Data Sheet

CH12.LX Mouse Lymphoma Cell Line

Cancer Cell Line

SCC252

Pack Size ≥1 x 10^6 viable cells/vial

Store at in liquid nitrogen.

FOR RESEARCH USE ONLY

Not for use in diagnostic procedures. Not for Human or Animal Consumption.

Background

Naïve B-cells differentiate and expand upon antigenic stimulation, undergoing class-switch recombination of immunoglobulin genes and forming antibody-producing plasma cells and memory cells that generate upon recall stimulation.[1] B-cell models are useful for elucidating pathways of differentiation and proliferation mechanisms of lymphoma.

The CH12.LX mouse lymphoma cell line is an established and well characterized B-cell model. CH12.LX cells express Ly-1[2] and have the characteristic $IgM^+CD5^+CD23^-$ cell surface marker expression of B1a B lymphocytes, as well as expressing CD19, CD11b, MHC II and alpha-4-integrin.[3] CH12.LX cells are responsive to a variety of antigens including lipopolysaccharide, expressing the activation protein CD14.[4] CH12.LX cells proliferate rapidly and are ideal for studies of B-cell activation and expansion.

Source

The CH12.LX cell line was generated from B10.*H-2^{a}H4^b*p/Wts mice immunized with sheep erythrocytes.[2]

Quality Control Testing

- Each vial contains ≥1 x 10^6 viable cells.
- Cells are tested negative for infectious diseases by a Mouse Essential CLEAR panel by Charles River Animal Diagnostic Services.
- Cells are verified to be of mouse origin and negative for inter-species contamination from rat, human, Chinese hamster, Golden Syrian hamster, and non-human primate (NHP) as assessed by a Contamination CLEAR panel by Charles River Animal Diagnostic Services.
- Cells are negative for *mycoplasma* contamination.

Storage and Handling

CH12.LX Mouse B-cell Lymphoma cell line should be stored in liquid nitrogen. The cells can be cultured for at least 10 passages after initial thawing without significantly affecting the cell marker expression and functionality.

Representative Data

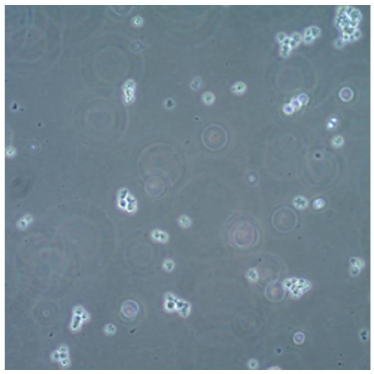

Figure 1: Brightfield image of CH12.LX mouse B-cell lymphoma cells.

Protocols

CH12.LX Mouse Lymphoma cell line grow as suspension cells and thus do not require enzymatic detachment or dissociation. Passage when the cell density reaches 1–1.5 million cells/mL. Optimal plating density should be ~200,000–250,000 cells/mL. The cells should not be grown at excessively high densities.

Note: CH12.LX cells grow relatively slowly and may take several days to reach optimal density for passaging.

1. Do not thaw the cells until the recommended medium is on hand. Cells are thawed in RPMI-1640 (R0883) supplemented with 2 mM Glutamine (TMS-002-C) and 20% FBS (ES-009-B). Once established, cells are expanded in RPMI-1640 with 2 mM glutamine and 10% FBS.

   IMPORTANT: Media should be warmed to 37 °C before thawing the cells.
2. Remove the vial of frozen CH12.LX cells from liquid nitrogen and incubate in a 37 °C water bath. Closely monitor until the cells are completely thawed. Maximum cell viability is dependent on the rapid and complete thawing of frozen cells.

   IMPORTANT: Do not vortex the cells.
3. As soon as the cells are completely thawed, disinfect the outside of the vial with 70% ethanol. Proceed immediately to the next step.
4. In a laminar flow hood, use a 1- or 2-mL pipette to transfer the cells to a sterile 15 mL conical tube. Be careful not to introduce any bubbles during the transfer process.
5. Using a 10 mL pipette, slowly add dropwise 9 mL of CH12.LX Thaw Medium (Step 1 above) to the 15 mL conical tube.

   IMPORTANT: Do not add the entire volume of media all at once to the cells. This may result in decreased cell viability due to osmotic shock.
6. Gently mix the cell suspension by slowly pipetting up and down twice. Be careful not to introduce any bubbles.

   IMPORTANT: Do not vortex the cells.
7. Centrifuge the tube at 200 x *g* for 2-3 minutes to pellet the cells.

   Note: Increased centrifugation speed or spin time may result in decreased cell viability.
8. Decant as much of the supernatant as possible. Steps 5-8 are necessary to remove residual cryopreservative (DMSO).
9. Resuspend the cells in 15–20 mL of CH12.LX Thaw Medium.
10. Transfer the cell suspension to a T75 flask.
11. Incubate the cells at 37 °C in a humidified incubator with 5% CO2. CH12.LX suspension cells require media replenishment every 2–3 days. Once established, CH12.LX cells are expanded in RPMI-1640 with 2 mM glutamine and 10% FBS. Passage cells when the cell density is at 1–1.5 million cells/mL.
12. Cells are typically plated at a density of 200,000–250,000 cells/mL.

Cryopreservation of Cells

CH12.LX Mouse B-Cell Lymphoma Cell Line may be frozen in the expansion medium plus 10% DMSO using a Nalgene® slow freeze Mr. Frosty® container.

References

1. Semin Hematol. 1997; 34(1 Suppl 1): 2-12.
2. Bishop, G. A., & Haughton, G. (1986). Induced differentiation of a transformed clone of Ly-1+ B cells by clonal T cells and antigen. Proceedings of the National Academy of Sciences, 83(19), 7410-7414.
3. Rasmussen, D. L., & Pfau, J. C. (2012). Asbestos activates CH12. LX B-lymphocytes via macrophage signaling. Journal of immunotoxicology, 9(2), 129-140.
4. Kimura, S., Tamamura, T., Nakagawa, I., Koga, T., Fujiwara, T., & Hamada, S. (2000). CD14-dependent and independent pathways in lipopolysaccharide-induced activation of a murine B-cell line, CH12. LX. Scandinavian Journal of Immunology, 51(4), 392-399.

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