Russian collection cell cultures (RCCC)

Abbreviations

6MPr - 6-mercaptopurine resistensive
8Agr - 8-azaguanine resistensive
Ad - adenovirus
ADH - alcohol dehydrogenase
AK - adenylate kinase
AKTG - adrenocorticotrophin
ATCC - American Type Culture Gollection
ATP - adenosine 5'-triphosphate
BAP - benzylaminopurine
bFGF - basic fibroblast growth factor
BLV - bovine leukosis virus
BME - basal medium Eagle
BS - bovine serum
BUdR - bromodeoxyuridine
BVD - bovine virus diarrhea
CEA - carcinoembryonic antigen
CMV - cytomegalovirus
CPV - cytoplasma polyhedrosis virus
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
DVX - Drosophila X virus
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
EMPH-d - enzymatic muscle protein hydrolyzate (dry)
ES D - esterase - D
ESCC - Ekaterinburg collection of continuous somatic cells of vertebrates
ESs - ecdysterone sensitive
FBS - fetal bovine serum
FGF - fibroblast's growth factor
Fuh - fumarase
G6PD - glucose-6-phosphate dehydrogenase
GLO - glyoxylase
Gpdh - glycerophosphate dehydrogenase
GPRT(-) - guanine phosphoribosile transferase (-)
HH - hemohydrolyzate
HIV - Human immuno deficiency virus
HLA - Human leucocyte antigen
HRC - Collection of pRi T-DNA transformed roots of higher plants
HS - horse serum

HSV - herpes simplex virus
HTLV - human T-cell leukemia virus
IAA - indolylacetic acid
IBR - infectious bovine rhynotracheitis
ICDG - isocitrate dehydrogenase
ICLC - Interlab cell line collection
Ig - immunoglobulin
IL - interleukin
LAH - lactalbumin hydrolyzate
LDH - lactate dehydrogenase
MDG1 - mobile disperged gene - one
Me - malic enzyme
MLV - Moloney leukemia virus
M-MSC - Moloney murine sarcoma virus
MNNG - methyl - N - nitroso-guanidine
MuMTV - mouse mammary tumor virus
MWIEV - Russian research Inst. of Experimental veterinary
MWIGG - N.I.Vavilov Institute of General Genetics
MWIIW - D.I. Ivanovsky Institute of virilogy
MWPH - milk whey protein hydrilyzate
NAA - naphthyl acetyc acid
NBCS - newborn calf serum
NDV - Newcastle disease virus
NEAA - non-essential amino acids
NK - naturally killer
NPP - norepinephrine
PEP - peptidase
PGD - phosphogluconate degydrogenase
PGM - phosphoglucomutase
PHA - phytohemagglutinin
PTH - parathyroid hormone
RCPC - All-Russia collection of the higher plant cells
RNA - ribonucleic acid
RS - Rauss sarcoma
RSV - respiratory syncytial virus
SF - Spodoptera fugiperda virus
SOD - superoxide dismutase
SPBIC - St.Peterburg Institute of Cytology
SPBII - St.Peterburg Institute of Influenza
STR - short tandem repeats
SV - simian virus
TBE - tick-borne encephalitis
TDV - Teshen’s disease virus
TK - timidine kinase
TL - thymus leukemia
VCA - viral capsid antigen
VS - vesicular stomatitis

Russian cell culture collection of vertebrates (RCCC V)

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Species index

SPECIES	ORGAN or TISSUE	NAME OF CELL LINE
Cat		
Felis catus	Fibroblasts M-MSV- transformed	SS81
	Kidney	FK-91
		CRFK
	Spleen	FS
Cattle		
Bos taurus	Blastocyst, 8-days embryo	ESb1
	Heart coronary vessels, embryo	KST
	Kidney	MDBK (NBL-1)
		MDBK-VIEV
		Taurus-1
	Lung, embryo	LEK
		LEK VIEV-90 ref
	Thymus, embryo	TEK
	Tongue	PYAEK
	Trachea, embryo	FBT
Chicken		
Gallus gallus	Lymphoblastoma	MDCC-MSB1
	Ovarian lymphoma	LOC
Dog		
Canis familiaris	Kidney	MDCK (NBL-2)
		MDCK, clone L-9
Dwarf goat	Kidney	PKK-FGM-10
Equine		
Equus caballus	Skin	EKL
Fish		
Carp *(Oncorhynchus tshawytscha)*,	Epithelial papilloma	EPC
Carp *(Cyprinus carpio)*	Ovary	ICO
Oncorhynchus keta *(Oncorhynchus tshawytscha)*	Heart	SNN-1
	Embryon	CHSE-214
Rainbow trout (Oncorhynchus mykiss)	Gonade	OMG
		RTG-2

Sturgeon white (Acipenser transmontanus)	Skin	WSSK-1
Sturgeon siberian	Fin Fin Fin	SSF-1(VIEV) SSF-2(VIEV) SSF-3(VIEV)
Tolstoganova black *(Pimephales promelas)*caudal peduncle	Caudal peduncle.	FHM
Goat	Gonade Ovary	G-91 YADK-04
Hamster Chinese *Cricetulus griseus*	Fibrosarcoma Lung Ovary	B14-150 A-238 V-79 CHO-K1 CHO-K1v DXB-11
Hamster Syrian *Messocricetus auratus*	Fibroblasts HSV-transformed Fibroblasts spontaneously transformed Kidney	14.012.8.1 EH/A44 EHT BHK-21/ 2-17 BHK-21 clone 13v BHK-21 clone 13 BHK-21/13-02 HaK
Human *Homo sapiens*	Amnion Bladder carcinoma Bladder papillary carcinoma Breast adenocarcinoma Breast carcinoma Burkitt lymphoma	AMN EJ (MGH-U1) T-24 RT-4v MCF-7 BT-474 Hs 578 T Daudi NAMALVA

	P3H3
	Raji
Cervical carcinoma	HeLa gniiem
	HeLa S 3
	HeLa TK^-
	HeLa v
	HeLa-KD
	M-HeLa
	M-HeLa clone 11
Colon adenocarcinoma	Caco-2
	HT-29
Colon, carcinoma	COLO 320 HSR
Duodenum, adenocarcinoma	HuTu 80
Embryonic stem cells	SC5
Epidermoid carcinoma	A 431
Fibroblasts from xeroderma pigmentosum patients, SV 40 virus-transformed	XPA
Fibrosarcoma	HT-1080
Glioblastoma	
	GL-6
	T 98G
Kidney hypernephroma	HN
Kidney	RH
	RH K-13/3
Kidney, carcinoma	OKP-GS
Kidney, embryo	293
	PECh 693/30
Leukemia B-lymphoblastic	CCRF-SB
Leukemia lymphoblastic	T-1387
Leukemia monocytic acute	THP-1
Leukemia myelogenous	KG-1
	K-562
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	FLECH
	FLECh 385/13
	FLECh 985/12
	FLECh 997/11
	FLECh 1097/30
	LECH-4 (81)
Lung, embryo, SV40 transformed	
Lymphoma, histiocytic	U-937
Mammary gland carcinoma	BT-20
Mammary gland carcinoma	ZR-75-1
<u>Mesenchymal stem cells:</u>	
muscle of a limb of the embryo	M-FetMSC
the bone marrow of the embryo	FetMSC
embryonic stem cells	SC5-MSC
the foreskin of a child	FRSN
	FRSN-1
the eyelid's skin of an adult donor	DF-1
	DF-2
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	2T
	Hos (TE85, clone F5)
	MG-63
	U-2 OS
Osteosarcoma, chemically transformed	MNNG-HOS (TE 85, clon F-5)
Ovarian teratocarcinoma	PA-1
Pancreatic adenocarcinoma	Capan-2
	AsPC-1
Pancreatic carcinoma	MIA PaCa-2
	PANC-1
Rectum adenocarcinoma	SW 837
Renal carcinoma	OKP-GS
Rhabdomyosarcoma	A-204v

	Rhabdomyosarcoma, embryo	RD RD-Tv K-92
	Skin-muscular tissue, embryo	ChEF 392/1
	Subcutaneous adipose tissue	ATRC-70
	Tracheal epithelium transfected with pSVori- plasmid	CFTE 29o$^-$
	Uterine leiomyosarcoma	SK-UT-1B
Ibex Asiatic *Capra sibirica*	Kidney	PSGK-60
Mink *Mustela vison*	Lung	Mv 1 Lu (NBL-7)
Monkey african green *Cercopithecus Aethiops*	Kidney	BGM BSC-1 CV-1 Vero Vero (V) Vero 76 Vero C1008
macaque rhesus *Macaca mulatta*	Kidney	LLC-MK2, derivative LLC-MK2, original LLC-MK2, original (ESCC) PO-88
	Kidney, embryo	MA-104
marmoset	Leukocytes EBV-transformed	B 95-8
Mouse *Mus musculus*		
	Brain, tumor	BC3H1
	Connective tissue	A-9 L TomNIIVS L-M (TK$^-$, APRT$^-$) Lk LS LSM NCTC clone 929 NCTC clone 929 (ESCC) TK$^-$ LM (clone 1D)
	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
		SC-1
		STO
	Fibroblasts, embryo, SV40transformed	3T3B-SV40
		3T3-SV 40
	Fibrosarcoma	Wehi 164
	Glioblastoma	EPNT-5
	Hepatoma	BWTG 3
		MH-22a
	Hybridoma, myeloma x splenocytes	A-1, F-5
	Leukemia lymphocytic	L 1210
	Leukemia myelomonocytic	Wehi-3
	Lymphoid neoplasm	P388 D_1
		P388D1, clone P_2
	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)
		PK (15)/ B5
		PK (15)/A11
		PS
		PSP
		RS-88

	Kidney, embryo	
		SPEV
		SPEV-13-D5-TK
		SPEV-17-91
		SPEV-2
		SPEV-F
	Testis	PTP-TK$^-$(410)
		PTPGGRFT$^-$(380)
	Thyroid	DSHCHS
	Intraspecies hybrid culture, pig embryon kidney SPEV-TK$^-$ x pig splenocytes	A4xS
	Hybrid culture, pig kidney SPEV-TK$^-$ x equine lymphocytes.	A4xL
Rabbit		
Oryctolagus cuniculus	Cornea	SIRC
	Intestine	KR-92
	Skin-muscle tissue, embryo	KMEKr-85
	Skin, embryo,	REK
	Intestine, embryo,	KEK-92
	Kidney	PK-82
		PNK-86
		PoK
		RK-13/91
		RK13
	Liver	PchK
	Skin-muscle	DKMEKr-85
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
	Neurinoma, Gasser node	NGUK-1
	Pancreas, insulinoma	RIN m 5F
	Pituitary tumor	GH3
	Sarcoma	JF 1
		XC
		XCp
Saiga		
Saiga tatarica	Kidney	PS-FGM
		SK
		PS/s4
Sheep	Embryon, skin	CEO (KEO)
Ovis aries	Heart	SYA
	Kidney	PO-2
		PO-100-TK$^-$
	Kidney, embryo	FLK
		PEO
		PPEO
	Kidney x sheep splenocytes, hybrid culture	Po-TK$^-$xSO
	Ovine kidney x rabbit lymphocytes, hybrid culture	Po-TK$^-$x LK
	Sheep kidney x β cells of rabbit, hybrid culture.	Po-TK$^-$x βr
Sturgeon white (Acipenser transmontanus)	Skin	WSSK-1
Sturgeon siberian	Fin	SSF-1(VIEV)
	Fin	SSF-2(VIEV)
	Fin	SSF-3(VIEV)

Presented in the passports of human cell lines results of authentication-DNA profile of cell lines (STR) belong to the collection Fund of the SPBIC.

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 (or heat inactivated HS) 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 64, number of markers - 7 (differential dye), number of polyploid cells 4.2% (ATCC).

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.

2T

Origin: human, osteosarcoma.

Int.J.Cancer 1967. 2: 434; Human Heredity 1971. 21: 238; Nature 1976. 264: 60; Tissue Antigens 1978. 11: 279.

Morphology: epithelial-like

Mode of cultivation: monolayer

Conditions for cultivation: medium - BME

serum - FBS 10%

subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:5, optimal population density 1.0x10^5 cells/ml

cryoconservation - BME 70%, FBS 20%, glycerol 10%, 3.0-5.0x10^6 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 and G6PD) analysis
Karyology: 2n= 46, variability in the range between 70-80 chromosomes, modal number of chromosomes 74, number of markers - 1, submetacentric with the second constriction at the long arm (routine dye), the cells have microchromosomes.
Tumorigenicity: tumorigenic
Other properties:
isoenzymes G6PD, B; PGM1, 2.
HLA cell line phenotype A (1, 2); B (12, w40); C (w2).
Not contaminated with Hela cells.
Applications: virology, tumorigenicity.
Collections: MWIIW.

A-204v

Origin: human, rhabdomyosarcoma.
Tissue Antigens 1978. 11: 279.
Morphology: epithelial-like
Mode of cultivation: monolayer /suspension
Conditions for cultivation: medium - EMEM
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3, optimal population density 1.0-2.0x10^5 cells/ml
cryoconservation - EMEM 70%, FBS 20%, glycerol 10%, 3.0-4.0x10^6 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 and G6PD) analysis
Karyology: 2n= 46, variability in the range between 81-95 chromosomes, modal number of chromosomes 87, number of markers - 2 (differential dye - C-banding), specific Hela marker chromosomes not detected (G banding), number of polyploid cells 2.0%.
Tumorigenicity: tumorigenic
Other properties:
virus susceptibility: oncornaviruses in particular leucoviruses.
Isoenzymes G6PD,B; PGM 3,1; PGM 1,1.
HLA cell line phenotype A (1,2); B (8,14); C (w3).
Applications: virology, tumorigenicity, biochemistry.
Collections: MWIIW.

A 431

Origin: human, epidermoid carcinoma
J.Natl.Cancer Inst. 1973. 51: 1417-1423.
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 - F12K, DMEM (SPBIC), BME or EMEM
serum - FBS or BS 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 or glycerol, $1.0\text{-}1.5x10^6$ 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 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% (ATCC)

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.

AMN (AMH)

Origin: human, normal amnion.
Submitted by Orlova T.G. Trudy MRIVP (Russ.), M., 1961. 2: 330.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:4-1:6, optimal population density 0.6-0.8x10^5 cells/ml
cryoconservation - growth medium, 10% glycerol, 1.0-2.0x10^6 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= 46, variability in the range between 51-60 chromosomes, modal number of chromosomes 55-58.
Plating efficiency: 60 %
Other properties:
virus susceptibility: polioviruses 1, 2, 3; Coxsackie A and B; ECHO; human adenoviruses 2, 4, 7.
Applications: virology.
Collections: ESCC

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% (ATCC)
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) (ATCC)

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.

ATRC-70

Origin: human, subcutaneous adipose tissue
Submitted: Savchenkova I.P., Korjikova S.V. Patent № 2354693, 2009 г.
Morphology:. fibroblast-like
Mode of cultivation: monolayer.
Conditions for cultivation: medium - DMEM-LG.
serum - FBS 10%
othrer components - 2mM α-glutamine.
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio: 1:10; optimal population density 2×10^3 cells/cm^2.
cryoconservation - DMEM 60%, serum 30%, DMCO 10%, 3 $x10^6$ 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, immunoassay.
Karyology: modal number of chromosomes 46.
Efficience cloning: 90 %
Tumorigenicity: non tumorigenic.
Другие характеристики:
Finite lifetime culture;
The ability to induced differentiation into osteogenic, chondrogenic and adipogenic directions.
Область применения: developmental biology, cellular and tissue engineering, virology.
Коллекции: MWIEV

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: PGM_3, 1; PGM_1, 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, ATCC), 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 - EMEM or DMEM (SPBIC)
serum - FBS 10-15%
other components - NEAA 1% (EMEM)
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% (ATCC)
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 - Mc Coy 5a or RPMI 1640 (SPBIC)
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, $1.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 92 % (ATCC)
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 cells 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, 3.0-4.0õ10^6 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% (ATCC).
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 ∆ F508-mutation (cystic fibrosis - recessive genetical disease)
Applications: genetical transformation and hereditary diseases studies, cell biology.
Collections: SPBIC.

ChEF 392/1

Origin: human, skin-muscular tissue of normal human embryo (designed in SPBII, NPKK 008)
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10 %

subculture procedure - cells detachment using 50 mg chymopsine in 500 ml EDTA 0.04 %, split ratio 1:2
cryoconservation - growth medium, 30 % BS, 5 % DMSO, 1.5 - 2.0x10^6 cells/ml in ampule.

Viability after cryoconservation: 70 - 80 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Other properties:
virus susceptibility: adenovirus, herpes simplex, vesicular stomatitis, cytomegalovirus
Applications: cell biology, virology, interferone titration
Collections: SPBII.

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, 9.0x10^6 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), number of poliploid cells 7.0%
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% (ATCC)
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.

Daudi

Origin: human, Burkitt lymphoma.
Cancer Res. 1968. 28: 1300; J. Gen. Virology 1976. 33: 539; Clin. Exp. Immunol. 1976. 25: 367; Int.J.Cancer 1977. 19: 334; Tissue Antigens 1978. 11: 96; Proc.Natl.Acad.Sci. 1978. 75: 3846.

Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density 2.0-5.0 cells/ml
cryoconservation - RPMI 1640 40%, FBS 50%, glycerol 10%, 5.0-10.0x10^6 cells/ml in ampule
Viability after cryoconservation: 72-84% (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, pseudodiploid, Y-chromosome is presented (routine and differential dye, C-banding).
Plating efficiency: the cells cannot be plated (ATCC)
Tumorigenicity: tumorigenic in nude mice
Other properties:
virus susceptibility: non susceptible to the Semliki Forest virus infection.
Isoenzymes G6PD, B.
Exhibit surface markers for the Fc fragment of Ig G, complement receptors and surface bound Ig.
The cells are negative for HLA-A and HLA-B antigens.
Positive for genetical markers EBV, EBNA and VCA.
High sensitive to the depressed mitotic activity of interferon.
Applications: virology, tumorigenicity.
Collections: ATCC CCL 213; DSM ACC 78; ECACC 85011437; 89120702; ICLC HTL 95024; MWIIW.

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%.
Plating Efficiency: 34.5%
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

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%.
Plating Efficiency: 25.4%
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

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.

EJ (MGH-U1)

Origin: human, bladder carcinoma.
Nature 1976. 264: 60; Tissue Antigens 1978. 11: 279.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%

subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:5, optimal population density $1.0x10^5$ cells/cm^2

cryoconservation - BME 70%, FBS 20%, glycerol 10%, $3.0\text{-}4.0x10^6$ 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 81-92 chromosomes, modal number of chromosomes 88 without markers (routine and differential dye, C-banding), there are some microchromosomes.
Tumorigenicity: tumorigenic
Other properties:
G6PD, B; PGM 3, 1.
HLA cell line phenotype A (2, w32); B (5, 12), C (w2, w3), Ek-2; Ek-10.
Applications: virology, biochemistry, cell biology, oncology.
Collections: MWIIW.

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 $4.0\text{-}5.0x10^4$ cells/cm^2

cryoconservation - growth medium, 10% DMSO, $1.5\text{-}2.0x10^6$ 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.

FLECH

Origin: human, embryo, lung.
In the book «Epidemiology, Clinic and Prophylactic of Virus Infection», Ekaterinburg, 1992. 45.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:2-1:3, optimal population density 1.4-1.6x10^5 cells/ml
cryoconservation - growth medium, 10% glycerol, 2.0x10^6 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= 46, variability in the range between 45-49 chromosomes, modal number of chromosomes 46.
Plating efficiency: 60%
Other properties:
virus susceptibility: TBE virus; HSV; CMV; RSV; human adenoviruses.
Finite lifetime culture, cells are capable of attaining 49-50 population doubling before onset of the decline in proliferation.
Applications: virology, biotechnology.
Collections: ESCC

FLECh 385/13

Origin: human, lung of normal human embryo (designed in SPBII, NPKK 004)
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10 %
subculture procedure - cells detachment using 50 mg chymopsine in 500 ml EDTA 0.04 %, split ratio 1 : 2
cryoconservation - growth medium, 30 % BS, 5 % DMSO, 1.5 - 2.0x10^6 cells/ml in ampule.
Viability after cryoconservation: 70 - 80 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Other properties:
virus susceptibility: parainfluenza types 2 and 3, RS, adenovirus, herpes simplex, ECHO, Coxsackie, vesicular stomatitis, cytomegalovirus, rubeolla, rubella, tick encephalitis
Finite lifetime culture, cells are capable of attaining 49-50 population doubling before onset of the decline in proliferation.
Applications: cell biology, virology, interferone titration
Collections: SPBII.

FLECh 985/12

Origin: human, lung of normal human embryo (designed in SPBII, NPKK 005)
Morphology: fibroblast-like

Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10 %
subculture procedure - cells detachment using 50 mg chymopsine in 500 ml EDTA 0.04 %, split ratio 1 : 2
cryoconservation - growth medium, 30 % BS, 5 % DMSO, 1.5 - 2.0x10^6 cells/ml in ampule.
Viability after cryoconservation: 70 - 80 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Other properties:
virus susceptibility: parainfluenza types 2 and 3, RS, adenovirus, herpes simplex, ECHO, Coxsackie, vesicular stomatitis, cytomegalovirus.
Finite lifetime culture, cells are capable of attaining 49-50 population doubling before onset of the decline in proliferation.
Applications: cell biology, virology, interferone titration.
Collections: SPBII.

FLECh 997/11

Origin: human, lung of normal human embryo (designed in SPBII)
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10 %
subculture procedure - cells detachment using 50 mg chymopsine in 500 ml EDTA 0.04 %, split ratio 1 : 2
cryoconservation - growth medium, 30 % BS, 5 % DMSO, 1.5 - 2.0x10^6 cells/ml in ampule.
Viability after cryoconservation: 70 - 80 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis.
Other properties:
virus susceptibility: parainfluenza types 2 and 3, RS, adenovirus, herpes simplex, ECHO, Coxsackie, vesicular stomatitis, cytomegalovirus
Finite lifetime culture, cells are capable of attaining 49-50 population doubling before onset of the decline in proliferation.
Applications: cell biology, virology, interferone titration
Collections: SPBII.

FLECh 1097/30

Origin: human, lung of normal human embryo (designed in SPBII)
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10 %
subculture procedure - cells detachment using 50 mg chymopsine in 500 ml EDTA 0.04 %, split ratio 1 : 2
cryoconservation - growth medium, 30 % BS, 5 % DMSO, 1.5 - 2.0x10^6 cells/ml in ampule.
Viability after cryoconservation: 70 - 80 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis

Other properties:
virus susceptibility: adenovirus, herpes simplex, vesicular stomatitis, cytomegalovirus. Finite lifetime culture, cells are capable of attaining 49-50 population doubling before onset of the decline in proliferation.
Applications: cell biology, virology, interferone titration.
Collections: SPBII.

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.

GL-6

Origin: human, glioblastoma.
Human Heredity 1971. 21: 238.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3, optimal population density 1.0x10^5 cells/cm^2
cryoconservation -DMEM 70%, FBS 20%, glycerol 10%, 3.0-4.0x10^6 cells/ml in ampule

Viability after cryoconservation: 50% (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 51-68 chromosomes, modal number of chromosomes 64-66, Y-chromosome is presented, without markers (routine, differential dye, C-banding), number of polyploid cells 6.0%.
Tumorigenicity: tumorigenic
Other properties:
isoenzymes G6PD, B; PGM1, 1.
Applications: virology, tumorigenicity.
Collections: MWIIW.

Hela gniiem

Origin: human, epithelioid cervical carcinoma, clone of Hela.

Cancer Res. 1952. 12: 264.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:5 -1:6, optimal population density 0.8 -1.2 x10^5 cells/ml
cryoconservation - growth medium, 10% glycerol, 1.0 x10^6 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 42-70 chromosomes, modal number of chromosomes 61-65.
Plating efficiency: 60 %
Other properties:
virus susceptibility:Coxsackie A, B1, B3, B5; ECHO; human adenoviruses 1-7. Presence of oncovirus B.
Applications: virology.
Collections: ESCC

Hela-KD

Origin: human, epithelioid cervical carcinoma, clone of Hela
Cancer Res. 1952. 12. 264. Submitted by Glinskikh N.P. et al., EVIRI, patent N 1036052 15.04.89
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:4-1:6, optimal population density 1.0-1.3x10^5 cells/ml
cryoconservation - growth medium, 10% glycerol, 2.0õ10^6 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 46-71 chromosomes, modal number of chromosomes 61-65.
Plating efficiency: 70%
Other properties:
virus susceptibility: polioviruses; Coxsackie B1, B3, B5; ECHO; human adenovirus 7. Presence of oncoviruses A and B
Applications: virology, biotechnology.
Collections: ESCC

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 (SPBIC) or DMEM
serum - FBS10%
other components - NEAA 1% (EMEM)
subculture procedure - optimal population density 3.0-9.0x10^5 cells/ml
cryoconservation - growth medium, 5%DMSO, 5.0x10^6 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 (SPBIC)
serum - FBS 10%
other components - NEAA 1% (EMEM)
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.

HeLa$_l$ v

Origin: human, cervical carcinoma, subline of HeLa.
Cancer Res. 1952. 12: 264; J Exp. Med. 1953. 97: 695; Obstet Gynecol. 1971.38: 945; Science 1976. 191: 392; Tissue Antigens. 1978. 11:279, 287.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199 or EMEM
serum - BS 10% (199) or FBS 10% (EMEM)
other components - NEAA 2% (EMEM)
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:5-1:10, optimal population density 0.5-1.0x10^5 cells/cm^2
cryoconservation - medium 199 70% + BS 20% or EMEM 70% + FBS 20%, glycerol 10%, 5.0x10^6 cells/ml in ampule
Viability after cryoconservation: 78-80% (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 54-83 chromosomes, modal number of chromosomes 64, number of markers - 14 (3 - specific for Hela - N 1, 2, 3, G-banding)
Tumorigenicity: tumorigenic
Other properties:
virus susceptibility: polioviruses; adenoviruses; Coxsackie; ECHO; vaccinia; reoviruses; rhinoviruses; arboviruses; measles; RSV.
Isoenzymes G6PD, A.
HLA cell line phenotype A (3,28), B (w35, w15), C (w2,w3), Ek-1, Ek-7a.
Applications: virology, tumorigenicity.
Collections: MWIIW.

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%, 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 (ATCC)
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 (SPBIC) or EMEM
serum - FBS 10%
other components - NEAA 1% (EMEM)
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, ATCC), 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-29

Origin: human, colon adenocarcinoma.
«Human tumor cells in vitro», NY, London, Plenum Press. 1975. 115; J.Natl.Cancer Inst. 1977. 58: 209; J.Natl.Cancer Res. 1977. 59: 221; 1988. 48; 6193; Tissue Antigens 1978. 11: 279.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:5, optimal population density $1.0x10^5$ cells/cm^2
cryoconservation - BME 70%, FBS 20%, glycerol 10%, $3.0\text{-}5.0x10^6$ 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 67-73 chromosomes, modal number of chromosomes 70, number of markers - 2 large submetacentric and metacentric chromosomes (routine dye), number of polyploid cells 2.0%.
Other properties:
virus susceptibility: vesicular stomatitis.
Isoenzymes G6PD, B; Me-2, 1; PGM3, 2-1; FUC, V2-1; PGM1, V2-1; ESD, 1; AK1, 1; PGD, A.
HLA cell line phenotype A (1/11, 3); B (12, 17); Ek-1; Ek-11.
Applications: virology, tumorigenicity.
Collections: ATCC HTB 38; ECACC 91072201; MWIIW.

HT-1080

Origin: human, fibrosarcoma.
Cancer 1974. 33: 1027-1033.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM or DMEM (SPBIC)
serum - FBS 10%
other components - NEAA 1% (EMEM)
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4 - 1:8, optimal population density $1.0\text{-}4.0x10^4$ 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 (ATCC)

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

Plating efficiency: 3% (ATCC)
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 - DMEM or EMEM (SPBIC)
serum - FBS 10%
other components - NEAA 1% (EMEM)
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) (ATCC) .

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 (ATCC)

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 - EMEM or DMEM (SPBIC)

serum - FBS 10%
other components - NEAA 1% (EMEM)
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% (ATCC)
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-$7.0x10^6$ 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 (ATCC)
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 (SPBIC) or Iscove's DMEM
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 (ATCC)
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.

LECH-4 (81)

Origin: human, embryo, lung.
Submitted by Glinskikh N.P. et al., Patent N 1147748, 27.01.83.
Morphology: fibroblast-like
Mode of cultivation: monolayer

Conditions for cultivation: medium - 199/EMEM (1:1)
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:2, optimal population density 1.4-1.6x10^5 cells/ml
cryoconservation - growth medium, 10% glycerol, 1.5-2.0x10^6 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= 46, variability in the range between 44-49 chromosomes, modal number of chromosomes 46.
Plating efficiency: 65%
Other properties:
virus susceptibility: polioviruses 1, 2, 3; Coxsackie B3; ECHO 3, 6, 11, 13, 19, 20, 24, 28; RSV, herpes simplex.
Finite lifetime culture, cells are capable of attaining 49-50 population doubling before onset of the decline in proliferation.
Applications: virology, biotechnology.
Collections: ESCC

M-FetMSC

Origin: human, mesenchymal stem cells from muscle of 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 under 80% monolayer 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 Z-disks.
Applications: myogenesis, cell biology, 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, ATCC), 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

Origin: human, epithelioid cervical carcinoma, clone from HeLa. J. Exp. Med. 1953, 97: 695, Cytology (Rus.) 1986, 28: 562.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10 %
subculture procedure - cells detachment using EDTA 0.04 %, split ratio 1 : 5
cryoconservation - growth medium, 30 % BS, 5 % DMSO, 1.0 - 1.5x10^6 cells/ml in ampule.
Viability after cryoconservation: 70 - 80 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: modal number of chromosomes 51, number of markers - 12-17.
Other properties:
virus susceptibility: adenoviruses, poliovirus, RS, parainfluenza.
Applications: cell biology, virology, biotechnology (test systems preparation, accumulation of viral mass)
Collections: SPBII.

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: 79% (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, 5.0x10^6 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) (ATCC)

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 CRL 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 - 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 - 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%.

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, 1.5-2.0x10^6 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 (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; 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, renal 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

P3H3

Origin: human, Burkitt lymphoma
J. Clin. Path. 1965. 18: 261; J. Virol. 1967.1: 1045; Proc.Soc.Exp.Biol.Med. 1967.124: 107.
Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density $2.0\text{-}5.0x10^5$ cells/ml
cryoconservation - RPMI 1640 40%, FBS 50%, glycerol 10%, $5.0\text{-}10.0x10^6$ 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) analysis
Karyology: 2n=46, variability in the range between 41-51 chromosomes, modal number of chromosomes 48, number of polyploid cells 14.0%
Other properties:
isoenzymes G6PD, B.
Contain and produce EBV

Applications: virology , the cells used for the indication of IgG and IgA, specific against early antigen (EA) of EBV
Collections: MWIIW

P3HR-1 (P3J-HR1K)

Origin: human, Burkett lymphoma.
J. Clin. Path. 1965.18: 261; J. Virol. 1967.1:1045; J.Natl. Cancer Inst. 1969.43: 1129; J. Natl. Cancer Inst. 1980. 64: 725.
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 - RPMI 1640 40%, FBS 50%, glycerol 10%, 5.0-10.0x10^6 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 44-49 chromosomes, modal number of chromosomes 47, without markers (routine and differential dye, C banding).
Other properties:
virus susceptibility: partly resistant to poliovirus and vesicular stomatitis.
Isoenzymes G6PD, B.
Production of IgM.
The cells discover EBNA and VCA.
5-8% of cells produce EBV.
Applications: virology, biotechnology (extensive production of EBV)
Collections: ATCC HTB 62, ECACC 85022101, MWiiW.

PA-1

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 - EMEM or DMEM (SPBIC)
serum - FBS 10%
other components - NEAA 1% (EMEM)
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 – 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, ATCC), number of polyploid cells 3 %.
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% (ATCC)
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.

PECh 693/30

Origin: human, kidney of normal human embryo
Designed in SPBII, NPKK 009)
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10 %

subculture procedure - cells detachment using 50 mg chymopsine in 500 ml EDTA 0.04 %, split ratio 1 : 2
cryoconservation - growth medium, 30 % BS, 5 % DMSO, 1.5 - 2.0x10^6 cells/ml in ampule.

Viability after cryoconservation: 70 - 80 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Other properties:
virus susceptibility: herpes simplex, vesicular stomatitis, cytomegalovirus, poliovirus, rubella, rubeilla, tick encephalitis.
Finite lifetime culture, cells are capable of attaining 49-50 population doubling before onset of the decline in proliferation.
Applications: cell biology, virology, interferone titration
Collections: SPBII.

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 3.0-9.0õ10^5 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, there are some sublines Raji with different karyotypic structure. One from sublines is:variability in the range between 43-48 chromosomes, modal number of chromosomes 48, number of markers – 8 (differential dye), 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% (MWIIW)
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 (SPBIC) or EMEM with twice the standard concentrations of amino acids and vitamins.
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2, optimal population density $4.0x10^4$ cells/cm^2
cryoconservation - growth medium, 5-10% DMSO or glycerin, 1.5-$2.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 70-80% (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

Plating efficiency: less 1% (ATCC), 50% (ESCC).
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.

RD-Tv K-92

Origin: human, rhabdomyosarcoma, clone of RD.
Submitted by EVIRI, 1992.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 5%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:4, optimal population density $1.2x10^5$ cells/ml
cryoconservation - growth medium, 10% glycerol, 1.5 $x10^6$ 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 42-80 chromosomes, modal number of chromosomes 48
Plating efficiency: 85%
Other properties:
virus susceptibility: CMV; HSV.
Applications: virology.
Collections: ESCC

RH

Origin: human, kidney.
Submitted by Brazilian Institute of Biology,1960 .
Morphology: epithelial-like
Mode of cultivation: monolayer
onditions for cultivation: medium - 199
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:5-1:6, optimal population density 1.0-1.2x10^5 cells/ml
cryoconservation - growth medium, 10% glycerol, 2.0 x10^6 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 45-87 chromosomes, modal number of chromosomes 60-65.
Plating efficiency: 65%
Other properties:
virus susceptibility: polioviruses; Coxsackie A and B; ECHO; human adenoviruses.
Applications: virology.
Collections: ESCC

RH K-13/3

Origin: human, kidney, clone of RH.
Submitted by Popova N.A. et al. In Tomsk RIVS, 1986.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:5-1:8, optimal population density 1.0x10^5 cells/ml
cryoconservation - growth medium, 10% glycerol, 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 analysis
Karyology: 2n= 46, variability in the range between 63-67 chromosomes, modal number of chromosomes 66.
Plating efficiency: 60%
Other properties:
virus susceptibility: TBE virus; vesicular stomatitis (Indiana).
Applications: virology.

Collections: ESCC

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 (ATCC)

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% (SPBIC)
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 6-70, 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 (ATCC)

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.

RT-4v

Origin: human, bladder papillary carcinoma, subline of RT-4.
Brit.J.Cancer 1970. 24: 746; Int.J.Cancer 1972. 10: 77; Tissue Antigens 1978. 11:279.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:5, optimal population density $1.0x10^5$ cells/cm^2
cryoconservation - BME 70%, FBS 20%, glycerol 10%, $3.0\text{-}5.0x10^6$ 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 isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 46, variability in the range between 82-94 chromosomes, modal number of chromosomes 88, Y-chromosome (C- and G-banding) and microchromosomes (routine dye) are presented.
Tumorigenicity: tumorigenic
Other properties:
isoenzymes G6PD,B; ME-M,1; PGM3,2-1; FUC,1; PGM1,2-1; ESD,2-1; AK1,1.
HLA cell line phenotype F (1, 3); B (12); Ek-2; Ek-5.
Applications: virology, tumorigenicity.
Collections: MWIIW.

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: human, mesenchymal stem cells from human embryonic stem cells (ESC). Tsitologiya. 2012. 54 (1): 5 – 16.
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%
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, ATCC), 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. Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.
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, 1.0-2.0õ10^6 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 - 1:3 (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% (ATCC)
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.

T-24

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 – BME, EMEM (SPBIC)
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, 5-10% DMSO, $1.0\text{-}2.0x10^6$ 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= 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.
Applications: virology, tumorigenicity.
Collections: ATCC HTB 4; MWIIW, SPBIC.

T-1387

Origin: human, acute lymphoblastic bone marrow leukemia.
Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640
serum - FBS 10%
subculture procedure - optimal population density $2.0\text{-}5.0x10^5$ cells/ml
cryoconservation - RPMI 1640 40%, FBS 10%, glycerol 10%, $5.0\text{-}10.0x10^6$ 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=46, variability in the range between 39-47 chromosomes, modal number of chromosomes 46, without markers (routine and differential dye, C -banding), number of polyploid cells 2.0%.
Other properties
virus susceptibility: alphaviruses; Semliki Forest virus; Venezuelan equine encephalomyelitis;
Isoenzymes G 6 PD,8
Applications: virology .
Collections: MWIIW

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% (ATCC).
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 $1.0\text{-}5.0x10^5$ 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%.
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.

