BCRJ Code:	0176
Cell Line:	MOLT-4
Species:	Homo sapiens
Vulgar Name:	Human
Tissue:	Peripheral Blood
Cell Type:	T Lymphoblast
Morphology:	Lymphoblast
Disease:	Acute Lymphoblastic Leukemia
Growth Properties:	Suspension
Sex:	Male
Age/Ethinicity:	19 Year /
Derivation:	A suspension culture derived from the peripheral blood of a 19 year old male with acute lymphoblastic leukaemia in relapse. A stable T-cell leukaemia that forms rosettes with sheep erythrocytes.
Applications:	This cell line is a suitable transfection host.
DNA Profile:	Amelogenin: X,Y CSF1PO: 11, 12, 13 D13S317: 12, 13 D16S539: 11, 14 D5S818: 12 D7S820: 8, 10, 11 THO1: 6, 8 TPOX: 8 vWA: 17, 18
Tumor Formation::	Yes, in untreated nude mice, anti lymphocyte serum treated mice and X-irradiated mice
Products:	high levels of terminal deoxynucleotidyl transferase (TdT) are produced
Biosafety:	1

Culture Medium:	RPMI-1640 medium modified to contain 2 mM L-glutamine, 4500 mg/L glucose and 10% of fetal bovine serum.
Subculturing:	Cultures can be maintained by addition or replacement of fresh medium. Start new cultures at 4 X 10e5 cells/mL and subculture before the cell density reaches 2 X 10e6 cells/mL.
Subculturing Medium Renewal:	Every 2 to 3 days
Culture Conditions:	Atmosphere: air, 95%; carbon dioxide (CO2), 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 × 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:	Minowada J, et al. Rosette-forming human lymphoid cell lines. I. Establishment and evidence for origin of thymus-derived lymphocytes. J. Natl. Cancer Inst. 49: 891-895, 1972. PubMed: 4567231 Ohsugi Y, et al. Tumorigenicity of human malignant lymphoblasts: comparative study with unmanipulated nude mice, antilymphocyte serum-treated nude mice, and X- irradiated nude mice. J. Natl. Cancer Inst. 65: 715-718, 1980. PubMed: 6932523 Mertelsmann R, et al. T-cell growth factor (interleukin 2) and terminal transferase activity in human leukemias and lymphoblastic cell lines. Blut 43: 99-103, 1981. PubMed: 6942897 Rodrigues NR, et al. p53 mutations in colorectal cancer. Proc. Natl. Acad. Sci. USA 87: 7555-7559, 1990. PubMed: 1699228 Sandstrom PA, Buttke TM. Autocrine production of extracellular catalase prevents apoptosis of the human CEM T-cell line in serum-free medium. Proc. Natl. Acad. Sci. USA 90: 4708-4712, 1993. PubMed: 8506323
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