

Misidentified Cell Line	Claimed Species	Claimed Cell Type	Contaminating Cell Line	Actual Species	Actual Cell Type	Misidentification Reported By	Reference PubMed ID
BHP 14-9	Human	Thyroid, papillary carcinoma	M14	Human	Melanoma	Schweppe et al, 2008	18713817
BHP 17-10	Human	Thyroid, papillary carcinoma	M14	Human	Melanoma	Schweppe et al, 2008	18713817
BHP 2-7	Human	Thyroid, papillary carcinoma	TPC-1	Human	Thyroid, papillary carcinoma	Schweppe et al, 2008; Zhao et al, 2011	18713817, 21868764
BHP 5-16	Human	Thyroid, papillary carcinoma	M14	Human	Melanoma	Schweppe et al, 2008; Zhao et al, 2011	18713817, 21868764
BHP 7-13	Human	Thyroid, papillary carcinoma	TPC-1	Human	Thyroid, papillary carcinoma	Schweppe et al, 2008	18713817
BIC-1	Human	Esophageal adenocarcinoma	SW-480, SW-620	Human	Colon carcinoma	Boonstra et al, 2010	20075370
BLIN-1 (also subclone 1E8)	Human	Leukemia, acute lymphoblastic, B cell precursor	NALM-6	Human	Leukemia, acute lymphoblastic, B cell precursor	Drexler et al, 2003	12592342
BM-1604	Human	Prostate carcinoma	DU-145	Human	Prostate carcinoma	MacLeod et al, 1999	10508494
BrCA 5	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees and Flandermeyer, 1977; Nelson-Rees et al, 1981	557237, 6451928
BT-B	Human	Bladder carcinoma	HeLa	Human	Cervical adenocarcinoma	DSMZ website	No PMID
C16 (MRC-5 derivative)	Human	Lung cells, fetal	HeLa	Human	Cervical adenocarcinoma	ECACC website	No PMID
C-433	Human	Giant cell tumor, benign	RD-ES	Human	Sarcoma (Ewing's)	DSMZ website	No PMID
CAC2	Human	Salivary gland, adenoid cystic carcinoma	Unknown	Rat	Unknown	Phuchareon et al, 2009	19557180
CaMa (clone 15)	Human	Breast carcinoma	Unknown	Syrian hamster and mouse	Unknown	Nelson-Rees et al, 1981	6451928
CaOV	Human	Ovarian carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
CaVe	Human	Gastric carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
CCL3	Human	Chordoma	Unknown	Mouse	Unknown	Brüderlein et al, 2010	21253487
Chang liver	Human	Liver, normal hepatic cells	HeLa	Human	Cervical adenocarcinoma	Lavappa et al, 1976; Nelson-Rees et al, 1981	1250349, 6451928
CHB	Human	Astrocytoma	Unknown	Rat	Not specified	Nelson-Rees et al, 1981	6451928
CHP-100	Human	Neuroblastoma	IMR-32	Human	Neuroblastoma	ECACC website	No PMID
CHP-234	Human	Neuroblastoma	Unknown	Human	Unknown	ATCC website	No PMID
Clom 15	Human	Glioblastoma	Unknown	Rat	Unknown	Higgins et al, 2010	20951163
Clone 1-5c-4	Human	Conjunctiva	HeLa	Human	Cervical adenocarcinoma	ECACC website	No PMID
Clone-16	Human	Pancreas, fetal endocrine cells	Unknown	Syrian hamster	Unknown	Matsuba et al, 1988	2903855
Clone 1A	Rainbow trout, <i>Oncorhynchus mykiss</i>	Blood	CHSE-214	Chinook salmon, <i>Oncorhynchus tshawytscha</i>	Embryo	Perry et al, 2001	19002917
CMP	Human	Rectal adenocarcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
CMP II C2	Human	Rectal adenocarcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
CNDT2	Human	Carcinoid tumour	Unknown	Human	Unknown	Ellis et al, 2010	20959409
CO (= COLE)	Human	Lymphoma, Hodgkin	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	Drexler et al, 2003	12592342
COLO-587	Human	Pancreatic carcinoma	COLO-320DM	Human	Colon carcinoma	ATCC FAQ #11058	No PMID
COLO-677	Human	Lung carcinoma, small cell	RPMI-8226	Human	Myeloma	DSMZ website	No PMID
COLO-720E	Human	Ovarian carcinoma	COLO684, COLO685	Human	Uterine adenocarcinoma	Personal communication, A. Capes-Davis	No PMID
COLO-818	Human	Melanoma	COLO-800	Human	Melanoma	MacLeod et al, 1999	10508494
CoLo-TC	Human	Colon carcinoma	COLO-205	Human	Colon carcinoma	RIKEN website	No PMID

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<i>Culisita inornata</i> culture	Mosquito	Not specified	Unknown	Moth, <i>Antheraea eucalypti</i>	Not specified	Greene et al, 1972; Nelson-Rees et al, 1981	4402510, 6451928
D18T	Human	Synovial cell	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
D98/AH	Human	Not specified	HeLa	Human	Cervical adenocarcinoma	Honma et al, 1992	1730567
D98/AH2 Clone B	Human	Not specified	HeLa	Human	Cervical adenocarcinoma	ECACC website	No PMID
DAMI	Human	Leukemia, acute myeloid, M7	HEL	Human	Leukemia, acute myeloid, M6	MacLeod et al, 1997; Drexler et al, 2003	9447816, 12592342
DAPT	Human	Astrocytoma, piloid	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
DD	Human	Malignant histiocytosis	K-562	Human	Leukemia, chronic myeloid, blast crisis	Drexler et al, 2003	12592342
Det30A	Human	Breast carcinoma, ascitic fluid	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
Detroit-6 (Det6)	Human	Sternal marrow cells	HeLa	Human	Cervical adenocarcinoma	Lavappa et al, 1976; Nelson-Rees et al, 1981	1250349, 6451928
Detroit-98	Human	Sternal marrow cells	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
Detroit 98/AG	Human	Sternal marrow cells	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
Detroit 98/AH-2	Human	Sternal marrow cells	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
Detroit 98/AH-R	Human	Sternal marrow cells	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
Detroit 98s	Human	Sternal marrow cells	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
DJM-1	Human	Squamous cell carcinoma	BSCC-93	Human	Skin, squamous cell carcinoma	Yoshino et al, 2006	16643607
DM12 (Tu-167 derivative)	Human	Oral squamous cell carcinoma	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	Zhao et al, 2011	21868764
DM14 (Tu-167 derivative)	Human	Oral squamous cell carcinoma	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	Zhao et al, 2011	21868764
DRO	Human	Thyroid, anaplastic carcinoma	A-375	Human	Melanoma	Zhao et al, 2011	21868764
DRO90-1	Human	Thyroid, anaplastic carcinoma	A-375	Human	Melanoma	Schwepppe et al, 2008	18713817
DuPro-1	Human	Prostate carcinoma	PC-3	Human	Prostate carcinoma	van Bokhoven et al, 2003	14518029
EB33	Human	Prostate carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees, 1979; Nelson-Rees et al, 1981	535908, 6451928
ECTC	Cow	Thyroid, embryonic	Vero	Monkey, African green (<i>Cercopithecus aethiops</i>)	Kidney, normal renal cells	Milanesi et al, 2003	14505435
ECV-304	Human	Endothelium, normal cells	T-24	Human	Bladder carcinoma	Dirks et al, 1999; MacLeod et al, 1999	10614862, 10508494
ED27	Human	Chorionic villus	HeLa	Human	Cervical adenocarcinoma	Kniss et al, 2002	11869090
EEK	Horse	Kidney, embryonic renal cells	NSK	Pig, <i>Sus scrofa</i>	Kidney, normal renal cells	Milanesi et al, 2003	14505435
EH	Human	Leukemia, hairy cell	HK	Human	Leukemia, hairy cell	Drexler et al, 2003	12592342
EJ-1	Human	Bladder carcinoma	T-24	Human	Bladder carcinoma	Masters et al, 2001	11416159
Ej138	Human	Bladder carcinoma	T-24	Human	Bladder carcinoma	Azari et al, 2007	17254797
EICo	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
EPC	Carp, <i>Cyprinus carpio</i>	Epithelial papilloma	Unknown	Fathead minnow, <i>Pimephales promelas</i>	Unknown	ATCC website	No PMID
EPLC3-2M1	Human	Lung carcinoma	HeLa	Human	Cervical adenocarcinoma	MacLeod et al, 1999	10508494
EPLC-65	Human	Lung carcinoma	HeLa	Human	Cervical adenocarcinoma	MacLeod et al, 1999	10508494
ESP1	Human	Lymphoma, Burkitt	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
ETK-1	Human	Cholangiocarcinoma	SSP-25	Human	Cholangiocarcinoma	Yoshino et al, 2006	16643607

