OVCAR-8-Luc

305697

GENERAL INFORMATION

Description

OVCAR-8-Luc cells are a bioluminescent derivative of the human ovarian adenocarcinoma cell line OVCAR-8, which was originally established from an adult patient with advanced-stage disease. These cells have been genetically engineered to stably express luciferase, an enzyme that catalyzes light emission in the presence of its substrate, enabling highly sensitive, non-invasive monitoring of cellular activity. The parental OVCAR-8 line is characterized by aggressive growth, genomic instability, and features representative of high-grade serous ovarian cancer, making it a widely used model for studying ovarian tumor biology.
The incorporation of luciferase allows OVCAR-8-Luc cells to be used in longitudinal in vivo imaging applications, particularly in xenograft and orthotopic tumor models, where tumor burden and metastatic dissemination can be quantitatively tracked over time using bioluminescence imaging. These cells retain key molecular and phenotypic traits of the parental line, including alterations in pathways relevant to ovarian cancer progression such as p53 dysfunction and dysregulated cell cycle control. Consequently, OVCAR-8-Luc cells are well suited for evaluating therapeutic efficacy, tumor growth kinetics, and metastatic behavior, as well as for studying tumor microenvironment interactions in preclinical research.

Tissue	Ovary
Disease	Adenocarcinoma
Metastatic site	Primary tumor site (ovary)

Applications

Ovarian cancer research; bioluminescence imaging in xenograft/orthotopic models; in vivo tumor burden tracking; drug efficacy and pharmacodynamics; PARP inhibitor and platinum sensitivity studies; peritoneal metastasis modeling; ovarian cancer immunotherapy evaluation

Synonyms

- OVCAR 8
- NIH:OVCAR-8
- OVCAR8
- Ovcar8
- OVCAR.8
- OVCA8
- OVCAR-8/EGFP_LC3

CLASSIFICATION

Organism	Human
Sex	Female
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

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CHARACTERISTICS

Morphology	Epithelial-like
Cell type	Epithelial cells

IDENTIFIERS

Citation

OVCAR-8-Luc (Cytion catalog number 305697)

NCBI TaxID	9606
Cellosaurus	CVCL_2169

EXPRESSION AND SUSCEPTIBILITY

Antigen expression

Luc2 (firefly, codon-optimized)

HANDLING AND CULTURE

Culture medium

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

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	Accutase
Seeding density	1-3 x 10^4 cells/mL
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

Donor age	64 years
Ethnicity	Caucasian

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