ATCC is an International Depository Authority (IDA) for patent deposits. ATCC is required to complete viability testing only at time of initial deposit of patent material. Patent deposits are made available on behalf of the depositor when the pertinent U.S. or international patent is issued, but material may not be used to infringe the patent claims.

This material was deposited with the ATCC Patent Depository to fulfill U.S. or international patent requirements. This material may not have been produced or characterized by ATCC.

**U.S. Patent Number:**
5,017,691

ATCC Technical Services does not have technical information on patent deposits that are not produced or characterized by ATCC. Additional information can be found on the international or U.S. patent office websites.

**Designation:**
CCRF-CEM Acute lymphocytic leukemia (ALL); Human (CRL-8436)

Please read this FIRST

**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.

**Technical Information**
ATCC Technical Services does not have technical information on patent deposits that are not produced or characterized by ATCC. Additional information can be found on the international or U.S. patent office websites.

**Product Description**

**Designation:** CCRF-CEM Acute lymphocytic leukemia (ALL); Human

**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.
- 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 5% CO₂ 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 CO₂ 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**
Every 2-3 days.
**SUBCULTURE PROCEDURE**

Cultures can be maintained by the addition of fresh medium or replacement of medium. Alternatively, cultures can be established by centrifugation with subsequent resuspension at 1-2 x 10^5 viable cells/ml. Maintain cell density between 10^5 and 10^6 per ml.

**HANDLING PROCEDURE FOR FLASK CULTURES (SUSPENSION)**

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. Upon receipt incubate the flask in an upright position for several hours to return the flask contents to 37°C. After the temperature has equilibrated, aseptically remove the entire contents of the flask and centrifuge at 300 x g for 15 minutes. Resuspend the cell pellet in 10-12 ml of the shipping medium. From this suspension remove a sample for a cell count and viability so that the cell density of the suspension can be adjusted to 2-3 x 10^5 viable cells/ml. If the suspension needs to be diluted use the shipping medium. Incubate the culture in a flat position at 37°C in a 5% CO_2 in air atmosphere. Maintain the cell density of the culture as suggested under the subculture procedure described above.

**NOTE**

This human cell line is sent with the condition that you assume all risks and responsibility in connection with its receipt, handling, storage and use. This material is cited in a U.S. and/or other Patent Application and may not be used to infringe the patent claims.

**CATALOG DESCRIPTION**


(1/98)

References and other information relating to this product are available online at [www.atcc.org](http://www.atcc.org).

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**

Patent Deposits not produced or characterized by ATCC are warranted for viability only. If you believe the culture you have received is nonviable, contact Technical Services by phone at 800-638-6597 or 703-365-2700 or by e-mail at tech@atcc.org. Or you may contact your local distributor.

**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.

This product is sent with the condition that you are responsible for its safe storage, handling, and use. ATCC is not liable for any damages or injuries arising from receipt and/or use of this product. While reasonable effort is made to insure authenticity and reliability of strains on deposit, ATCC is not liable for damages arising from the misidentification or misrepresentation of cultures.

Please see the enclosed Material Transfer Agreement (MTA) for further details regarding the use of this product. The MTA is also available on our Website at [www.atcc.org](http://www.atcc.org).
Disclosure

This material is cited in a US or other Patent and may not be used to infringe the claims. Depending on the wishes of the Depositor, ATCC may be required to inform the Patent Depositor of the party to which the material was furnished.

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

© ATCC 2018. All rights reserved. ATCC is a registered trademark of the American Type Culture Collection.

[09/12]