Product sheet

FRhK-4 Cells | 305151

General information

Description	The FRhK-4 cell line consists of fibroblast-like cells derived from the kidney of a fetal rhesus monkey (Macaca mulatta). This cell line is widely used in biomedical research due to its relevance to primate biology and its utility in studying viral infections, nephrotoxicity, and renal physiology. The cells exhibit typical fibroblast morphology, characterized by an elongated shape and a branching architecture, which facilitates numerous types of cell and molecular biology experiments. FRhK-4 cells are particularly noted for their susceptibility to various viruses, including simian virus 40 (SV40) and polyomavirus. This makes them an excellent model for studying viral mechanisms of infection, replication, and oncogenesis in a primate system. Additionally, their origin from kidney tissue allows researchers to explore cellular responses to renal toxins and drugs, making them a valuable tool for pharmacological studies and toxicity assessments. Moreover, the genetic and physiological similarities of the FRhK-4 cells to human cells support their use in translational research, where findings may have direct implications for understanding human kidney diseases and developing therapeutic strategies. The use of this cell line in diverse research settings underscores its versatility and importance in scientific studies that require a non-human primate model.
Organism	Rhesus macaque
Tissue	Embryonic kidney
Synonyms	FRHK-4, Frhk-4, FRhK4, Fetal Rhesus Kidney-4

Characteristics

Age	Fetus
Gender	Female
Morphology	Epithelial
Growth properties	Adherent

Regulatory Data

Citation	FRhK-4 (Cytion catalog number 305151)
Biosafety level	1

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NCBI_TaxID	9544
CellosaurusAccession	CVCL_4522

Biomolecular Data

Handling

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)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	TrypLE™ Express Enzym
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
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.