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

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 (SPBIC) or McCoy's 5a.
serum - FBS 10-15%
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), (ATCC).

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%.

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 (SPBIC) or BME with twice the concentration of amino acids and vitamins.

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 - 1:4, 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 (ATCC)

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% (ATCC).

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 64-75 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 1:4 - 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: 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, ATCC), 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.

ANIMAL CELL LINES

35

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

2211

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

14.012.8.1

Origin: syrian hamster, fibroblasts transformed by herpes simplex virus.
Ann. Microbiol. (Paris). 1978, 129A: 379.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:5, optimal population density $1.0x10^5$ cells/ml
cryoconservation - BME 70%, FBS 20%, glycerol 10%, $3.0\text{-}5.0x10^6$ 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 and G6PD) analysis
Karyology: 2n= 44, variability in the range between 42-48 chromosomes, modal number of chromosomes 44-45, number of markers - 1, one large submetacentric chromosome (routine dye), number of polyploid cells 2.0%.
Other properties:
virus susceptibility: herpes viruses.
Infectivity DNA of herpes simplex virus in cells is higher then infectivity of intact virus.
Applications: virology.
Collections: MWIIW.

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 NIH TK$^-$

Origin: mouse, embryo , subline 3T3 NIH
Cell 1979. 16: 63; 347.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3 , optimal population density 1.0x10^5 cells/ml
cryoconservation - DMEM 70%, FBS 20%, glycerol 10%, 3.0-5.0x10^6 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 and G6PD) analysis
Karyology: 2n=40, variability in the range between 51-64 chromosomes, modal number of chromosomes 59, number of polyploid cells 8.0%.
Other properties:
Deficient in thymidine kinase, resistant to 5-bromodeoxyuridine (25 mkg/ml)
Applications: virology, cytogenetics.
Collections: MWIIW

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% (ATCC)
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, 1.0-2.0x10^6 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% (SPBIC)
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.

A-7

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.

A-9

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 - EMEM or DMEM (SPBIC)
serum - FBS 10%
other components - NEAA 1% (EMEM)
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.

A-238

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; Cytology, Russ. 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.

A-1, F-5

Origin: mouse myeloma x mouse splenocytes, hybridoma.
Agricultural Biology. 1991. №6: 38-45. Patent № 1652339, 1991.
Morphology: lymphocyte-like
Mode of cultivation: suspension
Conditions for cultivation: medium – EMEM, DMEM, RPMI 1640
serum - FBS 10%
subculture procedure - cells detach using shaking, split ratio 1:2-1:4.
cryoconservation - DMEM 50%, FBS 40%, DMSO 10%, 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
Other properties:
Producer of monoclonal antibody to surface antigens of Mycoplasma arginini.
Applications: biotechnology, immunology, mycoplasmology.
Collections: MWIEV

A4xS

Origin: intraspecies hybrid culture, pig embryon kidney SPEV-TK^- x pig splenocytes.
J. Veterinary. 1990. № 4: 29 – 31. Patent RF № 94026140/13, 1997.
Morphology: epithelial and lymphocyte-like
Mode of cultivation: monolayer- suspension
Conditions for cultivation: medium - EMEM
serum - FBS 10 - 20%
subculture procedure – harvesting of the cells in suspension is earned out by deposition, detachment using from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:4 – 1:5.
cryoconservation – culture medium 50%, FBS 40%, DMSO 10%, 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 analysis.
Karyology: 2n=38, variability in the range between 38-45 chromosomes, modal number of chromosomes 40.
Other properties:
Virus susceptibility: coronavirus of swine, transmissible gastroenteritis of swine, hog cholera virus, virus of encephalomyocarditis, equine herpes virus type 1.
Cell culture is able to virus induced interferonogenesis
Applications: cell biology, virology, biotechnology,
Collections: MWIEV.

A4xL

Origin: hybrid culture, pig kidney SPEV-TK$^-$ x equine lymphocytes.
Agricultural Biology. 1990. № 2: 182 – 187. Patent RF № 1417475, 1998.
Morphology: epithelial and lymphocyte-like
Mode of cultivation: monolayer- suspension -roller
Conditions for cultivation: medium – EMEM, DMEM
serum - FBS 10 - 20%
subculture procedure –detach cells from flask using EDTA 0.02%, split ratio 1:6 – 1:8.
cryoconservation – culture medium 50%, FBS 40%, DMSO 10%, 3.0-4.0x10^6 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 analysis.
Karyology: variability in the range between 28-48 chromosomes, modal number of chromosomes 38.
Other properties:
virus susceptibility: equine herpes virus type 1 and type 3, coronavirus of swine, equine reovirus type 3.
Applications: virology, biotechnology,
Collections: MWIEV.

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 - Mc Coy's 5a, DMEM (SPBIC)
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% (SPBIC)
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.

B 95-8

Origin: monkey (marmoset), leucocytes, transformed by Epstein-Barr virus
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 - medium - RPMI 1640, FBS 20%, glycerol 10%, 5.0-10.0x10^6 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=60 , variability in the range between 40-48 chromosomes, modal number of chromosomes 45, number of polyploid cells 2.0%.
Other properties:
virus susceptibility: vesicular stomatitis ; alphaviruses.
Production of EBV
Applications: virology, biotechnology.
Collections: ATCC CRL 1612, DSM (ACC100), ECACC 85011419; ICLC ATL 95004; MWIIW.

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 or glycerol, 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% (SPBIC)
Other properties:
virus susceptibility: herpes simplex, vesicular stomatitis, coronavirus, SV 40, vaccinia, polyoma.
Contact inhibition of growth (by density 2.0-2.5x10^5 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 - EMEM or DMEM (SPBIC)
serum - FBS 10%
other components - NEAA 1% (EMEM)
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. 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 or DMEM (SPBIC)
serum - FBS 10%
other components - NEAA 1% (EMEM)

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: 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%.
Plating efficiency: less than 1% (ATCC); 80% (ESCC)
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.

BHK-21 (clone 13) v

Origin: Syrian hamster, kidney, subline of BHK-21 (clone 13)
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:5-1:6, optimal population density 0.5-0.7x10^5cells/ml
cryoconservation - BME 70%, FBS 20%, glycerol 10%, 4.0-5.0x10^6 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=44, variability in the range between 35-45 chromosomes, modal number of chromosomes 40, without markers (routine dye), number of polyploid cells 14%.
Other properties:
virus susceptibility: adenovirus 25; rabies; pseudorabies; foot and mouth disease; herpes simplex; vesicular stomatitis; reovirus 3; rubella; Coxsackie; vaccinia; arboviruses.
Applications: virology
Collections: MWIIW; ESCC.

BHK-21/ 2-17

Origin: Syrian hamster, kidney, subline BHK-21 clone 13.
USSR Patent N 240289, 1986.
Morphology: epithelial-like
Mode of cultivation: monolayer, suspension
Conditions for cultivation: medium - 0.25% EMPH-d
serum - BS 5%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:1), split ratio 1:3-1:6

cryoconservation - growth medium 45%, BS 45%, 10% DMSO or glycerol, 5.0-8.0x10^6 cells/ml in ampule
Viability after cryoconservation: 80-90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 44, modal number of chromosomes 42.
Other properties:
virus susceptibility: foot and mouth disease.
Applications: virology.
Collections: MWIEV

BHK-21/13-02

Origin: Syrian hamster, kidney subline BHK-21 clone 13
Virology 1962. 16: 147-151; J.Natl.Cancer Inst. 1963. 30: 795-811.
Morphology: fibroblast-like and round cells in suspension culture
Mode of cultivation: monolayer/ suspension
Conditions for cultivation: medium – 0.5% EMPH-d, 0.5% LAN, EMEM +199 (3:1)
serum - FBS or BS 5-7 %
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9)
cryoconservation – culture medium 73%, FBS or BS 20%, DMSO 7%, 3.0-5.0x10^6 cells/ml in ampule
Viability after cryoconservation: 85- 97% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Karyology: 2n= 44, variability in the range between 31-80, modal number of chromosomes 42 for suspension cultures, and variability in the range between 31-98, modal number of chromosomes 44 for monolayer cultures.
Other properties:
virus susceptibility: foot and mouth disease virus, rabies virus.
Applications: virology, biotechnology.
Collections: MWIEV.

BSC-1

Origin: African green monkey, kidney.
J.Immunol. 1963. 91: 416; Am.J.Public Health 1964. 54: 15-22.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3, optimal population density 1.5-2.0x10^5 cells/ml
cryoconservation -BME 70%, FBS 20%, glycerol 10%, 3.0-5.0x10^6 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 and G6PD) analysis
Karyology: 2n= 60, variability in the range between 42-56 chromosomes, modal number of chromosomes 53, number of markers-1, large submetacentric chromosome with additional C band (differential dye), the cells have chromosomes with secondary constriction and dicentrics, number of polyploid cells 6.0%.
Plating efficiency: 12% (ATCC)

Other properties:
virus susceptibility: SV40; polioviruses, vesicular stomatitis, arboviruses, parainfluenza, herpes simplex, measles, enteroviruses, influenza, RSV.
Susceptibility to the simian interferone.
Applications: virology.
Collections: ATCC CCL 26; ECACC 85011412; MWIIW.

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 (SPBIC) or F12
serum - FBS 10% (F12) or HS 15%/FBS 2.5% (F10)
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, $1.0\text{-}2.0x10^6$ 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% (SPBIC)
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 - 1:6, 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: 90-95% (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. 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, DMEM (SPBIC)
serum - FBS 10%
other components - NEAA 1% (EMEM)
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3 - 1:6, optimal population density 2.0x10^3 cells/cm^2
cryoconservation - growth medium, 10% DMSO, 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: 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% (ATCC)
Tumorigenicity: non tumorigenic

Other properties:
contact inhibition of growth
Applications: tumorigenicity, transformation, transfection, cell biology.
Collections: ATCC CCL 226; ECACC 86060303; SPBIC.

CEO (KEO)

Origin: sheep, embryon, skin.
Viev Bulletin. Moscow 1992. issue 7: 108 – 112.
Morphology: epithelium and fibroblast -like
Mode of cultivation: monolayer
Conditions for cultivation: medium – BME , 199.
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:2,
cryoconservation - culture medium 50%, FBS 40%, DMSO 10%, 2.0-3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 72% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative.
Species: karyological analysis
Karyology: 2n= 54, diploid.
Other properties:
virus susceptibility: ovine contagious ecthyma virus.
Applications: virology, cell biology, biotechnology.
Collections: MWIEV

CG-91

Origin: goat, gonad.
Abstracts, Meeting «Virus Diseases of Domestic Animals», Vladimir, 1995: 108.
RF Patent N 20617553, 1996.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.15%/EDTA 0.02% (1:3) with addition of 0.5% glucose, split ratio 1:2-1:4.
cryoconservation - BME 85%, BS 10%, ethylenglycol 5%, 2.0-3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 85-90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 60, modal number of chromosomes 59.
Other properties:
virus susceptibility: foot and mouth disease A, O, C, Asia-1; African equine plague.
Applications: virology, cell biology, biotechnology.
Collections: MWIEV

CHSE-214

Origin: Fish *(Oncorhynchus tshawytscha),* embryon.
Submitted by Mccain B.B. Fryer J.L. et al., 1965
Morphology: epithelium-like

Mode of cultivation: monolayer
Conditions for cultivation: medium – EMEM with a double set of amino acids and vitamins with salts of Erla
serum - FBS 10%
other components – L-glutamine (300 mg/ml)
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:2), split ratio 1:3, cultivation at 15-20^{0}C, rate of reinoculation once in one-two weeks.
cryoconservation – culture medium 60%, FBS 30%, DMSO 10%, 3.0-4.0x10^6 cells/ml in ampule
Viability after cryoconservation: 89% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Other properties:
virus susceptibility: infectious pancreatic necrosis virus (IPNV), viral haemorrhagic septicaemia virus (VHSV), infectious haematopoetic necrosis virus (IHNV), athlantic salmon herpesvirus (ASHV).
Applications: virology, biotechnology.
Collections: ATCC CRL 1681, MWIEV

CHO-K1

Origin: Chinese hamster, ovary, clone CHO.
J.Exp.Med. 1958. 108: 945; Proc. Natl.Acad.Sci. USA 1968. 60: 1275. 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 - 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 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), 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% (ATCC)
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.

CHO-K1v

Origin: Chinese hamster, ovary, subline of CHO-K1.
Proc.Natl.Acad.Sci. 1969. 64: 1284; Science 1969. 164. 312.

Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:5, optimal population density $1.0x10^5$ cells/ml
cryoconservation - BME 70%, FBS 20%, glycerol 10%, $4.0\text{-}5.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 92-97% (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 10-27 chromosomes, modal number of chromosomes 22, pseudodiplid, there are microchromosomes, number of polyploid cells 4.0%.
Other properties:
virus susceptibility: vesicular stomatitis, arboviruses.
The cells have deficiency in synthesis proline and interferon.
Applications: virology.
Collections: MWIIW.

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 - F10 or F12 (SPBIC)
serum - FBS 10% (F12) or HS 15%/FBS 2.5% (F10)
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2 - 1:3, optimal population density $2.0\text{-}3.0x10^4$ cells/cm^2
cryoconservation - growth medium, 10% DMSO, $2.0\text{-}3.0x10^6$ 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 (ATCC).
Plating efficiency: less than 1% (ATCC)
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.

CRFK

Origin: feline, kidney.
J. Amer. Vet. Med. Assoc. 1971. 158: 976; J.Natl.Cancer Inst. 1972. 41: 55; In Vitro 1973. 9: 176.
Morphology: epithelial-like

Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 15%
other components - glucose 4 g/l, glutamine 2mM, sodium pyruvate 1mM.
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:4-1:8, optimal population density 0.5-0.7x10^5 cells/ml
cryoconservation - DMEM 70%, FBS 20%, glycerol 10%, 2.0-5.0x10^6 cells/ml in ampule
Viability after cryoconservation: 89% (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 32-38 chromosomes, modal number of chromosomes 36, number of markers - 1 large submetacentric chromosome (routine dye), number of polyploid cells 4.0%.
Tumorigenicity: non tumorigenic
Other properties:
virus susceptibility: feline calicivirus, herpes, picornaviruses, rhynotracheitis, reovirus, canine parvoviruses, rabies.
Applications: virology.
Collections: ATCC CCL 94; ECACC 86093002; MWIIW.

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 - EMEM or DMEM (SPBIC)
serum - FBS 10%
other components - NEAA 1% (EMEM)
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% (ATCC).
Plating efficiency: 27% (ATCC)
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, 2.0x10^6 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 55-67 chromosomes, modal number of chromosomes 64-65, number of polyploid cells 3.0%.
Applications: cell biology.
Collections: SPBIC

DKMEKr-85

Origin: rabbit, skin-muscle tissue.
Inf.Bull. Cell Culture Ass. St.-Petersburg, 1997, N12.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 0.5% LAH/EMEM (1:1)
serum - BS 5-12%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:5), split ratio 1:2.
cryoconservation - culture medium 70%, BS 20%, DMSO 10%, 2.0-3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 50-60% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: isoenzymological (LDH, G6PD) analysis.
Karyology: 2n= 44, modal number of chromosomes 43-44, number of markers -1, large submetacentric chromosome with deletion of one arm.
Plating efficiency: 60%
Other properties:
virus susceptibility: equine rhinopneumonia and arthritis; reovirus 3; infectious rhinotracheitis; parainfluenza 3; bovine diarrhea.
Applications: virology.
Collections: MWIEV

DSHCHS

Origin: pig, thyroid.
Trudy of VIEV. Moscow. 1987. 64: 34-35.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199
serum - FBS 10%
other components -
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:2-1:3
cryoconservation - medium 199 50%, FBS 40%, DMSO 10%, 2.0-3.0x10^6 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=38, variability in the range between 36-57 chromosomes, modal number of chromosomes 38.
Other properties:
production of thyroid hormones (3-iodothyronine and thyroxin)
Applications: virology, biotechnology.
Collections: MWIEV.

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 (differential 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

EH/A44

Origin: Syrian hamster, fibroblasts, transformed by herpes simplex 1.
Ann.Microbiol.(Paris).1978. 129A: 379; J.Natl.Cancer Inst.1979. 62: 129.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3, optimal population density 1.0x10^5 cells/ml
cryoconservation - BME 70%, FBS 20%, glycerol 10%, 3.0-5.0x10^6 cells/ml in ampule
Viability after cryoconservation: 98-99% (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 39-57 chromosomes, modal number of chromosomes 55, number of markers - 1, large metacentric chromosome (routine dye), one microchromosome is present, number of polyploid cells 2.0%.

Tumorigenicity: high tumorigenic in nude mice and newborn hamsters.
Other properties:
virus susceptibility: herpes viruses.
Synthesis of virusspecific iRNA, but virusspecific antigens of HSV are not discovered.
Infectivity of herpes virus DNA is higher at 2-20 times, than in control cells EHT.
Cells are detected spontaneuos degeneration.
Applications: virology.
Collections: MWIIW.

EHT

Origin: Syrian hamster, spontaneously transformed fibroblasts.
Ann.Microbiol.(Paris).1978. 129A: 379; J.Natl.Cancer Inst.1979. 62: 129.
Morphology: epithelial- and fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:5, optimal population density $1.0x10^5$ cells/cm^2
cryoconservation - BME 70%, FBS 20%, glycerol 10%, $3.0\text{-}5.0x10^6$ 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= 44, variability in the range between 40-50 chromosomes, modal number of chromosomes 46, number of markers - 1 large submetacentric chromosome (routine dye), number of polyploid cells 2.0%.
Tumorigenicity: non tumorigenic in nude mice
Other properties:
virus susceptibility: herpes viruses.
Applications: virology.
Collections: MWIIW.

EKL

Origin: equine, skin.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM or EMPH-d
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:2-1:4
cryoconservation - culture medium 50%, FBS 40%, DMSO 10%, $2.0\text{-}3.0x10^6$ 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 analysis
Karyology: 2n= 64, variability in the range between 36-95 chromosomes, modal number of chromosomes 40-50 and 80-90.
Other properties:
virus susceptibility: infectious anaemia of equine, herpesvirus of equine 2.
Applications: virology, biotechnology.
Collections: MWIEV

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.

