Collection of cell cultures of vertebrates

Catalogue was prepared by:
G.G.Poljanskaya, G.A.Sakuta, A.S.Musorina (SPBIC)

Species index

SPECIES	ORGAN or TISSUE	NAME OF CELL LINE
Cattle		
Bos taurus	Kidney	MDBK (NBL-1)
	Trachea, embryo	FBT
Chicken		
Gallus gallus	Lymphoblastoma	MDCC-MSB1
Dog		
Canis familiaris	Kidney	MDCK (NBL-2)
hamster Chinese		
Cricetulus griseus	Fibrosarcoma	B14-150
	Lung	A-238
		V-79
	Ovary	CHO-K1
		DXB-11
hamster Syrian		
Messocricetus Auratus	Kidney	BHK-21 clone 13
		HaK
Human		
Homo sapiens	Bladder carcinoma	T-24
	Breast carcinoma	BT-474
		Hs 578 T
	Burkitt lymphoma	NAMALVA
		Raji
	Cervical carcinoma	Hela S 3
		Hela TK^-
		M-Hela clone 11
	Colon adenocarcinoma	Caco-2
	Colon, carcinoma	COLO 320 HSR
	Duodenum, adenocarcinoma	HuTu 80
	Embryonic stem cells	SC5
	Epidermoid carcinoma	A 431
	Fibroblasts from xeroderma pigmentosum patients, SV40 virus-tpansformed	XPA
	Fibrosarcoma	HT-1080
	Glioblastoma	T 98G
	Kidney hypernephroma	HN
	Kidney, carcinoma	OKP-GS
	Kidney, embryo	293
	Leukemia B-lymphoblastic	CCRF-SB
	Leukemia myelogenous	KG-1
		K-562
		THP-1
	Leukemia promyelocytic	HL-60
	Leukemia T-lymphoblastic	MOLT-3

		MOLT-4
		Jurkat
	Leukocytes	RPMI 1788
	Liver adenocarcinoma	SK-HEP-1
	Liver carcinoma	Hep G2
	Lung carcinoma	A 549
	Lung, embryo, SV40 transformed	WI-38VA13subline2RA
	Lymphoma, histiocytic	U-937
	Mammary gland carcinoma	BT-20
		ZR-75-1
		MCF-7
	<u>Mesenchymal stem cells:</u>	
	embryonic stem cells	SC5-MSC
	muscle of a limb of the embryo	M-FetMSC
	the bone marrow of the embryo	FetMSC
	the eyelid's skin of an adult donor	DF-1
		DF-2
	the foreskin of a child	FRSN
		FRSN-1
	pulp of a deciduous tooth	MSC-DP
	wharton jelly of the umbilical cord	MSCWJ-1
	Myeloma	IM-9
		RPMI 8226
	Nasal septum carcinoma	RPMI 2650
	Neuroblastoma	IMR-32
		SK-N-MC
	Osteosarcoma	MG-63
		U-2 OS
		Hos (TE85, clone F5)
	Osteosarcoma, chemically transformed	MNNG-HOS (TE 85, clon F-5)
	Ovarian teratocarcinoma	PA-1
	Pancreastic adenocarcinoma	Capan-2
		AsPC-1
	Pancreatic carcinoma	MIA PaCa-2
		PANC-1
	Rhabdomyosarcoma embryonic	RD
	Rectum adenocarcinoma	SW 837
	Tracheal epithelium transfected with pSVori- plasmid	CFTE 29o$^-$
	Uterine leiomyosarcoma	SK-UT-1B
<u>Mink</u>		
Mustela vison	Lung	Mv 1 Lu (NBL-7)
<u>Monkey</u>		
African green	Kidney	BGM
Cercopithecus		CV-1
aethiops		Vero
		Vero 76

Macaque rhesus *Macaca mulatta*	Kidney	LLC-MK2, derivative
Mouse		
Mus musculus	Brain, tumor	BC3H1
	Connective tissue	A-9
		L-M (TK^-, $APRT^-$)
		LS
		LSM
		NCTC clone 929
	Fibroblasts	McCoy B
	Fibroblasts, embryo	3T3 Swiss albino
		3T3-Swiss J2
		3T6 Swiss albino
		3T3 NIH TK^-
		BALB/3T3 clone A31
		C3H10T1/2 clone 8
		NIH/3T3
		PA 317
		Psi 2 BAG α
		STO
	Fibroblasts, embryo, SV40 transformed	3T3B-SV40
		3T3-SV 40
	Fibrosarcoma	Wehi 164
	Glioblastoma	EPNT-5
	Hepatoma	BWTG 3
		MH-22a
	Leukemia lymphocytic	L 1210
	Leukemia myelomonocytic	Wehi-3
	lymphoid neoplasm	P388 D_1
	Lymphoma	EL-4
		YAC-1
	Mastocytoma	P-815
	Melanoma	Clone M-3
	Muscle	C2C12
	Myeloma	NSO/1
		P3/NS1/1-Ag4-1(NS-1)
		P3X63Ag8.653
		Sp2/0-Ag14
	Neuroblastoma	NB41A3
		Neuro-2a
	Rhabdomyosarcoma	A-7
		MCH-7
		MCH-82
	Sarcoma histiocytic	J-774
	Teratocarcinoma	P19
	Testicular teratocarcinoma	F9
muntjac		
Muntiacus muntjak	Skin	Indian Muntjac (M)

		Indian Muntjac (MT)
Pig		
Sus scrofa	Kidney	PK(15)
	Kidney, embryo	SPEV
Rabbit		
Oryctolagus	Cornea	SIRC
Cuniculus	Kidney	RK13
rat kangaroo		
Potorous tridactylus	Kidney	Pt K1 (NBL-3-11) PTK1 (NBL-3-17)
Rat		
Rattus norvegicus	Fibroblasts Ad5-transformed, embryo	DFK3
	Fibroblasts spontaneously transformed	K-22
	Glioma	2211 35 C6
	Hepatoma	HTC
	Kidney	NRK-49F
	Leukemic basophilic granulocyte	RBL-1
	Leukemia basophilic chemically induced, peripheral blood	RBL-2H3
	Lymphosarcoma	RLC
	Muscle	L6J1 L-8
	Pancreas, insulinoma	RIN m 5F
	Pituitary tumor	GH3
	Carcoma	JF 1 XCp

Abbreviations

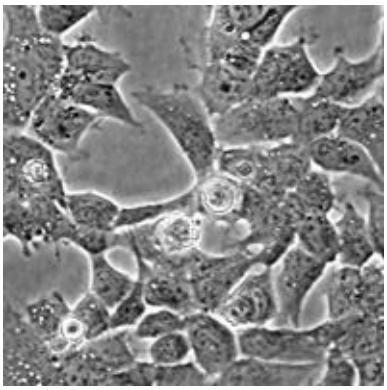
Ad - adenovirus
AK - adenylate kinase
AKTG - adrenocorticotrophin
ATCC - American Type Culture Gollection
ATP - adenosine 5'-triphosphate
bFGF - basic fibroblast growth factor
BS - bovine serum
BUdR - bromodeoxyuridine
BVD - bovine virus diarrhea
CSA - colony-stimulating activity
DMEM - Dulbecco's modified Eagle's medium
DMSO - dimethyl sulfoxide
DNA - deoxyribonucleic acid
DSM - German Collection of Microorganisms and Cell Cultures
EA - early antigen
EBNA - Epstein-Barr nuclear antigen
EBV - Epstein-Barr virus
ECACC - European Collection of Animal cell cultures
ECHO - enteric cytopathogenic human orphans
EDTA - disodium ethylene-diaminetetraacetate
EGF - epidermal growth factor
EMEM - minimal essential medium Eagle
ES D - esterase - D
ESCC - Ekaterinburg collection of continuous somatic cells of vertebrates
FBS - fetal bovine serum
FGF - fibroblast's growth factor
G6PD - glucose-6-phosphate dehydrogenase
GLO - glyoxylase
GPRT(-) - guanine phosphoribosile transferase (-)
HIV - Human immuno deficiency virus
HLA - Human leucocyte antigen
HS - horse serum
HSV - herpes simplex virus
HTLV - human T-cell leukemia virus
IBR - infectious bovine rhynotracheitis
ICLC - Interlab cell line collection
Ig - immunoglobulin
IL - interleukin
LDH - lactate dehydrogenase
Me - malic enzyme
MNNG - methyl - N - nitroso-guanidine
MWIEV - Russian research Inst. of Experimental veterinary
MWIIW - D.I. Ivanovsky Institute of virilogy
NEAA - non-essential amino acids
NK - naturally killer
NPP - norepinephrine
PEP - peptidase
PGD - phosphogluconate degydrogenase
PGM - phosphoglucomutase
PHA - phytohemagglutinin
PTH - parathyroid hormone

RNA - ribonucleic acid
SPBIC - St.Peterburg Institute of Cytology
SPBII - St.Peterburg Institute of Influenza
STR - short tandem repeats
SV - simian virus
TK - timidine kinase

HUMAN CELL LINES

293 (HEK-293)

Origin: human, embryonal kidney , cell transformed with human adenovirus type 5 (Ad 5) DNA.
Gen. Virology 1977. 36:59; Virology 1977. 77: 319; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.
Morphology: epithelial-like
Mode of cultivation: monolayer



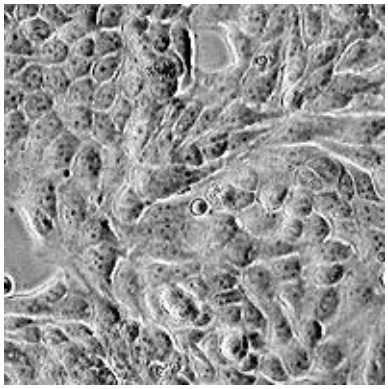
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components -NEAA 1%.
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:2 - 1:3), split ratio 1:2 - 1:3, optimal population density 3.0-5.0x10^4 cells/cm^2, cell detach at room temperature and may take several days to reattach.
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule
Viability after cryoconservation: 90-95% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n=46, modal number of chromosomes 72, number of markers - 12 (differential dye), number of polyploid cells 2.4%.
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	11,	12
D13S317:	12,	12
D16S539:	9,	13
D5S818:	8,	9
D7S820:	11,	12
THO1:	7,	9.3
TPOX:	11,	11
vWA:	16,	19

Other properties: virus susceptibility: human adenovirus type 5, astrovirus. Contain and express the transforming genes of Ad5.
Applications: biotechnology (human adenovirus titration), virology, transformation
Collections: ATCC CRL 1573; ECACC 85120602; MWIIW; SPBIC.

Origin:human, epidermoid carcinoma

J.Natl.Cancer Inst. 1973. 51: 1417-1423. Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: epithelial-like

Mode of cultivation: monolayer

Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule

Viability after cryoconservation: 83% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological and isoenzymological (LDH, G6PD) analysis

Karyology: 2n=46, variability in the range between 55-77 chromosomes, modal number of chromosomes 72, number of markers - 27 (differential dye), number of polyploid cells 7.0%

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	11,	12
D13S317:	9,	13
D16S539:	12,	13, 14
D5S818:	12,	13
D7S820:	10,	10
THO1:	9,	9
TPOX:	11,	11
vWA:	15,	17

Tumorigenicity: tumorigenic in anti-thymocyte serum - treated NIH/Swiss mice

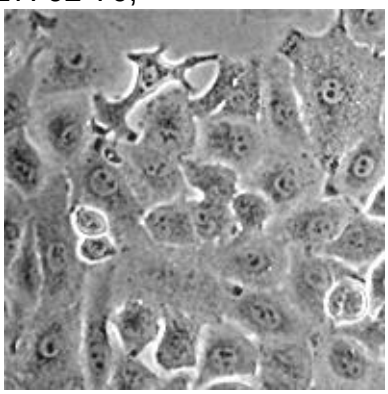
Other properties: large numbers of EGF binding sites

Applications: cell biology, growth factors study

Collections: ATCC CRL 1555; ECACC 85090402; SPBIC.

A 549

Origin: human, lung carcinoma.
J.Natl.Cancer Inst. 1973. 51: 1417-1423; Int.J.Cancer 1976. 17: 62-70;
Tissue Antigens 1978. 11:279.



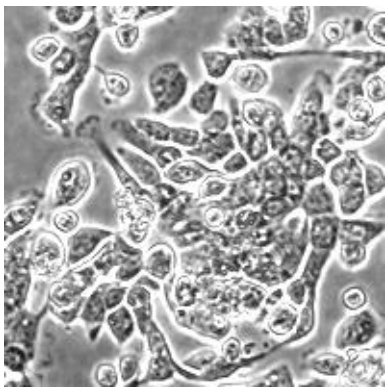
Morphology: epithelial-like.
Mode of cultivation: monolayer.
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 -1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium (may add 30% BS), 5-10% DMSO, 1.0-1.5x10^6 cells/ml in ampule.
Viability after cryoconservation: 97% (0 passage, dye trypan blue).
Sterility: tests for bacteria, fungi and mycoplasma were negative.
Species: karyological analysis.
Karyology: 2n= 46, variability in the range between 55-68 chromosomes, modal number of chromosomes 62-65 , number of markers - 1 large submetacentric chromosome (routine dye), number of poliploid cells - 3.2%.
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	10,	12
D13S317:	11,	11
D16S539:	11,	12
D5S818:	11,	11
D7S820:	8,	11
THO1:	8,	9,3
TPOX:	8,	11
vWA:	14,	14

Plating efficiency: 48%.
Tumorigenicity: tumorigenic in nude mice.
Other properties: virus susceptibility: adenovirus, herpes simplex, parainfluenza II and III, polioviruses, cytomegalovirus, vesicular stomatitis.
High specific activities of choline kinase and cholinephosphate cytidyl-transferase.
Fatty acids synthesis (lecitine).
Interleukine-6 synthesis, interferon receptors.
HLA cell line phenotype F (10,w19); B (8,12).
Applications: biotechnology (interferon induction and titration), tumorigenicity, cell biology, enzymology, virology
Collections: ATCC CCL 185; ECACC 86012804; MWIIW; SPBII; SPBIC.

AsPC-1

Origin: human, metastatic pancreas adenocarcinoma (ascitic fluid) J.Natl.Cancer Inst. 1981. 67: 563-569; Clin.Lab.Med. 1982. 2: 567-578; In vitro 1982. 18: 24-34; Tumor Biol. 1985. 6: 89-98.



Morphology: epithelial-like

Mode of cultivation: monolayer

Conditions for cultivation: medium - RPMI 1640
serum - FBS 20%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:4
cryoconservation - growth medium 10% DMSO, $3.4x10^6$ cells/ml in ampule

Viability after cryoconservation: 90% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological and isoenzymological (LDH, G6PD) analysis

Karyology: 2n= 46 , modal number of chromosomes 55, number of markers – 18% cells have large submetacentric chromosome (routine dye), and 6 markers (differential dye).

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	13
D13S317:	9,	12
D16S539:	11,	11
D5S818:	12,	12
D7S820:	12,	13
THO1:	7,	9,3
TPOX:	8,	10
vWA:	17,	17

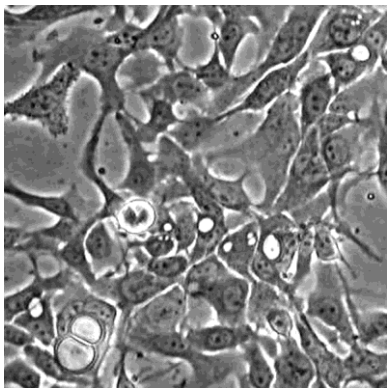
Tumorigenicity: tumorigenic in nude mice

Applications: tumorigenicity, immunology

Collections: ATCC CRL 1682; SPBIC.

BT- 20

Origin: human, mammary gland adenocarcinoma.
J. Natl. Cancer Inst. 1958. 21: 1131-1147; Int. J. Cancer 1975. 16: 74; Br. J. Cancer 2000. 83: 1309-1317; Cancer Res. 2000. 60: 4519-4525; Genes Chromosomes Cancer 2000. 28: 308-317; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – EMEM
serum - FBS 10%
other components -NEAA 1%.
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio: 1:2 -1:4
cryoconservation - growth medium, 5 - 10% DMSO, $3.5x10^6$ cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative.
Species: karyological analysis.
Karyology: 2n=46, variability in the range between chromosomes 47-52, modal number of chromosomes 49, number of markers - 20 (differential dye), number of poliploid cells 6.5 %.

DNA profile (STR):

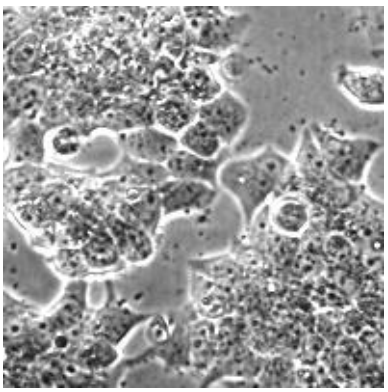
Amelogenin:	X,	X
CSF1PO:	12,	12
D13S317:	11,	11
D16S539:	11,	14
D5S818:	12,	12
D7S820:	10,	10
THO1:	7,	9.3
TPOX:	11,	11
vWA:	16,	17

Tumorigenicity: tumorigenic in nude mice
Other properties: isoenzymes: PGM3, 1; PGM1, 1; ES D, 1; AK1, 1-2; G6PD, B; GLO-1, 1-2. HLA cell phenotype A1; Bw16+/-
Applications: carcinogenesis, cell biology.
Collections: ATCC HTB 19; SPBIC.

BT-474

Origin: human, breast, ductal carcinoma
J.Natl.Cancer Inst. 1978. 61: 967-978; In vitro 1979. 15: 723-729.

Morphology: epithelial-like



Mode of cultivation: monolayer

Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
other components - bovine insulin 10 μ/ml
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2-1:4
cryoconservation - growth medium 10% DMSO, $5.0x10^6$ cells/ml in ampule

Viability after cryoconservation: 71% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological analysis

Karyology: 2n=46, variability in the range between 95-107 chromosomes, modal number of chromosomes 100-103, number of markers - 1 large submetacentric chromosome (routine dye), and 9 markers (differential dye), number of poliploid cells 0.2 %

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	11
D13S317:	11,	11
D16S539:	9,	11
D5S818:	11,	13
D7S820:	9,	12
THO1:	7,	7
TPOX:	8,	8
vWA:	15,	16

Tumorigenicity: tumorigenic in nude mice

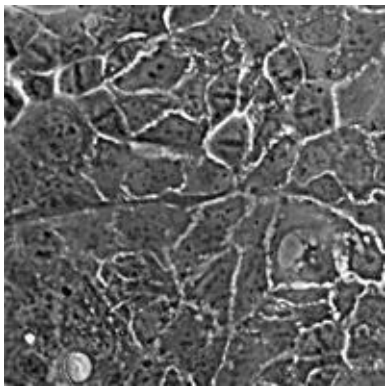
Other properties: virus susceptibility: mouse mammary tumor virus R-III-MuMTV; isoenzymes G6PD, B; PGM_1,1; PGM_3,1; ES D,1; Me-2, 0; AK1, 1; GLO-1,1; R-III-MuMTV replication.

Applications: tumorigenicity, virology, cell biology

Collections: ATCC HTB 20; SPBIC.

Caco-2

Origin: human, colon adenocarcinoma
J. Natl.Cancer Inst. 1977. 58: 209-214; J. Natl.Cancer Inst. 1977. 59: 221-226.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10-15%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:1 - 1:3), split ratio 1:2 - 1:4, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 5-10% DMSO, 1.0x10^6 cells/ml in ampule



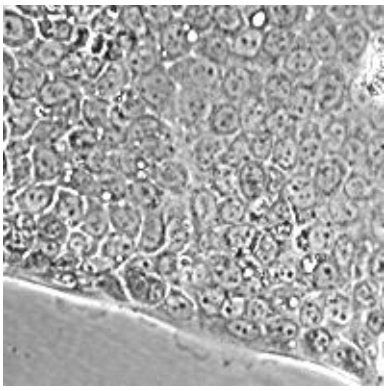
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis (ATCC)
Karyology: 2n=46, variability in the range between 91-107 chromosomes, modal number of chromosomes 96-101, number of markers - 10 (differential dye), number of poliploid cells 3.2%.

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	11,	11
D13S317:	11,	13, 14
D16S539	12,	13
D5S818:	12,	13
D7S820:	11,	12
THO1:	6,	6
TPOX:	9,	11
vWA:	16,	18

Tumorigenicity: tumorigenic in nude mice
Other properties: isoenzymes Me-2,1; PGM_3,1; PGM_1, 1; ES D,1; AK 1,1; GLO-1,1; G6PD, B.
Lipid production.
Applications: gastroenterology, biochemistry, tumorigenicity, cell biology, biophysics.
Collections: ATCC HTB 37; ECACC 86010202; SPBIC.

Capan-2



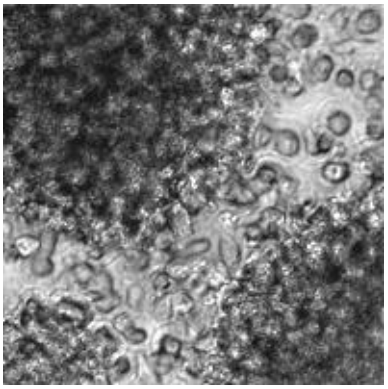
Origin: human, pancreas adenocarcinoma.
Submitted by ATCC 1990.
Morphology: polygonal
Mode of cultivation: monolayer
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:4), split ratio 1:2 - 1:4
cryoconservation - growth medium, 5-10% DMSO, $2.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 92 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=46, variability in the range between 63-71, modal number of chromosomes 68-70, number of poliploid cell 2.0%.

DNA profile (STR):

Amelogenin:	X	X
CSF1PO:	11	12
D13S317:	11	12
D16S539:	9	13
D5S818:	11	12
D7S820:	9	11
THO1:	9.3	9.3
TPOX:	8	8
vWA:	17	17

Tumorigenicity: tumorigenic in nude mice
Other properties: isoenzymes Me-2, 2; PGM_3, 2; PGM_1,1; ES D,1; AK1,1; GLO-1, 2; G6PD, B.
Applications: tumorigenicity, immunology, biochemistry.
Collections: ATCC HTB 80; SPBIC.

CCRF-SB



Origin: human, acute B-lymphoblastic leukemia, peripheral blood
Cancer Res. 1967. 27: 2479-24-82; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world
Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density $5.0x10^5$ cells/cm^2
cryoconservation - growth medium 5-10% DMSO, $3.0\text{-}4.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 75% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n=46 , variability in the range between 42-47, modal number of chromosomes 46, diploid, normal human karyotype (46, XY). Number of poliploid cells 1%.

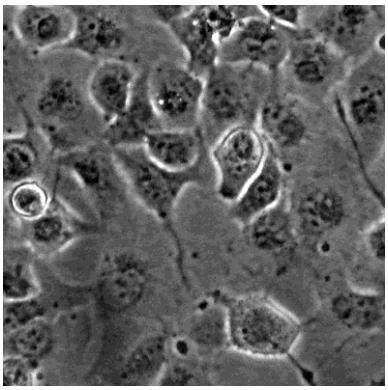
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	10,	12
D13S317:	10,	12
D16S539:	9,	13
D5S818:	11,	12
D7S820:	11,	12
THO1:	9,	10
TPOX:	8,	8
vWA:	18,	18

Other properties: Ig non synthesised.
Isoenzymes - G6PD, B.
Erythrocyte rosette tests: E, 0; EA, 6%; EAC, 23%.
HLA cell line phenotype A1, A2, B12, B17, Cw2.
Positive for EBNA
Applications: immunology, cell biology.
Collections: ATCC CCL 120; ECACC 89090405; SPBIC.

CFTE 29o$^-$

Origin: human, tracheal epithelium, cells were transfected with pSVori- plasmid.
Am.J.Respir.Cell Mol.Biol. 1993. 8; 522-529.



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:4
cryoconservation - growth medium, 10% DMSO, $1.5x10^6$ cells/ml in ampule
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 65-73 chromosomes, modal number of chromosomes 69-70, number of markers – 24% dicentrics (routine dye); number of poliploid cells 3.5%.

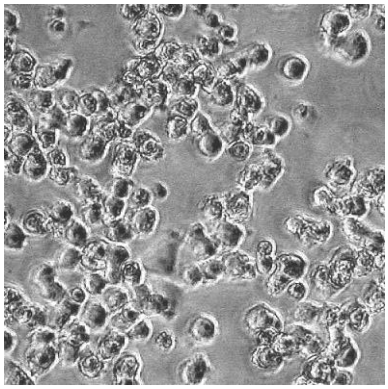
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	13
D13S317:	9,	11
D16S539:	10,	12
D5S818:	11,	12
D7S820:	10,	11
THO1:	7,	7
TPOX:	8,	11
vWA:	17,	17

Plating efficiency: 30%
Other properties: keratin expression.
Homozygous Δ F508-mutation (cystic fibrosis - recessive genetical disease)
Applications: genetical transformation and hereditary diseases studies, cell biology.
Collections: SPBIC.

COLO 320 HSR

Origin:human, colon, carcinoma.
Cancer Res. 1979. 39: 4914; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: round cells
Mode of cultivation: semisuspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - split ratio 1:3, optimal population density 3.0-9.0x10^5 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=46, variability in the range between 49-61 chromosomes, modal number of chromosomes 52, markers - 18 (differential dye), double minute chromosomes.

DNA profile (STR):

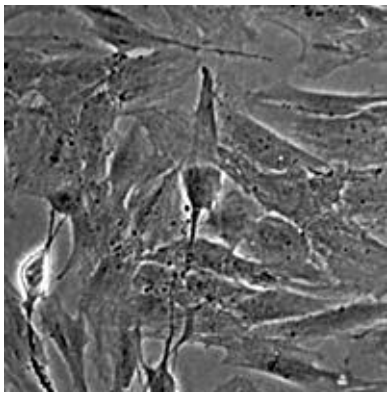
Amelogenin:	X,	X
CSF1PO:	11,	11
D13S317:	11,	11
D16S539:	11,	12
D5S818:	12,	12
D7S820:	9,	12
THO1:	8,	9
TPOX:	8,	9
vWA:	15,	18

Plating efficiency: 12%.
Tumorigenicity: tumorigenic in nude mice
Other properties: isoenzymes PGM_1,1; PGM_3,1; G6PD, B; PEP-D,1; PGD, A; ES D, 1 Serotonin, epinephrine, AKTG, NPP, PTH production
Applications: biochemistry, biophysics, endocrinology.
Collections: ATCC CCL 220.1; ECACC 87101501; SPBIC.

