SJCRH30

305624

GENERAL INFORMATION

Description

SJCRH30 is a human rhabdomyosarcoma cell line derived from the bone marrow of a child with metastatic alveolar rhabdomyosarcoma. It is classified as a cancer cell line and represents the alveolar subtype of rhabdomyosarcoma, a highly aggressive soft tissue sarcoma of skeletal muscle lineage. Cytogenetic analysis has identified the characteristic chromosomal translocation t(2;13)(q35;q14), which generates the PAX3-FOXO1 fusion gene, a defining molecular feature of alveolar rhabdomyosarcoma. This translocation has been documented in primary tumors and xenografts of this subtype and is associated with tumor progression and poor clinical outcome :contentReference[oaicite:0]{index=0}. SJCRH30 cells typically grow adherently in culture and display a small round cell morphology consistent with their tumor of origin. Functionally, SJCRH30 cells express myogenic regulatory factors, including MYOD1 and myogenin, but exhibit impaired terminal myogenic differentiation, a hallmark of rhabdomyosarcoma biology. Studies comparing rhabdomyosarcoma lines have demonstrated that although MYOD1 protein is present and capable of DNA binding, transcriptional activation of downstream differentiation programs is deficient, reflecting disruption of the normal myogenic regulatory network. The presence of the PAX3-FOXO1 fusion protein contributes to oncogenic transcriptional reprogramming, altered cell cycle regulation, and enhanced proliferative and metastatic capacity.

Comprehensive molecular profiling efforts, including large-scale genomic and proteomic analyses of cancer cell lines, have incorporated SJCRH30 as a representative alveolar rhabdomyosarcoma model. These datasets provide integrated information on copy number alterations, somatic mutations, gene expression, protein abundance, and drug sensitivity, supporting its use in studies of oncogenic signaling, therapeutic vulnerability, and biomarker discovery. Due to its well-characterized fusion status and metastatic origin, SJCRH30 is widely employed for investigating PAX3-FOXO1-driven tumor biology, epigenetic regulation, targeted therapy response, and mechanisms of resistance in high-risk pediatric soft tissue sarcoma.

Tissue	Metastatic
Disease	Alveolar rhabdomyosarcoma
Metastatic site	Bone marrow

Synonyms

- RH30
- RH-30
- Rh-30
- RH30SJ
- SJRH-30
- SJRH30
- SJ-RH30
- SJ-Rh 30
- SJRH 30
- SJCRH30
- RC13
- RMS-13
- RMS 13
- RMS13

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent

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Biosafety level	1

CHARACTERISTICS

Morphology	fibroblast
Doubling time	37 hours ; 35.5 +- 3.6 hours ; ~35 hours ; 35 hours

IDENTIFIERS

Citation

SJCRH30 (Cytion catalog number 305624)

NCBI TaxID	9606
Cellosaurus	CVCL_0041

EXPRESSION AND SUSCEPTIBILITY

Mutational profile

Mutation: p.Pro9Leu, Heterozygous; Mutation: p.Tyr205Cys, Heterozygous; Mutation: p.Arg273Cys, Heterozygous; Mutation: p.Arg280Ser, Heterozygous

HANDLING AND CULTURE

Culture medium

90-95% RPMI 1640 + 5-10% h.i. FBS

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	17 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

PRODUCT DETAILS

Composition table