Somatic mutations of the histone H3K27 demethylase, *UTX*, in human cancer. van Haaften et al.

Supplementary Information

Materials/Methods –

Genomic DNA samples were obtained from cancer cell lines or from patient samples as indicated. Collection and use of patient samples were approved by the IRB of each institution in addition to the study having LREC approval locally. Cancer cell lines and clinical samples screened are given in Supplemental Tables 1 and 2, respectively.

SNP-Array hybridization was as per Affymetrix Protocols and as previously described [1]. PCR-based exon resequencing was performed and data analysed as previously described [1]. Primer sequences are listed in Supplemental Table 3.

For RT-PCR analysis 3µg of total RNA, extracted using TRIZOL (Invitrogen), was reverse transcribed using Superscript III (Invitrogen). cDNA equivalent to 16ng input RNA was used in each subsequent PCR reaction. RT PCR specific primers (2.5ng/µl) are listed in Supplemental Table 3.

For western blotting, total cell lysates in RIPA buffer (150 mM sodium chloride, 1% Igepal CA-630, 0.5% sodium deoxycholate, 0.1% SDS and 50 mM Tris, pH 8) with protease inhibitors (Sigma), were separated using reducing SDS-page (Nupage system, Invitrogen). Following electro-transfer to PVDF membrane (Invitrogen) blocking (4ºC, 16hrs) antibody incubations and washes were done in 1x blocking buffer (Sigma) probed with primary antibodies for 3 h at RT, washed twice for 5 min and incubated with the appropriate peroxidase-linked secondary antibody for 1 h at RT and washed three times 5 min. All incubations and washes were done in 1x blocking buffer. UTX antiserum[2], was diluted 1:5000. Anti-β-actin (Abcam 8226), HRP-goat-anti-mouse (Abcam 6789) and HRP-goat-anti-rabbit (Cell Signaling #7074) were diluted according to manufacturer's instructions. Protein bands were visualised using SuperSignal West Pico Chemiluminescent substrate (Pierce).

UTX reintroduction/expression/ChIP PCR

The full length open reading frame of UTX was cloned into pExchange-1 (Stratagene) starting from the Origene expression vector SC112984. Cells were transfected with the UTX expression vector or empty vector control using lipofectamine (Invitrogen). Cell doubling times were determined using Cyquant cell proliferation assay (Invitrogen) with puromycin selected cells. Two days post transfection the cells were harvested for RNA extraction. Gene expression was analysed on Illumina Human WG-6 v2 BeadChips following standard protocols. ChIP-QPCR was started two days after transfection using the SimpleChIP Enzymatic Chromatin IP Kit (Cell Signalling) with antibodies against H3K27me3 (Upstate 07-449). The primers sequences are shown below.

PCDH19_f ATGGTGCACGGGAGCTGT
PCDH19_r GAGCTTTCTCCGGCTTTCTC

SOX21_f TTGCTGATCTCCGAGTTGTG
SOX21_r GCAGCCAACATTGATTTCCT
SFRP4_f GAAGGGACAGCGAAAGATGA
SFRP4_r CCACTAGGATGGAGAGGAACA
APRT_f GCCTTGACTCGCACTTTTGT
APRT_r TAGGCGCCATCGATTTTAAG
ACTB _f ACGCCTCCGACCAGTGTT
ACTB _r GCCCAGATTGGGGACAAA
(SFRP4, APRT and ACTB primers are taken from Schlesinger et al. [3])

Analysis and Statistics

Data quality test and normalization were performed using the Lumi package implemented in R [4]. The quality of each array was assessed by checking the mean and standard deviation of over-all expression, ratios of detectable probes, expression information of control probes (housekeeping genes) and the correlation among replicated samples. Background correction of each array was using variance-stabilizing transformation[5]. The data were normalized by the quantile method and expression level of each gene was log transformed. Differential expression was assessed was using the Limma package from BioConductor[6].The paired t-test was used to access the significant level of expression change before and after UTX reintroduction. P values were corrected by Benjamini/Hochberg paradigm with a false discovery rate of 0.05.

Enrichment tests for chromatin marks were based on comparison to target sets derived from the literature on genes with known H3K4, H3K27 and polycomb sites[7,8]. Significance was assessed using Pearson's chi-squared test implemented in R, comparing H3K4/K27 and polycomb target-set enrichment in genes with significantly altered expression after UTX reintroduction versus target-set enrichment in all genes included in the expression array. Expression data have been deposited in ArrayExpress, Accession number E-MTAB-84.

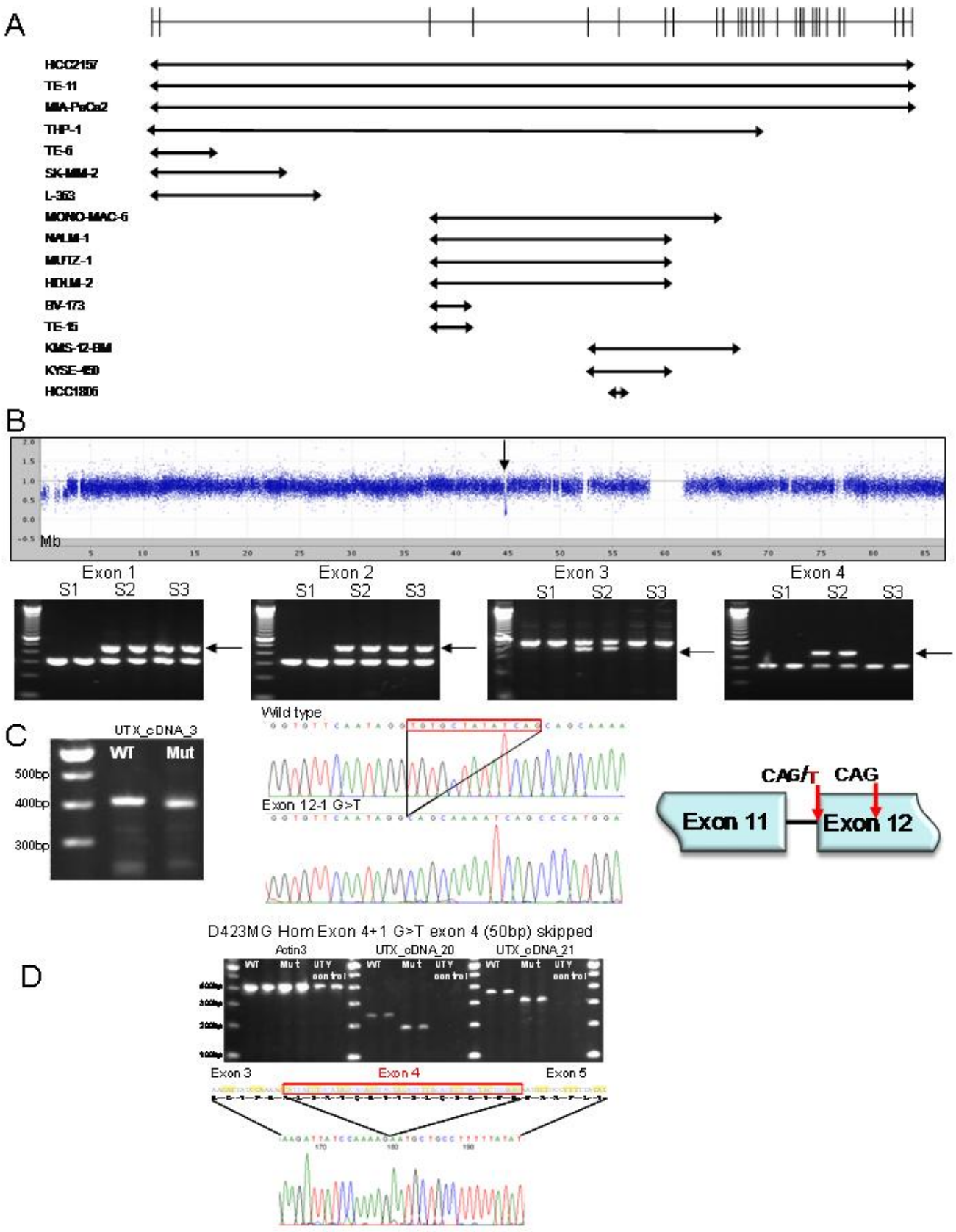
1. Greenman, C. et al. Patterns of somatic mutation in human cancer genomes. *Nature* **446**, 153-158 (2007).
2. Issaeva, I. et al. Knockdown of ALR (MLL2) Reveals ALR Target Genes and Leads to Alterations in Cell Adhesion and Growth. *Mol. Cell. Biol.* **27**, 1889-1903 (2007).
3. Schlesinger, Y. et al. Polycomb-mediated methylation on Lys27 of histone H3 pre-marks genes for de novo methylation in cancer. *Nat Genet* **39**, 232-236 (2007).
4. Du, P., Kibbe, W.A. & Lin, S.M. lumi: a pipeline for processing Illumina microarray. *Bioinformatics* **24**, 1547-1548 (2008).
5. Lin, S.M., Du, P., Huber, W. & Kibbe, W.A. Model-based variance-stabilizing transformation for Illumina microarray data. *Nucl. Acids Res.* **36**, e11- (2008).
6. Smyth, G. Linear models and empirical bayes methods for assessing differential expression in microarray experiments. *Stat Appl Genet Mol Biol.* **3**, article 3 (2004).
7. Bracken, A.P., Dietrich, N., Pasini, D., Hansen, K.H. & Helin, K. Genome-wide mapping of Polycomb target genes unravels their roles in cell fate transitions. *Genes & Development* **20**, 1123-1136 (2006).

8. Pan, G. et al. Whole-Genome Analysis of Histone H3 Lysine 4 and Lysine 27 Methylation in Human Embryonic Stem Cells. *Cell Stem Cell* **1**, 299-312 (2007).

Supplemental Figure Legend:

Figure S1:
1a) Homo/Hemizygous *UTX* deletions in cancer cell lines. Exon/intron structure of *UTX* is shown, with cancers and extent of deletion indicated. 1b) SNP6 plot for X chromosome showing hemizygous *UTX* deletion in the AML line MONO-MAC-6. Multiplex PCR *UTX* exons 1-4 indicating exonic deletions (samples in duplicate). Arrows indicate the UTX specific bands. S1:MIA-PaCa-2, deletion exons 1-4; S2:RPMI-8226, no deletion; S3:MONO-MAC-6, deletion exons 3, 4. 1c) Splice site mutation in renal carcinoma showing aberrantly migrating band on RT-PCR analysis, sequencing showing generation of a cryptic splice site and resulting altered transcript. 1d) Splice splice site mutation in a glioblastoma showing altered size RT-PCR product and 50bp deletion in the resulting transcript leading to a premature termination codon.

Supplementary Figure 1



Supplementary Table 1 - Cancer Cell Lines Screened

Cell line name	age at diagnosis	sex	Histology	Histology Subtype
RS4-11	32	f	acute_leukaemia	
KY821	28	m	acute_leukaemia_of_ambiguous_lineage	
MV-4-11	10	m	acute_leukaemia_of_ambiguous_lineage	
BALL-1		u	acute_lymphoblastic_B_cell_leukaemia	
MHH-CALL-2	15	f	acute_lymphoblastic_B_cell_leukaemia	
MHH-CALL-4	10	m	acute_lymphoblastic_B_cell_leukaemia	
MHH-PREB-1	5	m	acute_lymphoblastic_B_cell_leukaemia	
MN-60	20	m	acute_lymphoblastic_B_cell_leukaemia	
NALM-6	19	m	acute_lymphoblastic_B_cell_leukaemia	
REH	15	f	acute_lymphoblastic_B_cell_leukaemia	
SUP-B8		u	acute_lymphoblastic_B_cell_leukaemia	
U-698-M	7	m	acute_lymphoblastic_B_cell_leukaemia	
380	15	m	acute_lymphoblastic_leukaemia	
697	12	m	acute_lymphoblastic_leukaemia	
ALL-PO	0.33	f	acute_lymphoblastic_leukaemia	
BE-13	11	f	acute_lymphoblastic_leukaemia	
CCRF-CEM	4	f	acute_lymphoblastic_leukaemia	
GR-ST	10	m	acute_lymphoblastic_leukaemia	
HAL-01	17	f	acute_lymphoblastic_leukaemia	
KARPAS-45	2	m	acute_lymphoblastic_leukaemia	
KE-37	27	m	acute_lymphoblastic_leukaemia	
LC4-1	13	f	acute_lymphoblastic_leukaemia	
MOLT-4	19	m	acute_lymphoblastic_leukaemia	
P30-OHK	11	f	acute_lymphoblastic_leukaemia	
ATN-1	47	m	acute_lymphoblastic_T_cell_leukaemia	
J-RT3-T3-5	14	m	acute_lymphoblastic_T_cell_leukaemia	
LOUCY	38	f	acute_lymphoblastic_T_cell_leukaemia	
MOLT-13	2	f	acute_lymphoblastic_T_cell_leukaemia	
MOLT-16	5	f	acute_lymphoblastic_T_cell_leukaemia	
P12-ICHIKAWA	7	m	acute_lymphoblastic_T_cell_leukaemia	
PF-382	6	f	acute_lymphoblastic_T_cell_leukaemia	
RPMI-8402	16	f	acute_lymphoblastic_T_cell_leukaemia	
SUP-T1	8	m	acute_lymphoblastic_T_cell_leukaemia	
TALL-1	28	m	acute_lymphoblastic_T_cell_leukaemia	
AML-193	13	f	acute_myeloid_leukaemia	
CESS		u	acute_myeloid_leukaemia	
CMK	0.8	m	acute_myeloid_leukaemia	
CTV-1	40	f	acute_myeloid_leukaemia	
GDM-1	66	f	acute_myeloid_leukaemia	
HEL		u	acute_myeloid_leukaemia	
HL-60	36	f	acute_myeloid_leukaemia	
K052	46	m	acute_myeloid_leukaemia	
KASUMI-1	7	m	acute_myeloid_leukaemia	

KG-1	59	m	acute_myeloid_leukaemia	
KMOE-2	2	f	acute_myeloid_leukaemia	
MC-1010	25	m	acute_myeloid_leukaemia	
ML-2	26	m	acute_myeloid_leukaemia	
MONO-MAC-6	64	m	acute_myeloid_leukaemia	
NB4	23	f	acute_myeloid_leukaemia	
NKM-1		u	acute_myeloid_leukaemia	
NOMO-1		u	acute_myeloid_leukaemia	
OCI-AML2	65	m	acute_myeloid_leukaemia	
P31-FUJ		u	acute_myeloid_leukaemia	
QIMR-WIL		u	acute_myeloid_leukaemia	
SIG-M5	63	m	acute_myeloid_leukaemia	
THP-1	1	m	acute_myeloid_leukaemia	
NCI-H295	48	f	adrenal_cortical_carcinoma	
SW13	55	f	adrenal_cortical_carcinoma	
C8166		u	adult_T_cell_lymphoma-leukaemia	
HH	61	m	adult_T_cell_lymphoma-leukaemia	
KARPAS-299	25	m	anaplastic_large_cell_lymphoma	
SU-DHL-1	10	m	anaplastic_large_cell_lymphoma	
B2-17	75	m	astrocytoma	
MOG-G-CCM		u	astrocytoma	
MOG-G-UVW		u	astrocytoma	
SF126		u	astrocytoma	
SK-MG-1		u	astrocytoma	
SW1088	72	m	astrocytoma	
KINGS-1		m	astrocytoma_Grade_III	
no-10	62	m	astrocytoma_Grade_III	
no-11	64	f	astrocytoma_Grade_III	
SW1783	68	m	astrocytoma_Grade_III	
BC-1	46	m	B_cell_lymphoma_unspecified	
BC-3	85	m	B_cell_lymphoma_unspecified	
CRO-AP2	49	m	B_cell_lymphoma_unspecified	
CRO-AP5	35	m	B_cell_lymphoma_unspecified	
CTB-1	70	m	B_cell_lymphoma_unspecified	
HT	70	m	B_cell_lymphoma_unspecified	
MC116		m	B_cell_lymphoma_unspecified	
RL	52	m	B_cell_lymphoma_unspecified	
SCC-3	20	f	B_cell_lymphoma_unspecified	
TUR	37	m	B_cell_lymphoma_unspecified	
5637	68	m	bladder_ca_NS	
DSH1			bladder_ca_NS	
J82			bladder_ca_NS	
LB831-BLC	64	m	bladder_ca_NS	
RT4	63	m	bladder_squamous_cell_ca	
639-V	69	m	bladder_transitional_cell_ca	
647-V		u	bladder_transitional_cell_ca	
BFTC-905	51	f	bladder_transitional_cell_ca	

HT-1197	44	m	bladder_transitional_cell_ca	
HT-1376	58	f	bladder_transitional_cell_ca	
KU-19-19	76	m	bladder_transitional_cell_ca	
RT-112		f	bladder_transitional_cell_ca	
SW1710	84	f	bladder_transitional_cell_ca	
SW780	80	f	bladder_transitional_cell_ca	
T-24	81	f	bladder_transitional_cell_ca	
TCCSUP	67	f	bladder_transitional_cell_ca	
UM-UC-3		m	bladder_transitional_cell_ca	
VM-CUB-1		m	bladder_transitional_cell_ca	
BV-173	45	m	blast_phase_chronic_myeloid_leukaemia	
CML-T1	36	f	blast_phase_chronic_myeloid_leukaemia	
EM-2	5	f	blast_phase_chronic_myeloid_leukaemia	
LAMA-84	29	f	blast_phase_chronic_myeloid_leukaemia	
MEG-01	55	m	blast_phase_chronic_myeloid_leukaemia	
NALM-1	3	f	blast_phase_chronic_myeloid_leukaemia	
SJSA-1	19	m	bone_NS	
AU565	43	f	Breast_ca	
BT-20	74	f	Breast_ca	
BT-474	60	f	Breast_ca	
BT-549	72	f	Breast_ca	
CAL-120	43	f	Breast_ca	
CAL-148	58	f	Breast_ca	
CAL-51	45	f	Breast_ca	
CAL-85-1	35	f	Breast_ca	
CAMA-1	51	f	Breast_ca	
COLO-824	52	m	Breast_ca	
DU-4475	62	f	Breast_ca	
EFM-19	50	f	Breast_ca	
EVSA-T		f	Breast_ca	
HCC1143	52	f	Breast_ca	
HCC1187	41	f	Breast_ca	
HCC1395	43	f	Breast_ca	
HCC1419	42	f	Breast_ca	
HCC1569	70	f	Breast_ca	
HCC1599	44	f	Breast_ca	
HCC1806	60	f	Breast_ca	
HCC1937	23	f	Breast_ca	
HCC1954	61	f	Breast_ca	
HCC2157	48	f	Breast_ca	
HCC2218	38	f	Breast_ca	

HCC38	50	f	Breast_ca	
HCC70	49	f	Breast_ca	
Hs-578-T	74	f	Breast_ca	
MCF7	69	u	Breast_ca	
MDA-MB-134-VI	47	f	Breast_ca	
MDA-MB-157		f	Breast_ca	
MDA-MB-175-VII	56	f	Breast_ca	
MDA-MB-231	51	f	Breast_ca	
MDA-MB-361	40	f	Breast_ca	
MDA-MB-415	38	f	Breast_ca	
MDA-MB-435		f	Breast_ca	
MDA-MB-453	48	f	Breast_ca	
MDA-MB-468	51	f	Breast_ca	
MFM-223		f	Breast_ca	
MRK-nu-1	46	f	Breast_ca	
NCI-ADR-RES		u	Breast_ca	
OCUB-M	53	f	Breast_ca	
T47D	54	f	Breast_ca	
UACC-812	43	f	Breast_ca	
UACC-893	57	f	Breast_ca	
ZR-75-30	47	f	Breast_ca	
BL-41	8	m	Burkitt_lymphoma	
BL-70	16	m	Burkitt_lymphoma	
CA46		m	Burkitt_lymphoma	
Daudi	16	m	Burkitt_lymphoma	
DG-75	10	m	Burkitt_lymphoma	
EB2	7	f	Burkitt_lymphoma	
EB-3	3	m	Burkitt_lymphoma	
GA-10-Clone-20	41	m	Burkitt_lymphoma	
GA-10-Clone-4	41	m	Burkitt_lymphoma	
JiyoyeP-2003		m	Burkitt_lymphoma	
Raji	11	m	Burkitt_lymphoma	
Ramos-2G6-4C10	3	m	Burkitt_lymphoma	
ST486		f	Burkitt_lymphoma	
TE-161-T	11	m	Burkitt_lymphoma	
BOKU		f	cervical_ca	
C-33-A	66	f	cervical_ca	
C-4-II	41	f	cervical_ca	
Ca-Ski	40	f	cervical_ca	
DoTc2-4510		f	cervical_ca	
HeLaSF	31	f	cervical_ca	
HT-3	58	f	cervical_ca	
ME-180	66	f	cervical_ca	
OMC-1	52	f	cervical_ca	
SiHa	55	f	cervical_ca	
SKG-IIIa		f	cervical_ca	
SW756	46	f	cervical_ca	

TC-YIK	31	f	cervical_ca	
EGI-1	52	m	cholangiocarcinoma	
ETK-1		f	cholangiocarcinoma	
HuCCT1		u	cholangiocarcinoma	
HuH-28		u	cholangiocarcinoma	
TGBC24TKB		f	cholangiocarcinoma	
H-EMC-SS	77	f	chondrosarcoma	
JAR	24	f	choriocarcinoma	
JEG-3		f	choriocarcinoma	
SCH	46	m	choriocarcinoma	
EoL-1-cell	33	m	chronic_eosinophilic_leukaemia-hypereosinophilic_syndrome	
EHEB	69	f	chronic_lymphocytic_leukaemia-small_lymphocytic_lymphoma	
JVM-2	63	f	chronic_lymphocytic_leukaemia-small_lymphocytic_lymphoma	
JVM-3	73	m	chronic_lymphocytic_leukaemia-small_lymphocytic_lymphoma	
K-562	53	f	chronic_myeloid_leukaemia	
KU812		m	chronic_myeloid_leukaemia	
RPMI-8866	51	f	chronic_myeloid_leukaemia	
C2BBe1	72	m	colorectal_carcinoma	
CaR-1		u	colorectal_carcinoma	
CoCM-1		u	colorectal_carcinoma	
COLO-205	70	m	colorectal_carcinoma	
COLO-320-HSR	55	m	colorectal_carcinoma	
COLO-678	69	m	colorectal_carcinoma	
COLO-741	69	f	colorectal_carcinoma	
CW-2	55	f	colorectal_carcinoma	
Gp2D	71	f	colorectal_carcinoma	
GP5d	71	f	colorectal_carcinoma	
HCC2998		u	colorectal_carcinoma	
HCT-116		m	colorectal_carcinoma	
HCT-15		m	colorectal_carcinoma	
HT-29	44	f	colorectal_carcinoma	
HT55		u	colorectal_carcinoma	
KM12		u	colorectal_carcinoma	
LoVo	56	m	colorectal_carcinoma	
LS-1034	54	m	colorectal_carcinoma	
LS-123	65	f	colorectal_carcinoma	
LS-174T	58	f	colorectal_carcinoma	
LS-411N	32	m	colorectal_carcinoma	
LS-513	63	m	colorectal_carcinoma	
NCI-H508	55	m	colorectal_carcinoma	
NCI-H630	60	m	colorectal_carcinoma	
NCI-H716	33	m	colorectal_carcinoma	
NCI-H747	69	m	colorectal_carcinoma	

RCM-1		u	colorectal_carcinoma	
RKO		u	colorectal_carcinoma	
SK-CO-1	65	m	colorectal_carcinoma	
SNU-C1	71	m	colorectal_carcinoma	
SNU-C2B	43	f	colorectal_carcinoma	
SW1116	73	m	colorectal_carcinoma	
SW1417	53	f	colorectal_carcinoma	
SW1463	66	f	colorectal_carcinoma	
SW403	51	m	colorectal_carcinoma	
SW48	82	f	colorectal_carcinoma	
SW620	51	m	colorectal_carcinoma	
SW837	53	m	colorectal_carcinoma	
SW948	81	f	colorectal_carcinoma	
T84	72	m	colorectal_carcinoma	
DB	45	m	diffuse_large_B_cell_lymphoma	
DOHH-2	60	m	diffuse_large_B_cell_lymphoma	
KARPAS-422	73	f	diffuse_large_B_cell_lymphoma	
HUTU-80	53	m	duodenal_ca	
AN3-CA	55	f	endometrial_ca	
COLO-684	63	f	endometrial_ca	
EFE-184	69	f	endometrial_ca	
ESS-1	76	f	endometrial_ca	
HEC-1		f	endometrial_ca	
KLE	64	f	endometrial_ca	
MFE-280	77	f	endometrial_ca	
MFE-296	68	f	endometrial_ca	
RL95-2	65	f	endometrial_ca	
SNG-M	52	f	endometrial_ca	
VA-ES-BJ	43	m	epithelioid_sarcoma	
CADO-ES1	19	f	Ewings_sarcoma	
ES1	5	f	Ewings_sarcoma	
ES3	12	m	Ewings_sarcoma	
ES4	18	m	Ewings_sarcoma	
ES5	16	m	Ewings_sarcoma	
ES6	17	m	Ewings_sarcoma	
ES7	15	m	Ewings_sarcoma	
ES8	10	m	Ewings_sarcoma	
EW-1	19	m	Ewings_sarcoma	
EW-11	11	f	Ewings_sarcoma	
EW-12	16	f	Ewings_sarcoma	
EW-13		u	Ewings_sarcoma	
EW-16		u	Ewings_sarcoma	
EW-18		u	Ewings_sarcoma	
EW-22		u	Ewings_sarcoma	
EW-24		u	Ewings_sarcoma	
EW-3	14	m	Ewings_sarcoma	
EW-7	20	f	Ewings_sarcoma	

