The ICLAC Register of Misidentified Cell Lines is curated by the International Cell Line Authentication Committee. The latest version of the Register is available at:
http://iclac.org/databases/cross-contaminations/
The Register lists cell lines that are known to be cross-contaminated or otherwise misidentified.
Table 1 contains those cell lines where there is no authentic stock known to the list contributors.
Table 2 contains those cell lines where some stocks have been shown to be misidentified, but where authentic stock is known to exist.
Table 3 (Withdrawn) contains those cell lines that were initially believed to be misidentified but where further review (e.g., of source references) showed this is not the case.
The Register acts as a preliminary guide to avoiding suspect cell lines; check each cell line that you use before you start work, to see if others have shown it to be problematic.
You should also perform authentication testing of your sample (e.g., by STR profiling for human cell lines) and compare with reference samples before use.
Cell lines are listed in alphabetical order and are added after review of cell line provenance and authentication testing data.
An effort has been made to exclude synonymous cell lines that were legitimately established from the same donor
(e.g., where one cell line was knowingly derived from a parental cell line, or two cell lines were established separately from the same individual).
The "Contaminating Cell Line", in most cases, will have overgrown the claimed original, or will have replaced it by a technical error, and the original cells will no longer exist.
If authentic stocks are known to exist (Table 2), an additional column has been added to show the possible locations for authentic stock.
If authentic stocks are available from a cell line repository, the catalogue number is given in brackets. Repositories are listed in alphabetical order.
Observations made in these lists are based on published reports and details obtained from contributors, cell bank websites, and Wikipedia.
"Reference PubMed ID" refers to the unique ID number assigned to publications by the PubMed database (http://www.ncbi.nlm.nih.gov/pubmed/).
Entries in the last three columns indicate where and how these misidentifications were reported and in no way imply responsibility for the cause by the authors or institutions.
Additional cell line information is available through other databases and resources.
"Cellosaurus AC" refers to the unique ID number assigned to cell lines by the Cellosaurus database (http://web.expasy.org/cellosaurus/).
Cellosaurus acts as a cell line knowledge resource with links to many other online resources.
Researchers are very welcome to submit additional information regarding misidentified cell lines not listed here, authentic stocks, or any other relevant information.
Confusion may also arise from two different cell lines having the same name; information on these would also be welcome.
Please contact info@iclac.org and copy to the ICLAC Chair, Amanda Capes-Davis (acapdav@gmail.com).
The Register of Misidentified Cell Lines was developed by Amanda Capes-Davis and Ian Freshney, and published in 2010. To cite the Register or learn more, please refer to:
Capes-Davis A, Theodosopoulos G, Atkin I, Drexler HG, Kohara A, Macleod RA, Masters JR, Nakamura Y, Reid YA, Reddel RR, Freshney RI (2010)
Check your cultures! A list of cross-contaminated or misidentified cell lines. Int J Cancer 127(1): 1-8. PMID: 20143388.

Table 1. Misidentified cell lines where no authentic stock is known

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Misidentification Reported By	Reference PubMed ID	Notes
1-1ras1000 (BALB/3T3 A31-1-1 derivative)	ICLAC-00531	Mouse, *Mus musculus* (BALB/c strain)	Embryo, normal	CVCL_8653	Unknown	Mouse, *Mus musculus* (Swiss strain)	Unknown	None	Uchio-Yamada et al, 2017	27844419	Reviewed by ICLAC (ref: 170316). The evidence in this paper is sufficient to conclude that the cell line is misidentified, but the nature of the contaminating cell line is currently unknown. Further testing of 3T3 cell lines is needed to identify the contaminant and its strain identity with a high degree of confidence (e.g., STR profiling).
1-1src (BALB/3T3 A31-1-1 derivative)	ICLAC-00532	Mouse, *Mus musculus* (BALB/c strain)	Embryo, normal	CVCL_8654	Unknown	Mouse, *Mus musculus* (Swiss strain)	Unknown	None	Uchio-Yamada et al, 2017	27844419	Reviewed by ICLAC (ref: 170316). The evidence in this paper is sufficient to conclude that the cell line is misidentified, but the nature of the contaminating cell line is currently unknown. Further testing of 3T3 cell lines is needed to identify the contaminant and its strain identity with a high degree of confidence (e.g., STR profiling).
1E8 (BLIN-1 derivative)	ICLAC-00169	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_L811	NALM-6	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_0092	Drexler et al, 2003	12592342	BLIN-1 and 1E8 (BLIN-1 derivative) were originally a single entry. These two cell lines were split into two entries in v8.0, for consistency with other entries where derivatives are listed separately.
2008/C13*5.25 (C13, OV2008/C13)	ICLAC-00522 (contains: ICLAC-00457)	Human	Ovarian carcinoma	CVCL_0114	ME-180	Human	Cervical carcinoma	CVCL_1401	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830, 161031). This cell line is a derivative of 2008; the name used by its originators is "2008/C13*5.25" [source: Andrews et al 1985, PMID 4063975; Christen et al 1990, PMID 2243136]. The originator obtained their stocks of 2008 directly from its originator, Dr Philip DiSaia. The originating laboratory subsequently became aware of reports that the cell line was misidentified and performed their own STR profiling; their earliest stocks of 2008/C13*5.25 corresponded to ME-180. C13 was originally added as a separate entry and was merged in v9.

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222	ICLAC-00454	Human	Ovarian carcinoma	CVCL_1T15	PA1	Human	Teratocarcinoma	CVCL_0479	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830).
2474/90	ICLAC-00107	Human	Gastric carcinoma	CVCL_9556	HT-29	Human	Colon carcinoma	CVCL_0320	MacLeod et al, 1999	10508494	
2563 (MAC-21)	ICLAC-00032	Human	Lung carcinoma	CVCL_M629	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
28SC-ES (SC derivative)	ICLAC-00526	Human	Blood, monocyte/ macrophage	CVCL_EP74	U-937	Human	Lymphoma, histiocytic	CVCL_0007	JCRB website	No PMID	Reviewed by ICLAC (ref: 170208). ICLAC investigated four cell lines whose STR profiles corresponded to U-937: EL 1, SC (also known as 28SC), 28SC-ES (derived from SC) and PH. EL 1, SC, and PH were all found to come from the same patent deposit (http://www.google.com/patents/US5447861). The wording of the patent makes it clear that all were deposited by the originators at ATCC, where STR profiling was performed, and that U-937 was used as a control.
2957/90	ICLAC-00108	Human	Gastric carcinoma	CVCL_9557	HT-29	Human	Colon carcinoma	CVCL_0320	MacLeod et al, 1999	10508494	
3051/80	ICLAC-00109	Human	Gastric carcinoma	CVCL_9558	HT-29	Human	Colon carcinoma	CVCL_0320	MacLeod et al, 1999	10508494	
3AB-OS (MG-63 derivative)	ICLAC-00545	Human	Sarcoma (osteosarcoma)	CVCL_LM95	RD	Human	Sarcoma (rhabdomyosarcoma)	CVCL_1649	ICLAC correspondence	No PMID	Reviewed by ICLAC (ref: 180221). The cell line was investigated by ICLAC after it was reported that 3AB-OS had a shared donor origin with RD. Further testing confirmed this finding. 3AB-OS was originally reported to be derived from MG-63 and to display novel cancer stem cell properties.
41M	ICLAC-00110	Human	Ovarian carcinoma	CVCL_4993	OAW 28	Human	Ovarian carcinoma	CVCL_1614	Wilson et al, 1996	8795574	
A172TR3 (U251-TR3)	ICLAC-00523	Human	Glioblastoma	CVCL_1G29	U-251 MG	Human	Glioblastoma	CVCL_0021	Yip et al, 2009 [correction]	19584161	Reviewed by ICLAC (ref: 161031). This cell line was described by Yip et al (2009) as a temozolomide-resistant derivative of A-172. The authors subsequently published a correction saying that the cell line was actually U-251 MG. The Materials and Methods of their original article show that they worked with both cell lines. The authors have re-named the cell line "U251-TR3"
ACC2	ICLAC-00357	Human	Salivary gland, adenoid cystic carcinoma	CVCL_6872	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Phuchareon et al, 2009; Zhao et al, 2011	19557180, 21868764	Choi et al, 2008 (PMID: 18698025) also refer to authentication of the cell line in their erratum, found at Clin Cancer Res (2009); 15: 416.

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ACC3	ICLAC-00358	Human	Salivary gland, adenoid cystic carcinoma	CVCL_6873	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Phuchareon et al, 2009; Zhao et al, 2011	19557180, 21868764	Choi et al, 2008 (PMID: 18698025) also refer to authentication of the cell line in their erratum, found at Clin Cancer Res (2009); 15: 416.
ACCM	ICLAC-00359	Human	Salivary gland, adenoid cystic carcinoma	CVCL_6874	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Phuchareon et al, 2009; Zhao et al, 2011	19557180, 21868764	Choi et al, 2008 (PMID: 18698025) also refer to authentication of the cell line in their erratum, found at Clin Cancer Res (2009); 15: 416.
ACCNS	ICLAC-00360	Human	Salivary gland, adenoid cystic carcinoma	CVCL_6875	Unknown	Mouse	Unknown	None	Phuchareon et al, 2009	19557180	
ACCS	ICLAC-00361	Human	Salivary gland, adenoid cystic carcinoma	CVCL_6876	T-24	Human	Bladder carcinoma	CVCL_0554	Phuchareon et al, 2009	19557180	
ADLC-5M2	ICLAC-00111	Human	Lung carcinoma	CVCL_8169	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	MacLeod et al, 1999	10508494	
***Aedes aegypti*, Suitor's clone**	ICLAC-00014	Mosquito, *Aedes aegypti*	Not specified	CVCL_1R48	Unknown, possibly Ae (Grace's Antheraea eucalypti cells)	Emperor gum moth, *Opodiphthera eucalypti*	Unknown	None	Greene et al, 1972; Nelson-Rees et al, 1981	4402510, 6451928	
***Aedes vexans* culture**	ICLAC-00015	Mosquito, *Aedes vexans*	Not specified	CVCL_1R46	Unknown, possibly Ae (Grace's Antheraea eucalypti cells)	Emperor gum moth, *Opodiphthera eucalypti*	Unknown	None	Greene et al, 1972; Nelson-Rees et al, 1981	4402510, 6451928	
AG-F	ICLAC-00171	Human	Lymphoma, Hodgkin	CVCL_D101	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0207	Drexler et al, 2003	12592342	
AKI	ICLAC-00172	Human	Melanoma	CVCL_8170	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Yoshino et al, 2006	16643607	
ALVA-31	ICLAC-00173	Human	Prostate carcinoma	CVCL_4737	PC-3	Human	Prostate carcinoma	CVCL_0035	van Bokhoven et al, 2001; Varella-Garcia et al, 2001	11304728, 11433521	

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ALVA-41	ICLAC-00174	Human	Prostate carcinoma	CVCL_4734	PC-3	Human	Prostate carcinoma	CVCL_0035	van Bokhoven et al, 2001; Pan et al, 2001; Varella-Garcia et al, 2001	11304728, 11135436, 11433521	
ALVA-55	ICLAC-00175	Human	Prostate carcinoma	CVCL_4736	PC-3	Human	Prostate carcinoma	CVCL_0035	van Bokhoven et al, 2003	14518029	
ALVA-101	ICLAC-00176	Human	Prostate carcinoma	CVCL_4735	PC-3	Human	Prostate carcinoma	CVCL_0035	van Bokhoven et al, 2003	14518029	
AO	ICLAC-00033	Human	Amnion	CVCL_D631	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
Ao38 (BTI-Tnao38)	ICLAC-00510	Black witch moth, *Ascalapha odorata*	Eggs, normal	CVCL_Z252	Unknown	Cabbage looper moth, *Trichoplusia ni*	Eggs, normal	None	Hashimoto et al, 2012	22531032	Reviewed by ICLAC (ref: 160223). The CO1 barcoding alignment was interpreted as evidence of Trichoplusia ni origin, which was sufficient to show that the cell line was misidentified. However, the parental cell line was not necessarily proven to be BTI-Tn-5B1-4. We therefore recorded the parental cell line as "unknown".
ARO81-1 (ARO)	ICLAC-00177 (contains: ICLAC-00393)	Human	Thyroid, anaplastic carcinoma	CVCL_0144	HT-29	Human	Colon carcinoma	CVCL_0320	Schweppe et al, 2008; Zhao et al, 2011	18713817, 21868764	ARO and ARO81-1 were originally added as separate entries and were merged in V9. The laboratory that supplied ARO to Zhao et al. (2011) confirmed that these are the same cell lines.
AV3	ICLAC-00001	Human	Amnion	CVCL_1904	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Lavappa et al, 1976; Nelson-Rees et al, 1981	4864103, 1250349, 6451928	
AZ521	ICLAC-00369	Human	Gastric carcinoma	CVCL_2862	HuTu 80	Human	Duodenal carcinoma	CVCL_1301	JCRB website	No PMID	Website states, "originally established as gastric cancer-derived cell line, but is revealed to be the derivative of duodenum carcinoma cell line HuTu 80." STR profiles checked by ACD and found to match.
BALB/3T3 A31-1-1 (1-1, A31-1-1, Balb/c 3T3 A31-I-1; BALB/3T3 A31 derivative)	ICLAC-00528	Mouse, *Mus musculus* (BALB/c strain)	Embryo, normal	CVCL_J646	Unknown	Mouse, *Mus musculus* (Swiss strain)	Unknown	None	Uchio-Yamada et al, 2017	27844419	Reviewed by ICLAC (ref: 170316). The evidence in this paper is sufficient to conclude that the cell line is misidentified, but the nature of the contaminating cell line is currently unknown. Further testing of 3T3 cell lines is needed to identify the contaminant and its strain identity with a high degree of confidence (e.g., STR profiling)
BALB/3T3 A31-1-13 (Balb/c 3T3 A31-1-13; BALB/3T3 A31 derivative)	ICLAC-00529	Mouse, *Mus musculus* (BALB/c strain)	Embryo, normal	CVCL_L996	Unknown	Mouse, *Mus musculus* (Swiss strain)	Unknown	None	Uchio-Yamada et al, 2017	27844419	Reviewed by ICLAC (ref: 170316). The evidence in this paper is sufficient to conclude that the cell line is misidentified, but the nature of the contaminating cell line is currently unknown. Further testing of 3T3 cell lines is needed to identify the contaminant and its strain identity with a high degree of confidence (e.g., STR profiling)

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BCC1/KMC	ICLAC-00112	Human	Basal cell carcinoma	CVCL_A033	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	MacLeod et al, 1999	10508494	
BE-13	ICLAC-00178	Human	Leukemia, acute lymphoblastic, T cell	CVCL_1081	PEER	Human	Leukemia, acute lymphoblastic, T cell	CVCL_1913	Drexler et al, 2003	12592342	
BEL-7402	ICLAC-00549	Human	Liver, hepatocellular carcinoma	CVCL_5492	HeLa / HCT 8	Human	Cervical adenocarcinoma / colon carcinoma	CVCL_0030 / CVCL_2478	Ye et al, 2015; Huang et al, 2017; Bian et al, 2017; Rebouissou et al, 2017	26116706, 28107433, 28851942, 28807831	Reviewed by ICLAC (ref: 180418). It is difficult to obtain early samples for testing because the cell line was established many years ago. However, it is clear that multiple samples are misidentified. The entry should be reassessed if early material can be found for testing. Note: STR profiles show that BEL-7402 corresponds to either HeLa or HCT 8. The mechanism for two different cell lines appearing in the culture is unclear; the cell line may have been cross-contaminated on two separate occasions.
BEL-7404	ICLAC-00550	Human	Liver, hepatocellular carcinoma	CVCL_6568	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Huang et al, 2017; Rebouissou et al, 2017	28107433, 28807831	Reviewed by ICLAC (ref: 180418). It is difficult to obtain early samples for testing because the cell line was established many years ago. However, it is clear that multiple samples are misidentified. The entry should be reassessed if early material can be found for testing.
BGC-823	ICLAC-00570	Human	Gastric carcinoma	CVCL_3360	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Ye et al, 2015; Huang et al, 2017; Bian et al, 2017	26116706, 28107433, 28851942	Reviewed by ICLAC (ref: 190213). According to Li et al, 2005 (PMID: 16344271), the cell line was established in the People's Hospital of Peking University, China but the year of establishment was not stated; the earliest reference identified dated to 1998. Its STR profile is included in three papers from Chinese cell banks and testing facilities as a misidentified cell line.
Bhas42 (BALB/3T3 A31-1-1 derivative)	ICLAC-00530	Mouse, *Mus musculus* (BALB/c strain)	Embryo, normal	CVCL_5494	Unknown	Mouse, *Mus musculus* (Swiss strain)	Unknown	None	Uchio-Yamada et al, 2017	27844419	Reviewed by ICLAC (ref: 170316). The evidence in this paper is sufficient to conclude that the cell line is misidentified, but the nature of the contaminating cell line is currently unknown. Further testing of 3T3 cell lines is needed to identify the contaminant and its strain identity with a high degree of confidence (e.g., STR profiling).
BHP 10-3	ICLAC-00179	Human	Thyroid, papillary carcinoma	CVCL_6278	TPC-1	Human	Thyroid, papillary carcinoma	CVCL_6298	Schweppe et al, 2008	18713817	
BHP 14-9	ICLAC-00180	Human	Thyroid, papillary carcinoma	CVCL_6279	M14	Human	Melanoma	CVCL_1395	Schweppe et al, 2008; Korch et al, 2018	18713817, 28940260	STR profiling showed that this cell line has a shared donor origin with MDA-MB-435 and M14. The identity of these two cell lines was investigated further by ICLAC; all derivatives correspond to the M14 melanoma cell line and its donor (Korch et al, 2018).
BHP 15-3	ICLAC-00555	Human	Thyroid, papillary carcinoma	CVCL_6280	M14	Human	Melanoma	CVCL_1395	Korch et al, 2018	28940260	Reviewed by ICLAC (ref: 180625). STR profiling showed that this cell line has a shared donor origin with MDA-MB-435 and M14. The identity of these two cell lines was investigated further by ICLAC; all derivatives correspond to the M14 melanoma cell line and its donor (Korch et al, 2018).
BHP 17-10	ICLAC-00181	Human	Thyroid, papillary carcinoma	CVCL_6281	M14	Human	Melanoma	CVCL_1395	Schweppe et al, 2008; Korch et al, 2018	18713817, 28940260	STR profiling showed that this cell line has a shared donor origin with MDA-MB-435 and M14. The identity of these two cell lines was investigated further by ICLAC; all derivatives correspond to the M14 melanoma cell line and its donor (Korch et al, 2018).

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BHP 18-21	ICLAC-00571	Human	Thyroid, papillary carcinoma	CVCL_6282	M14 / TPC-1	Human	Melanoma / thyroid, papillary carcinoma	CVCL_1395 / CVCL_6298	Personal communication, C. Korch; Nims, 2018	No PMID; doi 10.1016/j.yamp.2018.07.005	Reviewed by ICLAC (ref: 190213). The STR profile showed multiple peaks at the majority of loci i.e. a mixture; further analysis showed that the mixture corresponded to M14 and TPC-1. It is not clear how a mixture came to develop but the sample is an early one from the originator's laboratory. The data are included in a paper on authentication of cell line mixtures (Nims, 2018).
BHP 2-7	ICLAC-00182	Human	Thyroid, papillary carcinoma	CVCL_6283	TPC-1	Human	Thyroid, papillary carcinoma	CVCL_6298	Schweppe et al, 2008; Zhao et al, 2011	18713817, 21868764	
BHP 5-16	ICLAC-00183	Human	Thyroid, papillary carcinoma	CVCL_6284	M14	Human	Melanoma	CVCL_1395	Schweppe et al, 2008; Zhao et al, 2011; Korch et al, 2018	18713817, 21868764, 28940260	STR profiling showed that this cell line has a shared donor origin with MDA-MB-435 and M14. The identity of these two cell lines was investigated further by ICLAC; all derivatives correspond to the M14 melanoma cell line and its donor (Korch et al, 2018).
BHP 7-13	ICLAC-00184	Human	Thyroid, papillary carcinoma	CVCL_6285	TPC-1	Human	Thyroid, papillary carcinoma	CVCL_6298	Schweppe et al, 2008	18713817	
BIC-1	ICLAC-00365	Human	Esophageal adenocarcinoma	CVCL_8092	SW-480, SW-620	Human	Colon carcinoma	CVCL_0546 / CVCL_0547	Boonstra et al, 2010	20075370	Boonstra et al. refer to the contaminant as SW620. However, SW-480 and SW-620 were derived from the same individual, so both carry the same identity; the contaminating cell line could be either of these two cell lines.
BLIN-1	ICLAC-00170	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_8173	NALM-6	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_0092	Drexler et al, 2003	12592342	BLIN-1 and 1E8 (BLIN-1 derivative) were originally a single entry. These two cell lines were split into two entries in v8.0, for consistency with other entries where derivatives are listed separately.
BM-1604	ICLAC-00113	Human	Prostate carcinoma	CVCL_1968	DU-145	Human	Prostate carcinoma	CVCL_0105	MacLeod et al, 1999	10508494	
BrCA 5	ICLAC-00016	Human	Breast carcinoma	CVCL_D280	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees and Flandermeyer, 1977; Nelson-Rees et al, 1981	557237, 6451928	
BSCC-93	ICLAC-00185	Human	Skin, squamous cell carcinoma	CVCL_8157	DJM-1	Human	Skin, squamous cell carcinoma	CVCL_1172	Yoshino et al, 2006; ICLAC correspondence	16643607	Reviewed by ICLAC (ref: 140421). Yoshino et al used STR profiling to show that these cell lines come from the same donor. DJM-1 was established from an 87 year old female and first published in 1987. BSCC-93 was established at a much later date (exact year and donor details are unclear). RIKEN discussed this match with the originator, who concluded that BSCC-93 is more likely to be misidentified. DJM-1 was initially listed in the database as the misidentified cell line; RIKEN has requested that this be changed in version 7.2 of the database. [Source: Yoshino et al, 2006; ICLAC correspondence.]

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BT-B	ICLAC-00394	Human	Bladder carcinoma	CVCL_1858	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	DSMZ website	No PMID	The DSMZ website notes, "these cells were thought to be "stablished from the malignant urinary bladder carcinoma of a 66-year-old Caucasian man (stage pTa G3) in 1989"; same donor as for cell line BT-A; however, DNA fingerprinting and cytogenetic analysis at the DSMZ established unequivocally that this cell line must be considered de facto a subclone of HELA."
C16 (MRC-5 derivative)	ICLAC-00296	Human	Lung cells, fetal	CVCL_2322	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	ECACC website	No PMID	Website states, "This was originally a clone of the MRC-5 cell line. This cell line was found to be indistinguishable from HeLa by STR PCR DNA profiling. Therefore, the cell line should be considered as derived from HeLa."
C-433	ICLAC-00395	Human	Giant cell tumor, benign	CVCL_1969	RD-ES	Human	Sarcoma (Ewing's)	CVCL_2169	DSMZ website	No PMID	The DSMZ website notes, "thought to be established from the benign giant cell tumor excised from a woman who had swelling and pain in the right ankle (distal tibia)"; however, DNA fingerprinting and cytogenetic analysis at the DSMZ established unequivocally that this cell line must be considered de facto a subclone of cell line RD-ES (ACC 269)."
CAC2	ICLAC-00362	Human	Salivary gland, adenoid cystic carcinoma	CVCL_6883	Unknown	Rat	Unknown	None	Phuchareon et al, 2009	19557180	
CaMa (clone 15)	ICLAC-00034	Human	Breast carcinoma	CVCL_1T14	Unknown	Syrian hamster and mouse	Unknown	None	Nelson-Rees et al, 1981	6451928	Reference states, "a 'parental' culture was thought to be that of Syrian hamster whereas two substrains were clearly of murine origin as shown by chromosome and isoenzyme results".
CaOV	ICLAC-00035	Human	Ovarian carcinoma	CVCL_M091	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
Caov-2	ICLAC-00458	Human	Ovarian carcinoma	CVCL_6861	NIH:OVCAR-2	Human	Ovarian carcinoma	CVCL_3941	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830).
CaVe	ICLAC-00036	Human	Gastric carcinoma	CVCL_8444	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
CCL3	ICLAC-00381	Human	Chordoma	CVCL_M023	Unknown	Mouse	Unknown	None	Brüderlein et al, 2010	21253487	
CGTH-W-1	ICLAC-00536	Human	Thyroid, follicular carcinoma	CVCL_1120	SW579	Human	Thyroid, squamous cell carcinoma	CVCL_3603	Yu et al, 2015	25877200	Reviewed by ICLAC (ref: 170829). ICLAC investigated this cell line after receiving a query about its shared donor origin with SW579. CGTH-W-1 is included in Yu et al (2015) as a synonymous cell line and also in the DSMZ catalogue (ACC 360). CGTH-W-1 was first published in 1995 (Lin et al, 1995; PMID 8826082); SW579 was established much earlier, in 1973 (Fogh et al, 1986; PMID 3518877). The originator of CGTH-W-1 was approached but was unable to supply additional material for testing.

