MUG-Chor1

305478

GENERAL INFORMATION

Description

The MUG-Chor1 cell line is a well-characterized in vitro model derived from a recurrent sacrococcygeal chordoma in a Caucasian female patient. Chordomas are rare, malignant tumors that arise from remnants of the notochord along the axial skeleton. MUG-Chor1 was established through mechanical and enzymatic disaggregation of the tumor tissue and cultured under optimized conditions to sustain its growth. The cell line retains the hallmark features of chordoma, including the expression of brachyury, a transcription factor essential for notochordal differentiation and a diagnostic marker for chordomas. Additionally, MUG-Chor1 expresses cytokeratins, EMA, vimentin, and S-100 proteins, further validating its chordoma origin.
Genetically, MUG-Chor1 mirrors the chromosomal and molecular alterations typical of chordomas, including gains at the brachyury (T) locus on chromosome 6q27 and losses at 9p24.3-p13.1, encompassing the CDKN2A/CDKN2B loci. It also demonstrates deletions at loci such as 10q25.2, which includes PTEN, and other regions associated with tumor progression. These genetic characteristics make MUG-Chor1 a valuable tool for studying chordoma biology and for evaluating therapeutic interventions.
The slow growth rate of MUG-Chor1, with a doubling time of 7-10 days, reflects the clinical behavior of chordomas, which are known for their indolent but locally aggressive nature. This cell line has been pivotal in preclinical research, including drug screening studies that have identified potential therapeutic agents, such as EGFR inhibitors. These inhibitors have demonstrated efficacy in reducing cell viability and tumor growth in chordoma models, underscoring the relevance of MUG-Chor1 for translational studies.

Tissue	Bone, sacrum
Disease	Sacral chordoma

Synonyms

- MUG-CHOR1
- MUGCHOR1
- Medical University of Graz-Chordoma 1

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Mesenchymal-like

IDENTIFIERS

Citation

MUG-Chor1 (Cytion catalog number 305478)

NCBI TaxID	9606
Cellosaurus	CVCL_9277

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Banking information
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HANDLING AND CULTURE

Culture medium

IMDM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 25 mM HEPES, w: 1.0 mM Sodium pyruvate, w: 3.024 g/L NaHCO3 (Cytion article number 820800a)

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

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	Accutase

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	57 years
Ethnicity	Unspecified

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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