Product sheet

UM-HMC-1 Cells | 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.
Organism	Human
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

Characteristics

Age	76 years
Gender	Male
Ethnicity	African American
Morphology	Epithelial-like
Cell type	Epithelial cells
Growth properties	Adherent

Regulatory Data

Citation	UM-HMC-1 (Cytion catalog number 305716)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_Y473

Biomolecular Data

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

Handling

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)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase, 20min 37°C
Doubling time	approx. 24 to 48 hours
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
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.

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% CO_2, humidified atmosphere.
Flask Coating	Use Collagen coated flasks
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.