

## Data Sheet

PAGE 1/4

<b>BCRJ Code:</b>	0126
<b>Cell Line:</b>	K-562
<b>Species:</b>	Homo sapiens
<b>Vulgar Name:</b>	Human
<b>Tissue:</b>	Bone Marrow
<b>Morphology:</b>	Lymphoblast
<b>Disease:</b>	Chronic Myelogenous Leukemia
<b>Growth Properties:</b>	Suspension
<b>Sex:</b>	Female
<b>Age/Ethnicity:</b>	53 Year /
<b>Derivation:</b>	The continuous cell line K-562 was established by Lozzio and Lozzio from the pleural effusion of a 53-year-old female with chronic myelogenous leukemia in terminal blast crises.
<b>Applications:</b>	This cell line is suitable as a transfection host. The K-562 cell line has attained widespread use as a highly sensitive in vitro target for the natural killer assay.
<b>DNA Profile:</b>	Amelogenin: X CSF1PO: 9,10 D13S317: 8 D16S539: 11,12 D5S818: 11,12 D7S820: 9,11 TH01: 9.3 TPOX: 8,9 vWA: 16
<b>Tumor Formation::</b>	Yes, in nude mice Tumors developed within 21 days at 100% frequency (5/5) in nude mice inoculated subcutaneously with 107 cells.
<b>Biosafety:</b>	1
<b>Culture Medium:</b>	RPMI-1640 medium modified to contain 2 mM L-glutamine, 4500 mg/L glucose and 10% of fetal bovine serum.

## Data Sheet

PAGE 2/4

### Subculturing:

Cultures can be maintained by the addition or replacement of fresh medium. Start new cultures at  $1 \times 10^5$  viable cells/mL. Subculture at  $1 \times 10^6$  cells/mL. T-75 flasks are recommended for subculturing this product.

### Subculturing Medium Renewal:

Every 2 to 3 days

### Culture Conditions:

Atmosphere: air, 95%; carbon dioxide (CO<sub>2</sub>), 5% Temperature: 37°C

### Cryopreservation:

95% FBS + 5% DMSO (Dimethyl sulfoxide)

### Thawing Frozen Cells:

**SAFETY PRECAUTION:** It is strongly recommended to always wear protective gloves, clothing, and a full-face mask when handling frozen vials. Some vials may leak when submerged in liquid nitrogen, allowing nitrogen to slowly enter the vial. Upon thawing, the conversion of liquid nitrogen back to its gas phase may cause the vial to explode or eject its cap with significant force, creating flying debris.

1. Thaw the vial by gently agitating it in a 37°C water bath. To minimize contamination, keep the O-ring and cap out of the water. Thawing should be rapid (approximately 2 minutes).
2. Remove the vial from the water bath as soon as its contents are thawed and decontaminate it by dipping in or spraying with 70% ethanol. From this point, all operations must be performed under strict aseptic conditions.
3. For cells sensitive to DMSO, it is recommended to remove the cryoprotective agent immediately. Transfer the vial contents to a centrifuge tube containing 9.0 mL of complete culture medium and centrifuge at approximately  $125 \times g$  for 5 to 7 minutes.
4. Discard the supernatant and resuspend the cell pellet in the recommended complete medium (see specific batch information for the appropriate dilution ratio).
5. Incubate the culture under appropriate atmospheric and temperature conditions (see "Culture Conditions" for this cell line).

**NOTE:** It is important to avoid excessive alkalinity of the medium during cell recovery. To minimize this risk, it is recommended to place the culture vessel containing the growth medium in the incubator for at least 15 minutes before adding the vial contents. This allows the medium to stabilize at its normal pH (7.0 to 7.6).

