LS174T

300392

GENERAL INFORMATION

Description

The LS147T cell line is a variant of LS-180, both of which are derived from a Duke's type B adenocarcinoma of the colon in a 58-year-old White female patient. The original LS-180 line was established by culturing the minced tumor tissue for 10 months. LS-147T, along with its parent line, is notable for its expression of multiple oncogenes including myc, myb, ras, and fos, while being negative for others like sis, abl, and ros. This line also expresses high levels of carcinoembryonic antigen (CEA), interleukin 6 (IL-6), and interleukin 10 (IL-10), which are important markers and potential targets in colorectal cancer research.
These cells exhibit several key characteristics of colonic epithelial cells, including abundant microvilli and intracytoplasmic mucin vacuoles, which are features typically associated with secretory cells in the colonic mucosa. Electron microscopy studies have confirmed these structural details, further supporting their origin and differentiation status. Importantly, LS-147T cells have been shown to be tumorigenic in immunodeprived mice, consistently producing tumors when inoculated subcutaneously at high cell densities, thus affirming their malignant potential.
Moreover, the LS-147T cell line is particularly valuable in studies focusing on the molecular and immunological aspects of colorectal cancer. It has been reported that this line is easier to subculture compared to its parent line, LS-180, making it a more practical choice for long-term studies. The robust production of CEA by these cells, which is significantly higher than that of other established lines like HT-29, makes LS-147T a critical model for understanding tumor marker dynamics and exploring targeted therapies in colorectal cancer.

Tissue	Colon
Disease	Adenocarcinoma

Synonyms

- Ls174T
- LS174t
- Ls-174-T
- LS-174-T
- LS 174 T
- LS174T
- Ls-174T
- LS 174T
- LS-174
- LS174

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Tumourigenic	Yes, in nude mice

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

Karyotype

45,x with one x chromosome missing but no other chromosomal aberrations

IDENTIFIERS

Citation

LS174T (Cytion catalog number 300392)

NCBI TaxID	9606
Cellosaurus	CVCL_1384

EXPRESSION AND SUSCEPTIBILITY

Protein expression

Colon Antigen 3 +, CEA +, p53 -, GFAP -, mRNA expression +

Antigen expression

HLA A2, B13, B50, Blood type O

Isoenzymes

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

Oncogenes

Myc +, myb + , ras +, fos +, p53 +, sis -, abl -, ros -, src -

Mutational profile

LS-174T cells carry a mutation in codon 12 of Kras gene: GGT(Wt Gly) >GAT(Asp)

Reverse transcriptase	Negative

Products

Carcinoembryonic antigen (CEA) 1944 ng/106 cells in 10 days, mucin, interleukin-10 (IL-10), interleukin-6 (IL-6)

HANDLING AND CULTURE

Culture medium

EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)

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

Supplements

Supplement the medium with 10% FBS and 1% NEAA

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.

Seeding density	5 to 8 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.

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	58 years
Ethnicity	Caucasian

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