Product sheet

Kasumi-1 Cells | 300226

General information

Description	The Kasumi-1 cell line was derived from the peripheral blood of a 7-year-old Japanese boy with acute myeloid leukemia (AML), specifically the FAB M2 subtype, during a relapse following bone marrow transplantation. This cell line is a valuable resource for researchers studying hematologic malignancies, especially those involving the t(8;21) chromosomal translocation. This translocation leads to the formation of the AML1-ETO fusion gene, a critical factor in certain subtypes of AML. Kasumi-1 cells thus serve as an essential model for investigating the molecular mechanisms of AML and testing potential therapeutic approaches. Kasumi-1 cells possess characteristics of both myeloid and macrophage lineages, making them particularly useful for studies on myeloid differentiation. These cells can be induced to differentiate into macrophage-like cells when cultured with phorbol 12-myristate 13-acetate (TPA), providing a robust system for exploring the pathways involved in myeloid lineage commitment and differentiation. This differentiation capacity enhances the utility of Kasumi-1 cells in research focused on both AML biology and broader myeloid cell development processes.
Organism	Human
Tissue	Blood
Disease	Acute myeloblastic leukemia
Synonyms	KASUMI-1, Kasumi 1, KASUMI1, Kasumi1

Characteristics

Age	7 years
Gender	Male
Ethnicity	Japanese
Morphology	Round cells showing marked variations in both size and nuclear cytoplasmic ratio.
Cell type	Myeloblast (AML-acute myeloid leukemia)
Growth properties	Suspension

Regulatory Data

Citation	Kasumi-1 (Cytion catalog number 300226)

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Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0589

Biomolecular Data

Antigen expression	CD4+ (37.1%, coexpressed with CD34 and CD33), CD13+(OKM13), CD15+(LeuM1), CD33+, CD34+(MY10), CD38+(OKT10, 50.1%), CD71+(Nu-TERf), HLA-DR+(OKDR).
Karyotype	T(8,21) chromosome translocation

Handling

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
Doubling time	40 to 45 hours
Subculturing	Maintain cultures by periodically adding or replacing the medium. Initiate cultures with a density of 5 x 10^5 cells/ml and keep the cell concentration within the range of 3 x 10^5 to 1 x 10^6 cells/ml for optimal growth.
Seeding density	1 x 10^5 cells/ml
Fluid renewal	Add fresh medium (20 to 30% by volume) every 2 to 3 days
Post-Thaw Recovery	About one week
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.

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 & Molecular Analysis

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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.