Product sheet

OVCAR-8 Cells | 305383

General information

Description	OVCAR-8 is a human ovarian carcinoma cell line established from a patient with advanced-stage ovarian adenocarcinoma. This cell line is particularly noted for its significant resistance to cisplatin and carboplatin, which were administered in high doses during the patient's treatment. OVCAR-8 is widely utilized in research investigating mechanisms of chemoresistance in ovarian cancer, as well as in the development of strategies to overcome resistance to platinum-based chemotherapies. OVCAR-8 cells exhibit an epithelial morphology and grow adherently in culture. The cell line is characterized by molecular and phenotypic traits associated with high-grade ovarian cancers, including alterations in DNA damage repair mechanisms and other pathways contributing to tumor survival under chemotherapeutic stress. Unlike some other ovarian cancer cell lines, OVCAR-8 does not exhibit detectable expression of metallothionein, a protein thought to play a role in resistance to heavy metal-based drugs. However, this cell line demonstrates cross-resistance to cadmium and other agents, suggesting the involvement of alternative resistance mechanisms, such as increased glutathione levels and enhanced DNA repair capacity. OVCAR-8 is a valuable tool in preclinical research for screening chemotherapeutic agents, evaluating targeted therapies, and studying the biology of chemoresistance. Researchers employ this cell line to explore combinations of drugs designed to sensitize resistant tumors to standard treatments. Additionally, OVCAR-8 provides insights into the genetic and molecular adaptations of ovarian cancer cells that underlie their survival and persistence despite aggressive chemotherapy regimens. Its clinical relevance and resistance profile make it an important resource for advancing ovarian cancer research and therapy development.
Organism	Human
Tissue	Ovary
Disease	Ovarian adenocarcinoma
Synonyms	OVCAR 8, NIH:OVCAR-8, OVCAR8, Ovcar8, OVCAR.8, OVCA8, OVCAR-8/EGFP_LC3

Characteristics

Age	64 years
Gender	Female
Ethnicity	Caucasian
Morphology	Epithelial-like
Growth properties	Adherent

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Regulatory Data

Citation	OVCAR-8 (Cytion catalog number 305383)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1629

Biomolecular Data

Mutational profile	Mutation: CTNNB1, Simple, p.Gln26Arg (c.77A>G), Heterozygous; Mutation: ERBB2, Simple, p.Gly776Val (c.2327G>T), Heterozygous; Mutation: KRAS, Simple, p.Pro121His (c.362C>A), Heterozygous; Mutation: TP53, Simple, c.376-1G>A (p.Tyr126_Lys132del, c.376_396del21), Homozygous, Splice acceptor mutation

Handling

Culture Medium	RPMI 1640, w: 2.1 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	24-32 hours
Seeding density	3-4 x 10^4 cells/mL
Freeze medium	As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

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 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium. 7. Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth. 8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.
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

Sterility	Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods. To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.