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CH1	ICLAC-00459	Human	Ovarian carcinoma	CVCL_4992	PA1	Human	Teratocarcinoma	CVCL_0479	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830). CH1 and CH1-cisR (CH-1 derivative) were originally a single entry. These two cell lines were split into two entries in V9, for consistency with other entries where derivatives are listed separately.
CH1-cisR (CH1 derivative)	ICLAC-00559	Human	Ovarian carcinoma	CVCL_X012	PA1	Human	Teratocarcinoma	CVCL_0479	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830). CH1 and CH1-cisR (CH-1 derivative) were originally a single entry. These two cell lines were split into two entries in V9, for consistency with other entries where derivatives are listed separately.
Chang liver	ICLAC-00002	Human	Liver, normal hepatic cells	CVCL_0238	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Lavappa et al, 1976; Nelson-Rees et al, 1981	4864103, 1250349, 6451928	STR profile (published by Masters et al, 2001; PMID 11416159) confirms HeLa identity.
CHB	ICLAC-00017	Human	Astrocytoma	CVCL_1R45	Unknown	Rat	Not specified	None	Stoolmiller et al, 1972; Nelson-Rees et al, 1981	4640072, 6451928	Both references state that CHB is not the commonly used C-6 rat glial cell line.
CHP-234	ICLAC-00297	Human	Neuroblastoma	CVCL_4359	Unknown	Human	Unknown	None	ATCC website	No PMID	ATCC website notes that the cell line carries a Y chromosome and is therefore unlikely to come from the original donor. See "Misidentified Cell Lines" page on the ATCC website.
Clom 15	ICLAC-00383	Human	Glioblastoma	CVCL_1R52	Unknown	Rat	Unknown	None	Higgins et al, 2010	20951163	
Clone 1-5c-4	ICLAC-00298	Human	Conjunctiva	CVCL_2260	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	ECACC website	No PMID	Website states, "These cells were originally Chang conjunctival cells adapted by Wong and Kilbourne, and designated as conjunctival 'D' cells.... This cell line was found to be indistinguishable from HeLa by STR PCR DNA profiling. Therefore, the cell line should be considered as derived from HeLa."
Clone-16	ICLAC-00037	Human	Pancreas, fetal endocrine cells	CVCL_1T11	Unknown	Syrian hamster	Unknown	None	Matsuba et al, 1988	2903855	Reference states, "Karyotyping confirmed the absence of human chromosomes in the Clone-16 cells while sizes, centromere indices, and banding patterns were identical to Syrian hamster fibroblasts."
Clone 1A	ICLAC-00371	Rainbow trout, *Oncorhynchus mykiss*	Blood	CVCL_1T03	CHSE-214	Chinook salmon, *Oncorhynchus tschawytscha*	Embryo	CVCL_2780	Perry et al, 2001	19002917	Conclusions based on microsatellite DNA profiling of salmonid cell lines.
CMP	ICLAC-00003	Human	Rectal adenocarcinoma	CVCL_D297	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Nelson-Rees et al, 1981	4864103, 6451928	

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CMPII C2	ICLAC-00038	Human	Rectal adenocarcinoma	CVCL_L115	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
CNDT2	ICLAC-00384	Human	Carcinoid tumour	CVCL_L293	Unknown	Human	Unknown	None	Ellis et al, 2010	20959409	STR profile does not match the originating tumour sample. There were no matches to any of the STR profiles within the ATCC database, so the contaminating cell line is unknown.
CNE-1	ICLAC-00473	Human	Nasal pharynx, carcinoma	CVCL_6888	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Chan et al, 2008; Strong et al, 2014	18196576, 24991015	Reviewed by ICLAC (ref: 121113, 150506). STR profiling in Chan et al (2008) demonstrated similarity to HeLa, but at less than 80% match. Strong et al (2014) presented additional data in support of this finding, demonstrating that cells carry HPV-18, as previously demonstrated in HeLa cells. The authors speculate that a fusion event may have occurred between HeLa and an unknown cell line; although
CNE-2	ICLAC-00474	Human	Nasal pharynx, carcinoma	CVCL_6889	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Chan et al, 2008; Strong et al, 2014	18196576, 24991015	Reviewed by ICLAC (ref: 121113, 150506). STR profiling in Chan et al (2008) demonstrated similarity to HeLa, but at less than 80% match. Strong et al (2014) presented additional data in support of this finding, demonstrating that cells carry HPV-18, as previously demonstrated in HeLa cells. The authors speculate that a fusion event may have occurred between HeLa and an unknown cell line; although
CO (COLE)	ICLAC-00186	Human	Lymphoma, Hodgkin	CVCL_J653	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0207	Drexler et al, 2003	12592342	
COLO-38	ICLAC-00556	Human	Melanoma	CVCL_3934	M14	Human	Melanoma	CVCL_1395	ICLAC correspondence	No PMID	Reviewed by ICLAC (ref: 180625). STR profiling showed that this cell line has a shared donor origin with MDA-MB-435 and M14. The identity of these two cell lines was investigated further by ICLAC; all derivatives correspond to the M14 melanoma cell line and its donor (Korch et al, 2018).
COLO-587	ICLAC-00396	Human	Pancreatic carcinoma	CVCL_F641	COLO-320DM	Human	Colon carcinoma	CVCL_0219	ATCC FAQ #11058	No PMID	In response to the question, "Why can't I find the COLO 587 (ATCC® CRL-2000) cell line on the ATCC website?" The FAQ notes, "STR yielded similar profiles for COLO 587 (ATCC® CRL-2000) and COLO 320 DM (ATCC® CCL-220). Since COLO 587 was established and deposited to ATCC after COLO 320 DM, the former of the two lines was discontinued from the collection."
COLO-677	ICLAC-00299	Human	Lung carcinoma, small cell	CVCL_1862	RPMI-8226	Human	Myeloma	CVCL_0014	DSMZ website	No PMID	A comment was made while investigating another COLO- cell line (COLO-775, ref: 170829) that one of the ICLAC members has tested an early passage of COLO-677. This early sample also matched RPMI 8226, confirming the previous report from the DSMZ website.
COLO-775	ICLAC-00537	Human	Leukemia, chronic myeloid	CVCL_1996	RPMI 8226	Human	Myeloma	CVCL_0014	Yu et al, 2015; personal communication, ECACC	25877200	Reviewed by ICLAC (ref: 170829). ICLAC investigated this cell line after receiving notification from ECACC that the cell line corresponds to RPMI 8226. The problem was picked up when the cell line was re-banked and STR profiling performed using the PowerPlex 16HS system. RPMI 8226 was first published in 1967; COLO-775 was established in 1990 and supplied to ECACC by the originator (George Moore) in 1994. George Moore's laboratory established both cell lines while based at the Colorado Oncology Foundation, Denver General Hospital (COLO) and Roswell Park Cancer Institute (RPMI).

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COLO-818	ICLAC-00114	Human	Melanoma	CVCL_1998	COLO-800	Human	Melanoma	CVCL_1135	MacLeod et al, 1999	10508494	
CoLo-TC	ICLAC-00300	Human	Colon carcinoma	CVCL_8290	COLO-205	Human	Colon carcinoma	CVCL_0218	RIKEN website	No PMID	Listed on RIKEN website without further comment. See "Cross-Contamination" page on website.
Culiseta inornata	ICLAC-00018	Mosquito, *Culiseta inornata*	Not specified	CVCL_1R47	Unknown, possibly Ae (Grace's Antheraea eucalypti cells)	Emperor gum moth, *Opodiphthera eucalypti*	Unknown	None	Greene et al, 1972; Nelson-Rees et al, 1981	4402510, 6451928	
D-11 (R1 derivative)	ICLAC-00582	Rainbow trout, *Oncorhynchus mykiss*	Liver, normal hepatic cells	CVCL_2012	Unknown	Chinook salmon, *Oncorhynchus tshawytscha*	Unknown	None	DSMZ website	No PMID	Reviewed by ICLAC (ref: 190827). R1 was originally reported to be established from the normal liver of rainbow trout; D-11 is a cloned derivative of this cell line. Both cell lines were deposited at the DSMZ (catalogue numbers ACC 56 and ACC 77). DSMZ staff subsequently concluded that these cell lines were derived from Chinook salmon not rainbow trout, based on CO1 barcoding data.
D18T	ICLAC-00039	Human	Synovial cell	CVCL_8669	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
D-54 MG	ICLAC-00505	Human	Glioma	CVCL_5735	A-172	Human	Glioblastoma	CVCL_0131	Personal communication, D. Bigner	No PMID	Reviewed by ICLAC (ref: 160115). Personal correspondence with the originator, Dr Darrell Bigner, indicated that the STR profile for D-54 MG corresponds to A-172.
D98/AH	ICLAC-00115	Human	Not specified	CVCL_U961	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Honma et al, 1992	1730567	
D98/AH2 Clone B	ICLAC-00301	Human	Not specified	CVCL_2884	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	ECACC website	No PMID	Website states, "The cell line was recloned in the depositor's laboratory and is useful in transformation studies. This cell line was found to be indistinguishable from HeLa by STR PCR DNA profiling. Therefore, the cell line should be considered as derived from HeLa."
DAMI	ICLAC-00116	Human	Leukemia, acute myeloid, M7	CVCL_4360	HEL	Human	Leukemia, acute myeloid, M6	CVCL_0001	MacLeod et al, 1997; Drexler et al, 2003	9447816, 12592342	Hans Drexler commented to IF that DAMI is human megakaryocytic leukemia (see letter).
DAPT	ICLAC-00040	Human	Astrocytoma, piloid	CVCL_D279	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	

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DD	ICLAC-00187	Human	Malignant histiocytosis	CVCL_J651	K-562	Human	Leukemia, chronic myeloid, blast crisis	CVCL_0004	Drexler et al, 2003	12592342	
Det30A	ICLAC-00041	Human	Breast carcinoma, ascitic fluid	CVCL_8674	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
Detroit-6 (Det6)	ICLAC-00004	Human	Sternal marrow cells	CVCL_2436	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Lavappa et al, 1976; Nelson-Rees et al, 1981	4864103, 1250349, 6451928	
Detroit-98	ICLAC-00005	Human	Sternal marrow cells	CVCL_8188	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Lavappa, 1978; Nelson-Rees et al, 1981	4864103, 566722, 6451928	
Detroit 98/AG	ICLAC-00019	Human	Sternal marrow cells	CVCL_8189	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928	
Detroit 98/AH-2	ICLAC-00020	Human	Sternal marrow cells	CVCL_8190	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928	
Detroit 98/AH-R	ICLAC-00021	Human	Sternal marrow cells	CVCL_8191	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928	
Detroit 98s	ICLAC-00022	Human	Sternal marrow cells	CVCL_8192	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928	
DM12 (Tu-167 derivative)	ICLAC-00397	Human	Oral squamous cell carcinoma	CVCL_1Q83	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	CVCL_7707	Zhao et al, 2011	21868764	The sample profiled by the authors showed multiple peaks at multiple loci, consistent with a mixture being present.
DM14 (Tu-167 derivative)	ICLAC-00398	Human	Oral squamous cell carcinoma	CVCL_1Q84	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	CVCL_7707	Zhao et al, 2011	21868764	The sample profiled by the authors showed multiple peaks at multiple loci, consistent with a mixture being present.

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DRO90-1 (DRO)	ICLAC-00188 (contains: ICLAC-00399)	Human	Thyroid, anaplastic carcinoma	CVCL_6286	A-375	Human	Melanoma	CVCL_0132	Schweppe et al, 2008; Zhao et al, 2011	18713817, 21868764	DRO and DR090-1 were originally added as separate entries and were merged in V9. The laboratory that supplied DRO to Zhao et al. (2011) confirmed that these are the same cell lines.
DuPro-1	ICLAC-00189	Human	Prostate carcinoma	CVCL_4738	PC-3	Human	Prostate carcinoma	CVCL_0035	van Bokhoven et al, 2003	14518029	
E006AA	ICLAC-00585	Human	Prostate carcinoma	CVCL_4834	786-O	Human	Kidney, renal cell carcinoma	CVCL_1051	Koochekpour et al, 2019	31416301	Reviewed by ICLAC (ref: 191110). E006AA was originally reported to come from prostate carcinoma. The original paper was later corrected when its STR profile was found to correspond to the 786-O renal adenocarcinoma cell line. E006AA has two synonymous cell lines: a deriviative, E006AA-hT, and a sister cell line, S006AA. An STR profile is available for E006AA-hT, showing that it corresponds to 786-O. An STR profile is not currently available for S006AA.
E006AA-hT (E006AA derivative)	ICLAC-00586	Human	Prostate carcinoma	CVCL_X480	786-O	Human	Kidney, renal cell carcinoma	CVCL_1051	Koochekpour et al, 2019	31416301	Reviewed by ICLAC (ref: 191110). E006AA was originally reported to come from prostate carcinoma. The original paper was later corrected when its STR profile was found to correspond to the 786-O renal adenocarcinoma cell line. E006AA has two synonymous cell lines: a derivative, E006AA-hT, and a sister cell line, S006AA. An STR profile is available for E006AA-hT, showing that it corresponds to 786-O. An STR profile is not currently available for S006AA.
EB33	ICLAC-00023	Human	Prostate carcinoma	CVCL_8344	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees, 1979; Nelson-Rees et al, 1981	535908, 6451928	
ECC-1	ICLAC-00460	Human	Endometrial carcinoma	CVCL_7260	Ishikawa	Human	Endometrial carcinoma	CVCL_D199	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830). Some stocks of ECC-1 tested have been found to be MCF-7, or a mixture of MCF-7 and Ishikawa.
ECTC	ICLAC-00190	Cow	Thyroid, embryonic	CVCL_4518	Vero	Monkey, African green (*Cercopithecus aethiops*)	Kidney, normal renal cells	CVCL_0059	Milanesi et al, 2003	14505435	Reference states, "Bovine ECTC resulted in an AFLP profile identical to that of the African green monkey VERO cell line, whereas one or more differences were observed with the other African green monkey cells".
ECV-304	ICLAC-00117	Human	Endothelium, normal cells	CVCL_2029	T-24	Human	Bladder carcinoma	CVCL_0554	Dirks et al, 1999; MacLeod et al, 1999	10614862, 10508494	STR profile (published by Masters et al, 2001; PMID 11416159) confirms T-24 identity.
ED27	ICLAC-00191	Human	Chorionic villus	CVCL_8345	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Kniss et al, 2002	11869090	The authors note that WISH was grown in their laboratory, making this the likely source of contamination. WISH is known to be cross-contaminated with HeLa.

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EEK	ICLAC-00192	Horse	Kidney, embryonic renal cells	CVCL_8346	NSK	Pig, *Sus scrofa*	Kidney, normal renal cells	CVCL_8378	Milanesi et al, 2003	14505435	Reference states, "human AMDURII and equine EEK had profiles identical to swine LLC-PK1 and NSK cell lines, respectively, and different from all other swine cell lines analyzed."
EH	ICLAC-00193	Human	Leukemia, hairy cell	CVCL_L804	HK	Human	Leukemia, hairy cell	CVCL_L805	Drexler et al, 2003	12592342	Reference states, "Cell lines EH and HK are supposed to be derived from two individual patients."
EJ-1	ICLAC-00194	Human	Bladder carcinoma	CVCL_2893	T-24	Human	Bladder carcinoma	CVCL_0554	Masters et al, 2001	11416159	The EJ-1 cell line referred to here was thought to be derived from bladder carcinoma; the EJ cell line is also known as MGH-U1 (Lin et al, 1985; PMID 4027986). Another EJ-1 cell line is derived from diffuse large B-cell lymphoma (Goy et al, 2003; PMID 12808126), and should be considered separately.
Ej138	ICLAC-00195	Human	Bladder carcinoma	CVCL_2443	T-24	Human	Bladder carcinoma	CVCL_0554	Azari et al, 2007	17254797	
EL 1	ICLAC-00524	Human	Spleen, monocyte/ macrophage	CVCL_3680	U-937	Human	Lymphoma, histiocytic	CVCL_0007	ICLAC correspondence	No PMID	Reviewed by ICLAC (ref: 170208). ICLAC investigated four cell lines whose STR profiles corresponded to U-937: EL 1, SC (also known as 28SC), 28SC-ES (derived from SC) and PH. EL 1, SC, and PH were all found to come from the same patent deposit (http://www.google.com/patents/US5447861). The wording of the patent makes it clear that all were deposited by the originators at ATCC, where STR profiling was performed, and that U-937 was used as a control.
E1Co	ICLAC-00042	Human	Breast carcinoma	CVCL_8686	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
EPC	ICLAC-00302	Carp, *Cyprinus carpio*	Epithelial papilloma	CVCL_4361	Unknown	Fathead minnow, *Pimephales promelas*	Unknown	None	ATCC website	No PMID	Website notes that cytochrome c oxidase subunit I (COI) sequencing for species identification showed cell line to come from fathead minnow, not carp. See "Misidentified Cell Lines" page on the ATCC website.
EPLC3-2M1	ICLAC-00118	Human	Lung carcinoma	CVCL_8193	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	MacLeod et al, 1999	10508494	
EPLC-65	ICLAC-00119	Human	Lung carcinoma	CVCL_8194	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	MacLeod et al, 1999	10508494	
ESP1	ICLAC-00043	Human	Lymphoma, Burkitt	CVCL_8351	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	

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ETK-1	ICLAC-00196	Human	Cholangiocarcinoma	CVCL_1206	SSP-25	Human	Cholangiocarcinoma	CVCL_4902	Yoshino et al, 2006	16643607	Yoshino et al used SIR profiling to show that these cell lines come from the same donor. ETK-1 was established from a 61 year old female and first published in 1997. SSP-25 was established by the same laboratory from a 64 year old female and first published in 1997. RIKEN discussed this match with the originator, who concluded that ETK-1 is more likely to be misidentified. [Source: Yoshino et al, 2006.]
EU-1	ICLAC-00197	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_8857	REH	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_1650	Drexler et al, 2003	12592342	
EU-7	ICLAC-00198	Human	Leukemia, acute lymphoblastic, T cell	CVCL_8865	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0207	Drexler et al, 2003	12592342	
EUE	ICLAC-00044	Human	Subcutis, fetal	CVCL_7262	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
EVLC2	ICLAC-00199	Human	Umbilical vein endothelium, transfected	CVCL_8687	Unknown	Human	Non-endothelial?	None	Unger et al, 2002	12453433	
F2-4E5	ICLAC-00120	Human	Thymic epithelium	CVCL_A040	SK-HEP-1	Human	Liver carcinoma	CVCL_0525	MacLeod et al, 1999	10508494	The parental cell line SK-HEP-1 may be of endothelial origin, as reported by Heffelfinger et al, 1992 (PMID 1371504). This report is based on the phenotype of the cell line and not on histopathology. The cell line was established in 1971 from ascitic fluid in a patient with liver carcinoma.
F2-5B6	ICLAC-00121	Human	Thymic epithelium	CVCL_A041	SK-HEP-1	Human	Liver carcinoma	CVCL_0525	MacLeod et al, 1999	10508494	The parental cell line SK-HEP-1 may be of endothelial origin, as reported by Heffelfinger et al, 1992 (PMID 1371504). This report is based on the phenotype of the cell line and not on histopathology. The cell line was established in 1971 from ascitic fluid in a patient with liver carcinoma.
F255A4	ICLAC-00045	Human	Not specified	CVCL_8688	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
FB2	ICLAC-00200	Human	Thyroid, papillary carcinoma	CVCL_9917	TPC-1	Human	Thyroid, papillary carcinoma	CVCL_6298	Ribeiro et al, 2008	19087340	
Fitz-HSA	ICLAC-00400	Dog, *Canis familiaris*	Sarcoma (hemangiosarcoma)	CVCL_1R34	DEN-HSA	Dog, *Canis familiaris*	Sarcoma (hemangiosarcoma)	CVCL_1R33	O'Donoghue et al, 2011	21908323	Reference used STR profiling (StockMarks for Dogs) to show that cell lines matched inappropriately.

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FL	ICLAC-00046	Human	Amnion	CVCL_1905	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981; Ogura et al, 1993	6451928, 8397027	
Flow 13000	ICLAC-00303	Human	Lung cells, embryonic fibroblast	CVCL_F664	MRC-5	Human	Lung cells, embryonic fibroblast	CVCL_0440	JCRB website	No PMID	
Flow 5000	ICLAC-00304	Human	Lung cells, embryonic fibroblast	CVCL_5910	Flow 1000	Human	Lung cells, embryonic fibroblast	CVCL_5615	JCRB website	No PMID	
Flow 6000	ICLAC-00305	Human	Lung cells, embryonic fibroblast	CVCL_F662	Flow 1000	Human	Lung cells, embryonic fibroblast	CVCL_5615	JCRB website	No PMID	
Flow 7000	ICLAC-00306	Human	Lung cells, embryonic fibroblast	CVCL_2904	Flow 3000	Human	Lung cells, embryonic fibroblast	CVCL_2903	JCRB website	No PMID	
FQ	ICLAC-00047	Human	Lymphoma, Hodgkin	CVCL_L984	OMK-210	Monkey, Owl (*Aotus trivirgatus*)	Kidney, normal renal cells	CVCL_L983	Nelson-Rees et al, 1981; Drexler et al, 2003	6451928, 12592342	
FRI-SpIm-1229	ICLAC-00566	Mulberry tiger moth, *Lemyra imparilis*	Neonate larvae	CVCL_Z133	Unknown	Cabbage moth, *Mamestra brassicae*	Unknown	None	Personal communication, RIKEN	No PMID	Reviewed by ICLAC (ref: 181028). FRI-SpIm-1229 was deposited at RIKEN by the originators in 2000 and tested using isoenzyme analysis. RIKEN recently re-tested its non-human cell lines and discovered that COI sequence for this cell line was 99.5% identical to Mamestra brassicae, a different species to that reported (see http://cell.brc.riken.jp/en/DNA-barcoding, Fig. 3 for
G-11 (HBT-3 derivative)	ICLAC-00048	Human	Breast carcinoma	CVCL_U962	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
GHE	ICLAC-00122	Human	Astrocytoma	CVCL_8199	T-24	Human	Bladder carcinoma	CVCL_0554	MacLeod et al, 1999	10508494	
Girardi heart	ICLAC-00006	Human	Heart, normal cells	CVCL_2254	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Lavappa, 1978; Nelson-Rees et al, 1981	4864103, 566722, 6451928	

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GLC-82	ICLAC-00572	Human	Lung carcinoma	CVCL_3371	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Ye et al, 2015; Bian et al, 2017	26116706, 28851942	Reviewed by ICLAC (ref: 190213). The cell line was originally established from a retired worker with long-term exposure to radon gas pollution (Liang, 1985; PMID 4006684). Its STR profile corresponds to HeLa, as reported in two papers from Chinese cell banks and testing facilities. An early sample of GLC-82 was obtained by ICLAC for testing, which also corresponded to HeLa.
GM1312	ICLAC-00201	Human	Myeloma	CVCL_J111	Correct name, incorrect cell type	Human	EBV+ B-lymphoblastoid cell line	None	Drexler et al, 2003	12592342	
GOS-3	ICLAC-00449	Human	Glioma, mixed astro-oligodendroglioma	CVCL_2050	U-343 MG	Human	Glioblastoma	CVCL_4773	DSMZ website	No PMID	Reviewed by ICLAC (ref: 120703). The DSMZ website was cited in Bady et al, 2012.
GPS-M	ICLAC-00049	Guinea pig	Spleen, adult cells	CVCL_1R31	Strain L-M	Mouse	Connective tissue	CVCL_4535	Nelson-Rees et al, 1981	6451928	Reference refers to "GSP-M" rather than GPS-M; the former is likely to be a typographical error (i.e. a typo). GPS = guinea pig spleen.
GPS-PD	ICLAC-00050	Guinea pig	Spleen, adult cells	CVCL_1R32	Strain L-M	Mouse	Connective tissue	CVCL_4535	Nelson-Rees et al, 1981	6451928	
GREF-X	ICLAC-00123	Human	Liver, hepatic myofibroblast	CVCL_7667	Unknown	Rat	Unknown	None	MacLeod et al, 1999	10508494	
GR-M	ICLAC-00538	Human	Melanoma	CVCL_2451	PSN1	Human	Pancreatic adenocarcinoma	CVCL_1644	Yu et al, 2015; personal communication, ECACC	25877200	Reviewed by ICLAC (ref: 170829). ICLAC investigated this cell line after receiving notification from ECACC that the cell line corresponds to PSN1. GR-M is included in Yu et al (2015) as a synonymous cell line; the problem was then picked up by ECACC when the cell line was re-banked and STR profiling performed using the PowerPlex 16HS System. PSN1 was first published in 1986. GR-M was first published in 1995 and supplied to ECACC by its originators (B. Souberbielle and A.G. Dalgleish) in March 1995.
GT3TKB	ICLAC-00202	Human	Gastric carcinoma	CVCL_1237	RERF-LC-A1	Human	Lung carcinoma	CVCL_4402	Yoshino et al, 2006	16643607	
H-494	ICLAC-00051	Human	Prostate carcinoma	CVCL_7669	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Williams, 1980	6244232	

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H7D7A	ICLAC-00203	Human	Liver, normal cells (SV40-transformed)	CVCL_1T06	HepG2	Human	Liver, hepatoblastoma	CVCL_0027	van Pelt et al, 2003	12619888	Reference states that the cell line was probably cross-contaminated "during early passages of the SV40 transfected H7 cells when making use of filtered HepG2 medium". Note: parental cell line HepG2 is reported to come from hepatoblastoma, based on review of donor tissue (Lopez-Terrada et al 2009, PMID 19751877).
H7D7B	ICLAC-00204	Human	Liver, normal cells (SV40-transformed)	CVCL_1T07	HepG2	Human	Liver, hepatoblastoma	CVCL_0027	van Pelt et al, 2003	12619888	Reference states that the cell line was probably cross-contaminated "during early passages of the SV40 transfected H7 cells when making use of filtered HepG2 medium". H7D7B and H7D7BD5 were originally a single entry. These two cell lines were split into two entries in V9, for consistency with other entries where derivatives are listed separately. Note: parental cell line HepG2 is reported to come from hepatoblastoma, based on review of donor tissue (Lopez-Terrada et al 2009, PMID 19751877).
H7D7BD5 (H7D7B derivative)	ICLAC-00560	Human	Liver, normal cells (SV40-transformed)	CVCL_1T10	HepG2	Human	Liver, hepatoblastoma	CVCL_0027	van Pelt et al, 2003	12619888	Reference states that the cell line was probably cross-contaminated "during early passages of the SV40 transfected H7 cells when making use of filtered HepG2 medium". H7D7B and H7D7BD5 were originally a single entry. These two cell lines were split into two entries in V9, for consistency with other entries where derivatives are listed separately. Note: parental cell line HepG2 is reported to come from hepatoblastoma, based on review of donor tissue (Lopez-Terrada et al 2009, PMID 19751877).
H7D7C	ICLAC-00205	Human	Liver, normal cells (SV40-transformed)	CVCL_1T08	HepG2	Human	Liver, hepatoblastoma	CVCL_0027	van Pelt et al, 2003	12619888	Reference states that the cell line was probably cross-contaminated "during early passages of the SV40 transfected H7 cells when making use of filtered HepG2 medium". Note: parental cell line HepG2 is reported to come from hepatoblastoma, based on review of donor tissue (Lopez-Terrada et al 2009, PMID 19751877).
H7D7D	ICLAC-00206	Human	Liver, normal cells (SV40-transformed)	CVCL_1T09	HepG2	Human	Liver, hepatoblastoma	CVCL_0027	van Pelt et al, 2003	12619888	Reference states that the cell line was probably cross-contaminated "during early passages of the SV40 transfected H7 cells when making use of filtered HepG2 medium". Note: parental cell line HepG2 is reported to come from hepatoblastoma, based on review of donor tissue (Lopez-Terrada et al 2009, PMID 19751877).
HAC15	ICLAC-00518	Human	Adrenal gland, adrenal cortex carcinoma	CVCL_S898	NCI-H295R	Human	Adrenal gland, adrenal cortex carcinoma	CVCL_0458	Wang and Rainey, 2012	21924324	Reviewed by ICLAC (ref: 160714). HAC15 was originally described as a novel adrenal cortex carcinoma cell line [source: Parmar et al 2008, PMID 18713819]. A later review noted that SNP analysis had been performed for HAC15 and demonstrated that it was actually a derivative of NCI-H295R [source: Wang and Rainey 2012, PMID 21924324]. An STR profile of HAC15 held at ATCC (CRL-3301) confirmed that
HAG	ICLAC-00124	Human	Thyroid adenoma (goitre)	CVCL_8223	T-24	Human	Bladder carcinoma	CVCL_0554	MacLeod et al, 1999	10508494	
HBC	ICLAC-00024	Human	Breast carcinoma, invasive ductal tumor	CVCL_M630	Unknown	Rat	Unknown	None	Nelson-Rees and Flandermeyer, 1977; Nelson-Rees et al, 1981	557237, 6451928	
HBL-100	ICLAC-00207	Human	Breast carcinoma	CVCL_4362	Unknown	Human	Unknown	None	Yoshino et al, 2006; ATCC website	16643607	Reference notes that the cell line carries a Y chromosome and is therefore unlikely to come from the original donor. See also "Misidentified Cell Lines" page on the ATCC website.

