



Leibniz Institute
DSMZ-German Collection
of Microorganisms
and Cell Cultures GmbH



HELA

ACC 57

Cell line:
HELA

DSMZ no.:
ACC 57

Species:
human (*Homo sapiens*)

Cell type:
cervix carcinoma

Origin:
established from the epitheloid cervix carcinoma of a 31-year-old black woman in 1951; later diagnosis changed to adenocarcinoma; first aneuploid, continuously cultured human cell line

Reference(s):
[14926](#), [14555](#), [18012](#), [18013](#)

Biosafety level:
1

Risk
assessment:

The cell line is infected with papilloma virus type 18 (HPV-18). The cells contain several copies as proviruses integrated into the eukaryotic genome. The integrated virus genomes are incomplete and exhibit 2-3 kb deletions of the E2-L2 region. An activation and transmission of the HPV-18 during handling of the cell line is improbable. The cell line is categorized biosafety level 1.

Permissions
and
restrictions:
[A](#)

DSMZ Cell Culture Data:

Morphology:
epithelial-like cells growing in monolayers; [image](#); [image](#)

Medium:
90% MEM (with Earle's salts) + 10% h.i. FBS + 2 mM
L-glutamine + non-essential amino acids (cells also grow
well in 90-95% RPMI 1640 + 5-10% h.i. FBS)

Subculture:
seed out at ca. $1-2 \times 10^6$ cells/80 cm²; split confluent
culture 1:4 to 1:6 every 3-5 days using trypsin/EDTA

Incubation:
at 37 °C with 5% CO₂

Doubling time:
ca. 40-48 hours

Harvest:
cell harvest of ca. $10-15 \times 10^6$ cells/175 cm²

Storage:
frozen with 70% medium, 20% FBS, 10% DMSO

DSMZ Scientific Data:

Mycoplasma:

negative in DAPI, microbiological culture, RNA hybridization, PCR assays

Immunology:

To inquire about expression of EpCAM and intermediate filaments, contact hilmar.quentmeier@dsmz.de.

Fingerprint:

multiplex PCR of minisatellite markers revealed a unique DNA profile

Species:

originally confirmed as human with IEF of G6PD, MDH, NP

Cytogenetics:

human hypertriploid/hypotetraploid karyotype with 15% polyploidy - 82(77-84)<4n>XXX, -X, -2, -3, -4, +5, +5, +5, +5, -7, -8, -11, -13, -14, -15, -16, -17, -18, -19, -21, -22, +mar - der(1)t(1;3)(p11;q11), add(2)(q37), del(3)(q13), der(3)t(3;5)(q11;q11), i(5p)x4, del(6)(q15), der(9)t(1;9)(p11;p11), add(12)(q23), i(15q), der(19)t(13;19)(q22;p13)x1-2, add(21)(p11), del(?22)(q12)

Viruses:

ELISA: reverse transcriptase negative; PCR: EBV -, HBV -, HCV -, HHV-8 -, HIV-1 -, HIV-2 -, HPV +, HTLV-I/II -, MLV -, SMRV -

Supplied as:

Delivery form	Prices
Frozen culture	400,- €
Growing culture (please inquire for exact delivery time)	800,- €
DNA isolated from cell line (25 µg)	500,- €
DNA isolated from cell line (5 µg)	120,- €

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