Product sheet

LS-513 Cells | 300457

General information

Description	The colorectal carcinoma cell line LS-513 was isolated in 1985 from a primary tumor biopsy of a 63 year old Caucasian male patient. He was diagnosed with a Dukes' C mucin secreting cecal tumor located at the Bauhin valve. LS-513 cells express the major histocompatibility (MHC) class I antigens HLA and beta 2 microglobulin. MHC class II antigens (HLA-DR, DQ, and DP were not detected). TGF beta-1 is inhibitory for proliferation of LS-513 cells, whereas TGF beta-2 has no effect on the growth of these cells. LS-513 cells are 100-fold less sensitive to TGF beta-1 than the LS-1034 cell line. LS-513 cells are multidrug resistant (MDR) and are tumorigenic in nude mice. Colony forming efficiency was 30% in methylcellulose.
Organism	Human
Tissue	Colorectal
Disease	Adenocarcinoma
Synonyms	LS513, LS 513

Characteristics

Age	63 years
Gender	Male
Ethnicity	Caucasian
Morphology	Epithelial-like
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	LS-513 (Cytion catalog number 300457)
Biosafety level	1

Expression / Mutation

Protein expression	CEA+ (50%), p53+

Antigen expression	Carcinoembryonic antigen (CEA), ICAM-1, HLA class I positive
Tumorigenic	Yes, forms tumors in nude mice
Products	Transforming growth factor beta 1 (TGF beta-1, 83 pg per 10 exp6 cells per 24 hours)
Karyotype	Two stem lines can be distinguished. The main one was represented in 65% of the cells, with a modal number of 51,xY and 3 markers, M1 - der(1)t(1,15), M2 - der(2)t(2,3)der(3)t(2,3), M3, and a monosomy 15. The second stem line had a modal chromosome number of 52,xY and presented M2 and M3 plus an isochromosome for the long arm of chromosome 1 called M4. A trisomy 5,7, a tetrasomy 13, and a monosomy 2 and 3 were present in all of the cells analyzed, the line did not exhibit monosomy 15.

Handling

Culture Medium	Ham's F12, w: 1.0 mM stable Glutamine, w: 1.0 mM Sodium pyruvate, w: 1.1 g/L NaHCO3 (Cytion article number 820600a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	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.
Split ratio	A ratio of 1:3 to 1:4 is recommended
Seeding density	1 x 10^4 cells/cm^2
Fluid renewal	Every 3 days
Freezing 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.
Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)

Handling of cryopreserved cultures

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. Optionally, skip centrifugation but remove any remaining freezing medium after 24 hours.
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.

Quality control / Genetic profile / HLA

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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STR profile	**CSF1PO**: 10 **D13S317**: 9,10 **D16S539**: 12,13 **D5S818**: 11 **D7S820**: 8,11 **TH01**: 8 **TPOX**: 8 **vWA**: 16,17 **D3S1358**: 15 **D21S11**: 30 **D18S51**: 12,18 **Penta E**: 5,18 **Penta D**: 9,14 **D8S1179**: 13 **FGA**: 19,21
HLA alleles	**A***: 32:01:01 **B***: 51:01:01 **C***: 01:02:01 **DRB1***: 11:01:01 **DQA1***: 05:05:01 **DQB1***: 03:01:01 **DPB1***: 04:01:01 **E**: 01:01:01