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HBT-3	ICLAC-00052	Human	Breast carcinoma	CVCL_D281	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
HBT-39b	ICLAC-00053	Human	Breast carcinoma	CVCL_J652	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
HBT-E (HBT-3 clone)	ICLAC-00054	Human	Breast carcinoma	CVCL_M746	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
HCC60	ICLAC-00533	Human	Ovarian carcinoma	CVCL_G002	NCI-H23	Human	Lung carcinoma	CVCL_1547	Yu et al, 2015	25877200	Reviewed by ICLAC (ref: 170629). ICLAC investigated HCC60 after receiving a query about its shared donor origin with NCI-H23, which is reported to come from a different donor. Publicly available STR profiles matched NCI-H23. The originator's laboratory was contacted and was able to find an STR profile from a 1999 sample. On reviewing the STR profile, it matched 2774 and A2774 (likely to be the same cell line under different names).
HCE	ICLAC-00055	Human	Cervical carcinoma	CVCL_M619	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
HCu-10	ICLAC-00056	Human	Esophageal squamous cell carcinoma	CVCL_M850	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37, Hcu-39 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_M850 / CVCL_M852 / CVCL_M853 / CVCL_M854 / CVCL_M855 / CVCL_M856 / CVCL_M857	van Helden et al, 1988	3167823	It is unclear which of the listed cell lines is the contaminating one; all have the same genetic identity. Hcu-13 was tested at the same time and was found to be genetically unique.
HCu-18	ICLAC-00057	Human	Esophageal squamous cell carcinoma	CVCL_M852	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37, Hcu-39 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_M850 / CVCL_M852 / CVCL_M853 / CVCL_M854 / CVCL_M855 / CVCL_M856 / CVCL_M857	van Helden et al, 1988	3167823	It is unclear which of the listed cell lines is the contaminating one; all have the same genetic identity. Hcu-13 was tested at the same time and was found to be genetically unique.
HCu-22	ICLAC-00058	Human	Esophageal squamous cell carcinoma	CVCL_M853	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37, Hcu-39 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_M850 / CVCL_M852 / CVCL_M853 / CVCL_M854 / CVCL_M855 / CVCL_M856 / CVCL_M857	van Helden et al, 1988	3167823	It is unclear which of the listed cell lines is the contaminating one; all have the same genetic identity. Hcu-13 was tested at the same time and was found to be genetically unique.
HCu-27	ICLAC-00059	Human	Esophageal squamous cell carcinoma	CVCL_M854	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37, Hcu-39 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_M850 / CVCL_M852 / CVCL_M853 / CVCL_M854 / CVCL_M855 / CVCL_M856 / CVCL_M857	van Helden et al, 1988	3167823	It is unclear which of the listed cell lines is the contaminating one; all have the same genetic identity. Hcu-13 was tested at the same time and was found to be genetically unique.
HCu-33	ICLAC-00060	Human	Esophageal squamous cell carcinoma	CVCL_M855	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37, Hcu-39 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_M850 / CVCL_M852 / CVCL_M853 / CVCL_M854 / CVCL_M855 / CVCL_M856 / CVCL_M857	van Helden et al, 1988	3167823	It is unclear which of the listed cell lines is the contaminating one; all have the same genetic identity. Hcu-13 was tested at the same time and was found to be genetically unique.

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HCu-37	ICLAC-00061	Human	Esophageal squamous cell carcinoma	CVCL_M856	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37, Hcu-39 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_M850 / CVCL_M852 / CVCL_M853 / CVCL_M854 / CVCL_M855 / CVCL_M856 / CVCL_M857	van Helden et al, 1988	3167823	It is unclear which of the listed cell lines is the contaminating one; all have the same genetic identity. Hcu-13 was tested at the same time and was found to be genetically unique.
HCu-39	ICLAC-00062	Human	Esophageal squamous cell carcinoma	CVCL_M857	Hcu-10, Hcu-18, Hcu-22, Hcu-27, Hcu-33, Hcu-37, Hcu-39 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_M850 / CVCL_M852 / CVCL_M853 / CVCL_M854 / CVCL_M855 / CVCL_M856 / CVCL_M857	van Helden et al, 1988	3167823	It is unclear which of the listed cell lines is the contaminating one; all have the same genetic identity. Hcu-13 was tested at the same time and was found to be genetically unique.
HCV-29Tmv (HCV-29 derivative)	ICLAC-00125	Human	Bladder, tumorigenic urothelial cells	CVCL_8229	T-24	Human	Bladder carcinoma	CVCL_0554	Christensen et al, 1993	8105864	Reference looked at the parental cell line and showed that their sample was distinctly different from T-24, i.e. it is likely that contamination has occurred during establishment of the derivative.
HEC-155	ICLAC-00307	Human	Uterine adenocarcinoma	CVCL_2926	HEC-155, HEC-180 (synonymous cell lines, donor origin unknown)	Human	Uterine carcinoma	CVCL_8313 / CVCL_2926	JCRB website	No PMID	Website notes that HEC-180 and HEC-155 have the same STR profile.
HEC-180	ICLAC-00308	Human	Uterine adenocarcinoma	CVCL_8313	HEC-155, HEC-180 (synonymous cell lines, donor origin unknown)	Human	Uterine adenocarcinoma	CVCL_8313 / CVCL_2926	JCRB website	No PMID	Website notes that HEC-180 and HEC-155 have the same STR profile.
HEK	ICLAC-00063	Human	Kidney, embryonic renal cells	CVCL_M624	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	Cell line is different to HEK-293 (also known as 293), which carries a separate genetic identity. See ATCC catalog for STR profiles of HeLa (CCL-2) and HEK-293 (CRL-1573).
HEK/HRV (HEK derivative)	ICLAC-00064	Human	Kidney, transformed embryonic renal cells	CVCL_M625	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
HEL-R66	ICLAC-00065	Human	Not specified	CVCL_1R39	Unknown	Monkey, African green (*Cercopithecus aethiops*)	Unknown	None	Nelson-Rees et al, 1981	6451928, 7236009	Nelson-Rees and colleagues published two articles in 1981 on this cell line, one as part of a general list (PMID 6451928), and the second dealing with HEL-R66 specifically (PMID 7236009).
HEp-2 (H.Ep.-2)	ICLAC-00007	Human	Laryngeal carcinoma	CVCL_1906	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Nelson-Rees et al, 1981; Chen, 1988	4864103, 6451928, 3180844	STR profile (published by Masters et al, 2001; PMID 11416159) confirms HeLa identity.
Hep-2C	ICLAC-00309	Human	Laryngeal carcinoma	CVCL_2940	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	ECACC website	No PMID	Website states, "The line carries several HeLa marker chromosomes and has been found to be indistinguishable from HeLa by STR PCR DNA profiling. Therefore, the cell line should be considered as derived from HeLa."

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Hep2 (Clone 2B)	ICLAC-00310	Human	Laryngeal carcinoma	CVCL_2817	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	ECACC website	No PMID	Website states, "The line carries several HeLa marker chromosomes and has been found to be indistinguishable from HeLa by STR PCR DNA profiling. Therefore, the cell line should be considered as derived from HeLa."
Hepa-T1	ICLAC-00567	Nile tilapia, *Oreochromis niloticus*	Liver, normal hepatic cells	CVCL_4226	Unknown, possibly Hepa-E1	Japanese eel, *Anguilla japonica*	Unknown	None	Personal communication, RIKEN; Tanaka et al, 2018 [erratum]	No PMID; doi 10.1007/s12562-018-1215-4	Reviewed by ICLAC (ref: 181028). Hepa-T1 was deposited at RIKEN by the originators in 1995 and tested using isoenzyme analysis. RIKEN recently re-tested its non-human cell lines and discovered that COI sequence for this cell line was 99.8% identical to Anguilla japonica, a different species to that reported (see http://cell.brc.riken.jp/en/DNA_barcoding, Fig. 2 for data). RIKEN tried to contact the originators but was unable to find early material for testing. Another cell line deposited by the same lab, Hepa-E1, was also Anguilla japonica; it is likely that this is the parental cell line, but we cannot confirm donor identity with these species.
HES	ICLAC-00461	Human	Endometrium	CVCL_W635	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Korch et al, 2012; Kniss & Summerfield, 2014	22710073, 24520087	Reviewed by ICLAC (ref: 120830). Kniss & Summerfield (2014) note that WISH was grown in their laboratory, making this the likely source of contamination. WISH is known to be cross-contaminated with HeLa.
HIMEG-1	ICLAC-00208	Human	Leukemia, chronic myeloid	CVCL_8439	HL-60	Human	Leukemia, acute myeloid, M2	CVCL_0002	Drexler et al, 2003	12592342	According to the authors of this reference, the original non-contaminated cell line has been characterized and may be available. However, the prototype was not accessible to the authors of that study. Unless previously authenticated, the identity of the cell line is uncertain and should be confirmed before use.
HKB-1	ICLAC-00209	Human	Lymphoma, Hodgkin	CVCL_5290	Unknown	Human	Unknown	None	Drexler et al, 2003	12592342	Reference states, "Different karyotype than original description of cell line and different from patient material".
HKMUS	ICLAC-00311	Human	Cervical carcinoma	CVCL_8776	SKG-II-SF	Human	Cervical carcinoma	CVCL_8159	RIKEN website	No PMID	Listed on RIKEN website without further comment. See "Cross-Contamination" page on website.
HKMUS-SF	ICLAC-00210	Human	Cervical carcinoma	CVCL_8230	SKG-II-SF	Human	Cervical carcinoma	CVCL_8159	Yoshino et al, 2006	16643607	
HL111783	ICLAC-00211	Human	Lung carcinoma	CVCL_8231	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Yoshino et al, 2006	16643607	
HMV-1	ICLAC-00126	Human	Melanoma	CVCL_8233	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	MacLeod et al, 1999	10508494	STR profile (published by Masters et al, 2001; PMID 11416159) confirms HeLa identity.

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HNOS	ICLAC-00580	Human	Oral squamous cell carcinoma	CVCL_M838	Unknown	Mouse, *Mus musculus*	Unknown	None	JCRB website	No PMID	Reviewed by ICLAC (ref: 190827). HNOS was originally reported to be established from an oral SCC and was transplanted into nude mice, where it was found to be highly metastatic. The cell line was deposited at the JCRB by its originator (catalogue number JCRB1023). JCRB staff concluded that the cell line was mouse not human, based on isoenzyme analysis and lack of amplification using human STR profiling. HNOS was subsequently authenticated using mouse STR profiling, with thanks to the support and generosity of JCRB and Genetica DNA Laboratories; the STR profile is available via Cellosaurus. There were no obvious matches at the time of testing.
HPB-MLT	ICLAC-00212	Human	Leukemia, acute lymphoblastic, T cell	CVCL_7959	HPB-ALL	Human	Leukemia, acute lymphoblastic, T cell	CVCL_1820	Drexler et al, 2003	12592342	Reference states, "Cell line HPB-MLT is taken to be HPB-ALL based on (1) gender and (2) clinical diagnosis, both of which are compatible with HPB-ALL only."
HPC-36M (HPC-36 derivative)	ICLAC-00213	Human	Prostate carcinoma	CVCL_8446	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Masters et al, 2001	11416159	
hPTC	ICLAC-00127	Human	Thyroid, papillary cell	CVCL_8224	Unknown	Pig, *Sus scrofa*	Unknown	None	MacLeod et al, 1999	10508494	
HROBML03	ICLAC-00587	Human	Lung carcinoma, large cell	CVCL_1D09	NCI-H460	Human	Lung carcinoma, large cell	CVCL_0459	Personal communication, M. Linnebacher	No PMID	Reviewed by ICLAC (ref: 191110). HROBML03 was reported to come from a brain metastasis removed from a 47 year old female with lung carcinoma. The cell line was subsequently deposited at CLS; their STR profile corresponds to NCI-H460. A discrepancy in donor sex also exists, with the STR profile including AMEL X,Y. We are grateful to Michael Linnebacher from the original laboratory, who investigated this cell line further once these problems were detected. STR profiling of donor material was performed and confirmed that the problem arose in the original laboratory; STR profiling was not available at the time the cell line was
Hs 677.St	ICLAC-00401	Human	Gastric tissue, normal	CVCL_F646	Unknown	Mouse	Unknown	None	ATCC FAQ #1072	No PMID	In response to the question, "Why can't I find the Hs 677.St (ATCC® CRL-7407) cell line on the ATCC website?" The FAQ notes, "Hs 677.St (ATCC® CRL-7407) has been discontinued. The cells were originally deposited as a human cell line, but isoenzymology revealed its origins to be mouse."
HSC-41	ICLAC-00312	Human	Gastric carcinoma	CVCL_8355	HSC-42	Human	Gastric carcinoma	CVCL_0316	JCRB website	No PMID	
HSG	ICLAC-00313	Human	Salivary gland, submandibular	CVCL_2517	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lin et al, 2018; ECACC website	29923277	ECACC website states, "The cell line HSG was originally thought to be established from a human submandibular gland from a 54 year old Japanese male. The cell line has since been found to be indistinguishable from HeLa by STR PCR DNA profiling. Therefore, the cell line should be considered as derived from HeLa."

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HSG-AZA1	ICLAC-00314	Human	Salivary gland, submandibular	CVCL_A047	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	JCRB website	No PMID	Website states that STR analysis was done by request and the cell line is not a JCRB registered cell line.
HSG-AZA3	ICLAC-00315	Human	Salivary gland, submandibular	CVCL_A048	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	JCRB website	No PMID	Website states that STR analysis was done by request and the cell line is not a JCRB registered cell line.
HSGc-C5	ICLAC-00316	Human	Oral carcinoma	CVCL_2951	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	JCRB website	No PMID	Website states, "STR-PCR analysis showed this cell line is genetically same cell line as ... HeLa."
HS-SULTAN	ICLAC-00214	Human	Myeloma	CVCL_2516	JIJOYE	Human	Lymphoma, Burkitt	CVCL_1317	Drexler et al, 2001; Drexler et al, 2003	11732505, 12592342	
HSY	ICLAC-00317	Human	Salivary gland, parotid	CVCL_B032	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lin et al, 2018; JCRB website	29923277	JCRB website states that STR analysis was done by request and the cell line is not a JCRB registered cell line.
hTERT-EEC	ICLAC-00462	Human	Endometrium, immortalized	CVCL_X007	MCF-7	Human	Breast carcinoma	CVCL_0031	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830).
Hu1734	ICLAC-00128	Human	Bladder, non-malignant urothelial cells	CVCL_8451	HCV-29	Human	Bladder, non-malignant urothelial cells	CVCL_8228	Christensen et al, 1993	7905254	
Hu456	ICLAC-00129	Human	Bladder, tumorigenic urothelial cells	CVCL_8238	T-24	Human	Bladder carcinoma	CVCL_0554	Christensen et al, 1993	8105864	STR profile (published by Masters et al, 2001; PMID 11416159) confirms T-24 identity.
Hu549	ICLAC-00130	Human	Bladder, tumorigenic urothelial cells	CVCL_8239	T-24	Human	Bladder carcinoma	CVCL_0554	Christensen et al, 1993	8105864	
Hu609	ICLAC-00131	Human	Bladder, non-malignant urothelial cells	CVCL_8240	J82	Human	Bladder carcinoma	CVCL_0359	Christensen et al, 1993; Masters et al, 2001	7905254, 11416159	Christensen et al (1993) states, "Hu609 was recorded to be derived from a female. However, the presence of a Y chromosome indicated either false labelling or cross-contamination." Masters et al (2001) included Hu609 in its STR profiling and found a match to J82.

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Hu609Tmv (Hu609 derivative)	ICLAC-00132	Human	Bladder, tumorigenic urothelial cells	CVCL_8242	T-24	Human	Bladder carcinoma	CVCL_0554	Christensen et al, 1993	8105864	Reference looked at the parental cell line and showed that their sample was distinctly different from T-24, i.e. it is likely that contamination has occurred during establishment of the derivative.
Hu961a, Hu961t (Hu961 derivatives)	ICLAC-00133	Human	Bladder, tumorigenic urothelial cells	CVCL_8243	T-24	Human	Bladder carcinoma	CVCL_0554	Christensen et al, 1993; Masters et al, 2001	8105864, 11416159	
HuK°39	ICLAC-00066	Human	Kidney, normal renal cells	CVCL_8283	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
HuL-1	ICLAC-00318	Human	Liver, hepatocellular carcinoma	CVCL_8357	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	JCRB website	No PMID	
Hut	ICLAC-00067	Human	Not specified	CVCL_M861	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
IMC-2	ICLAC-00134	Human	Maxillary carcinoma	CVCL_8245	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	MacLeod et al, 1999	10508494	
IMC-3	ICLAC-00215	Human	Maxillary carcinoma	CVCL_8246	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Masters et al, 2001	11416159	
IMC-4	ICLAC-00319	Human	Maxillary carcinoma	CVCL_8247	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	RIKEN website	No PMID	Reference found by IF; not on website when checked by ACD. Thought to be cross-contaminated by HeLa-S3.
Intestine 407 (Int-407, HEI)	ICLAC-00008	Human	Intestinal cells (jejunum/ileum), embryonic	CVCL_1907	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Lavappa, 1978; Nelson-Rees et al, 1981	4864103, 566722, 6451928	Reference notes that Intestine 407 = HEI = cell line held by ATCC as CCL-6. STR profile published (Masters et al, 2001; PMID 11416159) and confirms HeLa identity.
IPDDC-A2	ICLAC-00320	Human	Astrocytoma	CVCL_7169	Unknown	Rat	Unknown	None	ECACC website	No PMID	Website states, "ECACC has recently determined, using isoenzyme species analysis, that the IPDDC-A2 cell line sample deposited with ECACC is of rat origin rather than human. Although the sample received was purported by the depositor to be a human astrocytoma cell line an investigation has shown that the original material received was in fact of rat origin."

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IPRB	ICLAC-00385	Human	Glioblastoma	CVCL_1R53	Unknown	Rat	Unknown	None	Higgins et al, 2010	20951163	
IPRI-OL-7	ICLAC-00511	White marked tussock moth, *Orgyia leucostigma*	Neonate larvae	CVCL_Z490	IPRI-CF-124	Eastern spruce budworm, *Choristoneura fumiferana*	Neonate larvae	CVCL_Z480	Harvey and Sohi, 1985	No PMID	Reviewed by ICLAC (ref: 160223). The data here came from 1985 and DNA barcoding should be performed to show concordance with earlier methods if additional stocks are identified.
IPRI-OL-11	ICLAC-00512	White marked tussock moth, *Orgyia leucostigma*	Neonate larvae	CVCL_Z489	IPRI-CF-124	Eastern spruce budworm, *Choristoneura fumiferana*	Neonate larvae	CVCL_Z480	Harvey and Sohi, 1985	No PMID	Reviewed by ICLAC (ref: 160223). The data here came from 1985 and DNA barcoding should be performed to show concordance with earlier methods if additional stocks are identified.
IPTP/98	ICLAC-00321	Human	Glioblastoma	CVCL_7168	Unknown	Rat	Unknown	None	ECACC website	No PMID	Website states, "ECACC has recently determined, using isoenzyme species analysis, that the IPTP/98 cell line sample deposited with ECACC is of rat origin rather than human. Although the sample received was purported by the depositor to be a human glioblastoma cell line an investigation has shown that the original material received was in fact of rat origin."
IST-1	ICLAC-00402	Human	Placenta	CVCL_F642	SK-OV-3	Human	Ovarian carcinoma	CVCL_0532	ATCC FAQ #1068	No PMID	In response to the question, "Why can't i find the IST-1 (ATCC® CRL-2734) cell line on the ATCC website?" The FAQ notes, "STR yielded similar profiles for IST-1 (ATCC® CRL-2734) and SK-OV-3 (ATCC® HTB-77). Since IST-1 was established and deposited to ATCC after SK-OV-3, the former of the two lines was discontinued from the collection."
J-111	ICLAC-00009	Human	Leukemia, acute myeloid, M5	CVCL_2965	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Nelson-Rees et al, 1981; Drexler et al, 2003	4864103, 6451928, 12592342	STR profile (published by Masters et al, 2001; PMID 11416159) confirms HeLa identity.
J96	ICLAC-00068	Human	Leukemia	CVCL_3990	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
JCA-1	ICLAC-00216	Human	Prostate carcinoma	CVCL_4015	T-24	Human	Bladder carcinoma	CVCL_0554	van Bokhoven et al, 2001	11522622	
JHC	ICLAC-00069	Human	Placenta	CVCL_M093	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	Reference notes that both JHC and JHT are HeLa contaminants. JHT comes from a tumour formed from cell line JHC.
JHT (JHC derivative)	ICLAC-00070	Human	Placenta	CVCL_M620	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	Reference notes that both JHC and JHT are HeLa contaminants. JHT comes from a tumour formed from cell line JHC.

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JHU012	ICLAC-00403	Human	Oral squamous cell carcinoma (lymph node)	CVCL_5987	JHU022	Human	Laryngeal squamous cell carcinoma (lymph node)	CVCL_5991	Zhao et al, 2011	21868764	JHU013 was originally derived from JHU012. The reference used STR profiling to show that JHU012 and JHU013 samples came from different donors. JHU012 was found to be contaminated with JHU022, which was derived from a different donor, while JHU013 was found to be contaminated with FaDu.
JHU013 (JHU012 derivative)	ICLAC-00404	Human	Oral squamous cell carcinoma (lymph node)	CVCL_5988	FaDu	Human	Hypopharyngeal squamous cell carcinoma	CVCL_1218	Zhao et al, 2011	21868764	JHU013 was originally derived from JHU012. The reference used STR profiling to show that JHU012 and JHU013 samples came from different donors. JHU012 was found to be contaminated with JHU022, which was derived from a different donor, while JHU013 was found to be contaminated with FaDu.
JHU019	ICLAC-00405	Human	Oropharyngeal squamous cell carcinoma	CVCL_5989	PC-3	Human	Prostate carcinoma	CVCL_0035	Zhao et al, 2011	21868764	
JHU028	ICLAC-00406	Human	Oral squamous cell carcinoma	CVCL_5992	A549	Human	Lung carcinoma	CVCL_0023	Zhao et al, 2011	21868764	
JMAR (Tu-167 derivative)	ICLAC-00407	Human	Oral squamous cell carcinoma	CVCL_1Q86	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	CVCL_7707	Zhao et al, 2011	21868764	The sample profiled by the authors showed multiple peaks at multiple loci, consistent with a mixture being present.
JOSK-I	ICLAC-00135	Human	Leukemia, acute myeloid, M4	CVCL_2082	U-937	Human	Lymphoma, histiocytic	CVCL_0007	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342	
JOSK-K	ICLAC-00136	Human	Leukemia, acute myeloid, M5	CVCL_8141	U-937	Human	Lymphoma, histiocytic	CVCL_0007	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342	
JOSK-M	ICLAC-00137	Human	Leukemia, chronic myeloid, blast crisis	CVCL_2083	U-937	Human	Lymphoma, histiocytic	CVCL_0007	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342	
JOSK-S	ICLAC-00138	Human	Leukemia, acute myeloid, M5	CVCL_8142	U-937	Human	Lymphoma, histiocytic	CVCL_0007	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342	
JROECL 47 (OE47)	ICLAC-00546	Human	Esophageal squamous cell carcinoma	CVCL_4627	HCT-116	Human	Colon carcinoma	CVCL_0291	Wijnhoven et al, 2000	10789716	Reviewed by ICLAC (ref: 180221). The authors performed HLA analysis and found that JROECL 47, JROECL 50, and HCT-116 share the same HLA-DR allele, which differed from the allele present in the donor's primary tumor. This is sufficient to show that the cell lines are misidentified but STR profiling should be performed to confirm this finding if additional samples become available.