DF-1

Origin: human, mesenchymal stem cells from eyelid's skin of of 37 year old woman. Tsitologiya. 2016. 57 (11): 850 – 864

Morphology: fibroblast-like



Mode of cultivation: monolayer

Conditions for cultivation: medium – DMEM/F12
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio: 1:3, optimal population density 4.0- 5.0x10^4 cells/cm2
cryoconservation - growth medium, 10% DMSO, 1.0-1.5.x10^6 cells/ml in ampule

Viability after cryoconservation: 85% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative.

Species: karyological analysis.

Karyology: 2n=46, modal number of chromosomes 46 (98.0%), normal human karyotype (46, XX), detected nonclonal structural chromosome rearrangements, number of poliploid cells 0.8%.

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	11,	11
D13S317:	11,	11
D16S539:	10,	12
D5S818:	9,	13
D7S820:	10,	12
THO1:	9.3,	9.3
TPOX:	8,	9
vWA:	15,	19

Plating Efficiency: 34.5%

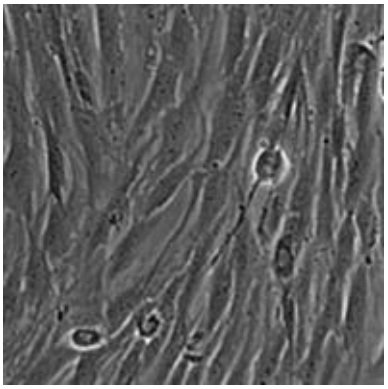
Other properties: finite lifetime culture; average population doubling time 40.0 h; The presence of surface antigens specific for human MSCs: CD44, CD73, CD90, CD105, HLA-ABC, vimentin and the lack of CD34, HLA-DR; The ability to induced differentiation into osteogenic, chondrogenic and adipogenic directions.

Applications: cell biology, biotechnology, feeder for cultivation embryonic stem cells.

Collections: SPBIC.

DF-2

Origin: human, mesenchymal stem cells from eyelid's skin of 45 year old woman
Tsitologiya. 2016. 57 (11): 850 – 864

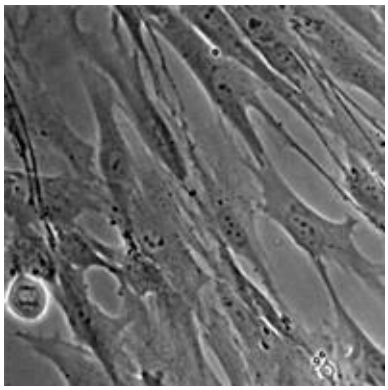


Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – DMEM/F12
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio: 1:3, optimal population density 4.0- 5.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0-1.5.x10^6 cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative.
Species: karyological analysis.
Karyology: 2n=46, modal number of chromosomes 46 (98.0%), normal human karyotype (46, XX), number of poliploid cells 1.2%.
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	12
D13S317:	11,	11
D16S539:	11,	11
D5S818:	11,	13
D7S820:	13,	13
THO1:	6,	9
TPOX:	9,	9
vWA:	15,	17

Plating Efficiency: 25.4%
Other properties: finite lifetime culture; average population doubling time 40.0 h; The presence of surface antigens specific for human MSCs: CD44, CD73, CD90, CD105, HLA-ABC, vimentin and the lack of CD34, HLA-DR; The ability to induced differentiation into osteogenic, chondrogenic and adipogenic directions.
Applications: cell biology, biotechnology, feeder for cultivation embryonic stem cells.
Collections: SPBIC.

FetMSC



Origin: human, mesenchymal stem cells from bone marrow of 5-6 week embryo.
Tsitologiya. 2012. 54 (1): 5 – 16; Tsitologiya. 2014. 56 (8): 562 – 573.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation:medium – DMEM/F12
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio: 1:3, optimal population density 4.0-5.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.5-2.0x10^6 cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative.
Species: karyological analysis.
Karyology: 2n=46, modal number of chromosomes 46 (97.0±1.7%), normal human karyotype (46, XY), number of poliploid cells 3.0%.

ДНК профиль (STR):

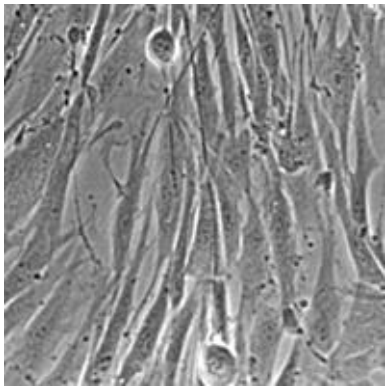
Amelogenin:	X,	Y
CSF1PO:	9,	12
D13S317:	11,	12
D16S539:	11,	11
D5S818:	12,	13
D7S820:	10,	12
THO1:	7,	8
TPOX:	8,	11
vWA:	14,	15

Other properties: finite lifetime culture; average population doubling time 33.5 h; The presence of surface antigens specific for human MSCs: CD44, CD73, CD90, CD105, HLA-ABC, vimentin and the lack of CD34, HLA-DR; The ability to induced differentiation into osteogenic, chondrogenic and adipogenic directions.
Applications: cell biology, biotechnology, feeder for cultivation embryonic stem cells.
Collections: SPBIC.

FRSN

Origin: human, mesenchymal stem cells from foreskin of a 3-years-old boy. Tsitologiya. 2012. 54 (1): 5 –16.

Morphology: fibroblast-like



Mode of cultivation: monolayer

Conditions for cultivation: medium – IMDM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio: 1:3, optimal population density 2.0- 4.0x10^4 cells/cm^2
cryoconservation - growth medium, 5% DMSO, 1.5-2.0x10^6 cells/ml in ampule

Viability after cryoconservation: 90% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative.

Species: karyological analysis.

Karyology: 2n=46, modal number of chromosomes 46 (98.5±1.2%), normal human karyotype (46, XY), number of poliploid cells 13.0%.

DNA profile (STR):

Amelogenin:	X,	Y	
CSF1PO:	10,	10	
D13S317:	8,	11,	12
D16S539:	12,	13,	14
D5S818:	12,	12	
D7S820:	8,	9,	12
THO1:	6,	6	
TPOX:	8,	8	
vWA:	16,	17,	18

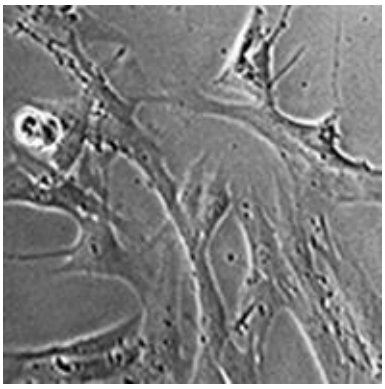
Other properties: finite lifetime culture; average population doubling time 30.0 h; The presence of surface antigens specific for human MSCs: CD44, CD73, CD90, CD105, HLA-ABC and the lack of CD34, HLA-DR; The ability to induced differentiation into osteogenic, chondrogenic and adipogenic directions.

Applications: cell biology, biotechnology, feeder for cultivation embryonic stem cells.

Collections: SPBIC.

FRSN-1

Origin: human, mesenchymal stem cells from foreskin of a 2.5 -years-old boy. Tsitologiya. 2016. 60 (4): 262 – 272.



Morphology: fibroblast-like

Mode of cultivation: monolayer

Conditions for cultivation: medium – IMDM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio: 1:3-1:4, optimal population density 2.0- 4.0x10^4 cells/cm^2
cryoconservation - growth medium, 5% DMSO, 1.0-1.5x10^6 cells/ml in ampule

Viability after cryoconservation: 90% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative.

Species: karyological analysis.

Karyology: 2n=46, modal number of chromosomes 46 (98.0±1.4%), normal human karyotype (46, XY), number of poliploid cells 6.4 %.

DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	11,	11
D13S317:	9,	11
D16S539:	11,	11
D5S818:	12,	13
D7S820:	10,	12
THO1:	9,	9.3
TPOX:	11,	11
vWA:	13,	16

Plating efficiency: 25.1 %

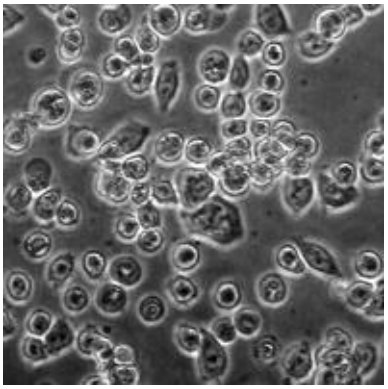
Other properties: finite lifetime culture; average population doubling time 36.9 h. The presence of surface antigens specific for human MSCs: CD44, CD73, CD90, CD105, HLA-ABC and the lack of CD34, HLA-DR; The ability to induced differentiation into osteogenic, chondrogenic and adipogenic directions.

Applications: cell biology, biotechnology.

Collections: SPBIC.

HeLa S 3

Origin: human, epithelioid cervical carcinoma, strain of HeLa
Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.
Morphology: round and epithelial-like
Mode of cultivation: semisuspension
Conditions for cultivation: medium - EMEM
serum - FBS10%
other components - NEAA 1%
subculture procedure - optimal population density 3.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 5%DMSO, 3.0x10^6 cells/ml in ampule



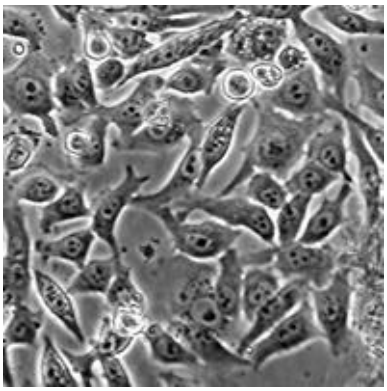
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=46, variability in the range between 51-74 chromosomes modal number of chromosomes 66-69, markers - 13 (differential dye), number of poliploid cells 11.0%
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	9,	10
D13S317:	13.3,	13.3
D16S539:	9,	10
D5S818:	11,	12
D7S820:	8,	12
THO1:	7,	7
TPOX:	8,	12
vWA:	16,	18

Plating efficiency: 14% (ATCC)
Tumorigenicity: non tumorigenic
Other properties: virus susceptibility: poliovirus type 1, adenovirus type 5, vesicular stomatitis (Indiana).
Isoenzymes G6PD, A
Applications: virology, toxicology, enzymology
Collections: ATCC CCL 2.2; ECACC 87110901; ICLC HTL 95020; SPBIC.

HeLa TK$^-$

Origin: human, epithelioid cervical carcinoma, strain of Hela. Submitted from Free University of Brussels, Belgium
Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:5 , optimal population density 1.0-5.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.5x10^6 cells/ml in ampule
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=46, variability in the range between 57-61 chromosomes, modal number of chromosomes 60, markers - 22 (differential dye), number of poliploid cells 14.0%

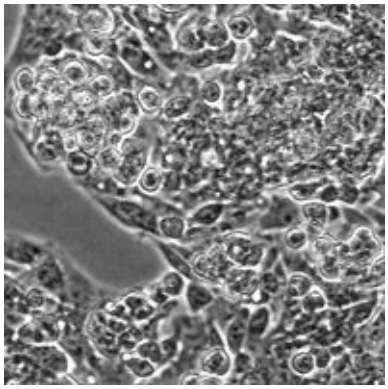
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	9,	10
D13S317:	13.3,	13.3
D16S539:	10,	10
D5S818:	11,	12
D7S820:	8,	12
THO1:	7,	7
TPOX:	8,	12
vWA:	16,	18

Other properties: deficient in thymidine kinase, resistant to 5-bromodeoxyuridine.
Applications: somatic cell genetics, cell biology
Collections: SPBIC.

Hep G2

Origin: human, hepatocyte carcinoma
Nature 1979. 282: 615-616; Science 1980. 209: 497-499.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM, DMEM
serum - FBS 10%
other components - NEAA 1%(EMEM), sodium pyruvate 0.1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 2.0-3.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule



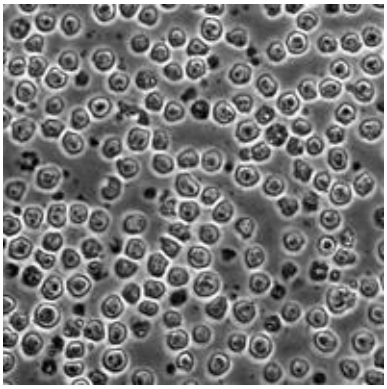
Viability after cryoconservation: 98% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD)analysis
Karyology: 2n=46 , variability in the range between 49-57 chromosomes, modal number of chromosomes 55, number of polyploid cells - 5.6%.
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	10,	11
D13S317:	9,	13
D16S539:	12,	13
D5S818:	11,	12
D7S820:	10,	10
THO1:	9,	9
TPOX:	8,	9
vWA:	17,	17

Tumorigenicity: non tumorigenic in nude mice
Other properties: produce α-fetoprotein, albumin, α2-macroglobulin, α1-antitrypsin, transferrin, α1-antichymotrypsin, haptoglobin, ceruloplasmin, plasminogen, complement (C3, C4), C3 activator, fibrinogen, α1-acid glycoprotein, α2-HS glycoprotein, β-lipoprotein, retinol binding protein.
Applications: biotechnology, biochemistry, virology, receptor study, enzymology, differentiation, cell biology
Collections: ATCC HB 8065; ECACC 85011430; SPBIC.

HL-60

Origin: human, peripheral blood, promyelocytic leukemia.
Nature 1977. 270: 347-349; Blood 1979. 54: 713-733; Cytology (Russ.) 1992. 34: 123.
Atlas of chromosomes of human and animal cell lines,
S.E. Mamaeva, 2002. Moscow, Scientific world.



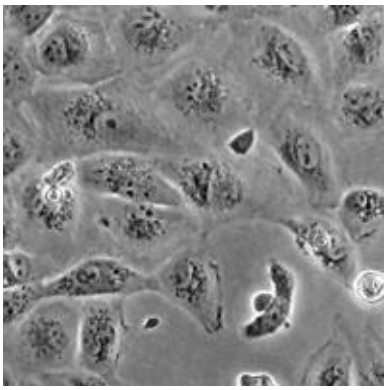
Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640 (Initial growth is sometimes by using Iscove's DMEM)
serum - FBS 20%
subculture procedure - split ratio 1:2, optimal population density 1.0-5.0x10^5 cells/cm^2
cryoconservation - growth medium, 5%DMSO, 3.0-5.0x10^6 cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=46 , variability in the range between 43-47 chromosomes, modal number of chromosomes 45, number of markers - 7 (differential dye), double minute chromosomes, number of polyploid cells 3%.

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	13,	14
D13S317:	8,	11
D16S539:	11,	11
D5S818:	12,	12
D7S820:	11,	12
THO1:	7,	8
TPOX:	8,	11
vWA:	16,	16

Plating efficiency: the cells cannot be plated.
Tumorigenicity: tumorigenic in nude mice
Other properties: virus susceptibility: HIV-1, HTLV-1.
Isoenzymes G6PD, B; PGM1,1; PGM3,1; ES D,1; Me-2,1; AK 1,1; GLO-1,1.
Erythrocyte rosette tests: E, 4%; EA, 17%; EAC, 1%.
Applications: differentiation, pharmacodynamics, Tumorigenicity:
Collections: : ATCC CCL 240; ECACC 88112501; DSM ACC 3; ICLC HTL 95010; SPBIC.

HN



Origin: human, kidney hypernephroma.
Biolog.Nauki 1985, 6: 29.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:3.
cryoconservation - growth medium, 5-10% DMSO, 1.0-1.5x10^6 cells/ml in ampule
Viability after cryoconservation: 75% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n=46 , variability in the range between 55-74 chromosomes, modal number of chromosomes 62.
DNA profile (STR):

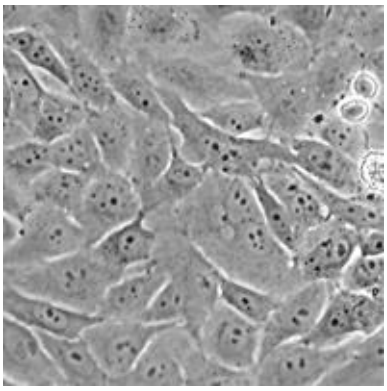
Amelogenin:	X,	Y
CSF1PO:	11,	11
D13S317:	не установлено	
D16S539:	11,	12
D5S818:	12,	12
D7S820:	9,	11
THO1:	6,	9.3
TPOX:	8,	11
vWA:	15,	16, 17

Tumorigenicity: produce tumors in the cheek pouch of the hamster
Other properties: virus susceptibility: vesicular stomatitis, herpes simplex, cytomegalovirus, adenoviruses, RSV, encephalomyocarditis, parainfluenza 1 and 2, SV-40.
Applications: biochemistry, immunology, cell biology, virology.
Collections: SPBIC.

Hos (TE85, clone F5)

Origin: human, osteosarcoma.

Cancer 1971. 27: 397-402; Int.J.Cancer 1975. 15: 23-29; Int.J.Cancer 1975. 16: 840-849. Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: epithelial-like

Mode of cultivation: monolayer

Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 2.5x10^6 cells/ml in ampule

Viability after cryoconservation: 95% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological and isoenzymological (LDH, G6PD) analysis

Karyology: 2n=46, modal number of chromosomes 50, number of markers 12 (differential dye), number of polyploid cells 3.6%.

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	12,	12
D13S317:	12,	12
D16S539:	10,	13
D5S818:	13,	13
D7S820:	11,	12
THO1:	6,	6
TPOX:	8,	11
vWA:	18,	18

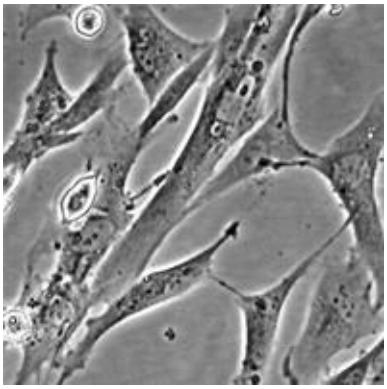
Other properties: cells are sensitive to both virus and chemical transformation

Applications: virology, transformation, biochemistry

Collections: ATCC CRL 1543; ECACC 87070202; MWIIW; SPBIC.

Hs 578 T

Origin: human, ductal breast carcinoma
J.Natl.Cancer Inst. 1977. 58: 1795-1806.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
other components - bovine insulin 10μg/ml
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:5, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule



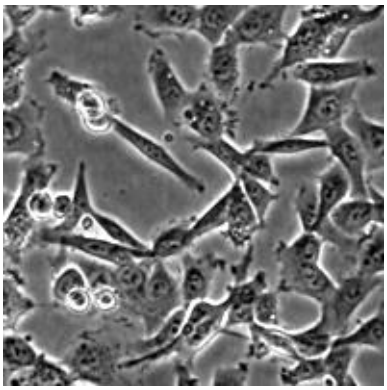
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 46, variability in the range between 50-77 chromosomes, modal number of chromosomes 59, number of markers - 10 (differential dye), number of polyploid cells 15.8%.

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	13,	13
D13S317:	11,	11
D16S539:	9,	12
D5S818:	11,	11
D7S820:	10,	10
THO1:	9,	9.3
TPOX:	8,	8
vWA:	17,	17

Tumorigenicity: tumorigenic in immunosupressed mice
Other properties: estrogen receptors were not detected.
Isoenzymes G6PD, B; PGM_1,1; PGM_3,1; ES D,1; Me-2, 0; AK 1,1; GLO-1,1.
Applications: antitumor tests, radiotherapy, tumorigenicity:
Collections: ATCC HTB 126; ECACC 86082104; SPBIC.

HT-1080

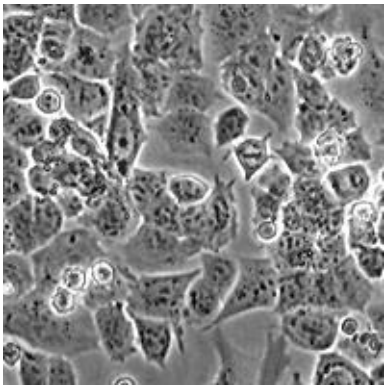


Origin: human, fibrosarcoma.
Cancer 1974. 33: 1027-1033.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4 - 1:8, optimal population density 1.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 5%DMSO, 1.2x10^6 cells/ml in ampule
Viability after cryoconservation: 96% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: isoenzymological (LDH, G6PD) analysis (LDH and G6PD)
Karyology: 2n= 46, variability in the range between 44-48 chromosomes, modal number of chromosomes 46, pseudodiploid, about 40% of the cells had rearranged karyotypes.
Plating efficiency: 3%.
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	12,	12
D13S317:	12,	14
D16S539:	9,	12
D5S818:	11,	13
D7S820:	9,	10
THO1:	6,	6
TPOX:	8,	8
vWA:	14,	19

Tumorigenicity: tumorigenic in NIH Swiss mice immunosupressed with anti-thymocytic serum.
Other properties: virus susceptibility: - RNA tumor viruses (RD 114, FelV), poliovirus 1, vesic. stomatitis (Indiana).
Isoenzymes G6PD, B.
Chemotaxis, chemoinvasion, matrigel invasion.
Collagen production
Applications: molecular and cell biology, cytotoxicity, tumorigenicity, virology.
Collections: ATCC CCL 121; ECACC 85111505; SPBIC.

HuTu 80



Origin:human, duodenum, adenocarcinoma
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:1 - 1:3), split ratio 1:3
cryoconservation - growth medium, 5-10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 90% (0 passage dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: isoenzymological (LDH, G6PD) analysis
Karyology: 2n=46, variability in the range between 42-48 chromosomes, modal number of chromosomes 46, pseudodiploid, number of polyploid cells 0.4%, number of markers - 3 (differential dye).

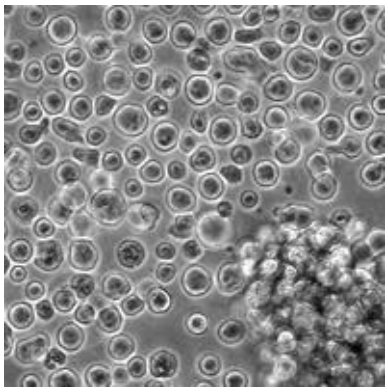
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	11,	13
D13S317:	8,	11
D16S539:	10,	11
D5S818:	12,	13
D7S820:	9,	11
THO1:	7,	7
TPOX:	9,	11
vWA:	16,	18

Tumorigenicity: tumorigenic in nude mice
Other properties: isoenzymes PGM_3,1-2; PGM_1,1-2; ES D,1; Me-2,2; AK 1,1; GLO-1,2; G6PD,B
Applications: tumorigenicity, cell biology
Collections: ATCC HTB 40; SPBIC.

IM-9

Origin: human, bone marrow, myeloma
Ann NY Acad.Sci. 1972. 190: 221-234; PNAS 1974. 71: 84-88; Nature 1974. 251: 443-444; J.Biol. Chem. 1974. 249: 1661-1667; J.Biol. Chem. 1976. 251: 6844-6851; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density 2.0-4.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 3.0-4.0x10^6 cells/ml in ampule
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 43-48 chromosomes, modal number of chromosomes 46, normal human karyotype (46, XX), but heterochromatin areas of the two homologue chromosomes 1 – decondensation, number of polyploid cells 7.5%.

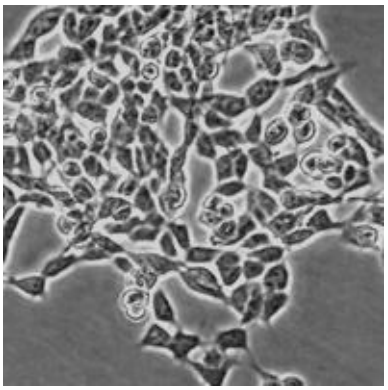
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	11
D13S317:	9,	11
D16S539:	9,	13
D5S818:	13,	13
D7S820:	11,	12
THO1:	6,	9.3
TPOX:	11,	11
vWA:	14,	17

Plating efficiency: the cells cannot be plated
Other properties: isoenzymes PGM_1,1-2; PGM_3, 0; ES T-D,1; Me-2, 2; GLO-1,1-2; G6PD, B.
Human growth hormone receptor, insulin receptor, calcitonin receptor. Erythrocyte rosette tests: E, 1%; EA, 0; EAC, 13%.
Applications: biotechnology (Ig G kappa production), endocrinology, Tumorigenicity:
Collections: ATCC CCL 159; DSM ACC 117; ECACC 86051302; SPBIC.

IMR-32

Origin: human, neuroblastoma
Cancer Res. 1970. 30: 2110. Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: fibroblast- and neuroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 2.0-3.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.5-2.0x10^6 cells/ml in ampule
Viability after cryoconservation: 76% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 42-51 chromosomes, modal number of chromosomes 48, number of markers - 2 (differential dye), number of polyploid cells 16%.

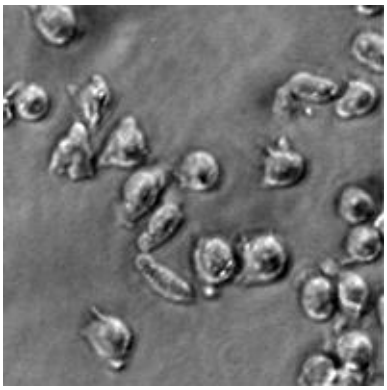
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	11,	12
D13S317:	9,	9
D16S539:	8,	8
D5S818:	11,	12
D7S820:	9,	10
THO1:	7,	9.3
TPOX:	11,	11
vWA:	15,	15

Plating efficiency: less than 1%.
Tumorigenicity: tumorigenic in nude mice
Other properties: virus susceptibility: vesicular stomatitis (Indiana), herpes simplex, vaccinia, adenovirus 12, Coxsackie B3.
Isoenzymes G6PD, B;
neurotransmitter synthesis.
Applications: tumorigenicity, immunology, differentiation, electrophysiology, cell biology
Collections: ATCC CCL 127: ECACC 86041809; ICLC HTL 96021; SPBIC.