MHH-ES-1	12	m	Ewings_sarcoma	
SK-PN-DW	17	m	Ewings_sarcoma	
HT-1080	35	m	fibrosarcoma	
SW684	68	m	fibrosarcoma	
WSU-NHL	46	f	follicular_lymphoma	
TGBC1TKB		f	gallbladder_ca	
23132-87	72	m	gastric_ca	
A3-KAW	68	f	gastric_ca	
AGS	54	f	gastric_ca	
ECC10		u	gastric_ca	
ECC12	63	m	gastric_ca	
GCIY		f	gastric_ca	
GT3TKB	53	m	gastric_ca	
HGC-27		u	gastric_ca	
KATOIII	55	m	gastric_ca	
MKN1	72	m	gastric_ca	
MKN28	70	f	gastric_ca	
MKN45	62	f	gastric_ca	
MKN7	39	m	gastric_ca	
NCI-N87		m	gastric_ca	
NCI-SNU-1	44	m	gastric_ca	
NCI-SNU-16	33	f	gastric_ca	
NCI-SNU-5	22	f	gastric_ca	
NUGC-3	72	m	gastric_ca	
RF-48	62	m	gastric_ca	
TGBC11TKB	72	f	gastric_ca	
ECC4	45	m	gastrointestinal_tract_ca_NS	
8-MG-BA	54	f	glioblastoma	
A172	53	m	glioblastoma	
AM-38	36	m	glioblastoma	
Becker	57	m	glioblastoma	
CAS-1	63	m	glioblastoma	
CCF-STTG1	68	f	glioblastoma	
D-245MG		u	glioblastoma	
D-247MG		u	glioblastoma	
D-263MG		u	glioblastoma	
D-336MG		u	glioblastoma	
D-392MG		u	glioblastoma	
D-397MG		u	glioblastoma	
D-423MG		u	glioblastoma	
D-502MG		u	glioblastoma	
D-538MG		u	glioblastoma	
D-566MG		u	glioblastoma	
DBTRG-05MG	59	f	glioblastoma	
DK-MG	67	f	glioblastoma	
GB-1	35	m	glioblastoma	
GMS-10	49	m	glioblastoma	

KS-1		f	glioblastoma	
LN-405	62	f	glioblastoma	
M059J	33	m	glioblastoma	
SNB19	47	m	glioblastoma	
T98G	61	m	glioblastoma	
U-118-MG	50	m	glioblastoma	
U-87-MG	44	f	glioblastoma	
YH-13	40	m	glioblastoma	
YKG-1	53	f	glioblastoma	
D-542MG			glioma_NS	
GAMG	42	f	glioma_NS	
H4	37	m	glioma_NS	
KALS-1		f	glioma_NS	
KNS-42	16	m	glioma_NS	
KNS-81-FD	65	m	glioma_NS	
NMC-G1		u	glioma_NS	
SF268		u	glioma_NS	
SF295		u	glioma_NS	
SF539		u	glioma_NS	
SNB75		u	glioma_NS	
U251		u	glioma_NS	
GI-1	61	m	gliosarcoma	
KGN	69	f	granulosa_cell_tumour_ov	granulosa_cell_tumour
BONNA-12	46	m	hairy_cell_leukaemia	
HC-1	56	m	hairy_cell_leukaemia	
MLMA	32	f	hairy_cell_leukaemia	
Mo-T		u	hairy_cell_leukaemia	
C3A	15	m	hepatocellular_carcinoma	
HLE	68	m	hepatocellular_carcinoma	
HUH-6-clone5	57	m	hepatocellular_carcinoma	
HuH-7	57	m	hepatocellular_carcinoma	
PLC-PRF-5		u	hepatocellular_carcinoma	
SK-HEP-1	52	m	hepatocellular_carcinoma	
SNU-387	41	f	hepatocellular_carcinoma	
SNU-423	40	m	hepatocellular_carcinoma	
SNU-449	52	m	hepatocellular_carcinoma	
SNU-475	43	m	hepatocellular_carcinoma	
BB30-HNC		f	HNSCC	NS
BB49-HNC	70	f	HNSCC	NS
BHY	52	m	HNSCC	NS
Ca9-22		m	HNSCC	gingiva
CAL-27	56	m	HNSCC	tongue
CAL-33	69	m	HNSCC	tongue
Detroit562		f	HNSCC	pharynx
DOK	57	m	HNSCC	tongue
FADU	56	m	HNSCC	hypopharynx
HCE-T	49	f	HNSCC	sinus

HN	60	m	HNSCC	mouth_roof
HO-1-N-1		u	HNSCC	buccal_mucosa
HSC-2	69	m	HNSCC	mouth
HSC-3	64	m	HNSCC	tongue
HSC-4	64	m	HNSCC	tongue
KOSC-2	51	m	HNSCC	mouth_floor
LB771-HNC	49	m	HNSCC	NS
RPMI-2650		u	HNSCC	sinonasal_and_nasal_cavity
SAS		u	HNSCC	tongue
SCC-15	55	m	HNSCC	tongue
SCC-25	70	m	HNSCC	tongue
SCC-4	55	m	HNSCC	tongue
SCC-9	25	m	HNSCC	tongue
HDLM-2	74	m	Hodgkin_lymphoma	
HD-MY-Z	29	u	Hodgkin_lymphoma	
KM-H2	37	m	Hodgkin_lymphoma	
L-428	37	f	Hodgkin_lymphoma	
L-540	20	f	Hodgkin_lymphoma	
RPMI-6666	29	m	Hodgkin_lymphoma	
G-402	0.75	f	leiomyoblastoma	
SK-UT-1	75	f	leiomyosarcoma	
SW872	36	m	liposarcoma	
NCI-H720		u	lung carcinoid	atypical
NCI-H727	65	f	lung carcinoid	
NCI-H835	48	f	lung carcinoid	
SR	11	m	lymphoma	
DEL	12	m	lymphoma_NS	
GCT	29	m	malignant_fibrous_histiocytoma-pleomorphic_sarcoma	
MFH-ino		f	malignant_fibrous_histiocytoma-pleomorphic_sarcoma	
A101D	56	m	malignant_melanoma	
A2058	43	m	malignant_melanoma	
A375	54	f	malignant_melanoma	
A4-Fuk	52	f	malignant_melanoma	
C32	53	m	malignant_melanoma	
CHL-1		u	malignant_melanoma	
COLO-679	47	f	malignant_melanoma	
COLO-792	62	m	malignant_melanoma	
COLO-800	14	m	malignant_melanoma	
COLO-829	45	m	malignant_melanoma	
CP50-MEL-B	54	m	malignant_melanoma	
CP66-MEL		m	malignant_melanoma	
CP67-MEL		u	malignant_melanoma	
G-361	31	m	malignant_melanoma	
GAK	86	f	malignant_melanoma	
HMV-II	65	f	malignant_melanoma	

HT-144	29	m	malignant_melanoma	
IGR-1	42	m	malignant_melanoma	
IPC-298	64	f	malignant_melanoma	
IST-MEL1		m	malignant_melanoma	
LB2518-MEL	57	f	malignant_melanoma	
LB373-MEL-D	32	f	malignant_melanoma	
LOXIMVI		u	malignant_melanoma	
M14		u	malignant_melanoma	
Malme-3M	43	m	malignant_melanoma	
MEL-HO		f	malignant_melanoma	
MEL-JUSO	58	f	malignant_melanoma	
Mewo		u	malignant_melanoma	
MMAC-SF	39	f	malignant_melanoma	
MZ2-MEL.		u	malignant_melanoma	
MZ7-mel			malignant_melanoma	
RPMI-7951	18	f	malignant_melanoma	
RVH-421	28	m	malignant_melanoma	
SH-4	60	f	malignant_melanoma	
SK-MEL-1	29	m	malignant_melanoma	
SK-MEL-2	60	m	malignant_melanoma	
SK-MEL-24	67	m	malignant_melanoma	
SK-MEL-28	51	m	malignant_melanoma	
SK-MEL-3	42	f	malignant_melanoma	
SK-MEL-30	67	m	malignant_melanoma	
SK-MEL-5	24	f	malignant_melanoma	
UACC-257		u	malignant_melanoma	
UACC-62		u	malignant_melanoma	
VMRC-MELG		u	malignant_melanoma	
WM-115	58	f	malignant_melanoma	
DJM-1	87	f	malignant_trichilemmal_cyst	
D-283MED	6	m	medulloblastoma	
D-384MED		u	medulloblastoma	
D-458MED		u	medulloblastoma	
D-556MED		u	medulloblastoma	
Daoy	4	m	medulloblastoma	
ONS-76	2	f	medulloblastoma	
PFSK-1	1.8	m	medulloblastoma	
IST-MES1	70	f	mesothelioma	
MPP-89	67	m	mesothelioma	
MSTO-211H	62	m	mesothelioma	
NCI-H2052	65	m	mesothelioma	
NCI-H2452		m	mesothelioma	
NCI-H28	48	m	mesothelioma	
ARH-77	33	f	mutiple myeloma	
IM-9		f	mutiple myeloma	
KMS-12-PE			mutiple myeloma	
L-363	36	f	mutiple myeloma	

LP-1	56	f	mutiple myeloma	
OPM-2	56	f	mutiple myeloma	
RPMI-8226	61	m	mutiple myeloma	
SK-MM-2	54	m	mutiple myeloma	
U-266	53	m	mutiple myeloma	
H9	53	m	mycosis_fungoides-Sezary_syndrome	
MJ	50	m	mycosis_fungoides-Sezary_syndrome	
MUTZ-1	5	f	myelodysplastic_syndrome	
SKM-1	76	m	myelodysplastic_syndrome	
ACN		u	neuroblastoma	
CHP-126	1.2	f	neuroblastoma	
CHP-134	1.08	u	neuroblastoma	
CHP-212		u	neuroblastoma	
GI-ME-N	2	f	neuroblastoma	
GOTO		u	neuroblastoma	
GOTO-P3	1	m	neuroblastoma	
IMR-5		u	neuroblastoma	
KP-N-RT-BM-1		u	neuroblastoma	
KP-N-S19s		u	neuroblastoma	
KP-N-YN		u	neuroblastoma	
KP-N-YS	4	u	neuroblastoma	
LAN-1			neuroblastoma	
LAN-5		u	neuroblastoma	
LAN-6	5.8	m	neuroblastoma	
MC-IXC	14	f	neuroblastoma	
MHH-NB-11	4	m	neuroblastoma	
NB1	2	m	neuroblastoma	
NB10	2	m	neuroblastoma	
NB12	0.1	f	neuroblastoma	
NB13	1	m	neuroblastoma	
NB14	1	f	neuroblastoma	
NB16	2.9	u	neuroblastoma	
NB17	1	f	neuroblastoma	
NB5	2	f	neuroblastoma	
NB6		m	neuroblastoma	
NB69	1.3	m	neuroblastoma	
NB7	0.07	m	neuroblastoma	
NBsusSR	18	m	neuroblastoma	
NH-12	1.25	m	neuroblastoma	
NH-6	0.75	f	neuroblastoma	
SCCH-26		u	neuroblastoma	
SIMA	1.66	m	neuroblastoma	
SK-N-AS	6	f	neuroblastoma	
SK-N-DZ	2	f	neuroblastoma	
SK-N-FI	11	m	neuroblastoma	
TGW		u	neuroblastoma	
YT	15	m	NK-T_cell_lymphoma	

A427	52	m	NSCLC	
A549	58	m	NSCLC	
ABC-1	47	m	NSCLC	adenocarcinoma
BEN	71	m	NSCLC	
CAL-12T			NSCLC	
Calu-1	47	m	NSCLC	mucoepidermoid_carcinoma
Calu-3	25	m	NSCLC	adenocarcinoma
Calu-6	61	f	NSCLC	adenocarcinoma
ChaGo-K-1	45	m	NSCLC	
COR-L105		u	NSCLC	adenocarcinoma
COR-L23	62	m	NSCLC	large_cell_carcinoma
DV-90	50	m	NSCLC	adenocarcinoma
EKVX		u	NSCLC	adenocarcinoma
EPLC-272H	57	m	NSCLC	squamous_cell_carcinoma
HOP-62		u	NSCLC	adenocarcinoma
HOP-92		u	NSCLC	large_cell_carcinoma
IA-LM	68	m	NSCLC	large_cell_carcinoma
KNS-62	49	m	NSCLC	squamous_cell_carcinoma
LC-1F	69	m	NSCLC	squamous_cell_carcinoma
LC-2-ad	51	f	NSCLC	adenocarcinoma
LCLC-103H	61	m	NSCLC	large_cell_carcinoma
LCLC-97TM1	44	m	NSCLC	large_cell_carcinoma
LK-2	74	m	NSCLC	squamous_cell_carcinoma
LU-65	64	m	NSCLC	giant_cell_carcinoma
LU-99A	63	m	NSCLC	lung giant_cell_carcinoma
LXF-289	63	m	NSCLC	adenocarcinoma
NCI-H1155	36	m	NSCLC	large_cell_carcinoma
NCI-H1299	43	m	NSCLC	large_cell_carcinoma
NCI-H1355	53	m	NSCLC	adenocarcinoma
NCI-H1395	55	f	NSCLC	adenocarcinoma
NCI-H1437	60	m	NSCLC	adenocarcinoma
NCI-H1563		m	NSCLC	adenocarcinoma
NCI-H157		m	NSCLC	squamous_cell_carcinoma
NCI-H1573	35	f	NSCLC	adenocarcinoma
NCI-H1581	44	m	NSCLC	large_cell_carcinoma
NCI-H1623	58	m	NSCLC	adenocarcinoma
NCI-H1648	39	m	NSCLC	adenocarcinoma
NCI-H1650	27	m	NSCLC	bronchioloalveolar_adenocarcinoma
NCI-H1651	71	m	NSCLC	adenocarcinoma
NCI-H1666	50	f	NSCLC	bronchioloalveolar_adenocarcinoma
NCI-H1693	55	f	NSCLC	adenocarcinoma
NCI-H1703	54	m	NSCLC	mixed_adenosquamous_carcinoma
NCI-H1734	56	f	NSCLC	adenocarcinoma
NCI-H1755	65	f	NSCLC	adenocarcinoma
NCI-H1770	57	m	NSCLC	
NCI-H1792	50	m	NSCLC	adenocarcinoma
NCI-H1793	52	f	NSCLC	adenocarcinoma

NCI-H1838		f	NSCLC	adenocarcinoma
NCI-H1926	27	m	NSCLC	lung small_cell_carcinoma
NCI-H1975		f	NSCLC	adenocarcinoma
NCI-H1993	47	f	NSCLC	adenocarcinoma
NCI-H2009	58	f	NSCLC	adenocarcinoma
NCI-H2030		m	NSCLC	adenocarcinoma
NCI-H2087	69	m	NSCLC	adenocarcinoma
NCI-H2122	46	f	NSCLC	adenocarcinoma
NCI-H2126	65	m	NSCLC	adenocarcinoma
NCI-H2170		m	NSCLC	squamous_cell_carcinoma
NCI-H2228			NSCLC	adenocarcinoma
NCI-H226		m	NSCLC	squamous_cell_carcinoma
NCI-H2291		m	NSCLC	adenocarcinoma
NCI-H23	51	m	NSCLC	
NCI-H2342	55	m	NSCLC	adenocarcinoma
NCI-H2347	54	f	NSCLC	
NCI-H2405	47	m	NSCLC	adenocarcinoma
NCI-H292	32	f	NSCLC	mucoepidermoid_carcinoma
NCI-H322M	52	m	NSCLC	bronchioloalveolar_adenocarcinoma
NCI-H358		m	NSCLC	bronchioloalveolar_adenocarcinoma
NCI-H441		m	NSCLC	bronchioloalveolar_adenocarcinoma
NCI-H460		m	NSCLC	large_cell_carcinoma
NCI-H520		m	NSCLC	squamous_cell_carcinoma
NCI-H522	60	m	NSCLC	
NCI-H596	73	m	NSCLC	mixed_adenosquamous_carcinoma
NCI-H650		m	NSCLC	bronchioloalveolar_adenocarcinoma
NCI-H661	43	m	NSCLC	large_cell_carcinoma
NCI-H810	51	m	NSCLC	large_cell_carcinoma
NCI-H838		u	NSCLC	
PC-14			NSCLC	adenocarcinoma
RERF-LC-MS		u	NSCLC	adenocarcinoma
SK-LU-1	60	f	NSCLC	adenocarcinoma
SK-MES-1	65	m	NSCLC	squamous_cell_carcinoma
SW1573	44	f	NSCLC	adenocarcinoma
SW900	53	m	NSCLC	squamous_cell_carcinoma
UMC-11		u	NSCLC	
VMRC-LCP		u	NSCLC	squamous_cell_carcinoma
COLO-680N	57	f	oesophagus_SCC	
EC-GI-10	65	m	oesophagus_SCC	
HCE-4			oesophagus_SCC	
KYSE-140	54	m	oesophagus_SCC	
KYSE-150	49	f	oesophagus_SCC	
KYSE-180	53	m	oesophagus_SCC	
KYSE-270	79	m	oesophagus_SCC	
KYSE-410	51	m	oesophagus_SCC	
KYSE-450	59	m	oesophagus_SCC	
KYSE-510	67	f	oesophagus_SCC	

KYSE-520	58	f	oesophagus_SCC	
KYSE-70	77	m	oesophagus_SCC	
OE19	72	m	oesophagus_SCC	
OE33	73	f	oesophagus_SCC	
TE-1			oesophagus_SCC	
TE-10			oesophagus_SCC	
TE-11		u	oesophagus_SCC	
TE-12		u	oesophagus_SCC	
TE-15			oesophagus_SCC	
TE-5	73	f	oesophagus_SCC	
TE-6		u	oesophagus_SCC	
TE-8			oesophagus_SCC	
TE-9		u	oesophagus_SCC	
CAL-72	10	m	osteosarcoma	
HOS	13	f	osteosarcoma	
HuO-3N1	15	f	osteosarcoma	
HuO9	13	f	osteosarcoma	
MG-63	14	m	osteosarcoma	
NOS-1	16	m	osteosarcoma	
NY		u	osteosarcoma	
Saos-2	11	f	osteosarcoma	
TI-73		u	osteosarcoma	
U-2-OS	15	f	osteosarcoma	
A2780		f	ovarian_ca	adenocarcinoma
Caov-3	54	f	ovarian_ca	adenocarcinoma
Caov-4	45	f	ovarian_ca	adenocarcinoma
EFO-21	56	f	ovarian_ca	serous_carcinoma
EFO-27	36	f	ovarian_ca	mucinous_carcinoma
KURAMOCHI		f	ovarian_ca	undifferentiated_carcinoma
OAW-42		f	ovarian_ca	mucinous_carcinoma
OC-314	39	f	ovarian_ca	serous_micropapillary_carcinoma
OVCAR-3	60	f	ovarian_ca	adenocarcinoma
RMG-I		f	ovarian_ca	clear_cell_carcinoma
RTSG	66	f	ovarian_ca	adenocarcinoma
SK-OV-3	64	f	ovarian_ca	adenocarcinoma
SW626	46	f	ovarian_ca	adenocarcinoma
TYK-nu		f	ovarian_ca	undifferentiated_carcinoma
IGROV-1		f	ovarian_ca_NS	
OAW-28		f	ovarian_ca_NS	
OVCAR-4		f	ovarian_ca_NS	
OVCAR-5		f	ovarian_ca_NS	
OVCAR-8		f	ovarian_ca_NS	
AsPC-1	62	f	pancreatic_ductal_ca	
BxPC-3	61	f	pancreatic_ductal_ca	
CAPAN-1	40	m	pancreatic_ductal_ca	
Capan-2	56	m	pancreatic_ductal_ca	
CFPAC-1	26	m	pancreatic_ductal_ca	

HPAF-II	44	m	pancreatic_ductal_ca	
HuP-T3	66	m	pancreatic_ductal_ca	
HuP-T4	60	m	pancreatic_ductal_ca	
KP-4	50	m	pancreatic_ductal_ca	
MIA-PaCa-2	65	m	pancreatic_ductal_ca	
MZ1-PC			pancreatic_ductal_ca	
PANC-03-27	65	f	pancreatic_ductal_ca	
PANC-08-13	85	m	pancreatic_ductal_ca	
PANC-10-05		m	pancreatic_ductal_ca	
PSN1		u	pancreatic_ductal_ca	
SW1990	56	m	pancreatic_ductal_ca	
YAPC	43	m	pancreatic_ductal_ca	
MC-CAR	81	m	plasmacytoma	
22RV1		m	prostate_ca	
BPH-1	68	m	prostate_ca	
DU-145	69	m	prostate_ca	
LNCaP-Clone-FGC	50	m	prostate_ca	
PC-3	62	m	prostate_ca	
A498	52	f	renal_ca_NS	
BFTC-909	64	m	renal_ca_NS	
769-P	63	f	renal_clear_cell_carcinoma	
786-0	58	m	renal_clear_cell_carcinoma	
A704	78	m	renal_clear_cell_carcinoma	
ACHN	22	m	renal_clear_cell_carcinoma	
BB65-RCC	60	m	renal_clear_cell_carcinoma	
CAKI-1	49	m	renal_clear_cell_carcinoma	
CAL-54	75	m	renal_clear_cell_carcinoma	
HA7-RCC		m	renal_clear_cell_carcinoma	
LB1047-RCC	49	f	renal_clear_cell_carcinoma	
LB2241-RCC		m	renal_clear_cell_carcinoma	
LB996-RCC	67	m	renal_clear_cell_carcinoma	
OS-RC-2		m	renal_clear_cell_carcinoma	
RCC10RGB		m	renal_clear_cell_carcinoma	
RXF393		u	renal_clear_cell_carcinoma	
SN12C		u	renal_clear_cell_carcinoma	
TK10		u	renal_clear_cell_carcinoma	
U031		u	renal_clear_cell_carcinoma	
VMRC-RCZ		u	renal_clear_cell_carcinoma	
WERI-Rb-1	1	f	retinoblastoma	
A204	1	f	rhabdomyosarcoma	
A673	15	f	rhabdomyosarcoma	
RD	7	f	rhabdomyosarcoma	
RH-1		m	rhabdomyosarcoma	
RH-18	2	f	rhabdomyosarcoma	
SJRH30	17	m	rhabdomyosarcoma	
TE-441-T	14	f	rhabdomyosarcoma	
A253	54	m	salivary_mucoepidermoid_ca	

MES-SA	56	f	sarcoma_NS	
S-117	47	f	sarcoma_NS	
SK-LMS-1	43	f	sarcoma_NS	
COLO-668	47	f	SCLC	
COR-L279	63	m	SCLC	
COR-L51	71	m	SCLC	
COR-L88	55	m	SCLC	
COR-L96CAR		u	SCLC	
CPC-N			SCLC	
DMS-114	68	m	SCLC	
DMS-153	44	m	SCLC	
DMS-273	50	f	SCLC	
DMS-53	54	m	SCLC	
DMS-79	65	u	SCLC	
IST-SL1		m	SCLC	
IST-SL2		m	SCLC	
LB647-SCLC	48	m	SCLC	
LU-134-A	80	m	SCLC	
LU-135	69	m	SCLC	
LU-139	63	m	SCLC	
LU-165	50	m	SCLC	
MS-1			SCLC	
NCI-H1048		f	SCLC	
NCI-H1092	67	m	SCLC	
NCI-H1105	73	m	SCLC	
NCI-H1173			SCLC	
NCI-H128	60	m	SCLC	
NCI-H1284			SCLC	
NCI-H1304	56	f	SCLC	
NCI-H1417	61	f	SCLC	
NCI-H1436	39	m	SCLC	
NCI-H146	59	m	SCLC	
NCI-H1522	53	m	SCLC	
NCI-H1618	55	f	SCLC	
NCI-H1694	61	m	SCLC	
NCI-H187	47	m	SCLC	
NCI-H1882			SCLC	
NCI-H1930	41	m	SCLC	
NCI-H1963	56	m	SCLC	
NCI-H2029	69	f	SCLC	
NCI-H2081	59	f	SCLC	
NCI-H209		m	SCLC	
NCI-H2107	36	m	SCLC	
NCI-H2141	58	m	SCLC	
NCI-H2171	50	m	SCLC	
NCI-H2196	67	m	SCLC	
NCI-H2227	54	m	SCLC	

