Product sheet

MV4-11 Cells | 300295

General information

Description	The MV-4-11 cell line, isolated from the blast cells of a child with biphenotypic B-myelomonocytic leukemia, serves as a critical resource in the study of acute leukemias, particularly acute myeloid leukemia (AML). MV4-11 cells are characterized by their high proliferation rate and the presence of certain genetic abnormalities. A translocation between chromosomes 4 and 11 leads to the creation of the MLL-AF4 fusion gene, which plays a crucial role in leukemogenesis and contributes to the aggressive nature of leukemia. The presence of the MLL-AF4 fusion gene makes these cells particularly relevant for understanding the molecular mechanisms underlying leukemogenesis and studies on targeted therapies that aim to disrupt the function of this oncogenic fusion protein. Additionally, MV4-11 cells can be used to study the biology of leukemia stem cells, drug resistance mechanisms, and the role of the bone marrow microenvironment in leukemia progression. The cell line is further instrumental in metabolomics and transcriptomic profiles research, providing a comprehensive understanding of the metabolic alterations and redox adaptation in leukemia. The ability of MV-4-11 cells to respond to various cancer research chemicals, including inhibitors like venetoclax, and their role in studying resistant cells. In conclusion, the MV-4-11 cell line is a crucial tool in leukemia research, offering a versatile platform for investigating the complex biology of acute myeloid leukemia, testing the efficacy of therapeutic agents, and exploring the potential of targeted treatments in overcoming drug resistance.
Organism	Human
Tissue	Blood
Disease	Acute monocytic leukemia
Synonyms	MV-4-11, MV-4:11, MV4:11, MV 4,11, MV4,11, MV411, MV(4,11),

Characteristics

Age	10 years
Gender	Male
Ethnicity	Caucasian
Morphology	Round cells
Cell type	Myelomonocytic, biphenotypic
Growth properties	Suspension

Identifiers / Biosafety / Citation

Citation	MV4-11 (Cytion catalog number 300295)
Biosafety level	1

Expression / Mutation

Antigen expression	CD4 (40-96%), CD10 (4-11%), CD15 (96-99%)
Mutational profile	FLT3mut (a FLT3 internal tandem duplication was verified by PCR)
Karyotype	48, xY, t(4,11)(q21,q23), +8, +19

Handling

Culture Medium	RPMI 1640, w: 2.1 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Medium supplements	Supplement the medium with 10% FBS
Subculturing	Maintain cultures by periodically adding or replacing the medium. Initiate cultures with a density of 2 x 10^5 cells/ml and keep the cell concentration within the range of 1 x 10^5 to 1 x 10^6 cells/ml for optimal growth.
Seeding density	1 x 10^5 cells/mL
Freezing recovery	Please allow the cells to recover from the freezing process for at least 48 hours.
Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)

Handling of cryopreserved cultures	MV4-11 cells are shipped in a deep-frozen state on dry ice. Upon receipt, confirm that the vial remains frozen. For storage, place the cryovial immediately at temperatures below -150 degrees. If you plan to culture the cells immediately, swiftly thaw the vial by shaking it in a 37 degrees water bath with clean water and an antimicrobial agent for 40-60 seconds. Remove the vial once a small ice clump persists, ensuring it remains cold. Proceed with all subsequent steps under aseptic conditions. In a sterile flow hood, disinfect the cryovial with 70% ethanol. Then, gently open the vial and transfer the cell suspension into a 15 ml centrifuge tube pre-filled with 8 ml of room temperature culture medium. Gently mix the cells. For cell separation, centrifuge at 300 x g for 3 minutes and dispose of the supernatant. Skipping centrifugation is optional, although any residual freezing medium should be removed after 24 hours. Resuspend the pellet gently in 10 ml of fresh culture medium and divide between two T25 culture flasks. Follow the subculture protocol for subsequent steps.

Quality control / Genetic profile / HLA

Sterility	Mycoplasma contamination is rigorously 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 **CSF1PO**: 10,12 **D13S317**: 13 **D16S539**: 11,12 **D5S818**: 11,12 **D7S820**: 8,9 **TH01**: 8,9.3 **TPOX**: 8,11 **vWA**: 14,15 **D3S1358**: 16,17 **D21S11**: 32,32.2 **D18S51**: 11,17 **Penta E**: 7,18 **Penta D**: 9,10 **D8S1179**: 13 **FGA**: 19,21
HLA alleles	**A***: 03:01:01, 20:01:02 **B***: 14:02:01, 18:01:01 **C***: 08:02:01, 15:02:01 **DRB1***: 01:01:01, 13:02:01 **DQA1***: 01:01:01, 01:02:01 **DQB1***: 05:01:01, 06:09:01 **DPB1***: 02:01, 04:01 **E**: 01:01, 01:03