Jurkat

Origin: human, T-lymphoblastic leukemia
Submitted from Institute of Immunology, Moscow. Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.
Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density 3.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 3.0-4.0x10^6 cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 41-49 chromosomes, modal number of chromosomes 46-47, number of markers - 2 (differential dye).

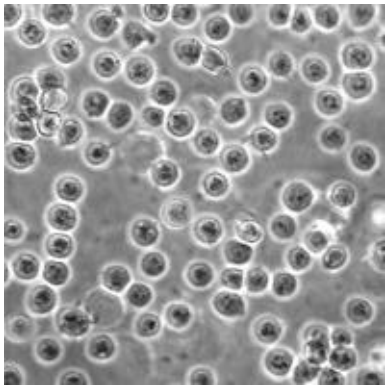
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	11,	12
D13S317:	8,	11
D16S539:	11,	11
D5S818:	9,	9
D7S820:	8,	10
THO1:	6,	9.3
TPOX:	8,	10
vWA:	18,	18

Other properties: IL-2 synthesis, T-cell marker CD 3.
Applications: immunology, biochemistry, differentiation
Collections: SPBIC.

K-562

Origin: human, chronic myelonгenous leukemia (pleural effusion).
Blood 1975. 45: 321-334; J.Natl.Cancer Inst. 1977. 59; 77; Int.J.Cancer 1979. 23: 143-147; Leukemia Res. 1979. 3; 363; Proc. 37th Ann.Meet.Electron Microsc.Soc.Amer, tex. 1979: 234; Blood 1980. 56: 344-350; J.Biol.Chem. 1980. 255: 3266; Biochem.J. 1981. 193: 361; Proc.Soc.Exp.Biol.Med. 1981. 166: 546-550; J.Immunol. 1982. 129; 2504; Exp.Hematol. 1983. 11: 601-610; Clin.Haemotol.1984.13:461; Biology of the cell in culture. L. Nauka,1984.279. Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: erythromyeloblastoid
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density $1.0x10^5$-$1.0x10^6$ cells/ml
cryoconservation - growth medium, 10% DMSO, $3.0\text{-}7.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 93% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=46, there are some sublines K-562 with different karyotypic structure. One from sublines is: variability in the range between 55-69 chromosomes, modal number of chromosomes 66, number of markers - 12 (differential dye), number of polyploid cells 3%.

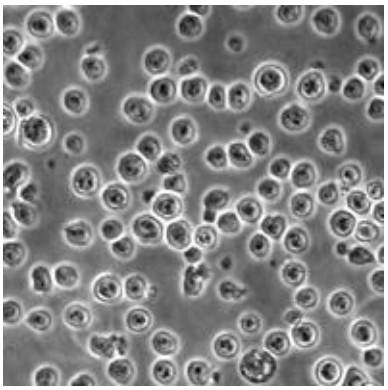
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	9,	10
D13S317:	8,	8
D16S539:	11,	12
D5S818:	11,	12
D7S820:	9,	11
THO1:	9.3,	9.3
TPOX:	8,	9
vWA:	16,	16

Plating efficiency: the cells cannot be plated
Tumorigenicity: tumorigenic in nude mice
Other properties: haemoglobin synthesis.
Isoenzymes AK 1,1; ES D,1; GLO-1, 2; G6PD, B; PGM_1, 0; PGM_3,1; Me-2,0.
Erythrocyte rosette tests: E, 1%; EA, 34%; EAC, 2%.
Capable to differentiate into progenitors of the erythrocytic, granulocytic and monocytic series.
Not contained B- and T-markers.
Applications: differentiation, cell biology, natural killer assay, pharmacodynamics.
Collections: ATCC CCL 243; ECACC 89121407; DSM ACB 10; ICLC HTL 94001; MWIIW; SPBII; SPBIC.

KG-1

Origin: human, acute myelogenous leukemia (bone marrow)
Science 1978. 200: 1153-1154; Blood 1980. 56: 344-350; Blood 1979. 54: Suppl. 1, 174a.



Morphology: myeloblastoid
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 20%
subculture procedure - optimal population density 3.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 5% DMSO, 3.0-4.0x10^6 cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=46, variability in the range between 44-49 chromosomes, modal number of chromosomes 46-47, number of markers - 5 (differential dye) (ATCC).

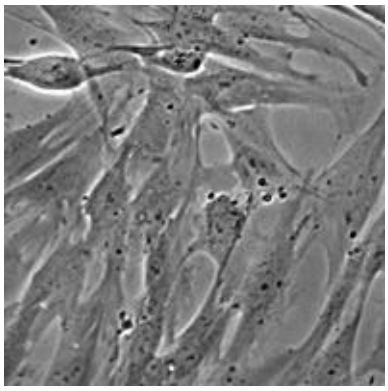
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	7,	7
D13S317:	11,	12
D16S539:	10,	11
D5S818:	13,	13
D7S820:	8,	10
THO1:	7,	8
TPOX:	7,	9
vWA:	14,	19

Plating efficiency: the cells cannot be plated.
Tumorigenicity: non tumorigenic
Other properties: isoenzymes G6PD, B; PGM_1,1; PGM_3, 0; ES D, 1; Me-2, 1; AK 1,0; GLO-1,2.
Have no surface Ig antigens.
Erythrocyte rosette tests: E, 0; EA, 2%; EAC, 0.
HLA cell line phenotype A 30, 31; B 35; Cw 4.
Express the human DR antigen.
Differentiation into non-dividing macrophages when exposed to phorbol esters; formation of colonies in soft-agar culture when exposed to colony-stimulating factor
Applications: tumorigenicity, differentiation
Collections: ATCC CCL 246; DSM ACC 14; ECACC 86111306; SPBIC.

M-FetMSC

Origin: human, mesenchymal stem cells from Muscle of a limb of 5-6 week embryo. Tsitologiya. 2014. 56 (8): 562 – 573.



Morphology: fibroblast-like.

Mode of cultivation: monolayer

Conditions for cultivation: medium - DMEM/F12
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio: 1:3-1:5, optimal population density 4.0- 5.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.5-2.0x10^6 cells/ml in ampule

Viability after cryoconservation: 90% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative.

Species: karyological analysis.

Karyology: 2n=46, modal number of chromosomes 46 (99.1±0.9%), normal human karyotype (46, XY), number of poliploid cells 2.2%.

DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	9,	12
D13S317:	11,	12
D16S539:	11,	11
D5S818:	12,	13
D7S820:	10,	12
THO1:	7,	8
TPOX:	8,	11
vWA:	14,	15

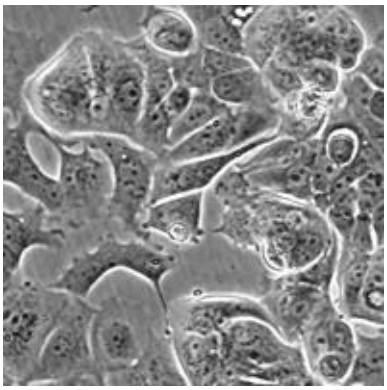
Other properties: finite lifetime culture; average population doubling time 25.0 h; The presence of surface antigens specific for human MSCs: CD44, CD73, CD90, CD105, HLA-ABC, vimentin and the lack of CD34, HLA-DR; The ability to induced differentiation into osteogenic, chondrogenic and adipogenic directions. Induced skeletal-muscle differentiation with the formation of myotube and Zdisks.

Applications: cell biology, myogenesis, biotechnology, feeder for cultivation embryonic stem cells.

Collections: SPBIC.

MCF-7

Origin: human, breast adenocarcinoma (pleural effusion)
J.Natl.Cancer Inst. 1973. 51: 1409-1416.
Morphology: epithelial-like
Mode of cultivation: monolayer



Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%, bovine insulin 10 μ/ml.
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 8-9%DMSO, 1.0x10^6 cells/ml in ampule
Viability after cryoconservation: 94% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n=46, variability in the range between 67-87 chromosomes, modal number of chromosomes 79-82, number of markers 2, large acrocentric and submetacentric chromosomes (routine dye), 29-34 (differential dye), number of polyploid cells 0.6%.

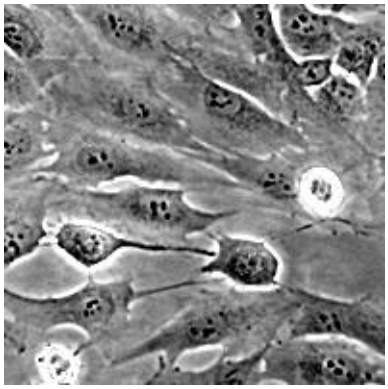
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	10
D13S317:	11,	11
D16S539:	11,	12
D5S818:	11,	12
D7S820:	8,	9
THO1:	6,	6
TPOX:	9,	12
vWA:	14,	15

Tumorigenicity: tumorigenic in nude mice
Other properties: isoenzymes PGM_3, 1-2; PGM_1, 2; ES D, 1; AK 1, 1; GLO-1, 1-2; G6PD, B. Estrogen receptor positive.
Estradiol synthesis.
Cells may carry B- or C-type virus.
The capability of forming domes.
Applications: receptor study, chemotherapeutic agents, tumorigenicity, cell biology, virology.
Collections: ATCC HTB 22; ECACC 86012803; ICLC HTL 95021; SPBIC.

MG-63

Origin: human, osteosarcoma
Antimicrob. Agents Chemother. 1977. 12: 11-15., Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 46, variability in the range between 59-65 chromosomes, modal number of chromosomes 63, number of markers - 22 (differential dye), number of polyploid cells - 2%.

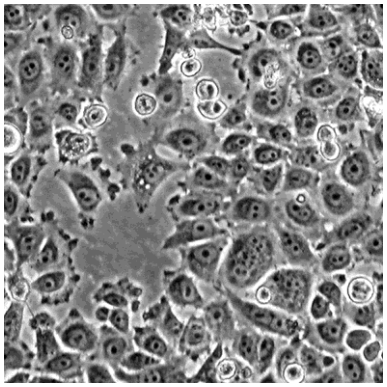
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	10,	12
D13S317:	11,	11
D16S539:	11,	11
D5S818:	11,	12
D7S820:	10,	10
THO1:	9.3,	9.3
TPOX:	8,	11
vWA:	16,	19

Applications: biotechnology (interferon production), cell biology
Collections: ATCC CRL 1427, ECACC 86051601; SPBIC.

M-HeLa clone 11

Origin: human, epithelioid cervical carcinoma, strain of HeLa, clone of M-HeLa
J.Exp.Med. 1953, 97: 695; Cytology (Russ) 1986, 28: 56 - 61



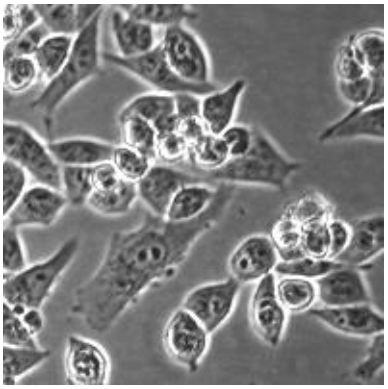
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detachment using trypsin 0.25%: EDTA 0.02% (1:3), split ratio1:3 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0-2.0x10^6 cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: bacteria, fungi and mycoplasma were negative
Species specificity: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=46, variability in the range between 49-50 chromosomes, modal number of chromosomes 50, number of markers - 13 (differential dye), number of polyploid cells – 2.4%.

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	9,	10
D13S317:	13.3,	13.3
D16S539:	9,	10
D5S818:	11,	12
D7S820:	12,	12
THO1:	7,	7
TPOX:	8,	8
vWA:	16,	18

Plating efficiency: 60%
Applications: cell biology, tumorigenicity, virology
Collections: SPBIC.

MIA PaCa-2



Origin: human, pancreatic carcinoma
Int.J.Cancer 1977. 19: 128-135.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%+HS 2.5%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:3, optimal population density 2.0-3.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 46, modal number of chromosomes 61, number of markers - 16-20 (differential dye).

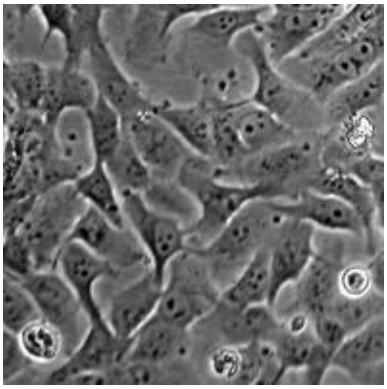
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	10
D13S317:	12,	13
D16S539:	10,	13
D5S818:	12,	13
D7S820:	12,	13
THO1:	9,	10
TPOX:	9,	9
vWA:	15,	15

Other properties: isoenzymes G6PD, B.
Sensitive to asparaginase
Applications: tumorigenicity, enzymology, cell biology
Collections: ATCC 3RL 1420; ECACC 85062806; SPBIC.

MNNG-HOS (TE 85, clon F-5)

Origin: human, osteosarcoma, chemically transformed (MNNG 0.1 μ/ml) Nature 1975. 256: 51; Int.J.Cancer 1977. 19: 505.



Morphology: epithelial-like

Mode of cultivation: monolayer

Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0-2.0x10^6 cells/ml in ampule

Viability after cryoconservation: 98% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological and isoenzymological (LDH, G6PD) analysis

Karyology: 2n= 46, variability in the range between 63-74 chromosomes, modal number of chromosomes 69-70 , number of polyploid cells 2.2%.

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	12,	12
D13S317:	12,	12
D16S539:	10,	13
D5S818:	13,	13
D7S820:	11,	12
THO1:	6,	6
TPOX:	8,	11
vWA:	18,	18

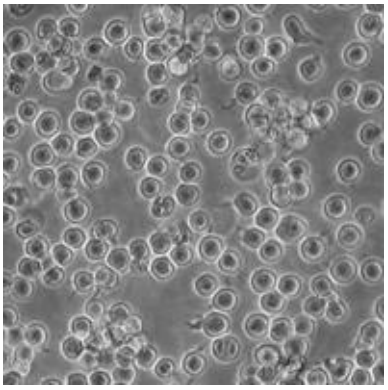
Tumorigenicity: tumorigenic in nude mice

Applications: tumorigenicity, transformation

Collections: ATCC CRL 1547; ECACC 87070201; SPBIC.

MOLT-3

Origin: human, T-lymphoblastic leukemia, peripheral blood.
J.Natl.Cancer Inst. 1972. 49: 891-895., Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.
Morphology: lymphoid
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density 5.0-6.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 5.0x10^6 cells/ml in ampule



Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46 - modal number of chromosomes 98, number of markers - 4 (differential dye), number of polyploid cells 1.0%.

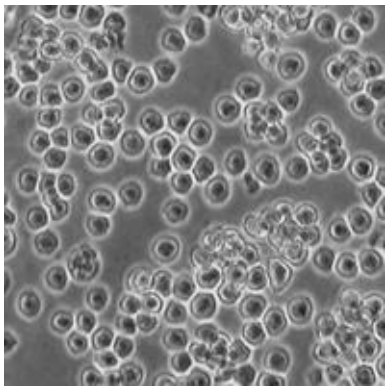
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	11,	12
D13S317:	12,	13
D16S539:	11,	14
D5S818:	12,	12
D7S820:	8,	10
THO1:	6,	8
TPOX:	8,	8
vWA:	17,	17

Other properties: virus susceptibility: HIV.
The cells form rosettes with sheep erythrocytes.
Applications: tumorigenicity, virology
Collections: ATCC CRL 1552; DSM ACC 84; ECACC 90021901; SPBIC.

MOLT-4

Origin: human, T-lymphoblastic leukemia, peripheral blood.
J.Natl.Cancer Inst. 1972. 49: 891-895; J.Immunol. 1982. 129: 2504-2510; Int.J.Immunopharmacol. 1988. 10: 907-911; Glukhova L.A. PhD Thesis; SPBIC, St.Petersburg. 1992.



Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density 2.0-5.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 5.0x10^6 cells/ml in ampule
Viability after cryoconservation: 94% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymologycal (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 77-100 chromosomes, modal number of chromosomes 97, number of markers - 6 (differential dye), number of polyploid cells 2.0%.

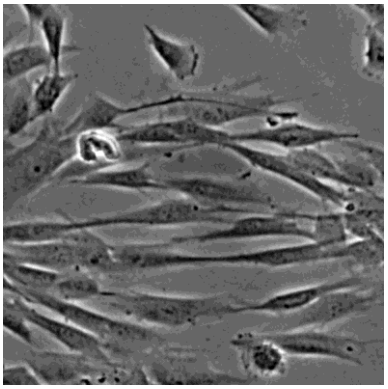
DNA profile (STR):

Amelogenin:	X,	Y	
CSF1PO:	11,	12,	13
D13S317:	12,	13	
D16S539:	11,	14	
D5S818:	11,	12	
D7S820:	8,	10,	11
THO1:	6,	8	
TPOX:	8,	8	
vWA:	17,	18	

Tumorigenicity: tumorigenic in nude mice
Other properties: virus susceptibility: measles, α-viruses
Terminal deoxynucleotidyl transferase activity is high.
The cells form rosettes with sheep erythrocytes.
Applications: biochemistry, cytotoxicity, differentiation, virology, tumorigenicity, immunology
Collections: ATCC CRL 1582; ECACC 85011413; MWIIW; SPBIC.

MSC-DP

Origin: human, mesenchymal stem cells from pulp of a deciduous tooth of a child. Tsitologiya. 2018. 60 (12): 955 – 268.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – DMEM/F12
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio: 1:3-1:4, optimal population density 2.0- 4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0-1.5x10^6 cells/ml in ampule.
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative.
Species: karyological analysis.
Karyology: 2n=46, modal number of chromosomes 46 (99.0 ± 1.0 %), normal human karyotype (46, XX), number of poliploid cells 7.8 %.

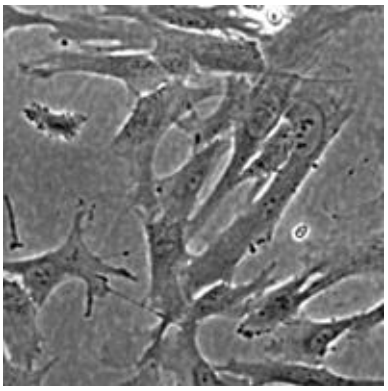
ДНК профиль (STR):

Amelogenin:	X,	X	
CSF1PO:	11,	11	
D13S317:	8,	9	
D16S539:	11,	11	
D5S818:	9,	11	
D7S820:	8,	10	12
THO1:	6,	8	9.3
TPOX:	8,	11	
vWA:	15,	16	17

Plating efficiency: 32.8%.
Other properties: finite lifetime culture; average population doubling time 32.8 h.
The presence of surface antigens specific for human MSCs: CD44, CD73, CD90, CD105, HLA-ABC and the lack of CD34, HLA-DR;
The ability to induced differentiation into osteogenic and chondrogenic directions; the expression of neuronal differentiation gene.
Applications: cell biology, biotechnology.
Collections: SPBIC.

MSCWJ-1

Origin: human, mesenchymal stem cells from Wharton jelly of the umbilical cord. Tsitologiya. 2017. 59 (5): 315-327; Tsitologiya. 2017. 59 (9): 574-587.
Morphology: fibroblast-like.



Mode of cultivation: monolayer
Conditions for cultivation: medium – DMEM/F12
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio: 1:3, optimal population density 4.0- 5.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1-1,5x10^6 cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative.
Species: karyological analysis.
Karyology: 2n=46, modal number of chromosomes 46 (98.0%), normal human karyotype (46, XX), number of poliploid cells 1.2%.

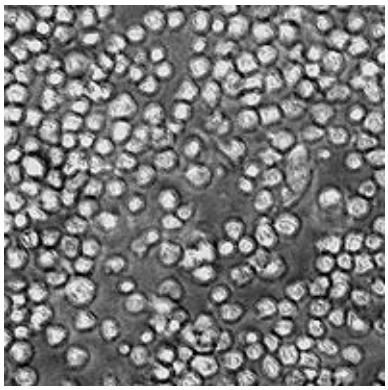
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	12
D13S317:	11,	11
D16S539:	12,	12
D5S818:	7,	11
D7S820:	10,	11
THO1:	6,	7
TPOX:	8,	8
vWA:	15,	16

Plating efficiency: 2.4%
Other properties: finite lifetime culture; average population doubling time 26.8 h; The presence of surface antigens specific for human MSCs: CD44, CD73, CD90, CD105, HLA-ABC, vimentin and the lack of CD34, HLA-DR; The ability to induced differentiation into osteogenic, chondrogenic and adipogenic directions.
Applications: cell biology, biotechnology.
Collections: SPBIC.

NAMALVA

Origin: human, Burkitt lymphoma.
Cancer 1969. 23: 64-79; Int.J.Cancer 1972. 10: 44-57; Int.J.Cancer 1973. 12: 396-408; J. Clin. Microbiol. 1975, 1: 116; Antimicrob. Agents Chemother. 1979. 15: 420; Mamaeva S.E. Cell Culture Methods. L., Nauka. 1988: 78-98; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world



Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10 %
subculture procedure - optimal population density 3.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 5-10% DMSO, 5.0x10^6 cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymologycal (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 36-48 chromosomes modal number of chromosomes 47, number of markers - 13 (differential dye, G-bandig), number of polyploid cells 2.0%.

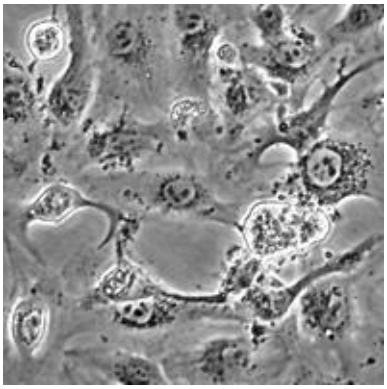
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	12
D13S317:	11,	12
D16S539:	9,	9
D5S818:	12,	13
D7S820:	11,	11
THO1:	7,	9,3
TPOX:	6,	11
vWA:	14,	14

Other properties: virus susceptibility: vesicular stomatitis, Sendai.
Secretion of monoclonal antibody (Ig M, lambda light chain).
Support replication of Semliki Forest virus.
Applications: biotechnology (interferon α production), virology, cell biology.
Collections: ATCC CRL 1432; ECACC 87060801; DSM (ACC 24); SPBII; MWIIW; SPBIC.

OKP-GS

Origin: human, kidney carcinoma
Folia Biol. 1988. 34: 308.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:4
cryoconservation - growth medium, 8-10% DMSO, $1.0x10^6$ cells/ml in ampule

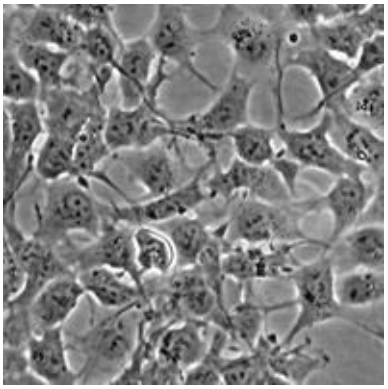


Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, modal number of chromosomes 75, number of markers - 2 (differential dye)
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	10,	12
D13S317:	10,	12
D16S539:	11,	12
D5S818:	7,	11
D7S820:	8,	10
THO1:	9,	9
TPOX:	8,	11
vWA:	16,	18

Tumorigenicity: non tumorigenic in nude mice
Applications: tumorigenicity, cell biology
Collections: SPBIC

Origin: human, ovarian teratocarcinoma, ascitic fluid
J.Natl.Cancer Inst. 1974. 52: 921; In Vitro 1974. 10: 382; Int.J.Cancer 1980. 25: 19-32; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 1.0-3.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0-2.0x10^6 cells/ml in ampule
Viability after cryoconservation: 87% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 33-47 chromosomes, modal number of chromosomes 46, pseudodiploid, number of markers - 2 (differential dye), number of polyploid cells 3.0%.

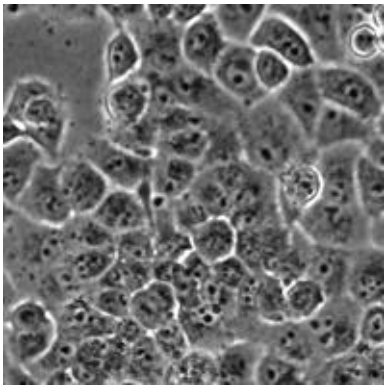
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	9,	12
D13S317:	9,	10
D16S539:	9,	12
D5S818:	11,	11
D7S820:	9,	9
THO1:	7,	9
TPOX:	11,	11
vWA:	15,	17

Tumorigenicity: tumorigenic in nude mice
Other properties: chemotaxis, chemoinvasion, matrigel invasion.
Applications: tumorigenicity, cell biology.
Collections: ATCC CRL 1572; ECACC 90013101; ICLC HTL 97002; SPBIC.

PANC-1

Origin: human, pancreatic carcinoma
Int.J.Cancer 1975. 15: 741-747.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:1), split ratio 1:2 - 1:4, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0-1.5x10^6 cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, modal number of chromosomes 61 and 63, number of markers - 4 (differential dye), number of polyploid cells 8.5%.

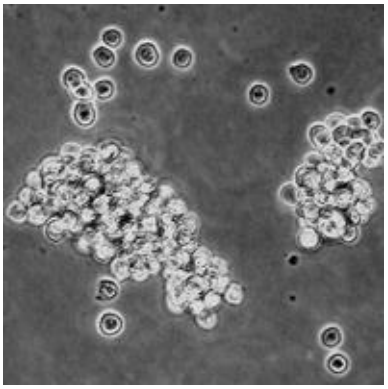
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	12
D13S317:	11,	11
D16S539:	11,	11
D5S818:	11,	13
D7S820:	8,	10
THO1:	7,	8
TPOX:	8,	11
vWA:	15,	15

Other properties: isoenzymes G6PD, B.
Applications: tumorigenicity:
Collections: ATCC CRL 1469: ECACC 87092802; SPBIC.