NCI-H2330	57	f	SCLC	
NCI-H250	34	m	SCLC	
NCI-H345	64	m	SCLC	
NCI-H378	66	f	SCLC	
NCI-H446	61	m	SCLC	
NCI-H510A	56	m	SCLC	
NCI-H524	63	m	SCLC	
NCI-H526	55	m	SCLC	
NCI-H64			SCLC	
NCI-H69	55	m	SCLC	
NCI-H711	49	m	SCLC	
NCI-H719	55	f	SCLC	
NCI-H748	62	m	SCLC	
NCI-H774	43	m	SCLC	
NCI-H82	40	m	SCLC	
NCI-H889	69	f	SCLC	
NCI-N417		f	SCLC	
RERF-LC-FM		u	SCLC	
SBC-1	46	m	SCLC	
SBC-5			SCLC	
SCLC-21H	46	m	SCLC	
SHP-77	54	m	SCLC	
A431	85	f	skin_SCC	
SW982	25	f	synovial_sarcoma	
PA-1	12	f	teratoma_ovarian	
ITO-II		m	testicular_germ_cell_tumour	
NCCIT		m	testicular_germ_cell_tumour	
NEC8	24	m	testicular_germ_cell_tumour	
NTERA-S-cl-D1	22	m	testicular_germ_cell_tumour	
8305C	67	f	thyroid_anaplastic_ca	
8505C	78	f	thyroid_anaplastic_ca	
BHT-101	63	f	thyroid_anaplastic_ca	
CAL-62	70	f	thyroid_anaplastic_ca	
HTC-C3	44	f	thyroid_ca_NS	
TCO-1		u	thyroid_ca_NS	
CGTH-W-1	70	f	thyroid_follicular_ca	
FTC-133	42	m	thyroid_follicular_ca	
K5		u	thyroid_follicular_ca	
RO82-W-1		u	thyroid_follicular_ca	
TT		u	thyroid_medullary_ca	
BCPAP		u	thyroid_papillary_ca	
A388	86	m	unknown	
TE-206-T	1	m	unknown	
CAL-39	76	f	vulva_SCC	
SW954	86	f	vulva_SCC	
SW962	64	f	vulva_SCC	
G-401	0.25	m	Wilms_tumour	

SK-NEP-1	25	f	Wilms_tumour	

Supplementary Table 2 - Clinical Samples Screened

Tumour	Sex	Age	Histology
PD1579a	F	47	Renal clear cell carcinoma
PD1580a	F	61	Renal clear cell carcinoma
PD1582a	F	47	Renal clear cell carcinoma
PD1590a	M	64	Renal clear cell carcinoma
PD1593a	M	59	Renal clear cell carcinoma
PD1753a	M	67	Renal clear cell carcinoma
PD1754a	F	42	Renal clear cell carcinoma
PD1759a	M	76	Renal clear cell carcinoma
PD1764a	M	41	Renal clear cell carcinoma
PD1766a	F	85	Renal clear cell carcinoma
PD1767a	F	80	Renal clear cell carcinoma
PD1768a	M	73	Renal clear cell carcinoma
PD1769a	M	43	Renal clear cell carcinoma
PD2125a	M	82	Renal clear cell carcinoma
PD2126a	F	74	Renal clear cell carcinoma
PD2127a	F	59	Renal clear cell carcinoma
PD2129a	M	75	Renal clear cell carcinoma
PD2130a	F	67	Renal clear cell carcinoma
PD2131a	F	63	Renal clear cell carcinoma
PD2132a	F	63	Renal clear cell carcinoma
PD2133a	M	52	Renal clear cell carcinoma
PD2134a	F	83	Renal clear cell carcinoma
PD2135a	M	73	Renal clear cell carcinoma
PD2136a	M	67	Renal clear cell carcinoma
PD2138a	M	74	Renal clear cell carcinoma
PD2139a	F	62	Renal clear cell carcinoma
PD2140a	M	48	Renal clear cell carcinoma
PD2141a	F	57	Renal clear cell carcinoma
PD2142a	M	49	Renal clear cell carcinoma
PD2145a	M	63	Renal clear cell carcinoma
PD2146a	M	64	Renal clear cell carcinoma
PD2147a	F	50	Renal clear cell carcinoma
PD2148a	F	77	Renal clear cell carcinoma
PD2149a	M	66	Renal clear cell carcinoma
PD2150a	M	78	Renal clear cell carcinoma
PD2152a	M	84	Renal clear cell carcinoma

PD2153a	M	48	Renal clear cell carcinoma
PD2154a	F	64	Renal clear cell carcinoma
PD2155a	M	50	Renal clear cell carcinoma
PD2156a	M	58	Renal clear cell carcinoma
PD2157a	M	32	Renal clear cell carcinoma
PD2158a	M	52	Renal clear cell carcinoma
PD2160a	M	73	Renal clear cell carcinoma
PD2161a	F	42	Renal clear cell carcinoma
PD2162a	M	57	Renal clear cell carcinoma
PD2163a	M	54	Renal clear cell carcinoma
PD2164a	F	56	Renal clear cell carcinoma
PD2166a	F	44	Renal clear cell carcinoma
PD2167a	M	59	Renal clear cell carcinoma
PD2168a	M	53	Renal clear cell carcinoma
PD2170a	M	60	Renal clear cell carcinoma
PD2171a	F	52	Renal clear cell carcinoma
PD2172a	M	67	Renal clear cell carcinoma
PD2173a	F	83	Renal clear cell carcinoma
PD2174a	F	65	Renal clear cell carcinoma
PD2175a	F	64	Renal clear cell carcinoma
PD2176a	M	62	Renal clear cell carcinoma
PD2177a	M	49	Renal clear cell carcinoma
PD2178a	F	62	Renal clear cell carcinoma
PD2180a	F	45	Renal clear cell carcinoma
PD2181a	F	71	Renal clear cell carcinoma
PD2182a	F	46	Renal clear cell carcinoma
PD2183a	F	66	Renal clear cell carcinoma
PD2184a	F	78	Renal clear cell carcinoma
PD2185a	F	71	Renal clear cell carcinoma
PD2186a	M	50	Renal clear cell carcinoma
PD2187a	F	49	Renal clear cell carcinoma
PD2188a	M	67	Renal clear cell carcinoma
PD2189a	M	57	Renal clear cell carcinoma
PD2190a	F	61	Renal clear cell carcinoma
PD2191a	M	68	Renal clear cell carcinoma
PD2192a	M	78	Renal clear cell carcinoma
PD2193a	M	61	Renal clear cell carcinoma

PD2194a	M	74	Renal clear cell carcinoma
PD2197a	F	65	Renal clear cell carcinoma
PD2198a	M	70	Renal clear cell carcinoma
PD2199a	M	58	Renal clear cell carcinoma
PD2201a	M	51	Renal clear cell carcinoma
PD2202a	M	82	Renal clear cell carcinoma
PD2203a	F	60	Renal clear cell carcinoma
PD2204a	M	56	Renal clear cell carcinoma
PD2205a	M	66	Renal clear cell carcinoma
PD2207a	M	66	Renal clear cell carcinoma
PD2208a	F	65	Renal clear cell carcinoma
PD2209a	F	69	Renal clear cell carcinoma
PD2210a	M	73	Renal clear cell carcinoma
PD2211a	F	51	Renal clear cell carcinoma
PD2213a	M	60	Renal clear cell carcinoma
PD2214a	M	53	Renal clear cell carcinoma
PD2215a	M	39	Renal clear cell carcinoma
PD2216a	M	62	Renal clear cell carcinoma
PD2217a	M	44	Renal clear cell carcinoma
PD2218a	M	77	Renal clear cell carcinoma
PD2219a	M	47	Renal clear cell carcinoma
PD2221a	F	48	Renal clear cell carcinoma
PD2222a	F	54	Renal clear cell carcinoma
PD3284a	M	56	Renal clear cell carcinoma
PD3285a	F	80	Renal clear cell carcinoma
PD3286a	F	71	Renal clear cell carcinoma
PD3287a	M	61	Renal clear cell carcinoma
PD3288a	M	56	Renal clear cell carcinoma
PD3289a	M	57	Renal clear cell carcinoma
PD3290a	F	58	Renal clear cell carcinoma
PD3291a	M	52	Renal clear cell carcinoma
PD3292a	M	76	Renal clear cell carcinoma
PD3293a	M	80	Renal clear cell carcinoma
PD3294a	F	60	Renal clear cell carcinoma
PD3295a	M	62	Renal clear cell carcinoma
PD3296a	M	72	Renal clear cell carcinoma
PD3297a	F	32	Renal clear cell carcinoma

PD3298a	M	64	Renal clear cell carcinoma
PD3299a	F	54	Renal clear cell carcinoma
PD3300a	F	49	Renal clear cell carcinoma
PD3301a	M	41	Renal clear cell carcinoma
PD3302a	F	53	Renal clear cell carcinoma
PD3303a	F	70	Renal clear cell carcinoma
PD3304a	M	64	Renal clear cell carcinoma
PD3305a	F	47	Renal clear cell carcinoma
PD3306a	F	80	Renal clear cell carcinoma
PD3307a	F	64	Renal clear cell carcinoma
PD3308a	M	43	Renal clear cell carcinoma
PD3309a	M	67	Renal clear cell carcinoma
PD3310a	M	52	Renal clear cell carcinoma
PD3311a	M	50	Renal clear cell carcinoma
PD3312a	F	81	Renal clear cell carcinoma
PD3313a	F	48	Renal clear cell carcinoma
PD3314a	F	58	Renal clear cell carcinoma
PD3315a	M	75	Renal clear cell carcinoma
PD3316a	M	44	Renal clear cell carcinoma
PD3317a	M	62	Renal clear cell carcinoma
PD3318a	M	74	Renal clear cell carcinoma
PD3319a	F	56	Renal clear cell carcinoma
PD3320a	M	60	Renal clear cell carcinoma
PD3321a	F	58	Renal clear cell carcinoma
PD3322a	F	83	Renal clear cell carcinoma
PD3324a	M	51	Renal clear cell carcinoma
PD3325a	M	57	Renal clear cell carcinoma
PD3326a	M	58	Renal clear cell carcinoma
PD3327a	M	56	Renal clear cell carcinoma
PD3328a	F	48	Renal clear cell carcinoma
PD3329a	F	77	Renal clear cell carcinoma
PD3330a	M	78	Renal clear cell carcinoma
PD3331a	F	64	Renal clear cell carcinoma
PD3332a	M	65	Renal clear cell carcinoma
PD3333a	M	44	Renal clear cell carcinoma
PD3334a	M	48	Renal clear cell carcinoma
PD3335a	F	71	Renal clear cell carcinoma

PD3336a	F	74	Renal clear cell carcinoma
PD3337a	F	71	Renal clear cell carcinoma
PD3338a	M	66	Renal clear cell carcinoma
PD3339a	M	49	Renal clear cell carcinoma
PD3340a	M	49	Renal clear cell carcinoma
PD3341a	M	37	Renal clear cell carcinoma
PD3342a	M	65	Renal clear cell carcinoma
PD3343a	M	69	Renal clear cell carcinoma
PD3344a	F	55	Renal clear cell carcinoma
PD3345a	M	57	Renal clear cell carcinoma
PD3346a	F	82	Renal clear cell carcinoma
PD3347a	M	68	Renal clear cell carcinoma
PD3348a	M	57	Renal clear cell carcinoma
PD3349a	F	56	Renal clear cell carcinoma
PD3350a	M	51	Renal clear cell carcinoma
PD3351a	M	65	Renal clear cell carcinoma
PD3352a	F	76	Renal clear cell carcinoma
PD3353a	M	66	Renal clear cell carcinoma
PD3354a	M	76	Renal clear cell carcinoma
PD3355a	F	59	Renal clear cell carcinoma
PD3356a	M	67	Renal clear cell carcinoma
PD3357a	M	71	Renal clear cell carcinoma
PD3358a	M	67	Renal clear cell carcinoma
PD3359a	M	72	Renal clear cell carcinoma
PD3360a	F	57	Renal clear cell carcinoma
PD3361a	M	72	Renal clear cell carcinoma
PD3362a	M	49	Renal clear cell carcinoma
PD3363a	F	72	Renal clear cell carcinoma
PD3364a	M	70	Renal clear cell carcinoma
PD3365a	F	54	Renal clear cell carcinoma
PD3366a	F	56	Renal clear cell carcinoma
PD3367a	F	69	Renal clear cell carcinoma
PD3368a	M	54	Renal clear cell carcinoma
PD3369a	F	71	Renal clear cell carcinoma
PD3370a	F	87	Renal clear cell carcinoma
PD3371a	F	56	Renal clear cell carcinoma
PD3372a	F	67	Renal clear cell carcinoma

PD3373a	M	57	Renal clear cell carcinoma
PD3374a	M	53	Renal clear cell carcinoma
PD3375a	F	57	Renal clear cell carcinoma
PD3376a	F	82	Renal clear cell carcinoma
PD3377a	F	50	Renal clear cell carcinoma
PD3378a	F	52	Renal clear cell carcinoma
PD3379a	M	62	Renal clear cell carcinoma
PD3380a	F	70	Renal clear cell carcinoma
PD3381a	M	66	Renal clear cell carcinoma
PD3382a	M	56	Renal clear cell carcinoma
PD3383a	F	82	Renal clear cell carcinoma
PD3384a	M	67	Renal clear cell carcinoma
PD3385a	M	71	Renal clear cell carcinoma
PD3386a	F	78	Renal clear cell carcinoma
PD3387a	F	77	Renal clear cell carcinoma
PD3388a	F	73	Renal clear cell carcinoma
PD3389a	M	48	Renal clear cell carcinoma
PD3390a	F	67	Renal clear cell carcinoma
PD3391a	M	54	Renal clear cell carcinoma
PD3392a	M	50	Renal clear cell carcinoma
PD3393a	F	54	Renal clear cell carcinoma
PD3394a	M	61	Renal clear cell carcinoma
PD3395a	M	74	Renal clear cell carcinoma
PD3396a			Renal clear cell carcinoma
PD3397a		47	Renal clear cell carcinoma
PD3398a	M	41	Renal clear cell carcinoma
PD3399a	F	58	Renal clear cell carcinoma
PD3400a	M	51	Renal clear cell carcinoma
PD3401a	F	70	Renal clear cell carcinoma
PD3402a	M	53	Renal clear cell carcinoma
PD3403a	M	63	Renal clear cell carcinoma
PD3404a	F	55	Renal clear cell carcinoma
PD3405a	M	55	Renal clear cell carcinoma
PD3406a	M	49	Renal clear cell carcinoma
PD3407a	M	54	Renal clear cell carcinoma
PD3408a	F	78	Renal clear cell carcinoma
PD3409a	M	69	Renal clear cell carcinoma

PD3410a	F	54	Renal clear cell carcinoma
PD3411a	F	58	Renal clear cell carcinoma
PD3412a	F	43	Renal clear cell carcinoma
PD3413a	F	51	Renal clear cell carcinoma
PD3414a	M	52	Renal clear cell carcinoma
PD3415a	M	65	Renal clear cell carcinoma
PD3416a	M	78	Renal clear cell carcinoma
PD3417a	M	59	Renal clear cell carcinoma
PD3418a	M	61	Renal clear cell carcinoma
PD3419a	F	67	Renal clear cell carcinoma
PD3420a	M	58	Renal clear cell carcinoma
PD3421a	M	65	Renal clear cell carcinoma
PD3422a	M	68	Renal clear cell carcinoma
PD3423a	M	61	Renal clear cell carcinoma
PD3424a	M	66	Renal clear cell carcinoma
PD3425a	M	48	Renal clear cell carcinoma
PD3426a	M	51	Renal clear cell carcinoma
PD3427a	M	50	Renal clear cell carcinoma
PD3428a	F	35	Renal clear cell carcinoma
PD3429a	M	51	Renal clear cell carcinoma
PD3430a	F	59	Renal clear cell carcinoma
PD3431a	M	63	Renal clear cell carcinoma
PD3432a	M	79	Renal clear cell carcinoma
PD3433a	M	47	Renal clear cell carcinoma
PD3434a	M	39	Renal clear cell carcinoma
PD3435a	M	68	Renal clear cell carcinoma
PD3436a	M	38	Renal clear cell carcinoma
PD3437a	F	68	Renal clear cell carcinoma
PD3438a	M	51	Renal clear cell carcinoma
PD3439a	M	59	Renal clear cell carcinoma
PD3440a	M	70	Renal clear cell carcinoma
PD3441a	M	69	Renal clear cell carcinoma
PD3442a	M	73	Renal clear cell carcinoma
PD3443a	F	48	Renal clear cell carcinoma
PD3444a	M	75	Renal clear cell carcinoma
PD3445a	F	55	Renal clear cell carcinoma
PD3446a	M	72	Renal clear cell carcinoma

PD3447a	F	53	Renal clear cell carcinoma
PD3448a	M	85	Renal clear cell carcinoma
PD3450a	M	68	Renal clear cell carcinoma
PD3451a	M	71	Renal clear cell carcinoma
PD3453a	F	64	Renal clear cell carcinoma
PD3454a	M	70	Renal clear cell carcinoma
PD3455a	F	42	Renal clear cell carcinoma
PD3456a	M	36	Renal clear cell carcinoma
PD3457a	M	39	Renal clear cell carcinoma
PD3458a	F	69	Renal clear cell carcinoma
PD3459a	F	52	Renal clear cell carcinoma
PD3460a	M	67	Renal clear cell carcinoma
PD3461a	M	67	Renal clear cell carcinoma
PD3462a	M	88	Renal clear cell carcinoma
PD3463a	M	59	Renal clear cell carcinoma
PD3464a	F	83	Renal clear cell carcinoma
PD3465a	M	54	Renal clear cell carcinoma
PD3466a	F	44	Renal clear cell carcinoma
PD3467a	F	72	Renal clear cell carcinoma
PD3469a	F	85	Renal clear cell carcinoma
PD3470a	F	58	Renal clear cell carcinoma
PD3471a	F	57	Renal clear cell carcinoma
PD3472a	M	66	Renal clear cell carcinoma
PD3473a	F	73	Renal clear cell carcinoma
PD3474a	M	62	Renal clear cell carcinoma
PD3475a	M	69	Renal clear cell carcinoma
PD3476a	F	46	Renal clear cell carcinoma
PD3478a	M	56	Renal clear cell carcinoma
PD3479a	M	76	Renal clear cell carcinoma
PD3480a	M	48	Renal clear cell carcinoma
PD3481a	F	80	Renal clear cell carcinoma
PD3482a	M	55	Renal clear cell carcinoma
PD3483a	M	67	Renal clear cell carcinoma
PD3484a	M	72	Renal clear cell carcinoma
PD3485a	M	69	Renal clear cell carcinoma
PD3486a	M	70	Renal clear cell carcinoma
PD3487a	M	44	Renal clear cell carcinoma

PD3488a	F	69	Renal clear cell carcinoma
PD3489a	F	58	Renal clear cell carcinoma
PD3490a	F	59	Renal clear cell carcinoma
PD3491a	M	87	Renal clear cell carcinoma
PD3492a	M	42	Renal clear cell carcinoma
PD3493a	F	78	Renal clear cell carcinoma
PD3494a	M	42	Renal clear cell carcinoma
PD3495a	M	71	Renal clear cell carcinoma
PD3496a	M	64	Renal clear cell carcinoma
PD3497a	M	63	Renal clear cell carcinoma
PD3498a	F	38	Renal clear cell carcinoma
PD3499a	M	55	Renal clear cell carcinoma
PD3500a	M	49	Renal clear cell carcinoma
PD3501a	F	83	Renal clear cell carcinoma
PD3502a	M	84	Renal clear cell carcinoma
PD3503a	M	60	Renal clear cell carcinoma
PD3504a	F	37	Renal clear cell carcinoma
PD3505a	M	54	Renal clear cell carcinoma
PD3506a	F	62	Renal clear cell carcinoma
PD3507a	M	57	Renal clear cell carcinoma
PD3508a	F	71	Renal clear cell carcinoma
PD3509a	M	58	Renal clear cell carcinoma
PD3510a	F	89	Renal clear cell carcinoma
PD3511a	F	58	Renal clear cell carcinoma
PD3512a	M	83	Renal clear cell carcinoma
PD3513a	M	69	Renal clear cell carcinoma
PD3514a	F	43	Renal clear cell carcinoma
PD3515a	M	80	Renal clear cell carcinoma
PD3516a	F	68	Renal clear cell carcinoma
PD3517a	F	63	Renal clear cell carcinoma
PD3518a	M	74	Renal clear cell carcinoma
PD3519a	F	85	Renal clear cell carcinoma
PD3520a	M	64	Renal clear cell carcinoma
PD3521a	M	54	Renal clear cell carcinoma
PD3522a	M	64	Renal clear cell carcinoma
PD3523a	F	47	Renal clear cell carcinoma
PD3524a	M	66	Renal clear cell carcinoma

PD3525a	F	74	Renal clear cell carcinoma
PD3526a	M	59	Renal clear cell carcinoma
PD3527a	F	66	Renal clear cell carcinoma
PD3528a	F	50	Renal clear cell carcinoma
PD3529a	M	56	Renal clear cell carcinoma
PD3530a	M	69	Renal clear cell carcinoma
PD3532a	M	41	Renal clear cell carcinoma
PD3533a	M	69	Renal clear cell carcinoma
PD3534a	M	55	Renal clear cell carcinoma
PD3535a	F	52	Renal clear cell carcinoma
PD3537a	M	62	Renal clear cell carcinoma
PD3538a	M	73	Renal clear cell carcinoma
PD3539a	M	78	Renal clear cell carcinoma
PD3540a	F	52	Renal clear cell carcinoma
PD3541a	M	61	Renal clear cell carcinoma
PD3542a	F	59	Renal clear cell carcinoma
PD3543a	M	55	Renal clear cell carcinoma
PD3544a	F	50	Renal clear cell carcinoma
PD3545a	M	54	Renal clear cell carcinoma
PD3546a	F	57	Renal clear cell carcinoma
PD3547a	F	63	Renal clear cell carcinoma
PD3548a	M	66	Renal clear cell carcinoma
PD3549a	F	56	Renal clear cell carcinoma
PD3550a	M	44	Renal clear cell carcinoma
PD3551a	F	69	Renal clear cell carcinoma
PD3552a	M	54	Renal clear cell carcinoma
PD3553a	F	75	Renal clear cell carcinoma
PD3554a	F	55	Renal clear cell carcinoma
PD3555a	F	66	Renal clear cell carcinoma
PD3556a	M	69	Renal clear cell carcinoma
PD3557a	F	49	Renal clear cell carcinoma
PD3558a	M	55	Renal clear cell carcinoma
PD3559a	F	74	Renal clear cell carcinoma
PD3560a	F	78	Renal clear cell carcinoma
PD3561a	M	72	Renal clear cell carcinoma
PD3562a	F	73	Renal clear cell carcinoma
PD3563a	M	57	Renal clear cell carcinoma

PD3564a	F	68	Renal clear cell carcinoma
PD3565a	M	65	Renal clear cell carcinoma
PD3566a	M	44	Renal clear cell carcinoma
PD3567a	M	75	Renal clear cell carcinoma
PD3568a	F	52	Renal clear cell carcinoma
PD3569a	F		Renal clear cell carcinoma
PD3570a	M	51	Renal clear cell carcinoma
PD3571a	M	72	Renal clear cell carcinoma
PD3572a	F	46	Renal clear cell carcinoma
PD3573a	M	65	Renal clear cell carcinoma
PD3574a	M	38	Renal clear cell carcinoma
PD3575a	F	62	Renal clear cell carcinoma
PD3576a	M	69	Renal clear cell carcinoma
PD3577a	F	53	Renal clear cell carcinoma
PD3578a	M	67	Renal clear cell carcinoma
PD3579a	M	74	Renal clear cell carcinoma
PD3580a	M	73	Renal clear cell carcinoma
PD3581a	M	66	Renal clear cell carcinoma
PD3582a	M	56	Renal clear cell carcinoma
PD3583a	F	77	Renal clear cell carcinoma
PD3584a	M	76	Renal clear cell carcinoma
PD3585a	M	67	Renal clear cell carcinoma
PD3586a	F	75	Renal clear cell carcinoma
PD3587a	M		Renal clear cell carcinoma
PD3588a	F	77	Renal clear cell carcinoma
PD3589a	M	91	Renal clear cell carcinoma
PD3590a	M	43	Renal clear cell carcinoma
PD3591a	M	79	Renal clear cell carcinoma
PD3592a	F	49	Renal clear cell carcinoma
PD3593a	M	49	Renal clear cell carcinoma
PD3594a	M	44	Renal clear cell carcinoma
PD3595a	F	56	Renal clear cell carcinoma
PD3596a	M	54	Renal clear cell carcinoma
PD3597a	M	60	Renal clear cell carcinoma
PD3598a	M	70	Renal clear cell carcinoma
PD3599a	M	67	Renal clear cell carcinoma
PD3600a	F	53	Renal clear cell carcinoma

