Product sheet

AML12 Cells | 300643

Información general

Description	AML12 cells, also known as Alpha Mouse Liver 12 cells, are a non-tumorigenic epithelial cell line derived from the liver of a transgenic mouse. These cells were initially developed to provide a suitable in vitro model for studying the hepatocyte function and liver biology of the adult mouse. AML12 cells express characteristics typical of differentiated hepatocytes, including the production of albumin, transferrin, and other liver-specific proteins, making them an invaluable resource for research in toxicology, drug metabolism, and liver disease. The cell line was established from hepatocytes isolated from a mouse harboring a transgene for human transforming growth factor alpha (TGF-alpha), under the control of the mouse metallothionein-I promoter. This genetic alteration contributes to the immortalization of the cells without disrupting their differentiated state. AML12 cells maintain a stable phenotype and karyotype under standard cell culture conditions, which includes a unique requirement for dexamethasone and insulin-transferrin-selenium in the growth medium to promote proliferation and maintain hepatocyte-specific functions.
Organism	Mouse
Tissue	Liver
Applications	3D cell culture, High-throughput screening, Toxicology
Synonyms	AML-12, AML 12, Alpha Mouse Liver 12

Características

Breed/Subspecies	CD-1 MT42 transgenic
Age	3 months
Gender	Male
Morphology	Epithelial
Cell type	Hepatocyte
Growth properties	Adherent

Datos normativos

Citation	AML12 (Cytion catalog number 300643)

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Biosafety level	1
NCBI_TaxID	10090
CellosaurusAccession	CVCL_0140
GMO Status	GMO-S1: This murine hepatocyte cell line (AML12) contains a human TGF-α transgene introduced by transfection, enabling growth-factor-dependent signaling studies. The insert is stably integrated into hepatocytic cells. This classification applies only within Germany and may differ elsewhere.

Datos biomoleculares

Products	The cells express high levels of human TGF alpha and lower levels of mouse TGF alpha.

Manejo

Culture Medium	DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 (Cytion article number 820400a)
Supplements	Supplement the medium with 10% FBS, 10 microgram/mL insulin, 5.5 microgram/mL transferrin, 5 ng/mL selenium, 40 ng/mL dexamethasone
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, 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.

Control de calidad y análisis molecular

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.