

9L/lacZ Cells | 305208

General information

Description

The 9L/lacZ cell line is a well-characterized rat gliosarcoma cell line commonly used in neurobiological and oncological research. Originally derived from a nitrosourea-induced rat brain tumor, this line has been engineered to express the lacZ gene, which encodes the enzyme β -galactosidase. This modification facilitates the tracing and studying of tumor cells in vivo, particularly useful in experiments involving tumor progression and metastasis. The expression of lacZ allows for the easy identification of these cells using X-gal staining, which turns the cells blue when they express β -galactosidase.

These cells exhibit aggressive tumor-forming capabilities when implanted in immunocompromised or syngeneic hosts, making them a robust model for studying brain cancer dynamics and testing therapeutic strategies against gliomas. Additionally, the 9L/lacZ cell line has been utilized in gene therapy trials, particularly in assessing the efficacy of suicide genes and other genetic interventions aimed at controlling tumor growth. This line is also pivotal in understanding the interactions between tumor cells and the host's immune system, thereby contributing insights into the complexities of tumor immunology.

Organism

Rat

Tissue

Brain

Disease

Rat malignant glioma

Synonyms

9L/LacZ

Characteristics

Gender

Male

Morphology

Fibroblast

Growth properties

Adherent

Identifiers / Biosafety / Citation

Citation

9L/lacZ (Cytion catalog number 305208)

Biosafety level

1

Expression / Mutation

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Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 1.5 g/L NaHCO ₃ , w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
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Medium supplements	Supplement the medium with 10% FBS
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Passaging solution	Accutase
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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.
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Split ratio	1:2 to 1:5
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Fluid renewal	2 to 3 times per week
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Freeze medium	CM-1 (Cytion catalog number 800100)
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Handling of cryopreserved cultures

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.

Quality control / Genetic profile / HLA

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.