Product sheet

BV-173 Cells | 300133

General information

Description	The BV-173 cell line originates from the peripheral blood of a patient diagnosed with Philadelphia chromosome-positive (Ph+) chronic myeloid leukemia (CML), established in 1980. This cell line is particularly noted for its Ph+ status, which is indicative of a specific chromosomal abnormality involving the translocation between chromosome 9 and chromosome 22. This translocation, often referred to as the Philadelphia chromosome, results in the BCR-ABL fusion gene, a critical molecular hallmark that drives the pathogenesis of CML by promoting leukemic cell proliferation and survival. BV-173 cells are used extensively in hematological research as a model to study the cellular and molecular mechanisms of CML, especially in the context of drug resistance and the cellular response to tyrosine kinase inhibitors (TKIs), which target the BCR-ABL fusion protein. The cell line has been instrumental in preclinical studies for evaluating new therapeutic strategies and understanding the biology of CML. BV-173 exhibits characteristics typical of myeloid lineage cells and is often used to study signal transduction pathways that are deregulated in CML due to the BCR-ABL oncogene.
Organism	Human
Tissue	Blood
Disease	Chronic myeloid leukemia

Characteristics

Age	45 years
Gender	Male
Ethnicity	Caucasian
Cell type	Undifferentiated blast cells
Growth properties	Suspension

Regulatory Data

Citation	BV-173 (Cytion catalog number 300133)
Biosafety level	1
NCBI_TaxID	9606

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CellosaurusAccession	CVCL_0181

Biomolecular Data

Reverse transcriptase	Negative (ELISA)
Ploidy status	T(9, 22) Modal Number: 2n=46
Mutational profile	B2a2 BCR-ABL

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 10% heat-inactivated FBS
Doubling time	35 hours
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.
Seeding density	1 x 10^5 cells/ml
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	Allow the cells to recover from the freezing process for at least 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.

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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.