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Product Information

ADME/Tox Cell Lines
Caco-2 Engineered Control Cells

Catalog Number **MTOX1000CC**
Storage Temperature –196 °C (liquid nitrogen)

TECHNICAL BULLETIN

Product Description

ATP-binding cassette (ABC) transporters are a family of transmembrane proteins that utilize ATP hydrolysis for translocation of substrates across membranes. ABC transporters are known to play a critical role in the development of multidrug resistance. Evaluation of membrane transporter pharmacology in drug disposition and drug-drug interactions (DDI) is critical to the pharmaceutical industry's safety evaluation of new drug entities.[1]

Components

Engineered Caco-2 control cells (C2BBe1 sub-clone) Catalog No. MTOX1000CC contains 2 million cells	1 vial

The cryoprotectant medium used is CryoStor™, Catalog No. C2874.

Cell Line Description
Organism*: Homo sapiens* (human)
Tissue: colorectal adenocarcinoma
Age: 72 years
Gender: Male
Ethnicity: Caucasian
Morphology: Epithelial
Growth properties: Adherent

DNA profile
Short Tandem Repeat (STR) analysis
Amelogenin: X
CSF1PO:11
D13S317:11,13,14
D16S539:12,13
D5S818:12,13
D7S820:11,12
THO1:6
TPOX:9,11 vWA: 16, 18

Parental Cell Line: ATCC® Cat. No. CRL-2102™
Note: Please see ATCC Cat. No. CRL-2102 product datasheet for additional information about the origin of these cell lines. Cytogenetic information is based on initial seed stock at Sigma-Aldrich Life Science. Cytogenetic instability has been reported in the literature for some cell lines.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Complete Medium: To make the complete growth medium, add fetal bovine serum, Catalog No. F4135, to a final concentration of 10% (v/v) in the base medium, DMEM, Catalog No. D5671. The medium is supplemented with L-glutamine, Catalog No. G7513, to a final concentration of 2 mM. This medium is formulated for use with a 5% CO_2 in air.

Storage/Stability

Upon receiving a shipment of frozen cells it is important the end user gives the shipment attention without delay.

To ensure the highest level of viability, thaw the vial and initiate the culture as soon as possible upon receipt. If upon arrival, continued storage of the frozen culture is necessary, it should be stored in liquid nitrogen vapor phase and not at –70 °C. Storage at –70 °C will result in loss of viability.

Procedure

Note: It is recommended that protective gloves and clothing always be used, and a full face mask always be worn when handling frozen vials. It is important to note that some vials leak when submerged in liquid nitrogen and will slowly fill with liquid nitrogen. Upon thawing, the conversion of the liquid nitrogen back to the gas phase may result in the rapid expansion of the vessel, potentially blowing off its cap with dangerous force creating flying debris. At the time a cell line is ordered, end users should also consider the culture conditions for the new cell line and make sure the appropriate measures are taken.

Plating of Frozen Cells

1. Thaw the vial by gentle agitation in a 37 °C water bath. To reduce the possibility of contamination, keep the O-ring and cap out of the water. Thawing should be rapid (2 minutes).
2. Remove the vial from the water bath as soon as the contents are thawed, and decontaminate by spraying with 70% ethanol solution. All of the operations from this point on should be carried out under strict aseptic conditions.
3. Transfer the vial contents to a sterile tube containing the appropriate amount of pre-warmed complete medium to seed cells at 110,000 cells/cm^2.

   Example: For a 24-well cell culture insert plate at 0.7 cm^2 seeding area, the seeding density is ~77,000 cells/well. For a seeding volume of 400 µL/well of cell suspension, the 1 mL of thawed cells would be added to 9.4 mL of complete medium for a total volume of 10.4 mL.

4. Fill Basal Feeder or Receiver Tray with pre-warmed complete medium and place plate in incubator at 37 °C and 5% CO_2.
5. Culture the plates for a minimum of 21 days to a maximum of 25 days, changing the medium 2-3 times per week.
6. Perform transwell assay on day 21-25.

Reference

1. The International Transporter Consortium (2010 White Paper), Membrane transporters in drug development. Nature Reviews Drug Discovery, **9**, 215-236 (2010).

Please see the Label License Agreement (LLA) for further details regarding the use of this product as a consumable vial only. The cells should not be banked or not be propagated under any circumstances for violation of the label license. The LLA is available on our website at https://www.sigmaaldrich.com/life-science/adme-tox-assays/cell-lines/license-agreements.html

Additional product and technical information can be obtained at www.sigmaaldrich.com.

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