

BHK-21 Cells | 305252**General information****Description**

The BHK-21 cell line is derived from the kidney of a baby hamster (*Mesocricetus auratus*). These cells are fibroblast-like in morphology and are widely used in various fields of biological and medical research. BHK-21 cells are adherent and grow rapidly in culture, making them an excellent model for studying cell biology, virology, and the production of recombinant proteins. They are especially noted for their use in the propagation of viruses, including foot-and-mouth disease virus, and in the production of viral vaccines.

Researchers utilize the BHK-21 cell line for its robust growth characteristics and its ability to support the replication of a wide range of viruses. This makes it a critical tool in virology research, vaccine production, and gene expression studies. BHK-21 cells are used in genetic engineering and biotechnology for the production of recombinant proteins and monoclonal antibodies.

Organism

Golden Hamster

Tissue

Kidney

Synonyms

BHK 21, BHK21, Baby Hamster Kidney-21, Baby Hamster Kidney 21, Baby Hamster Kidney from litter No. 21, BHK

Characteristics**Age**

1 day

Gender

Male

Morphology

Fibroblast

Growth properties

Adherent

Regulatory Data**Citation**

BHK-21 (Cytion catalog number 305252)

Biosafety level

1

NCBI_TaxID

10036

CellosaurusAccession

CVCL_1914

Biomolecular Data

BHK-21 Cells | 305252**Handling**

Culture Medium	EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO ₃ , w: EBSS (Cytion article number 820100a)
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Supplements	Supplement the medium with 10% FBS and 1% NEAA
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Dissociation Reagent	Accutase
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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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Seeding density	1 to 3 x 10 ⁴ cells/cm ²
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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.
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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% CO₂, 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.