Product sheet

HEL Cells | 305022

General information

Description	HEL cells are a human erythroleukemia cell line that was established from the peripheral blood of a 30-year-old man with erythroleukemia in relapse after treatment for Hodgkin lymphoma in 1980. HEL cells are capable of spontaneous and induced globin synthesis, producing mainly G gamma and A gamma chains. These cells also express embryonic chains (epsilon, zeta) and alpha chains in minimal amounts, while beta chains are undetectable. HEL cells are round, large to occasionally giant polynucleated, single cells in suspension, with a few cells adherent. The expression of mutated JAK2 has been confirmed in these cells by RT-PCR and sequencing. HEL cells express several cell surface markers, including CD3-, CD13+, CD14-, CD19-, CD33+, CD41a+, CD71+, and CD235a+. According to research, hydroxyurea, a medicine routinely used to treat a variety of cancers, including erythroleukemia, may also regulate the death of HEL cells. HEL cell apoptosis produced by hydroxyurea may be connected to HEL cell terminal differentiation. Additionally, earlier research has shown that hydroxyurea may be crucial in controlling HEL cell proliferation and differentiation.
Organism	Human
Tissue	Peripheral blood
Disease	Erythroleukemia
Synonyms	Hel, GM06141, GM06141B, Human ErythroLeukemia

Characteristics

Age	30 years
Gender	Male
Ethnicity	European
Morphology	Rounded
Growth properties	Adherent/suspension

Identifiers / Biosafety / Citation

Citation	HEL (Cytion catalog number 305022)

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Biosafety level	1

Expression / Mutation

Handling

Culture Medium	RPMI 1640, w: 2.1 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	Accutase
Doubling time	36 hours
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.
Split ratio	1:2 to 1:4
Fluid renewal	2 to 3 times per week
Freeze medium	CM-1 (Cytion catalog number 800100)

Handling of cryopreserved cultures

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.

Quality control / Genetic profile / HLA

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.

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STR profile

Amelogenin: x,x
CSF1PO: 10,11
D13S317: 9
D16S539: 11
D5S818: 11
D7S820: 7
TH01: 7
TPOX: 11
vWA: 14,17
D3S1358: 15
D21S11: 29,30.2,31.2
D18S51: 12,16
Penta E: 13,18
Penta D: 11,13
D8S1179: 13,15
FGA: 21,22,23
D6S1043: 11,13
D2S1338: 18,19
D12S391: 18,21
D19S433: 11,13