Product sheet

HL-1 Cells | 305264

Renseignements généraux

Description	HL-1 is a cardiac muscle cell line derived from the atrial cardiomyocytes of an adult mouse. This cell line is unique in that it retains the ability to contract and maintain a differentiated cardiac phenotype over long-term culture, making it an invaluable model for cardiovascular research. HL-1 cells are widely used in studies focused on cardiac physiology, electrophysiology, and pharmacology. Their ability to undergo spontaneous and inducible contractions allows researchers to investigate the molecular mechanisms underlying cardiac muscle function, disease, and response to therapeutic agents. HL-1 cells exhibit characteristics typical of cardiac muscle cells, including the expression of cardiac-specific markers such as troponin, myosin, and connexin 43. They are responsive to various physiological and pharmacological stimuli, enabling detailed studies of cardiac signal transduction pathways, ion channel function, and the effects of drugs on heart cells. This cell line is particularly valuable for modeling cardiac arrhythmias, hypertrophy, and other cardiac pathologies. Additionally, HL-1 cells are used in high-throughput drug screening assays aimed at identifying compounds that modulate cardiac function, which is crucial for the development of new treatments for cardiovascular diseases.
Organism	Mouse
Tissue	Heart, left atrium
Synonyms	HL1, HL-1 F2 P76

Caractéristiques

Breed/Subspecies	C3HeB/FeJ transgenic
Age	Unspecified
Gender	Female
Morphology	Epithelial
Cell type	Cardiomyocyte
Growth properties	Adherent

Données réglementaires

Citation	HL-1 (Cytion catalog number 305264)

HL-1 Cells | 305264

Biosafety level	2
NCBI_TaxID	10090
CellosaurusAccession	CVCL_0303

Données biomoléculaires

Viruses	Transformant: Simian virus 40 (SV40)

Manipulation

Culture Medium	Claycomb Medium (We do not supply this product; please consider other suppliers. Please let us know if you need further assistance)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Subculturing	Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.
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.
Flask Coating	Fibronectin and gelatin
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.

Contrôle de la qualité et analyse moléculaire

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.