Product sheet

HeLa-Luc Cells | 305664

[redacted]

Description	HeLa-Luc cells are a bioluminescent derivative of the human HeLa cervical adenocarcinoma cell line that have been engineered to constitutively express the firefly luciferase reporter gene. Following administration of the luciferin substrate, these cells emit a quantifiable luminescent signal that directly correlates with viable cell number and metabolic activity. This feature enables sensitive, non-invasive monitoring of tumor cell proliferation, survival, and dissemination in both in vitro assays and in vivo imaging applications. HeLa-Luc cells retain the robust growth characteristics and epithelial morphology associated with parental HeLa cells while providing an additional optical readout for longitudinal experimental analysis. The luciferase-expressing phenotype makes HeLa-Luc cells particularly useful for xenograft and metastasis studies in immunocompromised animal models, where real-time bioluminescence imaging can be used to track tumor burden and therapeutic response over time. In cell-based assays, these cells are widely employed for high-throughput drug screening, cytotoxicity testing, evaluation of gene delivery systems, and studies of cancer cell signaling and apoptosis. The stable reporter expression also supports reproducible quantification in co-culture systems and experimental models requiring dynamic monitoring of cellular viability or transcriptional activity. As with parental HeLa cells, HeLa-Luc cells exhibit the genomic instability and high proliferative capacity characteristic of transformed cervical cancer cells associated with human papillomavirus type 18 (HPV-18). Experimental conditions, luciferase vector design, promoter selection, and selection strategy may vary between laboratories or commercial sources, potentially influencing reporter intensity and long-term expression stability. Researchers should therefore verify luciferase activity, growth kinetics, and phenotypic consistency under their specific culture and assay conditions prior to large-scale experimental use.
Organism	Human
Tissue	Uterus, cervix
Disease	Human papillomavirus-related endocervical adenocarcinoma

[redacted]

Age	30,5 years
Gender	Female
Ethnicity	African American
Morphology	Epithelial-like
Growth properties	Adherent

HeLa-Luc Cells | 305664

[illegible]

Citation	Hela-Luc (Cytion catalog number 305664)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_YA88
GMO Status	GMO-S1: This HeLa cell line contains a lentiviral-Luc reporter construct for bioluminescent monitoring of cervical cancer cell behavior. This classification applies only within Germany and may differ elsewhere.

[illegible]

Protein expression	Luc
Isoenzymes	G6PD, A
Virus susceptibility	Poliovirus 1, 2, 3, vesicular stomatitis (Indiana), encephalomyocarditis, adenovirus 5
Reverse transcriptase	Negative
Products	Keratin

[illegible]

Culture Medium	EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)
Supplements	Supplement the medium with 10% FBS and 1% NEAA
Dissociation Reagent	Accutase
Seeding density	1 to 3 x 10^4 cells/cm^2

HeLa-Luc Cells | 305664

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.

[redacted] / [redacted] / HLA