HROC222 T1 M2

300859

GENERAL INFORMATION

Description

HROC222 T1 M2 is a human colorectal adenocarcinoma cell line established within the HROC (Hansestadt Rostock Colorectal Cancer) model collection from a primary tumor resected from an adult patient. The designation “T1” indicates that the specimen was obtained at the first surgical time point, while “M2” denotes the corresponding in vitro model generated from this tumor. The HROC platform integrates comprehensive biobanking, standardized molecular annotation, and parallel establishment of patient-derived xenografts (PDX) and permanent low-passage cell lines, enabling clinically annotated translational research models.
Generation of HROC222 T1 M2 followed standardized procedures involving mechanical dissociation of freshly resected tumor tissue, preparation of single-cell suspensions, and seeding onto collagen-coated culture plates in defined tumor cell culture medium supplemented with glutamine, antibiotics, and antimycotics. Across the HROC cohort, permanent primary colorectal cancer cell lines were successfully established from approximately 13% of attempted specimens. Statistical analysis identified higher tumor grading as significantly associated with successful primary cell line establishment, while advanced nodal status showed a positive trend. In multivariate analysis across the collection, nodal involvement emerged as an independent predictor of model establishment success.
The HROC collection encompasses all major molecular subtypes of colorectal carcinoma, including chromosomal instability (CIN), CpG island methylator phenotype (CIMP), microsatellite stable (MSS), and microsatellite instability-high (MSI-H) tumors, as well as diverse mutational backgrounds affecting key driver genes such as KRAS, BRAF, TP53, APC, and PIK3CA. HROC222 T1 M2 was generated within this rigorously characterized framework, permitting integration with detailed clinicopathological and molecular data and, where available, corresponding PDX material. As a low-passage, patient-derived colorectal carcinoma model, HROC222 T1 M2 is suitable for investigations of tumor biology, genotype-phenotype relationships, and preclinical therapeutic testing within precision oncology research.

Tissue	Transverse colon
Disease	Adenocarcinoma
Metastatic site	Not applicable (primary transverse colon tumor; T1 M2 denotes first surgical time point, in vitro model 2)

Applications

CRC research; colorectal adenocarcinoma; HROC Linnebacher biobank; drug sensitivity; tumor biology; PDX-in vitro integration

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
GMO status	Non-GMO

GMO status details

No genetic modification; wildtype patient-derived CRC cell line (HROC Linnebacher biobank).

Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Cell type	Epithelial cells

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IDENTIFIERS

Citation

HROC222 T1 M2 (Cytion catalog number 300859)

NCBI TaxID	9606
Cellosaurus	CVCL_VQ93

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

Subculturing

Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.

Fluid renewal	Every 3 to 5 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	79 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.

Third-party agreements apply	Yes