ATCC

Product Sheet

# MC2/3 (ATCC® CRL-2143™)

**Please read this FIRST**

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

Dulbecco's modified Eagle's medium containing 0.075 mM adenine, 800 nM aminopterin, and 0.016 mM thymidine, 80%; fetal bovine serum, 20%

## Citation of Strain

If use of this culture results in a scientific publication, it should be cited in that manuscript in the following manner: MC2/3 (ATCC® CRL-2143™)

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:** *Cricetulus griseus*, hamster, Chinese
**Cell Type:** somatic cell hybrid
**Morphology:** fibroblast
**Growth Properties:** adherent

## 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

HANDLING PROCEDURE FOR FROZEN CELLS

- Initiate culture as soon as possible upon receipt.

- Thaw by rapid agitation in 37°C water bath. Thawing should be rapid (within 40-60 seconds). As soon as the ice is melted, remove the ampule from the water bath and immerse in 70% ethanol at room temperature. All of the operations from this point on should be carried out under strict aseptic conditions.

- The cells are supplied in two different types of glass ampules. One is a standard ampule, the neck of which must be scored with a sharp file that has been immersed in ethanol. A definitive sharp nick about 1/8" in length on one side is necessary. The second type is prescored and is identifiable by a gold band around the ampule neck, and should not be scored with a file.

- Break the neck of the ampule between several folds of a sterile towel.

- Transfer the cell suspension and dilute it with the recommended culture medium in a culture flask (see specific batch information above for dilution ratio); incubate at 37°C with 10% $CO_2$ in air atmosphere. Since it is important to avoid excessive alkalinity of the medium during recovery of the cells, it is suggested that the culture medium be placed into the culture flask, tube, etc. and the pH be adjusted, as necessary, prior to the addition of the ampule contents. Note that the bicarbonate content of the culture medium will determine whether an atmosphere containing $CO_2$ will be required.

- It is not necessary to remove the freezing additive. However, if desired, the culture medium may be changed to remove the protective freezing additive (dimethylsulfoxide) 24 hours after thawing. If it is desired that the freezing additive be removed immediately, or that a more concentrated cell suspension be obtained, centrifuge the above diluted suspension at approximately 125 x g for 10 minutes, discard the fluid and resuspend the cells with growth medium at the dilution ratio given in the specific batch information above.

FLUID RENEWAL
Twice weekly.

SUBCULTURE PROCEDURE

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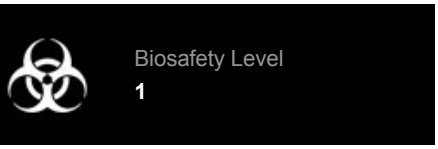


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Remove medium, rinse with trypsin (0.25%) - EDTA (0.03%) solution. Allow flasks to remain at room temperature (or incubate at 37°C) until cells detach. Add fresh culture medium, aspirate and dispense into new culture flasks.
Subcultivation ratio: 1:4 to 1:6.

## Handling Procedure for Flask Cultures

HANDLING PROCEDURE FOR FLASK CULTURES (MONOLAYER)
The flask was seeded with cells (see specific batch information above for concentration), grown and completely filled with medium to prevent loss of cells in transit. Remove all of the medium (which can be saved and used as fresh medium) except for a sufficient volume (5-10 ml) to cover the floor of the flask. Incubate at 37°C. The shipping medium contains reduced sodium bicarbonate suitable for a 5% $CO_2$ in air incubator. DMEM usually contains 3.7 grams of sodium bicarbonate per liter and should be incubated in a 10% $CO_2$ in air incubator. Sometimes in transit the cultures are handled roughly and most of the cells become detached and float in the culture medium. If this has occurred remove the entire contents of the flask and centrifuge at 300 x g for 15 minutes. Draw off the excess supernatant medium, resuspend the cells in 10 ml of the culture medium and plant the entire cell suspension in a single flask of suitable size (about 25 sq. cm.).

## Subculturing Procedure

**Subcultivation Ratio:** A subcultivation ratio of 1:4 to 1:6 is recommended
**Medium Renewal:** Twice per week
Remove spent medium, add fresh 0.25% trypsin, 0.03% EDTA solution, rinse and remove trypsin. Let the culture sit at room temperature (or at 37C) until the cells detach. Add fresh medium, aspirate and dispense into new flasks.

## Comments

MC2/3 is a mouse chromosome 8 specific monochromosome hybrid cell line.
This hybrid resulted from the fusion of adenine phosphoribosyl transferase negative (APRT -) Chinese hamster ovary cells with micronuclei from near euploid thymidine kinase negative (TK -) CAK mouse cells.
Hybrids containing mouse chromosome 8 (which has the APRT locus) were selected in medium containing 0.075 mM adenine, 800 nM aminopterin and 0.016 mM thymidine (AAT).
The mouse chromosome 8 could be from either the C57BL/6J or ARK/J inbred strain, since CAK cells were derived from an F1 hybrid of those two strains.
Mouse chromosome 8 may be isolated with 96% purity.
The depositor has reported the presence of one copy of mouse chromosome 8 in each Chinese hamster cell by G band cytogenetics, fluorescence in situ hybridization (FISH) and PCR analysis.
However, FISH analysis of ATCC frozen stocks by the depositor using biotinylated total genomic mouse DNA as probe indicates that 7 of 9 metaphases examined had a single mouse acrocentric chromosome present in a hamster background.
Two of nine metaphases showed different rearrangements of the mouse acrocentric.
An examination of interphase nuclei indicates that about 18% of the cells are tetraploid showing two distinct hybridization signals from the mouse while 82% are near diploid exhibiting one distinct signal.
The level of tetraploidy may increase with additional passage.

## References

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

## Biosafety Level: 1

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

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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.


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