SK-LU-1

300335

GENERAL INFORMATION

Description

SK-LU-1 is a human lung adenocarcinoma cell line widely used in cancer research, particularly in studies focused on non-small cell lung cancer (NSCLC). As a cisplatin-sensitive cell line, SK-LU-1 is often employed in studies evaluating chemotherapy resistance, cancer cell cycle progression, and apoptosis mechanisms. One of the defining features of SK-LU-1 is its utility in assessing the cytotoxic effects of various anti-cancer compounds, including those that modulate the cell cycle or induce apoptosis through targeted therapies. For instance, certain 6-substituted imidazopyridine derivatives have been shown to induce G2/M phase arrest and apoptosis in SK-LU-1 cells, indicating that these compounds may inhibit cyclin-dependent kinases (CDKs) involved in cancer cell division.
Additionally, SK-LU-1 cells have been used in studies exploring the immunomodulatory effects of agents like melatonin. In co-culture experiments with peripheral blood mononuclear cells (PBMCs), melatonin was shown to enhance the immune system's ability to induce apoptosis in SK-LU-1 cells. The treatment led to increased oxidative stress, reduced glutathione (GSH) levels, and cell cycle arrest at the G0/G1 phase, suggesting that melatonin may have potential as a supplementary treatment in NSCLC by boosting immune response and promoting cancer cell death.
Overall, SK-LU-1 provides a robust in vitro model for studying lung adenocarcinoma and testing novel therapeutic agents, including those that target the cell cycle, induce apoptosis, or modulate immune responses. Its responsiveness to chemotherapeutic agents like cisplatin and the wide range of experimental data available make it an important tool in NSCLC research.

Tissue	Lung
Disease	Adenocarcinoma (grade III)

Synonyms

- SK-Lu-1
- SK LU 1
- SK-Lu1
- SK-LU1
- SKLU-1
- SKLU1
- SKLU01

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Tumourigenic	Yes, in immunotolerant rats and nu-nu mice

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Karyotype

The stemline chromosome number is hypotetraploid, with the 2S component occurring at 4.4%. Marker chromosomes 1p, t(1q,11q), 11q+, t(13,?), 16q+, t(12q, 18q). M10, t(2q,13q), i(15), and ?t(xp,21q) occurred in all S metaphases, and t(1p,?), t(1p,14q), t(16,?), and t(14,21) occurred in some. In addition, 4 to 9 small markers of unidentifiable origin occurred frequently. Chromosome No. 7 was generally hexasomic, x chromosomes were disomic, and normal No. 15 was absent. No Y chromosome was detected in the QM stained preparation. Phenotype Frequency Product: 0.00003

IDENTIFIERS

Citation

SK-LU-1 (Cytion catalog number 300335)

NCBI TaxID	9606
Cellosaurus	CVCL_0629

EXPRESSION AND SUSCEPTIBILITY

Protein expression

P53 positive

Antigen expression

Blood Type O, Rh+, HLA Aw24, Aw32, B27, Bw41

Isoenzymes

Me-2, 1, PGM3, 1, PGM1, 2, ES-D, 2, AK-1, 1, GLO-1, 2, G6PD, B

HANDLING AND CULTURE

Culture medium

EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)

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

Supplements

Supplement the medium with 10% FBS and 1% NEAA

Dissociation reagent	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.

Seeding density	1 x 10^4 cells/cm^2
Fluid renewal	2 times per week
Post-thaw recovery	After thawing, plate the cells at 5 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 hours.

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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	60 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