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EU-1	Human	Leukemia, acute lymphoblastic, B cell precursor	REH	Human	Leukemia, acute lymphoblastic, B cell precursor	Drexler et al, 2003	12592342
EU-7	Human	Leukemia, acute lymphoblastic, T cell	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	Drexler et al, 2003	12592342
EUE	Human	Subcutis, fetal	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
EVLC2	Human	Umbilical vein endothelium, transfected	Unknown	Human	Non-endothelial?	Unger et al, 2002	12453433
F2-4E5	Human	Thymic epithelium	SK-HEP-1	Human	Liver carcinoma	MacLeod et al, 1999	10508494
F2-5B6	Human	Thymic epithelium	SK-HEP-1	Human	Liver carcinoma	MacLeod et al, 1999	10508494
F255A4	Human	Not specified	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
FB2	Human	Thyroid, papillary carcinoma	TPC-1	Human	Thyroid, papillary carcinoma	Ribeiro et al, 2008	19087340
Fitz-HSA	Dog, <i>Canis familiaris</i>	Sarcoma (hemangiosarcoma)	DEN-HSA	Dog	Sarcoma (hemangiosarcoma)	O'Donoghue et al, 2011	21908323
FL	Human	Amnion	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981; Ogura et al, 1993	6451928, 8397027
Flow 13000	Human	Lung cells, embryonic fibroblast	MRC-5	Human	Lung cells, embryonic fibroblast	JCRB website	No PMID
Flow 5000	Human	Lung cells, embryonic fibroblast	Flow 1000	Human	Lung cells, embryonic fibroblast	JCRB website	No PMID
Flow 6000	Human	Lung cells, embryonic fibroblast	Flow 1000	Human	Lung cells, embryonic fibroblast	JCRB website	No PMID
Flow 7000	Human	Lung cells, embryonic fibroblast	Flow 3000	Human	Lung cells, embryonic fibroblast	JCRB website	No PMID
FQ	Human	Lymphoma, Hodgkin	OMK-210	Monkey, Owl (<i>Aotus trivirgatus</i>)	Kidney, normal renal cells	Nelson-Rees et al, 1981; Drexler et al, 2003	6451928, 12592342
G-11 (HBT-3 derivative)	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
GHE	Human	Astrocytoma	T-24	Human	Bladder carcinoma	MacLeod et al, 1999	10508494
Girardi heart	Human	Heart, normal cells	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
GM1312	Human	Myeloma	Correct name, incorrect cell type	Human	EBV+ B-lymphoblastoid cell line	Drexler et al, 2003	12592342
GPS-M	Guinea pig	Spleen, adult cells	Strain L-M	Mouse	Connective tissue	Nelson-Rees et al, 1981	6451928
GPS-PD	Guinea pig	Spleen, adult cells	Strain L-M	Mouse	Connective tissue	Nelson-Rees et al, 1981	6451928
GRAF-X	Human	Liver, hepatic myofibroblast	Unknown	Rat	Unknown	MacLeod et al, 1999	10508494
GT3TKB	Human	Gastric carcinoma	RERF-LC-A1	Human	Lung carcinoma	Yoshino et al, 2006	16643607
H249	Human	Lung carcinoma, small cell	H69	Human	Lung carcinoma, small cell	Personal communication, M. Liscovitch to R. Nardone	No PMID
H-494	Human	Prostate carcinoma	HeLa	Human	Cervical adenocarcinoma	Williams, 1980	6244232
H7D7A and derivatives	Human	Liver, normal cells (SV40-transformed)	HepG2	Human	Liver, hepatocellular carcinoma	van Pelt et al, 2003	12619888
H7D7B and derivatives	Human	Liver, normal cells (SV40-transformed)	HepG2	Human	Liver, hepatocellular carcinoma	van Pelt et al, 2003	12619888
H7D7C and derivatives	Human	Liver, normal cells (SV40-transformed)	HepG2	Human	Liver, hepatocellular carcinoma	van Pelt et al, 2003	12619888
H7D7D and derivatives	Human	Liver, normal cells (SV40-transformed)	HepG2	Human	Liver, hepatocellular carcinoma	van Pelt et al, 2003	12619888
HAG	Human	Thyroid adenoma (goitre)	T-24	Human	Bladder carcinoma	MacLeod et al, 1999	10508494
HBC	Human	Breast carcinoma, invasive ductal tumor	Unknown	Rat	Unknown	Nelson-Rees and Flandermeyer, 1977; Nelson-Rees et al, 1981	557237, 6451928
HBL-100	Human	Breast carcinoma	Unknown	Human	Unknown	Yoshino et al, 2006; ATCC website	16643607
HBT-3	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
HBT-39b	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
HBT-E (HBT-3 clone)	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
HCE	Human	Cervical carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
Hcu-10	Human	Esophageal squamous cell carcinoma	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37 or Hcu-39 (genetically identical)	Human	Esophageal squamous cell carcinoma	van Helden et al, 1988	3167823

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HCU-18	Human	Esophageal squamous cell carcinoma	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37 or Hcu-39 (genetically identical)	Human	Esophageal squamous cell carcinoma	van Helden et al, 1988	3167823
HCU-22	Human	Esophageal squamous cell carcinoma	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37 or Hcu-39 (genetically identical)	Human	Esophageal squamous cell carcinoma	van Helden et al, 1988	3167823
HCU-27	Human	Esophageal squamous cell carcinoma	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37 or Hcu-39 (genetically identical)	Human	Esophageal squamous cell carcinoma	van Helden et al, 1988	3167823
HCU-33	Human	Esophageal squamous cell carcinoma	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37 or Hcu-39 (genetically identical)	Human	Esophageal squamous cell carcinoma	van Helden et al, 1988	3167823
HCU-37	Human	Esophageal squamous cell carcinoma	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37 or Hcu-39 (genetically identical)	Human	Esophageal squamous cell carcinoma	van Helden et al, 1988	3167823
HCU-39	Human	Esophageal squamous cell carcinoma	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37 or Hcu-39 (genetically identical)	Human	Esophageal squamous cell carcinoma	van Helden et al, 1988	3167823
HCV-29Tmv (HCV-29 derivative)	Human	Bladder, tumorigenic urothelial cells	T-24	Human	Bladder carcinoma	Christensen et al, 1993	8105864
HEC-155	Human	Uterine adenocarcinoma	HEC-180	Human	Uterine carcinoma	JCRB website	No PMID
HEC-180	Human	Uterine adenocarcinoma	HEC-155	Human	Uterine adenocarcinoma	JCRB website	No PMID
HEK	Human	Kidney, embryonic renal cells	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
HEK/HRV (HEK derivative)	Human	Kidney, transformed embryonic renal cells	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
HEL-R66	Human	Not specified	Unknown	Monkey, African green (<i>Cercopithecus aethiops</i>)	Unknown	Nelson-Rees et al, 1981	6451928, 7236009
HEp-2 (H.Ep.-2)	Human	Laryngeal carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981; Chen, 1988	6451928, 3180844
Hep-2C	Human	Laryngeal carcinoma	HeLa	Human	Cervical adenocarcinoma	ECACC website	No PMID
Hep2 (Clone 2B)	Human	Laryngeal carcinoma	HeLa	Human	Cervical adenocarcinoma	ECACC website	No PMID
HIMEG-1	Human	Leukemia, chronic myeloid	HL-60	Human	Leukemia, acute myeloid, M2	Drexler et al, 2003	12592342
HKB-1	Human	Lymphoma, Hodgkin	Unknown	Human	Unknown	Drexler et al, 2003	12592342
HKMUS	Human	Cervical carcinoma	SKG-II-SF	Human	Cervical carcinoma	RIKEN website	No PMID
HKMUS-SF	Human	Cervical carcinoma	SKG-II-SF	Human	Cervical carcinoma	Yoshino et al, 2006	16643607
HL111783	Human	Lung carcinoma	HeLa	Human	Cervical adenocarcinoma	Yoshino et al, 2006	16643607
HMV-1	Human	Melanoma	HeLa	Human	Cervical adenocarcinoma	MacLeod et al, 1999	10508494
HPB-MLT	Human	Leukemia, acute lymphoblastic, T cell	HPB-ALL	Human	Leukemia, acute lymphoblastic, T cell	Drexler et al, 2003	12592342
HPC-36M (HPC-36 derivative)	Human	Prostate carcinoma	HeLa	Human	Cervical adenocarcinoma	Masters et al, 2001	11416159
hPTC	Human	Thyroid, papillary cell	Unknown	Pig, <i>Sus scrofa</i>	Unknown	MacLeod et al, 1999	10508494
Hs 677.St	Human	Gastric tissue, normal	Unknown	Mouse	Unknown	ATCC FAQ #1072	No PMID
HSC-41	Human	Gastric carcinoma	HSC-42	Human	Gastric carcinoma	JCRB website	No PMID
HSG	Human	Salivary gland, submandibular	HeLa	Human	Cervical adenocarcinoma	ECACC website	No PMID
HSG-AZA1	Human	Salivary gland, submandibular	HeLa	Human	Cervical adenocarcinoma	JCRB website	No PMID
HSG-AZA3	Human	Salivary gland, submandibular	HeLa	Human	Cervical adenocarcinoma	JCRB website	No PMID
HSGc-C5	Human	Oral carcinoma	HeLa	Human	Cervical adenocarcinoma	JCRB website	No PMID
HS-SULTAN	Human	Myeloma	JJOYE	Human	Lymphoma, Burkitt	Drexler et al, 2001; Drexler et al, 2003	11732505, 12592342
HSY	Human	Salivary gland, parotid	HeLa	Human	Cervical adenocarcinoma	JCRB website	No PMID

