Product sheet

CTLL-2 Cells | 400482

General information

Description	CTLL-2, or cytotoxic T lymphocyte cell line-2, is an immortalized mouse cell line that originates from cytotoxic T cells. These cells were obtained through repetitive allogeneic Mixed Tumor-Lymphocyte Cultures (MTLC) of spleen cells from C57BL/6 mice immunized with F4-5 Friend virus (FLV)-induced leukemia cells. This specific derivation makes CTLL-2 a highly relevant model for studying T-cell mediated responses to viral oncogenesis and tumor immunology. The cell line requires the presence of interleukin-2 (IL-2) in its culture medium for survival and proliferation, emphasizing its utility in researching cytokine-driven cell processes. In immunological research, CTLL-2 serves as a critical tool for examining various aspects of T-cell function and cytokine biology. Its dependency on IL-2 for growth and sustenance is particularly useful for exploring the signaling pathways activated by this cytokine, as well as the broader gene expression changes in T cells responding to external stimuli. Furthermore, CTLL-2 is employed in studies related to T-cell receptor (TCR) activation, leading to insights into cell proliferation, apoptosis, and cytokine secretion. These attributes make CTLL-2 essential for high-throughput screening assays aimed at discovering new immunomodulatory agents, and for testing the biological activity of IL-2 formulations, which are pivotal in cancer immunotherapy and autoimmune disease management.
Organism	Mouse
Tissue	Blood
Synonyms	CTLL 2, CTLL2, CTLL(2)

Characteristics

Morphology	Single cell suspension, round, shining cells
Cell type	Lymphoblast
Growth properties	Suspension

Regulatory Data

Citation	CTLL-2 (Cytion catalog number 400482)
Biosafety level	1
NCBI_TaxID	10090
CellosaurusAccession	CVCL_0227

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Biomolecular Data

Receptors expressed	IL-2
Viruses	Tested and found negative for ectromelia virus (mousepox) .
Karyotype	Not specified

Handling

Culture Medium	i2Cult (We do not supply this product; please consider other suppliers. Please let us know if you need further assistance)
Subculturing	Immediately after thawing, about 50% viable cells were measured using Trypan Blue dye exclusion. The viability of the cells eventually will drop to even lower values. The cell viability should however increase to > 80% within 48 hours, at a cell concentration of about 1 million cells/ml. Subculture the cells at an inoculation density of 40000 cells/ml. Control the cell viability every day. Keep the cells at 37 degree Celsius and 5% CO_2.
Seeding density	5 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 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.

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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.
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.