Product sheet

22RV1 Cells | 305037

General information

Description	The 22Rv1 cell line is a human prostate carcinoma cell line that was established from a xenograft initiated by the inoculation of a hormone-refractory prostate cancer cell line, CWR22, into athymic nude mice. The CWR22 xenograft was derived from a primary prostate carcinoma. Upon regression after castration and subsequent relapse, the 22Rv1 cell line was established from the relapsed tumor, which exhibited androgen-independent growth. 22Rv1 cells express the androgen receptor (AR) and prostate-specific antigen (PSA), essential markers in prostate cancer research and therapeutic targeting. Notably, this cell line contains a variant form of the AR known as AR-V7. This splice variant lacks the ligand-binding domain, enabling it to remain constitutively active and contribute to the androgen-independent proliferation of 22Rv1 cells, a critical aspect of castration-resistant prostate cancer (CRPC). The 22Rv1 cell line is extensively used to investigate the mechanisms underlying the transition from androgen-dependent to androgen-independent prostate cancer growth, a key challenge in the treatment of advanced prostate cancer. 22Rv1 cells have facilitated significant advancements in understanding the molecular biology of CRPC, including the role of AR variants in resistance to androgen deprivation therapy (ADT) and the development of novel therapeutic strategies aimed at overcoming this resistance. In summary, the 22Rv1 cell line, serves as a critical model for studying CRPC. Exhibiting androgen-independent growth, these cells express key prostate cancer markers such as AR and PSA, and notably contain the AR-V7 variant, which is constitutively active due to the absence of the ligand-binding domain. The 22Rv1 cell line's unique properties make it invaluable for exploring the transition from androgen-dependent to independent growth in prostate cancer, and thereby aid in the development of new therapeutic approaches to tackle advanced stages of the disease.
Organism	Human
Tissue	Prostate
Disease	Prostate carcinoma
Synonyms	22Rv1, 22Rv-1, 22rV1, CWR-22rv1, CWR22-Rv1, CWR22R-V1, CWR22-R1, CWR22Rv1, CWR22R

Characteristics

Age	Adult
Gender	Male
Ethnicity	European
Morphology	Epithelial

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Growth properties	Adherent

Regulatory Data

Citation	22RV1 (Cytion catalog number 305037)
Biosafety level	2
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1045

Biomolecular Data

Antigen expression	Prostate-specific antigen (PSA)
Tumorigenic	Yes

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	40 to 60 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.
Fluid renewal	2 to 3 times per week

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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.