

WI-38 Cells | 300428

General information

Description

Please note: The WI-38 cell line is not available for purchase anymore. Our stock reached senescence and therefore cannot be sold anymore. However, we continue to offer an immortalized variant of this cell line, WI 38VA13 Subline 2RA (Catalog No. 300421).

The WI-38 cell line, derived from the fetal lung tissue of a 3-month-old fetus obtained from an elective abortion in Sweden in 1962, represents a landmark in medical science, particularly in vaccine production. WI-38 cells have played a crucial role in the development of vaccines for a wide array of virus-based infectious diseases, including poliomyelitis, measles, mumps, rubella, varicella, herpes zoster, adenovirus, rabies, and Hepatitis A, thereby significantly reducing morbidity associated with these conditions.

Notably, WI-38 cells have been utilized in the production of several key vaccines, such as Merck's rubella and Hepatitis A vaccines, Sanofi Pasteur's Imovax rabies vaccine, and the adenovirus vaccine used by the U.S. military, highlighting their essential role in public health. These cells, characterized by their fibroblast cell type and excellent biocompatibility, offer an optimal environment for the culture of viruses and the production of human virus vaccines.

As a human diploid cell line with a finite lifespan of about 50 population doublings and a doubling time of roughly 24 hours, WI-38 cells have been used extensively in biological research, including the study of cellular aging, cancer, and genetics. WI-38 cells further have been instrumental in the field of virology, particularly in supporting the cultivation and study of human viruses. These cells provide a conducive environment for growing viruses extracted from clinical specimens, which is essential for the development of vaccines and for advancing our understanding of viral behaviors and genetics.

In summary, WI-38 cells, with their extensive applications in vaccine production remain a cornerstone in the field of virology. Their contribution to the development of cell-derived vaccines and the advancement of primary cells in scientific research underscores their invaluable role in enhancing human health worldwide.

Organism Human

Tissue Lung

Synonyms Wi-38, WI38, Wistar Institute-38, AG06814E, AG06814G, AG06814H, AG06814-J, AG06814J, AG06814-M, AG06814-N

Characteristics

Age 3 months gestation

Gender Female

Ethnicity Caucasian

Morphology Epithelial-like

WI-38 Cells | 300428**Cell type** Fibroblast**Growth properties** Adherent**Identifiers / Biosafety / Citation****Citation** WI 38 (Cytion catalog number 300428)**Biosafety level** 1**Expression / Mutation****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**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.**Freeze medium** CM-1 (Cytion catalog number 800100)

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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.

STR profile

Amelogenin: x,x

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HLA alleles

A*: 02:05:01, 68:01:01
B*: 08:01:01, 58:01:01
C*: 07:01:01, 07:18:01
DRB1*: 11:01:01, 13:02:01
DQA1*: 01:02:01, 05:05:01
DQB1*: 03:01:01, 06:09:01
DPB1*: 03:01:01, 04:01:01
E: 01:01:01, 01:03:01