DH82

305003

GENERAL INFORMATION

Description

DH-82 cells, derived from the malignant histiocytosis of a ten-year-old male Golden Retriever, are a cornerstone in the study of canine immunology and related diseases.
These cells exhibit a macrophage-like morphology, mirroring the key functions of human macrophages, thereby providing a relevant model for investigating various aspects of canine health, particularly immune system-related conditions.
A defining characteristic of DH-82 cells is their capability to phagocytize latex particles, an essential function of macrophages responsible for the elimination of foreign substances in the body. This property positions DH-82 cells as a robust tool for delving into the immune responses of dogs, especially in the face of infections and inflammatory diseases. The expression of Fc gamma receptors in DH-82 cells is a notable trait.
These receptors are integral to immune responses, as they bind to antibodies and facilitate the phagocytosis of antibody-coated pathogens or particles. This makes DH-82 cells particularly valuable in studies focusing on immune responses and antibody-dependent cellular cytotoxicity (ADCC). In contrast, DH-82 cells do not express Fc mu and C3b receptors.
The absence of Fc mu receptors, typically found on B cells and involved in antigen presentation, and C3b receptors, which bind to complement proteins in immune responses, provides a controlled setting for examining specific immune mechanisms that might be influenced by these receptors.
Additionally, DH-82 cells are non-producers of IL-1, a pivotal cytokine in inflammatory responses. This feature offers a unique perspective for investigating the role of IL-1 in various biological processes and understanding IL-1-mediated diseases.
In the realm of infectious diseases, DH-82 cells have proven particularly useful in studying canine monocytic ehrlichiosis (CME), a tick-borne illness caused by Ehrlichia canis.
The cells provide a conducive environment for the bacterium's growth, aiding in the exploration of the disease's development and potential treatments. The doubling time of DH-82 cells, approximately 26 hours, is also a critical aspect in their use, influencing experimental design and the interpretation of results.

Disease	Canine histiocytic sarcom

Synonyms

- DH-82
- DH 82

CLASSIFICATION

Organism	Dog
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Macrophage-like
Cell type	Histiocyte

IDENTIFIERS

Citation

DH82 (Cytion catalog number 305003)

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NCBI TaxID	9615
Cellosaurus	CVCL_2018

HANDLING AND CULTURE

Culture medium

EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS and 1% NEAA

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.

Fluid renewal	2 to 3 times per week

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Breed / subspecies	Golden Retriever
Donor age	10 years

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes