Product sheet

J774A.1 Cells | 400220

General information

Description	The J774A.1 cell line was derived from the ascites tumour of a female BALB/c/NIH mouse during plasmacytoma-inducing treatment. The cells are known for their ability to perform antibody-dependent phagocytosis, making them a helpful tool for investigating immune responses to various antigens. The growth of J774A.1 cells is inhibited by various substances, including dextran sulfate, p-phenylenediamine (PPD), and lipopolysaccharide (LPS). J774A.1 cells synthesize large amounts of lysozyme and are known to synthesize interleukin-1 beta continuously. J774A.1 cells have a doubling time of 17 hours and can be cultured under the same conditions as RAW 264.7 macrophages. Additionally, the J774A.1 cell line is known to express specific genes, including interleukin-1 (IL-1) and lysozyme, as well as specific expression markers, such as complement (C3) and high-affinity Fc receptor, IgG (Fcgr1). The J774A.1 cell line has been used in various immunology and infectious disease studies. For example, it has been used to investigate the cytotoxicity of triazolo[1,5-a]pyridinium salts with leishmanicidal activity and the antitrypanosomatic activity of flavonoid glycosides isolated from Delphinium species. Overall, J774A.1 cells are a valuable tool in studying macrophage function, cytokine synthesis, and the immune response to various antigens and pathogens.
Organism	Mouse
Tissue	Reticulum
Disease	Sarcoma
Synonyms	J-774A.1, J774A1, J774 A1, J774A.1, J 774A.1, J774 A.1

Characteristics

Breed/Subspecies	BALB/c
Age	Adult
Gender	Female
Cell type	Macrophage
Growth properties	Adherent/suspension

Regulatory Data

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Citation	J774A.1 (Cytion catalog number 400220)
Biosafety level	1
NCBI_TaxID	10090
CellosaurusAccession	CVCL_0358

Biomolecular Data

Receptors expressed	Immunoglobulin (Fc), complement (C3)
Products	Interleukin-1 (interleukin 1, IL-1, LAF), lysozyme

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
Subculturing	Detachment of cells via a cell scraper is recommended. Gather the suspension cells in a 15 ml tube and gently wash the adherent cells with PBS lacking calcium and magnesium (use 3-5 ml for T25 flasks and 5-10 ml for T75 flasks). Apply Accutase (1-2 ml for T25 flasks, 2.5 ml for T75 flasks) ensuring full coverage of the cell layer. Allow the cells to incubate at room temperature for 10 minutes. Following incubation, combine and centrifuge both the suspension and adherent cells. After centrifugation, carefully resuspend the cell pellet and transfer the cell suspension into new flasks containing fresh medium.
Seeding density	1 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per 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

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.