

SNU-216 Cells | 305630

Description

The SNU-216 cell line is a human gastric carcinoma model derived from a metastatic lymph node of a patient with moderately differentiated adenocarcinoma. This cell line is part of a panel of gastric carcinoma models established to study gastric cancer biology, particularly in the context of tumor antigen expression, genetic mutations, and therapeutic responses. SNU-216 cells exhibit an adherent growth pattern in culture, forming a heterogeneous diffuse monolayer with round-oval cellular morphology and a low nuclear-to-cytoplasmic ratio.

Genetic analyses have revealed significant mutations in the SNU-216 cell line, including alterations in the TP53 gene. Specifically, a mutation in exon 6 has been identified, which likely impacts its tumor suppressor functions. Additionally, tumor antigen studies have shown that SNU-216 expresses high levels of carcinoembryonic antigen (CEA) and tissue polypeptide antigen (TPA), with no detectable alpha-fetoprotein (AFP). These features make the cell line a valuable tool for studying the molecular and genetic characteristics of gastric cancer and for exploring diagnostic and therapeutic applications related to tumor markers.

SNU-216 has also been included in the Cancer Cell Line Encyclopedia (CCLE), providing extensive genomic, transcriptomic, and pharmacological data. The cell line's molecular profile has been utilized to predict sensitivities to targeted therapies and to investigate pathways such as those involving receptor tyrosine kinases and PI3K signaling. Its inclusion in this resource underlines its importance as a preclinical model for gastric cancer research and drug development.

Organism Human

Tissue Gastric

Disease tubular adenocarcinoma

Applications Lymph node

Synonyms SNU216, NCI-SNU-216

Age 46 years

Gender Female

Ethnicity Korean

Morphology Epithelial-like

Cell type Epithelial

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Growth properties Adherent, monolayer

Citation SNU-216 (Cytion catalog number 305630)

Biosafety level 1

NCBI_TaxID 9606

CellosaurusAccession CVCL_3946

Mutational profile Mutation: TP53, Simple, p.Val216Met (c.646G>A), Homozygous

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 10% heat inactivated FBS

Dissociation Reagent Accutase

Doubling time 36 hours

Subculturing Remove medium, add fresh 0.25 % trypsin 0.02 % EDTA solution, stand culture flask at 37°C for 3 to 5 minutes, add culture medium and collect the cells, transfer the medium into 15ml tube, centrifuge, aspirate the medium, resuspend the pellets with culture medium and dispense into the culture flask

Fluid renewal 2 to 3 times per week

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.

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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.