ATCC

Product Sheet

NK-92 (ATCC® CRL-2407™)

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 Alpha Minimum Essential medium without ribonucleosides and deoxyribonucleosides but with 2 mM L-glutamine and 1.5 g/L sodium bicarbonate . To make the complete growth medium, add the following components to the base medium: 0.2 mM inositol; 0.1 mM 2-mercaptoethanol; 0.02 mM folic acid; 100-200 U/ml recombinant IL-2; adjust to a final concentration of 12.5% horse serum and 12.5% fetal bovine serum.

Citation of Strain

If use of this culture results in a scientific publication, it should be cited in that manuscript in the following manner: NK-92 (ATCC® CRL-2407™)

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: peripheral blood
Disease: malignant non-Hodgkin's lymphoma
Cell Type: natural killer cell; NK cell
Age: 50 years
Gender: male
Morphology: lymphoblast
Growth Properties: suspension, multicell aggregates
Virus Susceptibility:
Viral Testing: ATCC confirmed this cell line is positive for the presence of Epstein-Barr viral DNA sequences via PCR.
DNA Profile:
Amelogenin: X,Y
CSF1PO: 11,12
D13S317: 9,12
D16S539: 11,12
D5S818: 12,13
D7S820: 10,11
THO1: 6,9.3
TPOX: 8
vWA: 18

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 freshly thawed cells **drop by drop** into a centrifuge tube containing 9.0 mL complete culture medium and spin at approximately 125 x g for 10 minutes. Discard supernatant. Resuspend the cells at an initial seeding density of 4 X 10^5 viable cells/mL.
4. Resuspend the cell pellet with the recommended complete medium and dispense into a 25 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

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Cultures can be maintained by addition or replacement of medium. When replacing media, centrifuge cells and resuspend cell pellet in fresh medium at 2 to 3 X 10^5 viable cells/mL. These cells tend to grow in aggregates that may lose viability when they are dispersed. Accurate counts and viabilities may not be possible. Corning® T-75 flasks (catalog #431464) are recommended for subculturing this product.
NK-92 cells are extremely sensitive to overgrowth and media exhaustion.
Medium Renewal: Replace with fresh medium every 2 to 3 days (depending on cell density)

Cryopreservation Medium

Complete growth medium, 40%; fetal bovine serum, 50%; DMSO, 10%. Cell culture tested DMSO is available as ATCC Catalog No. 4-X.

Comments

The cell line is dependent on the presence of recombinant Il-2 and a dose as low as 10 U/mL is sufficient to maintain proliferation; cells will die within 72 hours in the absence of IL-2.
NK-92 cells have the following characteristics: surface marker positive for CD2, CD7, CD11a, CD28, CD45, CD54 and CD56 bright; surface marker negative for CD1, CD3, CD4, CD5, CD8, CD10, CD14, CD16, CD19, CD20, CD23, CD34 and HLA-DR.
ATCC confirmed this cell line is positive for the presence of Epstein-Barr viral DNA sequences via PCR.

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

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