Product sheet

Cytion

MH-3924A Cells | 500286

General information

Description	The MH3924A cell line is a well-characterized model derived from Morris rat hepatoma 3924A, which is frequently used in research to study hepatocellular carcinoma (HCC). These cells have been extensively employed to investigate the mechanisms underlying HCC growth, metastasis, and therapeutic responses. In particular, MH3924A cells are noted for their robust proliferative capacity and their ability to invade surrounding tissues, making them a suitable in vitro and in vivo model for exploring cancer progression and potential treatments. Studies have demonstrated that the proliferation and invasiveness of MH3924A cells can be significantly influenced by various factors. For instance, treatment with the immunosuppressive drug tacrolimus (FK506) has been shown to promote the proliferation of these cells, enhance their invasive potential, and increase the expression of key molecules involved in metastasis, such as CXCR4 and its ligand SDF-1α. FK506's effect on these cells underscores its potential to exacerbate cancer progression, particularly in the context of post-transplantation immunosuppression, where its use is common to prevent organ rejection but may inadvertently promote tumor growth. Additionally, MH3924A cells have been genetically modified to express the human sodium/iodide symporter (hNIS), which significantly enhances their iodide uptake capability. This modification has facilitated the use of these cells in radioiodine therapy studies, providing insights into the potential application of gene therapy for targeting HCC. However, despite the increased uptake, the rapid efflux of iodide from the cells suggests that further modifications or combined treatments are necessary to retain the radioactivity within the tumor cells for effective therapy. The MH3924A cell line thus remains a pivotal model in both basic and applied cancer research, particularly in the study of HCC's molecular underpinnings and therapeutic strategies.
Organism	Rat
Tissue	Liver
Disease	Hepatocellular carcinoma
Synonyms	MH 3924A, MH3924A, MH-3924 A, MH 3924 A, 3924A, Morris hepatoma 3924A, MH-3924, MH3924, MH 3924

Characteristics

Breed/Subspecies	ACI
Age	16 months
Gender	Unspecified
Morphology	Epithelial-like

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Growth properties	Adherent

Regulatory Data

Citation	MH-3924A (Cytion catalog number 500286)
Biosafety level	1
NCBI_TaxID	10116
CellosaurusAccession	CVCL_5799

Biomolecular Data

Tumorigenic	Yes, in ACI-rat
Viruses	RAP-test negative by PCR for: Adenovirus FL, Adenovirus K87, Hantavirus, Kilham rat virus, Lmyfocytair choriomeningitis virus, Mycoplasma pulmonis, Pneumonia virus of mice, Rat corona virus / Sialoacryoadenitis virus, Rat parvo virus, Reovirus type 3, Sendai virus, Theiler-s encephalomyelitis virus, Toolan-s H-1 virus.

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Doubling time	25 to 35 hours
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.
Seeding density	2 x 10^4 cells/cm^2

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Fluid renewal	Every 3 to 5 days
Post-Thaw Recovery	Start culture using the complete contents of the cryovial in 2xT25 cell culture flasks. The cells will recover within 24 to 48 hours.
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.
Flask Coating	None

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

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.