Product sheet

AT-1 Cells | 500121

General information

Description	The AT-1 cell line is a subclone of the parental R3327 rat prostate adenocarcinoma cell line. This particular cell line was derived from the Dunning model, which is a well-established model used to study prostate cancer. The AT-1 subclone is characterized by its relatively slow growth rate and low metastatic potential compared to other subclones derived from the same tumor, such as the MatLyLu (high metastatic potential) and AT-2 (moderate metastatic potential) cell lines. This makes the AT-1 cell line particularly useful for studies focused on the biology of non-metastatic or minimally invasive tumors. In research settings, the AT-1 cell line has been utilized extensively to investigate the mechanisms of prostate cancer progression and to assess the efficacy of therapeutic agents. The cells generally exhibit a cuboidal morphology and are adherent. They have been shown to respond to hormonal manipulations, which mimics the hormonal responses seen in clinical prostate cancer. Studies using the AT-1 cell line have contributed to a better understanding of the interactions between tumor cells and the microenvironment, angiogenesis, and the molecular pathways involved in cancer progression. Importantly, the AT-1 cell line has been a valuable tool in the development of therapeutic strategies that are less focused on metastasis and more on primary tumor growth and local invasion.
Organism	Rat
Tissue	Prostate
Disease	Adenocarcinoma
Synonyms	R-3327-AT-1, AT1, AT-1-TC, Dunning R-3327 AT-1, R3327-AT1

Characteristics

Morphology	Epithelial-like
Growth properties	Adherent. The cells form clusters in soft agar and can be adapted to suspension growth

Regulatory Data

Citation	AT-1 (Cytion catalog number 500121)
Biosafety level	1
NCBI_TaxID	10116
CellosaurusAccession	CVCL_3568

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Biomolecular Data

Tumorigenic	Yes, in rat and nude mice

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
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	1×10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	After thawing, plate the cells at 4×10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 48 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.