Product sheet

LNCaP clone FGC Cells | 305220

General information

Description	The LNCaP clone FGC (Fast Growing Colonies) is an epithelial cell line that has become a cornerstone in the field of cancer research, especially in studies related to prostate cancer. The parent LNCaP cell line was established from a metastatic carcinoma of the prostate in a 50-year-old Caucasian male patient originating from a needle aspiration biopsy of the left supraclavicular lymph node. These human prostate carcinoma cells demonstrate notable tumorigenic properties in soft agar and nude mice, underlining its relevance in studying the invasive and metastatic aspects of cancer. The LNCaP clone FGC is characterized by its adherent growth pattern, often forming single cells and loosely attached clusters, its slow growth rate and a propensity to rapidly acidify the culture medium. A defining feature of the LNCaP clone FGC is its expression of key prostate cancer markers such as human prostatic acid phosphatase and prostate-specific antigen (PSA), with a strong androgen sensitivity. This sensitivity to androgens and the involvement of the androgen receptor axis in the regulation of proliferation make the prostatic cancer cell line LNCaP clone FGC an invaluable in vitro model for the study of androgen sensitivity and its implications in prostate carcinogenesis. In summary, the human prostate cancer cell line LNCaP clone FGC, with its unique characteristics and extensive utility in advanced cancer research applications, including 3D cell culture and transfection studies, continues to be highly cited and valued in the field of human cell research, providing deep insights into the molecular and cellular mechanisms underpinning prostate cancer and offering avenues for the development of novel therapeutic strategies.
Organism	Human
Tissue	Prostate
Disease	Carcinoma
Metastatic site	Left supraclavicular lymph node
Synonyms	LNCaP-Clone-FGC, LNCaP.FGC, LNCaP-FGC, LNCaP FGC, LNCAPCLONEFGC, LNCaP-ATCC

Characteristics

Age	50 years
Gender	Male
Ethnicity	European
Morphology	Epithelial

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Growth properties	Adherent

Regulatory Data

Citation	LNCaP clone FGC (Cytion catalog number 305220)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1379

Biomolecular Data

Karyotype	Exhibits a hypotetraploid karyotype with a modal chromosome number of 84

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	34-43 hours
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.
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.

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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

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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.