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Hu1734	Human	Bladder, non-malignant urothelial cells	HCV-29	Human	Bladder, non-malignant urothelial cells	Christensen et al, 1993	7905254
Hu456	Human	Bladder, tumorigenic urothelial cells	T-24	Human	Bladder carcinoma	Christensen et al, 1993	8105864
Hu549	Human	Bladder, tumorigenic urothelial cells	T-24	Human	Bladder carcinoma	Christensen et al, 1993	8105864
Hu609	Human	Bladder, non-malignant urothelial cells	J82	Human	Bladder carcinoma	Christensen et al, 1993; Masters et al, 2001	7905254, 11416159
Hu609Tmv (Hu609 derivative)	Human	Bladder, tumorigenic urothelial cells	T-24	Human	Bladder carcinoma	Christensen et al, 1993	8105864
Hu961a, Hu961t (Hu961 derivatives)	Human	Bladder, tumorigenic urothelial cells	T-24	Human	Bladder carcinoma	Christensen et al, 1993; Masters et al, 2001	8105864, 11416159
HuK ³⁹	Human	Kidney, normal renal cells	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
HuL-1	Human	Liver, hepatocellular carcinoma	HeLa	Human	Cervical adenocarcinoma	JCRB website	No PMID
Hut	Human	Not specified	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
IMC-2	Human	Maxillary carcinoma	HeLa	Human	Cervical adenocarcinoma	MacLeod et al, 1999	10508494
IMC-3	Human	Maxillary carcinoma	HeLa	Human	Cervical adenocarcinoma	Masters et al, 2001	11416159
IMC-4	Human	Maxillary carcinoma	HeLa	Human	Cervical adenocarcinoma	RIKEN website	No PMID
Intestine 407 (Int-407, HEI)	Human	Intestinal cells (jejunum/ileum), embryonic	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
IPDDC-A2	Human	Astrocytoma	Unknown	Rat	Unknown	ECACC website	No PMID
IPRB	Human	Glioblastoma	Unknown	Rat	Unknown	Higgins et al, 2010	20951163
IPTP/98	Human	Glioblastoma	Unknown	Rat	Unknown	ECACC website	No PMID
IST-1	Human	Placenta	SK-OV-3	Human	Ovarian carcinoma	ATCC FAQ #1068	No PMID
J-111	Human	Leukemia, acute myeloid, M5	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981; Drexler et al, 2003	6451928, 12592342
J96	Human	Leukemia	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
JCA-1	Human	Prostate carcinoma	T-24	Human	Bladder carcinoma	van Bokhoven et al, 2001	11522622
JHC	Human	Placenta	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
JHU012	Human	Oral squamous cell carcinoma (lymph node)	JHU022	Human	Laryngeal squamous cell carcinoma (lymph node)	Zhao et al, 2011	21868764
JHU013 (JHU012 derivative)	Human	Oral squamous cell carcinoma (lymph node)	FaDu	Human	Hypopharyngeal squamous cell carcinoma	Zhao et al, 2011	21868764
JHU019	Human	Oropharyngeal squamous cell carcinoma	PC-3	Human	Prostate carcinoma	Zhao et al, 2011	21868764
JHU028	Human	Oral squamous cell carcinoma	A549	Human	Lung carcinoma	Zhao et al, 2011	21868764
JHT (JHC derivative)	Human	Placenta	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
JMAR (Tu-167 derivative)	Human	Oral squamous cell carcinoma	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	Zhao et al, 2011	21868764
JOSK-I	Human	Leukemia, acute myeloid, M4	U-937	Human	Lymphoma, histiocytic	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342
JOSK-K	Human	Leukemia, acute myeloid, M5	U-937	Human	Lymphoma, histiocytic	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342
JOSK-M	Human	Leukemia, chronic myeloid, blast crisis	U-937	Human	Lymphoma, histiocytic	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342
JOSK-S	Human	Leukemia, acute myeloid, M5	U-937	Human	Lymphoma, histiocytic	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342
JTC-17	Human	Skin	HeLa	Human	Cervical adenocarcinoma	Honma et al, 1992; JCRB website	1730567
JTC-3	Human	Not specified	HeLa	Human	Cervical adenocarcinoma	Ogura et al, 1997	9556756
K051	Human	Leukemia, acute myeloid, M2	K-562	Human	Leukemia, chronic myeloid, blast crisis	Drexler et al, 2003	12592342

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K1	Human	Thyroid, papillary carcinoma	GLAG-66	Human	Thyroid, papillary carcinoma	Ribeiro et al, 2008; Schweppe et al, 2008	19087340, 18713817
K2	Human	Thyroid, papillary carcinoma	GLAG-66	Human	Thyroid, papillary carcinoma	Ribeiro et al, 2008; Schweppe et al, 2008	19087340, 18713817
KAK1	Human	Thyroid, follicular adenoma	HT-29	Human	Colon carcinoma	van Staveren et al, 2007; Schweppe et al, 2008	17804723, 18713817
KAT10	Human	Thyroid, papillary carcinoma	HT-29	Human	Colon carcinoma	van Staveren et al, 2007; Schweppe et al, 2008	17804723, 18713817
KAT4	Human	Thyroid, anaplastic carcinoma	HT-29	Human	Colon carcinoma	van Staveren et al, 2007; Schweppe et al, 2008	17804723, 18713817
KAT5	Human	Thyroid, papillary carcinoma	HT-29	Human	Colon carcinoma	Schweppe et al, 2008	18713817
KAT50	Human	Thyroid, differentiated cells	HT-29	Human	Colon carcinoma	Schweppe et al, 2008	18713817
KAT7	Human	Thyroid, benign follicular hyperplasia	HT-29	Human	Colon carcinoma	Schweppe et al, 2008	18713817
KB	Human	Oral carcinoma	HeLa	Human	Cervical adenocarcinoma	Gartier, 1967; Lavappa et al, 1976; Nelson-Rees et al, 1981	4864103, 1250349, 6451928
KB-3-1	Human	Oral carcinoma	HeLa	Human	Cervical adenocarcinoma	DSMZ website	No PMID
KB-V1	Human	Oral carcinoma	HeLa	Human	Cervical adenocarcinoma	DSMZ website	No PMID
KCI-MOH1	Human	Pancreatic carcinoma	HPAC	Human	Pancreatic carcinoma	DSMZ website	No PMID
KM-3	Human	Leukemia, acute lymphoblastic, B cell precursor	REH	Human	Leukemia, acute lymphoblastic, B cell precursor	Drexler et al, 2003	12592342
KM3	Human	Melanoma	Unknown	Rat	Not specified	Moseley et al, 2003	12740908
KMS-21-BM	Human	Myeloma	Unknown	Human	Unknown	Drexler et al, 2003	12592342
KMT-2	Human	Umbilical cord blood	KG-1	Human	Leukemia	Yoshino et al, 2006	16643607
KNS-89	Human	Gliosarcoma	U-251 MG	Human	Glioblastoma	JCRB website	No PMID
KOSC-3	Human	Oral carcinoma	Ca9-22	Human	Oral carcinoma	JCRB website	No PMID
KP-1N	Human	Pancreatic carcinoma	PANC-1	Human	Pancreatic carcinoma	JCRB website	No PMID
KPB-M15	Human	Leukemia, chronic myeloid, blast crisis	KYO-1	Human	Leukemia, chronic myeloid, blast crisis	Drexler et al, 2003	12592342
KPL-1	Human	Breast carcinoma	MCF-7	Human	Breast carcinoma	DSMZ website	No PMID
KP-P1	Human	Prostate carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
KSY-1	Human	Sarcoma (Kaposi)	T-24	Human	Bladder carcinoma	ATCC FAQ #1061	No PMID
KU-YS	Human	Neuroblastoma	KU-SN	Human	Neuroectodermal tumor	RIKEN website	No PMID
L-132	Human	Lung cells, embryonic	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
L-41 (J96 derivative)	Human	Leukemia, bone marrow	HeLa	Human	Cervical adenocarcinoma	ECACC website	No PMID
LED-Ti	Human	Cervical carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
LLC-15MB	Human	Breast carcinoma	M14	Human	Melanoma	Thompson et al, 2004	15679051
LR10.6	Human	Leukemia, acute lymphoblastic, B cell precursor	NALM-6	Human	Leukemia, acute lymphoblastic, B cell precursor	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342
LT-1	Frog, grass	Kidney, renal adenocarcinoma	TH and FHM	TH = box turtle; FHM = fathead minnow	TH = heart; FHM = unspecified	Nelson-Rees et al, 1981	6451928
LU	Human	Lung cells, fetal	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
LU 106	Human	Lung cells, embryonic	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
LU-130	Human	Lung carcinoma	Lu-134A, B	Human	Lung carcinoma	Yoshino et al, 2006	16643607
M10T	Human	Synovial cell	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
M4A4 and derivatives (MDA-MB-435 derivatives)	Human	Breast carcinoma	M14	Human	Melanoma	ATCC website	No PMID
MA-104	Monkey, Rhesus (<i>Macaca mulatta</i>)	Kidney, embryonic renal cells	Vero?	Monkey, African green (<i>Cercopithecus aethiops</i>)	Kidney, normal renal cells	Milanesi et al, 2003; ATCC FAQ #1067	14505435