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JROECL 50 (OE50)	ICLAC-00547	Human	Esophageal adenocarcinoma	CVCL_4628	HCT-116	Human	Colon carcinoma	CVCL_0291	Wijnhoven et al, 2000	10789716	Reviewed by ICLAC (ref: 180221). The authors performed HLA analysis and found that JROECL 47, JROECL 50, and HCT-116 share the same HLA-DR allele, which differed from the allele present in the donor's primary tumor. This is sufficient to show that the cell lines are misidentified but STR profiling should be performed to confirm this finding if additional samples become available.
JTC-17	ICLAC-00139	Human	Skin	CVCL_8362	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Honma et al, 1992; JCRB website	1730567	Reference states, "JTC-17 was established in Japan in 1968. This cell line was documented to be derived from a 46, XX [sic] male's skin, and was registered in the Japanese Tissue Culture Association in 1971."
JTC-3	ICLAC-00140	Human	Not specified	CVCL_A034	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Ogura et al, 1997	9556756	
K051	ICLAC-00217	Human	Leukemia, acute myeloid, M2	CVCL_3000	K-562	Human	Leukemia, chronic myeloid, blast crisis	CVCL_0004	Drexler et al, 2003	12592342	According to the authors of this reference, the original non-contaminated cell line has been characterized and may be available. However, the prototype was not accessible to the authors of that study. Unless previously authenticated, the identity of the cell line is uncertain and should be confirmed before use. N.B.: also referred to as KO51 on JCRB website; Hans Drexler informed IF that
K1	ICLAC-00218	Human	Thyroid, papillary carcinoma	CVCL_2537	GLAG-66	Human	Thyroid, papillary carcinoma	CVCL_9918	Ribeiro et al, 2008; Schweppe et al, 2008	19087340, 18713817	Schweppe et al used STR profiling to show that K1 and K2 came from the same donor; Ribeiro et al performed cytogenetic analysis to show that K1 was a derivative of GLAG-66. GLAG-66 was established from a 58 year old male and first published in 1993. K1 and K2 were established by a different laboratory (no donor details made available) and first published in 1997. Based on the different
K2	ICLAC-00219	Human	Thyroid, papillary carcinoma	CVCL_6308	GLAG-66	Human	Thyroid, papillary carcinoma	CVCL_9918	Ribeiro et al, 2008; Schweppe et al, 2008	19087340, 18713817	Schweppe et al used STR profiling to show that K1 and K2 came from the same donor; Ribeiro et al performed cytogenetic analysis to show that K1 was a derivative of GLAG-66. GLAG-66 was established from a 58 year old male and first published in 1993. K1 and K2 were established by a different laboratory (no donor details made available) and first published in 1997. Based on the different
KAK1	ICLAC-00220	Human	Thyroid, follicular adenoma	CVCL_6301	HT-29	Human	Colon carcinoma	CVCL_0320	van Staveren et al, 2007; Schweppe et al, 2008	17804723, 18713817	
KAT10	ICLAC-00221	Human	Thyroid, papillary carcinoma	CVCL_6302	HT-29	Human	Colon carcinoma	CVCL_0320	van Staveren et al, 2007; Schweppe et al, 2008	17804723, 18713817	
KAT4	ICLAC-00222	Human	Thyroid, anaplastic carcinoma	CVCL_6304	HT-29	Human	Colon carcinoma	CVCL_0320	van Staveren et al, 2007; Schweppe et al, 2008	17804723, 18713817	STR profiling of the KAT4 cell line was also performed by Zhao et al, 2011 (PMID: 21868764). Zhao's STR profile could suggest a mixture, since multiple peaks were present.
KAT5	ICLAC-00223	Human	Thyroid, papillary carcinoma	CVCL_0370	HT-29	Human	Colon carcinoma	CVCL_0320	Schweppe et al, 2008	18713817	

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KAT50	ICLAC-00224	Human	Thyroid, differentiated cells	CVCL_6305	HT-29	Human	Colon carcinoma	CVCL_0320	Schweppe et al, 2008	18713817	
KAT7	ICLAC-00225	Human	Thyroid, benign follicular hyperplasia	CVCL_6306	HT-29	Human	Colon carcinoma	CVCL_0320	Schweppe et al, 2008	18713817	
KB	ICLAC-00010	Human	Oral carcinoma	CVCL_0372	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Lavappa et al, 1976; Nelson-Rees et al, 1981	4864103, 1250349, 6451928	STR profile (published by Masters et al, 2001; PMID 11416159) confirms HeLa identity. Cross-contamination of KB was recently reviewed by Jiang et al, 2009 (PMID: 19196324).
KB-3-1 (KB derivative)	ICLAC-00372	Human	Oral carcinoma	CVCL_2088	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	DSMZ website	No PMID	KB-3-1 is derived from KB, which is known to be cross-contaminated by HeLa.
KB-V1 (KB derivative)	ICLAC-00373	Human	Oral carcinoma	CVCL_2089	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	DSMZ website	No PMID	KB-V1 is a multidrug-resistant subclone derived in 1985 from KB-3-1. This in turn is derived from KB, which is known to be cross-contaminated by HeLa. STR profiles checked by ACD and confirmed to match.
KCI-MOH1	ICLAC-00322	Human	Pancreatic carcinoma	CVCL_2090	HPAC	Human	Pancreatic carcinoma	CVCL_3517	DSMZ website	No PMID	
KM20	ICLAC-00513	Human	Colon carcinoma	CVCL_L095	HT-29	Human	Colon carcinoma	CVCL_0320	Roschke et al, 2005	15703300	Reviewed by ICLAC (ref: 160506). KM20 was established from a patient with colon carcinoma and KM20L2 was derived from KM20 [source for this cell line series: Morikawa et al 1988, PMID 3349467]. Roschke et al (2005) noted that KM20L2 corresponded to HT-29, resulting in a decision not to include the cell line in the NCI-60 panel. This finding was followed up by ICLAC, who found that an early sample of
KM20L2 (KM20 derivative)	ICLAC-00514	Human	Colon carcinoma	CVCL_D889	HT-29	Human	Colon carcinoma	CVCL_0320	Roschke et al, 2005	15703300	Reviewed by ICLAC (ref: 160506). KM20 was established from a patient with colon carcinoma and KM20L2 was derived from KM20 [source for this cell line series: Morikawa et al 1988, PMID 3349467]. Roschke et al (2005) noted that KM20L2 corresponded to HT-29, resulting in a decision not to include the cell line in the NCI-60 panel. This finding was followed up by ICLAC, who found that an early sample of
KM-3	ICLAC-00226	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_0011	REH	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_1650	Drexler et al, 2003	12592342	According to the authors of this reference, the original non-contaminated cell line has been characterized and may be available. However, the prototype was not accessible to the authors of that study. Unless previously authenticated, the identity of the cell line is uncertain and should be confirmed before use.
KM3	ICLAC-00227	Human	Melanoma	CVCL_1R51	Unknown	Rat	Not specified	None	Moseley et al, 2003	12740908	

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KMS-21-BM	ICLAC-00228	Human	Myeloma	CVCL_2991	Unknown	Human	Unknown	None	Drexler et al, 2003	12592342	Reference states, "KMS-21-BM and KMS-21-PE are supposedly sister cell lines, but showed different DNA fingerprints." STR profile matches KMS-24.
KMT-2	ICLAC-00229	Human	Umbilical cord blood	CVCL_5301	KG-1	Human	Leukemia	CVCL_0374	Yoshino et al, 2006	16643607	
KNS-89	ICLAC-00323	Human	Gliosarcoma	CVCL_2800	U-251 MG	Human	Glioblastoma	CVCL_0021	JCRB website	No PMID	
KOSC-3	ICLAC-00324	Human	Oral carcinoma	CVCL_2789	Ca9-22	Human	Oral carcinoma	CVCL_1102	JCRB website	No PMID	
KP-1N	ICLAC-00374	Human	Pancreatic carcinoma	CVCL_3002	PANC-1	Human	Pancreatic carcinoma	CVCL_0480	JCRB website	No PMID	The JCRB used STR profiling to show that these cell lines come from the same donor and listed this information on their website. PANC-1 was established from a 56 year old Caucasian male and first published in 1975. KP-1N was established by a different laboratory from a 69 year old Japanese male and first published in 1990. Based on the different establishment locations and dates, it is likely
KPB-M15	ICLAC-00230	Human	Leukemia, chronic myeloid, blast crisis	CVCL_5308	KYO-1	Human	Leukemia, chronic myeloid, blast crisis	CVCL_2095	Drexler et al, 2003	12592342	
KPL-1	ICLAC-00325	Human	Breast carcinoma	CVCL_2094	MCF-7	Human	Breast carcinoma	CVCL_0031	Ben-David et al, 2018; DSMZ website	30089904	The DSMZ used DNA fingerprinting analysis to show that KPL-1 (first placed into culture in December 1992, see Kurebayashi et al 1995, PMID 7710953) corresponded to MCF-7 (established in 1970, see Lee et al 2015, PMID 25828948). This was later confirmed by Ben-David et al (2018) using SNP-based fingerprinting.
KP-P1	ICLAC-00071	Human	Prostate carcinoma	CVCL_D283	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
KSY-1	ICLAC-00408	Human	Sarcoma (Kaposi)	CVCL_F660	T-24	Human	Bladder carcinoma	CVCL_0554	Stürzl et al, 2012; ATCC FAQ #1061	22987579	In response to the question, "Why is the KSY-1 (ATCC® CRL-11448) cell line labeled as misidentified on the ATCC website?" The FAQ notes, "STR yielded a similar profiles for KSY-1 (ATCC® CRL-11448) and T24 (ATCC® HTB-4). However, since KSY-1 cells were submitted to the ATCC Patent Repository in support of a US Patent, they remain available to the general public."
KU7	ICLAC-00480	Human	Bladder carcinoma	CVCL_4714	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Jäger et al, 2013	23500642	Reviewed by ICLAC (ref: 130401).

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KU-YS	ICLAC-00326	Human	Neuroblastoma	CVCL_E131	KU-SN	Human	Neuroectodermal tumor	CVCL_8730	RIKEN website	No PMID	Listed on RIKEN website without further comment. See "Cross-Contamination" page on website.
L-02	ICLAC-00575	Human	Liver, normal hepatic cells	CVCL_6926	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Huang et al, 2017	28107433	Reviewed by ICLAC (ref: 190616). L-02 was reported to be established from normal liver cells but its STR profile corresponds to HeLa. Samples tested in this study were directly deposited in the cell line repository that performed the investigation. L-02 has a derivative: HL-7702BaPT. No STR profiling information was available for the derivative at the time of review.
L-132	ICLAC-00025	Human	Lung cells, embryonic	CVCL_1908	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928	
L-41 (J96 derivative)	ICLAC-00327	Human	Leukemia, bone marrow	CVCL_7170	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	ECACC website	No PMID	Website states, "The cell line L41 was reported to have been established by cloning the line J96, which was originally derived from the bone marrow of a child patient with leukaemia. However, it has been found to be indistinguishable from Hela by STR PCR DNA profiling.Therefore, the cell line should be considered as being derived from HeLa."
LAH1	ICLAC-00568	Black-spotted frog, *Pelophylax nigromaculatus*	Skin, melanotic melanophore	CVCL_6666	Unknown	Japanese toad, *Bufo japonicas formosus*	Unknown	None	Personal communication, RIKEN	No PMID	Reviewed by ICLAC (ref: 181028). LAH1 was deposited at RIKEN by the originators in 2001 and tested using isoenzyme analysis. RIKEN recently re-tested its non-human cell lines and discovered that cytochrome b sequence for this cell line (performed to increase discrimination for frog cell lines) was 99.5% identical to Bufo japonicas formosus, a different species to that reported (see http://cell.brc.riken.jp/en/DNA_barcoding, Figs. 4 and 5 for data).
LAH2	ICLAC-00569	Black-spotted frog, *Pelophylax nigromaculatus*	Skin, melanotic melanophore	CVCL_6667	Unknown, possibly LAH3	Daruma pond frog, *Pelophylax porosus brevipodus*	Unknown	None	Personal communication, RIKEN	No PMID	Reviewed by ICLAC (ref: 181028). LAH2 was deposited at RIKEN by the originators in 2001 and tested using isoenzyme analysis. RIKEN recently re-tested its non-human cell lines and discovered that cytochrome b sequence for this cell line (performed to increase discrimination for frog cell lines) was 100% identical to Pelophylax porosus breviopodus, a different species to that reported (see http://cell.brc.riken.jp/en/DNA_barcoding, Figs. 4 and 6 for data). Another cell line deposited by the same individual, LAH3, was also Pelophylax porosus breviopodus; it is likely that this is the parental cell line, but we cannot confirm donor identity with these species.
LC5 (L-132 derivative)	ICLAC-00515	Human	Lung cells, embryonic	CVCL_5G52	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928	Reviewed by ICLAC (ref: 160506). LC5 and LC5-HIV are both derivatives of L-132 [source: Mellert et al 1990, PMID 2201317]. L-132 is a known misidentified cell line, as demonstrated by Lavappa and Nelson-Rees. Many in the HIV field describe these two cell lines as coming from embryonic lung rather than HeLa, resulting in inclusion of these L-132 derivatives for clarity.
LC5-HIV (L-132 derivative)	ICLAC-00516	Human	Lung cells, embryonic	CVCL_5G53	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928	Reviewed by ICLAC (ref: 160506). LC5 and LC5-HIV are both derivatives of L-132 [source: Mellert et al 1990, PMID 2201317]. L-132 is a known misidentified cell line, as demonstrated by Lavappa and Nelson-Rees. Many in the HIV field describe these two cell lines as coming from embryonic lung rather than HeLa, resulting in inclusion of these L-132 derivatives for clarity.
LED-Ti	ICLAC-00072	Human	Cervical carcinoma	CVCL_8438	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	

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LLC-15MB	ICLAC-00231	Human	Breast carcinoma	CVCL_B055	M14	Human	Melanoma	CVCL_1395	Thompson et al, 2004; Korch et al, 2018	15679051, 28940260	Identity was originally shown to MDA-MB-435. Subsequently, a 2007 study concluded that MDA-MB-435 is genetically identical to the melanoma cell line M14 (Rae et al, 2007; PMID 17004106). This was later confirmed by ICLAC (Korch et al, 2018).
LN-319	ICLAC-00450	Human	Glioma, anaplastic astrocytoma	CVCL_3958	LN-992	Human	Glioblastoma	CVCL_6845	Bady et al, 2012	22570425	Reviewed by ICLAC (ref: 120703).
LN-443	ICLAC-00451	Human	Glioblastoma	CVCL_3960	LN-444	Human	Glioblastoma, recurrence (different donor)	CVCL_3961	Bady et al, 2012	22570425	Reviewed by ICLAC (ref: 120703).
LR10.6	ICLAC-00141	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_8260	NALM-6	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_0092	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342	
LT-1	ICLAC-00073	Frog, grass	Kidney, renal adenocarcinoma	CVCL_1R49	TH and FHM	TH = box turtle; FHM = fathead minnow	TH = heart; FHM = unspecified	CVCL_3820 / CVCL_4324	Nelson-Rees et al, 1981	6451928	
LTEP-a2	ICLAC-00576	Human	Lung carcinoma	CVCL_6929	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Ye et al, 2015; Bian et al, 2017	26116706, 28851942	Reviewed by ICLAC (ref: 190616). LTEP-a2 was reported to be established from lung adenocarcinoma but multiple STR profiles correspond to other cell lines. HeLa is listed as the contaminant here because it appear to affect the most widely distributed holdings. At least one holding corresponds to LTEP-a3 and LTEP-sm; Bian et al. (2017) notes that these cell lines were reported to come from different patients.
LU	ICLAC-00074	Human	Lung cells, fetal	CVCL_M631	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
LU 106	ICLAC-00075	Human	Lung cells, embryonic	CVCL_8892	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
Lu-130	ICLAC-00232	Human	Lung carcinoma	CVCL_6862	Lu-134A, B	Human	Lung carcinoma	CVCL_1387 / CVCL_1388	Yoshino et al, 2006	16643607	
M10T	ICLAC-00076	Human	Synovial cell	CVCL_M094	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	

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M4A4 (MDA-MB-435 derivative)	ICLAC-00375	Human	Breast carcinoma	CVCL_B057	M14	Human	Melanoma	CVCL_1395	Korch et al, 2018; ATCC website	28940260	M4A4 is a derivative of MDA-MB-435; M4A4 GFP, M4A4 LM3-2 GFP, and M4A4 LM3-4 CL16 GRP are all derivatives of M4A4. ATCC flagged all of these cell lines on its website as problematic (see https://www.atcc.org/Products/Cells_and_Microorganisms/Cell_Lines/Misidentified_Cell_Lines.aspx). The identity of MDA-MB-435 was investigated further by ICLAC; all derivatives
M4A4 GFP (MDA-MB-435 derivative)	ICLAC-00561	Human	Breast carcinoma	CVCL_B058	M14	Human	Melanoma	CVCL_1395	Korch et al, 2018; ATCC website	28940260	M4A4 is a derivative of MDA-MB-435; M4A4 GFP, M4A4 LM3-2 GFP, and M4A4 LM3-4 CL16 GRP are all derivatives of M4A4. ATCC flagged all of these cell lines on its website as problematic (see https://www.atcc.org/Products/Cells_and_Microorganisms/Cell_Lines/Misidentified_Cell_Lines.aspx). The identity of MDA-MB-435 was investigated further by ICLAC; all derivatives
M4A4 LM3-2 GFP (MDA-MB-435 derivative)	ICLAC-00562	Human	Breast carcinoma	CVCL_B059	M14	Human	Melanoma	CVCL_1395	Korch et al, 2018; ATCC website	28940260	M4A4 is a derivative of MDA-MB-435; M4A4 GFP, M4A4 LM3-2 GFP, and M4A4 LM3-4 CL16 GRP are all derivatives of M4A4. ATCC flagged all of these cell lines on its website as problematic (see https://www.atcc.org/Products/Cells_and_Microorganisms/Cell_Lines/Misidentified_Cell_Lines.aspx). The identity of MDA-MB-435 was investigated further by ICLAC; all derivatives
M4A4 LM3-4 CL16 GFP (MDA-MB-435 derivative)	ICLAC-00563	Human	Breast carcinoma	CVCL_B060	M14	Human	Melanoma	CVCL_1395	Korch et al, 2018; ATCC website	28940260	M4A4 is a derivative of MDA-MB-435; M4A4 GFP, M4A4 LM3-2 GFP, and M4A4 LM3-4 CL16 GRP are all derivatives of M4A4. ATCC flagged all of these cell lines on its website as problematic (see https://www.atcc.org/Products/Cells_and_Microorganisms/Cell_Lines/Misidentified_Cell_Lines.aspx). The identity of MDA-MB-435 was investigated further by ICLAC; all derivatives
MA-1	ICLAC-00471	Human	Lymphoma, MALT	CVCL_M665	Pfeiffer	Human	Lymphoma, non-Hodgkin	CVCL_3326	Capes-Davis et al, 2013	23907998	Reviewed by ICLAC (ref: 120904).
MA-104	ICLAC-00077	Monkey, Rhesus (*Macaca mulatta*)	Kidney, embryonic renal cells	CVCL_3845	Unknown, possibly Vero	Monkey, African green (*Cercopithecus aethiops*)	Kidney, normal renal cells	None	Whitaker and Hayward, 1985; Milanesi et al, 2003; ATCC FAQ #1067	4043530, 14505435	The ATCC FAQ notes, "A pure population of Rhesus Monkey cells could not be obtained from the original deposit, and CRL-2378 was discontinued from the collection. However, the AGM subpopulation was cloned out, expanded and preserved as MA-104 Clone 1, ATCC® CRL-2378.1."
MA-111	ICLAC-00078	Rabbit	Kidney, newborn	CVCL_U963	Unknown, possibly Vero	Monkey, African green (*Cercopithecus aethiops*)	Kidney, normal renal cells	None	Nelson-Rees et al, 1981	6451928	
MA-160	ICLAC-00026	Human	Prostate adenoma	CVCL_8261	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees, 1977; Nelson-Rees et al, 1981	562836, 6451928	
Mash-1	ICLAC-00233	Human	Schwannoma	CVCL_8158	MMac	Human	Melanoma	CVCL_5951	Yoshino et al, 2006; ICLAC correspondence	16643607	Reviewed by ICLAC (ref: 140421). Yoshino et al used STR profiling to show that these cell lines come from the same donor. RIKEN discussed this match with the originator, who concluded that MMac is more likely to be misidentified. MMac was initially listed in the database as the misidentified cell line; RIKEN has requested that this be changed in version 7.2 of the database.
MaTu	ICLAC-00142	Human	Breast carcinoma	CVCL_5328	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	MacLeod et al, 1999	10508494	

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Misidentification Reported By	Reference PubMed ID	Notes
MC-4000	ICLAC-00143	Human	Breast carcinoma	CVCL_5331	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	MacLeod et al, 1999	10508494	
McCoy	ICLAC-00079	Human	Not specified	CVCL_3742	Strain L	Mouse	Connective tissue	CVCL_0462	Nelson-Rees et al, 1981	6451928	The ATCC catalog entry for McCoy cells (CRL-1696) notes that at least two sublines exist, McCoy A (human) and McCoy B (mouse). McCoy B (mouse) cells are held in repositories worldwide and have been extensively used.
MCF-7/AdrR (NCI/ADR-RES)	ICLAC-00234	Human	Breast carcinoma	CVCL_1452	OVCAR-8	Human	Ovarian carcinoma	CVCL_1629	Liscovitch and Ravid, 2007	16504380	The cell line was originally thought to be a derivative of MCF-7. When found to come from a different donor, the cell line was re-named NCI/ADR-RES (Scudiero et al, 1998; PMID 9625176). SNP analysis has subsequently shown that the cell line is genetically identical to OVCAR-8.
MDA-MB-435	ICLAC-00235	Human	Breast carcinoma	CVCL_0417	M14	Human	Melanoma	CVCL_1395	Ellison et al, 2002; Christgen et al, 2007; Rae et al, 2007; Korch et al, 2018	12354931, 17786032, 17004106, 28940260	MDA-MB-435 and M14 share a common donor origin as shown by a number of publications. ICLAC investigated these two cell lines and was offered early samples of M14 (predating establishment of MDA-MB-435) for testing, along with donor serum and other cell lines. M14 was found to be authentic, confirming previous findings that MDA-MB-435 was misidentified. Note: all MDA-MB-435 derivatives were split
MDA-MB-435S (MDA-MB-435 derivative)	ICLAC-00565	Human	Breast carcinoma	CVCL_0622	M14	Human	Melanoma	CVCL_1395	Ellison et al, 2002; Christgen et al, 2007; Rae et al, 2007; Korch et al, 2018	12354931, 17786032, 17004106, 28940260	MDA-MB-435 and M14 share a common donor origin as shown by a number of publications. ICLAC investigated these two cell lines and was offered early samples of M14 (predating establishment of MDA-MB-435) for testing, along with donor serum and other cell lines. M14 was found to be authentic, confirming previous findings that MDA-MB-435 was misidentified. Note: all MDA-MB-435 derivatives were split
MDA-N (MDA-MB-435 derivative)	ICLAC-00236	Human	Breast carcinoma, HER2/ERBB2-transfected	CVCL_1910	M14	Human	Melanoma	CVCL_1395	Lorenzi et al, 2009; Korch et al, 2018	19372543, 28940260	STR profiling showed that this cell line has a shared donor origin with MDA-MB-435 and M14. The identity of these two cell lines was investigated further by ICLAC; all derivatives correspond to the M14 melanoma cell line and its donor (Korch et al, 2018).
MDS	ICLAC-00237	Human	Leukemia, chronic myelomonocytic	CVCL_L807	JURKAT	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0065	Drexler et al, 2003	12592342	
MEL-HO	ICLAC-00144	Human	Melanoma	CVCL_1402	MEL-HO, MEL-WEI (synonymous cell lines, donor origin unknown)	Human	Unknown	CVCL_1402 / CVCL_3981	MacLeod et al, 1999	10508494	Reference notes that MEL-HO is identical to ME-WEI, which is meant to be derived from a different donor, and does not match LCL-HO, which is meant to be derived from the same donor.
MEL-WEI	ICLAC-00145	Human	Melanoma	CVCL_3981	MEL-HO, MEL-WEI (synonymous cell lines, donor origin unknown)	Human	Unknown	CVCL_1402 / CVCL_3981	MacLeod et al, 1999	10508494	Reference notes that ME-WEI is identical to MEL-HO, which is meant to be derived from a different donor, and does not match LCL-WEI, which is meant to be derived from the same donor.

