BFTC-905

305749

GENERAL INFORMATION

Description

The BFTC-905 cell line is a human transitional cell carcinoma (TCC) model derived from a high-grade, papillary bladder tumor in a female patient. It was established to represent aggressive bladder cancer and has been used in cytogenetic and molecular profiling studies to understand bladder tumor biology and therapeutic vulnerabilities. BFTC-905 exhibits a highly complex and rearranged karyotype, which includes multiple chromosomal abnormalities typical of advanced bladder cancers. These include non-random alterations such as deletions of 8p, duplications of 8q, and gains in chromosomes 7 and 20, features often linked to disease progression and poor prognosis in urothelial carcinoma.

Extensive characterization using multi-color fluorescence in situ hybridization (M-FISH) has revealed numerous structural rearrangements in BFTC-905, including interchromosomal translocations and deletions affecting loci with potential relevance to tumor suppressor loss. Specifically, BFTC-905 displays a deletion of chromosome 8p21, a region frequently lost in aggressive TCC and associated with tumor suppressor genes. This cytogenetic complexity provides a valuable opportunity for dissecting gene function in the context of genomic instability, a hallmark of late-stage bladder cancers.

BFTC-905 has also been included in large-scale pharmacogenomic studies such as the Cancer Cell Line Encyclopedia (CCLE) and Genomics of Drug Sensitivity in Cancer (GDSC). These resources have confirmed the molecular fidelity of BFTC-905 to primary bladder tumors and have enabled its use in predictive modeling of anticancer drug responses. Its multi-omics profile-including gene expression, mutation status, copy number variation, and DNA methylation-makes it a powerful model for investigating bladder cancer-specific therapeutic targets and resistance mechanisms.

Tissue	Urinary bladder
Disease	Bladder carcinoma

Synonyms

- BFTC 905
- BFTC905
- Black Foot disease Transitional Carcinoma 905

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial
Cell type	Epithelial
Doubling time	60-70 hours

IDENTIFIERS

Citation

BFTC-905 (Cytion catalog number 305749)

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NCBI TaxID	9606
Cellosaurus	CVCL_1083

EXPRESSION AND SUSCEPTIBILITY

Isoenzymes

G6PD; MD; LD

Mutational profile

Mutation: NRAS, Simple, p.Gln61Leu (c.182A>T), Heterozygous (Cosmic-CLP=910926), TP53, Simple, c.673-2A>T (IVS6-2A>T), Homozygous, Note=Splice acceptor mutation (Cosmic-CLP=910926)

Viruses

Reverse transcriptase negative; PCR: EBV -, HBV -, HCV -, HHV-8 -, HIV-1 -, HIV-2 -, HTLV-1/2 -, MLV -, SMRV -

HANDLING AND CULTURE

Culture medium

DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)

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

Supplements

Supplement the medium with 10% FBS

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	1 to 3 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week

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	51 years
Ethnicity	Chinese

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.

Disclaimer

Our cells are provided for in vitro laboratory research purposes exclusively and are not intended for clinical or diagnostic use, nor are they to be administered to humans or used for veterinary purposes. Users must adhere to all applicable guidelines and regulations for the handling and use of these cells in a research setting.

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