## References:

Koeffler HP, Golde DW. Human myeloid leukemia cell lines: a review. *Blood* 56: 344-350, 1980. PubMed: 6996765 Ortaldo JR, et al. Specificity of natural cytotoxic reactivity of normal human lymphocytes against a myeloid leukemia cell line. *J. Natl. Cancer Inst.* 59: 77-82, 1977. PubMed: 69036 Lozzio CB, Lozzio BB. Human chronic myelogenous leukemia cell-line with positive Philadelphia chromosome. *Blood* 45: 321-334, 1975. PubMed: 163658 Lozzio BB, Lozzio CB. Properties and usefulness of the original K-562 human myelogenous leukemia cell line. *Leuk. Res.* 3: 363-370, 1979. PubMed: 95026 Andersson LC, et al. K562--a human erythroleukemic cell line. *Int. J. Cancer* 23: 143-147, 1979. PubMed: 367973 Lozzio BB, et al. A multipotential leukemia cell line (K-562) of human origin. *Proc. Soc. Exp. Biol. Med.* 166: 546-550, 1981. PubMed: 7194480 Dimery IW, et al. Variation amongst K562 cell cultures. *Exp. Hematol.* 11: 601-610, 1983. PubMed: 6576909 Chan YJ, et al. Two distinct upstream regulatory domains containing multicopy cellular transcription factor binding sites provide basal repression and inducible enhancer characteristics to the immediate-early IES (US3) promoter from human cytomegalovirus. *J. Virol.* 70: 5312-5328, 1996. PubMed: 8764042 Kolanus W, et al. alphaLbeta2 integrin/LFA-1 binding to ICAM-1 induced by cytohesin-1 a cytoplasmic regulatory molecule. *Cell* 86: 233-242, 1996. PubMed: 8706128 Gan W, Rhoads RE. Internal initiation of translation directed by the 5'-untranslated region of the mRNA for eIF4G, a factor involved in the picornavirus-induced switch from cap-dependent to internal initiation. *J. Biol. Chem.* 271: 623-626, 1996. PubMed: 8557663 Tiffany HL, et al. Enhanced expression of the eosinophil-derived neurotoxin ribonuclease (RNS2) gene requires interaction between the promoter and intron. *J. Biol. Chem.* 271: 12387-12393, 1996. PubMed: 8647842 Chan YJ, et al. Synergistic interactions between overlapping binding sites for the serum response factor and ELK-1 proteins mediate both basal enhancement and phorbol ester responsiveness of primate cytomegalovirus. *J. Virol.* 70: 8590-8605, 1996. PubMed: 8970984 Nauseef WM, et al. Effect of the R569W missense mutation on the biosynthesis of myeloperoxidase. *J. Biol. Chem.* 271: 9546-9549, 1996. PubMed: 8621627 Grune T, et al. Degradation of oxidized proteins in K562 human hematopoietic cells by proteasome. *J. Biol. Chem.* 271: 15504-15509, 1996. PubMed: 8663134 Jondal M, Pross H. Surface markers on human b and t lymphocytes. VI. Cytotoxicity against cell lines as a functional marker for lymphocyte subpopulations. *Int. J. Cancer* 15: 596-605, 1975. PubMed: 806545 West WH, et al. Natural cytotoxic reactivity of human lymphocytes against a myeloid cell line: characterization of effector cells. *J. Immunol.* 118: 355-361, 1977. PubMed: 299761 Pross HF, et al. Spontaneous human lymphocyte-mediated cytotoxicity against tumor target cells. IX. The quantitation of natural killer cell activity. *J. Clin. Immunol.* 1: 51-63, 1981. PubMed: 7334070 Chen TR. Modal karyotype of human leukemia cell line, K562 (ATCC CCL 243). *Cancer Genet. Cytogenet.* 17: 55-60, 1985. PubMed: 3857109 Wu SQ, et al. Extensive amplification of bcr/abl fusion genes clustered on three marker chromosomes in human leukemic cell line K-562. *Leukemia* 9: 858-862, 1995. PubMed: 7769849

## Data Sheet

PAGE 4/4

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