EPC

Origin: Carp *(Oncorhynchus tshawytscha)*, epithelial papilloma.

Ann Virol. 1983. 134E: 2: 151 – 284.

Morphology: epithelium-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% (1:9), split ratio 1:3.

cryoconservation – culture medium 50%, FBS 40%, DMSO 10%, 3.0-4.0x10^6 cells/ml in ampule

Viability after cryoconservation: 89% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: karyological analysis

Karyology: 2n = 96 (21% of total quantity), variability in the range between 56-107 chromosomes, modal number of chromosomes 30,

Other properties:

virus susceptibility: carp viremia in spring, salmonis viruses, eel viruses..

Applications: virology.

Collections: MWIEV.

EPNT-5

Origin: mouse C57Bl, glioblastoma induced by dimethylbenzanthracene and than passed in outbred mice.

Cytology, Russ. 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.

ESb1

Origin: cattle, embryo, 8-days blastocyst.
Inf.Bull. Cell Culture Ass. St.-Petersburg 1997, N12.
Morphology: cell clusters group
Mode of cultivation: on the feeder layer of mitotic inactivated mouse fibroblasts.
Conditions for cultivation: medium - α DMEM
serum - NBCS 10%
other components - 2-mercaptoethanol 0.1 mM, glucose 3.5 g/l, glutamine 2mM.
subculture procedure - mechanic method of cells detachment with further colonies trypsinization
cryoconservation - α DMEM 70%, FBS 20%, glycerole 5%, DMSO 10%, $2.0\text{-}3.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 30-40% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 60, modal number of chromosomes 58.
Applications: cell biology.
Collections: MWIEV

F9

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.

FHM

Origin: Fish *(Pimephales promelas)*, caudal peduncle.
Ann.N.Y.Acad. Sci. 1965. 126: 555.
Morphology: epithelium-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – EMEM
serum - FBS 10%
other components – L-glutamine (300 mg/ml)
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (5:7), split ratio 1:3-1:4, cultivation at 20-25^{0}C, rate of reinoculation once in two weeks

cryoconservation – culture medium 60%, FBS 30%, DMSO 10%, 3.0-4.0x10^6 cells/ml in ampule

Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n = 50 modal number of chromosomes 51,
Other properties:
virus susceptibility: infectious pancreatic necrosis virus (IPNV), viral haemorrhagic serticaemia virus (VHNV), spring viraemia of carp virus (SVCV), epizootic haemopoetic necrosis virus (EHNV).
Applications: virology.
Collections: ATCC CCL-42, ECACC 88102401, MWIEV.

FK-91

Origin: cat, kidney.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 5-7%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:4-1:8.
cryoconservation -EMEM 60%, FBS 30%, DMSO or glycerol 10%, 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= 38, variability in the range between 56-67 chromosomes, modal number of chromosomes 64.
Other properties:
virus susceptibility: mink enteritis parvovitus.
Applications: virology, biotechnology.
Collections: MWIEV

FLK

Origin: sheep, embryo, kidney.
J.Natl.Cancer Inst. 1974. 52: 491; Bibl. Haemotol. 1976. 43: 360; Canad. J. Comp. Med. 1981. 45: 154; Virology 1982. 122: 353; J. Virol. Meth. 1983. 6: 19; Vopr. Virusol. (Russ.) 1983. 5: 615.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:2-1:3, optimal population density 0.8-1.2x10^5 cells/ml
cryoconservation - BME 80%, FBS 10%, glycerol 10%, 3.0-5.0x10^6 cells/ml in ampule

Viability after cryoconservation: 90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi were negative
Species: karyological and/or isoenzymological (LDH, G6PD) analysis

Karyology: 2n= 54, variability in the range between 44-55 chromosomes, modal number of chromosomes 54, pseudodiploid, there is one microchromosome, number of polyploid cells 4.0%.
Other properties:
Cells are BLV carriers and producers.
Applications: virology, biotechnology.
Collections: MWIIW; MWIEV.

FS

Origin: feline, spleen.
Inf.Bull. Cell Culture Ass. St.-Petersburg, 1997, N12.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME or 199
serum - FBS 5-10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:1), split ratio 1:5-1:20.
cryoconservation -BME 80%, FBS 10%, DMSO 10%, 2.0-3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 75-95% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and/or isoenzymological (LDH and G6PD) analysis
Karyology: 2n= 38, variability in the range between 56-68 chromosomes, modal number of chromosomes 62.
Plating efficiency: 50-60%
Other properties:
virus susceptibility: parvoviruses of carnivorous.
Applications: virology, biotechnology.
Collections: MWIEV

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% (ATCC)
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 – BME, DMEM (SPBIC)
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%.
Plating efficiency: 50% (ATCC)
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%
other components - NEAA 1% (EMEM)
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% (SPBIC)
Tumorigenicity: tumorigenic in syngeneic animals
Other properties:
inducible tyrosine aminotrasferase.

Applications: tumorigenicity, enzymology, cytotoxicity, cell biology.
Collections: ICLC ATL 95006; SPBIC.

ICO

Origin: immature carp *(Cyprinus carpio)* ovary.
Shchelkunov I.S., Shchelkunova T.I., Kupinskaya O.A., Emelyanova O.V. Seventh Intern.Conf. of EAFP «Diseases of Fish and Shellfish», Palma de Mallorca, 10–15 September 1995, Book of Abstracts, P.49.
Morphology: epithelium-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – EMEM with a double set of amino acids and vitamins
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (5:7), split ratio 1:4, optimal population density $2.0x10^5$ cells/cm^2 , cultivation at 25^0C, rate of reinoculation once in 10 – 14 days.
cryoconservation – culture medium 70%, FBS 20%, DMSO 10%, 2.0-$2.5x10^6$ cells/ml in ampule
Viability after cryoconservation: 75-80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, protozoa, fungi and mycoplasma were negative
Species: molecular-genetic analysis
Karyology: 2n = 100 modal number of chromosomes 90 its value is 36 %.
Other properties:
virus susceptibility: spring viraemia of carp virus, viral haemorrhagic septicaemia virus, infectious haematopoietic necrosis virus, *Rhabdovirus anguilla*, pike fry rhabdovirus, *Cyprinus carpio iridovirus.*
Applications: virology, biotechnology.
Collections: MWIEV.

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% (ATCC)
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. 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 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, 1.0x10^6 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
Tumorigenicity: tumorigenic in syngeneic animals
Other properties:
phagocytosis, chemotaxis, antigen presentation.
Applications: immunology, cytotoxicity, cell biology.
Collections: SPBIC.

JF 1

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

K-22

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

KMEKr-85

Origin: rabbit embryo, skin-muscle tissue.
Submitted by N.I. Gvosdenko, L.P. Dyakonov, G.R. Mihailova, B.V. Solovyov, N.M. Puhova in 1987.
Morphology: epithelium-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – 0.5% LAH, LAH+BME
serum - BS 5-10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:5), split ratio 1:3
cryoconservation - culture medium 70%, BS 20% DMSO 10%, 3.0-$4.0x10^6$ cells/ml in ampule

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

Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: isoenzymological (LDH, G6PD) analysis
Karyology 2n= 44, variability in the range between 28-89 chromosomes.
Other properties:
virus susceptibility: equine herpes virus type 1, equine arteriitis virus, reovirus type 3, infectious bovine rhinotracheitis virus (IBR), parainfluenza-3 (PI-3), bovine diarrhea virus (BDV).
Applications: medicine, veterinary virology.
Collections: MWIEV

KEK-92

Origin: rabbit, embryo, intestine.
Submitted by Shmeleva N.A. et al, EVIRI, 1986
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199/EMEM (1:1)
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:3 optimal population density $1.0x10^5$ cells/ml
cryoconservation - growth medium, 10% glycerol, $2.0 x10^6$ 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 and isoenzymological (LDH, G6PD) analysis
Karyology: 2n=46, variability in the range between 40-60 chromosomes, modal number of chromosomes 44
Plating efficiency: 65 %
Other properties:
virus susceptibility: herpes simplex 1,2; CMV; enteroviruses; parainfluenza 3.
Applications: virology, biotechnology.
Collections: ESCC

KR-92

Origin: rabbit, intestine.
Submitted by Kolesnicova G.G. et al., EVIRI, 1992
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199/EMEM (1:1)
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:4-1:5, optimal population density 0.8 -$1.0x10^5$ cells/ml
cryoconservation - growth medium, 10% glycerol, $1.0õ10^6$ 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= 44, variability in the range between 42-50 chromosomes, modal number of chromosomes 44.
Plating efficiency: 70 %
Other properties:

virus susceptibility: herpes simplex; enteroviruses; parainfluenza 3.
Applications: virology, biotechnology.
Collections: ESCC

KST

Origin: cattle, embryo, heart coronary vessels.
Cytology (Russ.) 1992. 34, N 9. USSR Patent N 1835849, 1992.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - BS 7-10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:3-1:4
cryoconservation - BME 45%, BS 45%, DMSO10%, 2.0-3.0x10^6 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 analysis
Karyology: 2n=60, variability in the range between 58-61 chromosomes, modal number of chromosomes 58-60.
Tumorigenicity: tumorigenic in nude mice
Other properties:
virus susceptibility: diarrhea, infectious rhynotracheitis of cattle.
Applications: cell biology, virology.
Collections: MWIEV

L-8

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. Atlas of chromosomes of human and animal cell lines, S.E. Mamaeva, 2002. Moscow, Scientific world.
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.

LEK

Origin: cattle, embryo, lung.
J. Veterinary (Russ). 1985. 10: 35-37.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME or MWPH or EMPH-d

serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:2-1:3.
cryoconservation - culture medium 45%, BS 45%, DMSO 10%, 3.5-4.0x10^6 cells/ml in ampule

Viability after cryoconservation: 80 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n=60, modal number of chromosomes 58-60.
Other properties:
virus susceptibility: equine rhinopneumonia; calf rotavirus; parainfluenza 3; bovine infectious rhinotracheitis.
Applications: virology , biotechnology
Collections: MWIEV

LEK VIEV-90 ref

Origin: cattle, embryo, lung.
RF Patent N17781885, 1.08.92; Zamaraeva H.B., PhD thesis, M., 1993.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 0.25% EMPH-d
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:5.
cryoconservation - culture medium 50%, BS 40%, DMSO 10%, 2.0-3.0x10^6 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
Other properties:
production of BLV.
Applications: biotechnology.
Collections: MWIEV

Lk

Origin: mouse C3H, subcutaneous adipose connective tissue, clone of NCTC clone 929.
J.Natl.Cancer Inst. 1948. 9: 228
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199/EMEM (1:1)
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:3-1:5, optimal population density 1.0-1.3x10^5 cells/ml
cryoconservation - growth medium, 20% glycerol, 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 and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 36-67 chromosomes, modal number of chromosomes 54.
Plating efficiency: 80%

Other properties:
virus susceptibility: arboviruses, togaviruses.
Presence of oncoviruses A and C.
Applications: virology.
Collections: ESCC

LLC-MK2, original

Origin: rhesus, monkey, kidney.
Anat. Rec. 1956. 124: 490; Natl.Cancer Inst. Monograph. 1962. 7: 161; J.Exp.Med. 1962. 115: 903; J.Gen.Virol. 1979. 43: 289.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:5, optimal population density $1.0x10^5$ cells/ml
cryoconservation - EMEM 70%, FBS 20%, glycerol 10%, $3.0\text{-}5.0x10^6$ 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= 42, variability in the range between 56-69 chromosomes, modal number of chromosomes 68, number of markers - 1 large submetacentric chromosome with a gap (routine dye), number of polyploid cells 16.0%.
Other properties:
virus susceptibility: arboviruses; enteroviruses; vesicular stomatitis, polioviruses 1-3, parainfluenza 1-3, influenza A, B; rhinoviruses, myxoviruses, poxviruses.
Applications: virology.
Collections: ATCC CCL 7; ECACC 85062804; MWIIW.

LLC-MK2, original (ESCC)

Origin: rhesus, monkey, kidney, subline of LLC-MK2, original.
Anat. Rec. 1956. 124: 490.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199/BME (1:1)
serum - BS 5-7%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:4-1:5, optimal population density $0.8\text{-}1.0x10^5$ cells/ml
cryoconservation - growth medium, glycerol 10%, $1.0\text{-}1.5x10^6$ 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 and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 42, variability in the range between 44-64 chromosomes, modal number of chromosomes 56-60.
Plating efficiency: 80 %
Other properties:
virus susceptibility: arboviruses; enteroviruses; adenoviruses.
Applications: virology.
Collections: ESCC.

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 (SPBIC) or EMEM
serum - FBS 10%
other components - NEAA 1% (EMEM)
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 (may add 30% BS), 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% (ATCC)
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 2.0-3.0x10^4 cells/cm^2
cryoconservation - growth medium, 10% FBS, 5-10% DMSO, 1.8x10^6 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.

LOC

Origin: chicken, ovarian lymphoma infected with Marek's disease virus.
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 - RPMI 1640 40%, FBS 50%, glycerol 10%, 5.0-8.0x10^6 cells/ml in ampule
Viability after cryoconservation: 89% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 78, variability in the range between 5-44 large chromosomes, modal number of large chromosomes 37, number of markers - 1 large submetacentric chromosome (routine dye), the cells have many microchromosomes (for example diploid karyotype - 78 chromosomes - includes 63 microchromosomes), variability in the range between microchromosomes was not analysed.
Other properties:
virus susceptibility: alphaviruses, vesicular stomatitis.
Presence of particles of avian oncornaviruses C associated with destroied cells.
Applications: virology.
Collections: MWIIW.

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
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.

L TomNIIVS

Origin: mouse C3H, malignated subcutaneous adipose connective tissue, clone of NCTC cl.929.
Submitted by Tomsk RIVS from MRIVP, 1975.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199/EMEM (1:1)
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:4 -1:5, optimal population density 1.0 -1.3x10^5 cells/ml
cryoconservation - growth medium, 10% glycerol, 1.0 -1.5 x10^6 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 35-56 chromosomes, modal number of chromosomes 52
Plating efficiency: 80 %
Other properties:
virus susceptibility: arboviruses; arenaviruses.
Presence of A and C oncoviruses and paramyxoviral ribonucleoproteid.
Applications: virology.
Collections: ESCC

MA-104

Origin: monkey, embryonic kidney of *Macaca resus* .
Appl. Microbiol. 1968, 16, 1770; J.Gen.Virol. 1979. 43: 513; Arch.Virol. 1981. 70: 33; J.Clin.Microbiol. 1981. 13: 730.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS or FBS 10 %
subculture procedure - cells detachment using EDTA 0.04 %, split ratio 1:3-1:5, optimal population density 1.0-1.2x10^5 cells/ml
cryoconservation - EMEM 70%, FBS or BS 20%, glycerol 10%, 1.5-4.0x10^6 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=42, variability in the range between 88-105 chromosomes, modal number of chromosomes 100, number of markers - 1 large submetacentric chromosome (routine dye). There are microchromosomes, number of polyploid cells 22.0%.
Other properties:
virus susceptibility: alphaviruses, rubella, flaviviruses, vaccinia, RS, parainfluenza types 2 and 3, rotaviruses.
Applications: cell biology, virology, biotechnology (test systems preparation)
Collections: ECACC 85102918; MWIIW; SPBII.

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 - EMEM, DMEM (SPBIC)
serum - FBS 10%
other components NEAA 1%, (EMEM)(without NEAA 1% - SPBII)
subculture procedure - cells detachment using EDTA 0.04 %, split ratio 1:3 - 1:7
cryoconservation - growth medium, can add 30 % BS, 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 10-15%
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(SPBIC) or EMEM
serum - FBS 10%
other components - NEAA 1% (EMEM)
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% (ATCC)
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.

MDBK-VIEV

Origin: bovine, kidney, subline of MDBK (NBL-1)
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:-1:4,
cryoconservation - BME 45%, BS 45%, DMSO 10%, 2.0 -3.0 x10^6 cells/ml in ampule
Viability after cryoconservation: 70 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n=60, variability in the range between 40-75 chromosomes, modal number of chromosomes 42.
Other properties:
virus susceptibility: IBR; parainfluenza 3; BVD.
Applications: virology, biotechnology
Collections: MWIEV

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 - EMEM, BME or DMEM (SPBIC)
serum - FBS 10%
other components - NEAA 1% (EMEM)
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 (may add 30% FBS), 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% (ATCC)
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.

MDCK, clone L-9

Origin: dog, kidney of adult *Cocker spaniel* . S.H. Madin, N.B. Darby, 1958 (clone L-9 was obtained from the Centers for Disease Control and Prevention (CDC), Atlanta, USA).
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10 %
subculture procedure - cells detachment using 50 mg chymopsine in 500 ml EDTA 0.04 %, split ratio 1 : 5
cryoconservation - growth medium, 30 % BS, 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 analysis
Other properties:
virus susceptibility: influenza
Applications: cell biology, virology, biotechnology (test systems preparation)
Collections: SPBII.

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, 5.0-6.0õ10^6 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, 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), number of markers – 8 (differential 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 (SPBIC) or EMEM
serum - FBS 10%
other components - NEAA 1% (EMEM)
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) (ATCC).
Plating efficiency: 5% (ATCC)
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% (1:2), split ratio 1:2 - 1:4, 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% (SPBIC)
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 (SPBIC) or 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 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% (SPBIC)
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.

NCTC clone 929 (ESCC)

Origin: mouse C3H/An, connective, subline of NCTC clone 929.
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199/BME (1:1)
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:3 - 1:5, optimal population density 1.0-1.3x10^5 cells/cm^2

cryoconservation - growth medium, glycerol 10%, $1.0x10^6$ cells/ml in ampule

Viability after cryoconservation: 75% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological, isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between 35-56 chromosomes, modal number of chromosomes 45-55.
Plating efficiency: 70%
Other properties:
virus susceptibility: arboviruses.
Presence of oncoviruses A, C.
Applications: virology.
Collections: ESCC.

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 $2.0\text{-}4.0x10^4$ cells/cm^2
cryoconservation - growth medium, 8% DMSO, $2.0\text{-}3.0x10^6$ 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% (SPBIC)
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.

