Product sheet

5637 Cells | 300105

General information

Description	5637 is a bladder carcinoma cell line isolated from the urinary bladder of a 68-year-old man with grade II carcinoma. 5637 cells produce and secrete several growth factors, such as SCF, IL-1, IL-6, G-CSF, and GM-CSF. These cytokines are functionally active and can be a valuable source for the culture of growth factor-responsive or dependent hematopoietic primary cells and cell lines. The karyotype modal chromosome number of 5637 cells is 67, ranging from 59 to 71. The stemline modal chromosome number is 67 at 36% and polyploidy at 0.6%. Fourteen marker chromosomes are common to these cells, including 3q+, 11q+, i(13q), t(9q21q), i(17q), i(21q). Additional markers, like der(5)t(5;7)(q31;p11) and 1p, were only found specific to a minor subpopulation, as well as microchromosomes and double minutes (DM). Some cells include one or occasionally two Y chromosomes. 5637 cells are tumorigenic and have been shown to induce tumours in nude mice inoculated subcutaneously. The doubling time of 5637 cells is approximately 24 hours. The isoenzyme profile of 5637 cells consists of isoform 1 of AK-1, ES-D, Me-2 and PGM1, isoform 1 and 2 of GLO-I, isoform B of G6PD, as well as isoform 2 of PGM3. In terms of oncogenes, 5637 cells are positive for FGFR3, PIK3CA, HRAS, KRAS, NRAS, TERT, and CDKN2A but negative for TP53 and belong to the molecular bladder cancer subtype l5637 is a bladder carcinoma cell line isolated from the urinary bladder of a 68-year-old man with grade II carcinoma. 5637 cells produce and secrete several growth factors, such as SCF, IL-1, IL-6, G-CSF, and GM-CSF. These cytokines are functionally active and can be a valuable source for the culture of growth factor-responsive or dependent hematopoietic primary cells and cell lines. The karyotype modal chromosome number of 5637 cells is 67, ranging from 59 to 71. The stemline modal chromosome number is 67 at 36% and polyploidy at 0.6%. Fourteen marker chromosomes are common to these cells, including 3q+, 11q+, i(13q), t(9q21q), i(17q), i(21q). Additional markers, like der(5)t(5;7)(q31;p11) and 1p, were only found specific to a minor subpopulation, as well as microchromosomes and double minutes (DM). Some cells include one or occasionally two Y chromosomes. 5637 cells are tumorigenic and have been shown to induce tumours in nude mice inoculated subcutaneously. The doubling time of 5637 cells is approximately 24 hours. The isoenzyme profile of 5637 cells consists of isoform 1 of AK-1, ES-D, Me-2 and PGM1, isoform 1 and 2 of GLO-I, isoform B of G6PD, as well as isoform 2 of PGM3. In terms of oncogenes, 5637 cells are positive for FGFR3, PIK3CA, HRAS, KRAS, NRAS, TERT, and CDKN2A but negative for TP53 and belong to the molecular bladder cancer subtype luminal. In conclusion, 5637 cells are a valuable tool for cancer research, especially with respect to the study of growth factors, cell division, oncogenes, and bladder cancer.
Organism	Human
Tissue	Bladder
Disease	Carcinoma
Metastatic site	Primary tumor site (urinary bladder)

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Applications	Bladder cancer research; hematopoietic growth factor production (SCF, IL-1, IL-6, G-CSF, GM-CSF); oncogene studies (FGFR3, PIK3CA, HRAS, KRAS, TERT); drug sensitivity; transfection host; feeder cells for hematopoietic cultures

Characteristics

Age	68 years
Gender	Male
Ethnicity	Caucasian
Morphology	Epithelial-like
Cell type	Epithelial cells
Growth properties	Adherent

Regulatory Data

Citation	5637 (Cytion catalog number 300105)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0126
GMO Status	No genetic modification; wildtype bladder carcinoma cell line

Biomolecular Data

Isoenzymes	Me-2, 1, PGM3, 2, PGM1, 1, ES-D, 1, AK-1, 1, GLO-1, 1-2, G6PD, B
Tumorigenic	Yes, In nude mice.
Products	IL-1, IL-6, G-CFS, GM-CSF, SCF
Ploidy status	The modal chromosome number of the stemline cells is 67, comprising 36% of the total. Polyploidy occurs in 0.6% of these cells. Each cell typically had one or occasionally two Y chromosomes.

Karyotype	Phenotype Frequency Product: 0.0056.

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	24 hours
Subculturing	First, 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	1 to 5
Seeding density	1 x 10^4 cells/cm^2 will result in a confluent monolayer within 3 days.
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.
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.