

SK-N-DZ Cells | 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.

Organism

Human

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

Characteristics

Age

2 years

Gender

Female

Ethnicity

Caucasian and Native North American

Morphology

Epithelial

SK-N-DZ Cells | 305628**Cell type** Neuronal**Growth properties** Adherent**Regulatory Data****Citation** SK-N-DZ (Cytion catalog number 305628)**Biosafety level** 1**NCBI_TaxID** 9606**CellosaurusAccession** CVCL_1701**Biomolecular Data****Mutational profile** Mutation: TP53, Simple, p.Arg110Leu (c.329G>T), Homozygous**Handling****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)**Supplements** Supplement the medium with 10% FBS and 0.1mM NEAA**Dissociation Reagent** Accutase**Seeding density** $1-3 \times 10^4/\text{cm}^2$ **Fluid renewal** 2 to 3 times per week**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.

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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% CO₂, 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

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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.