**Product sheet**

# HuT-78 Cells | 300338

## General information

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| **Description** | The HuT-78 cell line is a human T-cell lymphoma line derived from a patient with Sézary syndrome, a leukemic variant of cutaneous T-cell lymphoma (CTCL). These cells are characterized by their mature T-helper phenotype, expressing CD4 and lacking CD8 surface markers, consistent with their origin from a malignant T-cell population. The HuT-78 cells are particularly significant in studies of T-cell biology, immune response, and lymphoma, offering insights into the molecular and cellular mechanisms underlying T-cell leukemias and lymphomas.<br><br>HuT-78 cells exhibit a range of abnormal karyotypes, including complex chromosomal rearrangements and aneuploidy, which are commonly associated with their malignant phenotype. These cells are responsive to mitogenic stimulation, which can be utilized in research involving T-cell activation and signaling pathways. Additionally, HuT-78 cells are sensitive to various chemotherapeutic agents, making them a valuable model for testing anti-cancer drugs, particularly those targeting T-cell lymphomas. Researchers also use HuT-78 cells to study the interactions between lymphoma cells and the immune system, providing a better understanding of immune evasion mechanisms.<br><br>This cell line is cultured in suspension, requiring specific conditions to maintain viability and growth. HuT-78 cells are vital in advancing the understanding of CTCL pathogenesis and in the development of potential therapeutic strategies targeting malignant T-cells. |
| **Organism** | Human |
| **Tissue** | Blood |
| **Disease** | Mycosis fungoides and Sezary syndrome |
| **Synonyms** | Hut 78, HUT 78, HuT 78, HUT-78, HuT78, Hut78, HUT78, NCI-H78 |

## Characteristics

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| **Age** | 53 years |
| **Gender** | Male |
| **Ethnicity** | Caucasian |
| **Morphology** | Round cells |
| **Cell type** | T lymphoblast |
| **Growth properties** | Suspension |

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## Regulatory Data

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| **Citation** | HuT-78 (Cytion catalog number 300338) |
| **Biosafety level** | 1 |
| **NCBI_TaxID** | 9606 |
| **CellosaurusAccession** | CVCL_0337 |

## Biomolecular Data

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| **Receptors expressed** | Interleukin-2 (interleukin 2, IL-2) |
| **Protein expression** | P53 negative |
| **Antigen expression** | CD4 |
| **Products** | Interleukin-2 (interleukin 2, IL-2), tumor necrosis factor alpha (TNF alpha) |

## Handling

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| **Culture Medium** | RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a) |
| **Supplements** | Supplement the medium with 10% heat-inactivated FBS |
| **Subculturing** | Maintain cultures by periodically adding or replacing the medium. Initiate cultures with a density of 5 x $10^5$ cells/ml and keep the cell concentration within the range of 3 x $10^5$ to 1 x $10^6$ cells/ml for optimal growth. |
| **Seeding density** | 1 x $10^5$ cells/ml |
| **Fluid renewal** | 2 to 3 times per week |
| **Post-Thaw Recovery** | Allow the cells to recover from the freezing process for 24 to 48 hours. |

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| **Freeze medium** | As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress. |

**Thawing and Culturing Cells**

1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
2. Upon receipt, either store the cryovial immediately at temperatures below -150°C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required.
3. For immediate culturing, swiftly thaw the vial by immersing it in a 37°C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains.
4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
5. Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently.
6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
7. Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth.
8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

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| **Incubation Atmosphere** | 37°C, 5% $CO_2$, humidified atmosphere. |
| **Shipping Conditions** | Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately −78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage. |
| **Storage Conditions** | For long-term preservation, place vials in vapor-phase liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable only as a short interim step before transfer to liquid nitrogen. |

## Quality Control & Molecular Analysis

**Sterility**

Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods.

To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.