

## U-87 MG-RFP Cells | 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.

**Organism** Human

**Tissue** Brain

**Disease** Glioblastoma

**Synonyms** U-87MG, U87 MG, U-87-MG, U87-MG, U-87 MG, U-87, U87, 87 MG, 87MG

## Characteristics

**Age** 44 years

**Gender** Male

**Ethnicity** Caucasian

**Morphology** Epithelial-like

**Growth properties** Adherent

## Regulatory Data

**Citation** U87MG-RFP (Cytion catalog number 305702)

**Biosafety level** 1

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**NCBI\_TaxID** 9606**GMO Status** GMO-S1: This human glioblastoma RFP-tagged cell line (U87MG-RFP) contains a lentiviral construct encoding red fluorescent protein from *Aequorea victoria*, enabling stable red fluorescence labeling. The modification is stably present. This classification applies only within Germany and may differ elsewhere.**Biomolecular Data****Protein expression** RFP**Isoenzymes** Me-2, 1, PGM3, 1, PGM1, 2, ES-D, 1, AK-1, 1, GLO-1, 1, G6PD, B**Tumorigenic** Yes, in nude mice inoculated subcutaneously with 107 cells**Handling****Culture Medium** EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO<sub>3</sub>, w: EBSS (Cytion article number 820100a)**Supplements** Supplement the medium with 10% FBS**Dissociation Reagent** Accutase**Seeding density** 1.5 to 2 x 10<sup>4</sup> cells/cm<sup>2</sup>**Freeze medium** As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability.

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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  $-150^{\circ}\text{C}$  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  $37^{\circ}\text{C}$  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  $200 \times g$  for 5 minutes, carefully discard the supernatant containing freezing medium.
7. Follow the procedure described under Post-Thaw Recovery

### Incubation Atmosphere

$37^{\circ}\text{C}$ , 5%  $\text{CO}_2$ , humidified atmosphere.

### Shipping Conditions

Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately  $-78^{\circ}\text{C}$  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  $-196^{\circ}\text{C}$ . Storage at  $-80^{\circ}\text{C}$  is acceptable only as a short interim step before transfer to liquid nitrogen.

## Quality Control & Molecular Analysis