Product sheet

TOV-21G Cells | 305892

General information

Description	TOV-21G is a human epithelial ovarian cancer cell line derived from a primary clear cell carcinoma tumor obtained from an adult patient who had not received prior chemotherapy or radiation treatment. The cell line was established as part of a panel of spontaneously immortalized ovarian cancer models that retain many biological characteristics of the original tumors from which they were derived. TOV-21G grows as an adherent epithelial monolayer in culture and exhibits morphological and molecular features consistent with clear cell ovarian carcinoma, a distinct histological subtype of epithelial ovarian cancer characterized by aggressive clinical behavior and unique molecular alterations. Molecular and genomic analyses of ovarian cancer cell line panels have demonstrated that TOV-21G contains alterations in genes and pathways commonly implicated in ovarian tumorigenesis, including mutations affecting tumor suppressor and cell cycle regulatory pathways. Comparative gene expression profiling using high-density microarrays has shown that TOV-21G displays transcriptional patterns that clearly distinguish it from normal ovarian surface epithelial cells and align more closely with profiles observed in aggressive epithelial ovarian tumors. These analyses highlight dysregulation of numerous genes involved in proliferation, cellular signaling, and tumor progression, supporting the relevance of TOV-21G as a model for studying ovarian cancer biology. Functional studies using TOV-21G have demonstrated pronounced neoplastic properties, including anchorage-independent growth, invasive behavior, and tumorigenic potential in experimental systems. Chromosomal and genomic investigations further indicate that introduction of specific normal chromosomes, such as chromosomes 6 or 18, can suppress aspects of the malignant phenotype, suggesting the presence of tumor suppressor loci affecting ovarian cancer progression. These properties make TOV-21G a valuable experimental model for investigating mechanisms of ovarian carcinogenesis, tumor suppressor gene function, and the evaluation of targeted therapeutic strategies for clear cell ovarian cancer.
Organism	Human
Tissue	Ovary
Disease	Clear cell adenocarcinoma of the ovary
Synonyms	TOV-21g, TOV21G, TOV21

Characteristics

Age	62 years
Gender	Female
Ethnicity	Caucasian
Morphology	epithelial

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Growth properties	Adherent

Regulatory Data

Citation	TOV-21G (Cytion catalog number 305892)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_3613

Biomolecular Data

Mutational profile	Mutation: p.Gly13Cys, Heterozygous; Mutation: p.His1047Tyr, Heterozygous; Mutation: p.Lys267Argfs*9, Heterozygous

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 15% FBS
Dissociation Reagent	Accutase
Doubling time	1.5 days ; 27 hours ; 30.62 hours
Seeding density	1 to 3 x 10^4 cells/cm^2
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