Product sheet

K-562-GFP Cells | 305948

General information

Description	K-562-GFP cells are a genetically modified variant of the human chronic myelogenous leukemia (CML) cell line K-562, originally derived from the peripheral blood of an adult patient in blast crisis. The parental K-562 line is characterized by the presence of the Philadelphia chromosome, resulting in the BCR-ABL fusion protein with constitutive tyrosine kinase activity, which drives uncontrolled proliferation and survival. K-562 cells exhibit erythroleukemia features and can be induced to undergo differentiation along erythroid, megakaryocytic, or monocytic lineages under specific experimental conditions, making them a versatile model for studying hematopoietic differentiation and leukemia biology. The introduction of green fluorescent protein (GFP) into K-562 cells enables real-time visualization and tracking of leukemic cell behavior in vitro and in vivo. K-562-GFP cells are widely used in assays involving cell proliferation, migration, and drug response, as well as in co-culture systems to study interactions with stromal or immune cells. The fluorescent labeling facilitates applications such as flow cytometry, live-cell imaging, and high-throughput screening. **Genetic modification:** Stably modified by replication-incompetent lentiviral transduction to express the ZsGreen1 green fluorescent protein reporter; maintained as a polyclonal population under puromycin selection (1–5 µg/mL). S1/BSL-1 containment.
Organism	Human
Tissue	Pleural effusion
Disease	Chronic myeloid leukemia

Characteristics

Age	53 years
Gender	Female
Ethnicity	Caucasian
Morphology	Lymphoblast-like
Cell type	Lymphoblast
Growth properties	Suspension

Regulatory Data

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Citation	K562-GFP (Cytion catalog number 305948)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1G55
GMO Status	GMO-S1: This cell line contains a stably integrated ZsGreen1 green fluorescent protein reporter introduced via replication-incompetent lentiviral transduction. The resulting polyclonal cell population was maintained under puromycin selection (1–5 µg/mL). S1 containment is required. This classification applies only within Germany and may differ elsewhere.

Biomolecular Data

Antigen expression	ZsGreen1 (green fluorescent protein)
Mutational profile	Mutation: p.Gln136fs*13, Homozygous

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% FBS
Dissociation Reagent	None
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	0.3 to 1 x 10^6 cells/ml
Fluid renewal	2 to 3 times per week
Freeze medium	As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability.

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 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium. 7. Follow the procedure described under Post-Thaw Recovery
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