

OCUM-1 Cells | 305612

General information

Description

OCUM-1 is a human gastric cancer cell line derived from a patient with poorly differentiated adenocarcinoma of the stomach. This cell line is widely utilized in cancer research to study the aggressive nature of gastric cancers, particularly those with low differentiation status. OCUM-1 serves as a reliable in vitro model for investigating tumor biology, mechanisms of metastasis, and therapeutic responses in gastric adenocarcinoma, which remains a leading cause of cancer-related mortality worldwide.

OCUM-1 cells exhibit epithelial morphology and adhere under standard culture conditions. They are characterized by features typical of poorly differentiated gastric cancer, including high proliferative capacity, the ability to invade surrounding tissues, and molecular alterations that drive tumor progression. Researchers frequently use OCUM-1 to study signaling pathways such as Wnt/ β -catenin, PI3K/AKT, and EMT-related mechanisms, which are often dysregulated in gastric adenocarcinoma and contribute to its metastatic behavior. Additionally, this cell line provides a platform for evaluating genetic and epigenetic changes associated with poorly differentiated tumors.

In preclinical research, OCUM-1 is particularly valuable for drug screening and the development of targeted therapies aimed at treating aggressive gastric cancer subtypes. The cell line is often used to assess the efficacy of chemotherapy agents, small-molecule inhibitors, and combination therapies, as well as to explore mechanisms of chemoresistance. Furthermore, OCUM-1 is utilized in studies focused on tumor microenvironment interactions and the molecular drivers of peritoneal dissemination, a frequent and challenging complication in advanced gastric cancer. Overall, OCUM-1 remains a crucial resource for advancing gastric cancer research and the discovery of novel therapeutic approaches.

Organism

Human

Tissue

Stomach

Disease

adenocarcinoma

Metastatic site

Pleural effusion

Synonyms

OCUM1, Osaka City University Medical school-1

Characteristics

Age

38 years

Gender

Female

Ethnicity

Japanese

Morphology

Lymphocyte-like with clustering

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Cell type	Lymphocyte
Growth properties	Adhärent/Suspension

Regulatory Data

Citation	OCUM-1 (Cytion catalog number 305612)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_3084

Biomolecular Data

Mutational profile	Mutation: MAP2K1, Simple, p.Gln56Pro (c.167A>C), Hemizygous
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Handling

Culture Medium	DMEM low glucose, 0.5 mM sodium pyruvat
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Cells detach by tapping the flask, no PBS/Accutase needed
Doubling time	26-34 hours
Seeding density	$2-4 \cdot 10^4/\text{cm}^2$
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.

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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 $300 \times g$ 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

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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.