C8166

305528

GENERAL INFORMATION

Description

The C8166 cell line is a T-cell line transformed by Human T-cell Leukemia Virus type 1 (HTLV-1) and is widely utilized in research on retroviral infections, particularly HIV and HTLV. Initially derived by fusing umbilical cord blood lymphocytes with T-cells from leukemia-lymphoma patients, C8166 cells retain the HTLV-1 genome and express viral RNA without producing infectious HTLV-1 particles. This cell line is notable for its high susceptibility to HIV-1 infection, which is demonstrated by syncytia formation-large, multinucleated cells resulting from viral fusion activity, making it a robust model for studies on HIV pathogenesis and cytopathic effects in vitro.
C8166 cells have been used extensively in studies examining viral gene functions and interactions, such as the HIV-1 viral protein R (Vpr) which can induce G2/M cell cycle arrest and apoptosis in infected T-cells. The introduction of Vpr into C8166 cells has been shown to activate caspase-related apoptotic pathways, implicating its potential as a target in HIV-related apoptosis studies and antiviral therapies. Additionally, C8166's expression of specific surface markers and sensitivity to HIV-1 entry and replication make it valuable for evaluating the effects of inhibitors on HIV replication and cellular responses under different conditions, including serum-free media which has been shown to alter expression levels of certain receptors and diminish HIV infectivity over time.
This cell line's adaptability and sensitivity to HIV and HTLV-1 provide a dynamic system for research in virology and immunology, particularly for understanding viral latency, replication mechanisms, and potential therapeutic interventions targeting viral infections in T-cells.

Tissue	Umbilical cord blood

Synonyms

- C8166-CD4

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Suspension
Biosafety level	2

CHARACTERISTICS

Morphology	Lymphoblast-like
Cell type	Lymphoblastoid

IDENTIFIERS

Citation

C8166 (Cytion catalog number 305528)

NCBI TaxID	9606
Cellosaurus	CVCL_1099

HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

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Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS

Subculturing

Gather the suspension cells in a 15 ml tube and gently wash the adherent cells with PBS lacking calcium and magnesium (use 3-5 ml for T25 flasks and 5-10 ml for T75 flasks). Apply Accutase (1-2 ml for T25 flasks, 2.5 ml for T75 flasks) ensuring full coverage of the cell layer. Allow the cells to incubate at room temperature for 10 minutes. Following incubation, combine and centrifuge both the suspension and adherent cells. After centrifugation, carefully resuspend the cell pellet and transfer the cell suspension into new flasks containing fresh medium.

Seeding density	2-4 x 10^5 cells/mL

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Donor age	Newborn
Ethnicity	Caucasian

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes

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