A375-GFP

305665

GENERAL INFORMATION

Description

A375-GFP is a genetically engineered variant of the human malignant melanoma cell line A375, stably expressing enhanced green fluorescent protein (eGFP). The parental A375 cell line is derived from a skin melanoma tumor in an adult patient and is widely used as a model for cutaneous melanoma, particularly for studies involving oncogenic BRAF signaling, as it harbors the BRAF V600E mutation. This mutation leads to constitutive activation of the MAPK/ERK pathway, driving proliferation and survival, and making A375 cells highly relevant for investigating targeted therapies such as BRAF and MEK inhibitors. The GFP-expressing derivative retains these molecular and phenotypic characteristics while enabling fluorescence-based applications.
The stable incorporation of the eGFP reporter allows for real-time visualization of A375-GFP cells in both in vitro and in vivo systems. Fluorescence imaging facilitates monitoring of cell proliferation, migration, invasion, and morphological changes, as well as tracking tumor growth and metastatic dissemination in xenograft models. The enhanced GFP variant provides improved brightness and stability compared to earlier GFP constructs, enabling sensitive detection even at low cell numbers. This makes A375-GFP particularly useful in co-culture experiments, high-content imaging platforms, and studies requiring precise spatial resolution of tumor cell behavior.
A375-GFP maintains the aggressive and proliferative phenotype of the parental melanoma line, including responsiveness to MAPK pathway inhibitors and the capacity for invasion and metastasis in experimental models. The addition of GFP expands its utility for drug screening, live-cell imaging, and tumor–microenvironment interaction studies. As with other reporter-labeled cell lines, validation of fluorescence stability and consistency across passages is recommended for specific experimental applications.
Genetic modification: Stably modified by replication-incompetent lentiviral transduction to express the ZsGreen1 green fluorescent protein reporter; maintained as a polyclonal population under puromycin selection (1–5 µg/mL). S1/BSL-1 containment.

Tissue	Leg, skin
Disease	Amelanotic melanoma

CLASSIFICATION

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

GMO status details

GMO-S1: This cell line contains a stably integrated ZsGreen1 green fluorescent protein reporter introduced via replication-incompetent lentiviral transduction. The resulting polyclonal cell population was maintained under puromycin selection (1–5 µg/mL). S1 containment is required. This classification applies only within Germany and may differ elsewhere.

Biosafety level	1

IDENTIFIERS

Citation

A375-GFP (Cytion catalog number 305665)

NCBI TaxID	9606
Cellosaurus	CVCL_QZ67

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EXPRESSION AND SUSCEPTIBILITY

Antigen expression

ZsGreen1 (green fluorescent protein)

Mutational profile

Mutation: BRAF, Simple, p.Val600Glu (c.1799T>A), Homozygous (from parent cell line).Mutation, CDKN2A, Simple, p.Glu61Ter (c.181G>T) (p.Gly75Val, c.224G>T), Homozygous (from parent cell line).Mutation, CDKN2A, Simple, p.Glu69Ter (c.205G>T) (p.Gly83Val, c.248G>T), Homozygous (from parent cell line).Mutation, TERT, Simple, c.1-146C>T (c.250C>T) (C250T), Unspecified, Note=In promoter (from parent cell line).

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 to 3 x 10^4 cells/cm^2
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 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium.
Follow the procedure described under Post-Thaw Recovery

QUALITY CONTROL AND CRYOPRESERVATION

Freeze medium	As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability.

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
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