Misidentified Cell Line	Claimed Species	Claimed Cell Type	Contaminating Cell Line	Actual Species	Actual Cell Type	Misidentification Reported By	Reference PubMed ID
MA-111	Rabbit	Kidney, newborn	Vero?	Monkey, African green (<i>Cercopithecus aethiops</i>)	Kidney, normal renal cells	Nelson-Rees et al, 1981	6451928
MA-160	Human	Prostate adenoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees, 1977; Nelson-Rees et al, 1981	562836, 6451928
MaTu	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	MacLeod et al, 1999	10508494
MC-4000	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	MacLeod et al, 1999	10508494
McCoy	Human	Not specified	Strain L	Mouse	Connective tissue	Nelson-Rees et al, 1981	6451928
MCF-7/Adr (NCI/ADR-RES)	Human	Breast carcinoma	OVCAR-8	Human	Ovarian carcinoma	Liscovitch and Ravid, 2007	16504380
MDA-MB-435	Human	Breast carcinoma	M14	Human	Melanoma	Ellison et al, 2002; Christgen et al, 2007; Rae et al, 2007	12354931, 17786032, 17004106
MDA-N (MDA-MB-435 derivative)	Human	Breast carcinoma, HER2/ERBB2-transfected	M14	Human	Melanoma	Lorenzi et al, 2009	19372543
MDS	Human	Leukemia, chronic myelomonocytic	JURKAT	Human	Leukemia, acute lymphoblastic, T cell	Drexler et al, 2003	12592342
MEL-HO	Human	Melanoma	Unknown, does not match other cell line from same donor	Human	Unknown	MacLeod et al, 1999	10508494
ME-WEI	Human	Melanoma	Unknown, does not match other cell line from same donor	Human	Unknown	MacLeod et al, 1999	10508494
MGH-U1 (EJ)	Human	Bladder carcinoma	T-24	Human	Bladder carcinoma	O'Toole et al, 1983; Lin et al, 1985	6823318, 4027986
MGH-U2 (HM)	Human	Bladder carcinoma	T-24	Human	Bladder carcinoma	O'Toole et al, 1983; Lin et al, 1985	6823318, 4027986
MHH-225	Human	Leukemia, acute myeloid, M7	JURKAT	Human	Leukemia, acute lymphoblastic, T cell	Drexler et al, 2003	12592342
Minnesota EE	Human	Esophageal epithelium	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
MKB-1	Human	Leukemia, acute myeloid	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342
MKN28	Human	Gastric carcinoma	MKN74	Human	Gastric carcinoma	JCRB website	No PMID
MKN-7	Human	Gastric carcinoma	Unknown	Human	Lymphoblastoid cells	Suzuki and Sekiguchi, 1999	No PMID (book chapter)
MMac	Human	Melanoma	Mash-1	Human	Schwannoma	Yoshino et al, 2006	16643607
MOBS-1	Human	Leukemia, acute myeloid, M5	U-937	Human	Lymphoma, histiocytic	Drexler et al, 2003	12592342
MOLT-15	Human	Leukemia, acute lymphoblastic, T cell	CTV-1	Human	Leukemia, acute myeloid, M5	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342
MPanc-96	Human	Pancreatic carcinoma	AsPC-1	Human	Pancreatic carcinoma	ATCC website	No PMID
MRO87-1	Human	Thyroid, follicular carcinoma	HT-29	Human	Colon carcinoma	Schweppe et al, 2008	18713817
MS (Monkey Stable)	Monkey	Kidney, normal renal cells	HeLa	Human	Cervical adenocarcinoma	Milanesi et al, 2003	14505435
MT-1	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	MacLeod et al, 1999	10508494
MUTZ-1	Human	Leukemia, acute myeloid, M2	Namalwa	Human	Lymphoma, Burkitt	Drexler et al, 2009	19344951
MV522	Human	Lung carcinoma	HT-29	Human	Colon carcinoma	ATCC FAQ #1075	No PMID
NC-37	Human	Lymphoblastoid cell line, normal donor	Raji	Human	Lymphoma, Burkitt	JCRB website	No PMID
NCC16	Human	Cervical carcinoma	PHK16-0b	Human	Skin, immortalised keratinocytes	JCRB website	No PMID
NCI/ADR-RES (MCF-7/Adr)	Human	Breast carcinoma	OVCAR-8	Human	Ovarian carcinoma	Liscovitch and Ravid, 2007	16504380
NCI-H1264	Human	Lung carcinoma	NCI-H157	Human	Lung carcinoma	ATCC FAQ #930, #931	No PMID
NCI-H1304	Human	Lung carcinoma, small cell	NCI-H1870	Human	Lung carcinoma, small cell	ATCC FAQ #1069	No PMID
NCI-H1514	Human	Lung carcinoma	Unknown	Human	Unknown	Durkin et al, 2000; ATCC website	10949990
NCI-H157	Human	Lung carcinoma	NCI-H1264	Human	Lung carcinoma	ATCC FAQ #930, #931	No PMID

