BS-C-1

305009

GENERAL INFORMATION

Description

The BS-C-1 cell line, also known as Cercopithecus aethiops kidney cells, originates from the kidney of the African green monkey. This cell line, established in the 1960s, is used extensively in virology research due to its susceptibility to adenoviruses, simian viruses, and other pathogenic agents. BS-C-1 cells exhibit epithelial morphology and are adherent in culture, making them suitable for a variety of experimental setups, including virus-host interaction studies and cytotoxicity assays.
One of the distinguishing features of BS-C-1 cells is their utility in the propagation and maintenance of polioviruses, which facilitates vaccine development and virus lifecycle studies. The cells are also known for their role in the discovery and study of adenoviruses, contributing significantly to our understanding of viral genetics and replication processes. Despite their origins and primary uses, BS-C-1 cells have also been employed in pharmacological research and toxicology, testing the effects of various substances on cellular processes and viability.
Due to their robust growth characteristics and ability to be transfected relatively easily, BS-C-1 cells are valuable in molecular biology for gene expression studies. Their compatibility with a wide range of DNA transfection methods supports their use in gene therapy research and recombinant protein production. Overall, BS-C-1 cells continue to be a critical resource in biomedical research, providing insights into cellular behavior and the molecular basis of disease.

Tissue	Kidney

Synonyms

- BSC-1
- BSC1
- GMK
- Biologics Standards-Cercopithecus-1

CLASSIFICATION

Organism	Vervet monkey
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial
Doubling time	72 hours

IDENTIFIERS

Citation

BS-C-1 (Cytion catalog number 305009)

NCBI TaxID	60710
Cellosaurus	CVCL_0607

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EXPRESSION AND SUSCEPTIBILITY

Protein expression

Keratin

HANDLING AND CULTURE

Culture medium

EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS and 1% NEAA

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.

Fluid renewal	2 to 3 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.

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.

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.

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.

Material Transfer Agreement required	Yes

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