Raji

Origin: human, Burkitt lymphoma
Lancet 1964. 1: 238; J.Bact. 1965. 89: 252; J. Clin. Pathol.1965. 18: 261; J.Natl.Cancer Inst. 1965. 34: 231; J.Natl.Cancer Inst. 1966. 37: 547; Trans. NY Acad. Sci. 1966. 29: 61; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density 3.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 5.0x10^6 cells/ml in ampule
Viability after cryoconservation: 78-88% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis (LDH, G6PD)
Karyology: 2n= 46, variability in the range between 43-48 chromosomes, modal number of chromosomes 48, number of markers - 8, number of polyploid cells 4.0%

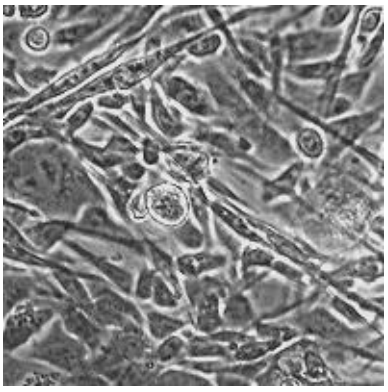
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	10,	12
D13S317:	13,	13
D16S539:	8,	11
D5S818:	10,	13
D7S820:	10,	10
THO1:	6,	7
TPOX:	8,	13
vWA:	16,	19

Plating efficiency: 40%
Other properties: virus susceptibility: simian retrovirus D, arboviruses.
Isoenzymes G6PD, B.
HLA cell line phenotype A (1, 3).
Erythrocyte rosette tests: E, 0; EA, 1%; EAC, 34%.
Positive for EBNA, but does not contain the EBV.
Applications: B-cell differentiation, immunology, antitumor testing, virology.
Collections: ATCC CCL 86; ECACC 85011429; MWIIW; SPBIC.

RD

Origin: human, embryonic rhabdomyosarcoma.
J. Virol. 1967. 1: 326; Cancer 1969. 24: 520-526; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.
Morphology: spindle-shaped cells and large multinucleated cells.
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:2), split ratio 1:3, optimal population density $4.0x10^4$ cells/cm^2
cryoconservation - growth medium, 5-10% DMSO, $1.5\text{-}2.0x10^6$ cells/ml in ampule



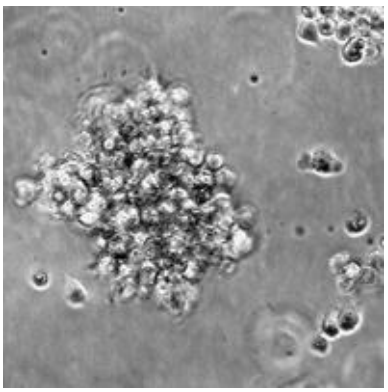
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 45-50 chromosomes, modal number of chromosomes 49, some cells have microchromosomes, number of polyploid cells 3.0%.
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	11
D13S317:	13,	13
D16S539:	10,	11
D5S818:	11,	11
D7S820:	8,	12
THO1:	9.3,	9.3
TPOX:	9,	9
vWA:	18,	18

Other properties: virus susceptibility: poliovirus 1, vesic. stomatitis, herpes simplex, vaccinia, cytomegalovirus, parainfluenza, rotaviruses.
Isoenzymes G6PD, B.
Myoglobin secretion; myoglobin and myosin-ATPase activity.
Applications: differentiation, biochemistry, genetics, tumorigenicity, cell biology.
Collections: ATCC CCL 136; ECACC 85111502; MWIIW; SPBII; ESCC; SPBIC.

RPMI 1788

Origin: human, leukocytes of peripheral blood from healthy male.
J.Natl.Cancer Inst. 1969. 43: 1119; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 20%
subculture procedure - optimal population density 3.0-4.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 3.0-4.0x10^6 cells/ml in ampule
Viability after cryoconservation: 75% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 43-48 chromosomes, modal number of chromosomes 47, number of markers - 1 is in all cells; (differential dye), number of polyploid cells 5.6%

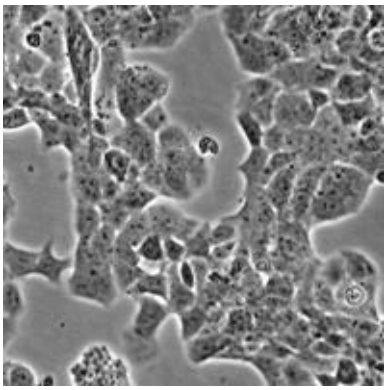
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	10,	10
D13S317:	11,	13
D16S539:	10,	13
D5S818:	12,	13
D7S820:	10,	12
THO1:	6,	9.3
TPOX:	8,	9
vWA:	18,	19

Plating efficiency: the cells cannot be plated.
Other properties: virus susceptibility: poliovirus 1; vesicular stomatitis (Indiana).
IgM secretion (lambda light chain).
Isoenzymes G6PD, B.
Erythrocyte rosette tests: E, 0; EA, 0; EAC, 19%.
HLA cell line phenotype A2, Aw33, B7, B14.
Positive for EBNA
Applications: immunology, biochemistry, cell biology.
Collections: ATCC CCL 156; ECACC 85112106; SPBIC.

RPMI 2650

Origin: human, nasal septum carcinoma (Pleural effusion)
Cancer 1964. 17: 170; Exp. Cell Res. 1965. 39: 190; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:3, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0-2.0x10^6 cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and immunofluorescent analysis
Karyology: 2n= 46, variability in the range between 44-46 chromosomes, modal number of chromosomes 46, pseudodiploid, number of markers - 7 (differential dye), number of polyploid cells 2.2%

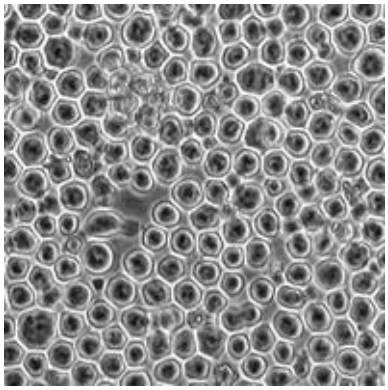
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	9,	11
D13S317:	11,	12
D16S539:	11,	12
D5S818:	12,	13
D7S820:	8,	11
THO1:	6,	8
TPOX:	8,	8
vWA:	16,	18

Plating efficiency: 2%
Other properties: virus susceptibility: poliovirus 1, herpes simplex, vesic. stomatitis (Indiana).
Isoenzymes G6PD, B.
Mucopolysaccharide production
Applications: tumorigenicity, cell biology.
Collections: ATCC CCL 30; ECACC 88031602; SPBIC.

RPMI 8226

Origin: human, myeloma
Proc.Soc.Exp.Biol.Med. 1967, 125: 1246-1250; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.
Morphology: lymphoblast-like



Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density $5.0x10^5$ cells/ml
cryoconservation - growth medium, 10% DMSO, $5.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 55% (0 passage, dye trypan blue)
Sterility: bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=46 variability in the range between 57-73 chromosomes, modal number of chromosomes 67-70, number of markers - 23 (differential dye), number of polyploid cells 10 %

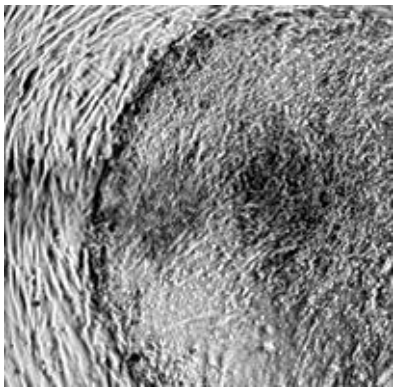
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	12,	12
D13S317:	11,	11
D16S539:	9,	9
D5S818:	11,	13
D7S820:	9,	10
THO1:	8,	8
TPOX:	8,	11
vWA:	16,	18

Plating efficiency: the cells cannot be plated.
Other properties: virus susceptibility: poliovirus 1, vesicular stomatitis (Indiana Strain), herpes simplex, vaccinia.
Isoenzymes G6PD, A.
Secrete λ-type light chains of immunoglobulin.
Erythrocyte rosette tests: E, 0; EA, 1%; EAC, 13%.
HLA cell line phenotype : Aw 19, B 15, B 37, Cw 2.
Applications: cell biology, tumorigenicity: , immunology, biotechnology (production Ig)
Collections: ATCC CCL 155, ECACC 87012702; SPBIC.

SC5

Origin: embryonic stem cells (ESC) from blastocyst 5-6 days
Science. 1998. 282: 1145 – 1147;Ontogenez. 2011. 42 (4): 249 – 263; Tsitologiya. 2012. 54 (1): 5 – 16.



Morphology: colonies of rounded cells
Mode of cultivation: monolayer; colonies attached to the feeder layer of mitotically inactivated (mitomycin C) cells of line FetMSC
Conditions for cultivation: medium – Knockout DMEM
serum - Knockout serum replacement
other components - NEAA 1%, L-glutamine 2mM, 2- mercaptoethanol 0.1 mM, bFGF – 8ng/ml
subculture procedure - mechanical reseeding of culture ESC carried out under the control of the microscope by cutting the colony into fragments using a single scalpel and transfer them onto a new layer feeder; daily changing growth medium; subculture every 5-6 days
cryoconservation - growth medium, 10% DMSO, $5x10^5$ cells/ml in ampule
Viability after cryoconservation: 60% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative.
Species: karyological analysis.
Karyology: 2n=46, modal number of chromosomes 46 (98.0%), normal human karyotype (46, XX), number of poliploid cells 0.2%.

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	12,	13
D13S317:	8,	11
D16S539:	9,	12
D5S818:	9,	11
D7S820:	8,	10, 12
THO1:	6,	9.3
TPOX:	10,	11
vWA:	17,	17

Other properties: immortalized line; passed through more than 120 cell population doublings; average population doubling time 28.2 h; The presence of surface antigens specific for human ESC: SSEA-4, TRA-1-60, Oct-4, Nanog; The ability to differentiation into the derivates of the 3 germ layers and forming teratomas, containing these derivates.
Applications: cell biology, embryology, biotechnology.
Collections: SPBIC.

SC5-MSC

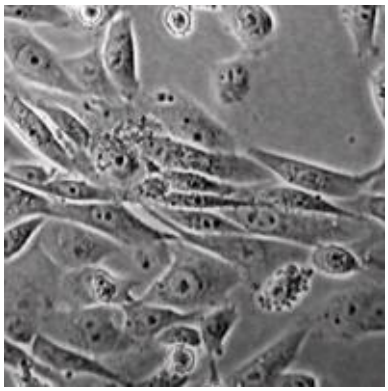
Origin: mesenchymal stem cells from human embryonic stem cells (ESC). Tsitologiya. 2012. 54 (1): 5 – 16; Tissue Eng Part A. 2010. 16:705 – 715.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – α-MEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio: 1:4, optimal population density 4.0- 5.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.5-2.0x10^6 cells/ml in ampule
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative.
Species: karyological analysis.
Karyology: 2n=46, modal number of chromosomes 46 (100.0±1.0%), normal human karyotype (46, XX), number of poliploid cells 0.9%.
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	12,	13
D13S317:	8,	11
D16S539:	9,	12
D5S818:	9,	11
D7S820:	10,	12
THO1:	6,	9.3
TPOX:	10,	11
vWA:	17,	17

Other properties: finite lifetime culture; average population doubling time 25.5 h; The presence of surface antigens specific for human MSCs: CD44, CD73, CD90, CD105, HLA-ABC, and the lack of CD34, HLA-DR; The ability to induced differentiation into osteogenic, chondrogenic and adipogenic directions.
Applications: cell biology, biotechnology, feeder for cultivation embryonic stem cells.
Collections: SPBIC.

SK-HEP-1

Origin: human, liver adenocarcinoma (ascitic fluid).
J.Natl.Cancer Inst. 1977. 58: 209; J.Natl.Cancer Inst. 1977. 59: 221.
Morphology: epithelial-like
Mode of cultivation: monolayer



Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%, sodium pyruvate 1mM.
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:4, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 5%DMSO, 1.0x10^6 cells/ml in ampule
Viability after cryoconservation: 93% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 46, variability in the range between 58-64 chromosomes, modal number of chromosomes 60-61, number of markers - 8 (differential dye), 50% of cells have large acrocentric chromosome, number of polyploid cells 0.4%.

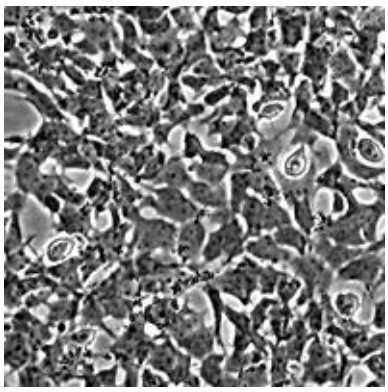
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	11,	12
D13S317:	8,	12
D16S539:	12,	12
D5S818:	10,	13
D7S820:	8,	11
THO1:	7,	9
TPOX:	9,	9
vWA:	14,	17

Tumorigenicity: tumorigenic in nude mice
Other properties: isoenzymes Me-2, 1-2; PGM_3,1; PGM_1, 2; ES D,1; AK 1,1; GLO-1,1; G6PD,B.
bFGF production.
Applications: tumorigenicity:
Collections: ATCC HTB 52; ECACC 91091816; SPBIC.

SK-N-MC

Origin: human, neuroblastoma (metastasis to supra-orbital area)
Cancer Res. 1973. 33: 2643; In Vitro 1973. 8: 410; Cancer Res. 1977. 37: 1364; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: epithelial-like and neuroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:5
cryoconservation - growth medium, 5-10% DMSO, 1.0-1.5x10^6 cells/ml in ampule
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 46, variability in the range between 44-47 chromosomes, modal number of chromosomes 46, pseudodiploid, number of markers - 15 (differential dye), number of polyploid cells 1.2%

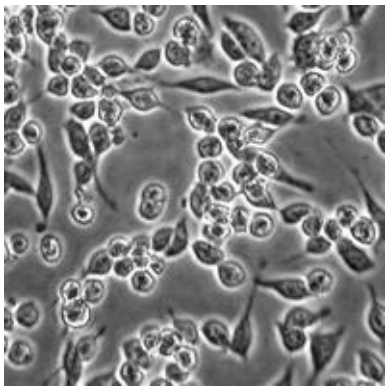
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	10
D13S317:	11,	11
D16S539:	12,	12
D5S818:	11,	11
D7S820:	8,	8
THO1:	9.3,	9.3
TPOX:	9,	11
vWA:	17,	18

Tumorigenicity: tumorigenic: produce neuroblastoma in nude mice; produce tumors in the cheek pouch of the hamster.
Other properties: isoenzymes Me-2,2; PGM_3,1-2; PGM_1,1; ES D,2; AK-1,1; GLO-1,1-2; G6PD,B.
Catecholamine production.
Applications: neurophysiology, biochemistry.
Collections: ATCC HTB 10; SPBIC.

SK-UT-1B

Origin: human, uterine leiomyosarcoma.
J. Natl.Cancer Inst. 1977. 59: 221-226; Cancer Genet. Cytogenet. 1988, 33: 77-81



Morphology: epithelial-like
Mode of cultivation: monolayer (weak adhesion)
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1.3 -1:5
cryoconservation - growth medium, 8%DMSO, 1.0-2.0x10^6 cells/ml in ampule
Viability after cryoconservation: 82% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 46, variability in the range between 44-48 chromosomes, modal number of chromosomes 46, normal human karyotype (46, XX), number of polyploid cells 0.6%.

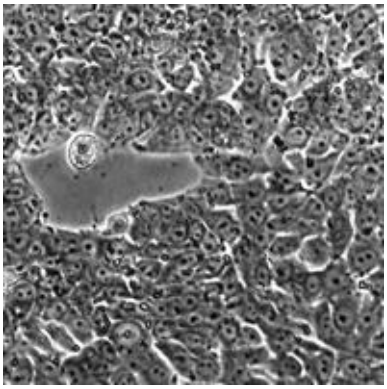
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	11
D13S317:	10,	13
D16S539:	12,	14
D5S818:	10,	11
D7S820:	9,	10
THO1:	7,	7
TPOX:	8,	8
vWA:	16,	16

Tumorigenicity: tumorigenic in nude mice
Other properties: isoenzymes Me2,1-2; PGM_3,1; PGM_1,1; ESD,1; AK 1,1; GLO-1,1-2; G6PD,B
Applications: tumorigenicity, cytogenetics, cell biology.
Collections: ATCC HTB 115; SPBIC.

SW 837

Origin: human, rectum adenocarcinoma.
Cancer Res. 1976. 36: 4562- 4569; Cytology (Russ.) 1992. 34: 63-64.; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



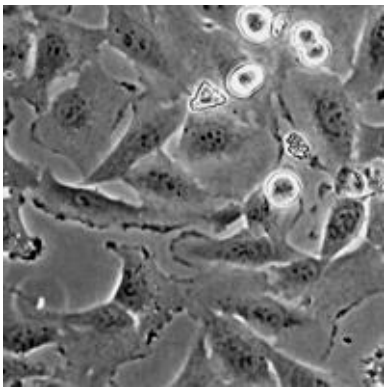
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - L-15 (Leibovitz)
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 (subcultivation in14-18 days), optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 2.0-3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 46, variability in the range between 34-41 chromosomes, modal number of chromosomes 40, number of markers - 11 (differential dye), number of polyploid cells 10%.

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	10
D13S317:	13,	13
D16S539:	12,	12
D5S818:	12,	12
D7S820:	9,	12
THO1:	9.3,	9.3
TPOX:	8,	9
vWA:	15,	16

Plating efficiency: 2%.
Tumorigenicity: tumorigenic in nude mice.
Other properties: isoenzymes G6PD, B; PGM_3, 1; PGM_1, 1; PGD, A; ES D, 1. CEA production.
Applications: tumorigenicity, cell biology.
Collections: ATCC CCL 235; ECACC 91031104; SPBIC.

Origin: human, bladder carcinoma.
Int. J. Cancer 1970.5: 310; Int. J.Cancer 1971. 8: 503; Int. J. Cancer 1973.11: 765; Tissue Antigens. 1978.11:279.



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3-1:5, optimal population density $1.0x10^5$ cells/cm^2
cryoconservation - growth medium, 10% DMSO, $1.0\text{-}2.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 86% (0 passage, dye trypan blue)
terility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 77-99 chromosomes, modal number of chromosomes 93 without markers (routine, differential dye, C-banding), there are microchromosomes, number of polyploid cells 2.0%.

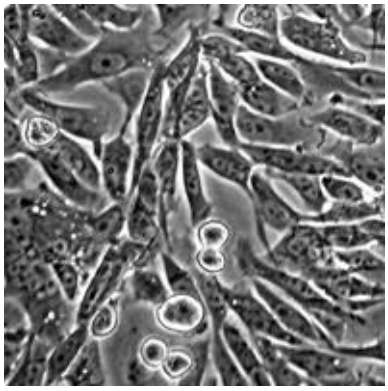
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	12
D13S317:	12,	12
D16S539:	9,	9
D5S818:	10,	12
D7S820:	10,	11
THO1:	6,	6
TPOX:	8,	11
vWA:	17,	17

Tumorigenicity: tumorigenic
Other properties: isoenzymes G6PD,B; Me-2,2-1; PGM 3,1; FUC,2-1; PGM 1,1; ESD,1; ADA,1.
HLA cell line phenotype A (1,3); B (8,18); C (w2, w6), Ek-2, DRw2, w4
Applications: virology, tumorigenicity.
Collections: ATCC HTB 4; MWIIW, SPBIC

T 98G

Origin: human, glioblastoma.
J. Cell Physiol. 1979. 99: 43-54.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 -1:6
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 46, modal number of chromosomes 128-132, number of markers - 14-16 (differential dye), number of polyploid cells 1.3%.

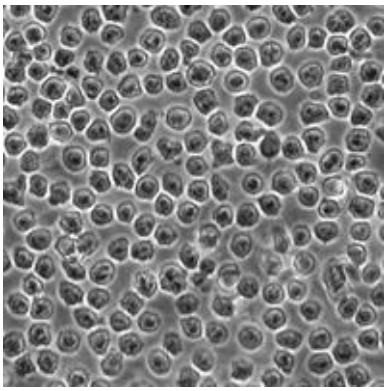
DNA profile (STR):

Amelogenin:	X,	Y
CSF1PO:	10,	12
D13S317:	13,	13
D16S539:	13,	13
D5S818:	10,	12
D7S820:	9,	10
THO1:	7,	9.3
TPOX:	8,	8
vWA:	17,	20

Applications: studies on the mechanisms for cessation of proliferation, cell synchronisation in G_1 phase and ageing.
Collections: ATCC CRL 1690; SPBIC.

THP-1

Origin: human, peripheral blood, acute monocytic leukemia from 1-year-old male
Int. J. Cancer 1980. 26: 171 – 176; Cancer Res. 1982. 42: 1530; J. Immunol. 1983. 131: 1882; Genes Chromosomes Cancer. 2000. 29: 333 – 338; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.
Morphology: monocyto-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
other components - 2-mercaptoetanol $2x10^{-5}$M
subculture procedure - optimal population density 1.0- $5.0x10^5$ cells/ml
cryoconservation - growth medium, 10% DMSO, $4.0\text{-}6.0x10^6$ cells/ml in ampule

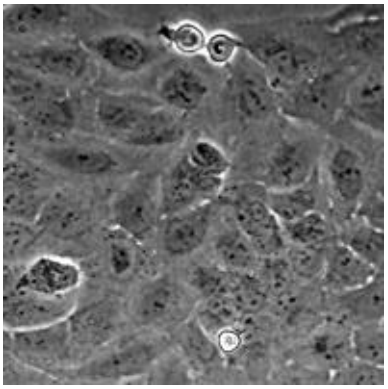


Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 46, modal number of chromosomes 50, number of markers - 8 (differential dye), number of polyploid cells 2.5%.
DNA profile (STR):

Amelogenin:	X,	Y	
CSF1PO:	11,	13	
D13S317:	13,	13	
D16S539:	11,	12	
D5S818:	11,	12	
D7S820:	10,	10	
THO1:	5,	8,	9.3
TPOX:	8,	11	
vWA:	16,	16	

Other properties: presence Fc and C3b receptors.
Lack surface and cytoplasmic immunoglobulins.
Produce lysozymes, phagocytic activity.
Differentiation into macrophage-like cells.
Induce by herbology ether of monocytic differentiation.
HLA cell phenotype – A2, A9, B5, DRw1, DRw2.
Applications: immunology, differentiation, tumorigenicity.
Collections: ATCC TIB-202; ECACC 88081201; DSM ACC 16; SPBIC.

U-2 OS



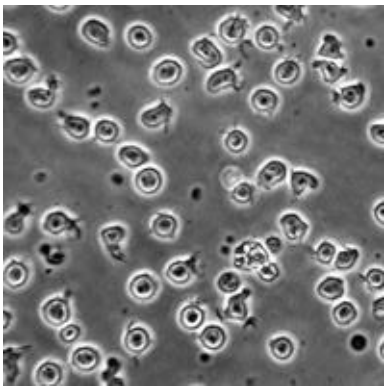
Origin: human, osteosarcoma.
Int.J.Cancer 1967. 2: 434-447.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:4
cryoconservation - growth medium, 5-10% DMSO, 1.0-2.0x10^6 cells/ml in ampule
Viability after cryoconservation: 92% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 67-80 chromosomes, modal number of chromosomes 76 and 78-79, number of markers - 22 (differential dye).
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	12,	13
D13S317:	13,	13
D16S539:	11,	12
D5S818:	8,	11
D7S820:	11,	12
THO1:	6,	6
TPOX:	11,	12
vWA:	14,	18

Other properties: isoenzymes PGM1, 1; PGM3, 2; ES D, 1; AK 1, 1; GLO-1, 2; G6PD, B.
Applications: tumorigenicity, cell biology.
Collections: ATCC HTB 96; SPBIC.

U-937

Origin: human, histiocytic lymphoma (pleural effusion)
Int.J.Cancer 1976. 17: 565-577; J.Exp.Med. 1976. 143: 1528-1533; J.Immunol. 1980. 125: 463-465; Nature 1979. 279: 328-331; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: histiomonocitoid
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density 2.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 8-9%DMSO, 5.0x10^6 cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 59-65 chromosomes, modal number of chromosomes 61, number of markers - 21 (differential dye), number of polyploid cells 3.0%.

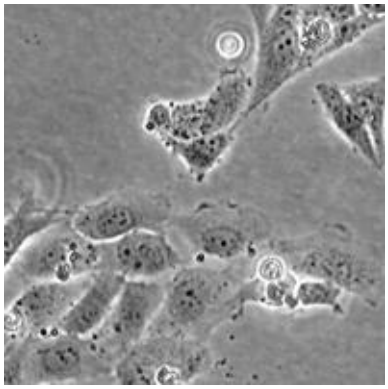
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	12
D13S317:	10,	12
D16S539:	12,	12
D5S818:	10,	12, 13
D7S820:	9,	11
THO1:	6,	9.3
TPOX:	8,	11
vWA:	14,	15

Other properties: virus susceptibility: HIV-1, HIV-2, herpes type 6.
IL-1 production.
Fc and C3 receptors.
Phagocytose antibody-coated erythrocytes and latex beads.
Applications: differentiation, virology, cell biology, tumorigenicity.
Collections: ATCC CRL 1593; DSM ACC 5; ECACC 85011440; 87010802; ICLC HTL 94002; SPBII; SPBIC.

WI-38 VA 13 subline 2RA

Origin: human, embryonic lung, an SV 40 virus-transformed derivative of the WI-38 cell line.
Ann.Med.Exp.Biol.Fenn.1966. 44:242; J.Natl.Cancer Inst.1964. 32: 917.
Morphology: epithelial-like
Mode of cultivation: monolayer



Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:4, optimal population density 1.0-3.0x10^4 cells/cm^2
cryoconservation - growth medium, 5%DMSO, 1.0x10^6 cells/ml in ampule
Viability after cryoconservation: 80-85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 46, variability in the range between 45-89 chromosomes, modal number of chromosomes 73-78, number of markers - 2-3 (routine dye), 1-6 microchromosomes.

