LAMA-84 Human Chronic Myeloid Leukemia Cell Line

Cancer Cell Line

Cat. # SCC140

FOR RESEARCH USE ONLY.
NOT FOR USE IN DIAGNOSTIC PROCEDURES.
NOT FOR HUMAN OR ANIMAL CONSUMPTION.

Pack size: ≥1x10^6 viable cells/vial

Store in liquid nitrogen

Data Sheet

Background

Chronic Myeloid Leukemia (CML) is a cancer arising from B cells in the bone marrow. CML is a relatively rare childhood leukemia and represents approximately 15% of adult leukemias.[1] Progression of the disease is slow but terminates in blast crisis, during which the B cells exhibit uncontrolled hyper-proliferation. Cellular models at this stage of CML are valuable for studies of B cell research owing to their immortal phenotype and rapid proliferation.

The LAMA-84 human chronic myeloid leukemia cell line exhibits megakaryocytic, erythroid, and granulocytic characteristics and is a well-established and widely studied model for B-cell maturation processes.[2] LAMA-84 cells are positive for the *BCR-ABL* gene translocation[2] and express a number of hematopoietic surface markers including the granulomonocytic differentiation marker CD33, which distinguishes CML from other leukemias.[3] LAMA-84 cells have the potential to differentiate into multiple B cell subtypes, contributing to its value as highly cited cellular model for B cell biology.

Source

The LAMA-84 cell line was derived from leukemia of a 29-year old female patient.[2]

Short tandem repeat (STR) Profile

D3S1358: 14, 17	D16S539: 11
TH01: 6, 7	CSF1PO: 11, 12
D21S11: 29, 31	Penta D: 10
D18S51: 13	vWA: 14, 17
Penta E: 7	D8S1179: 10, 15
D5S818: 11, 12	TPOX: 10, 11
D13S317: 11	FGA: 21, 22
D7S820: 11	Amelogenin: X

Cancer cell lines are inherently genetically unstable. Genetic instability may arise in the form of loss of heterozygosity of alleles at one or more genetic sites with increased passages.

Storage and Handling

LAMA-84 Human Chronic Myeloid Leukemia 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.

Quality Control Testing

- Each vial contains ≥ $1X10^6$ viable cells.
- Cells are tested by PCR and are negative for HPV-16, HPV-18, Hepatitis A, C, and HIV-1 & 2 viruses as assessed by a Human Essential CLEAR panel by Charles River Animal Diagnostic Services.
- Cells are verified to be of human origin and negative for inter-species contamination from rat, mouse, 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.
- Each lot of cells is genotyped by STR analysis to verify the unique identity of the cell line.

Representative Data

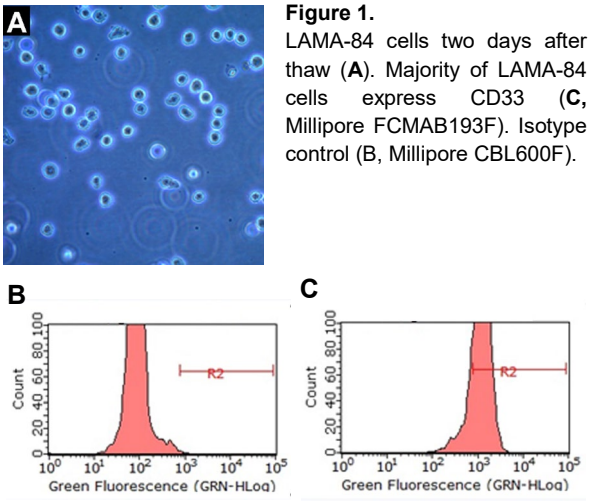

Figure 1.
LAMA-84 cells two days after thaw (**A**). Majority of LAMA-84 cells express CD33 (**C,** Millipore FCMAB193F). Isotype control (B, Millipore CBL600F).

References

1. *Leukemia.* 2019; 33(7): 1543-1566.
2. *Exp Hematol. 1987; 15(8): 822-832.*
3. *Scand J Immunol. 1996; 44: 54-61*

Rev.1.0/2019-09-25/SCC140/AN

Protocols

LAMA-84 cells 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.

1. Do not thaw the cells until the recommended medium is on hand.

   LAMA-84 Expansion Medium: Cells are thawed and expanded in RPMI-1640 (Sigma Cat. No. R0883) supplemented with 2 mM Glutamine (Cat. No. TMS-002-C) and 10% FBS (Cat. No. ES-009-B).

2. Remove the vial of frozen LAMA-84 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 LAMA-84 Expansion 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 300 x g for 2-3 minutes to pellet the cells.
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 LAMA-84 Expansion Medium.
10. Transfer the cell suspension to a T75 flask.
11. Incubate the cells at 37°C in a humidified incubator with 5% CO_2. LAMA-84 suspension cells require media replenishment every 2-3 days. 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

LAMA-84 Human Chronic Myeloid Leukemia Cell Line may be frozen in the expansion medium plus 10% DMSO using a Nalgene slow freeze Mr. Frosty container.

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