

C6-Luc Cells | 305620**General information****Description**

C6-Luc is a genetically modified derivative of the rat C6 glioma cell line, which was originally established from a N-nitrosomethylurea-induced glial brain tumour in a Wistar rat by Benda et al. (1968). The parental C6 line was stably transfected with a eukaryotic expression plasmid encoding luciferase under control of a constitutive promoter, followed by selection with hygromycin B to obtain stably expressing monoclonal populations.

C6-Luc cells constitutively express luciferase and emit bioluminescent signal in the presence of a luciferin substrate, enabling real-time, non-invasive monitoring of tumour growth by bioluminescence imaging (BLI) in live animals. The line is used to establish orthotopic syngeneic glioma models in Wistar or Sprague-Dawley rats following intracranial stereotactic implantation, and in subcutaneous xenograft models. Applications include evaluation of anti-glioma therapies, drug penetration across the blood-brain barrier, and development of brain tumour imaging platforms.

Organism

Rat

Tissue

Brain

Disease

Rat malignant glioma

Applications

Orthotopic rat glioma model for bioluminescence imaging; preclinical evaluation of anti-glioma therapies; blood-brain barrier drug penetration studies; neuroscience and brain tumour research.

Synonyms

Luciferase Reporter C6 Cell Line

Characteristics**Age**

Age unspecified

Gender

Male

Morphology

Polygonal / epithelial-like

Growth properties

Adherent

Regulatory Data**Citation**

C6-Luc (Cytion catalog number 305620)

Biosafety level

1

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NCBI_TaxID 10116**CellosaurusAccession** CVCL_E3GZ

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)

Tumorigenic Yes; forms intracranial tumours in syngeneic Wistar/Sprague-Dawley rats

Products Firefly luciferase (luc2, pGL4.50)

Handling

Culture Medium RPMI 1640, w: 2.1 mM stable Glutamine, w: 2.0 g/L NaHCO₃ (Cytion article number 820700a)

Supplements 10% Fetal Bovine Serum

Dissociation Reagent Accutase

Doubling time 24-48 hours

Subculturing Passage sub-confluent cultures (70–80%) at 1:3 to 1:6 using 0.25% Trypsin/EDTA.

Seeding density $1-3 \times 10^4/\text{cm}^2$

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% CO₂, 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