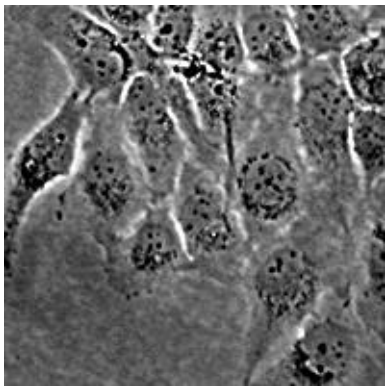
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	12
D13S317:	11,	11
D16S539:	11,	12
D5S818:	10,	10
D7S820:	9,	11
THO1:	9.3,	9.3
TPOX:	8,	8
vWA:	19,	20

Plating efficiency: 15%
Other properties: virus susceptibility: herpes simplex, vesicular stomaitits (Indiana), poliovirus 2, reovirus 3.
Isoenzymes G6PD.
Contains SV 40 neo (T) and transplantation antigens.
Applications: biochemistry, transformation, virology.
Collections: ATCC CCL 75.1; ECACC 85062512; SPBIC.

XPA

Origin: human, SV 40 virus-transformed fibroblasts from xeroderma pigmentosum patients.
Mol.Cell Biol. 1987. 7: 3353-3357.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3-1:5
cryoconservation - growth medium, 5-8%DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 55-75 chromosomes, modal number of chromosomes 68-70, number of markers – 19% dicentrics (routine dye), 7% of cells have microchromosomes, number of polyploid cells 5.0%.

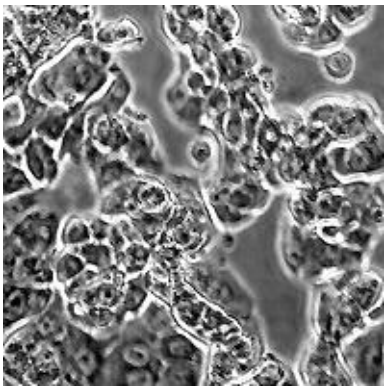
DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	12,	12
D13S317:	12,	12
D16S539:	9,	11
D5S818:	11,	12
D7S820:	12,	12
THO1:	9,	9
TPOX:	8,	11
vWA:	17,	17

Applications: genetics, tumorigenicity, cell biology.
Collections: SPBIC

ZR-75-1

Origin: human, mammary gland carcinoma (ascitic effusion)
Cancer Res. 1978. 38: 3352-3364 и 4327-4339.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:3, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 2.0x10^6 cells/ml in ampule



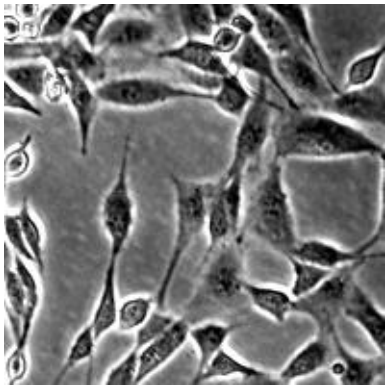
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 55-77 chromosomes, modal number of chromosomes 72, number of markers - 18 (differential dye), number of polyploid cells 0.8%.

DNA profile (STR):

Amelogenin:	X,	X
CSF1PO:	10,	11
D13S317:	9,	9
D16S539:	11,	11
D5S818:	13,	13
D7S820:	10,	11
THO1:	7,	9.3
TPOX:	8,	8
vWA:	16,	18

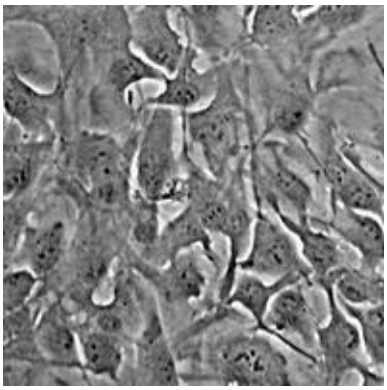
Other properties: receptors for estrogen and other steroid hormones.
Applications: tumorigenicity, cell biology.
Collections: ATCC CRL 1500; ECACC 87012601; SPBIC.

Origin: rat, glioma induced by ethylnitrozourea.
Submitted from Research Institute of Neurosurgery of the Ukrainian Ministry of Health, Kiev; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world



Morphology: glial
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:5.
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 96% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 42, variability in the range between 41-44 (first clone of cell population), 81-86 (second clone of cell population) chromosomes: modal number of chromosomes 82-84, number of markers - 3 (differential dye).
Tumorigenicity: tumorigenic
Applications: neurobiology, tumorigenicity.
Collections: SPBIC

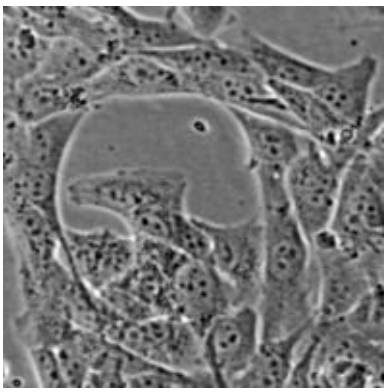
Origin: rat, glioma induced by N-methylnitrozourea. Exp.Oncol. (Russ) 1982. 2: 27.



Morphology: glial
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:5 - 1:8.
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 97% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 42, variability in the range between 78-85 chromosomes, modal number of chromosomes 81-83, number of markers - 20 (differential dye).
Plating efficiency: 45%
Tumorigenicity: tumorigenic in syngeneic animals
Other properties: secretion of protein S-100
Applications: neurobiology, tumorigenicity.
Collections: SPBIC

3T3B-SV40

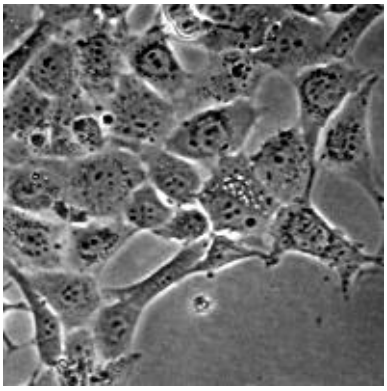
Origin: mouse BALB/c, embryo, BALB/3T3 clone A31 transformed by SV40.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 2.0x10^6 cells/ml in ampule



Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological, and isoenzymological (LDH, G6PD) and immunofluorescent analysis
Karyology: 2n= 40, variability in the range between 66-73 chromosomes, modal number of chromosomes 70, 1-2 microchromosomes in 40% of cells.
Plating efficiency: 30%
Tumorigenicity: non tumorigenic
Other properties: T antigen in nucleus
Applications: tumorigenicity, virology, cell biology.
Collections: SPBIC

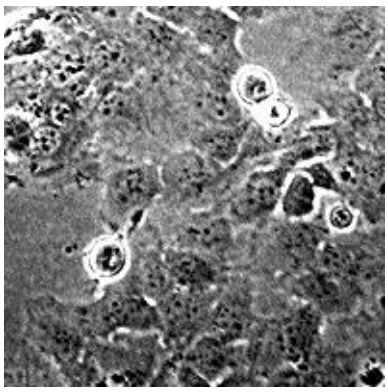
3T3-SV 40

Origin: mouse, embryo, 3T3 Swiss cells transformed by SV 40
Submitted from «Flow Labs» 1986.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:5
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 56-72 chromosomes, some cells have large submetacentric and metacentric chromosomes and middle acrocentric chromosome with secondary constriction (routine dye), number of polyploid cells 0.8%.
Applications: cell biology
Collections: SPBIC

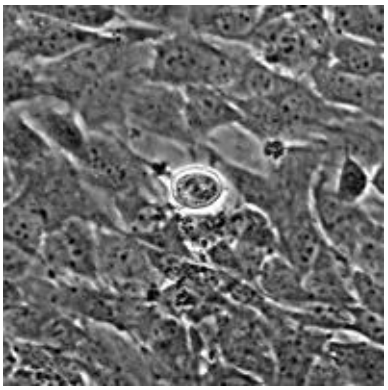
3T3 Swiss albino



Origin: Swiss mouse, embryo.
J. Cell Biol. 1963. 17: 299-313.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:1), split ratio 1:3 - 1:6, optimal population density $5.0x10^3$ - $1.0x10^4$ cells/cm^2
cryoconservation - growth medium, 5 – 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 65-73 chromosomes, modal number of chromosomes 69-71, number of markers - 2-3, small acrocentric chromosomes (routine dye), some cells have 1-2 microchromosomes, number of polyploid cells 1.2%.
Plating efficiency: 20 %.
Tumorigenicity: non tumorigenic
Other properties: virus susceptibility: herpes simplex, Sendai, vesic. stomatitis (Indiana), vaccinia.
Contact inhibition of growth.
Applications: biochemistry, differentiation, virology, genetical transformation, tumorigenicity.
Collections: ATCC CCL 92; ECACC 85022108; SPBIC.

3T3-Swiss J2

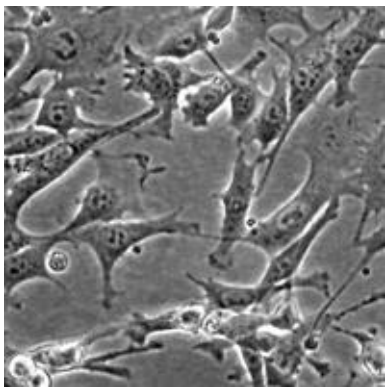
Origin: Swiss mouse, embryo.
Keratinocyte methods by I. and F. Walt. Cambridge University Press 1994. P.5-12.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:5, optimal population density $5.0x10^3$-$1.0x10^4$ cells/cm^2
cryoconservation - growth medium, 8%DMSO, $1.0\text{-}2.0x10^6$ cells/ml in ampule



Viability after cryoconservation: 95% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=40, variability in the range between 70-80 chromosomes, modal number of chromosomes 74-76, number of markers - 1-3 metacentric chromosomes (routine dye), number of polyploid cells 5.0%.
Other properties: secretion of extracellular matrix protein for adhesion of keratinocytes and growth factors for stimulation of keratinocyte proliferation.
Applications: feeder for cultivation of epithelial cells.
Collections: SPBIC

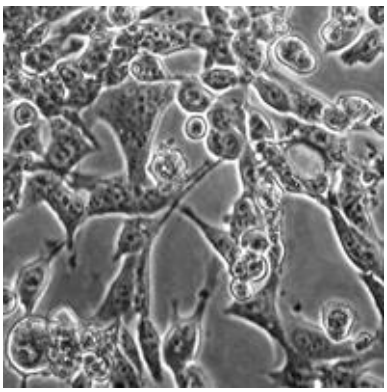
3T6 Swiss albino

Origin: Swiss mouse, embryo
J. Cell Biol. 1963. 17: 299-313; Nature 1966. 212: 631-633.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:1), split ratio 1:5 - 1:8, optimal population density $5.0x10^3$ - $1.0x10^4$ cells/cm^2
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule



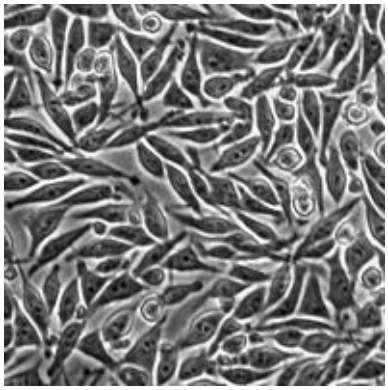
Viability after cryoconservation: 72% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 64-84 chromosomes, modal number of chromosomes 70-72, some cells have large submetacentric chromosome and microchromosomes (routine dye).
Plating efficiency: 32 %.
Other properties: virus susceptibility: herpes simplex, vaccinia, vesicular stomatitis (Indiana), pseudorabies.
Collagen and hyaluronic acid secretion.
Applications: differentiation, proliferation study.
Collections: ATCC CCL 96; ECACC 86120801; SPBIC.

Origin: mouse CC57W, rhabdomyosarcoma induced in vivo by methylcholanthrene Submitted in Institute of Cytology RAS 1977.



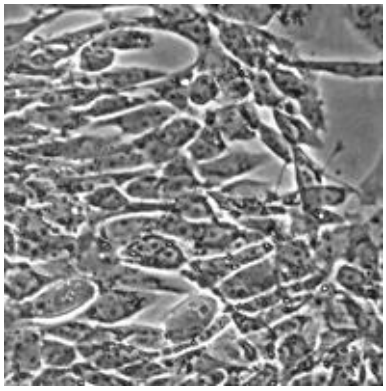
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:5.
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 91% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological, isoenzymological (LDH) and immunofluorescent analysis.
Karyology: 2n= 40, variability in the range between 46-63 chromosomes, modal number of chromosomes 54-56, number of markers - 1, large metacentric chromosomes (routine dye), 1-3 microchromosomes in the most cells, number of polyploid cells 28%.
Plating efficiency: 88 %
Tumorigenicity: tumorigenic in syngeneic mouse.
Applications: tumorigenicity, cell biology.
Collections: SPBIC.

Origin: mouse C3H/An, subcutaneous adipose connective tissue, derived from NCTC 929.
Proc.Natl.Acad.Sci. 1963. 50: 568; Nature 1964. 202: 1142; Am.J.Human Gen. 1974. 26: 273.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:1), split ratio 1:3 - 1:10, optimal population density 1.0-5.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule
Viability after cryoconservation: 95% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 52-57 chromosomes, modal number of chromosomes 54-55, number of markers - 1 (routine dye), number of polyploid cells 1.8%.
Other properties: deficient in hypoxanthine phosphoribosyltransferase, resistant to 8 - azaguanine and 6 - thioguanine
May be heterozygous for the ability to synthesize active inosinic acid phosphorylase.
Applications: metabolism, genetics of somatic cells.
Collections: ATCC CRL 6319; ECACC 84011426; SPBIC.

Origin: Chinese hamster, lung, clone of subline A-23 of cell line DON.
Bioch.Genet. 1972. 7: 33; DAN Russ. 1982. 267. 6: 1496-1498; Tsytologya, 1985. 27. 4: 467-475.

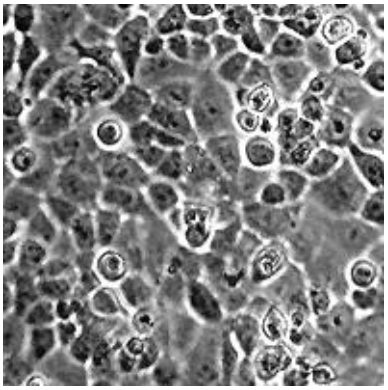


Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - F10
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:3
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 98% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 22, variability in the range between 30-48 chromosomes, modal number of chromosomes 41-44, number of markers - 8 - in the most cells (differential dye).
Other properties:
deficient in thymidine kinase, resistant to BUdR.
Applications: cell biology, genetics of somatic cells.
Collections: SPBIC.

B14-150

Origin: Chinese hamster, peritoneal cells, fibrosarcoma, derived from B14FAF28-G3. Science 1961. 133: 1600; Tex.Rep.Biol. a Med. 1965. 23: 231.

Morphology: fibroblast-like



Mode of cultivation: monolayer

Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4 – 1:8
cryoconservation - growth medium, 5% DMSO, $1.0x10^6$ cells/ml in ampule

Viability after cryoconservation: 94% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological, isoenzymological (LDH, G6PD) and immunofluorescent analysis

Karyology: 2n= 22, variability in the range between 19-25 chromosomes, modal number of chromosomes 22, pseudodiploid, a dicentric chromosome was observed in some cells.

Plating efficiency: 46 %.

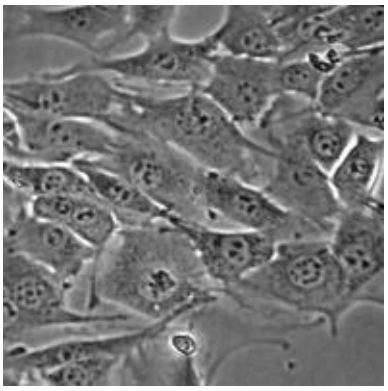
Other properties:
virus susceptibility: vesicular stomatitis (Indiana).
deficient in thymidine kinase, resistant to 5 - iododeoxyuridine

Applications: genetics, cell biology.

Collections: ATCC CCL 14.1; SPBIC.

BALB/3T3 clone A31

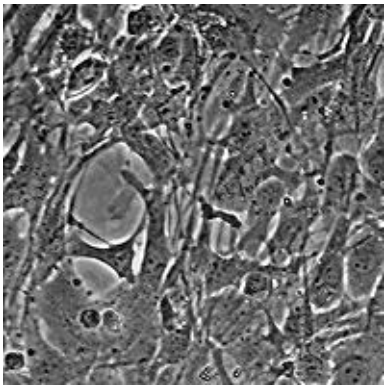
Origin: mouse BALB/c, embryo.
J.Cell Physiol. 1968. 72: 141-148; Virology 1969. 38: 174-202; Science 1968. 162: 1024-1026; Exp.Cell Res. 1970. 59: 137.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density $3.0x10^3$ - $2.0x10^4$ cells/cm^2
cryoconservation - growth medium, 7.5% DMSO, $1.0x10^6$ cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 55-84 chromosomes, modal number of chromosomes 68-74, number of polyploid cells 3.0%.
Plating efficiency: 20 %.
Other properties: virus susceptibility: herpes simplex, vesicular stomatitis, coronavirus, SV 40, vaccinia, polyoma.
Contact inhibition of growth (by density $2.0\text{-}2.5x10^5$ cells/cm^2).
Applications: virology, replication, tumorigenicity.
Collections: ATCC CCL 163; ECACC 86110401; MWIIW; SPBIC.

BC3H1

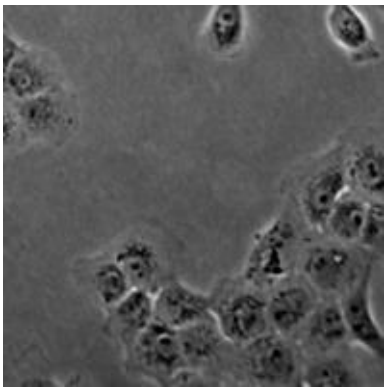
Origin: mouse C3H, smooth muscle-like cells from brain tumor induced in vivo by ethyl nitrosoethylurea.
J.Cell Biol. 1974. 61: 318-413; J.Biol.Chem. 1977. 252: 2143-2153.
Morphology: fibroblast-like
Mode of cultivation: monolayer



Conditions for cultivation: medium - DMEM
serum - FBS 20%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 1.0-5.0x10^4 cells/cm^2
cryoconservation - growth medium, 8% DMSO, 1.0x10^6 cells/ml in ampule
Viability after cryoconservation: 95% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 40, variability in the range between 60-76 chromosomes, modal number of chromosomes 64-67, number of polyploid cells 8%.
Other properties: synthesis of adenylate and creatine phosphokinases, acetylcholine receptors.
Possess many properties characteristic of smooth muscle.
Applications: acetylcholine receptors study.
Collections: ATCC CRL 1443; ECACC 86093001; SPBIC.

BGM

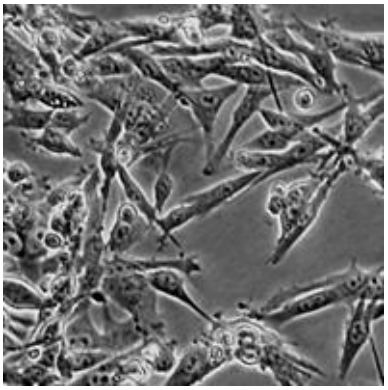
Origin: African green monkey, kidney.
Arch.Gesamte Virusforsch. 1970. 32: 389; Health Lab. Sci. 1974. 110: 275; Append. Environ.Microbiol. 1986. 51: 790.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density $5.0x10^3$ - $2.0x10^4$ cells/cm^2
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 95% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH and G6PD) analysis
Karyology: 2n= 60, variability in the range between 58-68 chromosomes, modal number of chromosomes 61-62, number of markers - 1-2, small submetacentric chromosome with secondary constriction (routine dye)
Other properties: virus susceptibility: poliovirus 1, 2, 3; ECHO 3, 6, 7, 9, 11, 12, 27; Coxsackie A9, B1, B2, B3; reovirus; rotavirus SA 11.
Applications: virology, chlamidia growth substrate.
Collections: ECACC 90092601; MWIIW; SPBIC.

BHK-21 clone 13

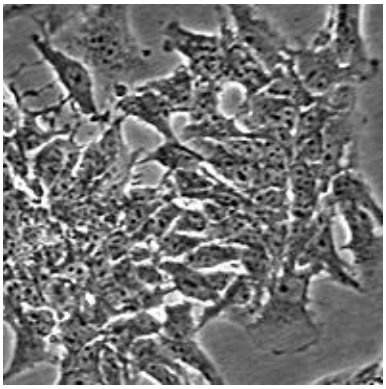
Origin: Syrian hamster, kidney
Virology 1962. 16: 147-151; J.Natl.Cancer Inst. 1963. 30: 795-811.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 5 – 10% DMSO, 1.0-1.5x10^6 cells/ml in ampule



Viability after cryoconservation: 92% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH and G6PD) analysis.
Karyology: 2n= 44, variability in the range between 44-52 chromosomes, modal number of chromosomes 49-50, number of markers - 1 large metacentric chromosome (routine dye), 7 markers (differential dye), number of polyploid cells 5.1%
Other properties: virus susceptibility: pseudorabies, vaccinia, herpes simplex, reovirus 3; vesicular stomatitis (Indiana), rubella, adenovirus 25, foot-and-mouth disease virus, Coxsackie, rabies, arboviruses..
Applications: virology, transformation, cell biology.
Collections: ATCC CCL 10; ECACC 85011433; SPBII; SPBIC, MWIEV.

BWTG 3

Origin: mouse, hepatoma
J.Cell Sci. 1979. 35: 267; Exp.Cell Res. 1980. 125: 305.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:5.
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule



Viability after cryoconservation: 86% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH and G6PD) analysis.
Karyology: 2n= 40, variability in the range between 62-68 chromosomes, modal number of chromosomes 65-66, number of markers - 1-3, large meta- and submetacentric chromosomes, the most cells have small metacentric chromosomes (routine dye), number of polyploid cells 2.4%.
Other properties: deficient in hypoxanthine phosphoribosyltransferase, resistant to 8 - azaguanine and 6 - thioguanine
Applications: somatic cell genetics
Collections: SPBIC

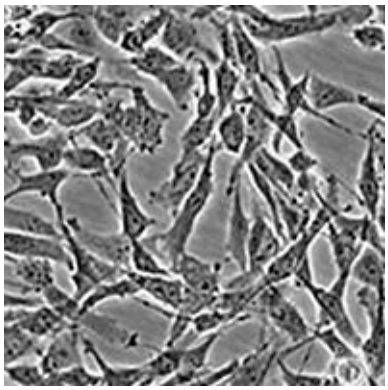
C6

Origin: rat, glioma induced in vivo by N-nitrosomethylurea, monoclonal cell line. Science 1968. 161: 370; Fed.Proc. 1968. 27: 720; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world

Morphology: fibroblast-like

Mode of cultivation: monolayer

Conditions for cultivation: medium - F10
serum - HS 15%/FBS 2.5%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 1.0-3.0x10^5 cells/cm^2
cryoconservation - growth medium, 7.5%DMSO, 1.0-2.0x10^6 cells/ml in ampule



Viability after cryoconservation: 93% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological, immunofluorescent and isoenzymological (LDH, G6PD) analysis

Karyology: 2n= 42, variability in the range between 39-44 chromosomes, modal number of chromosomes 42, normal rat karyotype (42, XY), cells, containing 43 chromosomes have 1 marker (differential dye).

Plating efficiency: 26%.

Tumorigenicity: tumorigenic in albino rat

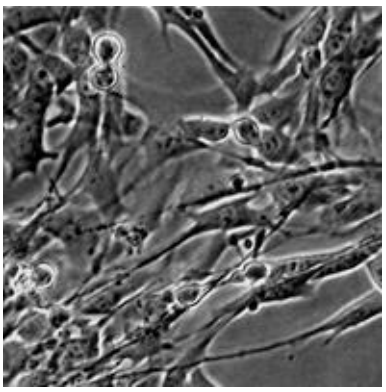
Other properties: virus susceptibility: pseudorabies, vesicular stomatitis (Indiana), herpes simplex, vaccinia.
S 100 protein production

Applications: biochemistry, virology, differentiation, tumorigenicity.

Collections: ATCC CCL 107; ECACC 85040101; ICLC ATL 95007; SPBIC.

C2C12

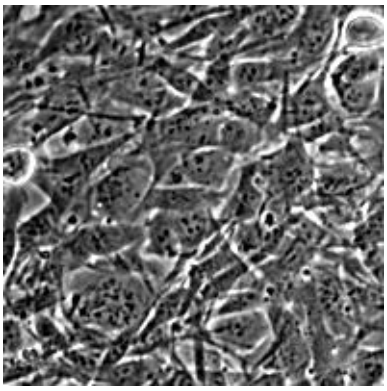
Origin: mouse C3H, leg muscle.
Nature 1977. 270: 725-727; Science 1985. 230: 758-766.
Morphology: myoblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:8, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule



Viability after cryoconservation: 90-95% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative.
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 73-80 chromosomes, modal number of chromosomes 77-80, number of polyploid cells 0.8%.
Other properties: muscle protein expression.
Differentiates producing myotubes.
Applications: myogenesis, cell differentiation, cell biology.
Collections: ATCC CRL 1772; ECACC 91031101; SPBIC.

