A375

300110

GENERAL INFORMATION

Description

The A375 human melanoma cell line, isolated from the skin of a 54-year-old female patient with malignant melanoma, is a significant resource in cancer research, particularly in the study of human melanoma, one of the most aggressive forms of skin cancer. The A375 cell line is known for its rapid growth rate and high tumorigenic potential, making them suitable for various experimental applications, including in vitro studies on cell proliferation, migration, and invasion, as well as in vivo tumorigenesis assays.
A375 cells exhibit high tumorigenic potential in immunosuppressed mice, forming rapidly growing amelanotic melanomas. The presence of the BRAFV600E mutation in A375 cells makes them highly sensitive to MEK inhibition, providing a valuable tool for investigating targeted therapies in melanoma treatment. The treatment of A375 cells with vemurafenib, for example, has been shown to enhance the induction of MHC Class I and Class II molecules, offering insights into the interactions between melanoma cells and the immune system.
In addition to their role in basic melanoma research, A375 cells are used in drug screening and in the investigation of signaling pathways involved in cancer cell survival, proliferation, and metastasis. A375 cells have further been utilized in apoptosis studies and A375 isogenic cell lines and the introduction of reporter proteins like-Luc (luc2) enable the study of gene function and the monitoring of cellular responses in real-time. A375 cells' suitability as a transfection host and their use in stable reporter cell lines also contribute to their versatility in research applications.
In summary, the A375 human melanoma cell line is a pivotal tool in the investigation of human melanoma, offering a comprehensive model for studying the molecular and cellular mechanisms underlying melanoma progression, the efficacy of therapeutic agents, and the interaction between cancer cells and the immune system.

Tissue	Skin
Disease	Melanoma

Synonyms

- A 375
- A-375
- A375-MEL
- A375-mel
- A375mel

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Tumourigenic	Yes, in nude mice

Karyotype

A375 cells are characterized by their hypotriploid karyotype, with a modal chromosome number of 62, and the presence of nine marker chromosomes in each cell, highlighting the genetic alterations associated with malignant melanoma.

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB

Doubling time	20 hours

IDENTIFIERS

Citation

A375 (Cytion catalog number 300110)

NCBI TaxID	9606
Cellosaurus	CVCL_0132

EXPRESSION AND SUSCEPTIBILITY

Antigen expression

P53 positive

Mutational profile

BRAF V600Emut

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.

Seeding density	1 x 10^4 cells/cm^2 will result in a confluent monolayer within 4 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 hours.

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.

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB

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	54 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