CESS

300262

GENERAL INFORMATION

Description

The CESS cell line is a B lymphoblastoid cell line derived from a human patient with leukemia. This cell line is commonly used to study immunoglobulin production, particularly IgG secretion, due to its strong response to cytokine stimulation. CESS cells are EBV-transformed and exhibit surface markers characteristic of mature B cells, such as CD19 and CD38. They express the sIgG1 class of immunoglobulins and serve as a model for studying B cell differentiation and function, including immune responses regulated by cytokines like interleukin-6 (IL-6), also known as B-cell stimulation factor 2 (BSF-2). IL-6 plays a crucial role in stimulating immunoglobulin production in CESS cells, making them a valuable model for investigating B cell responses in immunological research.
Additionally, CESS cells have been instrumental in studies focusing on cell signaling and apoptosis. Notably, these cells have been shown to produce and respond to Nerve Growth Factor (NGF) through an autocrine signaling mechanism, expressing both high- and low-affinity NGF receptors. Blocking NGF signaling with antibodies or specific inhibitors induces apoptosis in CESS cells, characterized by Bcl-2 phosphorylation and activation of the p38 MAPK pathway. This makes CESS cells an important model for understanding the molecular mechanisms of B cell survival and apoptosis, particularly in the context of NGF signaling and its regulation of the Bcl-2 family proteins.

Tissue	Peripheral blood
Disease	Acute myeloid leukemia

Applications

Establishment of human T hybridoma cell lines

Synonyms

- Cess

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Suspension
Biosafety level	1

CHARACTERISTICS

Morphology	Lymphoblast

IDENTIFIERS

Citation

CESS (Cytion catalog number 300262)

NCBI TaxID	9606
Cellosaurus	CVCL_0209

EXPRESSION AND SUSCEPTIBILITY

Viruses

Transformed by EBV

Products

IL-2 after induction with TRF (T cell-replacing factor)

HANDLING AND CULTURE

Culture medium

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

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

Supplements

Supplement the medium with 10% FBS

Subculturing

Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.

Seeding density	1 x 10^4 cells/cm^2 is recommended
Fluid renewal	2 to 3 times per week
Post-thaw recovery	Allow the cells to recover from the freezing process for at least 48 hours.

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

Ethnicity	European

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