Designation: **CCRF-CEM**

CLS order number: Cryovial: 300147
Vital: 330147

Origin and General Characteristics	
Organism:	*Homo sapiens* (human)
Ethnicity:	Caucasian
Age:	4 years of age
Gender:	Female
Tissue:	Peripheral blood
Morphology:	Polymorph cells, big nuclei; formation of microvilli
Cell type:	T lymphoblast
Growth Properties:	Suspension
Description:	CCRF-CEM cells were derived from the peripheral blood buffy coat of a child (CEM) with acute lymphoblastic leukemia who had originally presented with lymphosarcoma. **Do NOT centrifuge after thawing.**
References:	Foley GE et al. Continuous culture of human lymphoblasts from peripheral blood of a child with acute leukaemia. Cancer 18: 522-529, 1965.
Culture Conditions and Handling	
Culture Medium:	RPMI 1640 medium supplemented with 4.5g/L glucose, L-glutamine and 10% fetal bovine serum (MG-72, CLS order number 820702).
Subculturing:	Subculture by diluting an appropriate volume of the cell suspension in a new flask containing fresh medium. Establish new cultures at 3 x 10^5 viable cells/ml. Upon thawing, culture in 1-2 T-25 cell culture flasks, incubate at 37°C/5% CO_2. Renew the medium 24 hr later by centrifuging and resuspending the cells in the same amount of fresh medium unless the cell concentration exceeds 2 x 10^6 cells/ml.
Seeding density:	Start new cultures at 1 x 10^5 cells/ml
Fluid Renewal:	1 to 2 times weekly
Doubling time:	Approx.24hrs
Freeze Medium:	CM-ACF (CLS order number: 800650, 50ml)
Freezing recovery:	Low. Allow the cells to recover from the freezing process for at least 24-48 h.
Sterility:	Mycoplasma specific PCR: negative
Biosafety Level:	1
Safety precautions:	If the cryovial is planned to be stored in liquid nitrogen and to be thawed in the future, special safety precautions should be followed: Protective gloves and clothing should be used and a facemask or safety goggles must be worn when transferring frozen samples into or removing from the liquid nitrogen tank. The removal of a cryovial from liquid nitrogen may result in the explosion of the frozen vial creating flying fragments. Caputo, J.L. Biosafety procedures in cell culture. J. Tissue Cult. Methods 11:223-227, 1988. ATCC Quality Control Methods for Cell Lines, 2nd edition, 1992.
Special Features of the Cell Line	
Tumorigenic:	yes, in nude mice
Viruses:	SMRV: Negative, as confirmed by Real-Time PCR. Reverse Transcriptase: negative

DNA Profile (STR):	Amelogenin: X,X CSF1PO: 10,13 D13S317: 11 D16S539: 10,13 D5S818: 12,13 D7S820: 9,13 THO1: 6,7 TPOX: 8	vWA: 17,19 D3S1358: 14,15 D21S11: 30,34.2 D18S51: 13,18 Penta E: 5,14 Penta D: 10,11 D8S1179: 12,13 FGA: 23,24
Ploidy status:	Aneuploid	
MSI-status:	Instable (MSI)	
Cell Marker:	CD3 B (37%), CD4 (50%), CD5 (95%), CD7 (77%)	
Isoenzymes:	G6PD, B	
Protein Expression:	p53 negative	

Certificate of Analysis:	The Certificate of Analysis for each batch can be requested by e-mail at service@clsgmbh.de.

Recommendations for handling of cells growing in suspension following delivery	
Cryopreserved cells	The cells come deep-frozen shipped on dry ice. Please make sure that the vial is still frozen. If immediate culturing is not intended, the cryovial(s) must be stored below -150°C after arrival. If immediate culturing is intended, please follow these instructions: Quickly thaw by rapid agitation in a 37°C water bath within 40-60 seconds. The water bath should have clean water containing an antimicrobial agent. As soon as the sample has thawed, remove the cryovial from the water bath. Note: A small ice clump should still remain and the vial should still be cold. From now on, all operations should be carried out under aseptic conditions. Transfer the cryovial to a sterile flow cabinet and wipe with 70% alcohol. Carefully open the vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of culture medium (room temperature). Resuspend the cells carefully. Centrifuge at 300xg for 3 min and discard the supernatant. The centrifugation step may be omitted, but in this case the remains of the freeze medium have to be removed 24 hours later. Resuspend the cells carefully in 10ml fresh cell culture medium and transfer them into one T25 cell culture flask. All further steps are described in the Subculture section.
Proliferating Cultures	The cell culture flask, 1xT25, comes filled with cell culture medium. Incubate at 37°C for a minimum of 24 hrs. Count the cells, spin down the cell suspension at 300x g for 3 minutes to collect the cells. Resuspend the cells in an appropriate amount of fresh cell culture medium and transfer to new cell culture flasks. Incubate at 37°C for a minimum of 24 hrs.

Warranty:	CLS warrants for a high cell viability and culture performance only if the product(s) is (are) stored and cultured according to the information described above. Using cell culture media and supplements other than the ones recommended in this product information may result in satisfactory proliferation and viabilities. CLS, however, does not warrant for cell recovery, proliferation and function if differing formulations are employed.
Disclaimer:	The customer shall not be entitled to employ this product for purposes other than research. Commercial utilization shall not be permitted; in particular, the cell line, its components or materials made therefrom shall not be sold or transferred to any third party. In addition, the term ‘Commercial use’ shall mean any activity by a party for consideration and may include, but is not limited to, use of the product or its components in manufacturing, for providing services, e.g. fee for service testing, in quality control or

	assurance processes within the manufacturing of products for sale, for therapeutic, diagnostic or prophylactic purposes, or for resale.