Misidentified Cell Line	Claimed Species	Claimed Cell Type	Contaminating Cell Line	Actual Species	Actual Cell Type	Misidentification Reported By	Reference PubMed ID
NCI-H1622	Human	Lung carcinoma	Unknown	Human	Unknown	ATCC website	No PMID
NCI-H1870	Human	Lung carcinoma, small cell	NCI-H1304	Human	Lung carcinoma, small cell	ATCC FAQ #1069	No PMID
NCI-H249	Human	Lung carcinoma, small cell	NCI-H69	Human	Lung carcinoma, small cell	ATCC FAQ #1073	No PMID
NCI-H513	Human	Mesothelioma	NCI-H125	Human	Lung carcinoma	ATCC FAQ #1060	No PMID
NCI-H592	Human	Lung carcinoma, small cell	NCI-H69	Human	Lung carcinoma, small cell	ATCC FAQ #1070, #1073	No PMID
NCI-H60	Human	Lung carcinoma, small cell	NCI-N417	Human	Lung carcinoma, small cell	ATCC FAQ #1064	No PMID
NCI-H630	Human	Metastatic sample	Mixture	Human	Unknown	ATCC FAQ #1065	No PMID
NCI-H738	Human	Lung carcinoma	Unknown	Human	Unknown	ATCC website	No PMID
NCOL-1	Human	Intestinal cells, normal colon	LoVo	Human	Colon carcinoma	Melcher et al, 2005	15771911
NCTC 2544	Human	Skin epithelium	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
NCTC 3075	Human	Not specified	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
ND-1	Human	Prostate carcinoma	DU-145	Human	Prostate carcinoma	van Bokhoven et al, 2001	11304728
NM2C5 and derivatives (MDA-MB-435 derivatives)	Human	Breast carcinoma	M14	Human	Melanoma	ATCC website	No PMID
NOI-90	Human	Lymphoma, non-Hodgkin, natural killer cell	REH	Human	Leukemia, acute lymphoblastic, B cell precursor	Drexler et al, 2003	12592342
NPA87	Human	Thyroid, papillary carcinoma	M14	Human	Melanoma	Schweppe et al, 2008; Zhao et al, 2011	18713817, 21868764
NS-3	Human	Gastric carcinoma	COLO 201	Human	Colon carcinoma	JCRB website	No PMID
OCUM-6	Human	Gastric carcinoma	OCUM-11	Human	Gastric carcinoma	JCRB website	No PMID
OE	Human	Endometrium	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981; Ogura et al, 1997	6451928, 9556756
OF	Human	Not specified	HeLa	Human	Cervical adenocarcinoma	Ogura et al, 1997	9556756
OLGA-PH-J/92 [OL-J/92]	Crayfish, <i>Orconectes limosus</i>	Brain, cerebral ganglion	Unknown	Unknown, similar to amoeba species	Unknown	Lee et al, 2011; ATCC website	21938590
ONCO-DG-1	Human	Thyroid, papillary carcinoma	OVCAR-3	Human	Ovarian carcinoma	DSMZ website	No PMID
OST	Human	Sarcoma (osteosarcoma)	HeLa	Human	Cervical adenocarcinoma	Personal communication, R. Nardone	No PMID
OU-AML-1	Human	Leukemia, acute myeloid, M4	OCI/AML2	Human	Leukemia, acute myeloid, M4	Drexler et al, 2003	12592342
OU-AML-2	Human	Leukemia, acute myeloid, M2	OCI/AML2	Human	Leukemia, acute myeloid, M4	Drexler et al, 2003	12592342
OU-AML-3	Human	Leukemia, acute myeloid, M4	OCI/AML2	Human	Leukemia, acute myeloid, M4	Drexler et al, 2003	12592342
OU-AML-4	Human	Leukemia, acute myeloid, M2	OCI/AML2	Human	Leukemia, acute myeloid, M4	Drexler et al, 2003	12592342
OU-AML-5	Human	Leukemia, acute myeloid, M5	OCI/AML2	Human	Leukemia, acute myeloid, M4	Drexler et al, 2003	12592342
OU-AML-6	Human	Leukemia, acute myeloid, M1	OCI/AML2	Human	Leukemia, acute myeloid, M4	Drexler et al, 2003	12592342
OU-AML-7	Human	Leukemia, acute myeloid, M4	OCI/AML2	Human	Leukemia, acute myeloid, M4	Drexler et al, 2003	12592342
OU-AML-8	Human	Leukemia, acute myeloid, M4	OCI/AML2	Human	Leukemia, acute myeloid, M4	Drexler et al, 2003	12592342
OV-1063	Human	Ovarian carcinoma	Unknown	Human	Unknown	ATCC website	No PMID
OVMIU	Human	Ovarian carcinoma	OVSAYO	Human	Ovarian carcinoma	JCRB website	No PMID
P1-1A3	Human	Thymic epithelium	SK-HEP-1	Human	Liver carcinoma	MacLeod et al, 1999	10508494
P1-4D6	Human	Thymic epithelium	SK-HEP-1	Human	Liver carcinoma	MacLeod et al, 1999	10508494
P39/TSUGANE (P39/TSU)	Human	Leukemia, acute myeloid, M2	HL-60	Human	Leukemia, acute myeloid, M2	Drexler et al, 2003; JCRB website	12592342

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PBEI	Human	Leukemia, acute lymphoblastic, B cell precursor	NALM-6	Human	Leukemia, acute lymphoblastic, B cell precursor	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342
PC-93	Human	Prostate carcinoma	HeLa	Human	Cervical adenocarcinoma	van Bokhoven et al, 2003	14518029
PC-MDS	Human	Myelodysplastic syndrome, therapy-related	K-562	Human	Leukemia, chronic myeloid, blast crisis	Drexler et al, 2009	19344951
PCI-22A	Human	Oral squamous cell carcinoma	Unknown, does not match other cell line from same donor	Human	Unknown	Zhao et al, 2011	21868764
PCI-22B	Human	Oral squamous cell carcinoma (lymph node)	Unknown, does not match other cell line from same donor	Human	Unknown	Zhao et al, 2011	21868764
PCI-3	Human	Oropharyngeal squamous cell carcinoma	PC-3	Human	Prostate carcinoma	Zhao et al, 2011	21868764
PEAZ-1	Human	Prostate carcinoma	HT-1080	Human	Sarcoma (fibrosarcoma)	Schmelz et al, 2001 [erratum]	11433418 [erratum]
PH61-N	Human	Not specified	MIA PaCa-2	Human	Pancreatic carcinoma	JCRB website	No PMID
PLB-985	Human	Leukemia, acute myeloid, M4	HL-60	Human	Leukemia, acute myeloid, M2	Drexler et al, 2003	12592342
PPC-1	Human	Prostate carcinoma	PC-3	Human	Prostate carcinoma	Chen, 1993	8428522
PSV811	Human	Skin fibroblast, Werner's syndrome	WI-38	Human	Lung, normal diploid fibroblasts	JCRB website	No PMID
RAMAK-1	Human	Muscle synovium	T-24	Human	Bladder carcinoma	MacLeod et al, 1999	10508494
RB	Human	Lymphoma, Hodgkin	OMK-210	Monkey, Owl (<i>Aotus trivirgatus</i>)	Kidney, normal renal cells	Nelson-Rees et al, 1981; Drexler et al, 2003	6451928, 12592342
RBHF-1	Human	Liver, hepatoma	Unknown	Non-human	Unknown	MacLeod et al, 1999	10508494
RC-2A	Human	Leukemia, acute myeloid, M4	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	Drexler et al, 2003	12592342
RED-3	Human	Leukemia, acute myeloid	HL-60	Human	Leukemia, acute myeloid, M2	Drexler et al, 2003	12592342
REH-6	Human	Leukemia, acute lymphoblastic, B cell precursor	Unknown	Mouse	Unknown	Drexler et al, 2003	12592342
RERF-LC-MA	Human	Lung carcinoma, small cell	SK-MES-1	Human	Lung, squamous cell	Personal communication, A. Capes-Davis	No PMID
RERF-LC-OK	Human	Lung carcinoma	Marcus	Human	Astrocytoma	JCRB website	No PMID
RM-10	Human	Leukemia, chronic myeloid, blast crisis	K-562	Human	Leukemia, chronic myeloid, blast crisis	Drexler et al, 2003	12592342
RMG-I	Human	Ovarian carcinoma	RMG-II	Human	Ovarian carcinoma	JCRB website	No PMID
RMUG-L	Human	Ovarian carcinoma	SNG-II	Human	Endometrial carcinoma	JCRB website	No PMID
RPMI-4788	Human	Colon carcinoma	HeLa	Human	Cervical adenocarcinoma	Personal communication, A. Capes-Davis	No PMID
RPMI-6666	Human	Lymphoma, Hodgkin	Correct name, incorrect cell type	Human	EBV+ B-lymphoblastoid cell line	Drexler et al, 2003	12592342
RPTC-1	Human	Thyroid, papillary carcinoma	TPC-1	Human	Thyroid, papillary carcinoma	Zhao et al, 2011	21868764
RS-1	Human	Leukemia, acute myeloid, M7	K-562	Human	Leukemia, chronic myeloid, blast crisis	Drexler et al, 2003	12592342
RTSG	Human	Ovarian carcinoma	SNG-II	Human	Endometrial carcinoma	JCRB website	No PMID
RY	Human	Lymphoma, Hodgkin	Unknown	Monkey	Unknown	Harris et al, 1981; Drexler et al, 2003	7192801, 12592342
SA4	Human	Sarcoma (liposarcoma)	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
SAM-1	Human	Leukemia, chronic myeloid, blast crisis	K-562	Human	Leukemia, chronic myeloid, blast crisis	Drexler et al, 2003	12592342
SAML-1	Human	Lymphoma, Hodgkin	U-937	Human	Lymphoma, histiocytic	ATCC FAQ #1074	No PMID
SBC-2	Human	Bladder carcinoma	HeLa	Human	Cervical adenocarcinoma	MacLeod et al, 1999	10508494
SBC-7	Human	Bladder carcinoma	HeLa	Human	Cervical adenocarcinoma	MacLeod et al, 1999	10508494
SCCTF	Human	Oral squamous cell carcinoma	SCCKN	Human	Oral squamous cell carcinoma	Yoshino et al, 2006	16643607
SCLC-16H	Human	Lung carcinoma, small cell	SCLC-21/22H	Human	Lung carcinoma, small cell	MacLeod et al, 1999	10508494
SCLC-24H	Human	Lung carcinoma, small cell	SCLC-21/22H	Human	Lung carcinoma, small cell	MacLeod et al, 1999	10508494
SEG-1	Human	Esophageal adenocarcinoma	NCI-H460	Human	Lung carcinoma, large cell	Boonstra et al, 2010	20075370