PD3601a	F	56	Renal clear cell carcinoma
PD3230a	F	63	Oesophageal SCC
PD3231a	M	75	Oesophageal SCC
PD3232a	M	71	Oesophageal SCC
PD3233a	M	58	Oesophageal SCC
PD3234a	M	48	Oesophageal SCC
PD3235a	M	58	Oesophageal SCC
PD3236a	M	61	Oesophageal SCC
PD3237a	M	55	Oesophageal SCC
PD3238a	M	58	Oesophageal SCC
PD3239a	M	62	Oesophageal SCC
PD3240a	M	62	Oesophageal SCC
PD3241a	F	70	Oesophageal SCC
PD3242a	F	77	Oesophageal SCC
PD3243a	F	54	Oesophageal SCC
PD3244a	M	50	Oesophageal SCC
PD3245a	M	57	Oesophageal SCC
PD3246a	M	60	Oesophageal SCC
PD3247a	M	68	Oesophageal SCC
PD3248a	M	65	Oesophageal SCC
PD3249a	M	71	Oesophageal SCC
PD3250a	M	53	Oesophageal SCC
PD3251a	M	52	Oesophageal SCC
PD3252a	M	62	Oesophageal SCC
PD3253a	M	56	Oesophageal SCC
PD3254a	M	62	Oesophageal SCC
PD3255a	M	45	Oesophageal SCC
PD3256a	M	69	Oesophageal SCC
PD3257a	F	82	Oesophageal SCC
PD3258a	M	55	Oesophageal SCC
PD3259a	F	66	Oesophageal SCC
PD3260a	M	72	Oesophageal SCC
PD3261a	M	72	Oesophageal SCC
PD3262a	M	61	Oesophageal SCC
PD3263a	M	41	Oesophageal SCC
PD3264a	F	86	Oesophageal SCC
PD3265a	M	61	Oesophageal SCC

PD3266a	M	62	Oesophageal SCC
PD3267a	M	50	Oesophageal SCC
PD3268a	M	86	Oesophageal SCC
PD3269a	M	84	Oesophageal SCC
PD3270a	M	67	Oesophageal SCC
PD3271a	F	77	Oesophageal SCC
PD3272a	M	52	Oesophageal SCC
PD3273a	F	86	Oesophageal SCC
PD3274a	M	78	Oesophageal SCC
PD3275a	M	52	Oesophageal SCC
PD3276a	M	48	Oesophageal SCC
PD3277a	M	53	Oesophageal SCC
PD3278a	M	57	Oesophageal SCC
PD3279a	M	75	Oesophageal SCC
PD3280a	F	22	Oesophageal SCC
PD3281a	M	61	Oesophageal SCC
PD3282a	M	55	Oesophageal SCC
PD3283a	F	76	Oesophageal SCC
PD2944a	F	46	Glioblastoma
PD2945a	F	65	Glioblastoma
PD2946a	M	67	Glioblastoma
PD2947a	M	48	Glioblastoma
PD2948a	M	56	Glioblastoma
PD2949a	F	70	Glioblastoma
PD2950a	M	41	Glioblastoma
PD2951a	M	63	Glioblastoma
PD2952a	M	68	Glioblastoma
PD2953a	F	42	Glioblastoma
PD2954a	F	62	Glioblastoma
PD2955a	M	61	Glioblastoma
PD2956a	M	43	Glioblastoma 2°
PD2957a	M	25	Glioblastoma
PD2958a	M	55	Glioblastoma
PD2959a	F	73	Glioblastoma
PD2960a	M	62	Glioblastoma
PD2961a	M	51	Glioblastoma
PD2962a	F	58	Glioblastoma

PD2963a	F	54	Glioblastoma
PD2964a	M	43	Glioblastoma
PD2965a	M	39	Glioblastoma
PD2966a	F	61	Glioblastoma
PD2967a	M	56	Glioblastoma
PD2968a	F	31	Glioblastoma
PD2969a	M	48	Glioblastoma
PD2970a	M	45	Glioblastoma 2°
PD2971a	M	37	Glioblastoma
PD2972a	M	47	Glioblastoma
PD2973a	M	66	Glioblastoma
PD2974a	F	72	Glioblastoma
PD2975a	M	71	Glioblastoma
PD2976a	F	64	Glioblastoma
PD2977a	M	40	Glioblastoma
PD2978a	M	69	Glioblastoma
PD2979a	F	50	Glioblastoma 2°
PD2980a	F	62	Glioblastoma
PD2981a	M	70	Glioblastoma
PD2982a	M	39	Glioblastoma
PD2983a	M	45	Glioblastoma
PD2984a	M	67	Glioblastoma
PD2985a	M	50	Glioblastoma
PD2986a	F	56	Glioblastoma
PD2987a	F	54	Glioblastoma
PD2988a	M	31	Glioblastoma
PD2989a	F	61	Glioblastoma
PD2990a	F	41	Glioblastoma
PD2991a	M	66	Glioblastoma
PD2992a	F	46	Glioblastoma
PD2993a	M	46	Glioblastoma
PD2994a	M	52	Glioblastoma
PD2995a	F	45	Glioblastoma 2°
PD2996a	M	70	Glioblastoma
PD2997a	M	71	Glioblastoma
PD2998a	F	74	Glioblastoma
PD2999a	M	58	Glioblastoma

PD3000a	M	55	Glioblastoma
PD3001a	F	51	Glioblastoma
PD3002a	M	48	Glioblastoma
PD3003a	M	68	Glioblastoma
PD3004a	M	74	Glioblastoma
PD3005a	M	31	Glioblastoma
PD3006a	F	42	Glioblastoma
PD3007a	M	50	Glioblastoma 2°
PD3008a	M	51	Glioblastoma
PD3009a	M	65	Glioblastoma
PD3010a	F	37	Glioblastoma
PD3011a	F	46	Glioblastoma
PD3012a	M	72	Glioblastoma
PD3013a	M	54	Glioblastoma
PD3014a	M	22	Glioblastoma
PD3015a	M	64	Glioblastoma
PD3016a	F	68	Glioblastoma
PD3017a	F	65	Glioblastoma
PD3018a	M	65	Glioblastoma
PD3019a	M	72	Glioblastoma
PD3020a	M	64	Glioblastoma
PD3021a	F	72	Glioblastoma
PD3022a	M	65	Glioblastoma
PD3023a	M	68	Glioblastoma
PD3024a	M	52	Glioblastoma
PD3025a	M	44	Glioblastoma
PD3026a	M	35	Glioblastoma
PD3027a	M	64	Glioblastoma
PD3028a	M	81	Glioblastoma
PD3029a	M	48	Glioblastoma
PD3030a	F	42	Glioblastoma
PD3031a	M	67	Glioblastoma
PD3032a	F	53	Glioblastoma
PD3033a	M	54	Glioblastoma
PD3034a	M	66	Glioblastoma
PD3035a	M	66	Glioblastoma
PD3036a	F	61	Glioblastoma

PD3037a	M	49	Glioblastoma
PD3038a	M	59	Glioblastoma
PD3039a	F	53	Glioblastoma
PD2894a	f	65	Multiple myeloma
PD2895a	m	70	Multiple myeloma
PD2896a	M	65	Multiple myeloma
PD2897a	M	65	Multiple myeloma
PD2898a	M	68	Multiple myeloma
PD2899a	M	70	Multiple myeloma
PD2900a	m	61	Multiple myeloma
PD2901a	F	55	Multiple myeloma
PD2902a	M	68	Multiple myeloma
PD2903a	F	43	Multiple myeloma
PD2904a	F	62	Multiple myeloma
PD2905a	m	68	Multiple myeloma
PD2906a		ND	Multiple myeloma
PD2907a	f	62	Multiple myeloma
PD2908a	F	64	Multiple myeloma
PD2909a	F	53	Multiple myeloma
PD2910a	M	62	Multiple myeloma
PD2911a	f	59	Multiple myeloma
PD2912a	F	58	Multiple myeloma
PD2913a		ND	Multiple myeloma
PD2914a	F	60	Multiple myeloma
PD2915a	f	54	Multiple myeloma
PD2916a	F	55	Multiple myeloma
PD2917a	M	60	Multiple myeloma
PD2918a	f	56	Multiple myeloma
PD2919a	m	57	Multiple myeloma
PD2920a	M	54	Multiple myeloma
PD2921a	M	49	Multiple myeloma
PD2922a	M	66	Multiple myeloma
PD2923a	F	59	Multiple myeloma
PD2924a	M	67	Multiple myeloma
PD2925a	F	53	Multiple myeloma
PD2926a	F	54	Multiple myeloma
PD2927a	M	56	Multiple myeloma

PD2928a	M	54	Multiple myeloma
PD2929a	f	78	Multiple myeloma
PD2930a	M	66	Multiple myeloma
PD2931a	M	57	Multiple myeloma
PD2932a	M	79	Multiple myeloma
PD2933a	M	79	Multiple myeloma
PD2934a	M	78	Multiple myeloma
PD2935a	m	58	Multiple myeloma
PD2936a	M	57	Multiple myeloma
PD2937a	M	57	Multiple myeloma
PD2938a	M	89	Multiple myeloma
PD2939a	M	47	Multiple myeloma
PD2940a	M	71	Multiple myeloma
PD2941a	M	60	Multiple myeloma
PD2942a	ND	ND	Multiple myeloma

Supplementary Table 3 - PCR Primer Sequences

UTX sequencing primers

Exon	STS	Primer 1	Primer 2
1	stCE0X-24550	CGATAAAGTTGGTGTGCTGG	ATCTCACGAACCCAAAGAGG
2	stCE0X-27173	CTCGGTTTGGCGCTCTTC	CCCTTGACCCTAAACAGGCA
3	stCE0X-24598	AATATTGACTTCTTAGGTGATCGAA	TCTATATCAAACTGGGTCACTTTCT
4	stCE0X-27565	TATCTACTGGGAGGTGGGTGTG	CAGCCTTCTTTTACTCCCAGG
5	stCE0X-24518	GTTGATTGGAATCTGTGCCA	CCAAAAAGCTTTCTAATCTAAGCC
6	stCE0X-25353	CATATGCCCCTTTTCAATTTT	TGTTACCATGGAAGTCTTAGCA
7	stCE0X-26796	GGCTAGTGTATTTTATTTGCATAGCAT	CCAGCAAAACCTGTTTTTAATCC
8	stCE0X-28655	GACAGAAATTTCATTTGATAATGACC	GGAATTAATTTGTACACAGCAAGC
9	stCE0X-28737	CAACTGTCTGATGTTAAAGAAACATTC	GGGTTAAATACTAGGGAGTAATTTTGA
10	stCE0X-26889	ATGGCCAGAATTGGCAGT	GTCCTGCTAGACCAGATTATGCT
11	stCE0X-25351	CAGCATGCTTTTTAGCACCT	GGCTGATTTTGCTGCTGATA
12	stCE0X-29332	CAGATACATGGTGTTCAATAGGG	GGAAACAGATTATAGACATCAAAACA
13	stCE0X-27072	GGTTTATATTCCGGTTACCCTGT	AGGTTCTAAGTTGGTACCCCAAA
14	stCE0X-26800	AATGTTGGATCTAGTGGACAGTG	TTAATACTTGTTTGCTACCTCTACTCC
15	stCE0X-25856	TGACCAGATAGTGGTTCTGAGTTT	AGCCCTAAAAACCTTGCCTC
16	stCE0X-26152	CACACATTCCCTAATTATACATCTTCA	AGTTGGTTTTTCCACGGCT
16	stCE0X-29380	GGCCAATGGACCCTTTTC	CCACTGTAAATTAATGGTGCATTTT
17	stCE0X-28464	AGGACTTGGGTCAAATTATCTTATACA	CCATGGCTAGGACTGCAAA
17	stCE0X-28465	TACCTCAGGTGGACAACAAGG	GCAGATCTGTTTTCATGGGG
17	stCE0X-28466	AACTCTGTTGCCTCTTCACCA	GGGCAGTAACAGCACAATCA
18	stCE0X-24318	TGGACTTGTGCAAATGCCT	GCTGCTCAAAATTAGGGCAAT
19	stCE0X-27360	TCACCCCATAAAATGCGTTA	CACAATTATGTAAACGGACCAAA
20	stCE0X-27556	ATAGCTCAGGTTGTGCAGAGG	GAGACAACTGGAGAACACTTACAAA
21	stCE0X-62384	TTTTTCAGTTGTATGGTGGAAAG	AATGACAATAAATGAAACAGAAGAGG
22	stCE0X-28548	CCAGTTGTAGAACACTAAACTAGACTG	ATGACAATAAATGAAACAGAAGAGG
23	stCE0X-23981	TTTTGTTGGGAAGTTTTCTTTGG	ATGAAAAGGGGAAAAATCTTAATCTG
24	stCE0X-25571	TGAGCATTTGTAAGGTTTTGTTT	CTTTTCTATCTTCTTAATTCATGGGT
25	stCE0X-28774	ATATACATACAGCAGATCTTTTTGCAC	TACTACGAATTACAATTCTATGCAAGG
26	stCE0X-28828	GTTTTGAGGTTTTCAGAATTGATG	TGGGAAAGAAGCACAGGTCT
27	stCE0X-27486	TCAGGCCTGCTGAGCATT	AATGGCTAAGCAACAAAATTGAA
28	stCE0X-27503	AACCAGAGATCACTGTCCACAA	CTCACCCAGGAAAACTGAAAA
29	stCE0X-27586	AGCAGGCTGTTGAACTTTTTG	AAGGGGGAAAAGACAGATGAA

UTX multiplex assays

Exon	STS	Primer 1	Primer 2	Product size	Control primer
1	UTXhrd2	GTTGTGAATTCGCTGCGTTT	TGCCTTACCTTGCCCAGTAG	466	ACTIN 3
2	UTXhrd6	CGGACTGGACAGGTACGG	GAAAAGAGCGATTTCGCAAG	481	ACTIN 3

3	UTXhrd10	ACATAGGGAAGCTGTTCCTTC	CACTGAACATGCAGGTGGTT	489	ACTIN 8
4	UTXhrd14	TCCTCCACGAGTTTTGATCTTT	AACCCTTTTCCAATACCTTTCC	454	ACTIN 3
UTX intron 2	rs7056671_2	AAACATGTGGACTCTGGAGTTG	AATATGACGGGGGTGGGA	244	ACTIN 4
Control	ACTIN 3	CCTGCAGAGTTCCAAAGGAG	GGCATCCTCACCCTGAAGTA	320	
Control	ACTIN 4	GGACATGCAGAAAGTGCAAA	AAGATGACCCAGGTGAGTGG	389	
Control	ACTIN 8	GTCAGGCAGCTCGTAGCTCT	AACACTGGCTCGTGTGACAA	579	

UTX exon deletion mapping primers

Exon	STS name	Primer 1	Primer 2	Product size
5	UTXhrd17	ATTTCAGGGCTGGAATACCTC	AAATCTAAGGTGAGCCAACACC	450
5	UTXhrd18	CAAGAAACAAAAAGAACCAGAGG	CAAGCACAAACAAAACAAGCA	475
6	UTXhrd21	CAAGAATTCATGCACGTGTTA	ACCTTCACCCTTTCCTGATG	450
6	UTXhrd22	CAACCTATCTTCCTTCCCCTTT	AATTCCAACATTTCTCAATGCTC	451
7	UTXhrd25	CCCACAGCATGTCAGTTGTC	CTGGTCTTGCAGGTTCCATT	404
7	UTXhrd26	TCTCCATTCTCAGCTGTCTCAA	TAGCCATGGCAACCAATACA	408
8	UTXhrd29	TGCTTAATGTTGCCATTTTGA	AAGTAACGCCCAGAACTCCA	477
8	UTXhrd31	TGTGGTTTCTTATCATGATTGTG	ACAGCAAGCACTCCTTGGAA	443
9	UTXhrd33	TTCAGATGATATTGGCATTTGG	CCACATATTTGCCACACTCG	450
9	UTXhrd34	TGGTGTTAGGTACTCTGGAACAA	ACTGTGGGAAGGACAATGCT	463
10	UTXhrd37	AATGGCCAGAATTGGCAGT	TCCTGCTAGACCAGATTATGCT	500
10	UTXhrd38	TGAATGAAAGCCCTTTGTAGC	TTGTTTAACTTTCAGGAATCTTGG	500
11	UTXhrd50	GGTTTGTTGGAGGGCAAAT	GGCTGATTTTGCTGCTGATA	460
11	UTXhrd51	TGCAGCATGCTTTTTAGCAC	TCAACTCAGAAGAACTGCTTGG	446
12	UTXhrd52	ATTGGGAAAGTTCAGGATGC	CTGGGGAAATATGTGGCTTT	494
12	UTXhrd53	GCAAGTGCAGATACATGGTGTT	CCTCCTTCTGCCTGAGTGTT	457
13	UTXhrd55	CAGTCTTTCACTCTTGCTTGGA	GGGCACCTGCAGAACATAAC	423
13	UTXhrd57	GGCTTGTGTTAAATTTGCTTTTT	TCATGAAAATGCACAAAGGTTC	387
15	UTXhrd61	TCATTTCAGGGAAAGGTTGC	TGCTAACAAATTTCAGGGAAAAA	224
15	UTXhrd62	TGGAGTGTGTGACTGTTGGTC	TCTAAAAATCTCCGTCAATTACCA	418
16	UTXhrd64	ATGGAAACGTGCCTTACCTG	ATGGTGCATTTTGGGTGATT	377
16	UTXhrd66	CAGGAGTTGCACAGGTACGA	CCAGCGTTCTTGATGTGCTA	219
17	UTXhrd70	TGTTGATCCATGGTCATAGCTT	GCCCAGTGGAAGAGAGAGGT	426
17	UTXhrd71	TGGAGTCATTTTAGATAGCAAGGA	GTGGGATGTCCGTTCTGATT	346
28	UTXhrd41	TGCCAGTGGTTGTCATGAGT	GAGCAAACACTGCTGCTTCA	491
28	UTXhrd42	TCACTGTCCACAATTTCATTCA	CTGGTCTCACCCAGGAAAAC	496

29	UTXhrd45	TCCCCTAACTTCACAAGCAGA	TTCTGAAGGGGGAAAAGACA	475
29	UTXhrd46	TGTTGCATAGCAGGCTGTTG	CAAATTCATCAGCCCAGAAA	485

UTX deletion mapping primers

STS location	STS	Primer 1	Primer 2	Product size
5' upstream	rs7058967_1	CAGTTTAAAAGTGCAAAATGAGTTAGA	TATGTCACTGGCCTATGTGTTG	200
5' upstream	rs7058967_2	AAAGAATCATGTCACCTGAAAAA	CCTTAGGCAAATTCCTTAAACG	211
5' upstream	rs5952642_1	GACACCCATGACATCCATGA	AAAGGTCACTTCCCCACCTC	200
5' upstream	rs5952642_2	GCGTTGCATTTATCTGTGGA	GAGCCCAAGTACCAAAAGATTG	200
5' upstream	X_44599000_1	TTGGTTTGTAAGAAGTCTATTAGGGAA	AGAGTGCATAAAGCCTTTCGAG	200
5' upstream	X_44599000_2	TTTCTCTCTATGAATTGGCTGC	TGACTAAATAAAAATAATCTGCCTGG	200
5' upstream	X_44605000_1	CGGTTCTCCAGATTCTCCAT	TCCCCAACAGTAGGAACAAAA	200
5' upstream	X_44605000_2	CCATTCAATTTCTTAGCATCAGC	AAGGAAGAGGTGGGGACTGA	200
5' upstream	X_44606000_1	TGGTGAGCAGCTTTGAAGG	CTGGATTGAGAAAACCCCAG	200
5' upstream	X_44606000_2	GCACCAAGTCTTTGAGATGG	TGGATCTGGGTGAAATAGGTG	200
5' upstream	X_44609000_1	CCCAGCCCTCATTTTCATT	GGCAAAGCATTTATTATGCCA	200
5' upstream	X_44609000_2	TTCTGCTGTGATGAAATATTCTG	GTCATGCCTTTAACGATTATTTTG	200
5' upstream	X_44610000_1	GCCAGCCAGTTAGCCAGTAT	AGGCAGCACCATGAAGAGTC	200
5' upstream	X_44610000_2	AGCCCAGGTGAAAGCAAAT	GGCCAAGAGGATAAGGGAAA	200
5' upstream	CN_951003_1	CTGACCTCGGGTGATCCTT	TCTCAGAACACTGCCCAAAA	211
5' upstream	CN_951003_2	CTCCGCCTCCCAGATTTAAG	CATCATAGCAAGACCCAGGA	311
5' upstream	X_44613290_1	AGCAGTCCTAACTCTATTCTCACAA	ACGATCAAACATAGGTTCAAAAA	200
5' upstream	X_44613290_2	GCTCAAACCTAACCATATATCTATTTC	TGTTAGTGCCATATAACCTTTACAGA	216
Intron 2-3	X_44633000_1	GATGTTTAAAATTCTAGGCATAATCAC	GCCAAGCGACTCTTGCTACT	200
Intron 2-3	X_44633000_2	CCACTTCTTTCTTACAGTTGGGA	ATCTTTGTAATATCTACATGCCCAG	200
Intron 2-3	X_44634000_1	AAATAGTCATGATTCTATGAAAAGAGG	AGTCAATACATAAGTGTTGCCATTT	192
Intron 2-3	X_44634000_1	TGTCTTGTTGGACTTGGTTGTC	GGGAAACTGGGTAAAGCACA	200
Intron 2-3	X_44640000_1	TTAAGTTTCTAAGTATTTGGAGGGTTT	TGCAATATCCAGAGCAACCA	200
Intron 2-3	X_44640000_2	ACATTTCAGCACTACTTTAGCTGTGT	AAAAAGCAGATGAATGAGAAACA	200
Intron 2-3	X_44643000_1	TAGGCTTGCCACTAACCCAA	AAGAAGCAGGTGGTGCTTTG	200
Intron 2-3	X_44643000_2	TGTGTGGGGGATGGAAGAT	ACCACCACCACCAAGCAG	178
Intron 2-3	X_44644000_1	AGGGAGGACCTGGGAAGAAT	ATGGGTCACGCCCTAATAGA	200
Intron 2-3	X_44644000_2	TATGGTACTCCATTTTGGTGGA	AAACCATATCCCCGAAATAACA	200
Intron 2-3	X_44646000_1	AATATTCTGTGTCCCTAGTAACAATTT	ATTCAAGGACAAAAATAGGTTGAA	200
Intron 2-3	X_44646000_2	TTGAGTTGTTTGTTTTTACCTGTT	GCAAACAATAACCAAAATAGAGC	208
Intron 2-3	X_44648000_1	AGAATATTTGAGGCTGTCGAGC	AAACATGACCTCAAGTAAACAAAAA	200
Intron 2-3	X_44648000_2	ATCCCAGTTACCTCTCTTCAAGT	TGTCTCAAGAACTAAAGTATAAGGTCA	200
Intron 2-3	X_44649000_1	TGTACTCCCTCTGCTGGCTT	GAATCAAAGGCTTGCAGGAA	200
Intron 2-3	X_44649000_2	CAAGAGGGATCTTCCAGGG	TGTGGCTTTTTAATTTGCCC	200
Intron 2-3	X_44650000_1	CTGGTTACGTTATCAGCTGGC	GTTTTTAAATGGTTGAGGAGGG	200

