Product sheet

MonoMac6 Cells | 305440

Informações gerais

Description	The MonoMac6 cell line is a human monocytic cell line derived from a patient with monoblastic leukemia. It was developed to represent mature monocytes in vitro and serves as a robust model for studying monocyte biology and immune responses. Unlike earlier monocytic cell lines, such as U937 and THP-1, MonoMac6 inherently expresses markers and functions associated with mature monocytes without requiring differentiation induction. These include CD14 antigen, lysozyme production, and the capability for phagocytosis of antibody-coated erythrocytes. The cell line also demonstrates NaF-sensitive esterase activity, a hallmark of monocyte lineage, further validating its use as a model for mature monocyte behavior. Functionally, MonoMac6 cells are notable for their ability to produce cytokines such as TNF-α, IL-1β, and IL-6 in response to stimuli like lipopolysaccharides (LPS) and phytohemagglutinin A (PHA). This cytokine response closely mirrors that of primary human monocytes, though the cell line does not produce interferon-alpha (IFN-α), even when exposed to potent viral inducers. This feature makes MonoMac6 an essential tool for investigating specific monocyte-driven immune pathways and cytokine-mediated processes, including inflammation and sepsis. MonoMac6 cells exhibit extensive characterization at the morphological and cytogenetic levels. These cells display euchromatin-rich nuclei, a well-developed Golgi apparatus, and numerous lysosomes and endocytic vesicles, all consistent with the functional attributes of mature monocytes. The line's stable cytokine profiles and phenotypic markers make MonoMac6 an indispensable model for research into monocyte-related immunology, infections, and hematological malignancies.
Organism	Human
Tissue	Peripheral blood
Disease	Adult acute monocytic leukemia
Synonyms	MONO-MAC-6, Mono-mac-6, MONO-MAC 6, Mono Mac 6, Mono Mac6, MonoMac 6, Mono-Mac-6, MONOMAC6, MM6

Caraterísticas

Age	64 years
Gender	Male
Ethnicity	Caucasian
Morphology	Lymphoblast-like
Cell type	Monocyte

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Growth properties	Suspension, singular cells and slightly adherent, small aggregates

Dados regulamentares

Citation	MonoMac6 (Cytion catalog number 305440)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1426

Dados biomoleculares

Mutational profile	Mutation: TP53, p.Arg273His (c.818G>A); Gene fusion: KMT2A-MLLT3, MLL-MLLT3, MLL-AF9; Gene fusion: RUNX1-ATP8A2

Manuseamento

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% heat-inactivated FBS, 1% NEAA, 1 mM sodium pyruvate, 10 microgram/mL insulin
Seeding density	Maintain cultures between 3 x 10^5 and 1 x 10^6 cells/mL
Freeze medium	As a cryopreservation medium, we 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.

Controlo de qualidade / Perfil genético / 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.