NGUK-1

Origin: rat, Gasser node neurinoma.
Actual Problems of Modern Hystopathology, Moscow. 1983: 71; Vestnik AMS USSR (Russ.) 1984. 1: 36; Cytology (Russ.) 1989. 31: 97-101; Voprosy Virusol. (Russ.) 1997. 5: 203.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 10-20%
other components - chicken embryo extract 5% (MWIIW).
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:3-1:4

cryoconservation - growth medium, DMSO or glycerol 10%, 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 and G6PD) analysis
Karyology: 2n= 42, variability in the range between 39-45 chromosomes, modal number of chromosomes 41, number of polyploid cells 26.0%.
Tumorigenicity: tumorigenic in newborn rats.
Other properties:
virus susceptibility: vesicular stomatitis, rabbies, TBE virus, Synabis, hog cholera virus, bovine plague, Coxsackie A7.
Isoenzymes LDH and G6PD.
Persistention of transmissive spongioencephalopaties exciters, in particular creutzfeld Jakob disease, Hersmann-Schtreussler syndrom and skrepie agent.
Applications: virology, oncology, cell biology, biotechnology.
Collections: MWIEV, MWIIW.

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 (SPBIC) or DMEM
serum - FBS 10%
other components – NEAA 1% (DMEM)

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 - RPMI 1640 or DMEM/F12 (SPBIC)
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.

OMG

Origin: Rainbow trout (Oncorhynchus mykiss), gonade.
Submitted by Zavialova E.A., 2009.
Morphology: epithelium-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – EMEM
serum - FBS 10%
other components – L-glutamine (300 mg/ml)
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:4), split ratio 1:3, cultivation at 15-22^{0}C, rate of reinoculation once in two - three weeks
cryoconservation – culture medium 60%, FBS 30%, DMSO 10%, 3.0-4.0x10^6 cells/ml in ampule

Viability after cryoconservation: 80-87% (0 passage, dye trypan blue)

Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n = 60 modal number of chromosomes is 60,
Other properties:
virus susceptibility: infectious pancreatic necrosis virus (IPNV), viral haemorrhagic serticaemia virus (VHNV), infectious haematopoetic necrosis virus (IHNV).
Applications: virology, bionechnology.
Collections: MWIEV.

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 - DMEM/F12, RPMI 1640 (SPBIC)
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 10-20%
subculture procedure optimal population density 3.0-5.0x10^5 cells/ml
cryoconservation - growth medium, 10% DMSO, 5.0-6.0õ10^6 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 2.5%, CS 7.5% or 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 (ATCC).
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, ATCC), the most cells have 3-5 microchromosomes including double minute chromosomes, number of polyploid cells 4.5%.
Plating efficiency: the cells cannot be plated (ATCC)
Tumorigenicity: tumorigenic in nude mice
Applications: cell biology, tumorigenicity.
Collections: ATCC CCL 46; SPBIC.

P388D1, clone P_2

Origin: DBA/2 mouse, lymphoid neoplasma, induced by methylcholantrene.
Amer. J. Path. 1957, 33:603; J. Immunol. 1978, 120: 1497; J. Immunol. 1987, 139: 780.
Morphology: lymphoblast-like
Mode of cultivation: suspension
Conditions for cultivation: medium - RPMI 1640

serum - BS 10 %
other components - sodium pyruvate 1 mM
subculture procedure - optimal cell density $5.0x10^5$ cells/ml
cryoconservation - 95 % BS, 5 % DMSO, 1.5 - $2.0x10^6$ cells/ml in ampule.

Viability after cryoconservation: 70 - 80 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Other properties:
production of interleukines 1 and 6 under the lipopolysaccharide stimulation.
Applications: cell biology
Collections: SPBII.

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 $3.0\text{-}9.0x10^5$ 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.

PA 317

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 $3.0\text{-}5.0x10^4$ 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.

PchK

Origin: rabbit, liver.
Inf.Bull. Cell Culture Ass. St.-Petersburg, 1997, N12.
Morphology: epithelial-like and fibroblast-like3
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:2
cryoconservation - BME 50%, FBS 40%, DMSO 10%, 2.0-3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 70% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Other properties:
virus susceptibility: IBR, BVD.
Applications: cell biology, virology.
Collections: MWIEV

PEO

Origin: sheep, embryo, kidney.
Submitted by Glinskikh N.P. et al., EVIRI, Patent N 1364403. 8. 01. 85.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199/EMEM (1:1)
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:3-1:4, optimal population density 1.3 -1.5x10^5 cells/ml
cryoconservation - growth medium, 10% glycerol, 1.5-2.0 x10^6 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=54, variability in the range between 41-57 chromosomes, modal number of chromosomes 54
Plating efficiency: 85 %
Other properties:
virus susceptibility: TBE; parainfluenza; Coxsackie B.
Finite lifetime culture.
Applications: virology.
Collections: ESCC

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 5-10%

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%.(ATCC)
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.

PK (15)/ B5

Origin: pig, kidney.
Subbitted by: O.L. Kolbasova, S.B. Yurkov, N.A. Chermashentseva, 2000.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - FBS 5-10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2-1:3
cryoconservation – growth medium, DMSO 10% , 5.0-10.0x10^6 cells/ml in ampule

Viability after cryoconservation: 85-90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 38, variability in the range between 27-33 chromosomes, modal number of chromosomes is 31.
Other properties:
virus susceptibility: hog cholera virus.
Applications: virology, biotechnology.
Collections: MWIEV.

PK (15)/A11

Origin: pig, kidney.
Subbitted by: O.L. Kolbasova, S.B. Yurkov, N.A. Chermashentseva, 1999.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 5-10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:4-1:6
cryoconservation – growth medium, DMSO 10% , 5.0-10.0x10^6 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 analysis
Karyology: 2n= 38, variability in the range between 28-50 chromosomes, modal number of chromosomes is 31.
Other properties:
virus susceptibility: Teschena deasease, hog cholera virus.
Applications: biotechnology.
Collections: MWIEV.

PK-82

Origin: rabbit, kydney.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:5, optimal population density $1.0x10^5$ cells/ml
cryoconservation - BME 70%, BS 20%, glycerol 10%, 5.0 -$10.0x10^6$ 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 (LDG, G6PD) analysis
Karyology: 2n=44, variability in the range between 38-45 chromosomes, modal number of chromosomes 44, number of markers -1, large submetacentric chromosome (routine dye), number of polyploid cells 8.0%.
Other properties:
virus susceptibility: herpes simplex; Newcastle disease; Aujesky; foot-and-mouth disease; bovine rhynotracheitis; parainfluenza.
Applications: virology
Collections: MWIIW.

PKK-FGM-10

Origin: dwarf goat, kidney.
Kalugina I.A. PhD thesis, Moscow 1992.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME with addition 0.06% EMPH-d
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:2-1:4
cryoconservation - culture medium 50%, BS 40%, DMSO 10%, 3.0-$4.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 79% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Other properties:
chlamidia susceptibility:
Applications: virology, biotechnology.
Collections: MWIEV

PNK-86

Origin: rabbit, new-born kidney
Submitted by Kolesnikova G.G. et al., EVIRI, patent N 1613487, 1.06.88
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199/EMEM (1:1)
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:3-1:4, optimal population density $1.0x10^5$ cells/ml
cryoconservation - growth medium, 10% glycerol, $2.0 x10^6$ 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= 44, variability in the range between 41-85 chromosomes, modal number of chromosomes 66.
Plating efficiency: 70% (ESCC)
Other properties:
virus susceptibility: TBE; parainfluenza 2,3; human adenovirus 7; enteroviruses.
Applications: virology.
Collections: ESCC, MWIEV.

PO-2

Origin: sheep, kydney.
Bulletin WIEV. 1972. 14: 67.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:2-1:3, optimal population density $1.0x10^5$ cells/ml
cryoconservation - BME 80%, FBS 20%, glycerol 10%, $3.0\text{-}5.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 70-85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 54, variability in the range between 40-55 chromosomes, modal number of chromosomes 52, the cells have microchromosomes, number of polyploid cells 18.0%.
Other properties:
virus susceptibility: rhynotracheitis; parainfluenza 3; vaccine strain LG of bovine plague virus; foot and mouth disease; herpes; Newcastle disease; Aujeszky strain pseudorabies virus.
Applications: virology, veterinary.
Collections: MWIIW.

PO-88

Origin: rhesus, monkey, kidney.
Submitted by Glinskikh N.P. et al., EVIRI, 1988.
Morphology: epithelial-like
Mode of cultivation: monolayer

Conditions for cultivation: medium - 199/EMEM (1:1)
serum - BS 5-7%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:3-1:4, optimal population density 1.3 -1.5x10^5 cells/ml
cryoconservation - growth medium, 10% glycerol, 1.0 -1.5 x10^6 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 40-69 chromosomes, modal number of chromosomes 42.
Plating efficiency: 70%
Other properties:
virus susceptibility: TBE; parainfluenza 2,3; human adenovirus 7; enteroviruses.
Applications: virology.
Collections: ESCC

PO-100-TK$^-$

Origin: sheep, kidney.
Bulletin WIEV. 1972. 14: 67; Patent RF № 20131303, 2002.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – EMEM or DMEM
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%:EDTA 0.02% (1:9) split ratio 1:3-1:4,
cryoconservation – culture medium 50%, FBS 40%, DMSO 10%, 2.0 - 3.3 x10^6 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= 54, variability in the range between 18-67 chromosomes, modal number of chromosomes 54.
Other properties:
virus susceptibility:infectious rhinotracheitis virus (IBR), equine herpes virus type 1, bovine herpes virus type 1, rhinotracheitis virus (IBR), prion screpie (PrPsc).
deficient in thymidinekinase.
Applications: virology, biotechnology, cell and genetic engineering.
Collections: MWIEV

Po-TK$^-$xSO

Origin: sheep, kidney x sheep splenocytes, hybrid culture.
Submitted by L.L.Kulikova, T.V. Galnbek, L.P. Dyakonov, A.S. Simonova et al., 1999; Patent RF № 2203318, 27.04 2003.
Morphology: epithelial and lymphocyte-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% (1:9), split ratio 1:3-1:4,
cryoconservation – culture medium 50%, FBS 40%, DMSO 10%, 2.0 - 3.3 x10^6 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= 54, variability in the range between 38-58 chromosomes, modal number of chromosomes 54.
Other properties:
virus susceptibility:infectious rhinotracheitis virus (IBR), equine herpes virus type 1, prion screpie (PrPsc).
Applications: virology, biotechnology.
Collections: MWIEV

Po-TK$^-$x LK

Origin: ovine kidney x rabbit lymphocytes, hybrid culture.
Submitted by L.P. Dyakonov, A.S. Savenko, A.S. Simonova, R.V. Belousova, P.M. Klenovitskiy, 2005.
Morphology: 2 types of cells: epithelial-like – ovine kidney and lymphocyte-like – rabbit.
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% (1:9) split ratio 1:2-1:4
cryoconservation – culture medium 50%, FBS 40%, DMSO 10%, 2.0 - 3.0-4.0 x10^6 cells/ml in ampule
Viability after cryoconservation: 87-95 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: variability in the range between 88-120 chromosomes.
Other properties:
virus susceptibility:infectious rhinotracheitis virus (IBR), BDV.
Applications: virology, biotechnology.
Collections: MWIEV

Po-TK$^-$x βr

Origin: sheep kidney x β cells of rabbit, hybrid culture.
Submitted by L.P. Dyakonov, T.V. Galnbek, A.S. Simonova, N.A. Shevtsova, N.N. Skaletskiy, L.K. Ernst, N.A. Zinovyeva, P.M. Klenovitskiy, 2004.
Morphology: epithelial-like.
Mode of cultivation: monolayer
Conditions for cultivation: medium – EMEM or DMEM
serum - FBS 5%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9) split ratio 1:4-1:6
cryoconservation – culture medium 50%, FBS 40%, DMSO 10%, 3.0-4.0 x10^6 cells/ml in ampule
Viability after cryoconservation: 70-80 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: variability in the range between 46-102 chromosomes.
Other properties:
Insulin producer.
Applications: biotechnology, veterinary medicine.

Collections: MWIEV

PoK

Origin: rabbit, kidney.
Inf.Bull. Cell Culture Ass. St.-Petersburg, 1997, N12.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:2.
cryoconservation -BME 50%, FBS 40%, DMSO 10%, 2.0-3.0x10^6 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
Other properties:
virus susceptibility: hog cholera virus, IBR.
Applications: cell biology, virology, biotechnology.
Collections: MWIEV

PPEO

Origin: sheep, embryo , kidney
Inf. Bull. Cell Culture Ass. St.-Petersburg, 1997, N12.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199 or LAH or BME
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:5), split ratio 1:2-1:3.
cryoconservation - culture medium70%, BS 20%, glycerol 10%, 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=54, variability in the range between 24-85 chromosomes, modal number of chromosomes 45.
Other properties:
virus susceptibility: toga and herpes viruses.
Applications: virology, biotechnology
Collections: MWIEV

PS/s4

Origin: saiga, kidney
Submitted by L.I. Anisimova, E.T. Prilepskaya, S.G. Yurkov, 1998.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 0.5%
other components – liposoluble nvitamins A, E, hormones – thyroxin, insulin, hydrocortisone, pH 7.2-7.4.

subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:2-1:3.
cryoconservation - culture medium70%, BS 20%, DMSO 10%.

Viability after cryoconservation: 85-90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n=60, variability in the range between 44-50 chromosomes, modal number of chromosomes 50.
Other properties:
virus susceptibility: rabies virus, PI-3, IBR, canin distemper.
Applications: virology.
Collections: MWIEV

PS-FGM

Origin: saiga, kydney.
Abstracts, the 3-d Meeting « Cultivation of Human and Animals Cells», 1990: 99.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMPH-d
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:2-1:3
cryoconservation - EMPH-d 60%, BS 30%, DMSO 10%, 2.0-3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 85% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: modal number of chromosomes 48.
Other properties:
virus susceptibility: bovine diarrhea virus; vesicular stomatitis; bovine and equine small pox viruses.
Applications: virology, biotechnology
Collections: MWIEV

PSGK-60

Origin: Asiatic ibex, kidney.
Abstracts, Meeting «Virus Diseases of Domestic Animals», Vladimir, 1995: 22.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 0.25% EMPH-d
serum - BS 10%
other components - 50 μg/ml oxytetracycline hydrochloride
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:10), split ratio 1:6.
cryoconservation - 0.25% EMPH-d 70%, BS 20%, DMSO 10%, 5.0x10^6 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 analysis
Karyology: modal number of chromosomes 60-62.
Other properties:
virus susceptibility: different taxonomic groups.

Presence of oncornavirus C.
Applications: virology, biotechnology.
Collections: MWIEV

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.

PS

Origin: pig, kidney.
Virology 1962. 16: 205.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:5, optimal population density 0.5-$1.0x10^5$ cells/cm^2
cryoconservation - medium - 199 80%, FBS 20%, glycerol 10%, 3.0-$5.0x10^6$ 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= 38, variability in the range between 52-56 chromosomes, modal number of chromosomes 54-55, without markers (routine dye), number of polyploid cells 10.0%.
Other properties:
virus susceptibility: reoviruses 1-3; adenovirus 12; Japanese encephalitis virus and other arboviruses.
Applications: virology.
Collections: MWIIW.

PSP

Origin: pig, kidney.
Inf.Bull. Cell Culture Ass. St.-Petersburg, 1997, N12.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 0.5% hemohydrolyzate or BME/LAH (1:1).
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:5.
cryoconservation - culture medium 50%, BS 40%, DMSO 10%, 2.0-3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi were negative
Karyology: 2n= 38, modal number of chromosomes 34.
Other properties:
virus susceptibility: corona- and entoroviruses of swine.
Applications: virology, biotechnology.
Collections: MWIEV.

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 (SPBIC) or 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 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% (ATCC)
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 ratio 1:2
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.

PYAEK

Origin: cattle, tongue.
Patent N 3845698, 17.12.84.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199 or BME
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:4), split ratio 1:4
cryoconservation - culture medium 70%, BS 20%, glycerol 10%, $2.0-3.0x10^6$ 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= 60, variability in the range between 32-64 chromosomes, modal number of chromosomes 50-54.
Other properties:
virus susceptibility: IBR, foot and mouth disease, BLV.
Applications: virology, biotechnology.
Collections: MWIEV

PTP-TK$^-$(410)

Origin: pig, testis.
Submitted by E.V. Stavnichiy, E.S.Yurkov 2001.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:6), split ratio 1:3
cryoconservation - growth medium, DMSO 10%, $3.0-4.0x10^6$ 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= 38, variability in the range between 34-44 chromosomes, modal number of chromosomes 39.
Other properties:
deficient in thymidinekinase.
Applications: biotechnology.
Collections: MWIEV

PTPGGRFT$^-$(380)

Origin: pig, testis.
Submitted by E.V. Stavnichiy, E.S.Yurkov 2001.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 7-10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:6), split ratio 1:3
cryoconservation - growth medium, DMSO 10%, 3.0-4.0x10^6 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
Karyology: 2n= 38, variability in the range between 34-45 chromosomes, modal number of chromosomes 39.
Other properties:
deficient in hypoxantine guanine phosphoribosyl transpherase.
Applications: biotechnology.
Collections: MWIEV

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, chemically induced basophilic leukemia, 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.

REC (RES)

Origin: rabbit, embryo, skin.
Tsitologiya 1992. 34: 102. K.K. Rysmendeeva, thesis, Moscow, 1992.
Morphology: epithelial-like and fibroblast-like.
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:2-1:3.
cryoconservation - culture medium 50%, BS 40%, DMSO 10%, 2.0-$3.0x10^6$ 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= 44, diploid.
Other properties:
virus susceptibility:virus of ovine contagious ecthyma.
Applications: cell biology, virology, biotechnology.
Collections: MWIEV.

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%
other components - NEAA 1%
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 (SPBIC), BME
serum - FBS 10%
other components - NEAA 1% (EMEM)
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 (may add 30% BS), 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 % (ATCC)
Other properties:
virus 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.

RK-13/91

Origin: rabbit, kidney.

RF Patent N 2065496, 1996.

Morphology: epithelial-like and fibroblast-like
Mode of cultivation: monolayer/suspension
Conditions for cultivation: medium - BME
serum - BS 5-10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3) with addition of 0.5% glucose, split ratio 1:3.
cryoconservation -BME 85%, BS 10%, ethylenglycol 5%, 8.0-10.0x10^6 cells/ml in ampule

Viability after cryoconservation: 85-92% (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, modal number of chromosomes 62
Other properties:
virus susceptibility: equine African plague; vesicular disease of swine.
Applications: virology, biotechnology.
Collections: MWIEV

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 (SPBIC)
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.

