



## Product Sheet

# J45.01 (ATCC® CRL-1990™)

### Please read this FIRST



Storage Temp.  
**liquid nitrogen**  
**vapor phase**

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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: J45.01 (ATCC® CRL-1990™)

American Type Culture Collection  
PO Box 1549  
Manassas, VA 20108 USA  
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800.638.6597 or 703.365.2700  
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Or contact your local distributor

### Description

**Organism:** *Homo sapiens*, human  
**Tissue:** peripheral blood  
**Disease:** acute T cell leukemia  
**Cell Type:** T lymphocyte  
**Gender:** male  
**Morphology:** lymphoblast  
**Growth Properties:** suspension

### 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  $-130^{\circ}\text{C}$ , 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  $-70^{\circ}\text{C}$ . Storage at  $-70^{\circ}\text{C}$  will result in loss of viability.

1. Thaw the vial by gentle agitation in a  $37^{\circ}\text{C}$  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  $75\text{ cm}^2$  tissue culture flask 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).
4. Incubate the culture at  $37^{\circ}\text{C}$  in a suitable incubator. A 5%  $\text{CO}_2$  in air atmosphere is recommended if using the medium described on this product sheet.

If it is desired that the cryoprotective agent be removed immediately, or that a more concentrated cell suspension be obtained, centrifuge the cell suspension at approximately  $125 \times g$  for 5 to 10 minutes. Discard the supernatant and resuspend the cells with fresh growth medium at the dilution ratio recommended in the specific batch information.

### 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. Using an inverted microscope (preferably equipped with phase-contrast optics), carefully check for any evidence of microbial contamination
2. Incubate the flask in an upright position for several hours at  $37^{\circ}\text{C}$ . After the temperature has equilibrated, aseptically remove the entire contents of the flask and centrifuge at  $125 \times g$  for 5 to 10 minutes. Remove shipping medium and save for reuse. Resuspend the cell pellet in 10 mL of this medium.
3. From this cell suspension remove a sample for a cell count and viability. Adjust the cell density of the suspension to  $2\text{--}3 \times 10^5$  viable cells/mL in the shipping medium.
4. Incubate the culture, horizontally, at  $37^{\circ}\text{C}$  in a 5%  $\text{CO}_2$  in air atmosphere. Maintain the cell density of the culture as suggested under the subculture procedure.



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### Subculturing Procedure

Cultures can be maintained by addition or replacement of fresh medium. Start cultures at  $2 \times 10^5$  cells/mL and maintain between  $1 \times 10^5$  and  $1 \times 10^6$  cells/mL.

**Medium Renewal:** Every 2 to 3 days



### Cryopreservation Medium

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



### Comments

The J45.01 cell line is a CD45 deficient variant of the E6-1 clone of Jurkat (ATCC TIB-152). CD45 deficient cells were isolated using a fluorescence activated cell sorter, and cloned by limiting dilution. The cells express the T cell antigen receptor (TCR, CD3), CD2 and CD28 at levels comparable to the parental line, but only 5 to 8% as much CD45. Loss of CD45 diminishes TCR - CD2 signal transduction, thus the cells are inducible for interleukin 2 (IL-2) production with calcium ionophores and phorbol esters, but not with TCr or CD2 stimulation.



### References

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

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### Disclaimers

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Additional information on this culture is available on the ATCC web site at [www.atcc.org](http://www.atcc.org).  
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