Product sheet

SNU-81 Cells | 305638

Description	The SNU-81 cell line is a human colorectal carcinoma model established from a Korean patient. It is part of a collection of 12 colorectal cancer cell lines derived from both primary tumors and metastatic sites, providing a diverse representation of tumor biology. SNU-81 was derived from a primary colorectal adenocarcinoma and exhibits epithelial morphology with adherent growth in culture. The cell line expresses carcinoembryonic antigen (CEA), which is secreted into the culture supernatant, reflecting typical colorectal tumor characteristics. At the molecular level, SNU-81 has undergone extensive genetic characterization. It harbors a mutation in the TP53 tumor suppressor gene, a common event in colorectal carcinogenesis, typically associated with later stages of tumor progression. Additionally, mutations in the APC gene were identified, implicating disruption of Wnt/β-catenin signaling, a hallmark of colorectal cancer development. No activating mutations were detected in the K-ras2 gene for this line. Alterations in cell cycle regulators, such as hypermethylation of the p16 gene, were also observed, further supporting the cell line's utility in studying genetic and epigenetic mechanisms driving colorectal cancer. Overall, SNU-81 serves as a well-defined in vitro model for exploring tumor suppressor gene function, oncogenic pathway regulation, and response to targeted therapies in colorectal cancer research.
Organism	Human
Tissue	Colon
Disease	Adenocarcinoma
Synonyms	SNU81, NCI-SNU-81

Age	53 years
Gender	Male
Ethnicity	Korean
Morphology	Epithelial-like
Cell type	Epithelial
Growth properties	Adherent, monolayer

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Citation	SNU-81 (Cytion catalog number 305638)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_5098

Mutational profile	Mutation: APC, Simple, p.Ser1392Ter (c.4175C>A), Heterozygous; Mutation: APC, Simple, p.Arg1450Ter (c.4348C>T), Heterozygous; Mutation: APC, Simple, p.Arg2204Ter (c.6610C>T), Heterozygous; Mutation: FBXW7, Simple, p.Arg479Gln (c.1436G>A), Heterozygous; Mutation: KRAS, Simple, p.Ala146Thr (c.436G>A), Heterozygous; Mutation: PTEN, Simple, p.Arg130Gln (c.389G>A), Heterozygous; Mutation: PTEN, Simple, p.Glu299Ter (c.895G>T), Heterozygous; Mutation: TBX3, Simple, p.Glu111Ter (c.331G>T), Heterozygous; Mutation: TBX3, Simple, c.942-1G>T, Heterozygous; Mutation: TP53, Simple, p.Lys132Thr (c.395A>C), Heterozygous; Mutation: TP53, Simple, p.Arg213Ter (c.637C>T), Heterozygous

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% FBS
Dissociation Reagent	Accutase
Doubling time	30 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 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.

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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.