Product Sheet
CEM/C2 (ATCC® CRL-2264™)

Please read this FIRST

Storage Temp.
liquid nitrogen
vapor
temperature

Biosafety Level 1

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 ATCC-formulated RPMI-1640 Medium, ATCC 30-2001. To make the complete growth medium, add the following components to the base medium: fetal bovine serum (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: CEM/C2 (ATCC® CRL-2264™)

Description

Organism: Homo sapiens, human
Tissue: peripheral blood
Disease: acute lymphoblastic leukemia
Cell Type: T lymphoblast
Age: 4 years
Gender: female
Morphology: lymphoblast

Growth Properties: suspension

DNA Profile:
- Amelogenin: X
- CSF1PO: 11
- D13S317: 11,12
- D16S539: 10,13
- D5S818: 13
- D7S820: 9,8,3
- THO1: 6,7
- TPOX: 8
- vWA: 17,19

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 submerged 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. It is recommended that the cryoprotective agent be removed immediately. Centrifuge the cell suspension at approximately 125 x g for 5 to 10 minutes. Discard the supernatant and resuspend the cell pellet in an appropriate amount of fresh growth medium.
4. Transfer the vial contents to an appropriate size vessel and dilute with the recommended complete culture medium (see the specific batch information for the recommended dilution ratio). 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 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% CO₂ in air atmosphere is recommended if using the medium described on this product sheet.

Handling Procedure for Flask Cultures

The flask was seeded with cells (see specific batch information), grown, and completely filled with medium at ATCC to prevent loss of cells during shipping.

1. Upon receipt visually examine the culture for macroscopic evidence of any microbial contamination.
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Subculturing Procedure
Cultures can be maintained by addition of fresh medium. Alternatively, cultures can be established by centrifugation with subsequent resuspension at 2 x 10^5 viable cells/mL. Maintain cultures at a cell concentration between 2 x 10^5 and 2 x 10^6 cells/mL.

Medium Renewal: Every 2 to 3 days

Cryopreservation Medium
Complete culture medium described above supplemented with 5% (v/v) DMSO. Cell culture tested DMSO is available as ATCC Catalog No. 4-X.

Comments
The cells are approximately 970-fold less sensitive to CPT than the parental CEM cells. CEM/C2 cells exhibit cross resistance to both the water soluble (topotecan) and water insoluble (9-aminocarbinaldoxine-CPT) analogs of CPT. Resistance to CPT is stable for up to six months. CEM/C2 cells are also cross resistant to etoposide, daunorubicin, bleomycin, mitoxantrone, 4-(10-acridinylamino)methanesulfonyl-m-anisidine, and the anthracyclines daunorubicin and doxorubicin but retain sensitivity to the Vinca alkaloid vincristine.

CEM/C2 cells display atypical multidrug resistance (MDR), altered topoisoerase I catalytic activity and a unique topoisomerase I mutation (Asn722Ser).

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

Biosafety Level: 1

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.

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