HROC450Met1 T0 M1

300725

GENERAL INFORMATION

Description

The HROC (Hansestadt Rostock Colorectal cancer) cell line panel comprises patient-derived colorectal cancer models developed from primary tumor tissue and/or matched metastatic lesions. These cell lines are frequently accompanied by corresponding patient-derived xenografts (PDXs) and organoids, enabling integrative modeling of colorectal cancer (CRC) in both in vitro and in vivo systems. HROC models preserve critical clinical and molecular diversity found in colorectal cancer, including variations in microsatellite instability (MSI vs. MSS) and key genetic drivers such as mutations in APC, KRAS, BRAF, PIK3CA, and TP53. Cultured as adherent epithelial monolayers and typically used at low passage numbers, HROC lines maintain phenotypic and genomic fidelity to their patient tumors, supporting translational relevance in drug and biomarker research.

The nomenclature system for HROC cell lines provides detailed metadata on origin and experimental history. For example, “Tu” identifies cell lines derived from primary tumors, “Met” from metastatic lesions, while “T#” and “M#” indicate the number of PDX transfers and the specific mouse host, respectively. This systematic naming allows for easy tracking of matched sets, such as primary-metastasis pairs or in vitro-in vivo derivatives. These matched models support studies on clonal evolution, metastasis, therapy resistance, and pharmacokinetic behavior—including transporter expression and barrier integrity relevant for drug absorption. Cell lines undergo routine authentication (e.g., STR profiling) and are tested regularly for mycoplasma contamination. Characterization data for numerous HROC models are publicly available in peer-reviewed publications.

HROC cell lines are particularly valuable for subtype-stratified drug screening, biomarker discovery across MSI-H and MSS tumors, and mechanistic studies involving primary vs. metastatic disease. When paired with PDXs and/or organoids, they provide a robust platform for preclinical evaluation, including drug sensitivity testing and modeling of tumor-stroma or immune interactions. Due to their comprehensive annotation and clinical relevance, HROC models are suitable for both basic and translational research in colorectal cancer.

Tissue	Metastasis
Disease	Colorectal Adenocarcinoma
Metastatic site	Liver

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

MSI status	MSS

IDENTIFIERS

Citation

HROC450Met1 T0 M1 (Cytion catalog number 300725)

NCBI TaxID	9606

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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	TrypLE Express 15 min 37°C

Subculturing

Seeding after thawing 4*10⁴/cm²

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 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium.
Follow the procedure described under Post-Thaw Recovery

QUALITY CONTROL AND CRYOPRESERVATION

Freeze medium	As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability.

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	59 years

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

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