ATCC

Product Sheet

IDH2 mutant-TF-1 Isogenic Cell Line (ATCC® CRL-2003IG™)

Please read this FIRST

Storage Temp.
liquid nitrogen vapor phase

Biosafety Level
2

Intended Use

This product is intended for research use only. It is not intended for any animal or human therapeutic or diagnostic use.

Complete Growth Medium

The base medium for this cell line is RPMI-1640 Medium (ATCC 30-2001). To make the complete growth medium, add the following components to the base medium:

- 2 ng/ml recombinant human GM-CSF
- Fetal Bovine Serum (FBS; ATCC 30-2020) to a final concentration of 10%

Citation of Strain

If use of this culture results in a scientific publication, it should be cited in that manuscript in the following manner: IDH2 mutant-TF-1 Isogenic Cell Line (ATCC® CRL-2003IG™)

American Type Culture Collection
PO Box 1549
Manassas, VA 20108 USA
www.atcc.org

800.638.6597 or 703.365.2700
Fax: 703.365.2750
Email: Tech@atcc.org

Or contact your local distributor

Description

Organism: *Homo sapiens*, human
Tissue: bone marrow
Disease: erythroleukemia
Cell Type: erythroblast
Age: 35 years
Gender: male
Morphology: lymphoblast
Growth Properties: suspension
DNA Profile:
Amelogenin: X,Y
CSF1PO: 13
D13S317: 8,9
D16S539: 9,12
D5S818: 13
D7S820: 12
TH01: 7,9
TPOX: 8
vWA: 15,17

Batch-Specific Information

Refer to the Certificate of Analysis for batch-specific test results.

SAFETY PRECAUTION

ATCC highly recommends 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 submersed in liquid nitrogen and will slowly fill with liquid nitrogen. Upon thawing, the conversion of the liquid nitrogen back to its gas phase may result in the vessel exploding or blowing off its cap with dangerous force creating flying debris.

Unpacking & Storage Instructions

1. Check all containers for leakage or breakage.
2. Remove the frozen cells from the dry ice packaging and immediately place the cells at a temperature below -130°C, preferably in liquid nitrogen vapor, until ready for use.

Handling Procedure for Frozen Cells

To insure 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.

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 (approximately 2 minutes).
2. Remove the vial from the water bath as soon as the contents are thawed, and decontaminate by dipping in or spraying with 70% ethanol. All of the operations from this point on should be carried out under strict aseptic conditions.
3. Transfer the vial contents to a centrifuge tube containing 9.0 mL complete culture medium and spin at approximately 150 x g for 5 to 7 minutes.
4. Resuspend cell pellet with the recommended complete medium (see the specific batch information for the culture recommended dilution ratio) and dispense into a 25 cm^2 or a 75 cm^2 culture flask. It is important to avoid excessive alkalinity of the medium during recovery of the cells. It is suggested that, prior to the addition of the vial contents, the culture vessel containing the complete growth medium be placed into the incubator for at least 15 minutes to allow the medium to reach its normal pH (7.0 to 7.6).
5. Incubate the culture at 37°C in a suitable incubator. A 5% CO_2 in air atmosphere is recommended if using the medium described on this product sheet.

Subculturing Procedure

Cultures can be maintained by addition or replacement of fresh medium. Start cultures at 8 X 10^4 cells/mL and maintain between 5 X 10^4 and 1 X 10^6 cells/mL.

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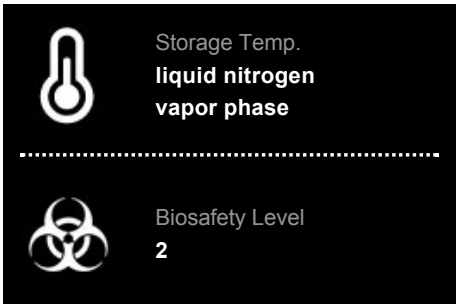

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Medium Renewal: Add fresh medium every 2 to 3 days (depending on cell density).

Cryopreservation Medium

Complete growth medium supplemented with 5% (v/v) DMSO (ATCC 4-X)

Comments

This is an acute myeloid leukemia (AML) IDH2R140Q mutant isogenic line derived from the parental TF-1 cell line. The c.419G>A knock-in mutation encoding IDH2R140Q protein expression was generated at ATCC by utilizing the CRISPR/Cas9 gene editing technology. This is a homozygous mutation expressing the c.419G>A mutant allele. The IDH2R140Q mutation in CRL-2003IG has been validated at the genomic, transcript, and protein bio-functional levels.
The IDH2R140Q mutation is a cancer driver gene which causes a gain of function in tumor cells converting isocitrate to the oncometabolite, D-2-hydroxyglutarate (D-2HG). High intracellular levels of D-2HG inhibits alpha-ketoglutarate-dependent DNA and histone demethylases, resulting in epigenetic disregulation, which in turn leads to a block in cellular differentiation, promoting AML development. These effects are reduced with treatment of IDH2 mutant-specific small-molecule inhibitors such as AG-221.
The IDH2R140Q mutant isogenic line CRL-2003IG has been tested for neomorphic functional activity displaying elevated intra- and extracellular D-2HG levels. A reduction in histone hypermethylation was also observed upon treatment with IDH2 specific molecules, AG-221 and AGI-6780. This IDH2R140Q isogenic cell model is a valuable in vitro cell-based tool for clinical diagnostics, elucidating mechanisms involved in cancer-associated differentiation, tumorigenesis and use in screening anti-cancer compounds for drug discovery and development.
Refer to the TF-1 parental line (ATCC CRL-2003) for additional background information.

References

References and other information relating to this product are available online at www.atcc.org.

Biosafety Level: 2

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the current publication of the *Biosafety in Microbiological and Biomedical Laboratories* from the U.S. Department of Health and Human Services Centers for Disease Control and Prevention and National Institutes for Health.

ATCC Warranty

ATCC® products are warranted for 30 days from the date of shipment, and this warranty is valid only if the product is stored and handled according to the information included on this product information sheet. If the ATCC® product is a living cell or microorganism, ATCC lists the media formulation that has been found to be effective for this product. While other, unspecified media may also produce satisfactory results, a change in media or the absence of an additive from the ATCC recommended media may affect recovery, growth and/or function of this product. If an alternative medium formulation is used, the ATCC warranty for viability is no longer valid.

Disclaimers

This product is intended for laboratory research purposes only. It is not intended for use in humans.
While ATCC uses reasonable efforts to include accurate and up-to-date information on this product sheet, ATCC makes no warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. ATCC does not warrant that such information has been confirmed to be accurate.
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Please see the enclosed Material Transfer Agreement (MTA) for further details regarding the use of this product. The MTA is also available on our Web site at www.atcc.org

Additional information on this culture is available on the ATCC web site at www.atcc.org.