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SH-2	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
SH-3	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
SJPL	Pig, <i>Sus scrofa</i>	Lung cells, immortalized epithelial	Unknown	Monkey, African green (<i>Cercopithecus aethiops</i>)	Unknown	Silversides et al, 2010	20200241
SK-GT-5	Human	Esophageal adenocarcinoma	SK-GT-2	Human	Gastric carcinoma (gastric fundus)	Boonstra et al, 2010	20075370
SK-MG-1	Human	Astrocytoma	Marcus	Human	Astrocytoma	JCRB website	No PMID
SK-N-MC	Human	Neuroblastoma	Unknown	Human	Sarcoma (Ewing's)	Staeger et al, 2004	15548687
SKW-3	Human	Leukemia, chronic lymphocytic, T cell	KE-37	Human	Leukemia, acute lymphoblastic	DSMZ website	No PMID
SNB-19	Human	Glioblastoma	U-251 MG	Human	Glioblastoma	Azari et al, 2007; ATCC website	17254797
SPI-801	Human	Leukemia, acute lymphoblastic, T cell	K-562	Human	Leukemia, chronic myeloid, blast crisis	Gignac et al, 1993; Drexler et al, 2003	8220135, 12592342
SPI-802	Human	Leukemia, acute lymphoblastic, T cell	K-562	Human	Leukemia, chronic myeloid, blast crisis	Gignac et al, 1993; Drexler et al, 2003	8220135, 12592342
SpR	Human	Lymphoma, Hodgkin	OMK-210	Monkey, Owl (<i>Aotus trivirgatus</i>)	Kidney, normal renal cells	Nelson-Rees et al, 1981; Drexler et al, 2003	6451928, 12592342
SQ-5	Human	Lung carcinoma	HeLa	Human	Cervical adenocarcinoma	Yoshino et al, 2006	16643607
SR-91	Human	Leukemia, acute lymphoblastic, T cell	AML-193	Human	Leukemia, acute myeloid, M5	Drexler et al, 2003	12592342
SW-527	Human	Colon carcinoma	SW-480, SW-620	Human	Colon carcinoma	Nelson-Rees et al, 1981	6451928
SW-598	Human	Colon carcinoma	SW-480, SW-620	Human	Colon carcinoma	Nelson-Rees et al, 1981	6451928
SW-608	Human	Colon carcinoma	SW-480, SW-620	Human	Colon carcinoma	Nelson-Rees et al, 1981	6451928
SW-613	Human	Colon carcinoma	SW-480, SW-620	Human	Colon carcinoma	Nelson-Rees et al, 1981	6451928
SW-732	Human	Colon carcinoma	SW-480, SW-620	Human	Colon carcinoma	Nelson-Rees et al, 1981	6451928
SW-733	Human	Colon carcinoma	SW-480, SW-620	Human	Colon carcinoma	Nelson-Rees et al, 1981	6451928
T-1	Human	Kidney, normal renal cells	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1980; Nelson-Rees et al, 1981	7394535, 6451928
T-33	Human	Leukemia, chronic myeloid, blast crisis	K-562	Human	Leukemia, chronic myeloid, blast crisis	Drexler et al, 2003	12592342
T404	Human	Oral squamous cell carcinoma	T404, T406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (genetically identical)	Human	Head and neck squamous cell carcinoma	Zhao et al, 2011	21868764
T406	Human	Oral squamous cell carcinoma	T404, T406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (genetically identical)	Human	Head and neck squamous cell carcinoma	Zhao et al, 2011	21868764
T409	Human	Oral squamous cell carcinoma	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	Zhao et al, 2011	21868764
T-9 (WI-38 derivative)	Human	Lung cells, transformed normal diploid fibroblasts	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
TCO-1	Human	Cervical carcinoma	TCO-2	Human	Cervical carcinoma	Yoshino et al, 2006	16643607
TDL-1	Human	Tonsillar lymphoid cells, non-neoplastic	P3JHR-1	Human	Lymphoma, Burkitt	Nelson-Rees et al, 1981	6451928
TDL-2	Human	Tonsillar lymphoid cells, non-neoplastic	P3JHR-1	Human	Lymphoma, Burkitt	Nelson-Rees et al, 1981	6451928
TDL-3	Human	Tonsillar lymphoid cells, non-neoplastic	RPMI 1788	Human	Lymphoblastoid cell line, normal donor	Nelson-Rees et al, 1981	6451928
TDL-4	Human	Tonsillar lymphoid cells, non-neoplastic	Raji	Human	Lymphoma, Burkitt	Nelson-Rees et al, 1981	6451928
TE-12	Human	Esophageal squamous cell carcinoma	TE-2, TE-3, TE-12 or TE-13 (genetically identical)	Human	Esophageal squamous cell carcinoma	Boonstra et al, 2007	17804709
TE-13	Human	Esophageal squamous cell carcinoma	TE-2, TE-3, TE-12 or TE-13 (genetically identical)	Human	Esophageal squamous cell carcinoma	Boonstra et al, 2007	17804709

Misidentified Cell Line	Claimed Species	Claimed Cell Type	Contaminating Cell Line	Actual Species	Actual Cell Type	Misidentification Reported By	Reference PubMed ID
TE-2	Human	Esophageal squamous cell carcinoma	TE-2, TE-3, TE-12 or TE-13 (genetically identical)	Human	Esophageal squamous cell carcinoma	Boonstra et al, 2007	17804709
TE-3	Human	Esophageal squamous cell carcinoma	TE-2, TE-3, TE-12 or TE-13 (genetically identical)	Human	Esophageal squamous cell carcinoma	Boonstra et al, 2007	17804709
TE671	Human	Medulloblastoma	RD	Human	Sarcoma (rhabdomyosarcoma)	Stratton et al, 1989; Chen et al, 1989	2650908, 2739733
TE671 Subline No.2	Human	Medulloblastoma	RD	Human	Sarcoma (rhabdomyosarcoma)	ECACC website, ATCC FAQ #1063	No PMID
TE-7	Human	Esophageal adenocarcinoma	TE-2, TE-3, TE-12 or TE-13 (genetically identical)	Human	Esophageal squamous cell carcinoma	Boonstra et al, 2007	17804709
TEC61	Human	Thyroid, endothelium	JEG3	Human	Choriocarcinoma	Patel et al, 2003 [retraction]	12388152 [retraction]
TK-1	Human	Glioblastoma	U-251 MG	Human	Glioblastoma	JCRB website	No PMID
TI-1	Human	Leukemia, acute myeloid, M2	K-562	Human	Leukemia, chronic myeloid, blast crisis	Rush et al, 2002; Drexler et al, 2003	11871388, 12592342
TMH-1	Human	Thyroid, benign goitre	IHH-4	Human	Thyroid, papillary thyroid carcinoma	JCRB website	No PMID
TMM	Human	Leukemia, chronic myeloid, blast crisis	Correct name, incorrect cell type	Human	EBV+ B-lymphoblastoid cell line	Drexler et al, 2003	12592342
TSU-Pr1	Human	Prostate carcinoma	T-24	Human	Bladder carcinoma	van Bokhoven et al, 2001	11522622
Tu-138	Human	Oral squamous cell carcinoma	T404, T406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (genetically identical)	Human	Head and neck squamous cell carcinoma	Zhao et al, 2011	21868764
Tu-158LN	Human	Oropharyngeal squamous cell carcinoma	T404, T406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (genetically identical)	Human	Head and neck squamous cell carcinoma	Zhao et al, 2011	21868764
Tu-159	Human	Oropharyngeal squamous cell carcinoma	T404, T406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (genetically identical)	Human	Head and neck squamous cell carcinoma	Zhao et al, 2011	21868764
Tu-167	Human	Oral squamous cell carcinoma	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	Zhao et al, 2011	21868764
Tu-182	Human	Oropharyngeal squamous cell carcinoma	T404, T406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (genetically identical)	Human	Head and neck squamous cell carcinoma	Zhao et al, 2011	21868764
Tu-212	Human	Hypopharyngeal squamous cell carcinoma	T404, T406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (genetically identical)	Human	Head and neck squamous cell carcinoma	Zhao et al, 2011	21868764
Tu-212LN	Human	Hypopharyngeal squamous cell carcinoma (lymph node)	T404, T406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (genetically identical)	Human	Head and neck squamous cell carcinoma	Zhao et al, 2011	21868764
TuWi	Human	Kidney, Wilms' tumor	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	6451928
U-118 MG	Human	Glioblastoma	U-138 MG	Human	Glioblastoma	ATCC website	No PMID
UM-UC-2	Human	Bladder carcinoma	T-24	Human	Bladder carcinoma	Chiong et al, 2009	19375735
UM-UC-3-GFP (UM-UC-3 derivative)	Human	Bladder carcinoma, GFP-transfected	Unknown, NOT UM-UC-3	Human	Unknown	Chiong et al, 2009	19375735
UPES/C	Human	Brain, non-neoplastic astrocytes	Unknown	Rat	Unknown	Higgins et al, 2010	20951163
UPHHJA	Human	Glioblastoma	Unknown	Rat	Unknown	Higgins et al, 2010	20951163
UTMB-460	Human	B-cells	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	Drexler et al, 2003	12592342

