Product sheet

HCT-15 Cells | 300229

General information

Description	HCT-15 cells are derived from the adenocarcinoma of the colon of a 44-year-old Caucasian male. This cell line, developed in the early 1970s, is widely utilized in the field of cancer research, especially for exploring the biology and treatment of colorectal cancer. Morphologically, HCT-15 cells are characterized by an epithelial-like appearance with a tendency to grow both as a monolayer and in clusters, displaying significant cellular heterogeneity. This feature mirrors the varied cellular environments found in solid tumors, making HCT-15 a valuable model for studying tumor dynamics and cellular interactions within the tumor microenvironment. Genotypically, HCT-15 cells exhibit a hyperdiploid karyotype with multiple chromosomal aberrations, typical of many colorectal cancers. These include mutations in key oncogenes and tumor suppressor genes, such as mutations in the KRAS gene and deletions affecting the p53 pathway, which are implicated in the pathogenesis and progression of colorectal cancer. These genetic traits make HCT-15 cells a crucial tool for investigating genetic and molecular mechanisms associated with cancer progression, metastasis, and resistance to therapies. The broad use of HCT-15 cells in research has led to significant insights into the molecular pathways involved in colorectal cancer, enhancing our understanding of disease mechanisms and aiding in the development of targeted therapies.
Organism	Human
Tissue	Colorectal
Disease	Adenocarcinoma
Synonyms	HCT 15, HCT.15, HCT15

Characteristics

Age	67 years
Gender	Male
Morphology	Epithelial-like
Growth properties	Adherent

Regulatory Data

Citation	HCT-15 (Cytion catalog number 300229)

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Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0292

Biomolecular Data

Antigen expression	The cells are positive for keratin by immunoperoxidase staining.
Tumorigenic	In nude mice
Viruses	Reverse Transcriptase negative

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 10% FBS
Dissociation Reagent	Accutase
Doubling time	15 hours
Subculturing	Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.
Seeding density	1 to 2 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	Fast

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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.