Product sheet

SK-CO-1 Cells | 305626

General information

Description	The SK-CO-1 cell line is a human colorectal adenocarcinoma model derived from a metastatic site in ascitic fluid. It has been widely used in cancer research to study the molecular mechanisms underlying colorectal cancer (CRC) progression and response to therapeutic interventions. SK-CO-1 cells are adherent in culture and exhibit morphological characteristics consistent with epithelial tumor cells. This cell line has been included in large-scale genomic studies, such as the Cancer Cell Line Encyclopedia (CCLE), which provides comprehensive genetic, transcriptomic, and pharmacological profiling. Genetic studies on SK-CO-1 have identified mutations and copy number variations in genes critical to CRC pathogenesis, including alterations in TP53, KRAS, and APC. These features make it a valuable model for exploring pathways such as WNT/β-catenin signaling, which plays a significant role in colorectal tumor development. Furthermore, pharmacological screening has revealed the cell line's differential sensitivities to chemotherapeutic agents, helping researchers identify potential biomarkers for drug response.
Organism	Human
Tissue	Large intestine, Colon
Disease	Colorectal Adenocarcinoma
Metastatic site	ascites
Applications	3D cell culture
Synonyms	SKCO-1, SKCO 1, SKCO1, SKCol1, SK-Col-1, SK Col 1

Characteristics

Age	65 years
Gender	Male
Ethnicity	Caucasian
Morphology	Epithelial
Growth properties	Adherent

Regulatory Data

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Citation	SK-CO-1 (Cytion catalog number 305626)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0626

Biomolecular Data

Antigen expression	Blood Type O; Rh+; HLA A1, A3, B7, B13
Isoenzymes	AK-1, 1-2 ES-D, 1 G6PD, B GLO-I, 1-2 Me-2, 1 PGM1, 1 PGM3, 1-2
Oncogenes	Myc+, ras+, myb+, fos+, sis+, p53+, abl-, ros-, src-
Mutational profile	Mutation: APC, Simple, p.Phe1089fs*37 (c.3266delT), Heterozygous; Mutation: APC, Simple, p.Pro1443fs*30 (c.4328delC), Heterozygous; Mutation: GNAS, Simple, p.Arg201Cys (c.601C>T), Heterozygous; Mutation: KRAS, Simple, p.Gly12Val (c.35G>T), Heterozygous
Karyotype	(P7) hypertriploid to hypotetraploid with abnormalities including dicentrics, minutes, rings, secondary constrictions, and 8 large submetacentric markers

Handling

Culture Medium	EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)
Supplements	Supplement the medium with 10% FBS and 1% NEAA
Dissociation Reagent	Accutase
Doubling time	46 hours
Subculturing	Remove medium, and rinse with 0.25% trypsin, 0.03% EDTA solution. Remove the solution and add an additional 1 to 2 ml of trypsin-EDTA solution. Allow the flask to sit at room temperature (or at 37°C) until the cells detach. Add fresh culture medium, aspirate and dispense into new culture flasks.
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.

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.