Product sheet

CESS Cells | 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.
Organism	Human
Tissue	Peripheral blood
Disease	Acute myeloid leukemia
Applications	Establishment of human T hybridoma cell lines
Synonyms	Cess

Characteristics

Gender	Male
Ethnicity	European
Morphology	Lymphoblast
Growth properties	Suspension

Regulatory Data

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Citation	CESS (Cytion catalog number 300262)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0209

Biomolecular Data

Viruses	Transformed by EBV
Products	IL-2 after induction with TRF (T cell-replacing factor)

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	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.
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.
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

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.