Product sheet

BSC1 Cells | 305009

General information

Description	The BSC-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. BSC-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 BSC-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, BSC-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, BSC-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, BSC-1 cells continue to be a critical resource in biomedical research, providing insights into cellular behavior and the molecular basis of disease.
Organism	Chlorocebus pygerythrus (Vervet monkey)
Tissue	Kidney
Synonyms	BSC-1, BSC1, GMK, BSC-1, Biologics Standards-Cercopithecus-1

Characteristics

Morphology	Epithelial
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	BS-C-1 (Cytion catalog number 305009)
Biosafety level	1

Expression / Mutation

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Protein expression	Keratin

Handling

Culture Medium	EMEM, w: 2 mM L-Glutamine, w: 1.5 g/L NaHCO3, w: EBSS, w: 1 mM Sodium pyruvate, w: NEAA (Cytion article number 820100c)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	Accutase
Doubling time	72 hours
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.
Split ratio	1: 3 to 1: 4
Fluid renewal	2 to 3 times per week
Freeze medium	CM-1 (Cytion catalog number 800100)

Handling of cryopreserved cultures

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.

Quality control / Genetic profile / HLA

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.