C3H10T1/2 clone 8

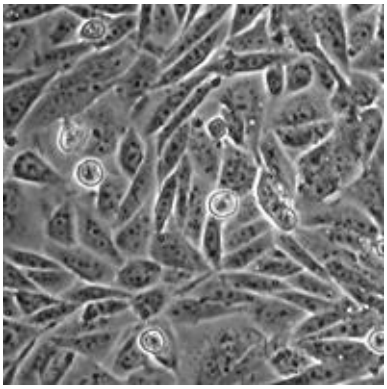
Origin: mouse C3H, embryo.
Cancer Res. 1973. 33: 3231-3238 и 3239-3249; Nature 1975. 253: 548-549; Virology 1975. 65: 392-409.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 2.0×10^3 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.5×10^6 cells/ml in ampule



Viability after cryoconservation: 92% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 66-82 chromosomes, modal number of chromosomes 80, number of markers - 16 (differential dye).
Plating efficiency: 30%.
Tumorigenicity: non tumorigenic
Other properties: contact inhibition of growth
Applications: tumorigenicity, transformation, transfection, cell biology.
Collections: ATCC CCL 226; ECACC 86060303; SPBIC.

CHO-K1

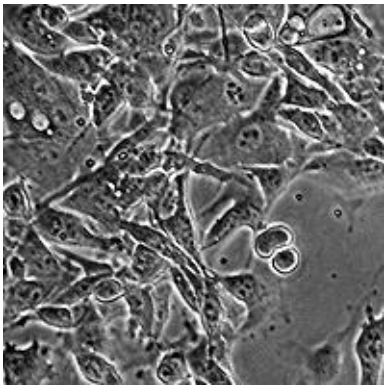
Origin: Chinese hamster, ovary, clone CHO.
J.Exp.Med. 1958. 108: 945; Proc. Natl.Acad.Sci. USA 1968. 60: 1275.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - F12
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:8, optimal population density 1.0-2.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0-2.0x10^6 cells/ml in ampule



Viability after cryoconservation: 99% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological, isoenzymological (LDH, G6PD) and immunofluorescent analysis
Karyology: 2n=22, variability in the range between 16-22 chromosomes, modal number of chromosomes 20, number of markers - 11 (differential dye), number of polyploid cells 7.4%
Plating efficiency: 90%.
Other properties: virus susceptibility: vesicular stomatitis (Indiana), Getah arbovirus. Absence of the gene for proline synthesis, requirement of proline for growth.
Applications: somatic cells genetics, cell biology, virology.
Collections: ATCC CCL 61; ECACC 85051005; DSM ACC 110; ESCC; SPBIC.

Clone M-3

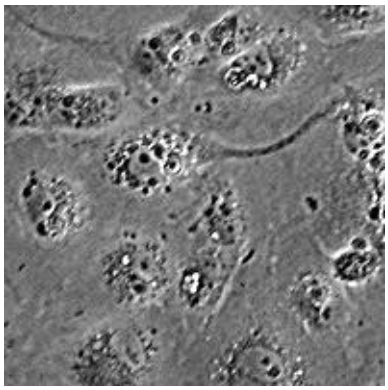
Origin: mouse F_1 (CxDBA), clone from melanoma Cloudman S91. Science 1966. 154: 1186.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - F12
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:3, optimal population density 2.0-3.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 2.0-3.0x10^6 cells/ml in ampule



Viability after cryoconservation: 94% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 76-86 chromosomes, modal number of chromosomes 83, number of markers - 2 (routine dye), some cells have microchromosomes.
Plating efficiency: less than 1%.
Tumorigenicity: tumorigenic in syngeneic animals
virus susceptibility: herpes simplex, vaccinia, pseudorabies, vesicular stomatitis (Indiana).
Melanin production for at least 33 passages
Applications: virology, tumorigenicity, cell biology.
Collections: ATCC CCL 53.1; ECACC 87081806; SPBIC.

CV-1

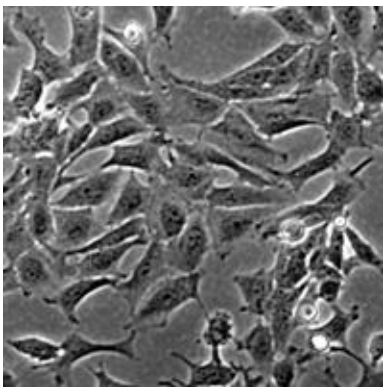
Origin: African green monkey, kidney.
Proc.Natl.Acad.Sci. 1964. 53: 53; Virology 1965. 27: 453.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 5%DMSO, 1.0x10^6 cells/ml in ampule



Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 60, variability in the range between 56-61 chromosomes, modal number of chromosomes 60, number of markers - 4-5 (differential dye), number of polyploid cells 4.4%.
Plating efficiency: 27%.
Other properties: virus susceptibility: poliovirus 1, herpes simplex, Eastern equine encephalitis, Western equine encephalitis, California encephalitis, SV 40.
Applications: virology.
Collections: ATCC CCL 70; ECACC 87032605; SPBII; MWIIW; SPBIC.

DFK3

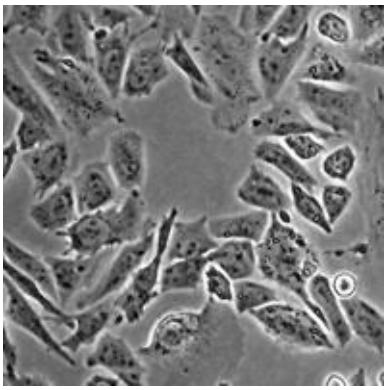
Origin: rat, embryo, fibroblasts transformed by adenovirus 5.
Mol.Biol. (Russ.) 1979. 13: 292.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:3
cryoconservation - growth medium, 10% DMSO, 2.0×10^6 cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=42, variability in the range between 55-67 chromosomes, modal number of chromosomes 64-65, number of polyploid cells 3.0%.
Applications: cell biology.
Collections: SPBIC

DXB-11

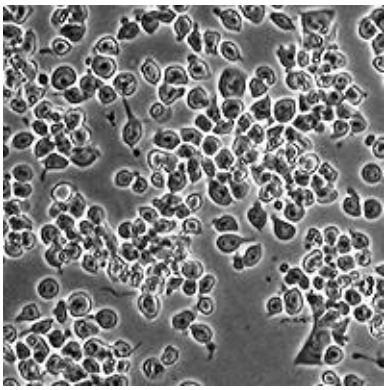
Origin: Chinese hamster, ovary, clone of CHO.
Submitted from Columbia University, New York, USA, 1984; Digest “Cell Cultures” 2015. 31: 46 – 54.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - F12
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3
cryoconservation - growth medium, 10% DMSO, 1.0-2.0x10^6 cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 22, variability in the range between 18-22 chromosomes, modal number of chromosomes 20, number of markers - 2 large metacentric chromosomes (routine dye), number of markers – 14 (defferential dye), number of polyploid cells 1.2%.
Other properties: dihydrofolate reductase deficient, requires hypoxanthine or adenine, glycine, thymidine and proline.
Applications: biochemistry, cell biology.
Collections: SPBIC

EL-4

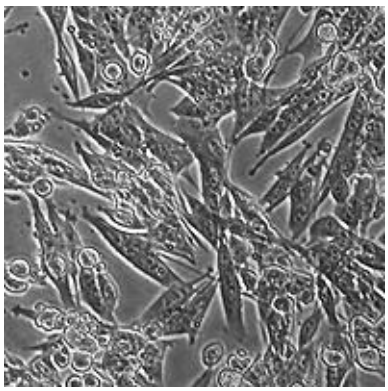
Origin: mouse C57BL/6N, lymphoma induced by dimethyl-benzanthracene (ascitic fluid).
Br.J.Cancer 1950. 4:372; Cancer Res. 1965. 25: 813; J.Natl.Cancer Inst. 1972. 48: 265; J.Jmmunol. 1972. 108:1146; J.Jmmunol.1973. 110: 1470.
Morphology: lymphoid
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density 3.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 5.0-6.0x10^6 cells/ml in ampule



Viability after cryoconservation: 70% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 36-40 chromosomes, modal number of chromosomes 38 and 40, number of markers - 3-4 (routine dye), number of polyploid cells 2.2%.
Other properties: antigens expressed by these cells include: G, a surface antigen induced by leukemia type G virus; H-2^b and Thy-1,2.
These cells do not bear TL antigen or surface immunoglobulin.
Resistant to cortisol and dexamethasone.
Sensitive to PHA.
Applications: virology, tumorigenicity, biotechnology (IL-2 and interferon production).
Collections: ATCC TIB 39; ECACC 85022105; SPBIC.

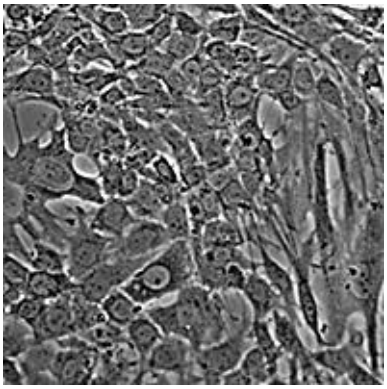
EPNT-5

Origin: mouse C57Bl, glioblastoma induced by dimethylbenzanthracene and than passed in outbred mice.
Tsitologiya, 1977. 19. 1: 95-100.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 -1:5
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 94% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological, isoenzymological (LDH, G6PD) and immunofluorescent analysis
Karyology: 2n= 40, variability in the range between 57-64 chromosomes, modal number of chromosomes 59-60, number of markers-3-5 large-sized metacentric and 1 middle acrocentric with secondary constriction (routine dye), number of polyploid cells 1.5%.
Plating efficiency: 60%
Tumorigenicity: tumorigenic in outbred mice
Other properties: muscarinic and nicotinic receptors for acetylcholine and receptors for diazepam.
Applications: neurooncology, cell biology.
Collections: SPBIC.

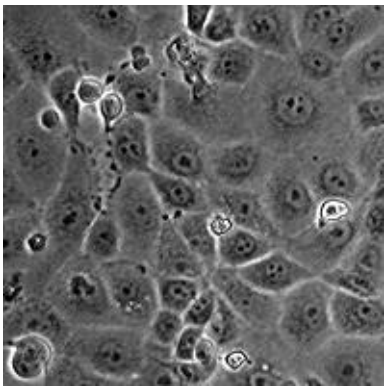
Origin: mouse line 129, testicular teratocarcinoma
Proc. Natl. Acad. Sci. USA 1973. 70: 3899 – 3903; Cell 1978.15: 393 – 403; Cell 1980. 21: 347 – 355; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - culture surface are coated with 0.1% gelatin, cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 5% DMSO, 1.5x10^6 cells/ml in ampule
Viability after cryoconservation: 85 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n = 40, variability in the range between 37-41 chromosomes, modal number of chromosomes 39, number of markers - 8 (differential dye), number of polyploid cells 0.8%.
Other properties: undergo very limited differentiation under normal culture conditions; Induction of differentiation into parietal endoderm in the presenceof retinoic acid and dibutyryl cyclic AMP;
Synthesis of plasminogen activator, laminin, type IV collagen, low levels alkaline phosphatase and lactate dehydrogenase.
Applications: cell biology, differentiation, tumorigenicity.
Collections: ATCC CRL 1720; ECACC 85060401; SPBIC.

FBT

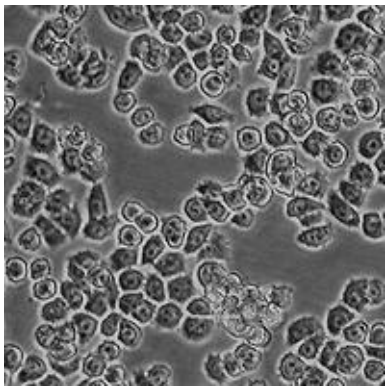
Origin: bovine, embryo, trachea.
Folia Biol. 1975. 21: 117.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 -1:5.
cryoconservation - growth medium, 8-10% DMSO, $1.0x10^6$ cells/ml in ampule



Viability after cryoconservation: 98% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 60, variability in the range between 42-53 chromosomes, modal number of chromosomes 48-49, number of polyploid cells 0.2%.
Other properties: virus susceptibility: vesicular stomatitis, IBR, parainfluenza 3.
Applications: virology.
Collections: MWIIW; SPBIC.

GH3

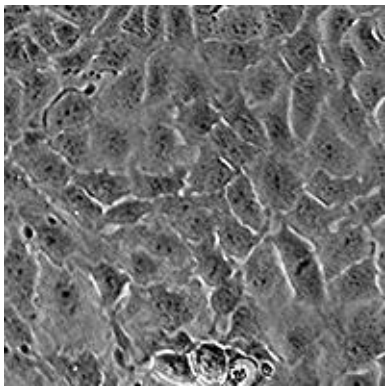
Origin: rat, pituitary tumor.
Endocrinology 1968. 82: 342; J.Cell Biol. 1969. 43: 432; In Vitro 1970. 60: 180.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - F10
serum - HS 15%, FBS 2.5%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:4, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0 - 2.0x10^6 cells/ml in ampule



Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 42, variability in the range between 40-75 chromosomes without modal number, number of markers - 2 dicentrics (routine dye), number of polyploid cells 0.6%.
Plating efficiency: less than 1%.
Tumorigenicity: tumorigenic in syngeneic animals
Other properties: virus susceptibility: vesicular stomatitis (Indiana), herpes simplex. Growth hormone, prolactin, somatotrophin secretion.
Applications: endocrinology, cell biology.
Collections: ATCC CCL 82.1; ECACC 87012603; ICLC ATL 96003; SPBIC.

HaK

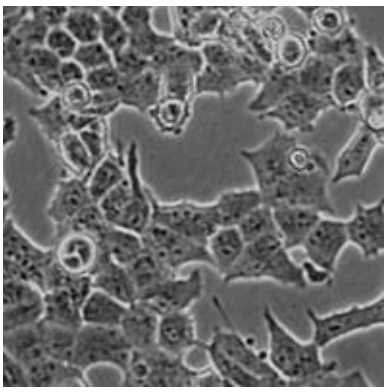
Origin: Syrian hamster, kidney
S.Afr.J.Med.Sci. 1963. 28: 81.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:5 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule



Viability after cryoconservation: 86% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 44, variability in the range between 48-58 chromosomes, modal number of chromosomes 52-53 and 56, number of polyploid cells 5.0%.
Plating efficiency: 50%.
Tumorigenicity: tumorigenic in hamster
Other properties: virus susceptibility: vesicular stomatitis, arboviruses, Coxsackie A4, A8, B1, herpes simplex, smallpox, Asian strain influenza, influenza, alpha viruses.
Applications: virology.
Collections: ATCC CCL 15; ECACC 90102522; MWIIW; SPBIC.

HTC

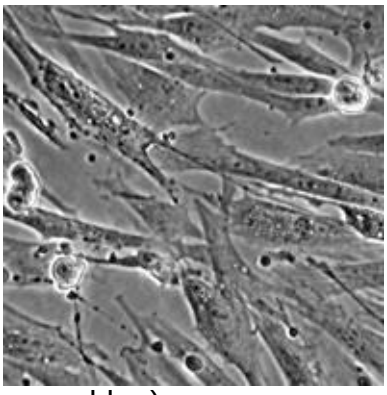
Origin: rat Buffalo, hepatoma induced by N,N'-2,7-fluorenylenebis-2,2,2-trifluoroacetamide, ascitic fluid.
Proc.Natl.Acad.Sci. 1966. 56: 296; ATLA 1988. 16: 32.



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:5
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 42, variability in the range between 63-68 chromosomes and 36% of cells have more of 84 chromosomes, modal number of chromosomes 65-67, number of markers - 22 (differential dye)
Plating efficiency: 60%.
Tumorigenicity: tumorigenic in syngeneic animals
Other properties:inducible tyrosine aminotrasferase.
Applications: tumorigenicity, enzymology, cytotoxicity, cell biology.
Collections: ICLC ATL 95006; SPBIC.

Indian Muntjac (M)

Origin: muntjac, skin.
Science 1970.168: 1364-1366; Cytogenet.Cell Genet.1979.24: 201-208; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - F10
serum - FBS 20%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2.
cryoconservation - growth medium, 8-10% DMSO, 1.0-1.5x10^6 cells/ml in ampule
Viability after cryoconservation: 95% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH and G6PD) analysis
Karyology: 2n= 7, variability in the range between 5-12 chromosomes, modal number of chromosomes 7, normal Muntjac karyotype (7, X,Y_1,Y_2), number of polyploid cells 3%.
Plating efficiency: 29%.
Other properties: virus susceptibility: vesicular stomatitis, herpes simplex, vaccinia.
Applications: genetics, morphology, virology, cell biology.
Collections: ATCC CCL 157; MWIIW; SPBIC.

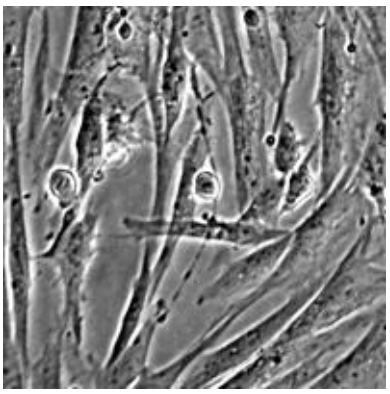
Indian Muntjac (MT)

Origin: muntjac, skin, subline, spontaneous derived from line M. Tsitologiya. 1988. 31: 807 – 817.

Morphology: fibroblast-like

Mode of cultivation: monolayer

Conditions for cultivation: medium - F10
serum - FBS 20%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2.
cryoconservation - growth medium, 8-10% DMSO, 1.0-1.5x10^6 cells/ml in ampule



Viability after cryoconservation: 95% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological and isoenzymological (LDH and G6PD) analysis

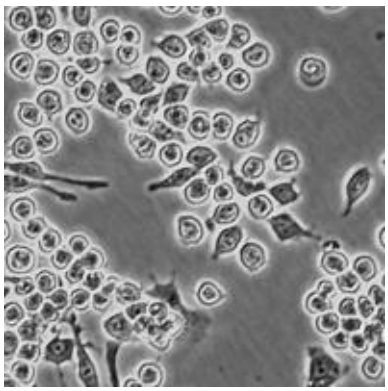
Karyology: 2n= 7, variability in the range between 5-12 chromosomes, modal number of chromosomes 9, markers are absent, The difference from normal Muntjac karyotype (7, X,Y_1,Y_2) consist of number of homologous chromosomes, number of polyploid cells 3%.

Applications: cytogenetics, morphology, cell biology.

Collections: SPBIC.

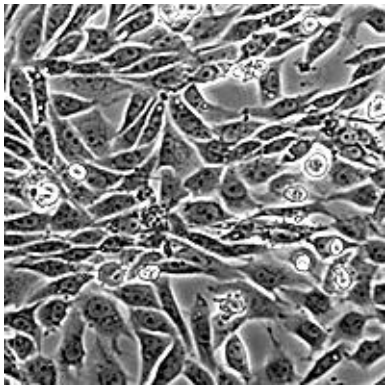
J-774

Origin: mouse BALB/c, histiocytic sarcoma.
J.Biol.Chem. 1987. 262: 8884; J.Cell Biol. 1988. 106: 657; Proc.Natl.Acad.Sci. 1984. 81: 5430.



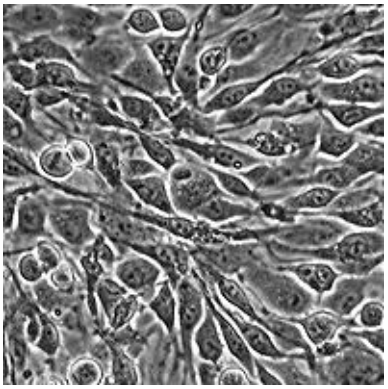
Morphology: star- and round-shaped
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:2 - 1:4
cryoconservation - growth medium, 10% DMSO, 1.0×10^6 cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Tumorigenicity: tumorigenic in syngeneic animals
Other properties: phagocytosis, chemotaxis, antigen presentation.
Applications: immunology, cytotoxicity, cell biology.
Collections: SPBIC.

Origin: rat, sarcoma, derived from cell line Jensen Sarcoma.
Cancer Res. 1959. 19: 591; Cell 1975. 6: 53-60.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 5-10%
other components - NEAA 1%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:4 - 1:6.
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule



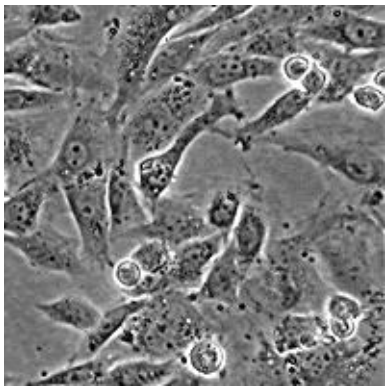
Viability after cryoconservation: 79% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 42, variability in the range between 49-61 chromosomes, modal number of chromosomes 52-56, number of markers - 1 middle acrocentric chromosome with gap (routine dye).
Plating efficiency: 46%.
Tumorigenicity: highly tumorigenic
Other properties: requires asparagine for growth
Applications: somatic cell genetics, tumorigenicity.
Collections: SPBIC

Origin: rat, fibroblasts spontaneously transformed in vitro.
Submitted from N.K.Belisheva, Institute of Cytology of the USSR Academy of Sciences, Leningrad, 1976. Dissert. work, 1979. L.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4
cryoconservation - growth medium, 5 – 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 42, variability in the range between 41-44 chromosomes, modal number of chromosomes 42, 15% of cells have 78-83 chromosomes.
Tumorigenicity: highly tumorigenic
Applications: cell biology.
Collections: SPBIC

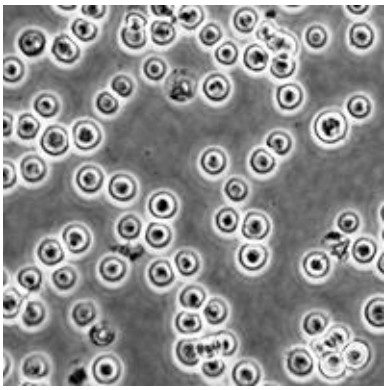
Origin: rat Wistar, skeletal muscle.
Develop.Biol. 1970. 23: 1-22; Differentiation 1977. 7: 159-166.
Morphology: myoblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4 - 1:8
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=42, variability in the range between 36-42 chromosomes, modal number of chromosomes 39, some cells have 1-2 large acrocentric chromosomes (routine dye), number of poliploid cells 1.0%
Other properties: synthesise several specific proteins characteristic of muscle tissue. Differentiates forming multinucleated muscle fiber
Applications: differentiation, cell biology
Collections: ATCC CRL 1769; SPBIC

L 1210

Origin: mouse DBA/2, lymphocytic leukemia, ascitic fluid.
J.Natl.Cancer Inst. 1966. 36: 405-421.
Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density $5.0x10^4$ - $8.0x10^5$ cells/ml
cryoconservation - growth medium, 10% DMSO, $3.0x10^6$ cells/ml in ampule

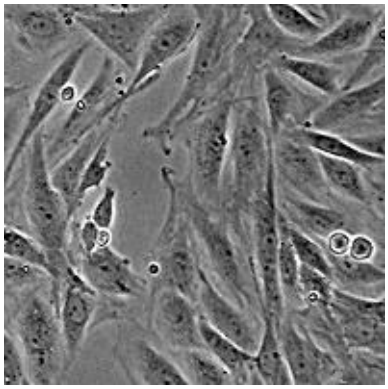


Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 34-42 chromosomes, modal number of chromosomes 39-41, number of polyploid cells 0.2%.
Tumorigenicity: tumorigenic in singeneic and nude mice
Applications: cytotoxicity, tumorigenicity, cell biology.
Collections: ATCC CCL 219; ECACC 87092804; SPBIC.

L6J1

Origin: rat, skeletal muscle cells transformed by methylcholanthrene, derived from L6. Exp.Cell Res. 1979. 120: 1; Cytology (Russ). 1983, 25: 1096-1097;.

Morphology: myoblast-like



Mode of cultivation: monolayer

Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4 - 1:6, do not allow cultures to become completely confluent.
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule

Viability after cryoconservation: 85% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological, isoenzymological (LDH, G6PD) and immunofluorescent analysis

Karyology: 2n= 42, variability in the range between 41-47 chromosomes, modal number of chromosomes 42-43, number of markers- 3-5 (differential dye) some cells have one small submetacentric chromosome with gap in short arm microchromosoma (routine dye), number of polyploid cells 5%.

Plating efficiency: 42%

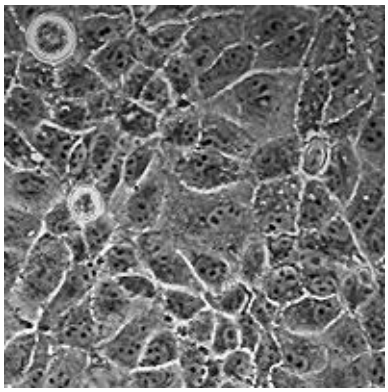
Other properties: differentiates producing myotubes, synthesis of muscle specific proteins.

Applications: differentiation, myogenesis.

Collections: SPBIC.

LLC-MK2, derivative

Origin: rhesus monkey, kidney, derived from LLC-MK2 original. Anat.Res. 1956. 124: 490; J.Gen.Virol. 1979. 43: 289.



Morphology: epithelial-like

Mode of cultivation: monolayer

Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 5 – 7%DMSO, 1.0-1.5x10^6 cells/ml in ampule

Viability after cryoconservation: 80-90% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological and isoenzymological (LDH, G6PD and nucleoside phosphorylase) analysis

Karyology: 2n= 42, variability in the range between 63-73 chromosomes, modal number of chromosomes 67-70, number of markers - 1-4 middle submetacentrics with the second constriction, number of polyploid cells 4.8%.

Plating efficiency: 45%.

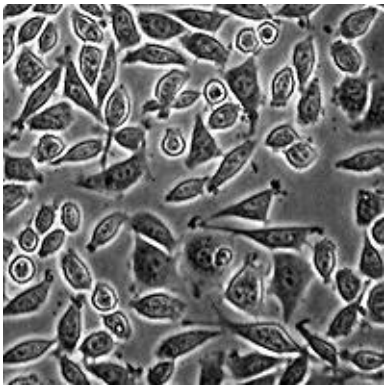
Other properties: virus susceptibility: poliovirus 1, 2, 3, parainfluenza 2, 3

Applications: virology.

Collections: ATCC CCL 7.1; SPBIC; SPBII.