Intron 2-3	X_44650000_2	TGGTTAAATTGCTGTTTTAAAGTTC	AGATTTGGTTCTGGAACAATGTA	213
Intron 2-3	X_44651000_1	TCAGGCTGGTCTTCAACTCC	GAAAGCGCTAAAGAATGGGA	200
Intron 2-3	X_44651000_2	TGTTGGGATTATCGGCGT	AATGAAGAAATGTCAGCACTGG	200
Intron 2-3	X_44652000_1	AAATTACCTGTATCCTTCAAAGGTG	AAATTAAAACAGACACACTGAGCA	200
Intron 2-3	X_44652000_2	AGGTGTGAGCCACTGCTTCT	CCACTTCCACAGTTTGGCTA	200
Intron 2-3	CN_951015_2	GGATTCTGCTGCTTGAAAGG	CACATGTGATGAAGCCATCC	314
Intron 2-3	CN_951015_3	TGGACCTGCTTTGTCTGTTG	GACCAACAGGTTAGGGCAAA	447
Intron 2-3	X_44653000_1	CTCTTGATGTGGAAGAGGCA	CACGCAAAGGACTTCTGGTT	200
Intron 2-3	X_44653000_2	CCTGTTGGTCAAAGCCTACC	TGTTCCCTTCCAACATCTCTG	200
Intron 2-3	X_44654000_1	TCAGATGCTAGTCTAATAAAGATGGC	GAATTGATCCTAAACAGCCACA	200
Intron 2-3	X_44654000_2	AAGTCAAAATGTATCTCACAGTCCA	ATTCTTTTCACACAGTCACCTAATTTT	200
Intron 2-3	CN_951016_2	GAGACGAAGTCTCGCTCCTG	AATCGGGCAGATCATTTGAG	236
Intron 2-3	CN_951016_3	AGCATAGCACTTTGTGGCTGT	CATGACAAAACTCCGCCTCT	499
Intron 2-3	X_44655000_1	TCTTGCACCGACCTTAATCC	TGGGGAAAGGATGGAAAAAT	200
Intron 2-3	X_44655000_2	CTCAAATGATCTGCCCGATT	CCTTGGGATGCTGTTGATCT	426
Intron 2-3	CN_951018_1	ACAAGTCCCAGCCCATAGTG	CTTTTGACTCCCCCAAAACA	392
Intron 2-3	CN_951018_2	TCCCTGGACAACTTCCTTTT	TCTCTCAGAAAGGCGAGCTT	253
Intron 2-3	CN_951019_2	TGATGGGGATGATATTTTGTCA	CCATACTGATGCCAAGCAAA	220
Intron 2-3	CN_951019_3	ACCAAGGGAAAGGTAATGGT	CAAGCAATGCTAACACCCATA	437
Intron 2-3	CN_951020_2	TGGGTGTTAGCATTGCTTGT	TGGCAAAGATCATGAATCACA	466
Intron 2-3	CN_951020_3	CATGTGGACTCCAGTTTGAAAG	TCAATCCTCCCTCCCTTTTT	415
Intron 2-3	rs12014045_1	TTCTCCTTTGCATTGTTTTTGA	AAGGAGCTCAACGGATCTCA	200
Intron 2-3	rs12014045_2	TGTCTGCAAAAGTTTAATTTTCTTCTT	AAGCAGTCAAAGGCAGGAGA	200
Intron 2-3	CN_951028_2	GGGAATGGGGCTTCACTATT	TGGAGGGTTGCCATTCTAAA	463
Intron 2-3	CN_951028_3	TGGTAATGTGCCTTGGTCTG	TCATACCACCACCCCTAACA	290
Intron 2-3	CN_951030_2	AGGTGGGTGGTGACAACAAT	TTTCCTGCGCAATATCCTTC	450
Intron 2-3	CN_951030_3	TTCAAAACCTAGCCCGTCAG	AGCTCTGCAACCACCTTTGT	334
Intron 2-3	CN_951034_1	CTGGCTTCATTCACTCAGCA	TGAGGATGCAGAACAAGTGG	380
Intron 2-3	CN_951034_3	AATGAGGGATGCCTGTTTGT	TTGCTGGTGAGAATGCAAAA	433
Intron 2-3	X_44691000_1	CCGTTAGAAATAACTTGCAGGC	TCAAAAGAAAGTTGGCATTGTG	200
Intron 2-3	X_44691000_2	TGTTAGGTTATTGTTTGCCAGTT	ATGCAATTTAGACACACGTAAAATA	234
Intron 2-3	X_44693000_1	GAGAACTGTGCACAATGTATGGA	AGAGTATCTGTTAACCAAGTTTTTGC	200
Intron 2-3	X_44693000_2	AGCACCTGACATCATTTAGGAAA	CAGTCAAATTAAAAGCACAATTTAAGC	200
Intron 2-3	X_44700000_1	TGCGTTGTCTTGAGTAGTCTTTT	TGGGAGTTACAAAGGAGATACC	201
Intron 2-3	X_44700000_2	CCATTAGGTTAATATAGGGGTTTTTC	AAAATATCCTTGGACTCTATGATTCT	200
Intron 2-3	CN_951039_1	TACCATTTGTAGTCACCCAGC	TTTGAGCTTGTGAACACAGACA	200
Intron 2-3	CN_951039_2	GACAGCGTCCTGTTTTAGCA	TGGTATCTGCTGCACTGTTATT	201
Intron 2-3	CN_951040_1	GGAATATGGCACTATGATGGAAA	CAGCAAGGAGGATAAAAGCAA	200

Intron 2-3	CN_951040_2	TTTCTACGTAGCTGGGAGGA	TTTCTTATGTTTATAAATGAAAAGCCT	200
Intron 2-3	X_44703000_1	TTCCAGTCCTTCTTCTCTGC	TTTACTCAAAAGGCTAATGATAACAGA	200
Intron 2-3	X_44703000_2	AGCAAGAAATAAAAATAATCCTATTGA	AACTTGAGATAATTTCCAATATTCCTA	189
Intron 2-3	X_44704000_1	TCCCAATAATGTTATGAATTTCTCTG	ATCTTTCTGCTTCCCTATAATTAAAAA	200
Intron 2-3	X_44704000_2	TTTTATACTCTAGCCATCTGCCA	CTTCAATTCCTGTTCTACTCTTAGC	202
Intron 2-3	rs17244990_1	TCACATAATTCAATAAAGTTCTTCTCA	GGCATAAGTGCTTTTCCCAT	199
Intron 2-3	rs17244990_2	TGTGGGAAAGATGCATATTATTT	CCCTATGTATTTATTAAAAGAGCCAC	203

UTX cDNA primers

Exons	**STS**	**Primer 1**	**Primer 2**	**Amplimer size**
Exon 10-Exon 12	UTX_cDNA_3	TGGGAGATAAAGCCACCAAG	GTGCTGCAAGTGCAGAGGTA	402
Exon 2-Exon 5	UTX_cDNA_20	CCTCTTTGGGTTCGTGAGAT	CAAGACCATATAAAAAGGCAGCA	245
Exon 1-Exon 6	UTX_cDNA_21	CCTGACAGCCGAGGAGAG	GCTGGGATCAACATAAAGCA	367
Exon 25-Exon 27	UTX_cDNA_11	GCTTGGAATGTTGGTCCACT	GCAATGAGAGCTTCCCTCAA	224
Exon 25-Exon 26	UTX_cDNA_12	ATTGGCTGGTGCAACAACAT	GCTTTGGATCTGAGACCTTGA	172
Exon 24-Exon 26	UTX_cDNA_13	TGGGGTGTTCTGAATGACTTC	TCCATTCGTACCGTTCCACT	256
Exon 23-Exon 24	UTX_cDNA_30	CGTGTCGTATCAGCAGGAAA	CACCCCAGTAACCTTCAGGA	196
Exon 23-Exon 25	UTX_cDNA_31	CATATTGGGCATGAACACAGTT	CCACCAAGAACCCATTAGGA	208
Exon 16-Exon 17	UTX_cDNA_33	GACACTATTTTGATAGGCAATAATCA	CTAGGCAGGGTGGGATGTC	296
Exon 16-Exon 17	UTX_cDNA_34	CTTTTCTGCAGGCCATGTTC	CAGCCCCCTGTGTTACTGAA	371

UTY multiplex

Exon	**STS**	**Primer 1**	**Primer 2**	**Product size**	**Control primer**
Exon 6	UTY_exon6_2	CGGAATTGAGAACAAAAGGA	TTCCAACGCTTCTCAGTGAC	407	ACTIN 3
Exon 22	UTY_exon22	TGAATCACAGGGTTTTTGAGG	TGATGGAAAAACAATACCCTGA	402	ACTIN 3
Controls	ACTIN 3	CCTGCAGAGTTCCAAAGGAG	GGCATCCTCACCCTGAAGTA	320	

Supplementary Table 4 - UTX Non-truncating variants identified

Tumour	Cancer Type	Sex	cDNA Annotation	Protein Annotation
OPM-2	MM	F	Het c.197G>A	p.G66D
ESS-1	Endo	F	Het c.319G>A	p.E107K
CoCM-1	Colo	M	Het c.855G>T	p.Q285H
HT-1376	Bladder	F	Het Exon 11 -3 C>G	
LB1047-RCC*	RCC	F	Het c.1124A>G	p.Y375C
647-V	Bladder	M	Het c.1166C>T	p.A389V
NCI-H1793	NSCLC	F	Hom c.1440C>T	p.L480L
HT-3	Cx	F	Het c.1592C>T	p.S531L
PD2990a	Glioma	F	Het c.1666C>A	p.P556T
HEC-1*	Endo	F	Het c.1780G>T	p.G594C
C-33-A*	Cx	F	Het c.1818C>T	p.N606N
LoVo*	Colo	M	Het c.1887G>T	p.E629D
SNU-C1	Colo	M	Hom c.2031G>A	p.Q677Q
SN12C	RCC	M	Hom c.2202T>G	p.T734T
SK-UT-1*	Leio	F	Het c.2233G>A	p.E745K
CP66-MEL	Mel	M	Hom c.2251G>A	p.V751I
CoCM-1	Colo	M	Het c.2264C>T	p.T755M
CAL-120	Breast	F	Hom c.2443G>T	p.V815F
NB16	Nb	M	Het c.2481A>T	p.T827T
CoCM-1	Colo	M	Het c.2822C>G	p.P941R
COLO-668	SCLC	F	Het c.2846G>T	p.R949L
LS-174T*	Colo	F	Hom c.2894A>C	p.N965T
GP5d*	Colo	F	Het c.2987A>G	p.H996R
NCI-H1651	NSCLC	M	Het c.3085C>T	p.H1029Y
CAL-27	HNSCC	M	Hom c.3304G>A	p.E1102K
HT*	B-lymph	M	Hom c.3331C>T	p.R1111C
CW-2*	Colo	F	Het c.3337G>A	p.V1113I
PD2905a	MM	M	Hom c.3487G>A	p.D1163N
HEC-1*	Endo	F	Het Exon 25 +1 G>A	
HCC2998	Colo	M	Het c.3614T>G	p.V1205G
PF-382	T-ALL	F	Het c.3786A>G	p.Q1262Q
CTV-1*	AML	F	Hom c.3822C>T	p.S1274S
SKG-IIIa	Cx	F	Het c.3897T>C	p.T1299T
PD2173a	RCC	F	Het c.3930C>A	p.L1310L
PD2173a	RCC	F	Het c.3938C>T	p.A1313V
NCI-H1436	NSCLC	M	Hom c.3961G>T	p.G1321W
EFE-184	Endo	F	Hom c.4073G>A	p.C1358Y
LC4-1	ALL	F	Het c.4072T>C	p.C1358R
J82	Bl	M	Hom c.4082G>A	p.C1361Y
SW684	Fibro	M	Het c.4160A>G	p.Y1387C
PD3485a	RCC	M	Het Exon 21 +3 del(AAGTCAT)	

Supplementary Table 5 - UTX reintroduction: significant expression changes

KYSE450

ProbeName	ID	GeneSymbol	logFC	t	P.Value	adj.P.Val	B
ILMN_15305	6SBHqKt6R_OqvL5_kk	ST6GALNAC2	0.45	8.92	4.11E-09	9.27E-05	10.4
ILMN_25529	rjEHulOHigKJ0ZUiHo	IGFBP3	0.375	7.87	4.02E-08	0.00023	8.46
ILMN_9856	0XdV3VP_R7u2OQ32ck	MPPED2	0.502	7.77	5.03E-08	0.00023	8.26
ILMN_20293	6c9N6Ciop_jiSqOInk	CALML3	0.579	7.7	5.92E-08	0.00023	8.12
ILMN_16551	xqhUIpLvnt5O1F_g3o	PKP1	0.382	7.61	7.17E-08	0.00023	7.95
ILMN_14703	BUo433ueoSod5d_i.o	KRT4	0.455	7.6	7.31E-08	0.00023	7.93
ILMN_17040	9SW3pSeXYM3hJ8kAKk	LOC92196	0.766	7.58	7.65E-08	0.00023	7.89
ILMN_7654	TFE9.r1SiJVPVJV63U	KRT5	0.436	7.55	8.17E-08	0.00023	7.83
ILMN_1735	upJRRddreVXTwD0b1Q	C10orf116	0.433	7.49	9.42E-08	0.000236	7.71
ILMN_21370	QeeYeOUoQX91SOwEiI	MT1F	0.366	7.39	1.20E-07	0.000271	7.49
ILMN_13394	cSTR6K60RIrJO5XLxI	SLC6A15	-0.231	-7.24	1.69E-07	0.000347	7.19
ILMN_25291	ToJ6ycuXdzQNKv5F_I	NPL	0.307	7.09	2.38E-07	0.000447	6.88
ILMN_25111	KoXa301C6Xiz9HpK_4	ALDH1A3	-0.441	-7.03	2.76E-07	0.000479	6.75
ILMN_17381	9V0C7RDnXXjh11UgBQ	OLR1	-0.266	-6.89	3.79E-07	0.000611	6.47
ILMN_28724	KURKrov3hgrXCou.u0	EDN1	0.369	6.8	4.75E-07	0.000714	6.26
ILMN_1007	KlS.3eurUu.71yu3nk	PPP2R2B	0.493	6.74	5.48E-07	0.000773	6.14
ILMN_37324	o5SX5IAp1T7vFU0dBc	C12orf56	0.265	6.61	7.56E-07	0.001	5.85
ILMN_22135	E5epfp6l3r3hH956Cc	SQSTM1	-0.262	-6.55	8.64E-07	0.00104	5.73
ILMN_9965	r5KQanEn88uvdwe63U	FOXQ1	0.315	6.55	8.73E-07	0.00104	5.72
ILMN_18243	oKnZ5_l5v5.8_7Nb1U	VEZF1	0.273	6.33	1.46E-06	0.0016	5.25
ILMN_3663	Q1T_A_emeelo5P.i.s	MAFB	0.282	6.31	1.54E-06	0.0016	5.21
ILMN_9313	0Y70inv15JOz9TpURI	FGFBP1	-0.311	-6.31	1.56E-06	0.0016	5.19
ILMN_25095	9lXuFd0fFWIXR.PEI0	FXYD3	0.35	6.21	2.00E-06	0.00196	4.97
ILMN_3189	N_SiAbV_UdVHdNKULo	KRT15	0.788	6.15	2.26E-06	0.00206	4.86
ILMN_16009	uty7Pd9EuUoCLr95u4	FZD10	0.544	6.14	2.34E-06	0.00206	4.83
ILMN_26449	ZTR4FSCIq65U4uiOUo	C12orf54	-0.148	-6.13	2.38E-06	0.00206	4.81
ILMN_12938	upWX307QohTkj44igk	SLU7	-0.207	-6.08	2.74E-06	0.00229	4.68
ILMN_12652	ofCQXnSrRt1BKSyLQo	OLFML2A	0.373	5.97	3.57E-06	0.0028	4.44
ILMN_8973	9qfuiAJt_63mL3iUHo	SFTPD	0.401	5.97	3.60E-06	0.0028	4.44
ILMN_2357	irb__6e8D.AeU5HafU	FOXA2	-0.288	-5.93	3.89E-06	0.00292	4.37
ILMN_18064	QqKkJ6PxK0aeh4Opf8	PAFAH1B1	0.315	5.91	4.11E-06	0.00299	4.32
ILMN_10249	3xSn94dedyj3RRsenI	UGT1A6	0.29	5.89	4.32E-06	0.00304	4.27
ILMN_8426	WqOfoK7txh9iMOh96U	OAT	-0.284	-5.87	4.54E-06	0.0031	4.22

ILMN_23792	liiuX3qzd7vrs3uU_k	C6orf117	0.325	5.85	4.79E-06	0.00318	4.18
ILMN_3370	HkE1w_nS5G.pDLlJe0	UCHL5	-0.265	-5.83	5.01E-06	0.00323	4.13
ILMN_129439	QuksruoJb5CSzdUIuI	PDE3B	0.193	5.79	5.50E-06	0.00342	4.05
ILMN_27948	WXLvRBh86gJ6.vXhXk	GLT8D2	0.19	5.79	5.62E-06	0.00342	4.03
ILMN_19612	WXaqXqgvu77ktLANdU	ZNF358	0.311	5.78	5.76E-06	0.00342	4.01
ILMN_11392	0k.d1Qvievw7v_j9XU	SOX21	0.718	5.76	5.96E-06	0.00344	3.98
ILMN_24093	0E7nlcSRXut9djAqBQ	GPC3	0.488	5.73	6.39E-06	0.00352	3.91
ILMN_139385	BlzT15PXH_Kt005Ueo	SUSD4	0.291	5.73	6.41E-06	0.00352	3.91
ILMN_28575	xniZB5VN4UeHQMYHn4	WDR41	0.261	5.61	8.63E-06	0.00463	3.64
ILMN_6390	fqVKXRT1C3UVf3IUMA	ALDH3A1	0.531	5.59	9.20E-06	0.0048	3.58
ILMN_27397	llUh_2Ro5IAfDoop4o	C21orf34	0.149	5.58	9.37E-06	0.0048	3.56
ILMN_18818	KoedxIITSUHkYtItSo	MATE2	0.495	5.51	1.13E-05	0.00564	3.4
ILMN_30263	cX8.55_OOIqKnnlEh4	CHUK	-0.333	-5.5	1.16E-05	0.00567	3.37
ILMN_101745	60qOKuKCuuCKtXCqfQ	NA	0.195	5.48	1.21E-05	0.00579	3.33
ILMN_13490	WdkTddf7r1H1XuSNuo	KARCA1	0.275	5.46	1.29E-05	0.00604	3.28
ILMN_22069	QIJ7c2p1JrTtaSKAqY	HIST2H4A	0.434	5.42	1.41E-05	0.00647	3.19
ILMN_137045	x4v3t.fk3QIpa5XYWU	GAL	-0.365	-5.37	1.58E-05	0.00699	3.09
ILMN_21212	uske9697_RlLqiIMCI	FAM43A	0.279	5.37	1.58E-05	0.00699	3.09
ILMN_10621	ojrImSOVFHgIuH_EI4	CASP1	0.275	5.33	1.75E-05	0.00757	3
ILMN_34065	WZNV5dTXLAh1_c55J4	LOC649970	0.304	5.29	1.98E-05	0.00837	2.88
ILMN_9686	ucr0UvioT_j71R9_p4	SERPINB13	0.172	5.28	2.01E-05	0.00837	2.87
ILMN_42657	EH07iSk6rdXiJ4wWoA	KIAA1644	-0.207	-5.27	2.06E-05	0.00841	2.84
ILMN_15591	HSKDkbS0AV.k1vsnq8	PRO1853	-0.201	-5.26	2.09E-05	0.00841	2.83
ILMN_137008	0dUy91Zt6_lW7vX.XM	ATP5G2	0.286	5.25	2.17E-05	0.00857	2.8
ILMN_1523	NateJLikjswwyld_gQ	SNRPA1	-0.298	-5.23	2.26E-05	0.00878	2.76
ILMN_26764	Bq5jX_ewHoiFLVASKo	MTMR15	0.242	5.2	2.48E-05	0.0091	2.67
ILMN_29906	fgexZ3f.pSdRXVhgpQ	AATF	-0.238	-5.19	2.50E-05	0.0091	2.67
ILMN_14915	uihtWnqOC3rrq2wvyg	IER3	-0.319	-5.19	2.52E-05	0.0091	2.66
ILMN_20473	l3q66JaX566f6qV6fU	KRT6A	0.341	5.18	2.55E-05	0.0091	2.65
ILMN_139249	uFKnit46gofh1K5ljk	ATP6V1C2	0.284	5.18	2.58E-05	0.0091	2.64
ILMN_18538	odYWE0aJJfQk9TxlU0	H19	0.326	5.18	2.58E-05	0.0091	2.64
ILMN_12928	BdXlXor7fQnuh96j_Q	DUSP5	-0.337	-5.17	2.65E-05	0.0092	2.61
ILMN_8954	rlSFe7XE9UrnEQL.SE	UGT1A6	0.243	5.14	2.86E-05	0.00975	2.54
ILMN_7980	QXiUeUE.V99S_Rz3io	PPARG	-0.264	-5.13	2.90E-05	0.00975	2.53
ILMN_25334	fXnHfqen5fp3_J1f_c	C17orf61	0.2	5.11	3.04E-05	0.0101	2.49
ILMN_28506	3lfTfn5C7k69DV0TUo	DKFZP564O0823	0.21	5.08	3.34E-05	0.0108	2.4

ILMN_421	BkFHkGnyH2HSjUtXxE	SLC2A1	0.245	5.08	3.35E-05	0.0108	2.4
ILMN_108758	H2peEEZMa8KT5Rcfbo	NA	-0.196	-5.05	3.56E-05	0.0113	2.34
ILMN_11081	uloEAOK7sgSrVEr_qE	ADAMTS1	-0.185	-5.02	3.90E-05	0.0122	2.26
ILMN_1051	ud5ejnv7rxfvidS3OI	NUP155	-0.28	-4.97	4.38E-05	0.0135	2.15
ILMN_111840	9psRNEH8BVtbHgl5tY	LOC401561	0.383	4.95	4.58E-05	0.0139	2.11
ILMN_6685	36HqUBcKuCun2qtuug	NCL	-0.391	-4.94	4.81E-05	0.0144	2.07
ILMN_9651	rArpuh1f7urqv7qy64	TNFRSF21	-0.27	-4.92	4.95E-05	0.0146	2.04
ILMN_6581	uRT.npF.eCy77VrNJc	WDR33	0.218	4.92	4.97E-05	0.0146	2.04
ILMN_13354	Kleqv0tN1U.rVeh7f4	BRD2	0.257	4.91	5.16E-05	0.0146	2
ILMN_7599	uein.0.eT1eEudTIso	MARVELD3	-0.228	-4.91	5.18E-05	0.0146	2
ILMN_20951	0Si_60s7deRJ6gUY3E	SUCLG1	0.209	4.9	5.26E-05	0.0146	1.98
ILMN_36910	9h.oUwVaCUBd7iTRL8	NA	-0.265	-4.9	5.30E-05	0.0146	1.98
ILMN_14653	QioV_nXu3rURFEgn7M	VSNL1	0.209	4.9	5.31E-05	0.0146	1.98
ILMN_18576	6ur92ermG4P7gnSjlQ	DNAJC12	-0.112	-4.88	5.55E-05	0.0151	1.94
ILMN_2030	ZiG.UjSVC.HMiHpUpE	LRP8	-0.265	-4.85	5.96E-05	0.016	1.87
ILMN_18286	xm60reewT9UUHd_e1E	CBLB	0.339	4.84	6.05E-05	0.016	1.86
ILMN_17359	imv6qJecg7ROjp7TKo	BCL11A	0.2	4.84	6.15E-05	0.0161	1.84
ILMN_1695	cXQeqnZ8u6eeuoACSI	CHMP2A	0.192	4.83	6.33E-05	0.0163	1.82
ILMN_10357	TektKXIp6be5L6qKSw	NOC2L	-0.223	-4.82	6.38E-05	0.0163	1.81
ILMN_1956	ZozS5elROIgSNTER.g	GBP6	0.294	4.82	6.49E-05	0.0164	1.79
ILMN_920	3Una1dSkCiAah8fRKE	LANCL2	0.217	4.81	6.66E-05	0.0167	1.77
ILMN_18897	QQwfnu6CSaqCFyBX9U	FGF19	-0.133	-4.8	6.83E-05	0.0169	1.75
ILMN_6717	0kno.2xFVK.4WBGw54	STT3B	-0.237	-4.78	7.08E-05	0.0172	1.71
ILMN_28555	3F4dNSe19AydbdXcVI	CHST7	0.219	4.78	7.10E-05	0.0172	1.71
ILMN_5859	T6S7lfAlf0sjir7Soo	ZNF512	0.275	4.77	7.33E-05	0.0176	1.68
ILMN_5464	Qd6pkoqIL5wuere9Po	ZCWPW1	0.226	4.76	7.57E-05	0.0178	1.65
ILMN_10714	T5MrCNdjeu93m6e8qE	KLHL3	0.213	4.75	7.67E-05	0.0178	1.64
ILMN_79545	EzsLgUzq4l3n91eEmc	RYK	-0.241	-4.75	7.71E-05	0.0178	1.63
ILMN_8469	HRHtFKvP5NQqJ6D4sU	BAMBI	0.473	4.75	7.74E-05	0.0178	1.63
ILMN_116115	Q2WKlqoUj8rsxtHjng	NA	0.126	4.74	7.96E-05	0.0181	1.6
ILMN_30096	ceF_X1KXFDJINDU3tU	KIAA0391	-0.348	-4.73	8.19E-05	0.0185	1.58
ILMN_82745	ZqGuyopTrQf_JxX4qA	NA	-0.201	-4.72	8.39E-05	0.0187	1.56
ILMN_18641	Wrk6B7r5QrPwCp.Xl0	HEY1	0.319	4.71	8.48E-05	0.0187	1.55
ILMN_3183	WF7r8C2nuF17VSJ7Gk	SLCO4A1	-0.36	-4.7	8.66E-05	0.0189	1.53
ILMN_3168	KQpKCINTUXd6EsOuSQ	PTPRZ1	0.273	4.7	8.84E-05	0.0189	1.51
ILMN_24834	uFiFdP.ptPecs_6SgQ	SLC30A5	-0.207	-4.69	8.90E-05	0.0189	1.5

