COLO-205

300380

GENERAL INFORMATION

Description

The COLO-205 cell line is a human colorectal adenocarcinoma cell line first established from the metastatic site of the ascites in a 70-year-old Caucasian male. Characterized by its epithelial cell morphology, this cell line is frequently utilized in biomedical research focused on colorectal cancer, particularly in studies related to cancer biology, drug response, and metastatic mechanisms. COLO-205 cells exhibit a hyperdiploid karyotype and are known to form moderately well-differentiated adenocarcinomas when xenografted into immunodeficient mice. COLO-205 cells express several key oncogenic and tumor suppressor pathways, making them a valuable model for pharmacological testing and cancer research. They are responsive to tumor necrosis factor-related apoptosis-inducing ligand (TRAIL) making them suitable for apoptosis studies. Furthermore, these cells have been used extensively to investigate the pharmacodynamics of various chemotherapeutic agents, providing insights into the mechanisms of action and resistance in colorectal cancer therapy. Research utilizing the COLO-205 line has contributed significantly to understanding the biological behaviors typical of colorectal adenocarcinomas, including cellular proliferation, differentiation, and interaction with anticancer drugs.

Tissue	Colon, Dukes' type D
Disease	Colorectal adenocarcinoma
Metastatic site	Ascites

Synonyms

- Colo 205
- CoLo 205
- COLO-205
- COLO 205
- COLO.205
- Colo205
- COLO205
- Co 205
- Colorado 205

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Tumourigenic	Yes, in nude mice
Ploidy status	Aneuploid
MSI status	Stable (MSS)
Doubling time	20 to 25 hours

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

IDENTIFIERS

Citation

COLO-205 (Cytion catalog number 300380)

NCBI TaxID	9606
Cellosaurus	CVCL_0218

EXPRESSION AND SUSCEPTIBILITY

Protein expression

CSAp- (Centriole and Spindle-Associated protein)

Antigen expression

The cells are positive for keratin by immunoperoxidase staining.

Isoenzymes

G6PD, B, PGM1, 1-2, PGM3, 1-2, 6PGD, A, ES-D, 1-2, PEP-D, 1

Reverse transcriptase	Negative

Products

Carcinoembryonic antigen (CEA) 1.5 to 4.1 ng/106 cells/10 days, keratin, interleukin 10 (IL-10, interleukin-10)

HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS

Subculturing

Collect suspension cells in a 15 ml tube and carefully rinse the adherent cells using PBS without calcium and magnesium (3-5 ml PBS for T25, 5-10ml for T75 cell culture flasks). Add Accutase (1-2ml per T25, 2.5ml per T75 cell culture flask), the cell sheet must be covered completely. Incubate at ambient temperature for 10 minutes, then centrifuge the cells growing in suspension and the adherent cells together. Carefully resuspend the cells and dispense into new flasks which contain fresh medium.

Seeding density	1 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Post-thaw recovery	After thawing, plate the cells at 5 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 hours.

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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.

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

Donor age	70 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.

Material Transfer Agreement required	Yes