Product sheet

MA104 Cells | 305007

General information

Description	The MA104 cell line is derived from rhesus monkey kidney epithelial cells and is widely used in virology and vaccine production research. These cells exhibit a typical epithelial morphology, adhering tightly to the substrate and forming a monolayer. Due to their origin, MA104 cells are particularly permissive to the replication of various viruses, including rotaviruses, polioviruses, and reoviruses, making them an essential tool in virological studies, especially in the propagation and isolation of these pathogens. Their high susceptibility to viral infection allows for efficient viral growth, which is crucial for vaccine development and testing. In addition to their role in virology, MA104 cells are also employed in studies focusing on cell biology and physiology, particularly those investigating kidney function and epithelial cell behavior. These cells have been instrumental in understanding the mechanisms of viral entry, replication, and the host-cell response to infection. Researchers also utilize MA104 cells to study protein expression and post-translational modifications due to their ability to support high levels of protein production.
Organism	Chlorocebus pygerythrus (Vervet monkey)
Tissue	Kidney
Synonyms	Ma-104, MA 104, MA104, Microbiological Associates-104

Characteristics

Age	Fetus
Morphology	Epithelial
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	MA-104 (Cytion catalog number 305007)
Biosafety level	1

Expression / Mutation

Handling

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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
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	1:2 to 1:5
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.