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Misidentification Reported By	Reference PubMed ID	Notes
MGC-803	ICLAC-00588	Human	Gastric carcinoma	CVCL_5334	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Huang et al, 2017; Bian et al, 2017	28107433, 28851942	Reviewed by ICLAC (ref: 191110). MGC-803 was reported to originally come from gastric carcinoma but several papers from cell repositories in China have shown that it has a high similarity to HeLa. Looking at the STR profiles that we have available, they appear to fall into two groups. One is consistent with HeLa, while the other has additional alleles at many loci e.g. Penta E has "7,10,16,17". This second group of samples may represent a mixture of HeLa and a second cell line; it may also represent a hybrid cell line (e.g., following exposure to a fusogenic agent).
MGH-U1 (EJ)	ICLAC-00080	Human	Bladder carcinoma	CVCL_2443	T-24	Human	Bladder carcinoma	CVCL_0554	O'Toole et al, 1983; Lin et al, 1985	6823318, 4027986	MGH-U1 was originally referred to as EJ (Lin et al, 1985; PMID 4027986).
MGH-U2 (HM)	ICLAC-00081	Human	Bladder carcinoma	CVCL_9826	T-24	Human	Bladder carcinoma	CVCL_0554	O'Toole et al, 1983; Lin et al, 1985	6823318, 4027986	MGH-U2 was originally referred to as HM (Lin et al, 1985; PMID 4027986). STR profile (published by Masters et al, 2001; PMID 11416159) confirms T-24 identity.
MHH-225	ICLAC-00238	Human	Leukemia, acute myeloid, M7	CVCL_8894	JURKAT	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0065	Drexler et al, 2003	12592342	According to the authors of this reference, the original non-contaminated cell line has been characterized and may be available. However, the prototype was not accessible to the authors of that study. Unless previously authenticated, the identity of the cell line is uncertain and should be confirmed before use.
Minnesota EE	ICLAC-00011	Human	Esophageal epithelium	CVCL_8264	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Lavappa, 1978; Nelson-Rees et al, 1981	4864103, 566722, 6451928	
MKB-1	ICLAC-00146	Human	Leukemia, acute myeloid	CVCL_8265	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0207	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342	
MKN28	ICLAC-00328	Human	Gastric carcinoma	CVCL_1416	MKN74	Human	Gastric carcinoma	CVCL_2791	JCRB website	No PMID	The JCRB used STR profiling to show that these cell lines come from the same donor. MKN28 was established from a 70 year old female and first published in 1986. MKN74 was established by the same laboratory from a 37 year old male and published alongside MKN28 in 1986. Please note that these cell lines were established from different genders. Amelogenin is listed as X, but this could be due to loss of
MOBS-1	ICLAC-00239	Human	Leukemia, acute myeloid, M5	CVCL_8442	U-937	Human	Lymphoma, histiocytic	CVCL_0007	Drexler et al, 2003	12592342	
MOLT-15	ICLAC-00147	Human	Leukemia, acute lymphoblastic, T cell	CVCL_8150	CTV-1	Human	Leukemia, acute myeloid, M5	CVCL_1150	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342	

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Misidentification Reported By	Reference PubMed ID	Notes
MPanc-96	ICLAC-00329	Human	Pancreatic carcinoma	CVCL_7165	AsPC-1	Human	Pancreatic carcinoma	CVCL_0152	ATCC website	No PMID	Website notes that STR profile for both cell lines was identical. See "Misidentified Cell Lines" page on the ATCC website.
MRO87-1	ICLAC-00240	Human	Thyroid, follicular carcinoma	CVCL_6310	HT-29	Human	Colon carcinoma	CVCL_0320	Schweppe et al, 2008	18713817	
MS (Monkey Stable)	ICLAC-00241	Monkey	Kidney, normal renal cells	CVCL_4243	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Milanesi et al, 2003	14505435	Reference states, "The MS cell type appeared to be contaminated by human cells having a profile identical to HeLa and HeLa-contaminated human cell lines."
MT-1 [Multiple cell lines with same name, see Cellosaurus]	ICLAC-00148	Human	Breast carcinoma	CVCL_0441	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	MacLeod et al, 1999	10508494	
MT-3 [Multiple cell lines with same name, see Cellosaurus]	ICLAC-00506	Human	Breast carcinoma	CVCL_2129	LS-174T (LS-180 derivative)	Human	Colon carcinoma	CVCL_1384	Yu et al, 2015	25877200	Reviewed by ICLAC (ref: 160115). The DSMZ catalogue entry provides additional information (ACC-403). Samples obtained directly from the originator were found to match LS-174T via SNP analysis [source: http://old-www.path.cam.ac.uk/~pawefish/BreastCellLineDescriptions/MT-3.html].
MUM2C	ICLAC-00501	Human	Melanoma,metastatic uveal	CVCL_3448	M14	Human	Melanoma	CVCL_1395	Folberg et al, 2008; Korch et al, 2018	18689700, 28940260	Reviewed by ICLAC (ref: 150529). MUM2C and OCM-1 were found to correspond to M14 and MDA-MB-435. Further investigation demonstrated that M14 is authentic (Korch et al, 2018).
MUTZ-1	ICLAC-00376	Human	Leukemia, acute myeloid, M2	CVCL_1431	Namalwa	Human	Lymphoma, Burkitt	CVCL_0067	Drexler et al, 2009	19344951	
MV522	ICLAC-00409	Human	Lung carcinoma	CVCL_7204	HT-29	Human	Colon carcinoma	CVCL_0320	ATCC FAQ #1075	No PMID	In response to the question, "Why can't I find the MV522 (ATCC® CRL-2519) cell line on the ATCC website?" The FAQ notes, "ATCC® CRL-2519 has been discontinued. STR yielded similar profiles for MV522 (ATCC® CRL-2519) and HT-29 (ATCC® HTB-38)."
NC-37	ICLAC-00330	Human	Lymphoblastoid cell line, normal donor	CVCL_3042	Raji	Human	Lymphoma, Burkitt	CVCL_0511	JCRB website	No PMID	Website states, "The NC-37 was originally established as a unique cell line from caucasian male. But later it was found to be cross-contaminated by the Raji cell reported by the ATCC. However we decided to keep the NC-37 on our list of cell lines because it have been used under the name by many experiments in the world."
NCC16	ICLAC-00331	Human	Cervical carcinoma	CVCL_U219	PHK16-0b	Human	Skin, immortalised keratinocytes	CVCL_3123	JCRB website	No PMID	Website states, "NCC16 was replaced with NCC16-P11 which was confirmed to be unique." NCC16-P11 as supplied by the JCRB is NOT cross-contaminated with PHK16-0b.

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Misidentification Reported By	Reference PubMed ID	Notes
NCI-H1264	ICLAC-00410	Human	Lung carcinoma	CVCL_3970	NCI-H157, NCI-H1264 (synonymous cell lines, donor origin unknown)	Human	Lung carcinoma	CVCL_0463 / CVCL_3970	ATCC FAQ #930, #931	No PMID	In response to the question, "Why are ATCC® CRL-5802 (NCI-H157) and ATCC® CRL-5860 (NCI-H1264) no longer available from ATCC?" The FAQ notes, "The cells were deaccessioned because their STR profiles were similar."
NCI-H1304	ICLAC-00411	Human	Lung carcinoma, small cell	CVCL_1462	NCI-H1304, NCI-H1870 (synonymous cell lines, donor origin unknown)	Human	Lung carcinoma, small cell	CVCL_1502 / CVCL_1462	ATCC FAQ #1069	No PMID	The ATCC FAQ notes, "STR yielded similar profiles for NCI-H1304 (ATCC® CRL-5862) and NCI-H1870 (ATCC® CRL-5901)." NCI-H1304 was established from a 56 year old female (DOB listed in reference) in 1986; NCI-H1870 was established by the same laboratory from a female of unknown age in 1988. The ATCC decided to discontinue both cell lines from their collection. Since it is unclear which cell line is
NCI-H1514	ICLAC-00242	Human	Lung carcinoma	CVCL_4363	Unknown	Human	Unknown	None	Durkin et al, 2000; ATCC website	10949990	Reference notes that the cell line carries a Y chromosome and is therefore unlikely to come from the original donor. See also "Misidentified Cell Lines" page on the ATCC website.
NCI-H157	ICLAC-00412	Human	Lung carcinoma	CVCL_0463	NCI-H157, NCI-H1264 (synonymous cell lines, donor origin unknown)	Human	Lung carcinoma	CVCL_0463 / CVCL_3970	ATCC FAQ #930, #931	No PMID	In response to the question, "Why are ATCC® CRL-5802 (NCI-H157) and ATCC® CRL-5860 (NCI-H1264) no longer available from ATCC?" The FAQ notes, "The cells were deaccessioned because their STR profiles were similar."
NCI-H1622	ICLAC-00332	Human	Lung carcinoma	CVCL_4364	Unknown	Human	Unknown	None	ATCC website	No PMID	ATCC website notes that the cell line carries a Y chromosome and is therefore unlikely to come from the original donor. See "Misidentified Cell Lines" page on the ATCC website.
NCI-H1870	ICLAC-00413	Human	Lung carcinoma, small cell	CVCL_1502	NCI-H1304, NCI-H1870 (synonymous cell lines, donor origin unknown)	Human	Lung carcinoma, small cell	CVCL_1502 / CVCL_1462	ATCC FAQ #1069	No PMID	The ATCC FAQ notes, "STR yielded similar profiles for NCI-H1304 (ATCC® CRL-5862) and NCI-H1870 (ATCC® CRL-5901)." NCI-H1304 was established from a 56 year old female (DOB listed in reference) in 1986; NCI-H1870 was established by the same laboratory from a female of unknown age in 1988. The ATCC decided to discontinue both cell lines from their collection. Since it is unclear which cell line is
NCI-H249	ICLAC-00334 (contains: ICLAC-00333)	Human	Lung carcinoma, small cell	CVCL_A537	NCI-H69	Human	Lung carcinoma, small cell	CVCL_1579	ATCC FAQ #1073	No PMID	In response to the question, "Why can't I find the NCI-H249 (ATCC® CRL-5827) cell line on the ATCC website?" The FAQ notes, "ATCC® CRL-5827 has been discontinued. STR yielded similar profiles for NCI-H249 (ATCC® CRL-5827) and NCI-H69 (ATCC® HTB-119)." H249 and NCI-H249 were originally added as separate entries in V6.1 and V6.8. After realising they are the same cell line under different names, "H249" and
NCI-H513	ICLAC-00414	Human	Mesothelioma	CVCL_A570	NCI-H125	Human	Lung carcinoma	CVCL_3968	ATCC FAQ #1060	No PMID	In response to the question, "Why can't I find the NCI-H513 (ATCC® CRL-5830) cell line on the ATCC website?" The FAQ notes, "STR yielded similar profiles for NCI-H513 (ATCC® CRL-5830) and NCI-H125 (ATCC® CRL-5801). Both items were discontinued from the collection."
NCI-H592	ICLAC-00415	Human	Lung carcinoma, small cell	CVCL_A590	NCI-H69	Human	Lung carcinoma, small cell	CVCL_1579	ATCC FAQ #1070, #1073	No PMID	In response to the question, "Why can't I find the NCI-H592 (ATCC® CRL-5832) cell line on the ATCC website?" The FAQ notes, "STR yielded similar profiles for NCI-H592 (ATCC® CRL-5832) and NCI-H249 (ATCC® CRL-5827). Both cell lines have been discontinued from the collection." The FAQ for NCI-H249 notes its STR profile is similar to NCI-H69.
NCI-H60	ICLAC-00416	Human	Lung carcinoma, small cell	CVCL_A592	NCI-N417	Human	Lung carcinoma, small cell	CVCL_1602	ATCC FAQ #1064	No PMID	In response to the question, "Why can't I find the NCI-H60 (ATCC® CRL-5821) cell line on the ATCC website?" The FAQ notes, "STR yielded similar profiles for NCI-H60 (ATCC® CRL-5821) and NCI-N417 (ATCC® CRL-5809). Both cell lines were discontinued from the collection."

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Misidentification Reported By	Reference PubMed ID	Notes
NCI-H630	ICLAC-00417	Human	Metastatic sample	CVCL_1572	Mixture	Human	Unknown	None	ATCC FAQ #1065	No PMID	In response to the question, "Why can't I find the NCI-H630 (ATCC® CRL-5833) cell line on the ATCC website?" The FAQ notes, "STR profiling of NCI-H630 (ATCC® CRL-5833) yielded a mixed sample (i.e., showing more than one, over-lapping human profile). The contaminant was not identified. The cells were discontinued from the collection."
NCI-H738	ICLAC-00335	Human	Lung carcinoma	CVCL_4365	Unknown	Human	Unknown	None	ATCC website	No PMID	ATCC website notes that the cell line carries a Y chromosome and is therefore unlikely to come from the original donor. See "Misidentified Cell Lines" page on the ATCC website.
NCOL-1	ICLAC-00243	Human	Intestinal cells, normal colon	CVCL_8375	LoVo	Human	Colon carcinoma	CVCL_0399	Melcher et al, 2005	15771911	This conclusion has been debated within the literature e.g. by Wenzel and Daniel, 2005 (PMID 16271966). It is possible that an original, uncontaminated stock exists; this could be confirmed by STR profiling.
NCTC 2544	ICLAC-00012	Human	Skin epithelium	CVCL_0461	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Lavappa, 1978; Nelson-Rees et al, 1981	4864103, 566722, 6451928	
NCTC 3075	ICLAC-00027	Human	Not specified	CVCL_8156	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928	
ND-1	ICLAC-00244	Human	Prostate carcinoma	CVCL_4781	DU-145	Human	Prostate carcinoma	CVCL_0105	van Bokhoven et al, 2001	11304728	
NM2C5 (MDA-MB-435 derivative)	ICLAC-00377	Human	Breast carcinoma	CVCL_B064	M14	Human	Melanoma	CVCL_1395	Korch et al, 2018; ATCC website	28940260	NM2C5 is a derivative of MDA-MB-435; NM2C5 GFP is a derivative of NM2C5. ATCC flagged these cell lines on its website as problematic (see https://www.atcc.org/Products/Cells_and_Microorganisms/Cell_Lines/Misidentified_Cell_Lines.aspx). The identity of MDA-MB-435 was investigated further by ICLAC; all derivatives correspond to the M14 melanoma cell line and its donor as
NM2C5 GFP (MDA-MB-435 derivative)	ICLAC-00564	Human	Breast carcinoma	CVCL_B065	M14	Human	Melanoma	CVCL_1395	Korch et al, 2018; ATCC website	28940260	NM2C5 is a derivative of MDA-MB-435; NM2C5 GFP is a derivative of NM2C5. ATCC flagged these cell lines on its website as problematic (see https://www.atcc.org/Products/Cells_and_Microorganisms/Cell_Lines/Misidentified_Cell_Lines.aspx). The identity of MDA-MB-435 was investigated further by ICLAC; all derivatives correspond to the M14 melanoma cell line and its donor as
NOI-90	ICLAC-00245	Human	Lymphoma, non-Hodgkin, natural killer cell	CVCL_8462	REH	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_1650	Drexler et al, 2003	12592342	
NOK-SI	ICLAC-00589	Human	Oral keratinocytes, spontaneously immortalized	CVCL_BW57	HaCaT	Human	Skin, immortalized keratinocytes	CVCL_0038	ICLAC correspondence	No PMID	Reviewed by ICLAC (ref: 191110). NOK-SI was reported to originally come from normal oral keratinocytes that became "spontaneously" immortalized. The original laboratory released an STR profile for NOK-SI as part of the OPC-22 panel. The STR profile for NOK-SI corresponds to HaCaT, which was established more than 20 years previously.

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NOSE06	ICLAC-00464	Human	Ovary, normal	CVCL_X010	DOV-13	Human	Ovarian carcinoma	CVCL_6774	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830).
NOSE07	ICLAC-00465	Human	Ovary, normal	CVCL_X011	DOV-13	Human	Ovarian carcinoma	CVCL_6774	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830).
NPA'87	ICLAC-00246	Human	Thyroid, papillary carcinoma	CVCL_0467	M14	Human	Melanoma	CVCL_1395	Schweppe et al, 2008; Zhao et al, 2011; Korch et al, 2018	18713817, 21868764, 28940260	STR profiling showed that this cell line has a shared donor origin with MDA-MB-435 and M14. The identity of these two cell lines was investigated further by ICLAC; all derivatives correspond to the M14 melanoma cell line and its donor (Korch et al, 2018).
NS-3	ICLAC-00336	Human	Gastric carcinoma	CVCL_8377	COLO 201	Human	Colon carcinoma	CVCL_1987	JCRB website	No PMID	Website states, "The COLO201 cell line was handled in the laboratory when the NS-3 cells were established."
OCM-1	ICLAC-00502	Human	Melanoma, primary uveal	CVCL_6934	M14	Human	Melanoma	CVCL_1395	Folberg et al, 2008; Korch et al, 2018	18689700, 28940260	Reviewed by ICLAC (ref: 150529). MUM2C and OCM-1 were found to correspond to M14 and MDA-MB-435. Further investigation demonstrated that M14 is authentic (Korch et al, 2018).
OCM-3	ICLAC-00503	Human	Melanoma, primary uveal	CVCL_6937	SK-MEL-28	Human	Melanoma, primary skin	CVCL_0526	Folberg et al, 2008; Griewank et al, 2012	18689700, 22236444	Reviewed by ICLAC (ref: 150529). Folberg et al (2008) demonstrated through STR profiling that OCM-3 and OCM-8 corresponded to the same donor. Griewank et al (2012) showed that these cell lines corresponded to SK-MEL-28, a melanoma cell line established many years previously.
OCM-8	ICLAC-00504	Human	Melanoma, primary uveal	CVCL_6938	SK-MEL-28	Human	Melanoma, primary skin	CVCL_0526	Folberg et al, 2008; Griewank et al, 2012	18689700, 22236444	Reviewed by ICLAC (ref: 150529). Folberg et al (2008) demonstrated through STR profiling that OCM-3 and OCM-8 corresponded to the same donor. Griewank et al (2012) showed that these cell lines corresponded to SK-MEL-28, a melanoma cell line established many years previously.
OCUM-6	ICLAC-00337	Human	Gastric carcinoma	CVCL_8387	OCUM-11	Human	Gastric carcinoma	CVCL_8379	JCRB website	No PMID	
OE	ICLAC-00082	Human	Endometrium	CVCL_J350	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981; Ogura et al, 1997	6451928, 9556756	
OF	ICLAC-00149	Human	Not specified	CVCL_M621	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Ogura et al, 1997	9556756	

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OLGA-PH-J/92 (OL-J/92)	ICLAC-00378	Crayfish, *Orconectes limosus*	Brain, cerebral ganglion	CVCL_U272	Unknown	Unknown, similar to amoeba species	Unknown	None	Lee et al, 2011; ATCC website	21938590	Website states, "This cell line was originally deposited as a crayfish cerebral ganglion cell line. However, cytochrome c oxidase subunit I (COI) testing at ATCC cannot confirm the crayfish origin." Lee et al performed species testing and were unable to precisely identify the species. It is similar to Acramoeba dendroida.
ONCO-DG-1	ICLAC-00338	Human	Thyroid, papillary carcinoma	CVCL_1882	OVCAR-3	Human	Ovarian carcinoma	CVCL_0465	DSMZ website	No PMID	Website states, "DNA fingerprinting analysis at the DSMZ showed cross-contamination with cell line OVCAR-3".
OS 187	ICLAC-00485	Human	Sarcoma (osteosarcoma)	CVCL_1R50	HCT-15	Human	Colon carcinoma	CVCL_0292	Zhang et al, 2013 [retraction]	24046071	Reviewed by ICLAC (ref: 140826). The authors also note that a second cell line, COL, is neuroblastoma and not osteosarcoma. However, ICLAC members felt that more data was required before concluding that COL was misidentified, i.e., no longer corresponded to its original donor.
OST	ICLAC-00339	Human	Sarcoma (osteosarcoma)	CVCL_8399	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Personal communication, R. Nardone	No PMID	Reference noted by IF; in the column "Reported by", he has written "Roland Nardone?"
OU-AML-1	ICLAC-00247	Human	Leukemia, acute myeloid, M4	CVCL_8391	OCI/AML2	Human	Leukemia, acute myeloid, M4	CVCL_1619	Drexler et al, 2003	12592342	
OU-AML-2	ICLAC-00248	Human	Leukemia, acute myeloid, M2	CVCL_8392	OCI/AML2	Human	Leukemia, acute myeloid, M4	CVCL_1619	Drexler et al, 2003	12592342	
OU-AML-3	ICLAC-00249	Human	Leukemia, acute myeloid, M4	CVCL_8393	OCI/AML2	Human	Leukemia, acute myeloid, M4	CVCL_1619	Drexler et al, 2003	12592342	
OU-AML-4	ICLAC-00250	Human	Leukemia, acute myeloid, M2	CVCL_8394	OCI/AML2	Human	Leukemia, acute myeloid, M4	CVCL_1619	Drexler et al, 2003	12592342	
OU-AML-5	ICLAC-00251	Human	Leukemia, acute myeloid, M5	CVCL_8395	OCI/AML2	Human	Leukemia, acute myeloid, M4	CVCL_1619	Drexler et al, 2003	12592342	
OU-AML-6	ICLAC-00252	Human	Leukemia, acute myeloid, M1	CVCL_8396	OCI/AML2	Human	Leukemia, acute myeloid, M4	CVCL_1619	Drexler et al, 2003	12592342	

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OU-AML-7	ICLAC-00253	Human	Leukemia, acute myeloid, M4	CVCL_8397	OCI/AML2	Human	Leukemia, acute myeloid, M4	CVCL_1619	Drexler et al, 2003	12592342	
OU-AML-8	ICLAC-00254	Human	Leukemia, acute myeloid, M4	CVCL_8398	OCI/AML2	Human	Leukemia, acute myeloid, M4	CVCL_1619	Drexler et al, 2003	12592342	
OV2008 (A2008)	ICLAC-00466 (contains: ICLAC-00455)	Human	Ovarian carcinoma	CVCL_0473	ME-180	Human	Cervical carcinoma	CVCL_1401	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830, 161031). Three cell lines with similar names were tested in Korch et al (2012): 2008, A2008 and OV2008. The 2008 cell line was established in the laboratory of Dr Philip J. DiSaia [source: DiSaia et al 1972, PMID 4118903]; the sample tested in this paper was sourced from the originator and its STR profile is believed to represent authentic stock. A2008 and OV2008 corresponded to ME-180 and are likely to represent misidentified stocks of 2008 that were re-named by different laboratories. "A2008" and "OV2008" were originally added as separate entries. After review of available data in 2016, "A2008" and "OV2008" were merged in v9.0
Ovary1847	ICLAC-00467	Human	Ovarian carcinoma	CVCL_D703	NIH:OVCAR-8	Human	Ovarian carcinoma	CVCL_1629	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830).
OVMIU	ICLAC-00341	Human	Ovarian carcinoma	CVCL_3112	OVSAYO	Human	Ovarian carcinoma	CVCL_3115	JCRB website	No PMID	The JCRB used STR profiling to show that these cell lines come from the same donor and listed this information on their website. OVMIU was established from a 46 year old female in 1998; a second cell line, OVMIU-II, was established from a recurrence in the same donor 3 months later. The STR profiles from these cell lines do not correspond. Instead, OVMIU matches OVSAYO, which was
P1-1A3	ICLAC-00150	Human	Thymic epithelium	CVCL_A042	SK-HEP-1	Human	Liver carcinoma	CVCL_0525	MacLeod et al, 1999	10508494	The parental cell line SK-HEP-1 may be of endothelial origin, as reported by Heffelfinger et al, 1992 (PMID 1371504). This report is based on the phenotype of the cell line and not on histopathology. The cell line was established in 1971 from ascitic fluid in a patient with liver carcinoma.
P1-4D6	ICLAC-00151	Human	Thymic epithelium	CVCL_A046	SK-HEP-1	Human	Liver carcinoma	CVCL_0525	MacLeod et al, 1999	10508494	The parental cell line SK-HEP-1 may be of endothelial origin, as reported by Heffelfinger et al, 1992 (PMID 1371504). This report is based on the phenotype of the cell line and not on histopathology. The cell line was established in 1971 from ascitic fluid in a patient with liver carcinoma.
P39/TSUGANE (P39/TSU)	ICLAC-00255	Human	Leukemia, acute myeloid, M2	CVCL_0478	HL-60	Human	Leukemia, acute myeloid, M2	CVCL_0002	Drexler et al, 2003; JCRB website	12592342	According to the authors of this reference, the original non-contaminated cell line has been characterized and may be available. However, the prototype was not accessible to the authors of that study. Unless previously authenticated, the identity of the cell line is uncertain and should be confirmed before use. Referred to sometimes as P39/TSU cells by the JCRB cell bank. As Drexler et al
Panc 01.28	ICLAC-00519	Human	Pancreatic adenocarcinoma	CVCL_7666	Panc 01.28, Panc 06.03 (synonymous cell lines, donor origin unknown)	Human	Pancreatic adenocarcinoma	CVCL_7666 / CVCL_7665	Yu et al, 2015	25877200	Reviewed by ICLAC (ref: 160714). STR profiles from Panc 01.28, Panc 04.21 and Panc 06.03 demonstrated that these cell lines were synonymous [source: Yu et al 2015, PMID 25877200]. The originator confirmed that they were established from different donors and supplied additional STR profiles. The originator's STR profiles corresponded for Panc 01.28 and Panc 06.03. Panc 04.21 did not