Misidentified Cell Line	Claimed Species	Claimed Cell Type	Contaminating Cell Line	Actual Species	Actual Cell Type	Misidentification Reported By	Reference PubMed ID
VC312R	Human	Medulloblastoma	Unknown	Mixed, human + mouse	Unknown	Higgins et al, 2010	20951163
VM-CUB-III	Human	Bladder carcinoma	VM-CUB-I	Human	Bladder carcinoma	Masters et al, 1986	3708594
WIDr	Human	Colon carcinoma	HT-29	Human	Colon carcinoma	Chen et al, 1987	3472642
WISH	Human	Amnion, normal cells	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
WKD	Human	Conjunctiva	HeLa	Human	Cervical adenocarcinoma	ECACC website	No PMID
Wong-Kilbourne	Human	Conjunctiva	HeLa	Human	Cervical adenocarcinoma	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928
WRL 68	Human	Liver, embryonic cells	HeLa	Human	Cervical adenocarcinoma	ECACC website	No PMID
WSU-ALCL	Human	Lymphoma, anaplastic large cell	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	Drexler et al, 2003	12592342
WSU-CLL	Human	Leukemia, chronic lymphocytic	REH	Human	Leukemia, acute lymphoblastic, B cell precursor	Drexler et al, 2002; Drexler et al, 2003	12200708, 12592342
YAA	Human	Monocytes	U-937	Human	Lymphoma, histiocytic	Drexler et al, 2003	12592342
YAP	Human	Monocytes	U-937	Human	Lymphoma, histiocytic	Drexler et al, 2003	12592342
YJ	Human	Leukemia, chronic myelomonocytic	HL-60	Human	Leukemia, acute myeloid, M2	Drexler et al, 2003	12592342
YMB-1	Human	Breast carcinoma	ZR-75-1	Human	Breast carcinoma	Personal communication, A. Capes-Davis	No PMID
YMB-1-E	Human	Breast carcinoma	ZR-75-1	Human	Breast carcinoma	Personal communication, A. Capes-Davis	No PMID

Cross-contamination has been reported in the following cell lines but authentic stocks apparently do exist.
 As with any imported cell line check identity on receipt or obtain from authenticated stock, e.g. from a reputable cell bank.

Table 2. Cross-contaminated or Misidentified Cell Lines where Authentic Stock May Exist

Misidentified Cell Line	Claimed Species	Claimed Cell Type	Contaminating Cell Line	Actual Species	Actual Cell Type	Misidentification Reported By	Reference PubMed ID
1483	Human	Oral squamous cell carcinoma	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	Zhao et al, 2011	21868764
183	Human	Oropharyngeal squamous cell carcinoma	T404, T406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (genetically identical)	Human	Head and neck squamous cell carcinoma	Zhao et al, 2011	21868764
207 (EU-2)	Human	Leukemia, acute lymphoblastic, B cell precursor	REH and SUP-B2	Human	Leukemia, acute lymphoblastic, B cell precursor	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342
B10XI	Chicken, <i>Gallus gallus</i>	Intestinal cells	Unknown	Pig, <i>Sus scrofa</i>	Unknown	Steube et al, 2011	22193509
B6	Chicken, <i>Gallus gallus</i>	Intestinal cells, small intestine	Unknown	Pig, <i>Sus scrofa</i>	Unknown	Steube et al, 2011	22193509
BJA-B	Human	Bladder carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees & Flandermeyer, 1976	1246601
BT-20	Human	Breast carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
Ca9-22	Human	Oral squamous cell carcinoma	MSK-922	Human	Laryngeal squamous cell carcinoma (recurrence)	Zhao et al, 2011	21868764
D-17	Dog, <i>Canis familiaris</i>	Sarcoma (osteosarcoma)	Moresco	Dog	Sarcoma (osteosarcoma)	O'Donoghue et al, 2011	21908323
EB-3	Human	Lymphoma, Burkitt	Daudi	Human	Lymphoma, Burkitt	JCRB website	No PMID
FU-RPNT-2	Human	Kidney, renal primitive neuroectodermal tumor	FU-RPNT-1	Human	Kidney, renal primitive neuroectodermal tumor	RIKEN website	No PMID
Grey	Dog, <i>Canis familiaris</i>	Sarcoma (osteosarcoma)	Unknown	Human	Unknown	O'Donoghue et al, 2011	21908323
HPB-ALL	Human	Leukemia, acute lymphoblastic, T cell	JURKAT	Human	Leukemia, acute lymphoblastic, T cell	Drexler et al, 2003	12592342
IPEC	Pig, <i>Sus scrofa</i>	Intestinal cells	Unknown	Cow	Unknown	Steube et al, 2011	22193509
J-82	Human	Bladder carcinoma	T-24	Human	Bladder carcinoma	Masters et al, 1986	3708594
JHH-1	Human	Liver, hepatocellular carcinoma	Unknown	Mouse	Unknown	JCRB website	No PMID
KARPAS-45	Human	Leukemia, acute lymphoblastic, T cell	Unknown	Human	Unknown	Drexler et al, 1999	10516762
KBM-3	Human	Leukemia, acute myeloid, M4	HL-60	Human	Leukemia, acute myeloid, M2	Drexler et al, 2003	12592342
KE-37	Human	Leukemia, acute lymphoblastic, T cell	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	Drexler et al, 1999	10516762
L-540	Human	Lymphoma, Hodgkin	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	Drexler et al, 2003	12592342
MB-02	Human	Leukemia, acute myeloid, M7	HU-3	Human	Leukemia, acute myeloid, M7	Drexler et al, 1999	10516762
MDA1986LN	Human	Oral squamous cell carcinoma (lymph node)	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	Zhao et al, 2011	21868764
MDA686LN	Human	Oropharyngeal squamous cell carcinoma (lymph node)	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	Zhao et al, 2011	21868764
MDA686TU	Human	Oropharyngeal squamous cell carcinoma	T404, T406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (genetically identical)	Human	Head and neck squamous cell carcinoma	Zhao et al, 2011	21868764
Parks	Dog, <i>Canis familiaris</i>	Melanoma	Unknown	Human	Unknown	O'Donoghue et al, 2011	21908323
RPMI-8402	Human	Leukemia, acute lymphoblastic, T cell	Unknown	Human	Unknown	Drexler et al, 1999	10516762
RT4	Human	Bladder carcinoma	HeLa	Human	Cervical adenocarcinoma	Nelson-Rees et al, 1981	6451928
T3M-12	Human	Lung carcinoma	T3M-1	Human	Oral carcinoma	RIKEN website	No PMID
U-373 MG	Human	Glioblastoma	U-251 MG	Human	Glioblastoma	ECACC website; ATCC website	No PMID
U-937	Human	Lymphoma, histiocytic	Unknown	Human	Unknown	Drexler et al, 1999	10516762

Misidentified Cell Line	Claimed Species	Claimed Cell Type	Contaminating Cell Line	Actual Species	Actual Cell Type	Misidentification Reported By	Reference PubMed ID
UT-7	Human	Leukemia, acute myeloid, M7	U-937	Human	Lymphoma, histiocytic	Drexler et al, 2003	12592342
Yamada	Dog, <i>Canis familiaris</i>	Sarcoma (osteosarcoma)	Unknown	Mouse	Unknown	O'Donoghue et al, 2011	21908323

Cell Banks Cited

Name	Website
ATCC: American Type Culture Collection	http://www.atcc.org/
DSMZ: Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH	http://www.dsmz.de/
ECACC: European Collection of Cell Cultures	http://www.hpacultures.org.uk/collections/ecacc.isp
JCRB: Japanese Collection of Research Biorepositories	http://cellbank.nibio.go.jp/
RIKEN Bioresource Center Cell Bank	http://www.brc.riken.go.jp/lab/cell/english/guide.shtml

