B16-F10-Luc

305658

GENERAL INFORMATION

Description

B16-F10-Luc is a bioluminescent derivative of the B16-F10 murine melanoma cell line, which was originally established from a spontaneous melanoma arising in a C57BL/6 mouse. The parental B16-F10 line is widely used in cancer research owing to its high metastatic potential and robust, reproducible engraftment in syngeneic C57BL/6 hosts. In B16-F10-Luc cells, a luciferase gene has been stably integrated under the control of a constitutively active promoter (commonly EF-1α or CMV) by lentiviral transduction, resulting in high-level, stable luciferase expression across passages.
B16-F10-Luc cells emit bioluminescent signal in the presence of a luciferin substrate, enabling non-invasive, quantitative in vivo bioluminescence imaging (BLI) of tumour growth, dissemination and metastasis in live animals. The line is suitable for both subcutaneous and intravenous (experimental metastasis) models in C57BL/6 mice, with metastatic colonies forming preferentially in the lungs. Luminescence output is linearly proportional to viable cell number, allowing real-time, longitudinal monitoring of tumour burden without sacrifice of animals at each time point. Luciferase expression does not significantly alter the in vitro or in vivo growth kinetics of B16-F10 cells.
Key applications include evaluation of antitumour agents, immunotherapies and metastasis-inhibiting compounds in syngeneic models, as well as quantitative pharmacodynamic imaging in preclinical oncology studies.

Tissue	Skin
Disease	Mouse melanoma

CLASSIFICATION

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

GMO status details

GMO-S1: This cell line contains a stably integrated firefly luciferase reporter cassette (Luc2, codon-optimized) 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

CHARACTERISTICS

Morphology	Mixture of spindle-shaped and epithelial-like cells

IDENTIFIERS

Citation

B16-F10-Luc (Cytion catalog number 305658)

NCBI TaxID	10090
Cellosaurus	CVCL_C8XU

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EXPRESSION AND SUSCEPTIBILITY

Antigen expression

Luc2 (firefly, codon-optimized)

Products

Melanin

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

Breed / subspecies	C57BL/6

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

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