RS-88

Origin: pig, kidney.
«Foot and Mouth Disease» Vladimir, 1991: 109. USSR Patent N 323703, 1989.
Morphology: epithelial-like in monolayer
Mode of cultivation: monolayer/suspension
Conditions for cultivation: medium - for monolayer cultivation - BME; for cultivation in suspension - 0.25% blood protein hydrolyzate on Earle's solution, 10x Na_2HPO_4, 2 g/l glucose; 0.3 g/l glutamine; 0.05 g/l yeast extract.
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.15%/EDTA 0.02% (1:9), split ratio 1:6-1:8.
cryoconservation - culture medium 80%, BS 10%, DMSO 10%, 10.0-20.0x10^6 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 and G6PD) analysis
Karyology: 2n= 38, modal number of chromosomes 58-60.
Other properties:
virus susceptibility: foot and mouth disease, vesicular disease of swine.
Applications: virology, biotechnology.
Collections: MWIEV

RTG-2

Origin: rainbow trout (Oncorhynchus mykiss), gonade.

Science 1962, 135: 1065-1066.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – EMEM
serum - FBS 10%
other components – L-glutamine (300 mg/ml)
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:1), split ratio 1:3-1:4, cultivation at 15-21^{0}C, rate of reinoculation once in two weeks
cryoconservation – culture medium 60%, FBS 30%, DMSO 10%, 3.0-4.0x10^6 cells/ml in ampule
Viability after cryoconservation: 80-87% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n = 60 modal number of chromosomes 60,
Other properties:
virus susceptibility: infectious pancreatic necrosis virus (IPNV), viral haemorrhagic serticaemia virus (VHNV), infectious haematopoetic necrosis virus (IHNV), viral diseases oncorhynchus masou (OMVD).
Applications: virology.
Collections: MWIEV.

SC-1

Origin: mouse, embryo.
Virology 1975. 65: 128.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:6, optimal population density 1.0x10^5 cells/ml
cryoconservation - BME 70%, FBS 20%, glycerol 10%, 3.0-5.0x10^6 cells/ml in ampule
Viability after cryoconservation: 71-75% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis
Karyology: 2n= 40, variability in the range between73-90 chromosomes, modal number of chromosomes 82, 20% of cells have metacentric and submetacentric chromosomes (1-5 in a cell), number of markers - 4 acrocentric chromosomes with additional C-bands (routine dye, C-banding).
Other properties:
virus susceptibility: N-, B- and NB-trophic murine leukemia viruses.
The cells should be used within 70-100 passages.
Applications: virology, virus titration.
Collections: ATCC CRL 1404; ECACC 86060301; ICLC ATL 96009; MWIIW.

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% (ATCC).
Plating efficiency: less than 1% (ATCC)
Other properties:
virus susceptibility: rubella.
Applications: virology, cell biology.
Collections: ATCC CCL 60; ECACC 89090404; ICLC AL 96001; MWIIW; SPBIC.

SK

Origin: saiga, kydney.
Abstract, the 3-d Meeting « Cultivation of Human and Animals Cells» 1990: 90. Moscow. RF Patent N 95108959/13, 1996. Kalugina I.A., PhD thesis, Moscow, 1992.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 0.06% EMPH-d on Earle's solution
serum - FBS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:2-1:3.
cryoconservation - culture medium 50%, FBS 40%, DMSO 10%, 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
Other properties:
chronically infected with chlamydia.
Applications: virology, biotechnology.
Collections: MWIEV.

SNN-1

Origin: Oncorhynchus keta, heart.
In Vitro 1984. 20: 671-676.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – EMEM with a double set of amino acids and vitamins with salts of Erla.
serum - FBS 10%
other components – L-glutamine (300 mg/ml)
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:1), split ratio 1:2-1:3, cultivation at 18-21^{0}C, rate of reinoculation once in one-two weeks

cryoconservation – culture medium 60%, FBS 30%, DMSO 10%, 3.0-4.0x10^6 cells/ml in ampule

Viability after cryoconservation: 89% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Other properties:
virus susceptibility: infectious pancreatic necrosis virus (IPNV), viral haemorrhagic serticaemia virus (VHNV), infectious haematopoetic necrosis virus (IHNV).
Applications: virology, biotechnology.
Collections: ATCC CRL 1680, MWIEV.

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% (SPBIC)
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 - EMEM or DMEM (SPBIC) or 199
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 or glycerol, 1.0-1.5x10^6 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 10 (differential dye), 1 large submetacentric chromosome (routine dye), number of polyploid cells 1,6%
Plating efficiency: 80% (ESCC)
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

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SPEV-2

Origin: pig, embryo, kidney, clone of SPEV.
Submitted by EVIRI, patent N 1505019, 2.02.87.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 199
serum - BS 2%
subculture procedure - cells detach from flask using EDTA 0.02%, split ratio 1:5, optimal population density $1.0x10^5$ cells/ml
cryoconservation - growth medium, 10% glycerol, $1.5x10^6$ cells/ml in ampule
Viability after cryoconservation: 72% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: 2n= 38, variability in the range between 32-64 chromosomes, modal number of chromosomes 38.
Plating efficiency: 60%
Other properties:
virus susceptibility: arboviruses, rotavirus SA-11.
Presence of oncornaviruses A and C.
Applications: virology.
Collections: ESCC

SPEV-13-D5-TK

Origin: pig, kidney, subline of SPEV.
Agricultur. Biology (Russ.)1985.1:20-28. USSR Patent N1275905, 1986.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM or EMEM
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:10
cryoconservation - culture medium, BS 40%, DMSO 10%, $2.0\text{-}3.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 85-90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH and G6PD) analysis
Karyology: 2n= 38, modal number of chromosomes 40
Other properties:
virus susceptibility: transmissible gastroenteritis of swine, equine rhinopneumonia.

Applications: virology, biotechnology.
Collections: MWIEV

SPEV-17-91

Origin: pig, kidney, clone of SPEV.
«Foot and Mouth Disease» 1991: 118-119. Vladimir.
Morphology: epithelial-like in monolayer
Mode of cultivation: monolayer/suspension
Conditions for cultivation: medium - BME Ca^{+} free
serum - BS 10%
other components - sodium pyruvate 1mM, glutamine 0.3 g/l
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:4
cryoconservation - culture medium 85%, BS 10%, ethylenglycol 5%, 10.0-15.0x10^6 cells/ml in ampule
Viability after cryoconservation: 95-98% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: isoenzymological (LDH and G6PD) analysis
Karyology: 2n= 38, modal number of chromosomes 40.
Other properties:
virus susceptibility: foot and mouth disease A, O, C, Asia-1.
Applications: virology, biotechnology.
Collections: MWIEV

SPEV-F

Origin: pig, kidney, subline of SPEV.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - 0.3% EMPH-d
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:9), split ratio 1:4-1:5
cryoconservation - culture medium 50%, BS 40%, DMSO 10%, 3.0-4.0x10^6 cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Other properties:
virus susceptibility: transmissible gastroenteritis of swine, rhinopneumonia of equine.
Applications: virology, biotechnology.
Collections: MWIEV

SSF-1(VIEV)

Origin: Siberian sturgeon, fin.
Works of All-Russian Institute of Experimental Veterinary, M. 2009. 75: 249 – 252.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – 199
serum - FBS 10%
other components – L-glutamine (300 mg/ml)

subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:2-1:3, cultivation at 21-22^{0}C, rate of reinoculation once in two weeks
cryoconservation – culture medium 50%, FBS 40%, DMSO 10%, 3.0-4.0x10^6 cells/ml in ampule

Viability after cryoconservation: 75- 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: variability in the range between 190-290 chromosomes, modal number of chromosomes 250.
Other properties:
virus susceptibility: siberian sturgeon herpesvirus (SSHV).
Applications: virology.
Collections: MWIEV.

SSF-2(VIEV)

Origin: Siberian sturgeon, fin.
Works of All-Russian Institute of Experimental Veterinary, M. 2009. 75: 249 – 252.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – 199
serum - FBS 10%
other components – L-glutamine (300 mg/ml)
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:4), split ratio 1:3-1:4, cultivation at 21-22^{0}C, rate of reinoculation once in two weeks
cryoconservation – culture medium 50%, FBS 40%, DMSO 10%, 3.0-4.0x10^6 cells/ml in ampule

Viability after cryoconservation: 80-89% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: variability in the range between 190-290 chromosomes, modal number of chromosomes 250-252.
Other properties:
virus susceptibility: siberian sturgeon herpesvirus (SSHV), infectious pancreatic necrosis virus (IPNV), viral haemorrhagic serticaemia virus (VHNV), infectious haematopoetic necrosis virus (IHNV), spring viraemia of carp virus (SVCV).
Applications: virology.
Collections: MWIEV.

SSF-3(VIEV)

Origin: Siberian sturgeon, fin.
Works of All-Russian Institute of Experimental Veterinary, M. 2009. 75: 249 – 252.
Morphology: epitheliun-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – EMEM
serum - FBS 10%
other components – L-glutamine (300 mg/ml)

subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3-1:4, cultivation at 21-22^{0}C, rate of reinoculation once in two weeks
cryoconservation – culture medium 50%, FBS 40%, DMSO 10%, 3.0-4.0x10^6 cells/ml in ampule

Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: variability in the range between 190-290 chromosomes, modal number of chromosomes 250-252.
Other properties:
virus susceptibility: siberian sturgeon herpesvirus (SSHV).
Applications: virology, biotechnology.
Collections: MWIEV.

SS81

Origin: feline, embryo, fibroblasts transformed by Moloney murine sarcoma virus.
J.Virol. 1973. 11: 978; 1974. 14; 177.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - DMEM
serum - FBS 15%
other components - glucose 4 g/l, glutamine 2 mM, sodium pyruvate 1mM.
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:6-1:10, optimal population density 0.5-0.7x10^5 cells/ml
cryoconservation - DMEM 70%, FBS 20%, glycerol 10%, 2.0-3.0x10^6 cells/ml in ampule

Viability after cryoconservation: 89% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH and G6PD) analysis
Karyology: 2n= 38, variability in the range between 26-32 chromosomes, modal number of chromosomes 30, number of markers -1, large submetacentric chromosome (routine dye), number of polyploid cells 8.0%.
Other properties:
virus susceptibility: vesicular stomatitis; feline leukemia; bovine syncytium-forming virus.
Presence of murine sarcoma virus genome.
Production of oncornaviruses RD-114 and murine sarcoma.
Applications: virology.
Collections: MWIIW

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.

Taurus-1

Origin: calf kidney.
Author's patent certificate N 1347448 of 22.05.87 deposition number RKKDP/002/SPBII
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - EMEM
serum - BS 10 %
subculture procedure - cells detachment using 50 mg chymopsine in 500 ml EDTA 0.04 %, split ratio 1 : 3
cryoconservation - 85 % growth medium, 10 % BS, 5 % DMSO, 1.0 - 2.0x10^6 cells/ml in ampule.

Viability after cryoconservation: 70 - 80 % (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymatic analysis (LDH, G6PD)
Karyology: aneuploid cells (24 %), polyploid cells (2 %), modal number of chromosomes 57, number of markers - 3.
Other properties:
virus susceptibility: inzluenza, parainfluenza, adenoviruses, cattle viruses (infectious rhynotracheitis, adenovirus, diarrhea)
Applications: cell biology, virology, biotechnology (test-systems preparation, accumulation of viral mass)
Collections: SPBII; ESCC.

TEK

Origin: bovine, embryo, thymus.
Bulletin WIEV 1972. 14: 64; 1972. 14: 78.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - BS 10%

subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:5, optimal population density 0.5-1.0x10^5 cells/cm^2
cryoconservation - BME 80%, BS 10%, glycerol 10%, 3.0-5.0x10^6 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 56-64 chromosomes, modal number of chromosomes 60, pseudodiploid, number of markers - 2-4 metacentric and submetacentric chromosomes (routine dye), number of polyploid cells 2.0%.
Other properties:
virus susceptibility: foot and mouth disease; vesicular stomatitis; Aujesky; bovine rhynotracheitis; rabies; smallpoxvaccine; horse rhinopneumonia.
Applications: virology.
Collections: MWIIW.

TK^- LM (clone 1D)

Origin: mouse C3H/An, connective, subline of LM.
Proc. Natl. Acad. Sci., 1979. 76: 3755.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3-1:6, optimal population density 1.0x10^5 cells/ml
cryoconservation - BME 70%, FBS 20%, glycerol 10%, 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 and isoenzymological (LDG, G6PD) analysis
Karyology: 2n=40-, variability in the range between 46-56 chromosomes, modal number of chromosomes 53, number of markers 5 (routine and (differential dye, C banding).
Other properties:
virus susceptibility: herpes viruses.
Deficient in thymidine kinase.
Applications: virology
Collections: MWIIW

V-79

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%
Plating efficiency: 58 % (SPBIC)
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 - 199, EMEM, DMEM (SPBIC) or BME
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 (may add 30% FBS or BS),10 %DMSO or glycerol 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 % (SPBIC); 65% (ESCC)
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.

Vero C1008

Origin: African green monkey, kidney, clone of Vero 76.
In: « Vero cells - origin, properties and biomedical applications».Depart. Microbiol. School of Medicine Chiba University, Japan. 1988: 26.
Morphology: epithelial- and fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 8 -10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:3 - 1:5, optimal population density 1.0x10^5cells/ml
cryoconservation - BME 70%, FBS 20% glycerol 10%, 3.0-5.0x10^6 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 (LDG, G6PD) analysis
Karyology: 2n=60, variability in the range between 52-58 chromosomes, modal number of chromosomes 56, number of markers - 3 (routine and differential dye, C banding), number of polyploid cells 6.0%.
Other properties:
virus susceptibility: hemorrhagic fever Machupo (Bolivian), Junin (Argentinian), Lassa (African); karelian fever (Russian); Marburg; Ebola.
Applications: virology, biotechnology.
Collections: ATCC CRL 1586, ECACC 85020206, MWIIW.

Vero (V)

Origin: african green monkey, kidney, subline of Vero.
Cytology (Russ.) 1996. 2: 241; Vopr.Virusol. (Russ.) 1996. 4: 183.
Morphology: epithelial- and fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - FBS 8%

subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:4-1:5, optimal population density $1.0x10^5$ cells/cm^2
cryoconservation - BME 70%, FBS 20%, glycerol 10%, $2.0\text{-}5.0x10^6$ 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 49-58 chromosomes, modal number of chromosomes 54-55, number of markers - 1 large metacentric chromosome (routine dye) and 3 markers (differential dye, C-banding), number of polyploid cells 3.0%.
Tumorigenicity: non tumorigenic
Other properties:
virus susceptibility: herpes simplex 1 and 2, cytomegalovirus, hepariris A, vaccinia.
The keeping of stability of biological properties in the range 178-200 subcultures.
Applications: virology, biotechnology.
Collections: MWIIW

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 $1.0\text{-}5.0x10^5$ cells/ml
cryoconservation - growth medium, 8%DMSO, $3.0\text{-}4.0x10^6$ 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
Mode of cultivation: monolayer
Conditions for cultivation: medium - RPMI 1640 (SPBIC) or 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 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.

WSSK-1

Origin: white sturgeon (Acipenser transmontanus), skin.
Submitted by: Hedrick et al., 1991.
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – EMEM with a double set of amino acids and vitamins.
serum - FBS 10%
other components – L-glutamine (300 mg/ml)
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3), split ratio 1:3-1:4, cultivation at 20-22^{0}C, rate of reinoculation once in two-three weeks
cryoconservation – culture medium 50%, FBS 40%, DMSO 10%, 3.0-4.0x10^6 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: variability in the range between 190-250 chromosomes, modal number of chromosomes 220.
Other properties:
virus susceptibility:Siberian sturgeon herpesvirus (SSHV).
Applications: virology, biotechnology.
Collections: MWIEV.

XC

Origin: rat, sarcoma.
Nature 1960. 168: 980; Folia Biol. 1961. 7: 46; 1962. 8: 221; 1963. 9: 77; Neoplasma 1962. 9: 104; PNAS 1969. 63: 753; Virology 1970. 42: 1136.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - BME
serum - BS 10%
subculture procedure - cells detach from flask using EDTA 0.02% with 0.1 mg/ml chimopsin, split ratio 1:4-1:6, optimal population density 1.0x10^5 cells/cm^2
cryoconservation - BME 80%, BS 10%, glycerol 10%, 3.0-5.0x10^6 cells/ml in ampule

Viability after cryoconservation: 84% (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 32-52 chromosomes, modal number of chromosomes 39, number of markers - about 10 (differential dye), number of polyploid cells 16.0%.
Plating efficiency: 15% (ATCC)
Tumorigenicity: tumorigenic
Other properties:
virus susceptibility: vesicular stomatitis, MLV.
Contain the RS genome but does not appear to release infectious virus.
Applications: virology, the cells are employed as indicator for detecting the growth of murine leukemia viruses in cell cultures.
Collections: ATCC CCL 165; ECACC 88120601; ICLC ATL 96013; MWIIW.

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%
other components - HEPES 0.01M (MWIIW)
subculture procedure optimal population density $3.0-9.0x10^5$ cells/ml
cryoconservation - growth medium (may add 40% FBS), 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.

YADK-04

Origin: goat domesticus, ovary.
Submitted by: V.N. Gerasimov, N.I. Gerasimova, L.P. Dyakonov, K.N. Gruzdev, V.N. Zaharov, B.L. Manin. 2004.
Morphology: epithelium-like
Mode of cultivation: monolayer
Conditions for cultivation: medium – BME.
serum - BS 10%
subculture procedure - cells detach from flask using trypsin 0.25%: EDTA 0.02% (1:3)+ 0.5% dextrose, split ratio 1:2-1:4.
cryoconservation –growth medium, ethylenglycole 5%, 2.0-3.0x10^6 cells/ml in ampule
Viability after cryoconservation: 85-90% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymological (LDH, G6PD) analysis.
Karyology: 2n = 60, modal number of chromosomes 57-58.
Other properties:
virus susceptibility: aujeszky desease, equine African cholera virus, hog holera virus, poultry pneumoviruses.
Applications: virology, biotechnology.
Collections: MWIEV.

All-russian specialized collection of continuous invertebrate cell lines (MWIEV)

The chapter of catalogue was prepared by: V.T. Kakpakov, S.V. Kakpakov, Z.N. Sayfutdinova.

