A172

300108

GENERAL INFORMATION

Description

A-172 (A172 or A-172 MG) is a significant cell line used in neuroscience research. It originates from the brain tissue of a 53-year-old male with glioblastoma, a type of brain cancer. These cells adhere and spread on the surface of culture dishes, with a karyotype of n = 80 (80 chromosomes). A-172 cells are hypertriploid, exhibiting over 20 marker chromosomes. They have been shown to be non-tumorigenic in anti-thymocyte serum treated NIH Swiss mice. A-172 cells have a gene expression profile that highlights their mesenchymal lineage and involvement in angiogenesis.
They express genes related to mesenchymal markers (CD90, CD105, fibroblast activation protein, tenascin C) and angiogenesis inducers (VEGF, FGF2 (b), TGFb1, thrombospondin-1). Comparisons with the T98G cell line reveal differences in morphology and surface marker expression. Both cell lines show high expression of a2 smooth muscle actin. Changing the fetal serum concentration in the culture medium affects the proportion of cells expressing specific surface antigens, such as CD73 and CD105.
A-172 and T98G cell lines accurately represent glioblastomas, providing valuable tools for studying this brain tumor. Their gene expression profiles and morphological features allow for investigations into the molecular mechanisms underlying glioblastoma development and progression. Researchers can utilize A-172 cells to gain insights into glioblastoma biology and potentially identify new therapeutic targets for this devastating disease.

Tissue	Brain
Disease	Glioblastoma
Metastatic site	Primary tumor site (brain)

Applications

Glioblastoma research; mesenchymal GBM biology; VEGF/FGF/TGF-β angiogenesis studies; glioma invasion and migration; IDH1 wild-type GBM modeling; drug sensitivity assays; xenograft models

Synonyms

- A-172
- A 172
- A-172 MG
- A-172MG

CLASSIFICATION

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

GMO status details

No genetic modification; wildtype GBM line with IDH1 wild-type status and MSS phenotype

Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like (glioma)

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Cell type	Glial cells
Ploidy status	Aneuploid
MSI status	Stable (MSS)
Doubling time	40 hours

IDENTIFIERS

Citation

A172 (Cytion catalog number 300108)

NCBI TaxID	9606
Cellosaurus	CVCL_0131

EXPRESSION AND SUSCEPTIBILITY

Mutational profile

Has no IDH1 mutation

HANDLING AND CULTURE

Culture medium

DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)

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

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.

Split ratio	1 to 5
Seeding density	1 x 10^4 cells/cm^2 will result in a confluent monolayer within 3 days.
Fluid renewal	2 to 3 times per week
Post-thaw recovery	After thawing, plate the cells at 4 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 to 48 hours.

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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	53 years
Ethnicity	Caucasian

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