14,18
Penta E: 11,12
Penta D: 10,12
D8S1179: 13
FGA: 24,25