Species index

SPECIES	ORIGIN of CELLS	NAME OF CELL LINE
Drosophila		
Drosophila hydei	6 h embryo	Dh 33
	embryonic blastema	Dh 14
Drosophila melanogaster	1 st stage embryo	S1
	6 h embryo	Kc
	clonal subline	67 j 25 DK
	clonal subline	67 j 25 DT
	Embryo	G2
	Embryo	S3
Drosophila melanogaster OrR	12 h embryo	85 h 16 Dm (OrR)
Drosophila melanogaster OrRC	6-12 h embryo	67 j 25 D
Drosophila melanogaster vg	Embryo	75 e 7 vg 2
Drosophila virilis	20 h embryo	79 f 7 Dv 3g
Mosquito		
Aedes aegypti	Larvae	Mos 20 A
Aedes albopictus	Larvae	Aa
Moth		
Fall armyworm *Spodoptera frugiperda*	pupal ovary	Sf9 Sf 9 (IPLB- 21)
Turnip moth *Agrothis segetum*	pupal ovary	MB- 03C4
Silkworm		
Bombyx mori	clonal subline	BmN
	larval ovary	Bm

67j 25D

Origin: Drosophila melanogaster (Insecta) 6-12 h embryonic cells.
Genetica (Russ) 1969,12:67; Intervertebr.Systems in vitro 1980. p 565.
Morphology: round and spindle-shaped cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 5- 10%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $0.5x10^6$ cells/ml
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 analysis
Karyology: 2n=8 (female cells)
Plating efficiency: 10%
Other properties:
virus susceptibility: picornaviruses, DVX
isoenzymes PGD,G6PD, Fich, α-Gpdh
genetical markers: GPRT-, ES s, 8Agr, 6MPr.
Applications: cell biology, molecular and ecological genetics, endicrynology, cytogerontology, reproduction of drosophila retrotransposones: MDG-1, MDG-3, copia, gypsy, 17,6 and 297.
Collections: MWIEV

67j25DK

Origin: Drosophila melanogaster (Insecta), clonal line, embryonic cells.
Ontogenez (Russ.), 1971, 2: 304- 310.
Morphology: round cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml
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 analysis
Karyology: triploid 3n = 12
Plating efficiency: 10%
Other properties:
virus susceptibility: picornaviruses, DVX
isoenzymes PGD, G6PD
genetical markers: GPRT-, 8AG r, 6MP r, ES s.
Applications: cell biology
Collections: MWIEV

67j25DT

Origin: Drosophila melanogaster (Insecta). Clonal line, embryonic cells.
Genetica (Russ) 1969, 12: 67-75; Ontogenez (Russ), 1971, 2: 259-303
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46

serum - FBS 10%
subculture procedure -cell detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml
cryoconservation - growth medium, 10% DMSO, $2.0x10^6$ cell/ ml in ampule.

Viability after cryoconservation: 90% (0 passage, due trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological and isoenzymologycal (GPGD) analysis
Karyology: tetraploid (4n=16 chromosomes)
Plating efficiency: 50%
Other properties:
virus susceptibility: picornaviruses
isoenzymes GPGD, G6PD
genetical markers: GPRT -; Es s.
Applications: cell biology, virology, biotechnology.
Collections: MWIEV

75 e 7 vg 2

Origin: Drosophila melanogaster (Insecta), vestigial (II- 67,0)
Drosophila Information Servise, 1977, 52:110
Morphology: round and spindle-shaped cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 5%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml
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 analysis
Karyology: 2n= 7
Plating efficiency: 5%
Other properties:
virus susceptibility: picornaviruses
isoenzymes phumarasa, GFGD, ADG.
genetical markers: ES s.
Applications: cell biology, virology, genetics of Somatic cells
Collections: MWIEV

79f7Dv3g

Origin: Drosophila virilis (Insecta). 20h. Embryonic cells.
VII Europ. Drosophila Res. Conf. Finland, 1981, 23
Morphology: round cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml
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 analysis

Karyology: 2n= 11 (with one Y- chromosome)
Plating efficiency: 20%
Applications: cell biology, Drosophila virilis retrotransposone producent (Tv1)
Collections: MWIEV

85 h 16 Dm Or R (OrR)

Origin: Drosophila melanogaster (Insecta), 12 h embryotic cells.
Proc III International cell culture congress. Sendai, 1985, 38
Morphology: round cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml
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 analysis
Karyology: 2n= 8
Plating efficiency: 10%
Applications: cell biology, somatic cell genetics, endocrinology
Collections: MWIEV

Aa

Origin: Mosquito (Insecta), Aedes albopictus, minced trypsinized larvae
Curr. sci. 1967, 35: 506-508
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure - cells detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml
cryiconservation: growth medium, 10% DMS0, $1.0x10^6$ 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: diploid 2n = 6
Plating efficiency: 50%
Other properties:
virus susceptibility: arboviruses
Applications: cell biology, bacteriology, virology
Collections: MWIEV

Bm

Origin: Silkworm. Bombyx mori; larval ovary cells.
Nature, 1967, 216: 613
Morphology: spindle-like cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46 or Grase
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:5, optimal population density $1.0x10^6$ cells/ml

cryoconservation - growth medium, 10% DMSO, $2.0x10^6$ 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 (PGD) analysis
Karyology: polyploid >100 chromosomes
Plating efficiency: 1%
Other properties:
virus susceptibility: baculoviruses
isoenzymes LDH, ICDG, SOD
Applications: virology, biotechnology.
Collections: MWIEV

BmN

Origin: Silkworm, Bombyx mori, ovary cells , clonal line.
Appl. Environ. Microbiol., 1982, 44:227
Morphology: spindle-shapped cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46 or TMN-FH
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:5, optimal population density $1.0x10^6$ cells/ml
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: Isoenzymological analysis (6 PGD)
Karyology: polyploid. 260- 300 chromosomes.
Plating efficiency: 10%
Other properties:
virus susceptibility: baculoviruses
isoenzymes 6 PGD, LDH, SOD
Applications: biotechnology
Collections: MWIEV

Dh14

Origin: Drosophila Hydei (Insecta), embryonic blastema
In Vitro, 1980, 16: 913
Morphology: round cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $0.5x10^6$ cells/ml
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 analysis
Karyology: 2n= 11 (XO -cells)
Plating efficiency: 10%
Applications: cell biology
Collections: MWIEV

Dh33

Origin: Drosophila hydei (Insecta), embryonal cells.
In vitro 1980, 16: 913
Morphology: spindle-shaped cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml.
cryoconservation - growth medium, 10% DMSO, $2.0x10^6$ cell/ 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: diploid 2n= 12 (XY- chromosomes)
Plating efficiency: 10%
Other properties:
virus susceptibility: picornaviruses
Applications: cell biology, virology.
Collections: MWIEV

G2

Origin: Drosophila melanogaster (Insecta). Embryonic cells.
Genetics and Biology of Drosophila. London. 1978. 2: 266
Morphology: round cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $0.5x10^6$ cells/ml
cryoconservation - growth medium, 10% DMSO, $2.0\text{-}5.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 80% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis
Karyology: hypotetraploid
Plating efficiency: 20%
Applications: cell biology
Collections: MWIEV

Kc

Origin: Drosophila melanogaster (Insecta), 6 h embryo.
In vitro. 1970, 6:162.
Morphology: round cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml
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 analysis
Karyology: diploid 2n = 7 (XO- cells)

Plating efficiency: 20%
Other properties:
virus susceptibility: picornaviruses
isoenzymes isozymes GPGD
genetical markers: GPRT -
Applications: cell biology, virology, endocrinology
Collections: MWIEV

MB-O3C4

Origin: Agrothis segetum (Insecta), pupal ovary cells
Deposited in MWIGG, patent of RF
Morphology: fibroblast-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml
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 (SOD) analysis
Karyology: polyploid. > 130 chromosomes
Other properties:
virus susceptibility: baculoviruses
isoenzymes G6PD, LDH
Applications: virology, biotechnology
Collections: MWIEV

Mos 20 A

Origin: Mosquito (Insecta), Aedes aegypti. Minced trypsinized larvae of mosquito.
J.Med. Entomol. 1969, 6: 432-439.
Morphology: epithelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure -cells detachment mechanically, split ratio 1:20, optimal population density $0.5x10^6$ cells/ml.
cryoconservation - growth medium, 10% DMSO, $1.0\text{-}2.0x10^6$ 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= 6
Plating efficiency: 10%
Other properties:
virus susceptibility: yellow fever virus, CPV, SF.
Applications: cell biology, biotechnology, virology.
Collections: MWIEV

S1

Origin: Drosophila melanogaster (Insecta). Cells of last embryos and first stage larvae.
J. Embryol. Exp. Morphol. 1972, 27: 353-365
Morphology: round cells
Mode of cultivation: monolayer

Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml
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 (G6PD) analysis
Karyology: 60%- diploid, 40%- heteroploid
Plating efficiency:10 %
Other properties:
virus susceptibility: picornaviruses, VS
Applications: cell biology, somatic cells genetics, virology.
Collections: MWIEV

S3

Origin: Drosophila melanogaster (Insecta), last embryonal cells.
J.Embryol. Exp. Morphol. 1972, 27: 353-365.
Morphology: round, fibroblast-like, epithelial like
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46
serum - FBS 10%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml
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 analysis
Karyology: diploid 2n = 8
Plating efficiency: 20%
Other properties:
virus susceptibility: picornaviruses
Applications: cell biology
Collections: MWIEV

Sf9 (IPLB-21)

Origin: fall armyworm (Insecta). Spodoptera frugiperda. Pupal ovary cells.
Invertebrate tissue cultures. Research Application. 1976. p.328
Morphology: small spherical cells with a few fibroblast-like cells
Mode of cultivation: monolayer
Conditions for cultivation: medium - C-46 or IPL-40
serum - FBS 5%
subculture procedure - cell detachment mechanically, split ratio 1:10, optimal population density $1.0x10^6$ cells/ml
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 analysis
Karyology: polyploid > 100 chromosomes
Other properties:
virus susceptibility: baculoviruses

Applications: biotechnology, virology
Collections: MWIEV

Sf9

Origin: Insect, ovary Spodoptera frugiperda pupa, clone of IPLB-SF 21 AE.
In vitro 1977. 4: 134.
Morphology: epitelial-like
Mode of cultivation: monolayer
Conditions for cultivation: medium - SF-900 11 SFM Grec
serum - BS 10%
cryoconservation - culture medium 60%, FBS 10% DMSO 10%, $5.0x10^6$ cells/ml in ampule
Viability after cryoconservation: 75% (0 passage, dye trypan blue)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Other properties:
virus susceptibility: baculoviruses
Applications: cell biology, biotechnology
Collections: ATCC, MWIEV

All-Russian Collection of the higher plant cells (RCPC)

The chapter of catalogue was prepared by L.V. Frolova, I.N. Smolenskaya, E.S. Sukhanova

Species index

SPECIES	ORGAN or TISSUE	NAME OF CELL LINE
Aristolochia manshuriensis	Stem	A-2
Arnebia euchroma	Axillary bud	AE-1
Camellia sinensis	Stem	ChS-2
Dioscorea deltoidea	IPHR D1,callus	IPHR DM 0.5
	IPHR D1,callus	IPHR DM1
	IPHR D1,callus	IPHR DM8
	Root	IPHR D1
Epimedium - macrosepalum	Leaf petiole	EM-1
Eritrichium incanum	Root	ERSR
Medicago sativa	Leaf	L-1
Panax ginseng	Root	DAN-25
	Root	IPHR G1
	Root	PANAX - 13
	Stem tumor	R-1
Panax quinquefolius	Root	IPHR G10
Poliscias filicifolia	Leaf	BFT-01-95
Rhodiola rosea	Stem	ZK-1
Rubia cordifolia	Stem apex	RC-1
Scorzonera hispanica	Root tumor	SFR-SH-1
Stephania glabra	line VILAR Sg-6	VILAR Sg - 48
Stevia rebaudiana Bertoni	Leaf	SR-1
Ungernia victoris	Bulb	U-1

A - 2 (Aristolochia manshuriensis Komar.)

Origin: segments of shoots, cultivated with Agrobacterium tumefaciens
Morphology: yellow biomass
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS
subculture procedure - change of solid medium on the 30th day of cultivation
cryoconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=28, variability in the range between 28-91 chromosomes, modal class 3n, aneuploid cells
Other properties:
producer of aristolochic acids
Applications: biotechnology
Collections : RCPC

AE - 1 (Arnebia euchroma)

Origin: axillary bud
Morphology: colour of biomass from grey to dark-red
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS (kinetine 0.5mg/l, IAA 0.2mg/l)
subculture procedure - change of solid medium on the 30th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=8, variability in the range between 14-64 chromosomes, modal number of chromosomes 32
Other properties:
producer of shikonin
Applications: biotechnology
Collections : RCPC

BFT - 01-95 (Poliscias filicifolia (Moore ex Rounier) Bally)

Origin: leave
Morphology: light-yellow biomass
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS (kinetine 2mg/l, NAA 5mg/l)
subculture procedure - change of solid medium on the 21th day of cultivation
cryoconservation - growth medium, 15% glycerol, 10% saccharose
Viability after cryoconservation: 47% (dye phenosafranin)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=24, variability in the range between 22-74 chromosomes, modal class 2n, aneuploid cells
Other properties:
producer of active pharmaceutical compounds
Applications: biotechnology
Collections : RCPC

ChS - 2 (Camellia sinensis L.)

Origin: stem
Morphology: yellow biomass

Mode of cultivation: solid medium
Conditions for cultivation: modified Heller medium (2,4-D 5mg/l)
subculture procedure - change of the solid medium on 45-50th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=30, variability in the range between 20-150 chromosomes, modal class 2n, aneuploid cells
Other properties:
producer of phenolic compounds (catechins, proanthocyanidins etc)
Applications: biotechnology
Collections : RCPC

DAN - 25 (Panax ginseng C.A. Mey.)

Origin: main root of cultivated plant
Morphology: light-yellow biomass
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS (kinetine 0.1mg/l)
subculture procedure - change of solid medium on the 30th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=48, variability in the range between 20-91 chromosomes, modal class is not expressed, aneuploid cells
Other properties:
producer of ginsenosides
Applications: biotechnology
Collections : RCPC

EM - 1 (Epimedium - macrosepalum Stearn)

Origin: petiole of young leaf
Morphology: light-yellow biomass
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS
subculture procedure - change of solid medium on the 28th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=8, variability in the range between 4-32 chromosomes, modal class 2n
Other properties:
producer of mannosidase
Applications: biotechnology
Collections : RCPC

ERSR (Eritrichium incanum(Turez.)A.DC.ssp sichotense(M.Pop.)Starchenko)

Origin: root
Morphology: light-grey biomass
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS (BAP 0.5mg/l, NAA 2mg/l)
subculture procedure - change of solid medium on the 28th day of cultivation
cryconservation - not tested

Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=24, variability in the range between 10-48 chromosomes, modal number of cromosomes 18
Other properties:
producer of chitinase
Applications: biotechnology
Collections : RCPC

IPHR D1 (Dioscorea deltoidea Wall.)

Origin: root, callus was treatment by mutagene
Morphology: light-yellow biomass
Mode of cultivation: solid and liquid medium
Conditions for cultivation: modified medium - MS (kinetine 0.1mg/l, NAA 1mg/l)
subculture procedure - change of solid medium on the 30th day, liquid medium on the 14th day of cultivation
cryoconservation - growth medium, 7% DMSO
Viability after cryoconservation: 30% after asparagine pretreatment (dye phenosafranin)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=20, variability in the range between 8-49 chromosomes, two modal class 3n and 4n, aneuploid cells
Other properties:
producer of diosgenin and furostanol glycosides
Applications: cell biology, biotechnology
Collections : RCPC

IPHR DM 0.5 (Dioscorea deltoidea Wall.)

Origin: IPHR D1 after treatment by mutagene
Morphology: light-yellow biomass
Mode of cultivation: solid and liquid medium
Conditions for cultivation: modified medium - MS (kinetine 0.1mg/l, NAA 1mg/l)
subculture procedure - change of solid medium on the 30th day, liquid medium on the 14th day of cultivation
cryoconservation - growth medium, 7% DMSO
Viability after cryoconcervation: 30%(dye phenosafranin)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=20, variability in the range between 12-63 chromosomes, two modal class: 2n and 3n, aneuploid cells
Other properties:
producer of diosgenin and furostanol glycosides
Applications: cell biology, biotechnology
Collections : RCPC

IPHR DM1 (Dioscorea deltoidea Wall.)

Origin: IPHR D1 after treatment by mutagene
Morphology: light-yellow biomass
Mode of cultivation: solid and liquid medium
Conditions for cultivation: modified medium - MS (kinetine 0.1mg/l, NAA 1mg/l)
subculture procedure - change of solid medium on the 30th day of cultivation, liquid medium on the 14th day
cryoconservation - growth medium, 7% DMSO
Viability after cryoconservation: 30%(dye phenosafranin)

Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=20, variability in the range between 12-50 chromosomes, modal class 2n, aneuploid cells
Other properties:
producer of diosgenin and furostanol glycosides
Applications: cell biology, biotechnology
Collections : RCPC

IPHR DM8 (Dioscorea deltoidea Wall.)

Origin: IPHR D1 after treatment by mutagene, cell selection on the altered medium -
Morphology: light-yellow biomass
Mode of cultivation: solid and liquid medium
Conditions for cultivation: modified medium - MS (without hormones)
subculture procedure - change of solid medium on the 30th day of cultivation, liquid medium on the 14th day
cryoconservation - growth medium, 7% DMSO
Viability after cryoconservation: 30%(dye phenosafranin)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=20, variability in the range between 9-70 chromosomes, modal class 2n, aneuploid cells
Other properties:
producer of diosgenin and furostanol glycosides
Applications: cell biology, biotechnology
Collections : RCPC

IPHR G1 (Panax ginseng C.A. Mey.)

Origin: root segments of wildgrown plant
Morphology: light-yellow biomass
Mode of cultivation: solid and liquid medium
Conditions for cultivation: medium - MS (kinetine 1mg/l, NAA 2mg/l)
subculture procedure - change of solid medium on the 30th day, liquid medium on the 14th day of cultivation
cryconservation - growth medium, 10% glycerol, 10% sacchrose
Viability after cryoconservation: 30%(dye phenosafranin)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=48, variability in the range between 50-100 chromosomes, modal class is not expressed, aneuploid cells
Other properties:
producer of ginsenosides
Applications: cell biology, biotechnology
Collections : RCPC

IPHR G10 (Panax quinquefolius L.)

Origin: root of greenhouse plant
Morphology: light-yellow biomass
Mode of cultivation: solid and liquid medium
Conditions for cultivation: medium - MS (kinetine 1mg/l, NAA 2mg/l)
subculture procedure - change of solid medium on the 30th day of cultivation, liquid medium on the 14th day
cryconservation - growth medium
Viability after cryoconservation: 30%(dye phenosafranin)
Sterility: tests for bacteria, fungi and mycoplasma were negative

Species: biochemical determination of secondary substances
Other properties:
producer of ginsenosides
Applications: cell biology
Collections : RCPC

L - 1 (Medicago sativa L.)