ILMN_14412	WnvYXotJcQZfQWfXk4	VPS28	0.244	4.69	8.97E-05	0.0189	1.5
ILMN_137235	9mel1qEdzyOp53d8d0	DLX5	0.354	4.69	9.00E-05	0.0189	1.49
ILMN_26788	0qqATDhKVV1F315J78	LOC374395	0.229	4.69	9.03E-05	0.0189	1.49
ILMN_9057	fSUyR.vR7Xu0iR4nUU	TXNIP	0.606	4.68	9.15E-05	0.0189	1.48
ILMN_1407	Eqj_iqkpAtAuDhd7UU	SNAPAP	0.249	4.68	9.32E-05	0.019	1.46
ILMN_23985	TqCLahRL88UPeKC1l8	MAD2L1	-0.33	-4.67	9.36E-05	0.019	1.46
ILMN_15421	6R7R.SJ2unRJu15Vr8	GNA15	-0.184	-4.65	9.93E-05	0.02	1.4
ILMN_28273	6DjoKCHq_Soe63deqU	FGFRL1	-0.279	-4.64	0.000101	0.0201	1.39
ILMN_1491	9aklvNW6.DAnlmZ0UI	FLJ22531	0.274	4.64	0.000102	0.0201	1.38
ILMN_15712	i1LnXep34vnn4PluyE	UBADC1	0.269	4.64	0.000102	0.0201	1.37
ILMN_21460	6uiuCguiSoiiW6MOgo	PMS2L3	-0.175	-4.61	0.00011	0.0211	1.31
ILMN_23495	WSJVRo.eRHere566BM	COMMD7	0.2	4.6	0.000112	0.0211	1.29
ILMN_5038	Q3h9M3uo1EQ6orHpfo	DKFZp451M2119	0.361	4.6	0.000112	0.0211	1.29
ILMN_27253	KWaSe3.5xzCoPelFeo	CCNF	-0.372	-4.6	0.000113	0.0211	1.29
ILMN_42423	QKFARVRVj4heauedxA	NA	-0.275	-4.6	0.000114	0.0211	1.28
ILMN_12148	HugJshCiOSs_uLaNkk	BCL2L1	-0.245	-4.6	0.000114	0.0211	1.27
ILMN_6563	iZauVnkv36hMomQIJw	CEBPD	-0.173	-4.6	0.000114	0.0211	1.27
ILMN_12568	QLk_xlf6Ut_zuX41Bk	FLRT3	0.196	4.59	0.000116	0.0212	1.26
ILMN_28991	Tol53Cksg66eoI7goI	LAMC2	-0.134	-4.58	0.000119	0.0216	1.24
ILMN_24765	NeiuSJRAZH9qly.52A	SP8	0.363	4.56	0.000126	0.0227	1.18
ILMN_5938	9US36eI0Co4kEqH3lE	PPFIBP2	0.236	4.55	0.000128	0.0228	1.17
ILMN_14571	cK7K7urh53ueZfdOng	SLC4A11	-0.219	-4.55	0.000128	0.0228	1.17
ILMN_15497	KqS0wne.VXdVAl9JgY	SUMF1	0.188	4.53	0.000137	0.0241	1.11
ILMN_17486	Tu6lgXjF5eoSUegH.o	PRODH	0.257	4.52	0.000138	0.0241	1.1
ILMN_21283	ZVIrpX78S4odpR7t3s	MNT	-0.256	-4.51	0.000142	0.0245	1.08
ILMN_3399	6Nd4gBJUSh6tdfNbfk	C12orf41	0.343	4.5	0.000145	0.0249	1.06
ILMN_22604	H3iFCp_fheOP9fSd3g	KIAA1826	0.274	4.5	0.000146	0.0249	1.04
ILMN_18065	6qd3g1xev30p96H5yk	LOC144233	0.309	4.49	0.000148	0.0249	1.04
ILMN_16064	EHGUK_J69dUVeeI1cg	ATP5L	0.327	4.49	0.000149	0.0249	1.03
ILMN_2023	KO51fUnriKKLyJ62.4	IDS	-0.18	-4.49	0.00015	0.0249	1.02
ILMN_17848	rpPpSo17oF33L0qu4k	CD109	0.152	4.49	0.00015	0.0249	1.02
ILMN_30033	06Tt_Ktf37yi.NeUlQ	ILDR1	0.287	4.49	0.000151	0.0249	1.02
ILMN_19169	rla5l9zxP5cE3_hukg	MRPL3	-0.202	-4.48	0.000153	0.0249	1.01
ILMN_19314	rkiktz5Chff55S80yk	EIF4G2	-0.237	-4.48	0.000154	0.0249	1
ILMN_7846	cj3ouCSO8dhf_3VKe4	MRPS30	-0.24	-4.46	0.00016	0.0256	0.964
ILMN_9220	lv.m6i7uXm6u7m7_r8	SIAH1	0.285	4.46	0.00016	0.0256	0.962

ILMN_26487	NJoDUIHXLHeFJSpSpI	DHRS7B	0.222	4.45	0.000164	0.026	0.941
ILMN_2508	r5zqnylOdLnqhKL.lQ	MRPS18A	0.181	4.45	0.000167	0.0263	0.927
ILMN_3186	uor8nTo_mnU9yXf6sU	ACTL6A	-0.222	-4.43	0.000175	0.0274	0.882
ILMN_20959	9p8ZfZ13LiqDiXjhHM	PCDH19	0.275	4.42	0.000177	0.0275	0.87
ILMN_24514	KEoF6iEBF4SgpeK_Vs	CXorf38	-0.163	-4.41	0.000181	0.028	0.848
ILMN_6157	93qBFQhLgK7TTUqJWY	NRP2	-0.139	-4.41	0.000185	0.0284	0.831
ILMN_13350	NnekUL0Df11U.uJ7qE	ZNF323	0.25	4.4	0.000186	0.0284	0.823
ILMN_18326	ZO6IOuzJVTV4wKJbCk	GALNT5	-0.196	-4.39	0.000191	0.0289	0.801
ILMN_1402	odNytG79eOhepUOtIo	MSRB2	0.298	4.38	0.000197	0.0294	0.775
ILMN_18684	BkpeHhSu3TTlI8CEh4	ARL6IP2	-0.191	-4.38	0.000197	0.0294	0.774
ILMN_37799	Zl3fbpPwEldE3Vf8eI	NA	0.147	4.37	0.000204	0.0302	0.742
ILMN_29029	NkEC1YkOC01HXk3r60	CFD	0.251	4.36	0.000209	0.0304	0.719
ILMN_6435	6eipewbvkNd0.oIc1c	AKR1B10	0.155	4.35	0.000211	0.0304	0.709
ILMN_6383	iAdwVL3tXonu4VaEKU	ETFB	0.191	4.35	0.000213	0.0304	0.702
ILMN_558	TnqJL5KUS4Lu_fe0fw	TRAPPC2	0.218	4.35	0.000213	0.0304	0.701
ILMN_8340	T73f_VsrqKuqPnm1yc	MYADM	-0.266	-4.35	0.000213	0.0304	0.7
ILMN_7184	3qSjV6EfGxDn255eOE	SYTL1	0.245	4.35	0.000214	0.0304	0.698
ILMN_21403	ZlekT1T_57rs17v1_0	CPA4	-0.206	-4.35	0.000214	0.0304	0.695
ILMN_7731	fF5976WihjleBd_iX8	LOC400566	0.211	4.35	0.000216	0.0304	0.689
ILMN_14021	i0NA17XLu5Lt9pXuhE	EHD4	-0.292	-4.33	0.000222	0.0311	0.661
ILMN_14837	Tl6K7grns1aA3N6Feg	FHOD1	-0.208	-4.33	0.000224	0.0311	0.657
ILMN_134510	Wr9CXo4eog45RyqogQ	KIF2A	0.16	4.33	0.000227	0.0313	0.642
ILMN_2430	lkqhK3QtfVJMREqBAQ	PDE6D	0.184	4.33	0.000228	0.0313	0.64
ILMN_15231	ZUCXcuxfXXfHTU1S0E	HCP5	0.274	4.32	0.00023	0.0315	0.629
ILMN_9515	NTDupI.p0nX04jStLo	SNCAIP	0.211	4.31	0.000239	0.0319	0.597
ILMN_777	HnepfRIOOkX1wFdOro	GPX2	0.254	4.31	0.00024	0.0319	0.592
ILMN_15655	cndSXiQSJaFe3RQKAA	COX19	0.276	4.3	0.000242	0.0319	0.586
ILMN_5727	uV7ued.rpMIKh6e7z0	SFT2D1	-0.269	-4.3	0.000242	0.0319	0.583
ILMN_24748	lGlfnlFBOiH_xbtW98	DC2	0.232	4.3	0.000243	0.0319	0.581
ILMN_19158	WkXHGxfrHvQnuojEms	76P	-0.232	-4.3	0.000243	0.0319	0.579
ILMN_84965	oIIioMqIiuop43vbpU	NA	-0.301	-4.3	0.000246	0.0319	0.57
ILMN_3827	KnEn78Gku09V.kew4o	EFNB2	0.206	4.3	0.000246	0.0319	0.569
ILMN_5529	WBf1LPrE36felQFUJI	ZNF294	-0.199	-4.29	0.000247	0.0319	0.567
ILMN_138674	QZQ01RTMF9j7n3QdRU	SH3BP4	-0.2	-4.29	0.000249	0.0321	0.558
ILMN_138760	xVyKdhRIMOUtFFeBkQ	DLX1	-0.194	-4.29	0.00025	0.0321	0.553
ILMN_2369	cpJL9454pL_Q1ThB6M	PLA2G4A	-0.251	-4.26	0.00027	0.0342	0.484

ILMN_16193	rqaOSp6rTezeCVdoMA	DHRS13	0.229	4.26	0.00027	0.0342	0.483
ILMN_21009	ThQrKUtDVBRzndS7FQ	NFE2L3	-0.25	-4.25	0.000278	0.0349	0.455
ILMN_7405	uVNSTu7t3N_TcXnX6U	MAPK10	0.161	4.25	0.000279	0.0349	0.452
ILMN_3055	N7R5zufUVmWotUetyA	LOC124446	0.207	4.24	0.00028	0.0349	0.449
ILMN_3402	KTSJLp6pHoLO16okOQ	CPEB2	0.128	4.24	0.000283	0.035	0.44
ILMN_9629	TgRLrHOK2qTxHlzlCk	USP16	-0.183	-4.23	0.000289	0.0356	0.421
ILMN_10248	3tnnXimOOpCgiiPmaM	TCEA2	0.3	4.23	0.000294	0.0357	0.406
ILMN_1962	lgiQKueA4fsa_nrn90	KLHDC5	0.25	4.22	0.000295	0.0357	0.403
ILMN_19282	xU75QpS3gNep0LjXXk	GART	-0.288	-4.22	0.000295	0.0357	0.403
ILMN_21476	HeOif1xSFeA9GTSmag	KATNAL2	0.138	4.22	0.000298	0.036	0.392
ILMN_26010	Z590t9JSKip7z9SK5k	DAP	0.293	4.22	3.00E-04	0.036	0.386
ILMN_16111	3nivfFfvk55Rd18lLk	C1orf116	-0.247	-4.21	0.000302	0.036	0.38
ILMN_18952	iiHrXr.vV.rEhd_0uc	GTF2E1	-0.184	-4.21	0.000307	0.0363	0.367
ILMN_3927	ZunPhR2k868t4PlR54	C9orf66	0.239	4.21	0.000308	0.0363	0.362
ILMN_2367	0uXT1.VFCDU3yZdeUk	LYK5	0.223	4.21	0.000309	0.0363	0.36
ILMN_27537	cN3p4qOHxe9LHcQ9d4	HSP90AA1	-0.411	-4.2	0.000311	0.0363	0.353
ILMN_22610	fiqeVovq1_Xo.4RJB8	TRIM8	0.186	4.2	0.000316	0.0366	0.338
ILMN_22421	BQof3gl0fOI5eCUpTo	CR2	-0.147	-4.2	0.000317	0.0366	0.336
ILMN_16205	uuQv3UvqO_3eVr6F10	GOT2	-0.255	-4.19	0.000318	0.0366	0.333
ILMN_24204	0RjkK6IdY4Q4odooi4	CLUAP1	0.184	4.19	0.000323	0.0368	0.319
ILMN_3488	K4I1UHnUl3lnlOf4tQ	SCGB1A1	0.189	4.19	0.000325	0.0368	0.313
ILMN_2335	KjupQtR7XX6aQCVPgg	TAGLN	-0.383	-4.18	0.000326	0.0368	0.31
ILMN_12943	Tpe.T8.s83l61eKbeo	TMEM98	0.184	4.18	0.000326	0.0368	0.309
ILMN_12614	xRERl9QrpCcQRd4HpE	ZNF750	0.199	4.18	0.000331	0.0371	0.297
ILMN_19665	33dt4lVKX.Uf4qK59g	CES2	0.236	4.18	0.000334	0.0372	0.289
ILMN_25630	i65p6U6ICeH6eu6xIg	MAT2A	0.476	4.17	0.000341	0.0377	0.27
ILMN_13555	x3VEoIqiSEqA3lxQio	TMEM79	0.256	4.17	0.000341	0.0377	0.269
ILMN_3162	3LV5rVIyXg15Wi6CeA	TIMP1	-0.257	-4.16	0.000344	0.0378	0.262
ILMN_27351	ER6dKLhJWD5fEs0QKk	C14orf149	-0.171	-4.16	0.00035	0.038	0.245
ILMN_7444	6aaey6nd9dfUW4VQXc	UBE2S	-0.257	-4.16	0.00035	0.038	0.245
ILMN_4348	QuCQeDfSTvdNpol9_4	AUTS2	0.138	4.16	0.000351	0.038	0.244
ILMN_14255	TLuqfizk6P_s3kqteo	NA	0.133	4.15	0.000353	0.0381	0.237
ILMN_18647	6KhTnqXeZd7EFHnWB0	SLC22A18	0.163	4.15	0.000358	0.0384	0.225
ILMN_4989	Qpt0ed0q9KyDvnr.ik	C17orf59	0.215	4.14	0.000363	0.0388	0.211
ILMN_138451	00g6Loa0X10ffPnDdQ	FAM91A1	-0.271	-4.14	0.000369	0.039	0.197
ILMN_103501	NnglJ17X.NQB6su1JQ	NA	-0.133	-4.14	0.00037	0.039	0.195

ILMN_15639	QniJVJ4ToDEvvpdaXU	CTSD	0.265	4.13	0.00037	0.039	0.195
ILMN_27156	WlpdLtTve7bEZ_Aizg	HPS3	-0.276	-4.13	0.000375	0.0393	0.183
ILMN_20957	Bo6vH5UUgElctUHX5s	WBP1	0.267	4.13	0.000376	0.0393	0.179
ILMN_11739	xXQSlSoqC7iZfrOHwA	IRF1	0.184	4.12	0.000383	0.0396	0.162
ILMN_7276	NERV5_oVyczk.zuF_U	DFNA5	-0.243	-4.12	0.000385	0.0396	0.159
ILMN_17160	WV_l5R.UrtfzR.hqHc	SH3PXD2A	0.244	4.12	0.000385	0.0396	0.157
ILMN_12370	rd42yg_KLtWX7p4geg	SFN	-0.287	-4.12	0.000386	0.0396	0.155
ILMN_25780	il3cSST7R7op9wlA6E	PCDH7	0.219	4.11	0.000391	0.0399	0.143
ILMN_14234	opVElXnh0AQcOB3oJU	NA	0.344	4.1	0.000401	0.0406	0.12
ILMN_11895	HLl890SQlXy1UJV1Vw	RYR1	0.14	4.1	0.000402	0.0406	0.117
ILMN_16484	lmp__6CNF._MV5R2C0	LRRC8D	0.194	4.1	0.000404	0.0406	0.113
ILMN_18558	cqcdO17JS9NdMMIOpI	GSTA4	0.255	4.1	0.000405	0.0406	0.111
ILMN_1807	NoEh4gqQE9eonqQojU	NR1H3	0.215	4.1	0.000407	0.0406	0.107
ILMN_9690	B3O119RVC1aNHZ7.ek	SLC37A2	-0.151	-4.09	0.000413	0.041	0.0939
ILMN_18139	oKtUJLUiCO3u6f1dXk	UBQLN4	-0.183	-4.08	0.000422	0.0417	0.0744
ILMN_27552	Hd8dyud.riISn_9370	PPM1E	-0.192	-4.07	0.000432	0.0425	0.0519
ILMN_17770	rOTSdl6h6d7jACFXVk	KLHL22	0.21	4.06	0.000442	0.0432	0.0309
ILMN_5987	iAjhVKE.nr976Uvylo	ALG11	-0.139	-4.06	0.000443	0.0432	0.03
ILMN_26493	33obrCQopAnZlAmA1Y	HIST1H2AC	0.164	4.06	0.000445	0.0432	0.0249
ILMN_2607	xjlJ93dSrny_n_VFXQ	JUP	0.257	4.06	0.000452	0.0437	0.011
ILMN_1092	BqIVUT0Ion9KY3ogIE	LAMB3	0.171	4.05	0.000463	0.0446	-0.0104
ILMN_4651	6pM_m9e5zjjqe7jIio	MRPL39	-0.237	-4.04	0.000466	0.0447	-0.0176
ILMN_25905	rZ1e6.uVHnQxJdY10c	AP3S2	0.273	4.04	0.000469	0.0448	-0.0237
ILMN_26003	3qnFKAmXUFckAuQjqg	NUPR1	0.4	4.03	0.00048	0.0456	-0.0437
ILMN_28045	3jXvhFUBUEKKCXqC5U	SLPI	0.17	4.03	0.000481	0.0456	-0.0462
ILMN_2465	x0CfooGqipWoO1e3kY	KRT86	-0.124	-4.03	0.000488	0.0461	-0.0599
ILMN_856	f5e2Tv7t5dvV1Xrl7s	CAMK2B	0.299	4.02	0.000496	0.0465	-0.0745
ILMN_99086	WCX_zu10qpIWH8IqFI	FAM119A	0.253	4.02	0.000499	0.0465	-0.0797
ILMN_2007	HhmlFUpf1IkBeiCPRA	TP53I3	0.3	4.02	0.000499	0.0465	-0.08
ILMN_138009	Z1JCtcrl1ul.bEupC8	NUP50	-0.194	-4.01	0.000504	0.0467	-0.0882
ILMN_39594	BVzqJCp4XuHv83UqUE	NA	0.225	4.01	0.000506	0.0468	-0.0927
ILMN_46045	Ki3pfreTe53VfRAKSk	NA	0.319	4.01	0.000514	0.0473	-0.106
ILMN_11722	HF1uvR6LwJDapvsSdE	MGC52110	0.19	4	0.000523	0.0479	-0.123
ILMN_11566	Nrlw71O3gv5VLnEb6I	MAOA	0.164	3.99	0.000531	0.0485	-0.138
ILMN_25404	9l_le_Lc3rBHonh1eo	SPINK1	-0.101	-3.99	0.000533	0.0485	-0.141
ILMN_3773	EjUqOiOoK8gKSV0XeI	PLCG1	-0.179	-3.99	0.000539	0.0486	-0.15

ILMN_14188	9le_SKQ.juhPfN2oRE	VPS29	0.218	3.99	0.000539	0.0486	-0.15
ILMN_12569	BVfNNHlz2d9dSXekFE	LOC113386	0.261	3.99	0.000541	0.0486	-0.154
ILMN_15956	HuV.XSgvnu.T9.o6Hc	RDH10	-0.213	-3.98	0.000548	0.049	-0.165
ILMN_33412	xVHloAfoZFn_gd1ai8	NA	-0.121	-3.98	0.000555	0.0492	-0.177
ILMN_12919	BWeXuR04Aqf6fwqCSc	PPIE	0.184	3.98	0.000555	0.0492	-0.177
ILMN_8673	NfCKX03lNHbt3S4Cnk	DMRT2	0.186	3.97	0.000559	0.0494	-0.183
ILMN_13494	TuUn0AFY7rqzSikmnw	MELK	-0.215	-3.97	0.000567	0.0499	-0.196

KYSE180

ProbeName	ID	GeneSymbol	logFC	t	P.Value	adj.P.Val	B
ILMN_532	BhFLTHp0qVFnDl8OA0	TRIM22	-0.682	-19.6	2.31E-16	5.20E-12	25.4
ILMN_36318	9UuS9Unt1eddx646nA	NA	-0.885	-18.9	5.69E-16	6.42E-12	24.7
ILMN_22857	ueQUrXd5FH554RlhZc	CCL3L3	-0.764	-16.6	9.63E-15	7.24E-11	22.4
ILMN_32946	0SZL1Se3V513HrjqcM	NA	-0.622	-15.7	3.45E-14	1.63E-10	21.4
ILMN_11175	o3qVxJeiBeiDXEVEgU	BIRC4BP	-0.506	-15.6	3.84E-14	1.63E-10	21.3
ILMN_18149	fju3dEn4Al4hJ7fuKg	HLA-B	-0.785	-15.5	4.34E-14	1.63E-10	21.2
ILMN_6158	ogoZKSQIstLV9_neeE	CCL3L1	-0.518	-15.2	7.64E-14	2.46E-10	20.7
ILMN_3648	Ko6INenlO6_OUlXUiA	LOC129607	-0.498	-14.5	2.14E-13	6.03E-10	19.9
ILMN_11198	05l456hJVnVI7AgZh8	MT2A	-0.882	-14	4.38E-13	1.00E-09	19.2
ILMN_7054	3iBX5HIoFcRVBXqqDs	OAS2	-0.386	-14	4.43E-13	1.00E-09	19.2
ILMN_25320	fSpP_tQvufNUyUoB3k	IL1A	-0.555	-13.6	8.17E-13	1.63E-09	18.7
ILMN_5994	igVgS9VeuSoulMrp1w	OAS2	-0.592	-13.5	8.68E-13	1.63E-09	18.6
ILMN_17824	Bihnt.kyleqwCS4C6Q	CXCL11	-0.379	-13.2	1.56E-12	2.70E-09	18.1
ILMN_9209	ruhEjVHoI1XdeVCR9E	KRT14	-0.622	-12.8	2.96E-12	4.77E-09	17.6
ILMN_1999	xhGpJIS60tf36d54R0	CCL3	-0.403	-12.5	5.12E-12	7.70E-09	17.1
ILMN_15231	ZUCXcuxfXXfHTU1S0E	HCP5	-0.768	-12.1	9.54E-12	1.34E-08	16.5
ILMN_26472	0X.iEWX3lRR0aET95c	SOST	0.379	11.8	1.63E-11	2.16E-08	16
ILMN_24462	Bppj0CkgYkDjkoioiE	GBP5	-0.367	-11.3	3.73E-11	4.67E-08	15.3
ILMN_14624	NdQiNvJJNLUQEfLpUQ	WNT5A	0.406	10.7	1.20E-10	1.42E-07	14.2
ILMN_7531	3XUk9LUqolGgFO9_fA	UBE2L6	-0.549	-10.5	1.86E-10	2.10E-07	13.8
ILMN_29986	TlzuclRAgz7dPJeDuU	PTGS2	-0.464	-10.1	4.08E-10	4.38E-07	13.1
ILMN_36377	ZiiOfneYrSFroguBug	NA	-0.272	-9.92	5.37E-10	5.50E-07	12.9
ILMN_15271	in0n9od69_jbtd1V2U	CITED4	-0.489	-9.87	5.94E-10	5.82E-07	12.8
ILMN_73498	KXukJSQjpXrhJAIB5E	NA	-0.382	-9.72	7.91E-10	7.43E-07	12.5
ILMN_28991	Tol53Cksg66eoI7goI	LAMC2	-0.283	-9.66	9.00E-10	8.12E-07	12.4

ILMN_14915	uihtWnqOC3rrq2wvyg	IER3	-0.585	-9.5	1.22E-09	1.06E-06	12.1
ILMN_1797	055155VOJ7lC7lSp5M	MT1A	-0.687	-9.41	1.47E-09	1.23E-06	11.9
ILMN_20440	WqEQkplDrN6midEi98	ANGPTL4	-0.346	-9.39	1.56E-09	1.26E-06	11.9
ILMN_2829	HdefXV5T01eVd1OCfg	OAS1	-0.486	-9.26	2.00E-09	1.56E-06	11.6
ILMN_7985	HgCiovEdKeQkuEuVKk	HLA-A	-0.436	-9.01	3.36E-09	2.44E-06	11.1
ILMN_19659	BEUuoPnooFIpH1F_no	LAMC2	-0.479	-9.01	3.38E-09	2.44E-06	11.1
ILMN_18673	fSohbtLKju5enuxurs	LY6E	-0.61	-8.99	3.51E-09	2.44E-06	11.1
ILMN_17240	NeZfUgkrVAwJS5UXgA	OSGIN1	0.526	8.98	3.57E-09	2.44E-06	11.1
ILMN_9856	0XdV3VP_R7u2OQ32ck	MPPED2	0.573	8.87	4.58E-09	3.03E-06	10.9
ILMN_18760	f5OhpkpWUh8KhetFGc	ECGF1	-0.345	-8.82	5.03E-09	3.24E-06	10.8
ILMN_19272	r4UKUSJzq7SRSj_CUo	HSH2D	-0.358	-8.77	5.62E-09	3.52E-06	10.7
ILMN_5566	NVefS1fVTn1_XjhDAk	KRT17	-0.679	-8.69	6.65E-09	4.01E-06	10.5
ILMN_17789	KXSucqCmoF_r4sOdt4	IL4R	-0.446	-8.68	6.76E-09	4.01E-06	10.5
ILMN_22732	EP5e.efnftcn6in1XQ	CCL5	-0.433	-8.57	8.63E-09	4.99E-06	10.3
ILMN_84564	9TYUiK93914c56hPek	NA	-0.272	-8.55	8.96E-09	5.05E-06	10.2
ILMN_20142	fr.cFeEaHuTH9XTU54	CEACAM1	-0.246	-8.45	1.12E-08	6.07E-06	10
ILMN_15421	6R7R.SJ2unRJu15Vr8	GNA15	-0.333	-8.44	1.13E-08	6.07E-06	10
ILMN_3012	Bzkii9KFxeipi5ei_c	HLA-F	-0.374	-8.33	1.45E-08	7.61E-06	9.76
ILMN_28687	lcg6Ay4qUOVKvoqKKk	GJB5	-0.328	-8.31	1.51E-08	7.74E-06	9.72
ILMN_21701	fgetKf6njlJ5.N6yR4	IFRD1	0.323	8.27	1.67E-08	8.35E-06	9.63
ILMN_21444	TQ78QKpChd06Eel3JU	RHEBL1	-0.283	-8.25	1.74E-08	8.52E-06	9.59
ILMN_9851	ESXkU2l59i16KKNVCw	HAS3	-0.412	-8.23	1.81E-08	8.70E-06	9.55
ILMN_17548	cLulAutKul3p3lsv_U	IFI27	-0.488	-8.1	2.38E-08	1.12E-05	9.29
ILMN_24608	WtYp5.6ih9PhepeQ_k	BDKRB1	-0.222	-8.09	2.47E-08	1.13E-05	9.26
ILMN_23731	ZSVvWSocin9p._oSQc	ISG20	-0.593	-8.08	2.50E-08	1.13E-05	9.25
ILMN_4643	uUK90R6Xqfq5UzKK3s	IFI35	-0.371	-8.06	2.63E-08	1.14E-05	9.2
ILMN_6244	TokgOQqnk4XFKEgf1U	SERPINE1	-0.343	-8.06	2.63E-08	1.14E-05	9.2
ILMN_20221	cc3PU76FDFEeVy0e_Q	CYP4F3	0.266	7.95	3.36E-08	1.43E-05	8.97
ILMN_43594	ByBzz4UZddQtUmJW7E	LOC441019	-0.442	-7.68	6.08E-08	2.47E-05	8.4
ILMN_27771	KpkJJLFJIhLa0.9EJk	CHRM3	0.246	7.68	6.10E-08	2.47E-05	8.4
ILMN_80709	QaeB4dujrwv16rp6BU	LEMD1	-0.271	-7.68	6.13E-08	2.47E-05	8.39
ILMN_12678	l7afEnfWi3Il7673tU	COBLL1	0.325	7.65	6.51E-08	2.57E-05	8.34
ILMN_26260	NA6IuyXip675eXVe58	PRKCDBP	-0.395	-7.56	8.15E-08	3.17E-05	8.12
ILMN_138156	NZ6BfqQoIO4kIsiIuU	RSAD2	-0.392	-7.36	1.27E-07	4.87E-05	7.7
ILMN_1946	Qt_chCvnvuS7l7Rx60	SERPINE2	-0.342	-7.35	1.31E-07	4.91E-05	7.67
ILMN_2234	30pLrnVN9dVEHudKes	GJB3	-0.335	-7.3	1.47E-07	5.42E-05	7.56

