EL4

300653

GENERAL INFORMATION

Description

The EL4 cell line is derived from a lymphoma of a mouse and is extensively used in immunology and cancer research. These cells originate from a thymoma, a type of tumor arising from the thymic epithelial cells, and they serve as a model for studying T-cell lymphomas and the immune response. EL4 cells are valuable for investigating the mechanisms of T-cell development, activation, and signaling, as well as the interaction between tumor cells and the immune system. Due to their lymphoid origin, EL4 cells are also employed in research focused on the production and function of cytokines, which are critical for immune regulation.
EL4 cells display a lymphoblastic morphology and express markers characteristic of T-cells, such as CD3 and T-cell receptor complexes. They are highly responsive to various stimuli that activate T-cells, making them suitable for studies on T-cell receptor signaling pathways and the effects of immunomodulatory agents. Furthermore, EL4 cells are used in tumor immunology to explore the interactions between cancer cells and the immune system, aiding in the development of immunotherapies for T-cell lymphomas and other cancers. The ability of EL4 cells to produce large quantities of specific cytokines, such as interleukin-2 (IL-2), makes them a useful tool in both basic research and the development of therapeutic strategies targeting immune responses.

Tissue	Ascites
Disease	Mouse precursor T cell lymphoblastic lymphoma/leukemia

Applications

Cancer research, 3D cell culture, Immunology

Synonyms

- EL-4
- EL 4
- E.L.4

CLASSIFICATION

Organism	Mouse
Sex	Unspecified
Growth properties	Suspension
Biosafety level	1

CHARACTERISTICS

Morphology	Lymphoblast
Cell type	T lymphoblast

Karyotype

Modal number = 39

IDENTIFIERS

Citation

EL4 (Cytion catalog number 300653)

NCBI TaxID	10090

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Cellosaurus	CVCL_0255

EXPRESSION AND SUSCEPTIBILITY

Antigen expression

H-2b, Thy-1.2

Viruses

MLV +, Negative for ectromelia virus (mousepox)

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

Suspension cells: Remove cells from substrate by pipetting with fresh medium. To obtain single cells, pass the suspension several times through a 22 gauge needle and dispense into new flasks. Growing on collagen: To remove adherent cells, use the following standard protocol. Remove medium and rinse the adherent cells using PBS without calcium and magnesium (3-5 ml PBS for T25, 5-10ml for T75 cell culture flasks). Add TrypleExpress (1-2ml per T25, 2.5ml per T75 cell culture flask), the cell sheet must be covered completely. Incubate at 37 degree Celsius for 10 minutes. Carefully resuspend the cells, the addition of medium is optional but not necessary, and dispense into new flasks which contain fresh medium.

Fluid renewal	2 to 3 times per week

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

Breed / subspecies	C57BL/6N
Donor age	Unspecified

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