Product sheet

Ba/F3 Cells | 305224

General information

Description	The BA/F3 cell line, originating from murine pro-B cells of the BALB/c mouse strain, is a cornerstone in drug discovery and development, where BaF3 cells are commonly used to test the efficacy of small molecule inhibitors targeting oncogenic kinases. Baf3 is an IL-3 dependent cell line with a single, round cell morphology and instances of polymorphism. Ba/F3 cells are used for F3 transformation assays and Ba/F3 proliferation assays. The F3 transformation assays allow for the exploration of how specific genetic alterations can confer IL-3 independent growth, indicating oncogenic potential. These cells rely on cytokine signaling through cytokine receptors for IL-3 to sustain their proliferation, making the baf3 proliferation assay an excellent tool for studying the effects of cytokine deprivation and the role of cytokine signaling in cell survival and growth. BA/F3 cells have proven invaluable in the context of kinase oncogene evaluation and the testing of small-molecule kinase inhibitors. For instance, Ba/F3 cells transformed to express the BCR-ABL oncogene, which is characteristic of chronic myeloid leukemia (CML), have been used to test the effectiveness of tyrosine kinase inhibitors (TKIs) such as imatinib. Ba/F3 cells are further suitable for high-throughput screening and the exploration of drug resistance mechanisms, which are crucial in understanding the dynamics of cancer-associated kinome mutations and developing strategies to overcome resistance in targeted therapies. Overall, the BA/F3 cell line, with its distinct features and biological functions, serves as a critical resource in kinase drug discovery.
Organism	Mouse
Tissue	Bone marrow
Synonyms	BA/F3, BaF3, BAF3, Baf3

Characteristics

Breed/Subspecies	C3H
Morphology	Lymphocyte
Cell type	Pro-B cell
Growth properties	Suspension

Regulatory Data

Citation	Ba/F3 (Cytion catalog number 305224)

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Biosafety level	1
NCBI_TaxID	10090
CellosaurusAccession	CVCL_0161

Biomolecular Data

Karyotype	The Ba/F3 cell line exhibits a near diploid murine karyotype, with about 33% of the cells showing polyploidy.

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 5% heat-inactivated FBS, 10 ng/mL mouse IL-3
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.
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.