

U-343 MG Cells | 300365

General information

Description

The U-343 MG cell line is derived from a human glioblastoma, a type of aggressive brain tumor. Originally isolated from a 54-year-old Caucasian male, this cell line has been widely used in neurological research, particularly in studies concerning the pathology and therapeutic treatment strategies for glioblastoma. The U-343 MG cell line is notable for its astrocytic properties, resembling those of astrocytes in the brain, which makes it particularly useful for studying tumor behavior and neurobiology in a controlled in vitro environment.

Genetically, the U-343 MG cells are characterized by various mutations typical of glioblastoma, including alterations in the TP53 gene and the EGFR gene. These mutations not only offer insights into the molecular underpinnings of glioblastoma malignancy but also serve as potential targets for therapeutic intervention. The cell line is also used to assess the cytotoxicity of drugs and to study the mechanisms of resistance that glioblastoma cells can develop. This makes U-343 MG a valuable model for evaluating the efficacy of new chemotherapeutic agents and for exploring novel treatment paradigms, such as targeted therapy and immunotherapy.

Organism Human

Tissue Brain

Disease Glioblastoma

Synonyms U-343MG, U-343-MG, U343MG, U-343, U343, 343 MG, 343MG

Characteristics

Age 54 years

Gender Male

Ethnicity Caucasian

Morphology Epithelial-like

Growth properties Adherent

Regulatory Data

Citation U-343 MG (Cytion catalog number 300365)

Biosafety level 1

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NCBI_TaxID 9606

CellosaurusAccession CVCL_S471

Biomolecular Data

Receptors expressed GFAP: 95% of the cells tested positive.**Tumorigenic** Yes, in nude mice

Handling

Culture Medium EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO₃, w: EBSS (Cytion article number 820100a)**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.**Seeding density** 2×10^4 cells/cm²**Fluid renewal** 2 to 3 times per week**Freeze medium** As a cryopreservation medium, we use 50% basal medium + 40% FBS + 10% DMSO, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

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Thawing and Culturing Cells

1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
2. 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.
3. 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.
4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
5. 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.
6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
7. 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.
8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

Incubation Atmosphere

37°C, 5% CO₂, humidified atmosphere.

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.

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.

Quality Control & Molecular Analysis

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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.