L-M (TK^-, $APRT^-$)

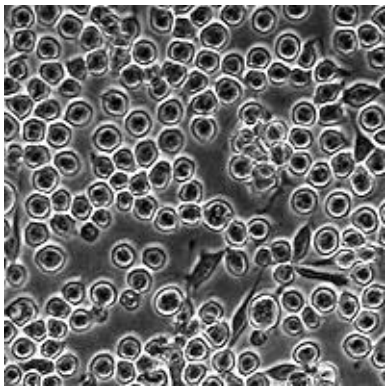
Origin: mouse, connective, derived from NCTC clone 929.
Submitted Institute of Biochemistry, Martinsried, FGR.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:5, optimal population density $2.0\text{-}3.0 \times 10^4$ cells/cm^2
cryoconservation - growth medium, 10% FBS, 5-10% DMSO, 1.8×10^6 cells/ml in ampule



Viability after cryoconservation: 68% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological, isoenzymological (LDH, G6PD) and immunological analysis
Karyology: 2n= 40, variability in the range between 46-51 chromosomes, modal number of chromosomes 49, number of markers - 9 metacentrics (routine dye).
Plating efficiency: 25%
Tumorigenicity: non tumorigenic
Other properties: deficient in thymidine kinase and adenine phosphoribosyl transferase (resistant to 5-bromodeoxyuridine and 8-azaadenine.
Retrovirus type A production
Applications: virology, somatic cell genetics, cell biology.
Collections: SPBIC.

LS

Origin: mouse C3H/An, connective, derived from NCTC clone 929. Proc.Roy.Soc. 1967. 168: 431-438.



Morphology: round cells

Mode of cultivation: suspension

Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - optimal population density 0.8-1.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 2.0x10^6 cells/ml in ampule

Viability after cryoconservation: 87% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological, isoenzymological (LDH, G6PD) and immunofluorescent analysis

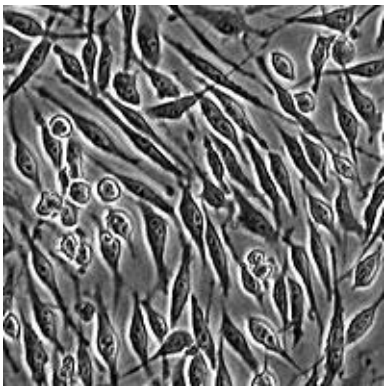
Karyology: 2n= 40, variability in the range between 53-57 chromosomes, modal number of chromosomes 55-56, number of polyploid cells 1%.

Applications: biochemistry, cell biology.

Collections: SPBIC.

LSM

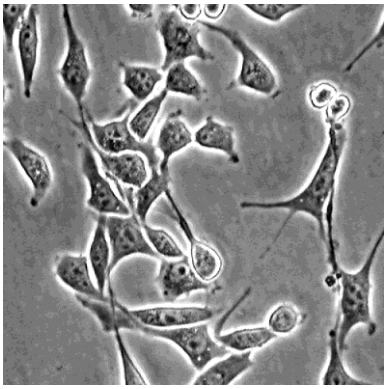
Origin: mouse, connective, LS cells adapted to monolayer growth
Tsitologiya 1981.23.10.1216
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule



Viability after cryoconservation: 92% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological, isoenzymological (LDH, G6PD) and immunofluorescent analysis
Karyology: 2n= 40, variability in the range between 52-58 chromosomes, modal number of chromosomes 56, most cells have 1 metacentric with second constriction (routine dye), number of polyploid cells 2%.
Tumorigenicity: tumorigenic in syngenic animals
Applications: oncology, biochemistry.
Collections: SPBIC.

McCoy B

Origin: mouse, cells obtained from synovial fluid of human knee joint with arthritis (Z. Zellforsch. 1957, 47: 158), but later one of sublines proved to be of mouse origin. Proc. Soc. Exp. Biol. Med. 1965, 118: 354.



Morphology: fibroblast-like

Mode of cultivation: monolayer

Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detachment using EDTA 0.04 %, split ratio 1:3 - 1:7
cryoconservation - growth medium, 5% DMSO, 1.0-1.5x10^6 cells/ml in ampule.

Viability after cryoconservation: 80 - 90 % (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological and isoenzymological (LDH, G6PD) analysis

Karyology: 2n=40, variability in the range between 55-63 chromosomes, modal number of chromosomes 58-60, number of markers - 1 small telocentric chromosome, some cells have dicentric chromosomes (routine dye), number of polyploid cells 2.6%.

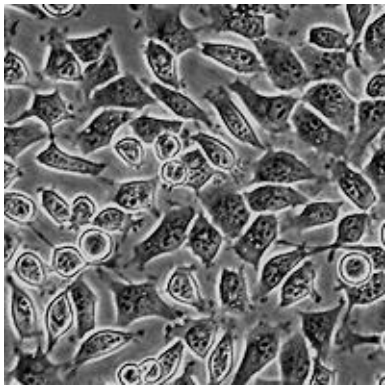
Other properties: virus susceptibility: vesicular stomatitis.
Susceptibility to chlamidia.

Applications: cell biology, virology

Collections: ATCC CRL 1696, ECACC 90010305, SPBII, SPBIC.

MCH-7

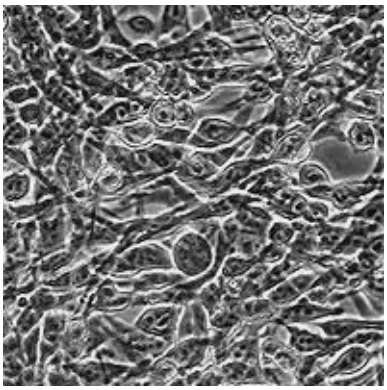
Origin: mouse C3H, rhabdomyosarcoma induced by methylcholanthrene. Cytology, Russ. 1970. 12: 798.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:8
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 91% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 57-85 chromosomes, 77-78 chromosomes in 30% of cells, some cells have 1-3 microchromosomes.
Plating efficiency: 80%
Tumorigenicity: tumorigenic in syngeneic animals
Applications: tumorigenicity
Collections: SPBIC.

MCH-82

Origin: mouse DBA/2, rhabdomyosarcoma induced by methylcholanthrene. Cytology, Russ. 1988. 30: 726.



Morphology: fibroblast-like

Mode of cultivation: monolayer

Conditions for cultivation: medium - DMEM
serum - FBS 10 %
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:8
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule

Viability after cryoconservation: 90% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological and isoenzymological (LDH, G6PD) analysis

Karyology: 2n=40, variability in the range between 50-60 chromosomes, modal number of chromosomes 53, number of markers - 2 (differential dye)

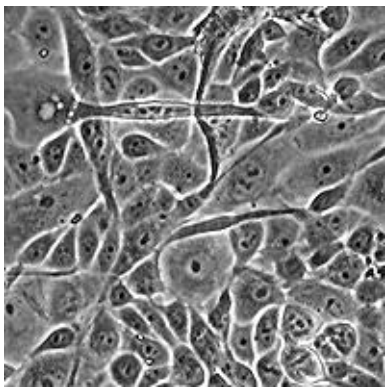
Tumorigenicity: tumorigenic in syngeneic animals

Applications: tumorigenicity:

Collections: SPBIC.

MDBK (NBL-1)

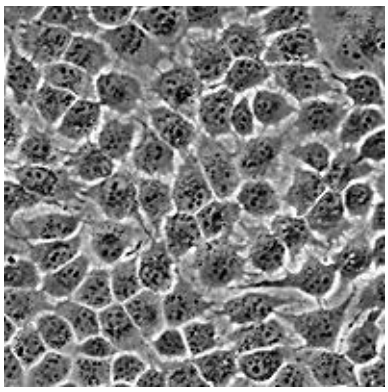
Origin: bovine, kidney.
Proc.Soc.Exp.Biol.Med.1958. 98:574; J.Natl.Cancer Inst.1986. 76:87-93.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - F12
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:5, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 60, variability in the range between 40-57 chromosomes, modal number of chromosomes 51-53, number of markers - 11-14 (differential dye), number of polyploid cells 2.0%.
Plating efficiency: 19%.
Other properties: virus susceptibility: - alphaviruses, vesicular stomatitis, IBR, BVD, bovine parvoviruses, bovine adenoviruses I and III, parainfluenza 3.
Applications: virology.
Collections: ATCC CCL 22; ECACC 90050801; SPBIC; MWIIW.

MDCK (NBL-2)

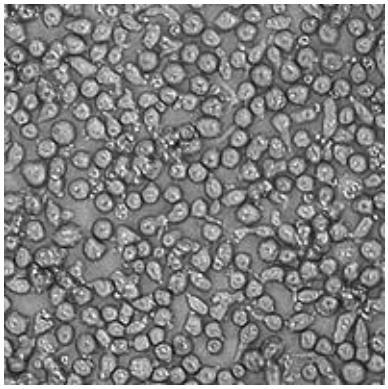
Origin: dog, kidney.
Proc.Soc.Exp.Biol.Med. 1958. 98: 574.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6 , optimal population density 1.0-3.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 78, variability in the range between 75-83 chromosomes, modal number of chromosomes 78-80, number of markers - 1-2 large submetacentric chromosomes, some cells have 1-2 middle meta- or submetacentric chromosomes (routine dye), number of polyploid cells 0.6%.
Plating efficiency: 35%.
Other properties: virus susceptibility: vesicular stomatitis, vaccinia, Coxsackie B-5, reovirus 2, 3; adenovirus 4, 5; influenza A, B, C; carnivorous plague, arboviruses, arenaviruses, infectious canine hepatitis, swine vesicular exanthema.
Applications: virology, biotechnology, cell biology.
Collections: ATCC CCL 34; ECACC 84121903; 85011435; MWIIW; ESCC; SPBIC.

MDCC-MSB1

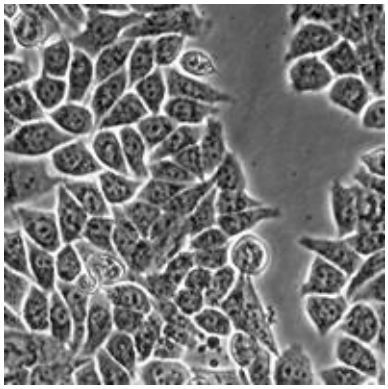
Origin: chicken, lymphoblastoma.
Submitted from Fridrich Loeffler Institute, Germany.
Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - optimal population density $2.0x10^5$ cells/cm^2
cryoconservation - growth medium, 10% DMSO, $5.0\text{-}6.0x10^6$ cells/ml in ampule



Viability after cryoconservation: 96% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Applications: cell biology
Collections: SPBIC.

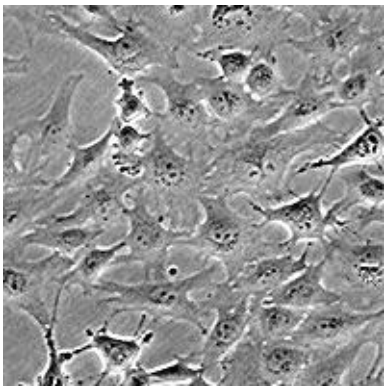
MH-22a

Origin: mouse C3HA, hepatoma.
Bull.Exp.Biol.Med. Russ. 1972. 5: 94-95; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 98% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological, isoenzymological (LDH and G6PD) and immunofluorescent analysis
Karyology: 2n= 40, variability in the range between 50-60 chromosomes, modal number of chromosomes 55, number of markers - 2 large and middle submetacentric chromosomes, some cells have middle telocentric chromosome with secondary constriction (routine dye).
Tumorigenicity: tumorigenic in syngeneic animals
Other properties:
virus susceptibility: adenovirus 6.
Transferrin synthesis
Applications: tumorigenicity, cell biology.
Collections: SPBIC.

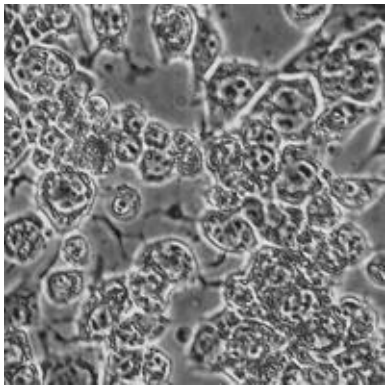
Mv 1 Lu (NBL-7)



Origin: mink, lung.
Virology 1974. 60: 282-287.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule
Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyologiical analysis
Karyology: 2n= 30, variability in the range between 24-32 chromosomes, modal number of chromosomes 30, pseudodiploid, number of markers - 1 dicentric in some cells (routine dye).
Plating efficiency: 5%.
Other properties: virus susceptibility: herpes simplex; reovirus 3; vesicular stomatitis; vaccinia; pseudorabies; IBR; murine sarcoma virus, feline sarcoma virus.
Applications: virology.
Collections: ATCC CCL 64; ECACC 88050503; MWIIW; SPBIC.

NB41A3

Origin: mouse A, neuroblastoma, clone of C1300. Proc.Natl.Acad.Sci. 1962. 48: 1184-1190.
Morphology: neuroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - F10
serum - HS 12.5%, FBS 2.5%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2, optimal population density 3.0-5.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 2.0x10^6 cells/ml in ampule

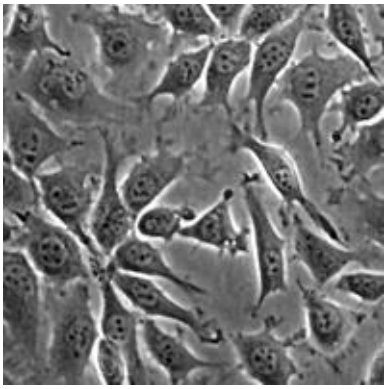


Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and immunofluorescent analysis
Karyology: 2n= 40, variability in the range between 67-99 chromosomes without modal number, number of markers - 6-10 metacentrics (routine dye).
Plating efficiency: 80%.
Other properties: virus susceptibility: vesicular stomatitis, herpes simplex, vaccinia. Acetylcholinesterase, choline acetylase and tyrosine hydroxylase production.
Applications: tumorigenicity, enzymology, virology, differentiation.
Collections: ATCC CCL 147; ECACC 89121405; SPBIC.

NCTC clone 929

Origin: mouse C3H/An, connective, clone of cell line L.
J.Natl.Cancer Inst. 1943. 4: 165; J.Natl.Cancer Inst. 1948. 9: 229; J.Natl.Cancer Inst. 1951. 12: 133; 1953. 14: 655; Cancer Res. 1956. 16: 162; J.Biophys.Biochem.Cytol.1958. 4: 567; Natl.Cancer Inst.Monogr.1962. 7: 147; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world

Morphology: fibroblast-like



Mode of cultivation: monolayer

Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 1.0-3.0x10^4 cells/cm^2
cryoconservation - growth medium, 5 – 10% DMSO, 1.0-1.5x10^6 cells/ml in ampule

Viability after cryoconservation: 80-90% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological, isoenzymological (LDH and G6PD) and immunofluorescent analysis

Karyology: 2n= 40, variability in the range between 58-66 chromosomes, modal number of chromosomes 64-65, number of markers - 29 including 1 polycentric (differential dye), number of polyploid cells 1%.

Plating efficiency: 40%.

Tumorigenicity: tumorigenic in syngeneic animals

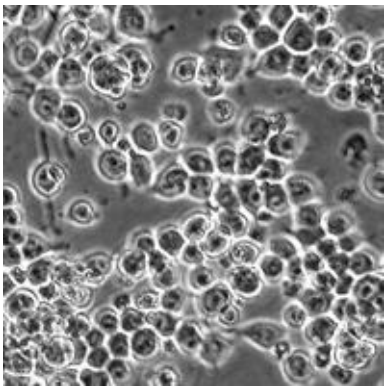
Other properties: virus susceptibility: pseudorabies, vesicular stomatitis, paramixovirus, togaviruses, herpes simplex.
Susceptibility to chlamidia

Applications: tumorigenicity, differentiation, virology, biotechnology.

Collections: ATCC CCL 1; ECACC 88102702; MWIIW; SPBIC; SPBII.

Neuro-2a

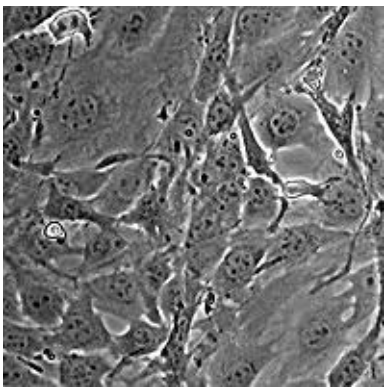
Origin: mouse A (albino), neuroblastoma.
J.Cell Biol. 1969. 43: 69A; Proc.Natl.Acad.Sci. 1970. 65: 129-136.
Morphology: neuron-like and amoeboid-like.



Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:2 - 1:4, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 8%DMSO, 2.0-3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 91% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological, isoenzymological (LDH and G6PD) and immunofluorescent analysis
Karyology: 2n= 40, variability in the range between 70-96 chromosomes without modal number, 32% of cells have middle metacentric chromosome with gap (routine dye), each cell have 1-7 microchromosomes.
Plating efficiency: 60%.
Tumorigenicity: tumorigenic in syngeneic animals.
Other properties:
Virus susceptibility: vesicular stomatitis (Indiana), herpes simplex.
Microtubular protein synthesis
Applications: differentiation, tumorigenicity, neurophysiology, cytoskelet study.
Collections: ATCC CCL 131; ECACC 89121404; SPBIC.

NIH/3T3

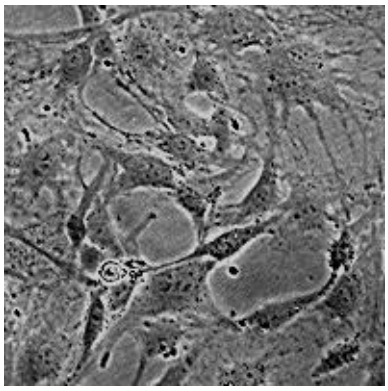
Origin: NIH/Swiss mouse, embryo.
J. Virology 1960. 4: 549-553; J.Cell Biol. 1963. 17: 299; J. Virology 1969. 4: 549-556; Science 1973. 182: 1151; Cell 1979. 16: 63-75; and 347-356.
Morphology: fibroblast-like
Mode of cultivation: monolayer



Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:8, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0-1.5x10^6 cells/ml in ampule
Viability after cryoconservation: 93% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 65-73 chromosomes, modal number of chromosomes 70, number of markers - 1 (routine dye), 1-2 microchromosomes in the most cells, number of polyploid cells 1.2%.
Other properties: virus susceptibility: vesicular stomatitis, herpes simplex, vaccinia, murine leukemia, murine sarcoma virus, N-tropic oncornaviruses C.
Contact inhibition of growth (by density 8-10x10^4 cells/cm^2).
Applications: tumorigenicity, genetical transformation, cell biology.
Collections: ATCC CRL 1658; DSM ACC 59; MWIIW; SPBIC.

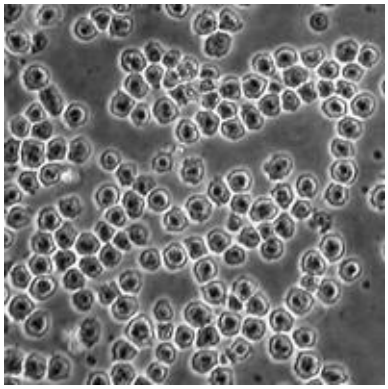
NRK-49F

Origin: rat, kidney.
J.Cell Physiol. 1978. 94: 35-342.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - F10
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6
cryoconservation - growth medium, 10% DMSO, 1.0-2.0x10^6 cells/ml in ampule



Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 42, variability in the range between 37-43 chromosomes, modal number of chromosomes 40, number of markers - 1 (routine dye), some cells have 1-2 dicentrics and 1-4 microchromosomes, number of polyploid cells 14%.
Other properties : virus susceptibility: murine sarcoma virus.
EGF receptors.
Applications: genetical transformation, cell biology.
Collections: ATCC CRL 1570; ECACC 86101301; SPBIC.

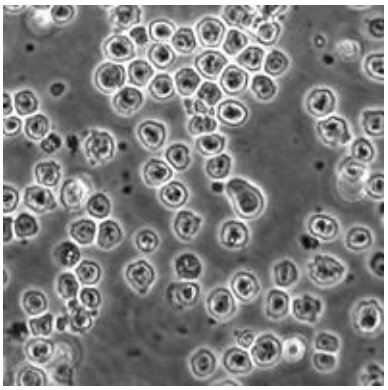
NSO/1



Origin: mouse, clone of myeloma P3X63Ag8.
Methods Enzymol. 1981. 73B: 3.
Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - DMEM/F12
serum - FBS 10%
subculture procedure - optimal population density 5.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 5.0-6.0x10^6 cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 40-65 chromosomes, modal number of chromosomes 60, number of markers - 2-5 meta- and submetacentric chromosomes (routine dye), number of polyploid cells 2.8%.
Other properties: does not synthesize Ig.
Resistant to 8-azaguanine
Applications: fusion partner for hybridomas.
Collections: MWIIW; SPBIC.

P3/NS1/1-Ag4-1(NS-1)

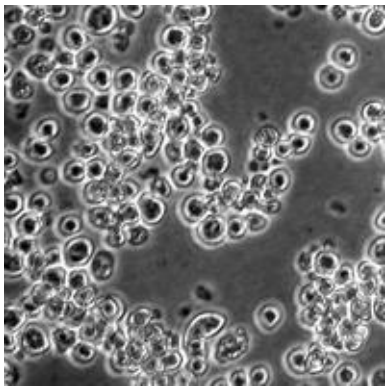
Origin: mouse BALB/c, myeloma, clone of P3X63Ag8.
Exp. Cell Res. 1970. 60:61; J. Mol. Biol. 1974. 90: 691; Eur. J. Immunol. 1976. 6: 511.



Morphology: lymphoid
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure optimal population density 1.0-5.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 5.0x10^6 cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Other properties: does not secrete Ig.
Resistant to 8-azaguanine
Applications: fusion partner for hybridomas, tumorigenicity.
Collections: ATCC TIB 18; DSM ACC 145; ECACC 85011427; MWIIW; SPBIC.

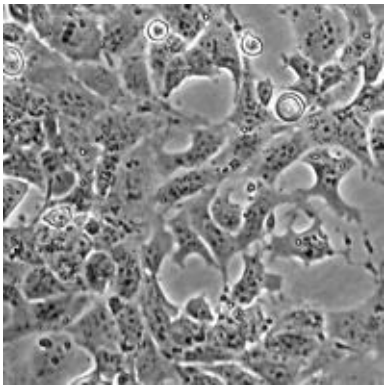
P3X63Ag8.653

Origin: mouse BALB/c, myeloma, clone of P3X63Ag8.
J.Immunol. 1979. 123: 1548.
Morphology: lymphoid
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10
subculture procedure optimal population density 3.0-5.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 5.0-6.0x10^6 cells/ml in ampule



Viability after cryoconservation: 71% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH and G6PD) analysis
Karyology: 2n= 40, variability in the range between 46-61 chromosomes, modal number of chromosomes 51-53, number of markers - 1-3 meta- and submetacentric chromosomes (routine dye), number of polyploid cells 2%.
Other properties: does not secrete Ig.
Resistant to 8- azaguanine
Applications: fusion partner for hybridomas, tumorigenicity.
Collections: ATCC CRL 1580; ECACC 85011420; DSM ACC 43; MWIIW; SPBIC.

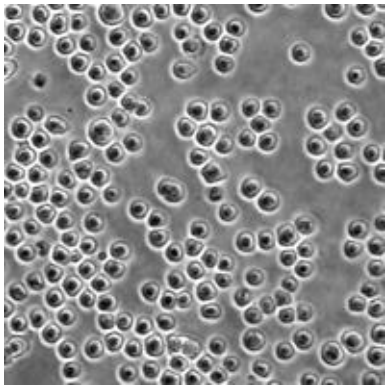
Origin: mouse C3H/He, teratocarcinoma.
Dev. Biol. 1982. 89: 503-508; J. Cell Biol. 1982. 94: 253-262; Nature 1982. 299: 165-167.



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - αMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6
cryoconservation - growth medium, 5% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 75% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=40, normal mouse karyotype (40, XY).
Plating efficiency: high efficiency in medium containing 10^{-4}M β-mercaptoethanol.
Other properties: can be induced to differentiate into neuronal and glial cells in the presence of retinoic acid; in the presence of DMSO differentiate into cardiac and skeletal muscle.
Applications: differentiation.
Collections: ATCC CRL 1825; SPBIC.

P388 D_1

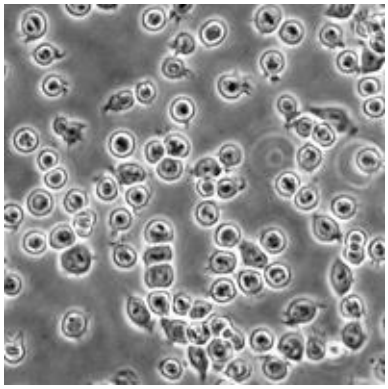
Origin: mouse DBA/2, lymphoid neoplasm induced by methylcholanthrene. Am.J.Pathol. 1957. 33: 603.



Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density $1.0x10^5$ cells/ml
cryoconservation - growth medium, 10% DMSO, $3.0\text{-}4.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 38-44 chromosomes, modal number of chromosomes 41-42, number of markers - 6 (differential dye), the most cells have 3-5 microchromosomes including double minute chromosomes, number of polyploid cells 4.5%.
Plating efficiency: the cells cannot be plated.
Tumorigenicity: tumorigenic in nude mice
Applications: cell biology, tumorigenicity.
Collections: ATCC CCL 46; SPBIC.

P-815

Origin: mouse DBA/2, mastocytoma induced by methylcholanthrene. J.Natl.Cancer Inst. 1957. 18: 587; Cell Immunol. 1973. 9: 60; J.Immunol. 1973. 111: 389; J.Immunol. 1977. 119: 950; Nature 1974. 249: 49; Biochem.Biophys.Res.Commun. 1974. 61: 1268; Cancer Res. 1977. 37: 546.