Origin: leaf
Morphology: light-yellow biomass
Mode of cultivation: liquid medium
Conditions for cultivation: medium - MS (kinetine 0.1mg/l, 2,4-D 1mg/l)
subculture procedure - change of medium on 15th day of cultivation
cryoconservation - growth medium, 7% DMSO
Viability after cryoconservation: 20-30% (dye phenosafranin)
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=16, variability in the range between 7-72 chromosomes, modal number of chromosomes 18, aneuploid cells
Other properties:
superproducer of peroxidase
Applications: biotechnology
Collections : RCPC

PANAX - 13 (Panax ginseng C.A. Mey.)

Origin: root of greenhouse plant
Morphology: light-yellow biomass
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS (kinetine 1mg/l, NAA 2mg/l; LX-13)
subculture procedure - change of solid medium on the 30th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: biochemical determination of secondary substances
Other properties:
producer of ginsenosides
Applications: biotechnology
Collections : RCPC

R - 1 (Panax ginseng C.A. Mey.)

Origin: stem tumor (after cultivation with Agrobacterium rizogenes A4)
Morphology: light-yellow biomass
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS
subculture procedure - change of solid medium on the 30th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=48, variability in the range between 24-190 chromosomes, modal class 2n, aneuploid cells
Other properties:
producer of ginsenosides
Applications: biotechnology
Collections : RCPC

RC - 1 (Rubia cordifolia L.)

Origin: stem apex
Morphology: orange biomass
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS (BAP 0.5mg/l, NAA 2mg/l)
subculture procedure - change of solid medium on the 21th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=38, variability in the range between 10-74 chromosomes, the modal class 2n
Other properties:
producer of anthraquinones
Applications: biotechnology
Collections : RCPC

SFR-SH-1 (Scorzonera hispanica L.)

Origin: crown-gall tumor of root
Morphology: light-yellow biomass
Mode of cultivation: solid medium
Conditions for cultivation: medium - B5
subculture procedure - change of medium on the 21th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=14, variability in the range between 13-28 chromosomes, modal class 2n
Other properties:
producer of physiologically active substances
Applications: biotechnology
Collections : RCPC

SR - 1 (Stevia rebaudiana Bertoni)

Origin: leaf
Morphology: colour of biomass from light-yellow to broun
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS (kinetine 1mg/l, NAA 2mg/l)
subculture procedure - change of solid medium on the 25th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=22, variability in the range between 16-132 chromosomes, modal number of chromosomes 24-40
Other properties:
producer of diterpenoid glucosides
Applications: biotechnology
Collections : RCPC

U - 1 (Ungernia victoris /Vved./)

Origin: bulb
Morphology: yellow biomass
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS (kinetine 1mg/l, NAA 2mg/l)

subculture procedure - change of solid medium on the 30-40th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=24, variability in the range between 9-110 chromosomes, modal class 2n, aneuploid cells
Other properties:
producer of alkaloids
Applications: biotechnology
Collections : RCPC

VILAR Sg - 48 (Stephania glabra (Rox b) Miers)

Origin: selection from the cell line VILAR Sg-6
Morphology: broun biomass
Mode of cultivation: liquid medium
Conditions for cultivation: medium - MS (2,4-D 2mg/l, NAA 0.2mg/l)
subculture procedure - change of medium on the 14th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=28, variability in the range between 4-87 chromosomes, modal class 3n, aneuploid cells
Other properties:
superproducer of stepharine
Applications: biotechnology
Collections : RCPC

ZK - 1 (Rhodiola rosea L.)

Origin: stem segments
Morphology: light-grey biomass
Mode of cultivation: solid medium
Conditions for cultivation: medium - MS (kinetine 0.5mg/l, NAA 2mg/l; adenine - 0/5mg/l)
subculture procedure - change of solid medium on the 25th day of cultivation
cryconservation - not tested
Sterility: tests for bacteria, fungi and mycoplasma were negative
Species: karyological analysis, biochemical determination of secondary substances
Karyology: 2n=22, variability in the range between 100-660 chromosomes, modal class - 7n, aneuploid cells
Other properties:
producer of phenolic compounds
Applications: biotechnology
Collections : RCPC

Collection of pRi T-DNA transformed roots of higher plants (HRC)

The chapter of catalogue was prepared by: I.N. Kuzovkina, A.Yu. Stepanova

Species index

SPECIES	NAME OF CELL LINE
Althaea officinalis L.	Alt.of.
Apocynum cannabinum L.	Ap.can.
Armoracia lapathifolia L.	Arm. lap.
Beta vulgaris L.	B.v.
Cucumis sativus L.	Cuc.sat.
Daucus carota L.	D.c.
Glycyrrhiza uralensis Fisch.	Gl.ur.
Helianthus annuus L.	H.an.
Ipomea purpurea L.	Ip.p.
Linum flavum L.	L.fl.
Linum usitatissimum L. cv.Atalante	L.usit. atalante
Linum usitatissimum L.	L.usit.
Lupinus polyphyllus L.	Lup.pol.
Lycopersicon esculentum Mill.	Tomate
Melia indica	Mel.
Ononis arvensis L.	On.ar.1601
Ononis arvensis L.	On.ar.A-4
Ononis spinosa L.	On.sp.
Peganum harmala L.	P.h.
Petroselinum sativum L.	Petr.sat.
Rauvolfia serpentina L.(Benth.)	R.s.
Rauvolfia vomitoria Afz.	R.v.
Rhaponticum carthamoides (Willd.)	Rhap.car.
Rubia tinctorum L.	R.t.
Ruta graveolens L.	R.gr.
Scutellaria baicalensis Georgi.	Sc.baic.
Tagetes patula L.	Taget.
Trifolium repens L.	Trif.rep.
Valeriana officinalis L.	Valer.
Withania somnifera L.	W.som.

Alt. of.

Origin: *Altheae officinalis* L. (Malvaceae) juvenile plant leaves transformation with pRi *Agrobacterium rhizogenes,* strain 15834
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 50 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature

Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: root specific polysaccharide biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific polysaccharides
Applications: biotechnology
Collections: HRC

Ap. can.

Origin: *Apocynum cannabinum* L. (Apocynaceae) juvenile plant shoots transformation with pRi *Agrobacterium rhizogenes,* strain R-1601
Morphology: highly branching roots
Conditions for cultivation: medium - Murashige and Skoog, hormones free (MSO 1/2 N)

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 5 weeks
explant ~ 250 mg per 60 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature

Viability after conservation: 80%
Sterility: fungi and bacteria free
Species: species specific hart glycoside biosynthesis
Plating efficiency: non-cloning
Other properties:
species specific hart glycosides
Applications: biotechnology
Collections: HRC

Arm. lap.

Origin: *Armoracia lapathifolia* Gilib. (Crucuferae) plant leaves transformation with pRi *Agrobacterium rhizogenes,* strain À 4
Morphology: highly branching roots shoot formation
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 4 weeks
explant ~ 250 mg per 100 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature

Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: opine test
Plating efficiency: non-cloning
Applications: biotechnology
Collections: HRC

B.v.

Origin: *Beta vulgaris* (L.) (Aegiptische Flachrunde) (Chenopodiaceae) seedling cotyledones transformation with pRi *Agrobacterium rhizogenes,* strain LBA-9402
Morphology: highly branching roots
Conditions for cultivation: medium - Murashige and Skoog (MS 1/2 N)

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring a group of root tips each 2 weeks
explant ~ 250 mg per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature

Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: betacyanine synthesis,opine test
Plating efficiency: non-cloning
Other properties:
root specific betacyanine biosynthesis
contamination sensitivity: sensitive to bacterial contamination
Applications: enzimology of betacyanine biosynthesis
Collections: HRC

Cuc. sat.

Origin: *Cucumis sativus* L. (Cucurbitaceae) seedling cotyledones transformation with pRi *Agrobacterium rhizogenes,* strain 8196
Morphology: highly branching thickened roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature

Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: opine test
Plating efficiency: non-cloning
Other properties:
root specific cucurbitacides
Applications: biotechnology
Collections: HRC

D.c.

Origin: *Daucus carota* L. (Umbellifereae) transformation with pRi *Agrobacterium rhizogenes,* strain ATCC 15834
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature

Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: opine test
Plating efficiency: non-cloning
Applications: biotechnology, dual culture with endomycorrhizal fungi
Collections: HRC

Gl.ur.

Origin: *Glycyrrhiza uralensis* Fisch. (Fabaceae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain 15834
Morphology: highly branching shortened roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 4 weeks
explant ~ 250 mg per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature

Viability after conservation: 70%
Sterility: fungi and bacteria free
Species: biosynthesis of phenolic compounds, opine test
Plating efficiency: non-cloning
Other properties:
root specific fenolic compounds
Applications: biotechnology, enzimology of phenolic compound biosynthesis
Collections: HRC

H.an.

Origin: *Helanthus annuus* L. (Compositae) juvenile plant leaves transformation with pRi *Agrobacterium rhizogenes,* strain R-1601
Morphology: highly branching roots
Conditions for cultivation: medium - MSO (1/2 N), B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 60 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature

Viability after conservation: 80%
Sterility: fungi and bacteria free
Species: opine test
Plating efficiency: non-cloning
Other properties:
root specific coumarines and phenolic compounds
Applications: biotechnology, biochemistry of signaling compounds
Collections: HRC

Ip.p.

Origin: *Ipomea purpurea* L., spec. Morning glory (Convolvulaceae) juvenile plant leaves transformation with pRi *Agrobacterium rhizogenes,* strain R-1601
Morphology: branching roots
Conditions for cultivation: medium - MSO (1/2 N)

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 5 weeks
explant ~ 250 mg per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature

Viability after conservation: 50%
Sterility: fungi and bacteria free
Species: opine test
Plating efficiency: non-cloning
Other properties:
contamination sensitivity: sensitive
Applications: biotechnology
Collections: HRC

L.fl.

Origin: *Linum flavum* L. (Linaceae)
rhizogene callus culture obtained after transformation of juvenile plantlets with pRi *Agrobacterium rhizogenes,* strain 15834
Morphology: highly branching roots
Conditions for cultivation: medium - MS (1/2 N), 0,5 mg/ë IAA

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 8 weeks
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 50%
Sterility: fungi and bacteria free
Species: opine test
Plating efficiency: non-cloning
Other properties:
root specific lignanes and 5-ÎÍ-podophyllotoxin
Applications: biotechnology
Collections: HRC

L.usit.

Origin: *Linum usitatissimum* L. (Linaceae) juvenile plant leaves transformation with pRi *Agrobacterium rhizogenes,* strain LBA - 9402
Morphology: highly branching roots
Conditions for cultivation: medium - MSO (1/2 N)

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 60 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 60%
Sterility: fungi and bacteria free
Species: opine test
Plating efficiency: non-cloning
Applications: biochemistry of cyanogene glycoside formation and transport
Collections: HRC

L.usit. atalante

Origin: *Linum usitatissimum* L. var. Atalante (Linaceae) seedling cotyledones transformation with pRi *Agrobacterium rhizogenes,* strain LBA-9402
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 50 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 70%
Sterility: fungi and bacteria free
Species: opine test
Plating efficiency: non-cloning
Applications: biochemistry of cyanogene glycoside formation and transport
Collections: HRC

Leuzea

Origin: *Rhaponticum carthamoides* (Wild.) = *Leuzea carthamoides* Wild.) **(**Asteraceae); juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain À 4
Morphology: branching roots
Conditions for cultivation: medium - Murashige and Skoog (1/2 N) plus 0.5 mg/l IAA

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring a root segment each 8 weeks
explant ~ 100 mg per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 50%
Sterility: fungi and bacteria free
Species: ecdysone synthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific ecdisteroids
contamination sensitivity: sensitive to bacterial contamination
Applications: biotechnology
Collections: HRC

Lup.pol.

Origin: *Lupinus polyphyllus* L. (Fabaceae) juvenile plant leaves transformation with pRi *Agrobacterium rhizogenes,* strain 15834
Morphology: highly branching roots
Conditions for cultivation: medium - Â 50

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 100 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: root specific phenolic compound biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific phenolic compounds
Applications: biotechnology
Collections: HRC

Mel.

Origin: *Melia indica* Azadoracht. (Meliaceae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain R-1601
Morphology: highly branching roots
Conditions for cultivation: medium - MSÎ (1/2 N)

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 4 weeks
explant ~ 250 per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 60%
Sterility: fungi and bacteria free
Species: opine test
Plating efficiency: non-cloning
Applications: biotechnology
Collections: HRC

On.ar. 1601

Origin: *Ononis arvensis* L. (Fabaceae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain R-1601
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture

subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 50 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: isoflavonoid biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific isoflavonoids
Applications: biotechnology
Collections: HRC

On.ar. A-4

Origin: *Ononis arvensis* L. (Fabaceae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain A 4
Morphology: branching roots
Conditions for cultivation: medium - B 5 O
22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 4 weeks
explant ~ 250 mg per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 60%
Sterility: fungi and bacteria free
Species: phenolic compound biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific phenolic compounds
contamination sensitivity: sensitive
Applications: biotechnology
Collections: HRC

On. sp.

Origin: *Ononis spinosa* L. (Fabaceae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain R-1601
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O
22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 50 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: root specific phenolic compound biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific phenolic compounds
Applications: biotechnology
Collections: HRC

P. h.

Origin: *Peganum harmala* L. (Zygophyllaceae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain A 4
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 50 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: root specific â-carbolin alkaloid and serotonin biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific â-carbolin alkaloids
Applications: biotechnology, indole alkaloid biogenesis
Collections: HRC

Petr. sat.

Origin: *Petroselinum sativum* L. juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain 15834
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 4 weeks
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: root specific essential oil biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific flavonoids and essential oils
Applications: biotechnology, enzimology of flavonoids biosynthesis
Collections: HRC

R.gr.

Origin: *Ruta graveolens* L. (Rutaceae) juvenile plant leaves transformation with pRi *Agrobacterium rhizogenes,* strain 15834
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 4 weeks
explant ~ 250 mg per 50 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: root specific coumarine and alkaloids biosynthesis
Plating efficiency: non-cloning
Other properties:
root specific furocoumarines and alkaloids
Applications: biotechnology, enzimology of coumarine and acridone alkaloid biosynthesis
Collections: HRC

R.s.

Origin: *Rauvolfia serpentina (*L.) Benth. (Apocinaceae) juvenile plant leaves, transformation with pRi *Agrobacterium rhizogenes,* strain À 4
Morphology: highly branching roots
Conditions for cultivation: medium - Gamborg (B 5 O)

temperature 22-25^{O}Ñ, rotary shaking - 90 rpm, liquid culture
subculture procedure - transferring root tips each 5 weeks
explant ~ 250 mg per 60 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: species specific alkaloids; opine test
Plating efficiency: non-cloning
Other properties:
indole alkaloid biosynthesis
Applications: biotechnology, enzimology of indole alkaloid biosynthesis
Collections: HRC

R.t.

Origin: *Rubia tinctorum* L. (cåì. Rubiaceae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain R-1601
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O, MSO (1/2 N)

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 50 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: Root specific anthraquinone biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
Root specific anthraquinones
Applications: biotechnology, enzimology of anthraquinone biosynthesis
Collections: HRC

R.v.

Origin: *Rauvolfia vomitoria* Afz. (Apocynaceae) juvenile plant leaves transformation with pRi *Agrobacterium rhizogenes,* strain À 4
Morphology: highly branching roots
Conditions for cultivation: medium - Gamborg (B 5 O)

temperature 22-25^{O}C, rotary shaking - 90 rpm, liquid culture
subculture procedure - transferring root tips each 5 weeks
explant ~250 mg per 60 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: root specific indole alkaloids, opine test
Plating efficiency: non-cloning
Other properties:
root specific indole alkaloid biosynthesis
Applications: biotechnology, enzimology of indole alkaloid biosynthesis
Collections: HRC

Scut. baic.

Origin: *Scutellaria baicalensis* Geirgi. (Labiatae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain 15834
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 4 weeks
explant ~ 250 mg per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 70%
Sterility: fungi and bacteria free
Species: root specific phenolic compound biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific phenolic compounds
Applications: biotechnology
Collections: HRC

Taget.

Origin: *Tagetes patula (*Compositae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes*, strain R-1601
Morphology: highly branching roots
Conditions for cultivation: medium - MSO (1/2 N), B 5 O

22-25^{O}C , 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 80%
Sterility: fungi and bacteria free
Species: theophene biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific theophenes biosynthesis
contamination sensitivity: sensitive
Applications: biotechnology, dual culture with endomycorrhizal fungi
Collections: HRC

Tomate

Origin: *Lycopersicon esculentum* Mill. (Solanaceae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain R-1601
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 4 weeks
explant ~ 250 mg per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 90%
Sterility: fungi and bacteria free
Species: opine test
Plating efficiency: non-cloning
Other properties:
contamination sensitivity: bacterial contamination
Applications: biotechnology
Collections: HRC

Trif. rep.

Origin: *Trifolium repens* L. (ceì. Fabaceae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain 15834
Morphology: highly branching roots

Conditions for cultivation: medium - MS (1/2 N)

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 30 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 80%
Sterility: fungi and bacteria free
Species: opine test
Plating efficiency: non-cloning
Applications: biotechnology
Collections: HRC

Valer.

Origin: *Valeriana officinalis* L. (Valerianaceae) juvenile plant leaves transformation with pRi *Agrobacterium rhizogenes,* strain 15834
Morphology: branching roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 6 weeks
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 50%
Sterility: fungi and bacteria free
Species: root specific valepotriate biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific valepotriates
Applications: biotechnology
Collections: HRC

W. som.

Origin: *Withania somnifera* Dun. (Solanaceae) juvenile plant hypocotyl transformation with pRi *Agrobacterium rhizogenes,* strain R-1601
Morphology: highly branching roots
Conditions for cultivation: medium - B 5 O

22-25^{O}C, 90 rpm, liquid culture
subculture procedure - transferring root tips each 3 weeks
explant ~ 250 mg per 50 ml of nutrient medium
conservation - maintenance on the solid medium at room temperature
Viability after conservation: 70%
Sterility: fungi and bacteria free
Species: root specific vitanolide biosynthesis, opine test
Plating efficiency: non-cloning
Other properties:
root specific sesquiterpen lactones (vitanolides)
Applications: biotechnology
Collections: HRC