THP-1

TIB-202™

Description

THP-1 is a suspension cell line isolated from peripheral blood of an acute monocytic leukemia patient. Depending on culture conditions, these cells can differentiate into macrophages and dendritic cells. THP-1 can be used in co-cultures with other cell types, such as intestinal cells, to better mimic in vivo conditions. As the most well established monocyte line, THP-1 has been heavily used in cancer and drug research as well.

Organism: *Homo sapiens*, human
Cell Type: monocyte
Tissue: Peripheral blood
Age: 1 year
Gender: Male
Morphology: monocyte
Growth properties: Suspension
Disease: Acute monocytic leukemia
Technical information: ATCC Product Experience does not have technical information on patent deposits that are not produced or characterized by ATCC. Additional information can be found in the corresponding patent available from the patent holder or with the U.S. and/or international patent office.

Storage Conditions

Product format: Frozen
Storage conditions: Vapor phase of liquid nitrogen

Intended Use

This product is intended for laboratory research use only. It is not intended for any animal or human therapeutic use, any human or animal consumption, or any

diagnostic use.

BSL 1

ATCC determines the biosafety level of a material based on our risk assessment as guided by the current edition of *Biosafety in Microbiological and Biomedical Laboratories (BMBL)*, U.S. Department of Health and Human Services. It is your responsibility to understand the hazards associated with the material per your organization's policies and procedures as well as any other applicable regulations as enforced by your local or national agencies.

ATCC highly recommends that appropriate personal protective equipment is always used when handling vials. For cultures that require storage in liquid nitrogen, it is important to note that some vials may 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 vial exploding or blowing off its cap with dangerous force creating flying debris. Unless necessary, ATCC recommends that these cultures be stored in the vapor phase of liquid nitrogen rather than submersed in liquid nitrogen.

Certificate of Analysis

For batch-specific test results, refer to the applicable certificate of analysis that can be found at www.atcc.org.

Growth Conditions

Temperature: 37°C

Atmosphere: 95% Air, 5% CO_2

Handling Procedures

Unpacking and 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.

Complete 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: 2-mercaptoethanol (Gibco catalog number 21985023) to a final concentration of 0.05 mM; fetal bovine serum to a final concentration of 10%.

Note: Because of limited stability, the 2-Mercaptoethanol should be added to an aliquot of the RPMI and FBS fresh prior to seeding or performing fluid additions. Use 0.9 µL /1 mL culture medium. The 2-Mercaptoethanol used at ATCC is at a concentration of 55 mM). Do not store media supplemented with 2-Mercaptoethanol.

Handling Procedure: 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 vial contents to a centrifuge tube containing 9.0 mL complete growth medium. and spin at approximately 150 to 400 x g for 8 to 12 minutes.
4. Resuspend cell pellet with the recommended complete growth medium (Refer to the Certificate of Analysis for specific batch information and recommended seeding density) and dispense into the appropriate number of culture flasks. 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). 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.
   Note: It is common for these cells to drop their level of viability during resuscitation

Subculturing procedure:

Protocol: Cultures should be maintained by the addition of fresh medium. Note: Full fluid changes should be performed by centrifuging and resuspending the cells in fresh media at least every 7 days. Subsequent resuspension at 1-4 x 10^5 viable cells/mL.Subculture when cell concentration reaches 8x10^5 cells/mL.Do not allow the cell concentration to exceed 1.5 x 106 cells/mL. Corning® T-75 flasks (catalog #431464) or equivalent are recommended for subculturing this product.

Medium Renewal: At least every 7 days
Reagents for cryopreservation: Complete growth medium supplemented with 5% (v/v) DMSO (ATCC 4-X)

Material Citation

If use of this material results in a scientific publication, please cite the material in the following manner: THP-1 (ATCC TIB-202)

References

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

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