Product sheet

Wilms10M Cells | 300418

General information

Description	The Wilms10M cell line was established from a metastatic lung nodule of a patient with Wilms tumor (nephroblastoma). Like its primary tumor counterpart, Wilms10T, the Wilms10M cell line is characterized by a homozygous deletion of the WT1 gene, resulting in the complete absence of WT1 protein. WT1 is essential for normal kidney development, and its deletion is associated with more aggressive tumor behavior, particularly in metastatic settings. Additionally, Wilms10M cells exhibit loss of heterozygosity (LOH) in the 11p15 chromosomal region, which includes the IGF2 gene, further contributing to the malignant properties of these cells. Wilms10M cells maintain a stable karyotype with no major chromosomal rearrangements apart from the specific deletion of the WT1 region. This cell line, derived from metastatic tissue, is particularly valuable for studying the molecular mechanisms that drive metastasis in Wilms tumor. The cells exhibit mesenchymal characteristics, expressing markers such as vimentin, while lacking epithelial markers like cytokeratin, which is indicative of their origin from the stromal component of the tumor. Research on Wilms10M has focused on the signaling pathways that are active in these metastatic cells. Proteomic analyses have demonstrated the activation of several receptor tyrosine kinases (RTKs), including IGF1R, PDGFRβ, and AXL, which are involved in promoting cell survival, proliferation, and metastatic potential. The downstream MAPK and PI3K/AKT signaling pathways are also activated, playing a key role in maintaining the invasive and metastatic phenotype of Wilms10M cells. Given its metastatic origin, Wilms10M is an essential model for understanding the molecular events underlying Wilms tumor metastasis and for developing targeted therapeutic strategies against metastatic disease.
Organism	Human
Tissue	Kidney
Disease	Wilms tumor
Applications	In vitro cell culture model. Biochemical studies
Synonyms	Wilms10

Characteristics

Age	2 years
Gender	Female
Ethnicity	Caucasian
Morphology	Spindle-shaped

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Cell type	Wilms cells
Growth properties	Adherent

Regulatory Data

Citation	Wilms10M (Cytion catalog number 300418)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_A5SL

Biomolecular Data

Mutational profile	WT1 mutation status: homozygous del WT1 within del11p13. LOH: no in 11p13 but UPD in 11p15. CTNNB1 mutation status: homozygous del TCT, p.DS45, UPD 3p

Handling

Culture Medium	MSCGM kit (from Lonza)
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.
Freeze medium	As a cryopreservation medium, 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.

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Thawing and Culturing Cells	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.
Incubation Atmosphere	37°C, 5% CO_2, humidified atmosphere.
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.
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.

Quality control / Genetic profile / HLA

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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.