ILMN_12370	rd42yg_KLtWX7p4geg	SFN	-0.508	-7.28	1.53E-07	5.56E-05	7.52
ILMN_25981	B9RVCIHZnSwGoE5VeQ	MSLN	-0.334	-7.26	1.62E-07	5.79E-05	7.47
ILMN_136941	K1eTl7q3neu7gra6vA	CAMKV	-0.311	-7.24	1.70E-07	6.00E-05	7.42
ILMN_13350	NnekUL0Df11U.uJ7qE	ZNF323	0.408	7.18	1.94E-07	6.74E-05	7.29
ILMN_24466	fp75V5VfrXlXIxJL8w	IFITM1	-0.466	-7.16	2.02E-07	6.89E-05	7.26
ILMN_12676	xqTKEmk0a_T1T6HTkU	ETV5	-0.32	-7.1	2.36E-07	7.94E-05	7.11
ILMN_20808	ipN94F1_bgwrt4egno	TNFSF18	-0.246	-7.04	2.69E-07	8.91E-05	6.98
ILMN_24538	K0lN0lSkUhC6uCCUX4	PLAUR	-0.428	-6.99	2.99E-07	9.78E-05	6.88
ILMN_137475	3.0uJuuHkivLnuAJ6k	CNTNAP2	0.259	6.91	3.66E-07	0.000117	6.68
ILMN_14210	cgep6Z_jeq6iwSpIDg	PRSS8	-0.212	-6.91	3.70E-07	0.000117	6.67
ILMN_26813	HqjN50lDoA3q9BSVeU	RAC2	-0.294	-6.88	3.89E-07	0.000122	6.63
ILMN_6435	6eipewbvkNd0.oIc1c	AKR1B10	0.245	6.88	3.94E-07	0.000122	6.61
ILMN_23021	fprgRN4JRzv16dwp20	NKD2	-0.386	-6.86	4.15E-07	0.000126	6.57
ILMN_36168	ZSiGfnQR6P6yjtWdy0	CLDN22	0.405	6.84	4.30E-07	0.000129	6.53
ILMN_584	fR0VZSIUdff7oYv4QU	VIT	0.28	6.81	4.59E-07	0.000136	6.47
ILMN_22378	c9dFJStdKQLXSUufyI	SOX7	-0.279	-6.8	4.69E-07	0.000137	6.45
ILMN_12066	rtniLXoHBLefWDgBVU	TMEM171	-0.2	-6.77	5.13E-07	0.000148	6.36
ILMN_43196	r6kSLRFR019ZQS1K0Q	SHANK3	-0.212	-6.76	5.18E-07	0.000148	6.35
ILMN_4380	xeqH7t5qjUiZEqLkTM	CYP1A1	0.343	6.71	5.82E-07	0.000164	6.24
ILMN_5895	6ijm72au7nm9Erv3mk	CDKN1A	-0.438	-6.71	5.90E-07	0.000164	6.23
ILMN_12928	BdXlXor7fQnuh96j_Q	DUSP5	-0.436	-6.68	6.31E-07	0.000173	6.16
ILMN_9793	r1SJJToKJ6V0RTUXUQ	EFNB1	-0.227	-6.67	6.43E-07	0.000175	6.14
ILMN_3642	ZLkR3RV5E5MBqRFUu0	LAMC3	-0.254	-6.55	8.55E-07	0.000229	5.87
ILMN_2315	cVSIwKeU.6q3sfOl4A	TNFAIP3	-0.311	-6.55	8.65E-07	0.000229	5.86
ILMN_18130	x.eVcSC7uTqX6ANxO4	RP5-875H10.1	0.239	6.54	8.78E-07	0.00023	5.84
ILMN_3090	6oievz.eV7mGL9J6UI	DKFZP686A01247	0.25	6.53	9.06E-07	0.000235	5.81
ILMN_12139	KtnaFShHEv3c5jdSJ0	PSMB8	-0.311	-6.51	9.51E-07	0.000244	5.77
ILMN_12849	Hul6v6J0kV5qD3PA3U	TMEM105	-0.192	-6.47	1.04E-06	0.000262	5.68
ILMN_27072	fogblc9Ed6ghnDe4Tc	PLCG2	-0.317	-6.47	1.04E-06	0.000262	5.68
ILMN_11442	fiCeKcvUAF3XhV5e_k	ITGA3	-0.428	-6.44	1.11E-06	0.000276	5.62
ILMN_20087	EmX16K4R_Oqu73rx70	COL17A1	-0.263	-6.42	1.17E-06	0.000287	5.57
ILMN_28662	oJH9jvqZ6b_73qRRbg	CYP26B1	-0.281	-6.4	1.24E-06	0.000301	5.51
ILMN_11739	xXQSlSoqC7iZfrOHwA	IRF1	-0.282	-6.32	1.50E-06	0.000359	5.33
ILMN_23524	rAgul1BJgesSJJZLis	KRT16	-0.235	-6.29	1.62E-06	0.000384	5.26
ILMN_20169	HiCg3odVNVUUowC14U	FLJ11286	-0.336	-6.24	1.82E-06	0.000427	5.14
ILMN_15527	rF39d3el6rndEV5GN8	KRT9	-0.187	-6.24	1.84E-06	0.000428	5.13

ILMN_25243	9USOu0q.Qgt8qfUqtU	TMEM16A	-0.192	-6.19	2.06E-06	0.000474	5.02
ILMN_4927	6kdr.ronhj.ip4p68o	ZBED2	-0.309	-6.18	2.11E-06	0.00048	5
ILMN_27029	9lUkuX7kO4O5m3ecBQ	CEBPA	0.225	6.14	2.34E-06	0.000526	4.9
ILMN_1557	0Uu3XrB6Bd14qoNeuc	ZFP36	-0.294	-6.06	2.84E-06	0.000632	4.71
ILMN_79243	WxdulJH10spP0ru0QE	NA	0.251	6.06	2.86E-06	0.000632	4.71
ILMN_6394	To6iMe_60XegDE95x0	IL1R2	-0.147	-6.04	2.96E-06	0.000648	4.68
ILMN_37324	o5SX5IAp1T7vFU0dBc	C12orf56	0.242	6.04	3.03E-06	0.000657	4.65
ILMN_27762	utE_0gSunnu65TYtXk	PARP12	-0.238	-6.01	3.21E-06	0.000686	4.6
ILMN_6497	ulQV9XRfpFIRUofPwE	ITGA5	-0.394	-6.01	3.23E-06	0.000686	4.59
ILMN_7403	BgprkrXTrndXT3ee3c	EMP3	-0.34	-6	3.30E-06	0.000696	4.57
ILMN_1778	cenynVkOoAQWipSJ8s	LGP2	-0.244	-5.99	3.41E-06	0.000712	4.54
ILMN_18852	WSjogkvLh6cit36jU0	HS3ST1	-0.202	-5.97	3.53E-06	0.00073	4.51
ILMN_4297	oe8SGlOxgWUgp_4lKM	VEGFC	-0.336	-5.97	3.57E-06	0.00073	4.49
ILMN_9309	rFqOBc19S6dnV7J3l0	IGFBP4	-0.378	-5.97	3.59E-06	0.00073	4.49
ILMN_14733	WqPEpuLhTlydH1K.BI	DTX3L	-0.26	-5.96	3.67E-06	0.000738	4.47
ILMN_20933	log4MatTQ0RsUXo77o	NA	0.228	5.92	4.06E-06	0.000809	4.37
ILMN_9405	9T0pSSQp4mJYuj4JzQ	PLEK2	-0.212	-5.88	4.46E-06	0.000883	4.28
ILMN_24486	fouZ6hvu5DIit1EUjs	RAPGEF3	-0.27	-5.86	4.69E-06	0.00092	4.23
ILMN_34065	WZNV5dTXLAh1_c55J4	LOC649970	-0.332	-5.77	5.80E-06	0.00112	4.03
ILMN_18432	ELieO5UUW7TiIOr8d0	IRS1	-0.24	-5.77	5.84E-06	0.00112	4.02
ILMN_21009	ThQrKUtDVBRzndS7FQ	NFE2L3	-0.339	-5.76	5.97E-06	0.00114	4
ILMN_1789	xX56r6K.R_RNOir8uc	CCL20	-0.289	-5.75	6.08E-06	0.00115	3.98
ILMN_17479	osGi.IlKnjn_u6Ukd4	TAP1	-0.394	-5.75	6.18E-06	0.00116	3.97
ILMN_13020	clUpRJuoHR.V_7QhP0	HBEGF	-0.313	-5.73	6.49E-06	0.00121	3.92
ILMN_1914	ffgVF1e1eh3HVinexM	DGKA	-0.244	-5.71	6.79E-06	0.00125	3.88
ILMN_18566	0Vb3Klul.liHskiAGw	HES4	-0.303	-5.71	6.86E-06	0.00126	3.87
ILMN_30971	llGfH57t5ug93Xe1XU	KIAA1949	-0.326	-5.69	7.17E-06	0.0013	3.82
ILMN_6116	x1191.eKOVxXsEC2.c	OAS2	-0.299	-5.66	7.65E-06	0.00138	3.76
ILMN_7438	KhXrooqfwV57TQI5fs	SLC27A2	0.204	5.65	7.91E-06	0.00141	3.73
ILMN_16111	3nivfFfvk55Rd18lLk	C1orf116	-0.331	-5.63	8.24E-06	0.00146	3.69
ILMN_1784	xQapRN7Tt92hAs066I	CLDN10	0.187	5.63	8.33E-06	0.00146	3.68
ILMN_78198	cd21IXIO391LnQvKJs	NA	-0.175	-5.63	8.38E-06	0.00146	3.67
ILMN_34882	ilRCL6wigGI.VoDAkk	SH2D5	-0.231	-5.63	8.40E-06	0.00146	3.67
ILMN_8500	xQox.DNS5a9IdFzukU	ATP7A	0.22	5.59	9.19E-06	0.00157	3.58
ILMN_16372	NpO51Vwp3nXV6l4C9c	TNFAIP2	-0.212	-5.59	9.22E-06	0.00157	3.58
ILMN_14614	Qn9O1SB8l.F7gu8cSU	CYP1B1	0.299	5.59	9.24E-06	0.00157	3.58

ILMN_5126	EDUn7DWVAJpJQ2iZig	PLEKHA4	-0.205	-5.56	9.88E-06	0.00166	3.51
ILMN_5201	cIpwqi6s4gPKlS2IVI	RTP4	-0.21	-5.56	9.94E-06	0.00166	3.51
ILMN_15689	TpnrGwMhQ5Lyunf1CE	OAS3	-0.259	-5.55	1.00E-05	0.00166	3.5
ILMN_138374	QZXtSkcinV_G.pI4AE	FOXD1	-0.283	-5.51	1.11E-05	0.00182	3.4
ILMN_23748	ZTFRXx9el33qceUe7k	RRAS	-0.267	-5.45	1.29E-05	0.00211	3.26
ILMN_18897	QQwfnu6CSaqCFyBX9U	FGF19	-0.151	-5.44	1.33E-05	0.00216	3.23
ILMN_25026	ilpekKqGLS6EdSgiaU	SEMA4B	-0.222	-5.43	1.38E-05	0.00223	3.19
ILMN_26561	cfP36eXrrlXq7TJU_c	OPN3	0.207	5.42	1.41E-05	0.00226	3.17
ILMN_2717	3Aq_iknpEIp4peng8U	OAS1	-0.346	-5.42	1.42E-05	0.00226	3.16
ILMN_17676	umiL0YHuVBk7zJSrXE	TNS3	0.305	5.39	1.52E-05	0.00239	3.1
ILMN_22067	Z0OiVaNUJXk_wlRLKQ	UBE1L	-0.261	-5.37	1.58E-05	0.00248	3.06
ILMN_30616	o8xDDiiSvoelNYJCPk	LOC648517	0.308	5.36	1.65E-05	0.00256	3.02
ILMN_11994	HumVXrqEECKEU.9SJ4	KCNN4	-0.293	-5.34	1.72E-05	0.00265	2.98
ILMN_26680	3nbh5GvxlEAud_E1uE	RPRM	0.176	5.34	1.73E-05	0.00265	2.98
ILMN_12475	Tld2bA_gXXXsCSkif4	BCAR3	-0.287	-5.31	1.87E-05	0.00283	2.9
ILMN_28310	HRK1OAv6fXr_O3vm6U	LASS6	0.33	5.31	1.87E-05	0.00283	2.9
ILMN_9313	0Y70inv15JOz9TpURI	FGFBP1	-0.261	-5.3	1.90E-05	0.00286	2.88
ILMN_5067	xnqhEk0nQhtFdT3kdI	COL17A1	-0.497	-5.28	2.00E-05	0.00297	2.84
ILMN_6529	uSepjuYnjLiaSDSixQ	KRT19	0.289	5.28	2.00E-05	0.00297	2.83
ILMN_17143	Ngyragq.uc9VHx6El4	XDH	-0.171	-5.26	2.12E-05	0.00312	2.78
ILMN_3162	3LV5rVIyXg15Wi6CeA	TIMP1	-0.325	-5.25	2.16E-05	0.00316	2.76
ILMN_18737	6qPyUIkSH6PX3tXVRc	IER5	-0.203	-5.2	2.45E-05	0.00353	2.64
ILMN_22317	uSUS17eryrfUT_KNfU	UMPS	0.232	5.2	2.46E-05	0.00353	2.63
ILMN_10998	KPqFUxbyV_zsxQR5QI	RHOBTB3	0.333	5.2	2.46E-05	0.00353	2.63
ILMN_18346	EXezXaJFUv5f47tZ7s	GRHL2	0.236	5.18	2.60E-05	0.00371	2.58
ILMN_5981	NuKn3U4RTL3lQx5P6g	FLJ20160	0.214	5.13	2.90E-05	0.00412	2.47
ILMN_26329	0RfXre_jl8zbjeffro	OPN3	0.237	5.11	3.05E-05	0.0043	2.43
ILMN_22925	fAEA0FqFUn.SB5KgEk	IFIT3	-0.364	-5.11	3.09E-05	0.00433	2.42
ILMN_8146	9qiKALo6C7egKkYiLc	NCF2	-0.2	-5.1	3.13E-05	0.00436	2.4
ILMN_1847	oreTyCFR3xyvVwo3lM	TMTC3	0.25	5.1	3.20E-05	0.00441	2.38
ILMN_1164	opRpn6DXr756Od.5jw	RARRES3	-0.283	-5.09	3.21E-05	0.00441	2.38
ILMN_30210	0..gjSdbqnr.rUSTBI	OCIAD2	-0.249	-5.08	3.31E-05	0.00452	2.35
ILMN_2939	fX9eh..pR5XocuAg6E	PKP2	0.246	5.05	3.61E-05	0.0049	2.27
ILMN_5409	KXrQIicb_pL3kiKNek	LOC130576	0.258	5.04	3.67E-05	0.00496	2.25
ILMN_24095	TrUix_.1Y7tSUnWSSc	BHLHB2	-0.253	-5.01	3.94E-05	0.00529	2.18
ILMN_8388	9dF09VRc1U93l7Hgng	KLK10	-0.2	-5.01	3.98E-05	0.00529	2.17

ILMN_5118	oOlSHh1NV4f1f4fRXs	NA	-0.3	-5.01	3.99E-05	0.00529	2.17
ILMN_11909	iLb36DFzuSUcVN0O0U	ITGAV	0.283	5	4.10E-05	0.00541	2.14
ILMN_11103	3p46XcX_zUogHkiSV4	TMEM2	0.264	4.98	4.32E-05	0.00566	2.09
ILMN_15437	TPeolujqponqv65L9Q	HMHA1	-0.155	-4.97	4.39E-05	0.00572	2.08
ILMN_23962	uqmXXquRj1dJ3q.Ds8	GRAMD1A	-0.249	-4.97	4.42E-05	0.00572	2.07
ILMN_22596	3Euf7Fo3ngk3tSes14	PCAF	0.258	4.96	4.53E-05	0.00583	2.05
ILMN_13158	x0pE0_gxKCyV5F5S4k	DSTN	0.26	4.95	4.61E-05	0.0059	2.03
ILMN_24301	0dU_ZfUKJ3Sl7v9Xew	FLJ25801	-0.205	-4.94	4.76E-05	0.00606	2
ILMN_2275	HneP1qkl.SOaSExBF4	CERK	0.254	4.92	4.94E-05	0.00626	1.96
ILMN_16867	3mkS1R9VN1ULK67yAE	RBM14	0.353	4.92	5.04E-05	0.00633	1.94
ILMN_20864	ofu_QqQXbU.wekXSo8	TMEM166	0.18	4.92	5.05E-05	0.00633	1.94
ILMN_1026	fcV3S0U75If1e3op0U	SP110	-0.225	-4.91	5.11E-05	0.00636	1.93
ILMN_22687	EnUlXXc.Ah1eRbtFSs	MGC71993	-0.137	-4.9	5.28E-05	0.00654	1.9
ILMN_9544	fX.X0i4NNSHXToytq4	ACO1	0.246	4.89	5.38E-05	0.00663	1.88
ILMN_3719	H9WdVTND.X.t1qniwM	MID1	0.253	4.88	5.51E-05	0.00675	1.86
ILMN_23979	0VT9Ov9LpB8eFfv.l4	SNTB1	0.153	4.87	5.70E-05	0.00695	1.82
ILMN_26458	9qzqR7kCHUye5cotyg	ELL3	-0.185	-4.86	5.81E-05	0.00705	1.81
ILMN_7664	Qd_S7V4OkLjsX3jkt4	KRT6B	-0.303	-4.84	6.11E-05	0.00737	1.76
ILMN_24215	ukpKBLurg_c6brC5Us	ALDH1A1	0.247	4.83	6.33E-05	0.00756	1.72
ILMN_11008	rg0n1K7KhV_KpQnhNQ	SUSD3	-0.197	-4.83	6.33E-05	0.00756	1.72
ILMN_8598	3n.kkfxd3gJVIoUiVU	NOS1AP	-0.147	-4.82	6.50E-05	0.00771	1.7
ILMN_14446	Kr544ac67tsTX7qIgU	CPT1A	0.178	4.81	6.53E-05	0.00771	1.69
ILMN_27300	9UtUW7Ne6EN1eQj0VM	CYP26A1	0.196	4.81	6.60E-05	0.00773	1.69
ILMN_13668	EgX.UL43NS4bpeupv0	TMEM158	0.305	4.81	6.62E-05	0.00773	1.68
ILMN_1606	KNCCAeJCl4meV5F1kg	UPP1	-0.372	-4.8	6.79E-05	0.00789	1.66
ILMN_14791	6LJP1cU0JT7.uU9KIo	ICK	0.257	4.79	6.89E-05	0.00796	1.64
ILMN_567	HkkqEoIBd4IRwl0hTo	ABCB6	0.243	4.77	7.32E-05	0.00842	1.58
ILMN_23732	BuNld8A_kue9fueVe0	AFAP1L2	-0.169	-4.76	7.52E-05	0.0086	1.56
ILMN_32441	BN365zVQHlHfD1d8i4	NA	-0.172	-4.75	7.67E-05	0.00873	1.54
ILMN_36561	Zy1cfQhTYoXikQjT5o	NA	-0.186	-4.74	7.92E-05	0.00893	1.51
ILMN_21866	9criZPiUuucDnEx1B4	CEACAM6	0.153	4.74	7.93E-05	0.00893	1.51
ILMN_28163	66F5XqUR4V4xKTpIIM	CSF2	-0.239	-4.73	8.01E-05	0.00899	1.5
ILMN_10210	QZcruSjd.BLJCnje3o	SERPINB1	-0.26	-4.72	8.41E-05	0.00939	1.45
ILMN_6835	iUql7S3g6_14UsFQlw	LAMA3	-0.18	-4.7	8.69E-05	0.00965	1.42
ILMN_13282	KS7gsL3TUE.delNT3U	SLC6A15	-0.168	-4.69	8.99E-05	0.00993	1.39
ILMN_6563	iZauVnkv36hMomQIJw	CEBPD	-0.175	-4.65	9.89E-05	0.0108	1.3

ILMN_11795	oLUKIIIpcl4lAiIsak	PSMB8	-0.329	-4.65	9.90E-05	0.0108	1.3
ILMN_30945	lqXVe7h3F5He78zXuU	ICHTHYIN	-0.123	-4.64	0.000102	0.0111	1.26
ILMN_11097	6fi.vlHiCSmr6uoooI	DUSP4	-0.215	-4.64	0.000103	0.0111	1.26
ILMN_138746	lQHtVfOFBJE.uCK9ko	NA	-0.188	-4.63	0.000105	0.0113	1.24
ILMN_14916	EtiKq4IT90H3aWi.p4	NA	-0.449	-4.62	0.000106	0.0113	1.23
ILMN_21403	ZlekT1T_57rs17v1_0	CPA4	-0.219	-4.62	0.000106	0.0113	1.23
ILMN_20959	9p8ZfZ13LiqDiXjhHM	PCDH19	0.286	4.61	0.000111	0.0118	1.18
ILMN_12441	NpdoVOHx5d4l_n97s0	LOC134145	0.264	4.58	0.000119	0.0126	1.12
ILMN_42106	No0Xhd6CuFxAYjdzmk	NA	0.171	4.57	0.000123	0.0129	1.08
ILMN_24843	3LqKTeqlArS6Sqs.Sw	USP18	-0.202	-4.57	0.000123	0.0129	1.08
ILMN_19000	ikibkUOIUY6gKlz8HU	S100A3	-0.335	-4.56	0.000124	0.013	1.08
ILMN_12576	o4t6qkXf3pe5F3d6fM	IGHMBP2	-0.164	-4.56	0.000126	0.0131	1.07
ILMN_18155	lVJVEVzN1u512u8fV8	PITPNM1	-0.208	-4.54	0.00013	0.0134	1.03
ILMN_4348	QuCQeDfSTvdNpol9_4	AUTS2	0.151	4.54	0.00013	0.0134	1.03
ILMN_30018	xFXldy_vep.jd9QXlQ	TGFA	-0.202	-4.53	0.000137	0.014	0.985
ILMN_14413	N1_.g57l3sXLFXVNx4	MAG1	0.362	4.51	0.00014	0.0143	0.959
ILMN_15522	Te003USVFTVeJEcFF0	S100A11	-0.262	-4.5	0.000145	0.0147	0.93
ILMN_6383	iAdwVL3tXonu4VaEKU	ETFB	0.198	4.5	0.000146	0.0147	0.924
ILMN_17130	r6m4FFOVJYAn.iqeH0	F3	-0.218	-4.5	0.000148	0.0148	0.911
ILMN_16682	iUiESVUaEAVVIzTcXI	SMAD6	0.281	4.49	0.000148	0.0148	0.91
ILMN_22726	6qfvjoQgemvnjtFFUQ	UBE1C	0.239	4.49	0.00015	0.0149	0.899
ILMN_77975	WYl_pDioIG7cvNRJWo	NA	0.127	4.49	0.00015	0.0149	0.894
ILMN_7388	6k.SOe_h9O1UFyfrio	ZNF207	0.157	4.49	0.00015	0.0149	0.893
ILMN_5586	rpOuo6O_QCM1ol1Le0	KITLG	0.159	4.47	0.000157	0.0154	0.854
ILMN_920	3Una1dSkCiAah8fRKE	LANCL2	0.202	4.46	0.00016	0.0156	0.834
ILMN_19846	Tyao14HoeDAG63VHmU	MUC1	-0.269	-4.46	0.00016	0.0156	0.832
ILMN_137079	fTS1QQjpcgNk90XZfk	MTMR11	-0.206	-4.45	0.000165	0.0161	0.802
ILMN_29435	WQK7ehxJEuhOU1Mel4	RAVER2	0.198	4.45	0.000166	0.0161	0.796
ILMN_25090	EdTQi8fFCpKoKqMyK0	CLCA2	-0.125	-4.44	0.000169	0.0163	0.779
ILMN_138138	rclcoKUolSyU7pS3FM	GSDMDC1	-0.175	-4.43	0.000173	0.0166	0.758
ILMN_2749	HU6l.0SqESn3wBBWn0	GBP4	-0.143	-4.42	0.000181	0.0173	0.715
ILMN_28109	BKS6Xoin_97Brl.3yo	PLEKHG3	-0.204	-4.41	0.000186	0.0177	0.691
ILMN_73193	WoeilXyXn7jBGQoDOo	NA	0.187	4.39	0.000194	0.0182	0.647
ILMN_10328	KJw_09TFdEO1dgvouU	ITFG1	0.193	4.39	0.000195	0.0182	0.645
ILMN_21253	HpR_L_11CrK7dP73pU	SNRP70	-0.223	-4.39	0.000195	0.0182	0.643
ILMN_16252	BULSS1yVQFJUiSrd3A	CRABP2	-0.185	-4.39	0.000195	0.0182	0.642