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Panc 06.03	ICLAC-00521	Human	Pancreatic adenocarcinoma	CVCL_7665	Panc 01.28, Panc 06.03 (synonymous cell lines, donor origin unknown)	Human	Pancreatic adenocarcinoma	CVCL_7666 / CVCL_7665	Yu et al, 2015	25877200	Reviewed by ICLAC (ref: 160714). STR profiles from Panc 01.28, Panc 04.21 and Panc 06.03 demonstrated that these cell lines were synonymous [source: Yu et al 2015, PMID 25877200]. The originator confirmed that they were established from different donors and supplied additional STR profiles. The originator's STR profiles corresponded for Panc 01.28 and Panc 06.03 . Panc 04.21 did not
PBEI	ICLAC-00152	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_8270	NALM-6	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_0092	MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342	
PC-93	ICLAC-00256	Human	Prostate carcinoma	CVCL_4888	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	van Bokhoven et al, 2003	14518029	
PC-MDS	ICLAC-00379	Human	Myelodysplastic syndrome, therapy-related	CVCL_1Q81	K-562	Human	Leukemia, chronic myeloid, blast crisis	CVCL_0004	Drexler et al, 2009	19344951	
PCI-22A	ICLAC-00418	Human	Oral squamous cell carcinoma	CVCL_1T56	Unknown, does not match other cell line from same donor	Human	Unknown	None	Zhao et al, 2011	21868764	Reference notes that PCI-22A and PCI-22B were obtained from a single donor, but their STR profiles do not match. One of these cell lines may be correct but it is unclear which, as donor tissue was not included in the analysis. The authors conclude, "we were unable to verify the authenticity of either cell line, and these cell lines should not be considered as an isogenic pair of cells."
PCI-22B	ICLAC-00419	Human	Oral squamous cell carcinoma (lymph node)	CVCL_1T57	Unknown, does not match other cell line from same donor	Human	Unknown	None	Zhao et al, 2011	21868764	Reference notes that PCI-22A and PCI-22B were obtained from a single donor, but their STR profiles do not match. One of these cell lines may be correct but it is unclear which, as donor tissue was not included in the analysis. The authors conclude, "we were unable to verify the authenticity of either cell line, and these cell lines should not be considered as an isogenic pair of cells."
PCI-3	ICLAC-00420	Human	Oropharyngeal squamous cell carcinoma	CVCL_C169	PC-3	Human	Prostate carcinoma	CVCL_0035	Zhao et al, 2011	21868764	
PEAZ-1	ICLAC-00257	Human	Prostate carcinoma	CVCL_8437	HT-1080	Human	Sarcoma (fibrosarcoma)	CVCL_0317	van Bokhoven, 2004; Schmelz et al, 2001 [erratum]	11433418 [erratum]	The cross-contamination of PEAZ-1 was published as an erratum to the original paper by Schmelz et al. The erratum refers to work carried out by Dr Adrie van Bokhoven as part of his PhD.
PH [Multiple cell lines with same name, see Cellosaurus]	ICLAC-00527	Human	Spleen, monocyte/ macrophage	CVCL_L107	U-937	Human	Lymphoma, histiocytic	CVCL_0007	ICLAC correspondence	No PMID	Reviewed by ICLAC (ref: 170208). ICLAC investigated four cell lines whose STR profiles corresponded to U-937: EL 1, SC (also known as 28SC), 28SC-ES (derived from SC) and PH. EL 1, SC, and PH were all found to come from the same patent deposit (http://www.google.com/patents/US5447861). The wording of the patent makes it clear that all were deposited by the originators at ATCC, where STR profiling was performed, and that U-937 was used as a control.
PH61-N	ICLAC-00342	Human	Not specified	CVCL_D282	MIA PaCa-2	Human	Pancreatic carcinoma	CVCL_0428	JCRB website	No PMID	

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PLB-985	ICLAC-00258	Human	Leukemia, acute myeloid, M4	CVCL_2162	HL-60	Human	Leukemia, acute myeloid, M2	CVCL_0002	Drexler et al, 2003	12592342	
PPC-1	ICLAC-00153	Human	Prostate carcinoma	CVCL_4778	PC-3	Human	Prostate carcinoma	CVCL_0035	Chen, 1993	8428522	Also published on in detail some years later by van Bokhoven et al, 2001 (PMID 11304728); Pan et al, 2001 (PMID 11135436); and Varella-Garcia et al, 2001 (PMID 11433521).
PSV811	ICLAC-00343	Human	Skin fibroblast, Werner's syndrome	CVCL_3142	WI-38	Human	Lung, normal diploid fibroblasts	CVCL_0579	JCRB website	No PMID	
QGY-7701	ICLAC-00551	Human	Liver, hepatocellular carcinoma	CVCL_6859	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Bian et al, 2017; Rebouissou et al, 2017	28851942, 28807831	Reviewed by ICLAC (ref: 180418). It is difficult to obtain early samples for testing because the cell line was established many years ago. However, it is clear that multiple samples are misidentified. The entry should be reassessed if early material can be found for testing.
QGY-7703	ICLAC-00552	Human	Liver, hepatocellular carcinoma	CVCL_6715	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Bian et al, 2017; Rebouissou et al, 2017	28851942, 28807831	Reviewed by ICLAC (ref: 180418). It is difficult to obtain early samples for testing because the cell line was established many years ago. However, it is clear that multiple samples are misidentified. The entry should be reassessed if early material can be found for testing.
QSG-7701	ICLAC-00553	Human	Liver, normal hepatic cells	CVCL_6944	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Ye et al, 2015; Rebouissou et al, 2017	26116706, 28807831	Reviewed by ICLAC (ref: 180418). It is difficult to obtain early samples for testing because the cell line was established many years ago. However, it is clear that multiple samples are misidentified. The entry should be reassessed if early material can be found for testing.
R1	ICLAC-00581	Rainbow trout, *Oncorhynchus mykiss*	Liver, normal hepatic cells	CVCL_4607	Unknown	Chinook salmon, *Oncorhynchus tshawytscha*	Unknown	None	DSMZ website	No PMID	Reviewed by ICLAC (ref: 190827). R1 was originally reported to be established from the normal liver of rainbow trout; D-11 is a cloned derivative of this cell line. Both cell lines were deposited at the DSMZ (catalogue numbers ACC 56 and ACC 77). DSMZ staff subsequently concluded that these cell lines were derived from Chinook salmon not rainbow trout, based on CO1 barcoding data.
RAMAK-1	ICLAC-00154	Human	Muscle synovium	CVCL_8271	T-24	Human	Bladder carcinoma	CVCL_0554	MacLeod et al, 1999	10508494	
RB	ICLAC-00083	Human	Lymphoma, Hodgkin	CVCL_L985	OMK-210	Monkey, Owl (*Aotus trivirgatus*)	Kidney, normal renal cells	CVCL_L983	Nelson-Rees et al, 1981; Drexler et al, 2003	6451928, 12592342	
RBHF-1	ICLAC-00155	Human	Liver, hepatoma	CVCL_Y465	Unknown	Non-human	Unknown	None	MacLeod et al, 1999	10508494	Reference states that RBHF-1 displayed "a non-human diploid karyotype with a modal number in the range 44 to 46."

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RC-2A	ICLAC-00259	Human	Leukemia, acute myeloid, M4	CVCL_L808	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0207	Drexler et al, 2003	12592342	According to the authors of this reference, the original non-contaminated cell line has been characterized and may be available. However, the prototype was not accessible to the authors of that study. Unless previously authenticated, the identity of the cell line is uncertain and should be confirmed before use.
RED-3	ICLAC-00260	Human	Leukemia, acute myeloid	CVCL_8907	HL-60	Human	Leukemia, acute myeloid, M2	CVCL_0002	Drexler et al, 2003	12592342	
REH-6	ICLAC-00261	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_L803	Unknown	Mouse	Unknown	None	Drexler et al, 2003	12592342	Reference states, "Widely used subclone allegedly derived from cell line REH."
REPC	ICLAC-00487	Human	Kidney, normal renal cells	CVCL_W815	Hep 3B	Human	Liver, hepatocellular carcinoma	CVCL_0326	Frede et al, 2014 [retraction]	21406725	Reviewed by ICLAC (ref: 140826).
RERF-LC-MA	ICLAC-00386	Human	Lung carcinoma, small cell	CVCL_3153	SK-MES-1	Human	Lung, squamous cell	CVCL_0630	Capes-Davis et al, 2013	23136038	The STR profile for RERF-LC-MA was noted to match SK-MES-1 when profiles from different cell banks were brought together for the ATCC SDO authentication standard.
RERF-LC-OK	ICLAC-00344	Human	Lung carcinoma	CVCL_3154	Marcus	Human	Astrocytoma	CVCL_3019	JCRB website	No PMID	Website states, "Established date of the RERF-LC-OK is not clear because of no reference, while a reference of marcus was published on 1978."
RGC-5	ICLAC-00472	Rat	Retinal ganglion	CVCL_4059	661W	Mouse	Retina, photoreceptor cells	CVCL_6240	Van Bergen et al, 2009; Krishnamoorthy et al, 2013	19443730, 23975727	Reviewed by ICLAC (ref: 121113, 131127). The original paper by Van Bergen et al (2009) noted that RGC-5 was misidentified, due to cross-contamination with an unknown mouse cell line. Krishnamoorthy et al (2013) later showed that the contaminant was 661W, a mouse photoreceptor cell line.
RM-10	ICLAC-00262	Human	Leukemia, chronic myeloid, blast crisis	CVCL_8463	K-562	Human	Leukemia, chronic myeloid, blast crisis	CVCL_0004	Drexler et al, 2003	12592342	
RML-15 [RML-RSE]	ICLAC-00583	American dog tick, Dermacentor variabilis	Embryo, normal	CVCL_Z182	Unknown	Brown dog tick, Rhipicephalus sanguineus	Unknown	None	Bell-Sakyi et al, 2015	26210950	Reviewed by ICLAC (ref: 190827). RML-15 was deposited at the Tick Cell Biobank (Bell-Sakyi et al, 2018; PMID 29886187). Sequencing of the 16S rRNA gene subsequently demonstrated that RML-15 corresponded to *R. sanguineus* instead of *D. variabilis*. This finding was published in Bell-Sakyi et al (2015) as a footnote to Table 1. The originator established three cell lines from *R. sanguineus*: RML-21, RML-22, and RML-23. It seems likely that RML-15 was cross-contaminated with one of these three cell lines.
RMUG-L	ICLAC-00421	Human	Ovarian carcinoma	CVCL_3157	SNG-II	Human	Endometrial carcinoma	CVCL_3170	JCRB website	No PMID	The JCRB catalog notes, "distribution is suspended, possibilty for cross-contamination with SNG-II."

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RO-D81-1	ICLAC-00482	Human	Thyroid, medullary carcinoma	CVCL_M779	HT-29	Human	Colon carcinoma	CVCL_0320	Dadon et al, 2013	23472229	Reviewed by ICLAC (ref: 130523). An author from the original paper describing this cell line was contacted by the ICLAC group, to ask if other stocks might be available for testing. The author was not aware of any additional stocks that could be tested. Note: when comparing STR profiles, RO-D81-1 has a higher match with the HT29 sub clone CX-1.
RO-H85-1	ICLAC-00481	Human	Thyroid, medullary carcinoma	CVCL_A666	647-V	Human	Bladder carcinoma	CVCL_1049	Dadon et al, 2013	23472229	Reviewed by ICLAC (ref: 130523). An author from the original paper describing this cell line was contacted by the ICLAC group, to ask if other stocks might be available for testing. The author was not aware of any additional stocks that could be tested.
RPMI-4788	ICLAC-00387	Human	Colon carcinoma	CVCL_0U46	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Capes-Davis et al, 2013	23136038	The STR profile for RPMI-4788 was noted to match HeLa when profiles from different cell banks were brought together for the ATCC SDO authentication standard.
RPMI-6666	ICLAC-00263	Human	Lymphoma, Hodgkin	CVCL_1665	Correct name, incorrect cell type	Human	EBV+ B-lymphoblastoid cell line	None	Drexler et al, 2003	12592342	Reference states, "Misleadingly indicated at ATCC as being derived from 'tissue Hodgkin's disease'."
RPTC-1	ICLAC-00422	Human	Thyroid, papillary carcinoma	CVCL_V277	TPC-1	Human	Thyroid, papillary carcinoma	CVCL_6298	Zhao et al, 2011	21868764	
RS-1	ICLAC-00264	Human	Leukemia, acute myeloid, M7	CVCL_8423	K-562	Human	Leukemia, chronic myeloid, blast crisis	CVCL_0004	Drexler et al, 2003	12592342	According to the authors of this reference, the original non-contaminated cell line has been characterized and may be available. However, the prototype was not accessible to the authors of that study. Unless previously authenticated, the identity of the cell line is uncertain and should be confirmed before use.
RTSG	ICLAC-00423	Human	Ovarian carcinoma	CVCL_1671	SNG-II	Human	Endometrial carcinoma	CVCL_3170	JCRB website	No PMID	The JCRB catalog notes, "distribution is suspended, possibilty for cross-contamination with SNG-II."
RY	ICLAC-00084	Human	Lymphoma, Hodgkin	CVCL_U964	Unknown	Monkey	Unknown	None	Harris et al, 1981; Drexler et al, 2003	7192801, 12592342	Other cell lines from this lab (FQ, SpR, RB) were cross-contaminated with OMK-210, a kidney cell line from monkey (*Aotus trivirgatus*). See Nelson-Rees et al, 1981 (PMID 6451928).
SA4	ICLAC-00085	Human	Sarcoma (liposarcoma)	CVCL_8910	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
SAM-1	ICLAC-00265	Human	Leukemia, chronic myeloid, blast crisis	CVCL_8440	K-562	Human	Leukemia, chronic myeloid, blast crisis	CVCL_0004	Drexler et al, 2003	12592342	

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SAML-1	ICLAC-00424	Human	Lymphoma, Hodgkin	CVCL_9997	U-937	Human	Lymphoma, histiocytic	CVCL_0007	ATCC FAQ #1074	No PMID	In response to the question, "Why can't I find the SAML-1 (ATCC® CRL-2776) cell line on the ATCC website?" The FAQ notes, "ATCC® CRL-2776 has been discontinued. STR yielded similar profiles for SAML-1 (ATCC® CRL-2776) and U937 (ATCC® CRL-1593.2)."
SBC-2	ICLAC-00156	Human	Bladder carcinoma	CVCL_1677	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	MacLeod et al, 1999	10508494	
SBC-7	ICLAC-00157	Human	Bladder carcinoma	CVCL_1680	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	MacLeod et al, 1999	10508494	
SC (28SC)	ICLAC-00525	Human	Blood, monocyte/ macrophage	CVCL_6444	U-937	Human	Lymphoma, histiocytic	CVCL_0007	ICLAC correspondence	No PMID	Reviewed by ICLAC (ref: 170208). ICLAC investigated four cell lines whose STR profiles corresponded to U-937: EL 1, SC (also known as 28SC), 28SC-ES (derived from SC) and PH. EL 1, SC, and PH were all found to come from the same patent deposit (http://www.google.com/patents/US5447861). The wording of the patent makes it clear that all were deposited by the originators at ATCC, where STR profiling was performed, and that U-937 was used as a control.
SCCTF	ICLAC-00266	Human	Oral squamous cell carcinoma	CVCL_0517	SCCKN	Human	Oral squamous cell carcinoma	CVCL_5362	Yoshino et al, 2006	16643607	
SCLC-16H	ICLAC-00158	Human	Lung carcinoma, small cell	CVCL_X025	SCLC-21/22H	Human	Lung carcinoma, small cell	CVCL_0024 / CVCL_2186	MacLeod et al, 1999	10508494	
SCLC-24H	ICLAC-00159	Human	Lung carcinoma, small cell	CVCL_8262	SCLC-21/22H	Human	Lung carcinoma, small cell	CVCL_0024 / CVCL_2186	MacLeod et al, 1999	10508494	
SEG-1	ICLAC-00366	Human	Esophageal adenocarcinoma	CVCL_8113	NCI-H460	Human	Lung carcinoma, large cell	CVCL_0459	Boonstra et al, 2010	20075370	Although Boonstra et al. refer to the contaminant as "H460", they give an ATCC catalog number for the matching STR profile; the full name for the contaminant is given on the ATCC website as NCI-H460.
SF767	ICLAC-00452	Human	Glioma, anaplastic astrocytoma	CVCL_6950	ME-180	Human	Cervical carcinoma	CVCL_1401	Bady et al, 2012	22570425	Reviewed by ICLAC (ref: 120703).
SGC-7901	ICLAC-00577	Human	Gastric carcinoma	CVCL_0520	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Ye et al, 2015; Huang et al, 2017; Bian et al, 2017	26116706, 28107433, 28851942	Reviewed by ICLAC (ref: 190616). SGC-7901 was reported to come from gastric adenocarcinoma but multiple STR profiles correspond to HeLa.

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SH-2	ICLAC-00086	Human	Breast carcinoma	CVCL_M622	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
SH-3	ICLAC-00087	Human	Breast carcinoma	CVCL_M383	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	
SJPL	ICLAC-00367	Pig, *Sus scrofa*	Lung cells, immortalized epithelial	CVCL_1T04	Unknown	Monkey, African green (*Cercopithecus aethiops*)	Unknown	None	Silversides et al, 2010	20200241	Karyotyping showed an absence of the characteristic porcine telocentric chromosomes, and a higher than expected ratio of acrocentric chromosomes per metaphase spread. Results were more consistent with green African monkey samples.
SK-GT-5	ICLAC-00368	Human	Esophageal adenocarcinoma	CVCL_8114	SK-GT-2	Human	Gastric carcinoma (gastric fundus)	CVCL_2194	Boonstra et al, 2010	20075370	
SK-MG-1	ICLAC-00345	Human	Astrocytoma	CVCL_1698	Marcus	Human	Astrocytoma	CVCL_3019	JCRB website	No PMID	The JCRB used STR profiling to show that these cell lines come from the same donor. SK-MG-1 was originally referred to as AJ (the donor identifier). The cell line was established from a 59 year old female and first published in 1978. A reference for the establishment of Marcus could not be found by ACD, but the JCRB notes that Marcus was published in 1978. The JCRB website lists SK-MG-1 as the
SK-N-MC	ICLAC-00267	Human	Neuroblastoma	CVCL_0530	Unknown	Human	Sarcoma (Ewing's)	None	Staege et al, 2004	15548687	
SK-OV-4	ICLAC-00469	Human	Ovarian carcinoma	CVCL_X008	C-33A	Human	Cervical carcinoma	CVCL_1094	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830).
SK-OV-6	ICLAC-00470	Human	Ovarian carcinoma	CVCL_A457	C-33A	Human	Cervical carcinoma	CVCL_1094	Korch et al, 2012	22710073	Reviewed by ICLAC (ref: 120830).
SKW-3	ICLAC-00346	Human	Leukemia, chronic lymphocytic, T cell	CVCL_2197	KE-37	Human	Leukemia, acute lymphoblastic	CVCL_1327	DSMZ website	No PMID	
SLK	ICLAC-00477	Human	Sarcoma (Kaposi)	CVCL_9569	Caki-1	Human	Renal cell carcinoma	CVCL_0234	Stürzl et al, 2012	22987579	Reviewed by ICLAC (ref: 130115).

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SLR20	ICLAC-00573	Human	Kidney, clear cell carcinoma	CVCL_V606	T-24	Human	Bladder carcinoma	CVCL_0554	ICLAC correspondence	No PMID	Reviewed by ICLAC (ref: 190213). STR profiles were very kindly shared by authors of a paper using the SLR cell line series (Pawlowski et al 2013, PMID: 22949125). SLR20 corresponded to T-24 and SLR24 corresponded to RCC4 and several of its derivatives. Cell lines were sourced directly from the originator's laboratory.
SLR24	ICLAC-00574	Human	Kidney, clear cell carcinoma	CVCL_V610	RCC4	Human	Kidney, clear cell carcinoma	CVCL_0498	ICLAC correspondence	No PMID	Reviewed by ICLAC (ref: 190213). STR profiles were very kindly shared by authors of a paper using the SLR cell line series (Pawlowski et al 2013, PMID: 22949125). SLR20 corresponded to T-24 and SLR24 corresponded to RCC4 and several of its derivatives. Cell lines were sourced directly from the originator's laboratory.
SMMC-7721	ICLAC-00554	Human	Liver, hepatocellular carcinoma	CVCL_0534	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Ye et al, 2015; Huang et al, 2017; Bian et al, 2017; Rebouissou et al, 2017	26116706, 28107433, 28851942, 28807831	Reviewed by ICLAC (ref: 180418). It is difficult to obtain early samples for testing because the cell line was established many years ago. However, it is clear that multiple samples are misidentified. The entry should be reassessed if early material can be found for testing.
SNB-19	ICLAC-00268	Human	Glioblastoma	CVCL_0535	U-251 MG	Human	Glioblastoma	CVCL_0021	Azari et al, 2007; ATCC website	17254797	Website notes that STR profile for SNB-19 was identical to U-373 MG. The ATCC stock for U-373 MG was in turn found to be identical to U-251 MG, although other stocks of U-373 MG (including the originator's) are different to the ATCC stock and it is possible that a correctly identified version of the cell line remains accessible. See "Misidentified Cell Lines" page on the ATCC website for
SNU-1958	ICLAC-00539	Human	Breast carcinoma	CVCL_T040	LS513	Human	Colon carcinoma (cecum)	CVCL_1386	Ku et al, 2013	24141649	Reviewed by ICLAC (ref: 170829). ICLAC investigated this cell line after receiving a query about its shared donor origin with LS-513. SNU-1958 was reported as a triple-negative breast carcinoma from ascitic fluid in a 55 year old female. The STR profile in the source reference was found to match LS513; the sample shared with ICLAC was AMEL X,Y indicating a male origin.
SPC-BM-36	ICLAC-00584	Domestic silkmoth, Bombyx mori	Ovary, normal	CVCL_Z327	Unknown	Fall armyworm, Spodoptera frugiperda	Unknown	None	DSMZ website	No PMID	Reviewed by ICLAC (ref: 190827). SPC-BM-36 was deposited at the DSMZ (catalogue number ACC 186). DSMZ staff subsequently concluded that SPC-BM-36 was derived from the genus Spodoptera, based on CO1 barcoding data. The closest matches were to S. frugiperda sp. 2, S. frugiperda, S. frugiperda DHJ02, and S. frugiperda sp. 1. The originator also established cell lines from Spodoptera littoralis, so it is possible that other Spodoptera species were grown in the originating laboratory.
SPI-801	ICLAC-00160	Human	Leukemia, acute lymphoblastic, T cell	CVCL_2200	K-562	Human	Leukemia, chronic myeloid, blast crisis	CVCL_0004	Gignac et al, 1993; Drexler et al, 2003	8220135, 12592342	
SPI-802	ICLAC-00161	Human	Leukemia, acute lymphoblastic, T cell	CVCL_2201	K-562	Human	Leukemia, chronic myeloid, blast crisis	CVCL_0004	Gignac et al, 1993; Drexler et al, 2003	8220135, 12592342	
SpR	ICLAC-00088	Human	Lymphoma, Hodgkin	CVCL_L986	OMK-210	Monkey, Owl (*Aotus trivirgatus*)	Kidney, normal renal cells	CVCL_L983	Nelson-Rees et al, 1981; Drexler et al, 2003	6451928, 12592342	
SQ-5	ICLAC-00269	Human	Lung carcinoma	CVCL_8273	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Yoshino et al, 2006	16643607	

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SR-91	ICLAC-00270	Human	Leukemia, acute lymphoblastic, T cell	CVCL_8441	AML-193	Human	Leukemia, acute myeloid, M5	CVCL_1071	Drexler et al, 2003	12592342	
SU-DHL-7	ICLAC-00557	Human	Lymphoma, diffuse large B-cell	CVCL_4380	SU-DHL-8	Human	Lymphoma, diffuse large B-cell (germinal center B-cell type)	CVCL_2207	ICLAC correspondence	No PMID	Reviewed by ICLAC (ref: 180625). SU-DHL-7, SU-DHL-8, and SU-DHL-9 were investigated by ICLAC after it was reported that they all have a shared donor origin. The originator was able to provide 39 year old samples for STR profiling, which confirmed the previous report. Karyotyping was performed at the DSMZ; SU-DHL-8 had a human hyperdiploid karyotype with 3% polyploidy - 51(47-53)<2n>X, -Y, +7, +13, +20, +20, t(8;22)(q24;q11), del(20)(q13), der(22)t(1;22)(q11;p11)del(1)(q?32) - carries t(8;22) effecting IGL-MYC rearrangement, which resembed the published karyotype (Hecht et al, 1985; PMID 3881165). Donor sex was also used for additional evidence. SU-DHL-8 was established from a 59 year old male; SU-DHL-7 and SU-DHL-9 were established from a 47 and 64 year old female, respectively. The DSMZ performed DXS analysis and showed that all three cell lines were homo- or hemizygous for four DXS loci. This finding is consistent with uniparental disomy and origin from a male donor. With that data, it seems reasonable to conclude that SU-DHL-8 is the parental cell line and that SU-DHL-7 and SU-DHL-9 are misidentified.
SU-DHL-9	ICLAC-00558	Human	Lymphoma, diffuse large B-cell	CVCL_4379	SU-DHL-8	Human	Lymphoma, diffuse large B-cell (germinal center B-cell type)	CVCL_2207	ICLAC correspondence	No PMID	Reviewed by ICLAC (ref: 180625). SU-DHL-7, SU-DHL-8, and SU-DHL-9 were investigated by ICLAC after it was reported that they all have a shared donor origin. The originator was able to provide 39 year old samples for STR profiling, which confirmed the previous report. Karyotyping was performed at the DSMZ; SU-DHL-8 had a human hyperdiploid karyotype with 3% polyploidy - 51(47-53)<2n>X, -Y, +7, +13, +20, +20, t(8;22)(q24;q11), del(20)(q13), der(22)t(1;22)(q11;p11)del(1)(q?32) - carries t(8;22) effecting IGL-MYC rearrangement, which resembed the published karyotype (Hecht et al, 1985; PMID 3881165). Donor sex was also used for additional evidence. SU-DHL-8 was established from a 59 year old male; SU-DHL-7 and SU-DHL-9 were established from a 47 and 64 year old female, respectively. The DSMZ performed DXS analysis and showed that all three cell lines were homo- or hemizygous for four DXS loci. This finding is consistent with uniparental disomy and origin from a male donor. With that data, it seems reasonable to conclude that SU-DHL-8 is the parental cell line and that SU-DHL-7 and SU-DHL-9 are misidentified.
SW-527	ICLAC-00089	Human	Breast carcinoma	CVCL_3799	SW-480, SW-620	Human	Colon carcinoma	CVCL_0546 / CVCL_0547	Leibovitz et al, 1979; Nelson-Rees et al, 1981	288927, 6451928	Eight cell lines established by Albert Leibovitz were found to have a shared donor origin: SW-480, SW-527, SW-598, SW-608, SW-613, SW-620, SW-732, and SW-733. Leibovitz and Jorgen Fogh were able to investigate this finding in the 1970s using early passage material. SW-480 was found to be authentic; SW-620 was established from the same donor and was also authentic. The other six cell lines were found to
SW-598	ICLAC-00090	Human	Meningioma	CVCL_F649	SW-480, SW-620	Human	Colon carcinoma	CVCL_0546 / CVCL_0547	Leibovitz et al, 1979; Nelson-Rees et al, 1981	288927, 6451928	Eight cell lines established by Albert Leibovitz were found to have a shared donor origin: SW-480, SW-527, SW-598, SW-608, SW-613, SW-620, SW-732, and SW-733. Leibovitz and Jorgen Fogh were able to investigate this finding in the 1970s using early passage material. SW-480 was found to be authentic; SW-620 was established from the same donor and was also authentic. The other six cell lines were found to
SW-608	ICLAC-00091	Human	Astrocytoma	CVCL_F653	SW-480, SW-620	Human	Colon carcinoma	CVCL_0546 / CVCL_0547	Leibovitz et al, 1979; Nelson-Rees et al, 1981	288927, 6451928	Eight cell lines established by Albert Leibovitz were found to have a shared donor origin: SW-480, SW-527, SW-598, SW-608, SW-613, SW-620, SW-732, and SW-733. Leibovitz and Jorgen Fogh were able to investigate this finding in the 1970s using early passage material. SW-480 was found to be authentic; SW-620 was established from the same donor and was also authentic. The other six cell lines were found to

