HET-1A

305270

GENERAL INFORMATION

Description

The HET-1A cell line is derived from the human esophageal epithelium and is used extensively in gastroenterological research. These cells provide a valuable model for studying the physiology and pathology of the esophagus, particularly in the context of esophageal diseases such as Barrett's esophagus and esophageal cancer. HET-1A cells are often employed to investigate the cellular responses to various environmental and dietary factors that may contribute to esophageal disease development and progression.
HET-1A cells exhibit an epithelial morphology and retain characteristics typical of esophageal epithelial cells, including the expression of cytokeratins and other epithelial markers. They are used in studies focusing on epithelial cell biology, differentiation, and the mechanisms of cellular transformation. Researchers utilize HET-1A cells to explore the effects of acid and bile reflux, oxidative stress, and inflammation on esophageal cells, providing insights into the pathophysiology of gastroesophageal reflux disease (GERD) and its potential progression to Barrett's esophagus or esophageal adenocarcinoma. Additionally, HET-1A cells are used to assess the impact of various chemopreventive and therapeutic agents on esophageal epithelial health, making them an important tool for advancing the understanding and treatment of esophageal disorders.

Tissue	Esophagus

Synonyms

- Het-1A
- HET1A
- Het1A

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
GMO status	GMO-S1

GMO status details

GMO-S1: This human esophageal epithelial cell line (HET-1A) contains an SV40 T-Antigen construct (pRSV-T) delivered via transfection under RSV-LTR control, enabling immortalization. The insert is stably integrated into esophageal epithelial cells. This classification applies only within Germany and may differ elsewhere.

Biosafety level	2

CHARACTERISTICS

Morphology	Epithelial
Cell type	Epithelial cell
Tumourigenic	No

IDENTIFIERS

Citation

HET-1A (Cytion catalog number 305270)

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NCBI TaxID	9606
Cellosaurus	CVCL_3702

EXPRESSION AND SUSCEPTIBILITY

Protein expression

Cytokeratin

Antigen expression

SV40 T antigen

Viruses

Transformant: Simian virus 40 (SV40)

HANDLING AND CULTURE

Culture medium

BEGM Bronchial Epithelial Cell Growth Medium BulletKit (from Lonza, Lonza catalog number CC-3170)

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

Donor age	74 years
Ethnicity	African American

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