U87MG-RFP

305702

GENERAL INFORMATION

Description

U-87 MG-RFP cells are a fluorescently labeled variant of the human glioblastoma astrocytoma cell line U-87 MG, which was originally derived from a malignant glioma tumor of an adult patient. The parental U-87 MG line is widely used as an in vitro model for glioblastoma due to its well-characterized growth properties, tumorigenic potential, and relevance to high-grade astrocytic tumors. These cells exhibit adherent growth with epithelial-like morphology and are commonly employed to study processes such as cell proliferation, invasion, angiogenesis, and response to hypoxic conditions.
In U-87 MG-RFP cells, stable expression of red fluorescent protein (RFP) enables real-time visualization of tumor cell behavior in both in vitro and in vivo systems. This modification facilitates applications such as live-cell imaging, tumor tracking in orthotopic xenograft models, and analysis of invasive growth patterns within brain tissue. U-87 MG-RFP cells are particularly valuable for studying glioblastoma progression, tumor–microenvironment interactions, and evaluating therapeutic strategies using fluorescence-based imaging approaches.
Genetic modification: Stably modified by replication-incompetent lentiviral transduction to express a red fluorescent protein (RFP) reporter; maintained as a polyclonal population under puromycin selection (1–5 µg/mL). S1/BSL-1 containment.

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

Applications

Glioblastoma research; RFP-based live-cell and in vivo fluorescence imaging; orthotopic xenograft tumor tracking; tumor-microenvironment interaction studies; angiogenesis; invasion and migration assays; puromycin-selected stable reporter cells for drug evaluation

Synonyms

- U-87MG
- U87 MG
- U-87-MG
- U87-MG
- U-87 MG
- U-87
- U87
- 87 MG
- 87MG

CLASSIFICATION

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

GMO status details

GMO-S1: This cell line contains a stably integrated red fluorescent protein (RFP) 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

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

CHARACTERISTICS

Morphology	Epithelial-like
Cell type	Glial cells (astrocytic)
Tumourigenic	Yes, in nude mice inoculated subcutaneously with 107 cells
Doubling time	approx. 24 to 36 hours

IDENTIFIERS

Citation

U87MG-RFP (Cytion catalog number 305702)

NCBI TaxID	9606
Cellosaurus	Not assigned (U87MG-RFP is a lentiviral RFP derivative; parental U-87 MG CVCL_0022)

EXPRESSION AND SUSCEPTIBILITY

Antigen expression

RFP (red fluorescent protein)

Isoenzymes

Me-2, 1, PGM3, 1, PGM1, 2, ES-D, 1, AK-1, 1, GLO-1, 1, G6PD, B

HANDLING AND CULTURE

Culture medium

EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)

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

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	Accutase
Split ratio	1 to 3
Seeding density	1.5 to 2 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.

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

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	44 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