# PtK1

608393

## GENERAL INFORMATION

### Description

PtK1 is a kidney epithelial cell line derived from the rat kangaroo, Potorous tridactylus. Known for its large, flat cells, PtK1 is widely used in microscopy, particularly in studies involving mitosis and chromosome behavior. The large size of its chromosomes makes PtK1 an ideal model for visualizing chromosome dynamics during cell division, making it a popular choice in cytogenetic and molecular biology research. PtK1 cells have also been utilized in studies involving cell fusion and hybridization, particularly between marsupial and eutherian species. These cells are often employed in somatic cell genetics due to their suitability for drug resistance selection. Researchers have developed drug-resistant variants of PtK1, making them useful for isolating hybrid cells and advancing our understanding of chromosome segregation and gene mapping in interspecies hybrids.
The cells are positive for keratin by immunoperoxidase staining.

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| **Tissue** | Kidney |

### Synonyms

- Pt K1 (NBL-3)
- NBL-3
- PTK-1
- PTK 1
- PtK 1
- PTK1
- PtK1
- Pt-K1
- Ptk1
- Potorous tridactylus Kidney 1

## CLASSIFICATION

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| **Organism** | Potoroo |
| **Sex** | Female |
| **Growth properties** | Adherent |
| **Biosafety level** | 1 |

## CHARACTERISTICS

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| **Morphology** | Epithelial-like |

## IDENTIFIERS

### Citation

PtK1 (Cytion catalog number 608393)

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| **NCBI TaxID** | 9310 |
| **Cellosaurus** | CVCL_0489 |

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## EXPRESSION AND SUSCEPTIBILITY

**Virus susceptibility**

Vesicular stomatitis (Indiana)

**Virus resistance**

Poliovirus 2

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| **Reverse transcriptase** | Negative |

**Products**

Keratin

## HANDLING AND CULTURE

**Culture medium**

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

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| **Incubation atmosphere** | 37°C, 5% $CO_2$, humidified atmosphere. |

**Supplements**

Supplement the medium with 10% FBS

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| **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.

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| **Fluid renewal** | 2 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.

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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. |

### 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

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| **Donor age** | Adult |

## 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.

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| **Material Transfer Agreement required** | Yes |