Product sheet

B16-F10-Luc Cells | 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.
Organism	Mouse
Tissue	Skin
Disease	Mouse melanoma

Characteristics

Breed/Subspecies	C57BL/6
Gender	Male
Morphology	Mixture of spindle-shaped and epithelial-like cells
Growth properties	Adherent

Regulatory Data

Citation	B16-F10-Luc (Cytion catalog number 305658)
Biosafety level	1

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NCBI_TaxID	10090
CellosaurusAccession	CVCL_C8XU
GMO Status	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.

Biomolecular Data

Antigen expression	Luc2 (firefly, codon-optimized)
Products	Melanin
MSI-status	

Handling

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)
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
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°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 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium. 7. Follow the procedure described under Post-Thaw Recovery
Incubation Atmosphere	37°C, 5% 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 °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