Morphology: round cells

Mode of cultivation: suspension

Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - optimal population density 3.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 5.0x10^6 cells/ml in ampule

Viability after cryoconservation: 70% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

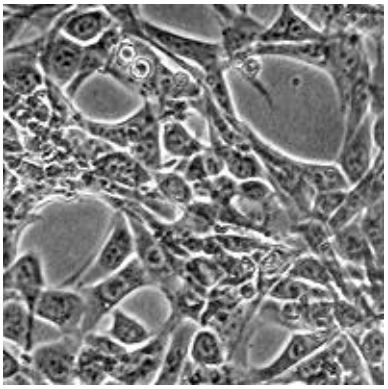
Species: karyological and isoenzymological (LDH, G6PD) analysis

Other properties: lysozyme synthesis

Applications: target cell for cytotoxic T-cell assays, immunology, cell biology.

Collections: ATCC TIB 64; DSM ACC1; SPBIC.

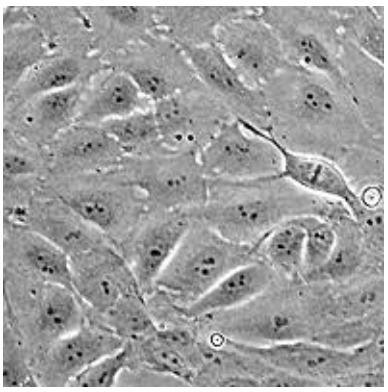
Origin: mouse, embryo. This line was derived from NIH/3T3 TK^- cells by cotransfection with retrovirus packaging construct DNA (pPAM3) and the herpes simplex virus thymidine kinase (TK) gene.
Mol.Cell Biol. 1986. 6: 2895-2902; N.Engl.J.Med. 1990. 232: 570-578.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:4, optimal population density 3.0-5.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Applications: genetical transformation, virology.
Collections: ATCC CRL 9078; ECACC 89032007; SPBIC.

PK(15)

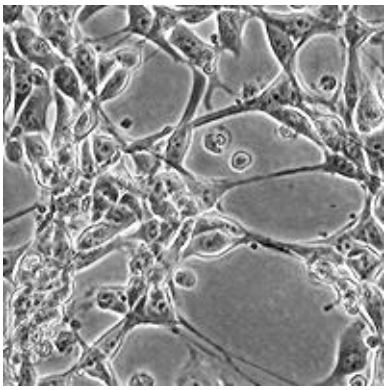
Origin: pig, kidney.
Am.J.Vet.Res. 1968. 29: 153; J.Genet.Virol. 1971. 10; 195-198; Vet.microbiol. 1982. 7: 515.



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:5, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 38, variability in the range between 30-38 chromosomes, modal number of chromosomes 37, number of markers - 1 (routine dye), number of polyploid cells 5.0%.
Plating efficiency: 2% (ATCC)
Other properties: virus susceptibility: vesicular stomatitis (Indiana); vaccinia; reovirus 2, 3; adenovirus 4, 5; Coxsackie B-2, B-3, B-4, B-5, B-6; pseudorabies; swine fever virus, swine pestis virus
Applications: virology.
Collections: ATCC CCL 33; ECACC 85022110; SPBIC.

Psi 2 BAG α

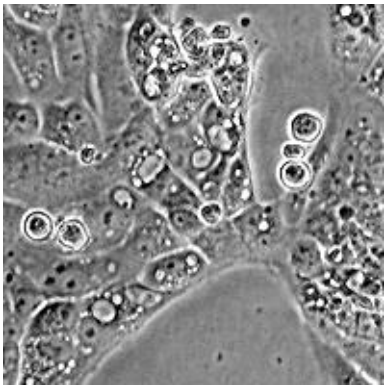
Origin: mouse NIH/Swiss, embryo.
Proc.Natl.Acad.Sci. 1987. 84: 156-160; Nature 1987. 328: 131-136.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 97% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 63-74 chromosomes, modal number of chromosomes 70, number of markers - 1 telocentric chromosome with secondary constriction (routine dye), 1 microchromosome, number of polyploid cells 1.5%.
Other properties: this line produces a vector (BAG) that can infect mouse and rat and transduce the bacterial β galactosidase gene.
Applications: genetical transformation.
Collections: ATCC CRL 9560; SPBIC.

Pt K1 (NBL-3-11)

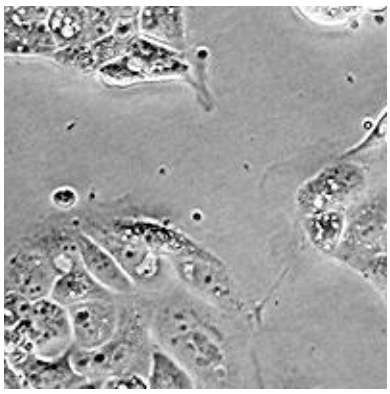
Origin: rat kangaroo, kidney.
Nature 1962. 194: 406; Cytogenetics 1964. 3: 19.; Cytology (Russ) 1988.30: 732-738; Cytology (Russ) 1996. 38: 75-84



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:3, optimal population density 4.0-5.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule
Viability after cryoconservation: 98% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH and G6PD) analysis
Karyology: 2n= 12, variability in the range between 10-17 chromosomes, modal number of chromosomes 11 without markers, one small metacentric of the diploid female karyotype is absent, number of polyploid cells 2%.
Plating efficiency: 2%.
Other properties: virus susceptibility: vesicular stomatitis (Indiana)
Applications: cell biology, cytogenetics, virology.
Collections: ATCC CCL 35; ECACC 91013163; MWIIW; SPBIC.

PTK1 (NBL-3-17)

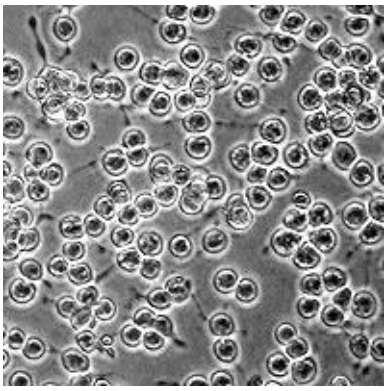
Origin: rat kangaroo, kidney, subline of Pt K1 (NBL-3)
Cytology (Russ.)1988. 30: 732-738; Cytology (Russ.) 1996. 38: 75-84; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio1:2 - 1:3
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 88% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 12, variability in the range between 15-19 chromosomes, modal number of chromosomes 17 without markers, hypotriploid, one small metacentric of the triploid female karyotype is absent, number of polyploid cells 3%.
Applications: cell biology, cytogenetics.
Collections: SPBIC.

RBL-1

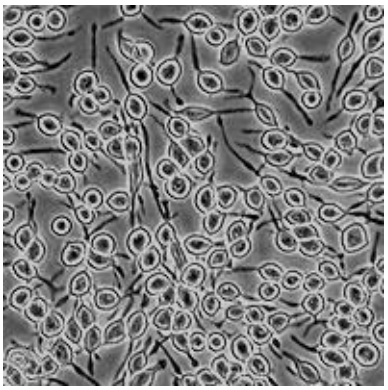
Origin: rat, leukemic basophilic granulocyte.
Nature New Biol. 1973. 244: 73 – 76; J.Exp.Med. 1974. 139: 600 – 616.
Morphology: lymphoblast-like
Mode of cultivation: semisuspension
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach without enzymatic treatment by light shaking of flask, split ratio 1:5
cryoconservation - growth medium, DMSO 5 – 10%, 1.0-3.0x10^6 cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 42, variability in the range between 52-75 chromosomes, modal number of chromosomes 71-74, number of polyploid cells 0.2%.
Other properties: expression of FcERI (Fc of IgE);
secretion of hystamin.
Applications: cell biology, differentiation.
Collections: ATCC CRL 1378; ECACC 86061001; SPBIC.

RBL-2H3

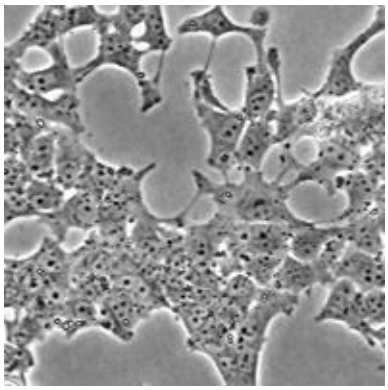
Origin: rat, leukemia basophilic chemically induced, peripheral blood.
Nature New Biol. 1973. 244: 73 – 76; J.Exp.Med. 1974. 139: 600 – 616.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 15% (heat inactivated – ATCC).
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4 - 1:8
cryoconservation - growth medium, 5 – 8% DMSO, $2.0x10^6$ cells/ml in ampule



Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Other properties: expression of FcERI (Fc of IgE);
secretion of hystamin;
the cells capable to degranulation (as distinct from cell line RBL-1), i.e. to release a number of substances, in particular, histamine, associated with immune reactions.
Applications: cell biology, differentiation.
Collections: ATCC CRL 2256^{tm}; SPBIC.

RIN m 5F

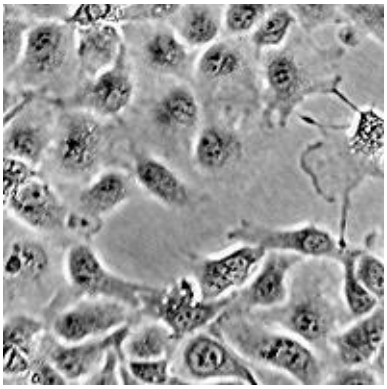
Origin: rat, insulinoma (pancreatic β-cells)
J Biol.Chem. 1996. 271: 8307-8312.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3
cryoconservation - growth medium, 8–10% DMSO, 1.0-2.0x10^6 cells/ml in ampule



Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Other properties: insulin production
Applications: endocrinology, cell biology.
Collections: SPBIC.

RK13

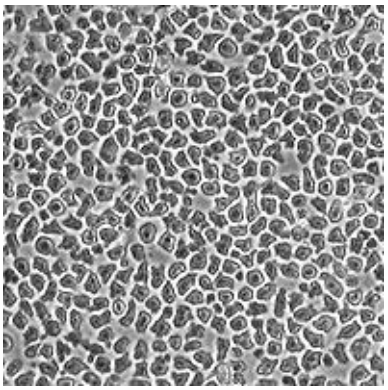
Origin: rabbit, kidney.
Lancet 1963. 2: 640; J. Pathol. Bacteriol. 1968. 95: 377; Annali Sclavo 1982. 24: 336.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:6, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 5 – 10% DMSO, 1.0-3.0x10^6 cells/ml in ampule



Viability after cryoconservation: 80-90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH and G6PD) analysis
Karyology: 2n=44, variability in the range between 62 -68 chromosomes, modal number of chromosomes 66 , number of markers -1 large acrocentric chromosome (routine dye), number of polyploid cells 2,6%.
Plating efficiency: 39 %.
Other properties:v irus susceptibility: rubella, virus B, herpes simplex, pseudorabies, vaccinia, rabbitpox, myxoma, Simian adenovirus, vesicular stomatitis, Semliki Forest virus, human enteroviruses, bovine rhynotracheitis.
Applications: virology.
Collections: ATCC CCL 37; ECACC 88062427; MWIIW; SPBII; ESCC; SPBIC.

RLC

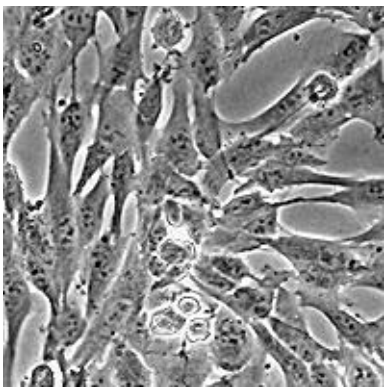
Origin: rat, lymphosarcoma induced by 3,3'-dichlorbenzedine.
Exp.Oncology (Russ.) 1980. 2: 40.
Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - EMEM
serum - FBS 10%
subculture procedure - optimal population density 5.0-7.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 3.0-4.0x10^6 cells/ml in ampule



Viability after cryoconservation: 68% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: immunofluorescent and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 42, variability in the range between 34-58 chromosomes, modal number of chromosomes 38-42.
Tumorigenicity: tumorigenic in syngeneic animals
Other properties: retrovirus C production
short mitotic cycle (12 human)
Applications: tumorigenicity, immunology, virology.
Collections: SPBIC.

SIRC

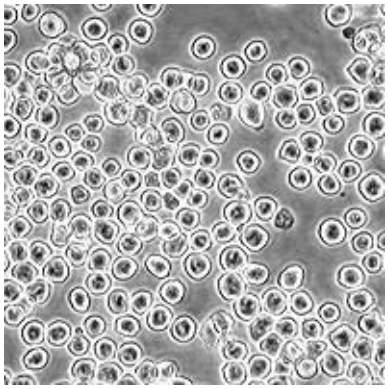
Origin: rabbit, cornea.
Science 1965. 149: 633; Proc.Soc.Exp.Biol.Med. 1966. 122: 783; Proc.Soc.Exp.Biol. Med. 1967. 125: 1271.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
other components - NEAA 1%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:4, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Karyology: 2n= 44, variability in the range between 51-80 chromosomes, modal number of chromosomes 66, number of markers - 3-4 (routine dye), number of polyploid cells 2.5%.
Plating efficiency: less than 1%.
Other properties: virus susceptibility: rubella.
Applications: virology, cell biology.
Collections: ATCC CCL 60; ECACC 89090404; ICLC AL 96001; MWIIW; SPBIC.

Sp2/0-Ag14

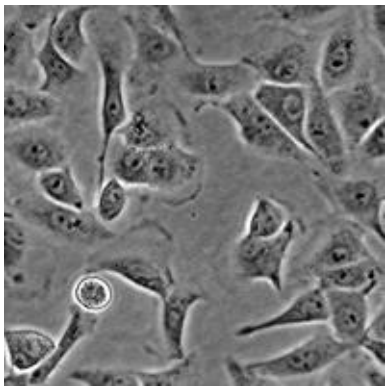
Origin: mouse, myeloma, hybrid of P3X63Ag8 and mouse BALB/c spleen cells. Nature 1978. 276: 269; J.Immunol. 1981. 126: 317-321.



Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density 3.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 5.0-6.0x10^6 cells/ml in ampule
Viability after cryoconservation: 92% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 60-66 chromosomes, modal number of chromosomes 63-64, number of markers - 33 (differential dye).
Plating efficiency: 47%.
Tumorigenicity: tumorigenic in syngeneic animals
Other properties: does not secrete Ig
Resistant to 8-azaguanine.
Applications: fusion partner for hybridomas.
Collections: ATCC CRL 1581, CRL 8287; DSM ACC 146; ECACC 86072401; SPBIC.

SPEV

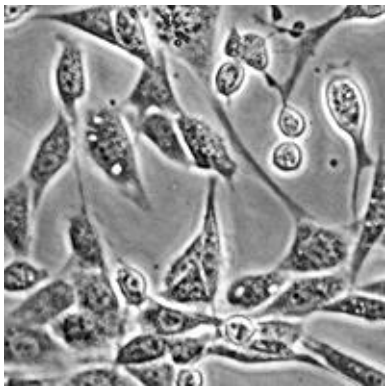
Origin: pig, embryo, kidney
Abstr. 2nd Sci Conf. MNIIVP; (Russ.) 1960. 57; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:5-1:10, optimal population density $0.9x10^5$ cells/ml.
cryoconservation - growth medium,10% DMSO, $1.0\text{-}1.5x10^6$ cells/ml in ampule



Viability after cryoconservation: 90-96% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 38, variability in the range between 39-42 chromosomes, modal number of chromosomes 40, number of markers - 1 large submetacentric chromosome (routine dye), number of polyploid cells 1,6%
Plating efficiency: 80%.
Other properties: virus susceptibility: arbovirus A and B; entero-, rota, coronaviruses of swine, rhinopneumonia of equine, influenza; encephalomyocarditis of swine, foot and mouth disease.
Presence of leukoviruses: Meson-Pfaizer-like and oncornaviruses.
Applications: virology, cell biology
Collections: MWIIW, SPBII, SPBIC, ESCC, MWIEV

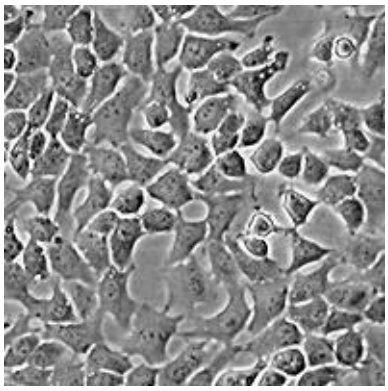
STO

Origin: mouse, embryonic fibroblasts, the line derived from continuous mouse line of SIM.
Proc. Natl. Acad. Sci. USA 1975. 72: 1441 – 1445; Roche Symposium on Teratomas and Differentiation, pp. 169 – 187, Sherman and Salter, eds.Academic Press, New York, 1975; Cell 1975. 6: 467 – 474; Dev. Biol. 1977. 61: 230 – 244.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:8, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, DMSO 5%, 1.0-1.5x10^6 cells/ml in ampule



Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 40, variability in the range between 55-65 chromosomes, modal number of chromosomes 60-62, number of markers - 2 (routine dye), 1-2 microchromosomes in the most cells, number of polyploid cells 7.0 %.
Other properties: resistance to 6-thioguanine and ouabain.
Sensitive to HAT medium and is HPRT negative.
Applications: cell biology, the cell line is used routinely to prepare feeder layder by irradiation or mitomycin C treatment in particular, for cultivation embryonic stem cells.
Collections: ATCC CRL 1503; ECACC 85061804; SPBIC.

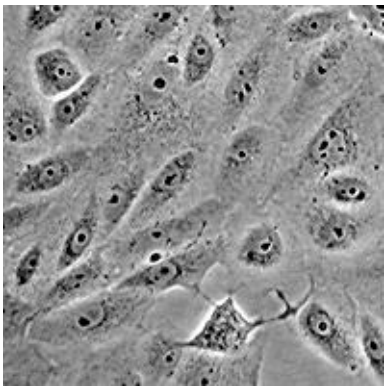
Origin: Chinese hamster, lung
J.Cell Biol.1967.34:684; Mol. Cell Biol. 1987. 7 :4218; Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4-1:8, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0-2.0x10^6 cells/ml in ampule



Viability after cryoconservation: 88 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 22, variability in the range between 17-23 chromosomes, modal number of chromosomes 21, number of markers 11 (differential dye), number of polyploid cells 6.0%
Plating efficiency: 58 %.
Other properties: the cells have very short G_1 phase of mitotic cycle
Applications: cell biology, proliferation mechanisms, somatic cell genetics, transformation.
Collections: ECACC 86041102, SPBIC.

Vero

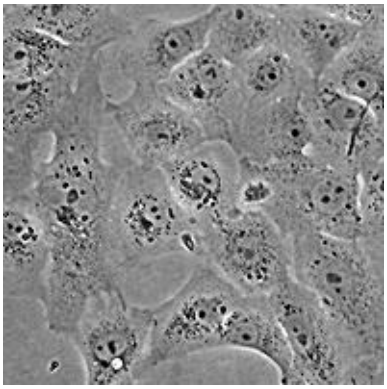
Origin: African green monkey, kidney.
Nippon Rincho 1963. 21: 1209; Arch. GVS Virusforsch. 1969. 27: 379.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:2), split ratio 1:3-1:10, optimal population density 1.0-3.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO 1.0-2.0x10^6 cells/ml in ampule



Viability after cryoconservation: 77 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD, nucleoside phosphorylase) analysis
Karyology: 2n=60, variability in the range between 53-60 chromosomes, modal number of chromosomes 57-58, number of markers -3 (routine and differential dye, C banding), number of polyploid cells 2%
Plating efficiency: 24 %.
Other properties: virus susceptibility: ortomixoviruses (influenza); Getah, Ndumu, Pixuna, Ross River, Semliki, Paramaribo, Kokobera,Modoc, Murutucu, Germiston, Guaroa, Pongola, Tacaribe Arboviruses; bovine leucosis; bluetongue; adenovirus 12; paramixoviruses (parainfluenza 1 and 4, measles, respir.syncytial virus) ; poliovirus 3; rubella; African swine fever virus; reoviruses; herpes simplex; vesicular stomatitis; echoviruses; SV 40; SV 5.
Isoenzymes: LDG, G6PD, A, typical for primate cells.
Applications: virology, cell biology.
Collections: ATCC CCL81; ECACC 84113001, 88020401; ICLC ATL 95005; MWIIW; SPBII; ESCC; SPBIC, MWIEV.

Vero 76

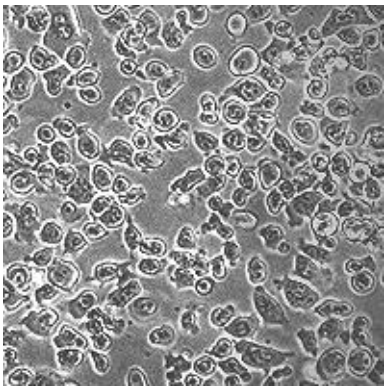
Origin: African green monkey, kidney, subline of Vero.
Vero cells - Origin, properties and biomedical applications. Tokyo: Soft Science Publications. 1988. 26-29.



Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:5 - 1:7, optimal population density 1.0-3.0x10^4 cells/cm^2
cryoconservation - growth medium, 10 %DMSO, 2.0x10^6 cells/ml in ampule
Viability after cryoconservation: 90 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=60, variability in the range between 53-60 chromosomes, modal number of chromosomes 56-57, number of markers - 1 (routine dye), number of polyploid cells 9%.
Other properties: virus susceptibility: haemorrhagic fever viruses, Ebola.
Applications: virology, cell biology.
Collections: ATCC CRL 1587; ECACC 85020205; SPBIC.

Wehi-3

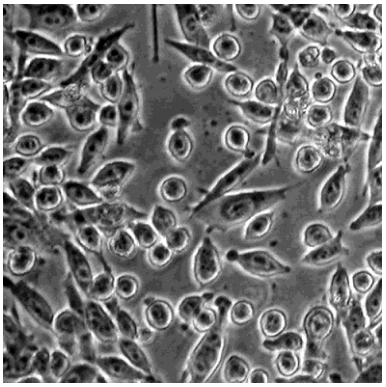
Origin: mouse BALB/c, myelomonocytic leukemia.
J.Exp.Med. 1976. 143: 1528-1533; Cancer Res. 1977. 37: 546-550; J.Immunol. 1977. 119: 950-954; J.Exp.Med. 1981. 154: 1419-1431.



Morphology: macrophage-like
Mode of cultivation: semisuspension
Conditions for cultivation: medium - Iscove's MDM
serum - FBS 10%
other components - 2-mercaptoethanol 10^{-5}M
subculture procedure - optimal population density 1.0-5.0x10^5 cells/ml
cryoconservation - growth medium, 8%DMSO, 3.0-4.0x10^6 cells/ml in ampule
Viability after cryoconservation: 70% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 72-83 chromosomes, modal number of chromosomes 75-78, number of markers - 4 metacentric chromosomes (routine dye), number of polyploid cells 0.8%.
Other properties: lysozyme, IL-3 and granulocyte CSA production.
Ig and complement receptors.
Applications: immunology, cell biology, chemotherapeutic agents studies.
Collections: ATCC TIB 68; SPBIC.

Wehi 164

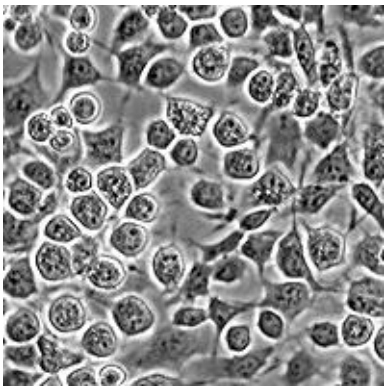
Origin: mouse BALB/c, fibrosarcoma induced by methylcholathrene. Proc.Soc.Exp.Biol.Med. 1973. 144: 813; J.Natl.Cancer Inst. 1984. 72: 23-29; Blood 1985. 65: 8-14.



Morphology: fibroblast-like and lymphoblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2-1:3, optimal population density 2.0-4.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 1.0x10^6 cells/ml in ampule
Viability after cryoconservation: 70% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Other properties: the line is highly sensitive, after pretreatment with actinomycin D, to human cytotoxic monocytes, to human TNF and to lymphotoxin.
Applications: cytotoxicity, tumorigenicity, cell biology.
Collections: ATCC CRL 1751; ECACC 87022501; DSM (ACC 25); ICLC ATL 96004; SPBIC.

XCp

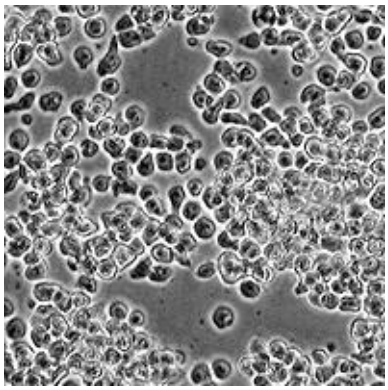
Origin: rat Wistar, sarcoma, subline of cell line XC derived from sarcoma, induces in vivo by Raus sarcoma
Submitted from Cardiological Scientific Centre. Moscow. 1979



Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4 - 1:6
cryoconservation - growth medium, 10% DMSO, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 98% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and immunofluorescent analysis
Karyology: 2n=42 , variability in the range between 40-45 chromosomes, modal number of chromosomes 42-43, number of markers -10 (differential dye), number of polyploid cells 70%
Plating efficiency: 68 %
Applications: cell biology
Collections: SPBIC.

YAC-1

Origin: mouse A/Sn, lymphoma induced in vivo by MLV.
Eur. J. Immunol. 1975. 5: 112-117.
Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure optimal population density 3.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 4.0-6.0x10^6 cells/ml in ampule



Viability after cryoconservation: 80-90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 40-47 chromosomes, modal number of chromosomes 43 without markers (routine and differential dye, C-banding), number of polyploid cells 2.5%.
Other properties: this cell line is sensitive to the cytotoxic activity of NK cells. The cells not discovered of markers B- and T-lymphocytes (MWIIW).
Applications: NK assay, cytotoxicity.
Collections: ATCC TIB 160; ECACC 86022801; DSM ACC 96; MWIIW; SPBIC.