Ba/F3

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.

Tissue	Bone marrow

Synonyms

- BA/F3
- BaF3
- BAF3
- Baf3

CLASSIFICATION

Organism	Mouse
Growth properties	Suspension
Biosafety level	1

CHARACTERISTICS

Morphology	Lymphocyte
Cell type	Pro-B cell

Karyotype

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

IDENTIFIERS

Citation

Ba/F3 (Cytion catalog number 305224)

NCBI TaxID	10090
Cellosaurus	CVCL_0161

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Banking information
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HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

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.

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Breed / subspecies	C3H

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes

PRODUCT DETAILS

Composition table

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