# HCT-8

300210

## GENERAL INFORMATION

### Description

HCT-8 cells, also known as human ileocecal colorectal adenocarcinoma cells, are an epithelial cell line originally derived from a 67-year-old Caucasian male patient with ileocecal adenocarcinoma. The HCT-8 cell line was established in the late 1960s and is widely utilized in cancer research, particularly in the study of colorectal cancer pathogenesis, metastasis, and treatment response.
Morphologically, HCT-8 cells are epithelial-like and exhibit a monolayer growth pattern with a polygonal shape. They possess the capability to grow in both adherent and semi-suspended cultures, which is characteristic of some transitional stages of cancer cell metastasis. This feature makes them particularly useful for studies related to cancer cell invasion and migration.
Genotypically, HCT-8 cells are hypertriploid, containing several chromosomal aberrations common in colorectal carcinomas, including mutations and deletions which are relevant to cancer progression and resistance mechanisms. This genetic profile supports their use in oncological studies, especially those focusing on genetic pathways involved in tumorigenesis and drug resistance.
Research utilizing HCT-8 cells has contributed significantly to the understanding of colorectal cancer biology, including the elucidation of molecular pathways involved in cancer cell proliferation, apoptosis, and chemoresistance. The cell line continues to be a critical model for investigating the efficacy of new therapeutic agents and for exploring the molecular mechanisms underlying colorectal cancer.

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| **Tissue** | Rectum |
| **Disease** | Adenocarcinoma |

### Synonyms

- HCT 8
- HCT8

## CLASSIFICATION

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| **Organism** | Human |
| **Sex** | Male |
| **Growth properties** | Adherent |
| **Biosafety level** | 1 |

## CHARACTERISTICS

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| **Morphology** | Epithelial-like |
| **Tumourigenic** | In nude mice |
| **Doubling time** | 15 hours |

## IDENTIFIERS

### Citation

HCT-8 (Cytion catalog number 300210)

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| **NCBI TaxID** | 9606 |
| **Cellosaurus** | CVCL_2478 |

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB

## EXPRESSION AND SUSCEPTIBILITY

**Antigen expression**

CDx (+/-), CDy (-),

**Isoenzymes**

AK-1, 1, ES-D, 1-2, GLO-1, 2, G6PD, B, PGM1, 1, PGM3, 1, Me-2, 1

**Mutational profile**

HRT-18 cells carry a mutation in codon 13 of Kras gene: GGC(Wt Gly) >GAC(Asp)

**Viruses**

Reverse Transcriptase negative

**Products**

Carcinoembryonic antigen (CEA) 0.5 ng/10 exp6 cells/10 days, alkaline phosphatase, keratin

## HANDLING AND CULTURE

**Culture medium**

DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 (Cytion article number 820400a)

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| **Incubation atmosphere** | 37°C, 5% $CO_2$, humidified atmosphere. |

**Supplements**

Supplement the medium with 10% FBS

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| **Dissociation reagent** | Accutase |

**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.

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| **Seeding density** | 2 to 4 x $10^4$ cells/$cm^2$ |
| **Fluid renewal** | 2 to 3 times per week |
| **Post-thaw recovery** | Fast |

**Thawing and culturing**

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

## QUALITY CONTROL AND CRYOPRESERVATION

### 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.

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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. |

### 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.

### 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.

## DONOR

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| **Donor age** | 67 years |

## LEGAL AND SAFETY

### Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

### Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

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| **Material Transfer Agreement required** | Yes |