

L5178Y TK+/- Clone (3.7.2C) Cells | 305485**General information****Description**

The L5178Y TK+/- Clone 3.7.2C cell line is a mouse lymphoma model widely used for in vitro genotoxicity testing, particularly in the mouse lymphoma thymidine kinase (TK) gene mutation assay (MLA). This clone was derived from the parental L5178Y cell line, established from a thymic lymphoma induced by methylcholanthrene in DBA-2 mice. The 3.7.2C subclone was specifically developed to be heterozygous at the TK locus (TK+/-), enabling the selection of TK-/- mutants through loss-of-heterozygosity events.

L5178Y TK+/- 3.7.2C cells are characterized by their rapid population doubling time (approximately 8-11 hours) and stable modal chromosome number of 40. They exhibit a complex karyotype including Robertsonian fusions and specific translocations. The p53 gene is mutated in these cells, with one allele carrying a nonsense mutation in exon 4 and the other a missense mutation in exon 5, resulting in the loss of normal p53 function. This genetic background enhances their utility for studying clastogenic and mutagenic effects.

Organism Mouse**Tissue** Thymus**Disease** Mouse thymic lymphoma**Synonyms** L5178Y TK+/-3.7.2c, TK+/- (clone 3.7.2C)**Characteristics****Breed/Subspecies** DBA/2**Age** 8 months**Gender** Female**Morphology** Lymphoblast-like**Cell type** T cell**Growth properties** Suspension**Regulatory Data****Citation** L5178Y TK+/- Clone (3.7.2C) (Cytion catalog number 305485)

L5178Y TK+/- Clone (3.7.2C) Cells | 305485**Biosafety level** 1**NCBI_TaxID** 10090**CellosaurusAccession** CVCL_6665**Biomolecular Data****Handling****Culture Medium** DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO₃, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)**Supplements** Supplement the medium with 10% FBS and 0,1% Pluronic F-68**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** 0,1-2*10⁶ cells/mL**Fluid renewal** 2 times per week**Post-Thaw Recovery** Immediate dilution into 25ml culture medium (standard: 8ml)**Freeze medium** As a cryopreservation medium, we use 95% (v/v) FBS + 5% (v/v) DMSO + 0,1% Pluronic F-68 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 $300 \times g$ 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

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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.