Product sheet

PLH Cells | 302137

General information

Description	The PLH cell line is an Epstein-Barr virus (EBV)-transformed human lymphoblastoid cell line derived from a patient with congenital adrenal hyperplasia (CAH) due to steroid 21-hydroxylase (21-OHase) deficiency. This autosomal recessive disorder, which impairs cortisol biosynthesis, is strongly linked to specific HLA haplotypes, particularly HLA-Bw47;DR7. The PLH line is homozygous for this haplotype and has been used as a genetic model to investigate the molecular basis of 21-OHase deficiency. It is especially valuable in studying gene deletions affecting the cytochrome P-450C21 gene, which is responsible for 21-hydroxylation, a crucial step in cortisol production. Molecular analyses using DNA probes confirmed that PLH cells exhibit a homozygous deletion of one of the two P-450C21 genes, consistent with the loss of 21-hydroxylase activity observed in affected individuals. The PLH cell line was part of the Fourth Asia-Oceania Histocompatibility Workshop (4AOHW) panel, which aimed to provide a well-characterized set of EBV-transformed lymphoblastoid cell lines representing diverse MHC alleles and haplotypes. These panels serve as essential resources for histocompatibility studies, HLA typing development, and immunogenetics research. The selection of PLH for inclusion in the 4AOHW reflected its unique MHC genotype and disease relevance, contributing to both the standardization of HLA allele assignments and studies exploring the genetic architecture of immune-related disorders.
Organism	Human
Tissue	Adrenal gland
Disease	Classic congenital adrenal hyperplasia due to 21-hydroxylase deficiency
Metastatic site	Peripheral blood

Characteristics

Age	Unspecified
Gender	Female
Ethnicity	Scandinavian, Caucasian
Morphology	Lymphoblast
Cell type	B Cell
Growth properties	Suspension

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Regulatory Data

Citation	PLH (Cytion catalog number 302137)
NCBI_TaxID	9606
CellosaurusAccession	CVCL_E810

Biomolecular Data

Viruses	Epstein-Barr virus (EBV)

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% FBS
Subculturing	Gently homogenize the cell suspension in the flask by pipetting up and down, then take a representative sample to determine the cell density per ml. Dilute the suspension to achieve a cell concentration of 1 x 10^5 cells/ml with fresh culture medium, and aliquot the adjusted suspension into new flasks for further cultivation.
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.

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 x 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

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.