Data Sheet

P493-6 Human Lymphoblastoid Cell Line

Cancer Cell Line

SCC279

Pack Size ≥ 1x10^6 viable cells/vial

Store in liquid nitrogen

FOR RESEARCH USE ONLY

Not for use in diagnostic procedures. Not for human or animal consumption.

Background

The proto-oncogene c-myc is an activator of cell proliferation, promoting cell cycle progression, and is thus significant factor in many cancers. Burkitt's lymphoma is a rare cancer of human B cells associated with Epstein-Barr virus (EBV) that is the most rapidly growing human tumor, due to transcriptional activation of c-myc by chromosomal translocation.[1] Because of its highly aggressive nature, Burkitt's lymphoma has a high mortality rate if left untreated. Cellular models of c-myc-activated lymphomas are essential for understanding mechanisms of proliferation and for developing treatments for this disease. The P493-6 Human Lymphoblastoid Cell Line expresses c-myc under control of a tetracycline-inducible promoter.[2] P493-6 cells constitutively express c-myc when cultured without tetracycline. Addition of tetracycline switches off c-myc expression and arrests cells in G0/G1 phase. P493-6 cells demonstrate the morphology and surface antigen expression typical of Burkitt lymphoma cells, including CD10 and CD38.[3] The P493-6 B cell line permits conditional myc expression allowing for detailed studies of proliferative mechanisms in B cell lymphoma.

Source

The P493-6 cell line was established from a clone of the EREB2-5 EBV-positive lymphoblastoid cell line stably transfected with a c-myc-tet plasmid construct.[2]

Short Tandem Repeat

D3S1358: 15, 18	D16S539: 12
TH01: 8, 9.3	CSF1PO: 9, 12
D21S11: 28, 32.2	Penta D: 11, 13
D18S51: 13	vWA: 14, 18
Penta E: 12, 14	D8S1179: 9, 13
D5S818: 11, 12	TPOX: 8
D13S317: 11, 12	FGA: 22
D7S820: 8	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.

Quality Control Testing

- Each vial contains ≥ $1x10^6$ viable cells.
- Cells are tested negative for infectious diseases 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.

Storage and Handling

The P493-6 Human Lymphoblastoid 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

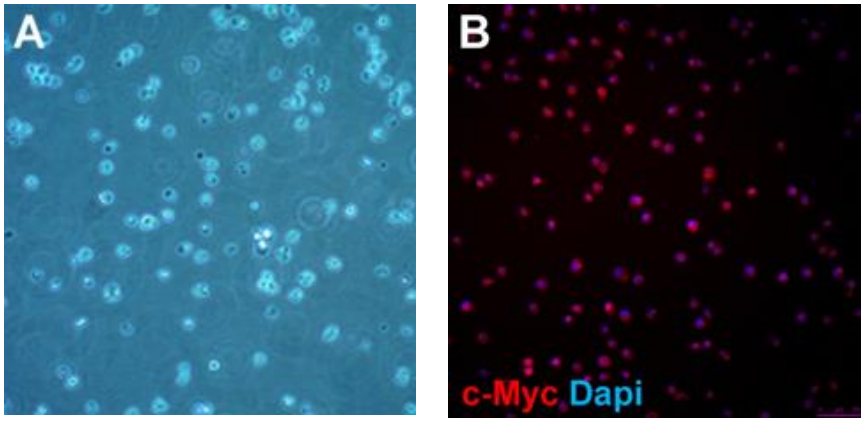

Figure 1. (**A**) Brightfield image of cells one day after thaw. (**B**) Cells express c-myc under control of a tetracycline-inducible promoter.

Protocols

The P493-6 Human Lymphoblastoid Cell Line grows 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.

   P493-6 Expansion Medium: Cells are thawed and expanded in RPMI-1640 (R0883) supplemented with 2 mM Glutamine (TMS-002-C) and 10% FBS (ES009-B).
2. Remove the vial of frozen P493-6 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 P493-6 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 P493-6 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. P493-6 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

The P493-6 Human Lymphoblastoid Cell Line may be frozen in the expansion medium plus 10% DMSO using a Nalgene® slow freeze Mr. Frosty® container.

References

1. Lancet. 2012; 379(9822): 1234-1244.
2. Int J Cancer. 2000; 87(6): 787-793.
3. 3. Int J Cancer. 2001; 93(6): 810-816.

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