Product sheet

CT26-Luc Cells | 305646

General information

Description	CT26-Luc is a bioluminescent derivative of the murine CT26 colon adenocarcinoma cell line, engineered to stably express a firefly luciferase reporter gene. The parental CT26 cell line was established from an N-nitroso-N-methylurethane-induced undifferentiated colon carcinoma in a BALB/c mouse and is one of the most widely used syngeneic tumor models for preclinical immuno-oncology research. CT26 cells exhibit aggressive growth characteristics, including rapid proliferation and high tumorigenic potential in immunocompetent BALB/c hosts, closely mimicking aspects of human colorectal cancer biology. The stable integration of a luciferase reporter in CT26-Luc enables sensitive, quantitative bioluminescent imaging (BLI) of tumor burden in living animals. Following administration of the luciferin substrate, the emitted light signal correlates with metabolically active tumor cell number, facilitating noninvasive longitudinal monitoring of tumor growth, metastatic dissemination, and treatment responses. This makes CT26-Luc especially valuable for preclinical studies evaluating checkpoint inhibitors, therapeutic antibodies, oncolytic viruses, and combination treatment strategies in an immune-competent setting. CT26-Luc retains the key biological features of the parental CT26 line, including its sensitivity to immune-mediated killing and its established use in studies of tumor immunology, adoptive cell therapy, and cancer vaccine development. The addition of the luciferase reporter substantially increases experimental throughput and sensitivity, enabling real-time assessment of therapeutic efficacy and tumor kinetics over the course of treatment without sacrificing animals at individual time points.
Organism	Mouse
Tissue	Colon
Disease	Colon adenocarcinoma
Synonyms	Luciferase Reporter CT26 Cell Line

Characteristics

Breed/Subspecies	BALB/c
Age	Age unspecified
Gender	Female
Morphology	Fibroblast
Growth properties	Adherent

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Regulatory Data

Citation	CT26-Luc (Cytion catalog number 305646)
Biosafety level	1
NCBI_TaxID	10090
CellosaurusAccession	CVCL_E3H3
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)
Mutational profile	Mutation: p.Gly12Asp, Homozygous

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Doubling time	24-48 hours
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 to 3
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.

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