ILMN_35845	0lsEgje4Io66.kXvXg	GLT8D3	0.167	4.38	0.000196	0.0182	0.641
ILMN_24220	BfV6X4sgC2qNqkIing	NDRG1	-0.218	-4.38	0.000197	0.0183	0.634
ILMN_25006	oZSV7W30VNVCXHIkIA	TMPRSS4	-0.22	-4.38	0.000198	0.0183	0.628
ILMN_92751	ERdUJAojqL5BICiS6o	NA	-0.141	-4.37	0.000201	0.0185	0.614
ILMN_2115	WqKzBXnXd1S3uQwK24	LEPREL2	-0.242	-4.37	0.000202	0.0185	0.61
ILMN_2022	KSe4E6HfVUdd8.nRGo	ADRB2	-0.327	-4.37	0.000203	0.0185	0.605
ILMN_743	Kl_i51Ul.QsLjjiTiA	SGOL2	0.216	4.36	0.000207	0.0188	0.587
ILMN_17733	Q5Qqd3A.JSygnHndek	CEP70	0.224	4.34	0.000221	0.02	0.523
ILMN_19648	luo2ITsJJNOiv4I5ZM	B2M	-0.318	-4.34	0.000221	0.02	0.523
ILMN_9982	f6UiKghEjjgnolKnlo	FXYD5	-0.262	-4.33	0.000226	0.0203	0.503
ILMN_6344	uuVMyuJNX8jTqBSSHk	KCTD3	0.199	4.32	0.000231	0.0206	0.484
ILMN_40266	ZXxeqQvJT7dUtO.FFQ	NA	0.178	4.32	0.000232	0.0206	0.476
ILMN_24167	6ut.eiK8ytHXql36tU	PLAU	-0.291	-4.32	0.000232	0.0206	0.476
ILMN_42290	Tt5huq2hqZcdZqzRSc	LOC554223	-0.351	-4.32	0.000233	0.0206	0.474
ILMN_14470	HnQ6FdqhULqn9BXdVQ	TMEM54	-0.187	-4.31	0.000239	0.0211	0.449
ILMN_26440	QVpORfv1O_011Tp9V4	DACT2	0.132	4.3	0.000242	0.0211	0.437
ILMN_137235	9mel1qEdzyOp53d8d0	DLX5	0.325	4.3	0.000242	0.0211	0.436
ILMN_12611	x6gOLnSojonyqK6ufU	PSMB9	-0.171	-4.3	0.000243	0.0211	0.434
ILMN_17796	lH3Ll3vFFF3Dl3rZZE	KRT13	0.421	4.3	0.000244	0.0211	0.43
ILMN_28633	KevBfguHvsU6_5E59I	RDX	0.262	4.28	0.000255	0.022	0.388
ILMN_23901	TbRp3XP7ejZ6Gc4ips	SLC15A3	-0.204	-4.27	0.00026	0.0223	0.369
ILMN_26726	3miN519rqpd6dI.qlA	TMEM121	-0.154	-4.26	0.000267	0.0229	0.343
ILMN_121718	6ErhvbiuTp.3gjCSw8	CDH13	0.133	4.26	0.000269	0.023	0.335
ILMN_12554	fSUs9G5SQSFx1H6cV4	FAM46A	-0.234	-4.25	0.000279	0.0237	0.3
ILMN_15973	fN5VUoJUgOVJYC4h1w	CBLC	-0.159	-4.24	0.000282	0.0239	0.29
ILMN_24193	93SJddpUfh8vfqehec	MST1R	-0.18	-4.23	0.000293	0.0246	0.253
ILMN_30058	uXnriqAite7h95fjhE	TRIM16	0.186	4.23	0.000293	0.0246	0.253
ILMN_11569	HVJeHnnE3DVcUOXXtU	CIDEB	-0.167	-4.23	0.000294	0.0246	0.252
ILMN_3384	0R00.Tn3eR3qXP7PgU	OXGR1	0.145	4.22	0.000296	0.0247	0.243
ILMN_27780	oiRRQTpzaoTi9.nhdU	GLI3	0.36	4.22	3.00E-04	0.025	0.23
ILMN_27275	KsX5EfPHl0vvl6IbCg	SPPL2A	0.191	4.21	0.000306	0.0254	0.211
ILMN_4873	ESkXp4u56LijfgSAfU	COIL	0.181	4.21	0.000307	0.0254	0.209
ILMN_21860	E3InooSv7r4ofd7WO0	NPR3	0.132	4.21	0.000309	0.0254	0.203
ILMN_138662	xd6Z60LRKEWCAU0bEY	EFEMP1	0.162	4.2	0.000313	0.0256	0.192
ILMN_29081	xWuu445TMWSp_fe0Ls	ADI1	0.245	4.19	0.000319	0.0261	0.172
ILMN_139078	rSFab6S7JTB.eO8sAE	DDX3X	0.259	4.19	0.000322	0.0262	0.165

ILMN_7797	WVfgELd0XiXtwH9oqI	TM7SF3	0.175	4.19	0.000325	0.0264	0.155
ILMN_20165	Nsp3aqIoGXnzXgLG.o	ZNF326	0.21	4.18	0.00033	0.0267	0.139
ILMN_773	HjjXHnVJBdxNSg4tXI	MAP4K1	0.152	4.16	0.000345	0.0278	0.0975
ILMN_4032	3CuU0lKkne1XXndTfM	ARID3B	-0.184	-4.16	0.000349	0.028	0.086
ILMN_17580	3qgoyrjvWCuKJ_AVuk	ASGR1	-0.152	-4.15	0.000354	0.0283	0.074
ILMN_22634	WdS75zuQjXd_if.5Mk	NA	-0.201	-4.15	0.000355	0.0283	0.0691
ILMN_21049	uud.vTT6V09Qkfxnt4	ABCA1	-0.334	-4.15	0.000359	0.0285	0.0591
ILMN_21408	6V5_jnuf9a.t3CVf3U	C1orf106	-0.17	-4.13	0.000373	0.0295	0.0238
ILMN_17827	lpI4BStHqi3n0.XeJ4	SCG2	0.287	4.13	0.000379	0.0299	0.00856
ILMN_2127	ER5RHdTRXfXuNRUFc0	FOSL1	-0.357	-4.11	0.000391	0.0307	-0.0216
ILMN_32537	BKKClC2qSieFujejh8	TMC3	-0.0919	-4.11	0.000396	0.031	-0.0352
ILMN_8426	WqOfoK7txh9iMOh96U	OAT	0.199	4.11	0.000399	0.0311	-0.0416
ILMN_4154	TSbXRcIpXlVxX5X8Hw	RABGGTA	-0.21	-4.1	0.000402	0.0312	-0.0477
ILMN_11289	rS4nqGiEJ1Lu5IKuII	RBP1	-0.261	-4.1	0.000404	0.0313	-0.0522
ILMN_88389	0sz7qvrV90YFShe5_o	NA	0.22	4.1	0.000408	0.0315	-0.0637
ILMN_4419	3Xvv55T6TgOlB7p7xI	TIPARP	-0.267	-4.1	0.000409	0.0315	-0.0656
ILMN_29511	xddfF_OHOqIWFKh0ho	UBR2	0.21	4.09	0.000417	0.032	-0.0838
ILMN_7975	rciqi_JKZSp7TQTozg	FHL1	-0.189	-4.07	0.000431	0.0328	-0.115
ILMN_11713	fpTFFeBOXiftMM74sU	RMI1	0.156	4.07	0.000431	0.0328	-0.115
ILMN_18544	Trg5RNfpqvOhd_TtMk	PHKB	0.143	4.07	0.000433	0.0329	-0.12
ILMN_139301	lKxJ6T.pI5MiE3iFdI	FLJ20152	0.218	4.07	0.000437	0.033	-0.128
ILMN_11972	0DVSkp.ovv1OuOqUjs	C6orf1	-0.233	-4.06	0.000447	0.0337	-0.15
ILMN_4825	TUIdM9NSfrtC6nvnlI	AZIN1	0.147	4.06	0.000448	0.0337	-0.152
ILMN_17567	WaqX1dq1ekgIT.FX34	TMEM145	-0.155	-4.05	0.000457	0.0342	-0.171
ILMN_16332	HFS7.KJOLlu7ubXtok	MX1	-0.265	-4.05	0.000459	0.0343	-0.176
ILMN_24091	o0Gn1ka01lX3F4UHXQ	LGALS3BP	-0.263	-4.04	0.000471	0.035	-0.199
ILMN_2073	lBLUXe7cU4VX10R4Xs	HLA-E	-0.369	-4.03	0.000482	0.0357	-0.222
ILMN_11392	0k.d1Qvievw7v_j9XU	SOX21	0.502	4.03	0.000486	0.0359	-0.229
ILMN_19361	KXndRB7V18VTsnY1gk	LRSAM1	-0.192	-4.03	0.000488	0.0359	-0.233
ILMN_21544	EqBKce19Xug_WIDckU	PYGB	-0.22	-4.02	0.000493	0.0362	-0.243
ILMN_4097	Q0R16neBERlJ13eCYc	ALPL	-0.191	-4.02	0.000494	0.0362	-0.245
ILMN_5889	HpLtZeSN0FUhNCjBNs	IRF6	-0.234	-4.01	0.000503	0.0367	-0.263
ILMN_39441	BFq7eaygQip4iretek	UNK	0.224	4.01	0.000508	0.037	-0.272
ILMN_23980	ueed9enmNCd6hex5uI	CYP26A1	0.115	4	0.00052	0.0375	-0.295
ILMN_42527	ZuVU025DF0uSQdfj34	NA	0.156	4	0.00052	0.0375	-0.295
ILMN_4890	iWrqCKi0TZ.qjU_u.o	EML2	-0.307	-4	0.000521	0.0375	-0.296

ILMN_137166	if7sbTCr99x3JEoikE	NA	0.134	4	0.000523	0.0375	-0.299
ILMN_138532	9foqAmzs8lpJe_vVHw	NA	0.181	4	0.000526	0.0377	-0.306
ILMN_8642	EA6JXik0nPMfqHcXdE	BZW2	0.169	3.99	0.000534	0.0381	-0.32
ILMN_25430	BLXpdZI59P_Ffp5LoI	WARS	-0.259	-3.99	0.000537	0.0382	-0.326
ILMN_10621	ojrImSOVFHgIuH_EI4	CASP1	-0.205	-3.99	0.000538	0.0382	-0.327
ILMN_137196	QRHZU.3C6.IK_S3l0U	EXOC5	0.132	3.98	0.000545	0.0385	-0.339
ILMN_13015	TKg7h3.ZUmW6HZp_6c	TPD52L1	0.0983	3.98	0.000548	0.0386	-0.344
ILMN_28362	9eUZQVSAMVROUgC4LU	WWC3	0.143	3.97	0.000561	0.0394	-0.366
ILMN_19245	Tr5SOuMEuwpfq3Ck1E	TSPAN6	0.201	3.97	0.000563	0.0394	-0.369
ILMN_414	3dC3s3l1Xl8.fO.5RI	KLHL5	0.265	3.96	0.000577	0.0402	-0.393
ILMN_138893	lg.VTodSNfxx4HRKns	C16orf52	-0.165	-3.96	0.000578	0.0402	-0.395
ILMN_12147	39OdESnOqOup1K0neQ	SSNA1	-0.128	-3.96	0.00058	0.0403	-0.399
ILMN_23553	9u7O543_R6d6WX3eCc	GAST	-0.146	-3.95	0.000585	0.0405	-0.407
ILMN_13790	rniefXv994_deqAEZc	SFRS2B	0.211	3.95	0.000588	0.0406	-0.412
ILMN_28070	0KFI_KSRwko5fdeihg	MPHOSPH9	0.151	3.94	0.000602	0.0414	-0.434
ILMN_14467	ugUohG7pqS6hUyN94A	GSR	0.264	3.94	0.000606	0.0415	-0.44
ILMN_37934	QepLldarJJz1J5x5.o	NA	-0.168	-3.94	0.000607	0.0415	-0.442
ILMN_10971	Q_.EWO1eDNJeycOh_o	M6PRBP1	-0.264	-3.94	0.00061	0.0415	-0.446
ILMN_11682	rrhKyeoXKc3xTgr7.k	TSC22D1	-0.27	-3.93	0.000616	0.0417	-0.455
ILMN_36244	lGK2bVV24UkB1wCaV8	NA	0.135	3.93	0.000617	0.0417	-0.458
ILMN_35293	HAtMxeK5FojlH3lelU	NA	-0.246	-3.93	0.000618	0.0417	-0.459
ILMN_17806	fuGuHul_CXooe_pOyE	FBXO31	-0.199	-3.93	0.000623	0.0419	-0.466
ILMN_24005	rdIxXU3HpU1XdcBAHU	SOSTDC1	0.267	3.92	0.000632	0.0424	-0.48
ILMN_115487	Qo44ioE3_Vn143y6gI	SAPS3	0.252	3.92	0.000633	0.0424	-0.482
ILMN_4735	HUrVUiUN5Vd3Od_B9w	OASL	-0.384	-3.92	0.000641	0.0427	-0.493
ILMN_7283	unghLpTktYiiy63l3A	LCMT2	0.132	3.91	0.000649	0.043	-0.505
ILMN_4184	iHq69UeThXc1eU3tVM	ABHD4	0.134	3.91	0.000649	0.043	-0.506
ILMN_12933	xdfrj1kuIi6eqToKQg	F12	-0.177	-3.91	0.000654	0.0432	-0.512
ILMN_14716	WUcRfeqeh_.SSf6_R4	ZNF689	0.207	3.91	0.000656	0.0432	-0.515
ILMN_27277	odF3XHR8CVl4SAUaUQ	IL1B	-0.178	-3.91	0.000662	0.0435	-0.525
ILMN_11911	oiJXrXITL0lECy_1f4	FXN	0.109	3.9	0.000664	0.0435	-0.526
ILMN_27436	rwiETEi6lWp6ICJ5eg	PGF	-0.145	-3.9	0.000672	0.0439	-0.539
ILMN_19028	ioJ4pLCNH4lSiljnks	MRPS16	0.221	3.9	0.000674	0.0439	-0.541
ILMN_87528	itQOJ5e5NNDubqgiq4	LOC728196	-0.14	-3.89	0.000681	0.0443	-0.552
ILMN_15850	o67h4JQSuEa02CJJIQ	ABHD12	0.157	3.89	0.000686	0.0445	-0.559
ILMN_14125	oW_q72_4X5A67TFSgk	HYLS1	0.154	3.89	0.000695	0.0449	-0.571

ILMN_71180	6u.OOLSLn.Xa6hL56U	AK3L1	0.19	3.87	0.000718	0.0463	-0.602
ILMN_410	iQlU4nn.OeAOtP1e9E	DCUN1D1	0.203	3.86	0.000735	0.0472	-0.624
ILMN_22073	umQWvdYBOi17KQrfF4	MEST	0.144	3.86	0.000737	0.0472	-0.627
ILMN_17590	WTu6uTe6SqIAiTu1Ic	TRIM7	-0.111	-3.86	0.000741	0.0473	-0.632
ILMN_12133	rSXVW1UE5N0d6u3638	FSCN1	-0.229	-3.86	0.000745	0.0474	-0.637
ILMN_11177	BuoBX.m618p8Q7keDY	PRNP	-0.252	-3.86	0.000746	0.0474	-0.639
ILMN_3516	HCiVRKCg96CM5e6NeE	SNCA	0.151	3.85	0.000752	0.0475	-0.646
ILMN_37893	Eigr1Ha9.C2UAlUlag	NA	0.17	3.85	0.000752	0.0475	-0.646
ILMN_28712	Ng8flJIqqXqIV6ofS4	ARNTL2	-0.132	-3.85	0.000767	0.0483	-0.664
ILMN_22093	Tpa8gVuHs93V_jFXOU	HERC5	-0.286	-3.84	0.000776	0.0487	-0.676
ILMN_138485	9UR5jr8IOpCgkF6Ouk	NA	-0.1	-3.84	0.000779	0.0488	-0.679
ILMN_31644	0DgBN4tdhTHLr2cSig	SPANXB2	-0.163	-3.84	0.000791	0.0494	-0.693
ILMN_1353	3JGiA1ORqAJ94RLSdU	ZSCAN29	-0.149	-3.83	0.000801	0.0499	-0.706

NCI-H1299

ProbeName	ID	GeneSymbol	logFC	t	P.Value	adj.P.Val	B
ILMN_1814	3mICpKigaKiu6uJ4zA	WDR79	0.503	8.67	6.96E-09	0.000157	9.36
ILMN_16054	B7zrorreri3gpd3TeE	C16orf73	0.249	7.44	1.07E-07	0.000686	7.16
ILMN_18432	ELieO5UUW7TiIOr8d0	IRS1	-0.309	-7.42	1.12E-07	0.000686	7.13
ILMN_8623	i6SQgrik0qBqDSnqHg	C10orf10	-0.304	-7.38	1.22E-07	0.000686	7.06
ILMN_10669	HQpQmhIqlOr7KPigaA	TLE1	-0.286	-6.83	4.42E-07	0.00199	5.99
ILMN_1772	QDirlSfMIOu8qo4k54	BMP6	0.272	6.65	6.79E-07	0.00226	5.63
ILMN_11856	WAkjP1aFSZpdBSpKAg	ZNF467	-0.418	-6.64	7.00E-07	0.00226	5.61
ILMN_9533	lm9UPOn3dI1Jfgvf4U	UBE2L3	0.259	6.4	1.25E-06	0.00354	5.12
ILMN_17622	i7o1RUDUHTXr_eRHr0	HIST1H2BD	-0.337	-6.31	1.56E-06	0.00392	4.93
ILMN_13518	0EBVuzd0MCulgqXY7o	NTSR1	-0.186	-6.17	2.20E-06	0.00496	4.64
ILMN_4661	0U7r1fW6FJbDAiUKy4	BCKDHB	-0.24	-6.11	2.50E-06	0.00513	4.53
ILMN_27899	BVfXJ7OF_Pu5fBZ3uE	DNASE2	-0.292	-6.06	2.85E-06	0.00534	4.42
ILMN_18304	EXSUfcJEFIpUGHCUlQ	PTGER1	-0.248	-6.03	3.08E-06	0.00534	4.36
ILMN_10833	NkHl8H_XF6XXzjVXWk	FLJ36070	-0.262	-5.76	5.98E-06	0.00962	3.79
ILMN_137102	imS5fkxUBSuom.74k4	NA	-0.301	-5.7	7.04E-06	0.0106	3.65
ILMN_6196	lks.ysTbiQol5PVKqY	VTI1A	-0.243	-5.66	7.69E-06	0.0108	3.57
ILMN_6015	HnHf5R593uDQqfFQ5I	NWD1	-0.153	-5.63	8.21E-06	0.0109	3.52
ILMN_11864	0rlSl0j8fp6326KAiY	C6orf165	-0.184	-5.59	9.08E-06	0.0114	3.43
ILMN_2597	rClSqivKIeMk7jp0p4	MAP3K12	0.243	5.56	9.98E-06	0.0118	3.35

ILMN_11004	rm4nlOzZSW_f7x4G5Y	PBX4	0.233	5.54	1.04E-05	0.0118	3.31
ILMN_30018	xFXldy_vep.jd9QXlQ	TGFA	-0.241	-5.4	1.48E-05	0.0159	3.01
ILMN_6281	BRbrB_Q7pZV5np9.dc	SPRY1	-0.244	-5.34	1.73E-05	0.017	2.87
ILMN_3288	lAZSt5e9_epDp46eUs	ABR	-0.304	-5.34	1.73E-05	0.017	2.87
ILMN_26701	KpRe1Fu6lue7XztPsM	MXD4	-0.328	-5.29	1.96E-05	0.0185	2.76
ILMN_1424	x3011GvRydcXgigKqU	WNT5B	0.179	5.2	2.46E-05	0.0222	2.57
ILMN_22028	HpSYoruoTDJeLn6vFM	ARHGAP19	0.274	5.15	2.81E-05	0.0243	2.45
ILMN_7229	HZVSXnhVSf3EhFI.uA	ALKBH7	-0.221	-5.12	3.02E-05	0.0252	2.39
ILMN_3042	ou7l6SBHkdQ.XaklEA	DLC1	-0.242	-5.05	3.62E-05	0.0291	2.23
ILMN_2941	xfcujvkdAankiOifSk	TGIF1	-0.284	-5.03	3.77E-05	0.0293	2.2
ILMN_137480	6KK4561elF3EleB34g	KATNB1	0.253	4.93	4.85E-05	0.0352	1.98
ILMN_4999	Qnd1TULhSOVx0n1NFU	GPR162	-0.237	-4.92	4.97E-05	0.0352	1.95
ILMN_24439	WJTReJBQA9d5nqtYeU	GPR3	0.199	4.92	5.00E-05	0.0352	1.95
ILMN_102811	B47o4oni0Y7oYoni2Y	NA	0.202	4.87	5.72E-05	0.0391	1.83
ILMN_37799	Zl3fbpPwEldE3Vf8eI	NA	-0.163	-4.83	6.22E-05	0.041	1.76
ILMN_14708	rXpX3TlQhL79Eougu4	CSRP2BP	0.171	4.81	6.63E-05	0.041	1.7
ILMN_2670	BlfRT7oOOV6fwr8nUQ	KLF9	-0.32	-4.8	6.76E-05	0.041	1.69
ILMN_23253	oqiqsel_pdc45ITrg8	ZWINT	0.177	4.78	7.20E-05	0.041	1.63
ILMN_8273	rsVr5xrgOCuVZNSAhk	PLCXD1	-0.28	-4.77	7.23E-05	0.041	1.63
ILMN_10629	0qb7u7bh9sXdCVdfsc	ADRA1B	-0.193	-4.77	7.27E-05	0.041	1.62
ILMN_12588	KX7nZdMrtz_h3Cdxq4	LAMA5	-0.282	-4.77	7.28E-05	0.041	1.62
ILMN_12442	0EgReqeagSXmxp3TQc	LMNA	-0.238	-4.76	7.48E-05	0.0411	1.6
ILMN_3691	fSglR7F6JTeowh.hU4	C1orf61	0.162	4.75	7.68E-05	0.0412	1.58
ILMN_17169	3dQeX9U13gcpPBJVbo	INCA1	0.161	4.7	8.82E-05	0.0453	1.45
ILMN_16130	Q_eF_l_V.sRC9Uq4kk	TACC2	-0.198	-4.7	8.84E-05	0.0453	1.45
ILMN_3621	ffaIXofRMBQfVN1UuU	ZNF655	0.238	4.68	9.23E-05	0.0462	1.41
ILMN_4649	xafXuefu0DoF5XcCR8	CYBRD1	-0.269	-4.63	0.000103	0.0494	1.32
ILMN_2297	riaFdd.qXbif.58070	CTDSP2	-0.213	-4.63	0.000105	0.0494	1.3
ILMN_17805	B5uqdWUSBROdegRAOg	ISYNA1	-0.256	-4.63	0.000106	0.0494	1.29
ILMN_19202	x1o13.jeVKAqOT4R3U	CBLN2	0.163	4.62	0.000107	0.0494	1.28