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SW-613	ICLAC-00092	Human	Breast carcinoma	CVCL_F650	SW-480, SW-620	Human	Colon carcinoma	CVCL_0546 / CVCL_0547	Leibovitz et al, 1979; Nelson-Rees et al, 1981	288927, 6451928	Eight cell lines established by Albert Leibovitz were found to have a shared donor origin: SW-480, SW-527, SW-598, SW-608, SW-613, SW-620, SW-732, and SW-733. Leibovitz and Jorgen Fogh were able to investigate this finding in the 1970s using early passage material. SW-480 was found to be authentic; SW-620 was established from the same donor and was also authentic. The other six cell lines were found to
SW-732	ICLAC-00093	Human	Cervical carcinoma	CVCL_F651	SW-480, SW-620	Human	Colon carcinoma	CVCL_0546 / CVCL_0547	Leibovitz et al, 1979; Nelson-Rees et al, 1981	288927, 6451928	Eight cell lines established by Albert Leibovitz were found to have a shared donor origin: SW-480, SW-527, SW-598, SW-608, SW-613, SW-620, SW-732, and SW-733. Leibovitz and Jorgen Fogh were able to investigate this finding in the 1970s using early passage material. SW-480 was found to be authentic; SW-620 was established from the same donor and was also authentic. The other six cell lines were found to
SW-733	ICLAC-00094	Human	Bladder carcinoma	CVCL_F652	SW-480, SW-620	Human	Colon carcinoma	CVCL_0546 / CVCL_0547	Leibovitz et al, 1979; Nelson-Rees et al, 1981	288927, 6451928	Eight cell lines established by Albert Leibovitz were found to have a shared donor origin: SW-480, SW-527, SW-598, SW-608, SW-613, SW-620, SW-732, and SW-733. Leibovitz and Jorgen Fogh were able to investigate this finding in the 1970s using early passage material. SW-480 was found to be authentic; SW-620 was established from the same donor and was also authentic. The other six cell lines were found to
T-1	ICLAC-00095	Human	Kidney, normal renal cells	CVCL_M858	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1980; Nelson-Rees et al, 1981	7394535, 6451928	
T1	ICLAC-00453	Human	Neural stem cell	CVCL_1U15	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Torsvik et al, 2012	22949886	Reviewed by ICLAC (ref: 120830).
T-33	ICLAC-00271	Human	Leukemia, chronic myeloid, blast crisis	CVCL_8427	K-562	Human	Leukemia, chronic myeloid, blast crisis	CVCL_0004	Drexler et al, 2003	12592342	According to the authors of this reference, the original non-contaminated cell line has been characterized and may be available. However, the prototype was not accessible to the authors of that study. Unless previously authenticated, the identity of the cell line is uncertain and should be confirmed before use.
T404	ICLAC-00425	Human	Oral squamous cell carcinoma	CVCL_1T20	1404, 1406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (synonymous cell lines, donor origin unknown)	Human	Head and neck squamous cell carcinoma	CVCL_1T20 / CVCL_1T19 / CVCL_4910 / CVCL_1T17 / CVCL_4911 / CVCL_4914 / CVCL_4915 /	Zhao et al, 2011	21868764	Reference used STR profiling to show that all cell lines came from the same donor. Cell lines are meant to come from different donors and are therefore contaminated, but it is unclear which is the contaminating cell line.
T406 [Multiple cell lines with same name, see Cellosaurus]	ICLAC-00426	Human	Oral squamous cell carcinoma	CVCL_1T19	1404, 1406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (synonymous cell lines, donor origin unknown)	Human	Head and neck squamous cell carcinoma	CVCL_1T20 / CVCL_1T19 / CVCL_4910 / CVCL_1T17 / CVCL_4911 / CVCL_4914 / CVCL_4915 /	Zhao et al, 2011	21868764	Reference used STR profiling to show that all cell lines came from the same donor. Cell lines are meant to come from different donors and are therefore contaminated, but it is unclear which is the contaminating cell line. Note: a different cell line exists with the same name. T406 (oral SCC) is misidentified, as referred to here. T406 (glioblastoma, also known as T-406) is described by Hann et
T409	ICLAC-00427	Human	Oral squamous cell carcinoma	CVCL_1Q88	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	CVCL_7707	Zhao et al, 2011	21868764	
T-9 (WI-38 derivative)	ICLAC-00096	Human	Lung cells, transformed normal diploid fibroblasts	CVCL_M092	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Nelson-Rees et al, 1981	6451928	

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Tca8113	ICLAC-00578	Human	Oral squamous cell carcinoma (tongue)	CVCL_6851	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Ye et al, 2015; Bian et al, 2017	26116706, 28851942	Reviewed by ICLAC (ref: 190616). Tca8113 was reported to come from an SCC of the tongue but multiple STR profiles correspond to HeLa. The cell line has six derivatives: Tca8113/CBP [Chengdu], Tca8113/CBP [Chogqing], Tca8113-P160, Tca8113-P60, Tca8113/PYM [Changsha], and Tca8113/PYM [Chengdu]. No STR profiling information was available for the derivatives at the time of review.
TCO-1	ICLAC-00272	Human	Cervical carcinoma	CVCL_3179	TCS	Human	Cervical carcinoma	CVCL_8160	Yoshino et al, 2006	16643607	Reviewed by ICLAC (ref: 160906). TCO-1 was thought to be established from the same donor as TCO-2. However, the STR profiles clearly show that these cell lines come from different individuals and that TCO-1 corresponds to TCS. The depositors concluded that TCO-1 was the misidentified cell line, not TCO-2. The contaminant was initially reported as TCO-2 (which was incorrect, based on a
TDL-1	ICLAC-00097	Human	Tonsillar lymphoid cells, non-neoplastic	CVCL_8428	P3JHR-1	Human	Lymphoma, Burkitt	CVCL_2676	Nelson-Rees et al, 1981	6451928	
TDL-2	ICLAC-00098	Human	Tonsillar lymphoid cells, non-neoplastic	CVCL_8429	P3JHR-1	Human	Lymphoma, Burkitt	CVCL_2676	Nelson-Rees et al, 1981	6451928	
TDL-3	ICLAC-00099	Human	Tonsillar lymphoid cells, non-neoplastic	CVCL_8430	RPMI 1788	Human	Lymphoblastoid cell line, normal donor	CVCL_2710	Nelson-Rees et al, 1981	6451928	
TDL-4	ICLAC-00100	Human	Tonsillar lymphoid cells, non-neoplastic	CVCL_8431	Raji	Human	Lymphoma, Burkitt	CVCL_0511	Nelson-Rees et al, 1981	6451928	
TE-12	ICLAC-00273	Human	Esophageal squamous cell carcinoma	CVCL_1762	TE-2, TE-3, TE-7, TE-12, TE-13 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_4455 / CVCL_9971 / CVCL_9972 / CVCL_1762 / CVCL_4463	Boonstra et al, 2007	17804709	Boonstra et al used STR profiling to conclude that TE-2, -3, -7, -12 and -13 all came from the same donor; cell lines were established by the same laboratory from different donors. As noted by Boonstra et al, "the human esophageal cancer cell lines TE-2, TE-3, TE-7, TE-12, and TE-13 are genotypically identical and therefore should be regarded as one single cell line". Since it cannot be determined which
TE-13	ICLAC-00274	Human	Esophageal squamous cell carcinoma	CVCL_4463	TE-2, TE-3, TE-7, TE-12, TE-13 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_4455 / CVCL_9971 / CVCL_9972 / CVCL_1762 / CVCL_4463	Boonstra et al, 2007	17804709	Reference uses STR profiling to conclude that TE-2, -3, -7, -12 and -13 all came from the same donor; cell lines were meant to be derived from five different donors. TE-7 was thought to be derived from adenocarcinoma, but from this evidence has been cross-contaminated with a squamous cell carcinoma line.
TE-2	ICLAC-00275	Human	Esophageal squamous cell carcinoma	CVCL_4455	TE-2, TE-3, TE-7, TE-12, TE-13 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_4455 / CVCL_9971 / CVCL_9972 / CVCL_1762 / CVCL_4463	Boonstra et al, 2007	17804709	Reference uses STR profiling to conclude that TE-2, -3, -7, -12 and -13 all came from the same donor; cell lines were meant to be derived from five different donors. TE-7 was thought to be derived from adenocarcinoma, but from this evidence has been cross-contaminated with a squamous cell carcinoma line.
TE-3	ICLAC-00276	Human	Esophageal squamous cell carcinoma	CVCL_9971	TE-2, TE-3, TE-7, TE-12, TE-13 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_4455 / CVCL_9971 / CVCL_9972 / CVCL_1762 / CVCL_4463	Boonstra et al, 2007	17804709	Reference uses STR profiling to conclude that TE-2, -3, -7, -12 and -13 all came from the same donor; cell lines were meant to be derived from five different donors. TE-7 was thought to be derived from adenocarcinoma, but from this evidence has been cross-contaminated with a squamous cell carcinoma line.

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TE671	ICLAC-00101	Human	Medulloblastoma	CVCL_1756	RD	Human	Sarcoma (rhabdomyosarcoma)	CVCL_1649	Stratton et al, 1989; Chen et al, 1989	2650908, 2739733	
TE671 Subline No.2	ICLAC-00347	Human	Medulloblastoma	CVCL_2731	RD	Human	Sarcoma (rhabdomyosarcoma)	CVCL_1649	ECACC website, ATCC FAQ #1063	No PMID	Website states, "Although originally described as derived from a medulloblastoma the cell line TE671 is now known to be identical to the human rhabdomyosarcoma RD cell line.... TE671 and TE671 Subline No.2 should be considered to be derived from RD."
TE-7	ICLAC-00277	Human	Esophageal adenocarcinoma	CVCL_9972	TE-2, TE-3, TE-7, TE-12, TE-13 (synonymous cell lines, donor origin unknown)	Human	Esophageal squamous cell carcinoma	CVCL_4455 / CVCL_9971 / CVCL_9972 / CVCL_1762 / CVCL_4463	Boonstra et al, 2007	17804709	Reference uses STR profiling to conclude that TE-2, -3, -7, -12 and -13 all came from the same donor; cell lines were meant to be derived from five different donors. TE-7 was thought to be derived from adenocarcinoma, but from this evidence has been cross-contaminated with a squamous cell carcinoma line.
TEC61	ICLAC-00364	Human	Thyroid, endothelium	CVCL_7167	JEG3	Human	Choriocarcinoma	CVCL_0363	Patel et al, 2003 [retraction]	12388152	The cross-contamination of TEC61 was published on retraction of the original paper. The authors note that conditioned medium from JEG3 was used while trying to isolate the original strain.
TI-1	ICLAC-00278	Human	Leukemia, acute myeloid, M2	CVCL_L806	K-562	Human	Leukemia, chronic myeloid, blast crisis	CVCL_0004	Rush et al, 2002; Drexler et al, 2003	11871388, 12592342	
TK-1	ICLAC-00348	Human	Glioblastoma	CVCL_B325	U-251 MG	Human	Glioblastoma	CVCL_0021	JCRB website	No PMID	
TMH-1	ICLAC-00349	Human	Thyroid, benign goitre	CVCL_3219	IHH-4	Human	Thyroid, papillary thyroid carcinoma	CVCL_2960	JCRB website	No PMID	Website states, "Y chromosome is only different point."
TMM	ICLAC-00279	Human	Leukemia, chronic myeloid, blast crisis	CVCL_1894	Correct name, incorrect cell type	Human	EBV+ B-lymphoblastoid cell line	None	Drexler et al, 2003	12592342	
TSCCa	ICLAC-00579	Human	Oral squamous cell carcinoma (tongue)	CVCL_VL15	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Ye et al, 2015; Huang et al, 2017	26116706, 28107433	Reviewed by ICLAC (ref: 190616). TSCCa was reported to come from an SCC of the tongue but multiple STR profiles correspond to HeLa.
TSU-Pr1	ICLAC-00280	Human	Prostate carcinoma	CVCL_4014	T-24	Human	Bladder carcinoma	CVCL_0554	van Bokhoven et al, 2001	11522622	

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Tu-138	ICLAC-00428	Human	Oral squamous cell carcinoma	CVCL_4910	1404, 1406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (synonymous cell lines, donor origin unknown)	Human	Head and neck squamous cell carcinoma	CVCL_1T20 / CVCL_1T19 / CVCL_4910 / CVCL_1T17 / CVCL_4911 / CVCL_4914 / CVCL_4915 /	Zhao et al, 2011	21868764	Reference used STR profiling to show that all cell lines came from the same donor. Cell lines are meant to come from different donors and are therefore contaminated, but it is unclear which is the contaminating cell line.
Tu-158LN	ICLAC-00429	Human	Oropharyngeal squamous cell carcinoma	CVCL_1T17	1404, 1406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (synonymous cell lines, donor origin unknown)	Human	Head and neck squamous cell carcinoma	CVCL_1T20 / CVCL_1T19 / CVCL_4910 / CVCL_1T17 / CVCL_4911 / CVCL_4914 / CVCL_4915 /	Zhao et al, 2011	21868764	Reference used STR profiling to show that all cell lines came from the same donor. Cell lines are meant to come from different donors and are therefore contaminated, but it is unclear which is the contaminating cell line.
Tu-159	ICLAC-00430	Human	Oropharyngeal squamous cell carcinoma	CVCL_4911	1404, 1406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (synonymous cell lines, donor origin unknown)	Human	Head and neck squamous cell carcinoma	CVCL_1T20 / CVCL_1T19 / CVCL_4910 / CVCL_1T17 / CVCL_4911 / CVCL_4914 / CVCL_4915 /	Zhao et al, 2011	21868764	Reference used STR profiling to show that all cell lines came from the same donor. Cell lines are meant to come from different donors and are therefore contaminated, but it is unclear which is the contaminating cell line.
Tu-167	ICLAC-00431	Human	Oral squamous cell carcinoma	CVCL_4912	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	CVCL_7707	Zhao et al, 2011	21868764	
Tu-182	ICLAC-00432	Human	Oropharyngeal squamous cell carcinoma	CVCL_4914	1404, 1406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (synonymous cell lines, donor origin unknown)	Human	Head and neck squamous cell carcinoma	CVCL_1T20 / CVCL_1T19 / CVCL_4910 / CVCL_1T17 / CVCL_4911 / CVCL_4914 / CVCL_4915 /	Zhao et al, 2011	21868764	Reference used STR profiling to show that all cell lines came from the same donor. Cell lines are meant to come from different donors and are therefore contaminated, but it is unclear which is the contaminating cell line.
Tu-212	ICLAC-00433	Human	Hypopharyngeal squamous cell carcinoma	CVCL_4915	1404, 1406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (synonymous cell lines, donor origin unknown)	Human	Head and neck squamous cell carcinoma	CVCL_1T20 / CVCL_1T19 / CVCL_4910 / CVCL_1T17 / CVCL_4911 / CVCL_4914 / CVCL_4915 /	Zhao et al, 2011	21868764	Reference used STR profiling to show that all cell lines came from the same donor. Cell lines are meant to come from different donors and are therefore contaminated, but it is unclear which is the contaminating cell line.
Tu-212LN	ICLAC-00434	Human	Hypopharyngeal squamous cell carcinoma (lymph node)	CVCL_1T18	1404, 1406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (synonymous cell lines, donor origin unknown)	Human	Head and neck squamous cell carcinoma	CVCL_1T20 / CVCL_1T19 / CVCL_4910 / CVCL_1T17 / CVCL_4911 / CVCL_4914 / CVCL_4915 /	Zhao et al, 2011	21868764	Reference used STR profiling to show that all cell lines came from the same donor. Cell lines are meant to come from different donors and are therefore contaminated, but it is unclear which is the contaminating cell line.
TuWi	ICLAC-00028	Human	Kidney, Wilms' tumor	CVCL_8275	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lavappa, 1978; Nelson-Rees et al, 1981	6451928	Also listed elsewhere as CCL-31 (ATCC catalog number).
U-118 MG	ICLAC-00350	Human	Glioblastoma	CVCL_0633	U-138 MG	Human	Glioblastoma	CVCL_0020	Bady et al, 2012; Allen et al, 2016; ATCC website	22570425, 27582061	ATCC used VNTR, STR, and cytogenetic analysis to show that U-118 MG and U-138 MG share a common donor origin and "share at least six derivative marker chromosomes". Bady et al (2012) and Allen et al (2016) subsequently confirmed this finding using STR profiling. U-118 MG was established from a 50 year old male in 1966; U-138 MG was established by the same laboratory from a 47 year old male in 1966.
UCDK9B1	ICLAC-00540	Dog, *Canis familiaris*	Lymphoma, B-cell	CVCL_GY10	JURKAT	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0065	Zwingenberger et al, 2012 [corrigendum]	22136758	Reviewed by ICLAC (ref: 171204). Samples of the five cell lines in the corrigendum were supplied to ICLAC for STR profiling by Dr Michael Kent (UCSD) and tested by Erin Hall (Genetica DNA laboratories). STR profiles for UCDK9B1, UCDK9B2, UCDK9B3, UCDK9B4, and UCDK9B5 demonstrated that Jurkat is the parental cell line in each case.

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Misidentification Reported By	Reference PubMed ID	Notes
UCDK9B2	ICLAC-00541	Dog, *Canis familiaris*	Lymphoma, B-cell	CVCL_GY11	JURKAT	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0065	Zwingenberger et al, 2012 [corrigendum]	22136758	Reviewed by ICLAC (ref: 171204). Samples of the five cell lines in the corrigendum were supplied to ICLAC for STR profiling by Dr Michael Kent (UCSD) and tested by Erin Hall (Genetica DNA laboratories). STR profiles for UCDK9B1, UCDK9B2, UCDK9B3, UCDK9B4, and UCDK9B5 demonstrated that Jurkat is the parental cell line in each case.
UCDK9B3	ICLAC-00542	Dog, *Canis familiaris*	Lymphoma, B-cell	CVCL_GY12	JURKAT	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0065	Zwingenberger et al, 2012 [corrigendum]	22136758	Reviewed by ICLAC (ref: 171204). Samples of the five cell lines in the corrigendum were supplied to ICLAC for STR profiling by Dr Michael Kent (UCSD) and tested by Erin Hall (Genetica DNA laboratories). STR profiles for UCDK9B1, UCDK9B2, UCDK9B3, UCDK9B4, and UCDK9B5 demonstrated that Jurkat is the parental cell line in each case.
UCDK9B4	ICLAC-00543	Dog, *Canis familiaris*	Lymphoma, B-cell	CVCL_GY13	JURKAT	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0065	Zwingenberger et al, 2012 [corrigendum]	22136758	Reviewed by ICLAC (ref: 171204). Samples of the five cell lines in the corrigendum were supplied to ICLAC for STR profiling by Dr Michael Kent (UCSD) and tested by Erin Hall (Genetica DNA laboratories). STR profiles for UCDK9B1, UCDK9B2, UCDK9B3, UCDK9B4, and UCDK9B5 demonstrated that Jurkat is the parental cell line in each case.
UCDK9B5	ICLAC-00544	Dog, *Canis familiaris*	Lymphoma, B-cell	CVCL_GY14	JURKAT	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0065	Zwingenberger et al, 2012 [corrigendum]	22136758	Reviewed by ICLAC (ref: 171204). Samples of the five cell lines in the corrigendum were supplied to ICLAC for STR profiling by Dr Michael Kent (UCSD) and tested by Erin Hall (Genetica DNA laboratories). STR profiles for UCDK9B1, UCDK9B2, UCDK9B3, UCDK9B4, and UCDK9B5 demonstrated that Jurkat is the parental cell line in each case.
UM-UC-2	ICLAC-00281	Human	Bladder carcinoma	CVCL_8155	T-24	Human	Bladder carcinoma	CVCL_0554	Chiong et al, 2009	19375735	STR profile shows close identity to T-24.
UM-UC-3-GFP (UM-UC-3 derivative)	ICLAC-00282	Human	Bladder carcinoma, GFP-transfected	CVCL_1R40	Unknown, NOT UM-UC-3	Human	Unknown	None	Chiong et al, 2009	19375735	Reference states that UM-UC-3-GFP "had a markedly different STR profile than UM-UC-3. This was confirmed by significant differences in TP53 mutation in the 2 different cell lines."
UPES/C	ICLAC-00388	Human	Brain, non-neoplastic astrocytes	CVCL_1R55	Unknown	Rat	Unknown	None	Higgins et al, 2010	20951163	
UPHHJA	ICLAC-00389	Human	Glioblastoma	CVCL_1R56	Unknown	Rat	Unknown	None	Higgins et al, 2010	20951163	
UTMB-460	ICLAC-00283	Human	B-cells	CVCL_8276	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0207	Drexler et al, 2003	12592342	
VC312R	ICLAC-00390	Human	Medulloblastoma	CVCL_1R57	Unknown	Mixture, human + mouse	Unknown	None	Higgins et al, 2010	20951163	

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Misidentification Reported By	Reference PubMed ID	Notes
WiDr	ICLAC-00103	Human	Colon carcinoma	CVCL_2760	HT-29	Human	Colon carcinoma	CVCL_0320	Chen et al, 1987	3472642	
WISH	ICLAC-00013	Human	Amnion, normal cells	CVCL_1909	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Gartler, 1967; Lavappa, 1978; Nelson-Rees et al, 1981	4864103, 566722, 6451928	
Wong-Kilbourne derivative (WKD)	ICLAC-00030 (contains: ICLAC-00029)	Human	Conjunctiva	CVCL_2764	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	Lavappa, 1978; Nelson-Rees et al, 1981	566722, 6451928	Wong-Kilbourne derivative and WKD were originally added as separate entries and were merged in V8.0. Most references use "Wong-Kilbourne derivative" and "WKD" interchangeably.
WRL 68	ICLAC-00351	Human	Liver, embryonic cells	CVCL_0581	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	ECACC website	No PMID	Website states, "This cell line was found to be indistinguishable from HeLa by STR PCR DNA profiling. Therefore, the cell line should be considered as derived from HeLa."
WSU-ALCL	ICLAC-00284	Human	Lymphoma, anaplastic large cell	CVCL_A036	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0207	Drexler et al, 2003	12592342	
WSU-CLL	ICLAC-00285	Human	Leukemia, chronic lymphocytic	CVCL_A049	REH	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_1650	Drexler et al, 2002; Drexler et al, 2003	12200708, 12592342	A comment on WSU-CLL was published by ICLAC (ICLAC, 2014). PMID: 24923861.
YAA	ICLAC-00286	Human	Monocytes	CVCL_8466	U-937	Human	Lymphoma, histiocytic	CVCL_0007	Drexler et al, 2003	12592342	
YAP	ICLAC-00287	Human	Monocytes	CVCL_8467	U-937	Human	Lymphoma, histiocytic	CVCL_0007	Drexler et al, 2003	12592342	
YJ	ICLAC-00288	Human	Leukemia, chronic myelomonocytic	CVCL_8931	HL-60	Human	Leukemia, acute myeloid, M2	CVCL_0002	Drexler et al, 2003	12592342	
YMB-1	ICLAC-00391	Human	Breast carcinoma	CVCL_2814	ZR-75-1	Human	Breast carcinoma	CVCL_0588	Capes-Davis et al, 2013	23136038	Capes-Davis et al compared STR profiles to show that YMB-1 and ZR-75-1 came from the same donor. ZR-75-1 was established from a 63 year old female and first published in 1978. YMB-1 was established by a different laboratory from a 55 year old female and was first published in 1984. Based on the different establishment locations and dates, it is likely that YMB-1 is misidentified. [Source: ATCC

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Misidentification Reported By	Reference PubMed ID	Notes
YMB-1-E	ICLAC-00392	Human	Breast carcinoma	CVCL_2815	ZR-75-1	Human	Breast carcinoma	CVCL_0588	Capes-Davis et al, 2013	23136038	Capes-Davis et al compared STR profiles to show that YMB-1-E and ZR-75-1 came from the same donor. ZR-75-1 was established from a 63 year old female and first published in 1978. YMB-1 was established by a different laboratory from a 55 year old female and was first published in 1984. Based on the different establishment locations and dates, it is likely that YMB-1-E is misidentified. [Source: ATCC

The ICLAC Register of Misidentified Cell Lines is curated by the International Cell Line Authentication Committee. The latest version of the Register is available at:
http://iclac.org/databases/cross-contaminations/
The Register lists cell lines that are known to be cross-contaminated or otherwise misidentified.
Table 1 contains those cell lines where there is no authentic stock known to the list contributors.
Table 2 contains those cell lines where some stocks have been shown to be misidentified, but where authentic stock is known to exist.
Table 3 (Withdrawn) contains those cell lines that were initially believed to be misidentified but where further review (e.g., of source references) showed this is not the case.
The Register acts as a preliminary guide to avoiding suspect cell lines; check each cell line that you use before you start work, to see if others have shown it to be problematic.
You should also perform authentication testing of your sample (e.g., by STR profiling for human cell lines) and compare with reference samples before use.
Cell lines are listed in alphabetical order and are added after review of cell line provenance and authentication testing data.
An effort has been made to exclude synonymous cell lines that were legitimately established from the same donor
(e.g., where one cell line was knowingly derived from a parental cell line, or two cell lines were established separately from the same individual).
The "Contaminating Cell Line", in most cases, will have overgrown the claimed original, or will have replaced it by a technical error, and the original cells will no longer exist.
If authentic stocks are known to exist (Table 2), an additional column has been added to show the possible locations for authentic stock.
If authentic stocks are available from a cell line repository, the catalogue number is given in brackets. Repositories are listed in alphabetical order.
Observations made in these lists are based on published reports and details obtained from contributors, cell bank websites, and Wikipedia.
"Reference PubMed ID" refers to the unique ID number assigned to publications by the PubMed database (http://www.ncbi.nlm.nih.gov/pubmed/).
Entries in the last three columns indicate where and how these misidentifications were reported and in no way imply responsibility for the cause by the authors or institutions.
Additional cell line information is available through other databases and resources.
"Cellosaurus AC" refers to the unique ID number assigned to cell lines by the Cellosaurus database (http://web.expasy.org/cellosaurus/).
Cellosaurus acts as a cell line knowledge resource with links to many other online resources.
Researchers are very welcome to submit additional information regarding misidentified cell lines not listed here, authentic stocks, or any other relevant information.
Confusion may also arise from two different cell lines having the same name; information on these would also be welcome.
Please contact info@iclac.org and copy to the ICLAC Chair, Amanda Capes-Davis (acapdav@gmail.com).
The Register of Misidentified Cell Lines was developed by Amanda Capes-Davis and Ian Freshney, and published in 2010. To cite the Register or learn more, please refer to:
Capes-Davis A, Theodosopoulos G, Atkin I, Drexler HG, Kohara A, Macleod RA, Masters JR, Nakamura Y, Reid YA, Reddel RR, Freshney RI (2010)
Check your cultures! A list of cross-contaminated or misidentified cell lines. Int J Cancer 127(1): 1-8. PMID: 20143388.