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分担研究報告書

細胞資源におけるウイルス検出法開発に関する研究

-マルチプレックス PCR 法を用いたウイルス検査-

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研究要旨

培養細胞を使用した研究の質を確保するためには細胞株の品質管理を徹底することが必要であるが、培養細胞研究資源へのウイルス汚染に関する検討は十分行われていない。本分担研究では、ウイルス汚染の実態を迅速に把握するため、簡便・安価に多種類のウイルスを測定する手法を開発・実用化を目指した研究を行い、以下の結果を得た。① これまでに作製したウイルス検査系の検査対象ウイルスに加え、パラインフルエンザウイルス（PIV）1型、2型、3型、RSウイルス、コロナウイルス（OC43, NL63）、メタニューモウイルスの7種類のウイルスの検査系を作成した② DNA・RNAウイルスおよびマイコプラズマの同時・高感度・迅速検査系を作成するため、それらの病原体を検出する RT-PCR と PCR 反応を同時に行うことが可能な酵素・バッファー系を開発した。

A. : 研究目的

医薬品開発や iPS 細胞を含めた再生医療研究が加速されており、それに伴いヒト培養細胞研究資源の重要性が著しく増している。実際、再生医療の研究に用いるヒト由来の分化能を持った培養細胞のバンクへの寄託も増加傾向にある。今後、再生医療の研究の質を高めるためには、ヒト培養細胞研究資源の品質管理法を確立し、研究に使用する培養細胞の品質管理を徹底することが求められる。培養細胞に微生物が持続感染すると、細胞の性質・増殖性、遺伝子発現パターン、動物に接種した際の細胞の挙動や動物の反応などが大きく変化する可能性があるため、細菌、マイコプラズマやウイルス汚染状況に関する情報は非常に重要である。実際、

外国に細胞を出荷する際には、ウイルス汚染状況に関する情報の添付を求められる事が多く、今後その必要性は増していくものと考えられる。

細菌・真菌・マイコプラズマなどと違い、ウイルスの増殖には生きた細胞が必須であり、しかもウイルスは組織・細胞特異性が高いため、培養法により多種類のウイルスの有無を同時に検査することは極めて難しい。したがって、PCR法などの核酸増幅法によりウイルスゲノムを直接検出することが必要となるが、その実用化には多くのウイルスを同時・高感度・安価に検出することが可能な新しい検査法の確立が望まれる。本研究では、細胞バンクが保有する細

胞株や今後新たに寄託される培養細胞株の全数検査に使用する事が出来る実用的な新規ウイルス検査系を確立することを目的としこれまで開発したウイルス検出系の測定項目を増やし、さらに、DNA・RNA ウイルスおよびマイコプラズマの同時・高感度・迅速検査系を可能にするため、それらの病原体を検出する RT-PCR と PCR 反応を同時に行うことが可能な酵素・バッファー系の開発を目的に研究を行った。

B：研究方法

1. ウイルスゲノムの増幅

ウイルスゲノム RNA を RT-PCR 法により増幅した。
○ウイルス遺伝子の増幅・検出にはアプライドバイオシステム社の ABI-Prism 7300 あるいは Roche 社の LightCycler 480 を使用した。

○ RT-PCR 反応

- ・逆転写反応：42°C5 分
- ・PCR 反応：95°C15 秒, 60°C60 秒 45 サイクル

○ 試薬

PCR 試薬：AmpliTaqGold & Gold Buffer (アプライドバイオシステムズジャパン) 5U 使用
RT-PCR 試薬 QuantiTect Probe RT-PCR Kit (Qiagen)
プライマー：通常のオリゴマーを使用 (配列は別途記載) 最終濃度 0.1~1 μM で使用

プローブ：Taqman Probe を使用 (配列は別途記載)
最終濃度 0.1~0.2 μM で使用

○ RT-PCR による測定方法

反応液の組成

RNA Sample	20 μl
2xBuffer	25 μl
RT-Taq	0.5 μl
RNase Free Water	4.5 μl

測定方法

- a. 各ウェル2ml の96ウェルリザーバーを使用し、Master Mixを330 μlとサンプルまたは陽性コン

トロール220 μlを混合する。その際、サンプルのRNA濃度が1 μg /ウェルになるように調製する。

c. マルチピペッターで3回ピペッティングした後、あらかじめ作成した検査用96ウェルプレートに分注する。

d. シールをして1000rpm, 3秒間遠心する。プレートを逆さにして1分間放置後、シェーカーでさらに1分振とうして、サンプルとプライマー・プローブをよく混合したのち RT-PCR 反応を開始する。

e. RT-PCR 反応後、結果を解析して、ウイルスの有無および量 (半定量) を測定する。

○ プライマー、プローブ配列

Genbank に登録されている遺伝子配列を BLAST 解析し、最も特異性の高いと思われる領域に下記 Primer, Probe を設定した。

★ パラインフルエンザウイルス 1 型

Forward Primer

GTTGTCAATGTCTTAATTCGTATCAATAATT

Reverse Primer

GTAGCCTMCCTTCGGCACCTAA

Probe

6FAM-TAGGCCAAAGATTGTTGTCGAGACTATTCCAA-iowaBK

★ パラインフルエンザウイルス 2 型

Forward Primer

F-AGGACTATGAAAACCATTACCTAAGTGA

Reverse Primer

R-AAGCAAGTCTCAGTTCAGCTAGATCA

Probe

6FAM-ATCAATCGCAAAAGCTGTTTCAGTCACTGCTATAC-iowaBK

★ パラインフルエンザウイルス 3 型

Forward Primer

F-GATATAAGRATAAAATGGA

Reverse Primer

R-TCCCATGGACATTCATTGT

Probe
6FAM-CCTGGTCTTGATAGCAC-iowaBK

★ RSウイルス

Forward Primer
F-GCTCTTAGCAAAGTCAAGTTGAATGA

Reverse Primer
R-TGCTCCGTTGGATGGTGTATT

Probe
6FAM-ACACTCAACAAAGTCAACTTCTGTCATCCAGC-iowaBK

★ コロナウイルス (OC43)

Forward Primer
F-CGATGAGGCTATTCGACTAGGT

Reverse Primer
R-CCTTCTGAGCCTTCAATATAGTAACC

Probe
6FAM-TCCGCCTGGCAGGTTACTCCCT-iowaBK

★ コロナウイルス (NL63)

Forward Primer
F-ACGTACTTCTATTATGAAGCATGATATTAA

Reverse Primer
R-AGCAGATCTAATGTTATACTTAAACTACG

Probe
6FAM-ATTGCCAAGGCTCCTAAACGTACAGGTGTT-iowaBK

★ メタニューモウイルス

Forward Primer
F-TGCYGTAGCTTCAGTCAATTC

Reverse Primer
R-GGTGTTATTCCAGCRTTGTCTGAAAA

Probe
6FAM-ACAGAAGGTTCTTAATGTTGTGCGGCA-iowaBK

マルチプレックス PCR 法による 1 のマイコプラズマ属の菌種を検出可能な検査系を用いた (遺伝子情報から 142 種類の検出が可能と推定され、日本薬局方記載の 3 種類のマイコプラズマ種が検出可能なことが実証されている)。

○ 増幅領域とプライマー・プローブ配列

★ インフルエンザウイルス B (FluB) 検出系

F-primer: aaatacgggtgattaaataaaagcaa

R-primer: ccagcaatagctccgaagaaa

Probe: FAM-cacccatattgggcaatttcctatggc-iowaBK

★ HHV6 検出系

F-primer: gaagcagcaacgcaacaca

R-primer: acaacatgtaactcgggtgtacgg

Probe: FAM-aaccctgctgccc-iowaBlack

★ マイコプラズマ検出系

F-primer 2種類、R-primer 9種類、Probe 5種類の合計16種類を同一反応に使用するマルチプレックスPCR検出系 (標的遺伝子は 16S, 23Sリボソーム遺伝子およびそのスペーサー領域: 特許申請中のためプライマー・プローブ配列は未記載)

○ 試薬と反応条件

★ 5X RT-PCR Buffer: 50mM Tris-HCL, 250mM KCL, 7.5 mM MgCL₂, 2.7M Betain, 0.025% Gelati

★ 酵素: 逆転写酵素: ReverseScribe (GW 社)

PCR 用酵素: HiTaq (抗 Taq 抗体含有: GW 社)

★ 反応液組成: 2xPremix Buffer (5xRT-PCR)

a. dNTP Mix (final 0.5mM)

b. ReverseScribe 1 μl (100U)

c. HiTaq 0.2 μl (0.4U)

d. Primer 各 5 pmol Probe 7.5 pmol

e. RT-primer は PCR 用の specific primer を使用し、FluB RT-PCR 法により増幅した。

★ ウイルス遺伝子の増幅・検出にはアプライドバイオシステム社の ABI-Prism 7300 および Roche 社の LightCycler 480 を使用。

2. RT-PCR と PCR の対象

1 Step RT-PCR のモデル実験系としてヒトインフルエンザウイルス B (FluB) を、DNA ウイルス検出 (PCR) のモデル実験系として HHV6 を選択した。マイコプラズマ検出系 (PCR) には我々が開発した