SK-N-DZ

305628

GENERAL INFORMATION

Description

The SK-N-DZ cell line is a human neuroblastoma model established from metastatic bone marrow of a child with neuroblastoma. It is part of the SK-N series of neuroblastoma cell lines and exhibits characteristics of neural crest-derived tumor cells. These cells are adherent in culture and demonstrate a small fraction of side population (SP) cells, indicative of a cancer stem-like subpopulation with high drug efflux capacity. SK-N-DZ cells have been extensively used in research to understand the role of genetic and epigenetic alterations in neuroblastoma. The cell line has been shown to harbor MYCN amplification and ALK gene mutations, both of which are implicated in the aggressive phenotype and poor prognosis of high-risk neuroblastomas. Furthermore, SK-N-DZ has been used to evaluate therapeutic responses to agents such as retinoids and vitamin E derivatives. Studies have shown that SK-N-DZ is uniquely sensitive to 13-cis-retinoic acid, exhibiting significant cell lysis at low concentrations, unlike other neuroblastoma cell lines.
SK-N-DZ has been utilized in experiments exploring neuroblastoma differentiation and stemness. The cell line's ability to form neurite extensions under certain treatment conditions highlights its potential for investigating tumor differentiation and cell plasticity. These features, combined with its well-characterized genetic background, make SK-N-DZ a valuable model for advancing therapeutic strategies and understanding the molecular underpinnings of neuroblastoma.

Tissue	Brain
Disease	Neuroblastoma
Metastatic site	Bone marrow

Applications

Tumour studies. MRD-1 resistance studies. Extremely sensitive to cis-retinoic acid; 3D cell culture, Immunology, Neuroscience

Synonyms

- SKNDZ

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial
Cell type	Neuronal

IDENTIFIERS

Citation

SK-N-DZ (Cytion catalog number 305628)

NCBI TaxID	9606
Cellosaurus	CVCL_1701

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EXPRESSION AND SUSCEPTIBILITY

Mutational profile

Mutation: TP53, Simple, p.Arg110Leu (c.329G>T), Homozygous

HANDLING AND CULTURE

Culture medium

DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)

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

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	Accutase
Seeding density	0.3 x 10^6 cells/ml
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	2 years
Ethnicity	Caucasian and Native North American

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

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