Table 2. Misidentified cell lines where authentic stock is known to exist

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Authentic Stock Location	Misidentification Reported By	Reference PubMed ID	Notes
1205Lu (WM793 derivative)	ICLAC-00483	Human	Melanoma	CVCL_5239	Unknown, probably from xenograft host	Mixture, human + mouse	Unknown	None	Rockland Immunochemicals Inc.	Nair et al, 2013; Brafford et al, 2016	No PMID	Reviewed by ICLAC (ref: 130523, 170629). ICLAC reviewed 1205Lu in 2013 after it was shown that stocks were a mixture of human and mouse (Nair et al 2013). Samples were sourced from Coriell and not the originators at the Wistar Institute; ICLAC felt it was important to also test material sourced from the originators. ICLAC re-reviewed 1205Lu in 2017 after finding a publication from the originators that examined Coriell and Wistar stocks (Brafford et al 2016). The Wistar stocks "had greater than 98% human cells as measured by FACS" and are now available from Rockland Immunochemicals Inc.
1483	ICLAC-00435	Human	Oral squamous cell carcinoma	CVCL_6980	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	CVCL_7707	Peter G. Sacks, New York University (originator)	Zhao et al, 2011	21868764	Early stocks of the cell line have a unique STR profile and are held by its originator, Dr Peter Sacks.
183	ICLAC-00436	Human	Oropharyngeal squamous cell carcinoma	CVCL_6978	1404, 1406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (synonymous cell lines	Human	Head and neck squamous cell carcinoma	CVCL_1T20 / CVCL_1T19 / CVCL_4910 / CVCL_1T17 / CVCL_4911 / CVCL_4914 / CVCL_4915 /	Peter G. Sacks, New York University (originator)	Zhao et al, 2011	21868764	Early stocks of the cell line have a unique STR profile and are held by its originator, Dr Peter Sacks.
207 (EU-2)	ICLAC-00162	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_K034	REH and SUP-B2	Human	Leukemia, acute lymphoblastic, B cell precursor	CVCL_1650 / CVCL_A312		MacLeod et al, 1999; Drexler et al, 2003	10508494, 12592342	207 was found to be cross-contaminated with a mixture of two cell lines, REH and SUP-B2.
Amdur II (AMDURII)	ICLAC-00289	Human	Skin	CVCL_3643	LLC-PK1	Pig, *Sus scrofa*	Kidney, normal renal cells	CVCL_0391	ATCC (CCL-124)	Milanesi et al, 2003; Yu et al, 2015	14505435, 25877200	Reviewed by ICLAC (ref: 160906). Milanesi et al (2003) tested AMDURII and found it came from an incorrect species (pig - it should be noted that the AFLP profiles in Figure 1A-B are difficult to reconcile and a different species may be present). In 2016, it was noted that ATCC holds Amdur II (CCL-124) and AMDURII was re-investigated. An STR profile for Amdur II was reported in Yu et al (2015)

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Authentic Stock Location	Misidentification Reported By	Reference PubMed ID	Notes
BG-1	ICLAC-00456	Human	Ovarian carcinoma	CVCL_6570	MCF-7	Human	Breast carcinoma	CVCL_0031	University of Montpellier, France	Korch et al, 2012; Li et al, 2014	22710073, 25321415	Reviewed by ICLAC (ref: 120830, 141107). Li et al. (2014) examined stocks of BG-1 obtained from one of the originators, Dr Charles Welander at the University of Montpellier (BG-1 FR), and from Dr Carl Barrett at the NIEHS (BG-1 NIEHS). The names "BG-1 FR" and "BG-1 NIEHS" only exist in this paper and were used by the authors to distinguish the two sources. BG-1 NIEHS corresponded to MCF-7, as previously demonstrated by Korch et al. (2012). Testing of BG-1 FR was consistent with it being authentic.
BJA-B	ICLAC-00031	Human	Bladder carcinoma	CVCL_5711	HeLa	Human	Cervical adenocarcinoma	CVCL_0030		Nelson-Rees & Flandermeyer, 1976	1246601	
BT-20	ICLAC-00104	Human	Breast carcinoma	CVCL_0178	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	ATCC (HTB-19)	Nelson-Rees et al, 1981	6451928	
Ca9-22	ICLAC-00437	Human	Oral squamous cell carcinoma	CVCL_1102	MSK-922	Human	Laryngeal squamous cell carcinoma (recurrence)	CVCL_6989	JCRB (JCRB0625); RIKEN (RCB1976)	Zhao et al, 2011	21868764	Correct cell line held at JCRB.
COLO-720E	ICLAC-00438	Human	Ovarian carcinoma	CVCL_1995	COLO704	Human	Uterine adenocarcinoma	CVCL_1994 / CVCL_AV69		Korch et al, 2012; ICLAC correspondence	22710073	Reviewed by ICLAC (ref: 120830). Korch et al (2012) showed that some samples of COLO-720E correspond to COLO720L. COLO-720E and COLO-720L are documented as coming from the same donor, suggesting that the samples tested by Korch et al are authentic (Ref: ECACC catalogue, information from depositor, George Moore). Other stocks of COLO-720E correspond to COLO684, COLO685 or COLO704 when tested by
D-17	ICLAC-00439	Dog, *Canis familiaris*	Sarcoma (osteosarcoma)	CVCL_1916	Moresco	Dog, *Canis familiaris*	Sarcoma (osteosarcoma)	CVCL_L363	ATCC (CCL-183)	O'Donoghue et al, 2011	21908323	Correct cell line held at the ATCC.
EB-3	ICLAC-00380	Human	Lymphoma, Burkitt	CVCL_1185	Daudi	Human	Lymphoma, Burkitt	CVCL_0008	ATCC (CCL-85); ECACC (90121003)	JCRB website	No PMID	Website states, "Cooperative study by W. Dirks in the DSMZ found this crosscontamination using the database including both ATCC and JCRB. The unique EB-3 (CCL 85) cell line (not crosscontaminated) is available from the ATCC."
FU-RPNT-2	ICLAC-00352	Human	Kidney, renal primitive neuroectodermal tumor	CVCL_4838	FU-RPNT-1	Human	Kidney, renal primitive neuroectodermal tumor	CVCL_4837	RIKEN (RCB2078)	RIKEN website	No PMID	Listed on "Cross-Contamination" page on RIKEN website, thought to be contaminated with FU-RPNT-1. However, the STR profiles for FU-RPNT-1 and -2 have been checked by ACD and are distinctly different; the current stocks are not cross-contaminated.
Grey	ICLAC-00440	Dog, *Canis familiaris*	Sarcoma (osteosarcoma)	CVCL_L354	Unknown	Human	Unknown	None		O'Donoghue et al, 2011	21908323	This cell line was reported to be misidentified in O'Donoghue et al (2011). The authors have since corresponded with ACD saying that they have profiled another Grey sample with a unique canine STR profile.
HPB-ALL	ICLAC-00290	Human	Leukemia, acute lymphoblastic, T cell	CVCL_1820	JURKAT	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0065	DSMZ (ACC-483); RIKEN (RCB1935)	Drexler et al, 2003	12592342	Correct cell line held at DSMZ.

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Authentic Stock Location	Misidentification Reported By	Reference PubMed ID	Notes
J-82	ICLAC-00105	Human	Bladder carcinoma	CVCL_0359	T-24	Human	Bladder carcinoma	CVCL_0554		Masters et al, 1986	3708594	
JHH-1	ICLAC-00353	Human	Liver, hepatocellular carcinoma	CVCL_2785	Unknown	Mouse	Unknown	None	JCRB (JCRB1062)	JCRB website	No PMID	Listed on "Misidentified Cell Lines" page on JCRB website, thought to be contaminated with mouse. However, the catalog entry for JHH-1 clearly shows that this stock is human; the stock currently held is not cross-contaminated.
KARPAS-45	ICLAC-00163	Human	Leukemia, acute lymphoblastic, T cell	CVCL_1326	Unknown	Human	Unknown	None	DSMZ (ACC-105), ECACC (06072602)	Drexler et al, 1999	10516762	Correct cell line held at DSMZ (Drexler et al, 2003; PMID 12592342; catalogue number ACC-105) and ECACC (catalogue number 06072602). Additional STR loci were provided by ECACC to demonstrate that these two samples correspond.
KBM-3	ICLAC-00291	Human	Leukemia, acute myeloid, M4	CVCL_A425	HL-60	Human	Leukemia, acute myeloid, M2	CVCL_0002		Drexler et al, 2003	12592342	Correct cell line held at DSMZ.
KE-37	ICLAC-00164	Human	Leukemia, acute lymphoblastic, T cell	CVCL_1327	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0207	DSMZ (ACC-46)	Drexler et al, 1999	10516762	Correct cell line held at DSMZ (Drexler et al, 2003; PMID 12592342).
L-540	ICLAC-00292	Human	Lymphoma, Hodgkin	CVCL_1362	CCRF-CEM	Human	Leukemia, acute lymphoblastic, T cell	CVCL_0207	DSMZ (ACC-72)	Drexler et al, 2003	12592342	Correct cell line held at DSMZ.
MB-02	ICLAC-00165	Human	Leukemia, acute myeloid, M7	CVCL_7075	HU-3	Human	Leukemia, acute myeloid, M7	CVCL_A619		Drexler et al, 1999	10516762	Correct cell line held at DSMZ (Drexler et al, 2003; PMID 12592342).
MDA1986LN	ICLAC-00441	Human	Oral squamous cell carcinoma (lymph node)	CVCL_AT80	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	CVCL_7707	Peter G. Sacks, New York University (originator)	Zhao et al, 2011	21868764	Early stocks of the cell line have a unique STR profile and are held by its originator, Dr Peter Sacks.
MDA686LN	ICLAC-00442	Human	Oropharyngeal squamous cell carcinoma (lymph node)	CVCL_6984	UM-SCC-1	Human	Oral squamous cell carcinoma (recurrence)	CVCL_7707	Peter G. Sacks, New York University (originator)	Zhao et al, 2011	21868764	Early stocks of the cell line have a unique STR profile and are held by its originator, Dr Peter Sacks.
MDA686TU	ICLAC-00443	Human	Oropharyngeal squamous cell carcinoma	CVCL_6985	1404, 1406, Tu-138, Tu-158LN, Tu-159, Tu-182, Tu-212, Tu-212LN (synonymous cell lines	Human	Head and neck squamous cell carcinoma	CVCL_1T20 / CVCL_1T19 / CVCL_4910 / CVCL_1T17 / CVCL_4911 / CVCL_4914 / CVCL_4915 /	Peter G. Sacks, New York University (originator)	Zhao et al, 2011	21868764	Early stocks of the cell line have a unique STR profile and are held by its originator, Dr Peter Sacks.
MKN-7	ICLAC-00166	Human	Gastric carcinoma	CVCL_1417	Unknown	Human	Lymphoblastoid cells	None	JCRB (JCRB1025); RIKEN (RCB0999)	Suzuki and Sekiguchi, 1999	No PMID (book chapter)	Reviewed by ICLAC (ref: 140421). The JCRB notes that stocks obtained from Dr Suzuki (JCRB0082) are misidentified.

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NCI-H1339	ICLAC-00534	Human	Lung carcinoma	CVCL_A472	NCI-H157, NCI-H1264 (synonymous cell lines, donor origin unknown)	Human	Lung carcinoma	CVCL_0463 / CVCL_3970	Adi F. Gazdar and John D. Minna, UTSouthwestern (originators)	Yu et al, 2015	25877200	Reviewed by ICLAC (ref: 170629). NCI-H1339, NCI-H157, and NCI-H1264 are reported to come from different donors but have matching STR profiles (Yu et al, 2015). ICLAC made contact with the originator's laboratory to discuss the match. They have fresh stocks of NCI-H1339 with the correct fingerprint matching NCI-BL1339, which is a lymphoblastoid cell line from the same donor. Note: H-1339 (deposited at DSMZ) is a different cell line with a unique STR profile.
NCI-H929	ICLAC-00478	Human	Myeloma	CVCL_1600	K-562	Human	Leukemia, chronic myeloid, blast crisis	CVCL_0004	ATCC (CRL-9068); DSMZ (ACC-163); ECACC (95050415)	MacLeod et al, 2013	23319659	Reviewed by ICLAC (ref: 130129). The authors note that the stocks in this paper are misidentified, but NCI-H929 is an authentic cell line in its own right. Authentic stocks are held by multiple cell banks.
OCI-Ly3	ICLAC-00517	Human	Lymphoma, non-Hodgkin, diffuse large B-cell	CVCL_8800	Unknown	Human	Unknown	CVCL_AT69	DMSZ (ACC-761)	Personal communication, A. Bairoch	No PMID	Reviewed by ICLAC (ref: 160506). The publicly available STR profiles for OCI-Ly3 come from different donors [sources: Yu et al 2015, PMID 25877200; DSMZ catalogue, ACC 761]. The DSMZ performed both STR profiling and karyotypic analysis on their sample (using the same culture for both tests) and demonstrated that its karyotype corresponds to the originator's [source: Mehra et al 2002, PMID 11807979]. A unique chromosomal arrangement, IGH-SPIB, is present in OCI-Ly3 and the DSMZ sample has this marker, also corresponding to the originator's publication [source: Lenz et al 2007, PMID 17353367]. This was further discussed with the originator, who noted that misidentified stocks exist of OCI-Ly3, referred to as the "Boston variant". The originator confirmed that the DSMZ data matches the authentic sample of OCI-Ly3, concluding that the DSMZ sample (ACC 761) is authentic and the Yu et al sample (GNE 587170) is misidentified.
OV-1063	ICLAC-00340	Human	Ovarian carcinoma	CVCL_4366	DU-145	Human	Prostate carcinoma	CVCL_0105	Hadassah University Hospital	ATCC website; personal communication, E. Hall	No PMID	Reviewed by ICLAC (ref: 160115, 180903). ATCC website notes that the cell line carries a Y chromosome and is therefore unlikely to come from the original female donor [source: "Misidentified Cell Lines" page, ATCC website]. A match to DU 145 was discovered by ICLAC member Erin Hall. Investigators at Hadassah University Hospital then made contact with ICLAC with a unique STR profile for OV-1063, held by Hadassah University Hospital.
Parks	ICLAC-00444	Dog, *Canis familiaris*	Melanoma	CVCL_DN32	Unknown	Human	Unknown	None		O'Donoghue et al, 2011	21908323	The authors note that another sample tested as canine, so some stocks are known to come from the correct species (O'Donoghue et al, 2011).
RMG-II	ICLAC-00354	Human	Ovarian carcinoma	CVCL_2803	RMG-I	Human	Ovarian carcinoma	CVCL_1662	JCRB (JCRB0172.1)	JCRB website	No PMID	Reviewed by ICLAC (ref: 140930). The JCRB used STR profiling to show that some stocks of RMG-I and RMG-II came from the same donor. RMG-I was established from a 34 year old female and published in 1988. RMG-II was established by the same laboratory from a 53 year old female and published in 1991. Additional stock of RMG-II (JCRB0172.1) has been obtained from the originator; this stock does not
RPMI-8402	ICLAC-00167	Human	Leukemia, acute lymphoblastic, T cell	CVCL_1667	Unknown	Human	Unknown	None	DSMZ (ACC-290)	Drexler et al, 1999	10516762	Correct cell line held at DSMZ (Drexler et al, 2003; PMID 12592342).
RT4	ICLAC-00106	Human	Bladder carcinoma	CVCL_0036	HeLa	Human	Cervical adenocarcinoma	CVCL_0030	ATCC (HTB-2); DSMZ (ACC-412); ECACC (91091914)	Nelson-Rees et al, 1981	6451928	

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Authentic Stock Location	Misidentification Reported By	Reference PubMed ID	Notes
SUM229PE	ICLAC-00548	Human	Breast carcinoma	CVCL_5594	SUM149PT	Human	Breast carcinoma	CVCL_3422	Asterand (BioIVT)	ICLAC correspondence	No PMID	Reviewed by ICLAC (ref: 180221). SUM229PE was established by Stephen Ethier and distributed by Asterand (later acquired by BioIVT). ICLAC was notified that the STR profile in Asterand's Certificate of Analysis matched SUM149PT. Stephen Ethier was contacted to ask about this finding and confirmed that SUM229PE and SUM149PT were established from different donors. An updated Certificate of Analysis was then issued; looking at the STR profile, the problem appears to have been corrected. The correct STR profile is available on Cellosaurus.
T3M-12	ICLAC-00355	Human	Lung carcinoma	CVCL_4058	T3M-1	Human	Oral carcinoma	CVCL_8289	RIKEN (RCB2281)	RIKEN website	No PMID	Listed on "Cross-Contamination" page on RIKEN website, thought to be contaminated with T3M-1. However, the STR profiles for T3M-12 and T3M-1 have been checked by ACD and are distinctly different; the current stocks are not cross-contaminated.
U-373 MG	ICLAC-00295	Human	Glioblastoma	CVCL_2219	U-251 MG	Human	Glioblastoma	CVCL_0021	ECACC (08061901)	Torsvik et al, 2014; Timerman & Yeung, 2014; ECACC website; ATCC website	24810477, 24333272	Correct cell line held at ECACC, which now holds stock from the originating laboratory at Uppsala. Other locations may hold a separate, contaminated stock; STR profiles should be confirmed prior to use.
U-87 MG (U-87 MG Uppsala)	ICLAC-00535	Human	Glioblastoma	CVCL_GP63	Unknown, referred to as U-87 MG ATCC	Human	Unknown, believed to be glioblastoma	CVCL_GP63	Bengt Westermark, University of Uppsala (originator)	Allen et al, 2016	27582061	Reviewed by ICLAC (ref: 170629). The original laboratory performed STR profiling on their stocks of U-87 MG and compared to ATCC stocks of U-87 MG; STR profiles did not correspond to the same donor. Mitochondrial DNA (HV1, HV2 regions) from the Uppsala stock matched original donor tissue. The authors concluded that the ATCC stocks of U-87 MG came from a different donor to the Uppsala stocks, which are authentic because they match the original donor. The ATCC stocks have a strong similarity to other cell lines of CNS origin, suggesting a common tissue origin.
U-937	ICLAC-00168	Human	Lymphoma, histiocytic	CVCL_0007	Unknown	Human	Unknown	None	ATCC (CRL-1593.2); DSMZ (ACC-5); ECACC (85011440); JCRB (JCRB9021)	Drexler et al, 1999	10516762	Some ATCC stocks were cross-contaminated by K-562 initially (Reid et al, 1995; PMID 7759961). The problem was corrected and subsequent stocks have been confirmed to carry only U-937. The problem referred to by Drexler et al (1999) may be separate.
UROtsa	ICLAC-00484	Human	Bladder, non-malignant urothelial cells	CVCL_0571	T-24	Human	Bladder carcinoma	CVCL_0554		Johnen et al, 2013	23691160	Reviewed by ICLAC (ref: 131127). The authors note that SV40 T-antigen is no longer expressed by authentic stocks of UROtsa. Stocks tested were two independent strains dating back to 1999 and 2001.
UT-7	ICLAC-00293	Human	Leukemia, acute myeloid, M7	CVCL_2233	U-937	Human	Lymphoma, histiocytic	CVCL_0007	DSMZ (ACC-137)	Drexler et al, 2003	12592342	Correct cell line held at DSMZ.
VM-CUB-III	ICLAC-00102	Human	Bladder carcinoma	CVCL_9830	VM-CUB-I	Human	Bladder carcinoma	CVCL_1786		Masters et al, 1986; Earl et al, 2015 [erratum]; Nickerson et al, 2017	3708594, 26621286, 27270441	Reviewed by ICLAC (ref: 180903). Isoenzyme analysis was performed to show that VM-CUB-I and VM-CUB-III had a shared donor origin. Two publications subsequently listed STR profiles for VM-CUB-III that do not match VM-CUB-I and appear to be unique. Samples can be traced back to the Human Tumor Cell Line Bank at Sloan-Kettering Institute, where VM-CUB-III was established by Y. Kodera (Dracopoli and Fogh, 1983; PMID 6220172).
Yamada	ICLAC-00445	Dog, *Canis familiaris*	Sarcoma (osteosarcoma)	CVCL_FA16	Unknown	Mouse	Unknown	None		O'Donoghue et al, 2011	21908323	The authors note that another sample tested as canine, so some stocks are known to come from the correct species (O'Donoghue et al, 2011).

The ICLAC Register of Misidentified Cell Lines is curated by the International Cell Line Authentication Committee. The latest version of the Register is available at:
http://iclac.org/databases/cross-contaminations/
The Register lists cell lines that are known to be cross-contaminated or otherwise misidentified.
Table 1 contains those cell lines where there is no authentic stock known to the list contributors.
Table 2 contains those cell lines where some stocks have been shown to be misidentified, but where authentic stock is known to exist.
Table 3 (Withdrawn) contains those cell lines that were initially believed to be misidentified but where further review (e.g., of source references) showed this is not the case.
The Register acts as a preliminary guide to avoiding suspect cell lines; check each cell line that you use before you start work, to see if others have shown it to be problematic.
You should also perform authentication testing of your sample (e.g., by STR profiling for human cell lines) and compare with reference samples before use.
Cell lines are listed in alphabetical order and are added after review of cell line provenance and authentication testing data.
An effort has been made to exclude synonymous cell lines that were legitimately established from the same donor
(e.g., where one cell line was knowingly derived from a parental cell line, or two cell lines were established separately from the same individual).
The "Contaminating Cell Line", in most cases, will have overgrown the claimed original, or will have replaced it by a technical error, and the original cells will no longer exist.
If authentic stocks are known to exist (Table 2), an additional column has been added to show the possible locations for authentic stock.
If authentic stocks are available from a cell line repository, the catalogue number is given in brackets. Repositories are listed in alphabetical order.
Observations made in these lists are based on published reports and details obtained from contributors, cell bank websites, and Wikipedia.
"Reference PubMed ID" refers to the unique ID number assigned to publications by the PubMed database (http://www.ncbi.nlm.nih.gov/pubmed/).
Entries in the last three columns indicate where and how these misidentifications were reported and in no way imply responsibility for the cause by the authors or institutions.
Additional cell line information is available through other databases and resources.
"Cellosaurus AC" refers to the unique ID number assigned to cell lines by the Cellosaurus database (http://web.expasy.org/cellosaurus/).
Cellosaurus acts as a cell line knowledge resource with links to many other online resources.
Researchers are very welcome to submit additional information regarding misidentified cell lines not listed here, authentic stocks, or any other relevant information.
Confusion may also arise from two different cell lines having the same name; information on these would also be welcome.
Please contact info@iclac.org and copy to the ICLAC Chair, Amanda Capes-Davis (acapdav@gmail.com).
The Register of Misidentified Cell Lines was developed by Amanda Capes-Davis and Ian Freshney, and published in 2010. To cite the Register or learn more, please refer to:
Capes-Davis A, Theodosopoulos G, Atkin I, Drexler HG, Kohara A, Macleod RA, Masters JR, Nakamura Y, Reid YA, Reddel RR, Freshney RI (2010)
Check your cultures! A list of cross-contaminated or misidentified cell lines. Int J Cancer 127(1): 1-8. PMID: 20143388.

Table 3. Withdrawn cell lines where evidence indicates that they are not misidentified

Misidentified Cell Line	Registration ID	Claimed Species	Claimed Cell Type	Misidentified Cell Line, Cellosaurus AC	Contaminating Cell Line	Actual Species	Actual Cell Type	Contaminating Cell Line, Cellosaurus AC	Misidentification Reported By	Reference PubMed ID	Notes
B2-17	ICLAC-00370	Human	Astrocytoma	CVCL_2864	U-251 MG	Human	Glioblastoma	CVCL_0021	JCRB website	No PMID	Reviewed by ICLAC (ref: 191110). This cell line was originally added in V6.6 (November 2010), based on its STR profile, which corresponded to U-251 MG. The original source reference was not listed in PubMed and was not identified at that time. The source reference was subsequently identified (Takeshita et al, 1990; CLPUB00152, in Japanese). It clearly states that B2-17 was a legitimate derivative of U-251 MG.

Cell Bank Websites 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.jsp
JCRB: Japanese Collection of Research Bioresources	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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