

**Designation: HT-29**

CLS order number: Cryovial: 300215
Vital: 330215

Origin and General Characteristics	
Organism:	Homo sapiens (human)
Ethnicity:	Caucasian
Age:	44 years
Gender:	Female
Tissue:	Colon
Morphology:	Epithelial
Cell type:	Adenocarcinoma, colorectal
Growth Properties:	Adherent
Description:	Ultrastructural features include microvilli, microfilaments, large vacuolated mitochondria with dark granules, smooth and rough ER with free ribosomes, lipid droplets, few primary and many secondary lysosomes. There is a G -> A mutation in codon 273 of the p53 gene resulting in an Arg -> His substitution.
References:	Fogh, J., ed., Human tumor cells in vitro. New York: Plenum Press, pp. 115-159, 1975.
Culture Conditions and Handling	
Culture Medium:	EMEM supplemented with 2 mM L-glutamine, 10% fetal bovine serum (MG-10, CLS order number 820100).
Subculturing:	Remove medium and rinse the adherent cells using PBS without calcium and magnesium (3-5 ml PBS for T25, 5-10ml for T75 cell culture flasks). Add Accutase (1-2ml per T25, 2.5ml per T75 cell culture flask), the cell sheet must be covered completely. Incubate at ambient temperature for 8-10 minutes. Carefully resuspend the cells with medium (10 ml), centrifuge for 5 min at 300xg, resuspend cells in fresh medium and dispense into new flasks which contain fresh medium.
Split Ratio:	A ratio of 1:3 to 1:8 is recommended
Seeding density:	3 x 10 ⁴ /cm ²
Fluid Renewal:	2 to 3 times per week
Doubling time:	About 24 hrs
Freeze Medium:	CM-2 (CLS order number: 800225, 25ml, 800250, 50ml), serum free
Freezing recovery:	Slow; the cells need roughly 48 hrs to settle and adhere.
Sterility:	Fluorescence (DAPI) test: negative; Mycoplasma specific PCR: negative; Bacteria 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; forms well differentiated adenocarcinoma consistent with colonic primary (grade I); tumors also form in steroid treated hamsters	
Oncogenes:	myc+; ras+; myb+; fos+; sis+; p53+; abl -; ros -; src -	
Viruses:	No virus particles have been observed. SMRV: Negative, as confirmed by Real-Time PCR	
Virus Susceptibility:	human immunodeficiency virus (HIV, LAV)	
Karyotype:	The stemline chromosome number is hypertriploid with the 2S component occurring at 2.4%. Seventeen marker chromosomes are found in most metaphases, generally in single copy per chromosome. The marker designations are: M1p-(=t(3p-;?) with a deleted short arm), t(7q;?), t(10q;?), i(13q), 19q+a; M6, ?t(8q;9q-), ?Xp, M9, 6q+, t(13;?)a, t(13;?)b, 19q+b, M14, M15, 15p+, and Xq-. Chromosome 13 is nullisomic and chromosomes 8 and 14 are generally monosomic. No Y chromosome was detected by QM band analysis.	
Antigen Expression:	Blood Type A; Rh+; HLA A1, A3, B12, B17, Cw5	
DNA Profile (STR):	Amelogenin: X,X CSF1PO: 11,12 D13S317: 11 D16S539: 11,12 D5S818: 11,12 D7S820: 10 THO1: 6,9 TPOX: 8,9	vWA: 17,19 D3S1358: 15,17 D21S11: 29,30 D18S51: 13 Penta E: 14,16 Penta D: 11,13 D8S1179: 10 FGA: 20,22
Isoenzymes:	Me-2, 1; PGM3, 1-2; PGM1, 1-2; ES-D, 1; AK-1, 1; GLO-1, 1-2; G6PD, B; Phenotype Frequency Product: 0.0230	
Products:	Secretory component of IgA; carcinoembryonic antigen (CEA); transforming growth factor beta binding protein; mucin; The p53 antigen is overproduced	
Immunology:	CD4 -; cell surface expression of galactose ceramide (a possible alternative receptor for HIV).	
Protein expression:	CEA negative, p53 positive	
Receptors Expressed:	urokinase receptor(u-PAR); vitamin D (moderate expression); no detectable plasminogen activator activity.	

Certificate of Analysis:	The Certificate of Analysis for each batch can be requested by e-mail at service@clsgmbh.de .
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Recommendations for handling of adherent cell cultures following delivery	
Cryopreserved cells	<p>If immediate culturing is not intended, the cryovial(s) must be stored below -150°C.</p> <p>If immediate culturing is intended, please follow these instructions:</p> <p>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.</p> <p>From now on, all operations should be carried out under aseptic conditions.</p> <p>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.</p> <p>Resuspend the cells carefully in 10ml fresh cell culture medium and transfer them into two T25 cell culture flasks. All further steps are described in the Subculture section.</p>

Proliferating Cultures	<p>The cell culture flasks, 2xT25, come filled with cell culture medium.</p> <p>Collect the entire medium in 2x 50 ml centrifuge tubes.</p> <p>Carefully add 5 ml of cell culture medium to each of the two T25 cell culture flasks.</p> <p>Control the cell morphology and confluency under the microscope.</p> <p>Incubate at 37°C for a minimum of 24 hrs.</p> <p>Spin down the collected medium at 300x g for 3 minutes to collect the cells which may have detached during transit. If a cell pellet is visible, resuspend the cells in 5 ml of cell culture medium and transfer to 1xT25 cell culture.</p> <p>Incubate at 37°C for a minimum of 24 hrs.</p>
Warranty:	<p>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.</p>
Disclaimer:	<p>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.</p>