UM-HMC-1

305716

GENERAL INFORMATION

Description

UM-HMC-1 is a human mucoepidermoid carcinoma cell line established from a primary salivary gland tumor of the anterior buccal gland of a 76-year-old African American male patient. The line is one of the University of Michigan Human Mucoepidermoid Carcinoma (UM-HMC) panel lines. UM-HMC-1 harbors a CRTC1-MAML2 gene fusion (also designated MECT1-MAML2), which is the defining oncogenic event in the majority of mucoepidermoid carcinomas and results from a t(11;19)(q21;p13) chromosomal translocation. This fusion activates CREB target genes and Notch pathway components, driving tumor proliferation and survival.
UM-HMC-1 is applicable in studies of salivary gland mucoepidermoid carcinoma biology, CRTC1-MAML2 fusion oncogene signalling, CREB pathway activation, Notch pathway dysregulation, and therapeutic targeting of fusion-driven cancers. It is used in drug sensitivity assays, invasion and migration studies, and as part of the UM-HMC multi-line panel for comparative characterization of salivary gland tumor biology.

Tissue	Salivary gland, anterior buccal gland
Disease	Salivary gland mucoepidermoid carcinoma
Metastatic site	Primary tumor site (anterior buccal gland, salivary gland)

Applications

Salivary gland carcinoma research; CRTC1-MAML2 fusion oncogene biology; CREB/Notch pathway studies; mucoepidermoid carcinoma drug sensitivity; fusion-driven cancer biology; UM-HMC panel studies

Synonyms

- University of Michigan-Human Mucoepidermoid Carcinoma-1

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Cell type	Epithelial cells
Doubling time	approx. 24 to 48 hours

IDENTIFIERS

Citation

UM-HMC-1 (Cytion catalog number 305716)

NCBI TaxID	9606
Cellosaurus	CVCL_Y473

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EXPRESSION AND SUSCEPTIBILITY

Mutational profile

Mutation: Gene fusion, CRTC1 + HGNC, MAML2, Name(s)=CRTC1-MAML2, MECT1-MAML2.

HANDLING AND CULTURE

Culture medium

DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 (Cytion article number 820400a)

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

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	Accutase, 20min 37°C
Flask coating	Use Collagen coated flasks

Subculturing

Remove medium, wash with PBS without calcium and magnesium, cover with Accutase, incubate 8–10 min at RT, resuspend in medium, centrifuge 300×g 3 min, discard supernatant, reseed in fresh medium.

Split ratio	1 to 5
Seeding density	1 to 3 x 10^4 cells/cm^2
Fluid renewal	Every 2 to 3 days

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	76 years
Ethnicity	African 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.

Disclaimer

Our cells are provided for in vitro laboratory research purposes exclusively and are not intended for clinical or diagnostic use, nor are they to be administered to humans or used for veterinary purposes. Users must adhere to all applicable guidelines and regulations for the handling and use of these cells in a research setting.

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