Product sheet

H9 Cells (derivative of HuT 78) | 300460

General information

Description	The H9 cell line, derived from a clonal derivative of the HUT 78 T-cell line from an adult patient with Sezary syndrome, exhibits specific clinical characteristics making it highly relevant in HIV research. It is notably permissive for HIV-1 replication, facilitating the isolation and propagation of HIV-1 from the blood of patients with AIDS and pre-AIDS conditions. This feature underscores its utility in studying viral behaviors and testing antiviral strategies under varied clinical scenarios. Karyotypically, H9 is near triploid with a modal chromosome number of 69, ranging from 58 to 74, and exhibits a 2.5% frequency of higher ploidies. The cell line displays an extremely complex karyotype, with nearly 60% of the chromosomes per cell consisting of structurally altered marker chromosomes, including translocations such as t(3p4q), t(5q6q), t(5p6p), and deletions like del(7)(q32). Such chromosomal abnormalities contribute to the line's unique genetic profile, influencing its behavior and response to viral infections. The absence of normal chromosomes N4, N5, N6, N7, N10, N13, N18, N19, N20, and X further distinguishes its genetic makeup. Moreover, the H9 cell line is tumorigenic in nature, demonstrated by successful subcutaneous tumor formation in nude mice when inoculated with 10(7) cells. It expresses a range of antigens including CD4 and various human leukocyte antigens (HLA) like A1, B62, C3, DR4, and DQ3, which play critical roles in immune recognition and response. Its susceptibility to HIV-1 and expression of genes like interleukin-2 (IL-2) are pivotal for investigating immune responses and viral interactions, making H9 a vital tool in the landscape of immunological and virological research.
Organism	Human
Tissue	Blood
Disease	Sezary syndrome (aggressive form of cutaneous T-cell lymphoma)
Metastatic site	Peripheral blood
Synonyms	HT clone H9, HT(H9), H 9, H-9

Characteristics

Age	53 years
Gender	Male
Ethnicity	European
Morphology	Lymphoblast
Cell type	T cell

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Growth properties	Suspension

Regulatory Data

Citation	H9 (derivative of HuT 78) (Cytion catalog number 300460)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1240

Biomolecular Data

Receptors expressed	CD4+
Protein expression	Interleukin 2 (IL-2)
Isoenzymes	AK-1, 0, ES-D, 1, G6PD, B, GLO-I, 1, Me-2, 0, PGM1, 1, PGM3, 0
Virus susceptibility	HIV-1 (HTLV-III)

Handling

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% FBS
Subculturing	Gently homogenize the cell suspension in the flask by pipetting up and down, then take a representative sample to determine the cell density per ml. Dilute the suspension to achieve a cell concentration of 1 x 10^5 cells/ml with fresh culture medium, and aliquot the adjusted suspension into new flasks for further cultivation.
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.

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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.
Incubation Atmosphere	37°C, 5% CO_2, humidified atmosphere.
Flask Coating	None
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

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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.