

Supplementary Materials

Role of MYC-regulated long noncoding RNAs in cell cycle regulation and tumorigenesis

Taewan Kim, Young-Jun Jeon, Ri Cui, Ji-Hoon Lee, Yong Peng, Sung-Hak Kim, Esmerina Tili, Hansjuerg Alder and Carlo M. Croce

Supplementary Methods

LncRNA microarray. Total RNA extracted from 4 normal colon-derived fibroblast cell lines (CCD-18Co, CCD-33Co, CCD-112CoN, CCD-841CoN), 4 colorectal cancer (CRC) cell lines (HT29, SW620, HCT116, RKO), 3 primary CRC tissue samples and their matched NAT (Origene), HCT116 cells treated with siCTRL or siMYC and RKO cells treated with siCTRL or siMYC was subjected to lncRNA microarray. The 3 primary CRC or NAT samples were mixed respectively and then subjected to the lncRNA microarray. Briefly, mRNA was purified from 1 µg total RNA after removal of rRNA (mRNA-ONLY™ Eukaryotic mRNA Isolation Kit, Epicentre). Then, each sample was amplified and transcribed into fluorescent cRNA along the entire length of the transcripts without 3' bias utilizing a random priming method. The labeled cRNAs were hybridized onto the Human LncRNA Array v2.0 (8 x 60K, Arraystar). After having washed the slides, the arrays were scanned by the Agilent Scanner G2505B. Agilent Feature Extraction software (version 10.7.3.1) was used to analyze acquired array images. Quantile normalization and subsequent data processing were performed using the GeneSpring GX v11.5.1 software package (Agilent Technologies). After quantile normalization of the raw data, lncRNAs and mRNAs that at least 16 out of 22 samples have flags in Present or Marginal (“All Targets Value”) were chosen for further data analysis. Differentially expressed lncRNAs and mRNAs with statistical significance were identified through Volcano Plot filtering (more than 2 fold change of log₂-transformed normalized intensity with p-value<0.05). Heat-maps of the differentially expressed lncRNAs and mRNAs were generated using dchip software.

Patients and primary colorectal and prostate tissue samples. Primary colorectal and prostate tissue samples were provided by the Department of Pathology, The Ohio State University (OSU). All human tissues were obtained according to a protocol approved by the Ohio State Institutional Review Board. Tissue samples were fresh-frozen in liquid nitrogen after surgery and kept at -80 °C. Frozen tissue samples were homogenized using the Tissue Ruptor (QIAGEN) before RNA extraction. Total RNA was extracted using Trizol (Invitrogen) in accordance with manufacturer’s instructions.

Xenograft and tumor-free survival analysis. Animal experiments were approved by the Ohio State University animal care and use committee and conducted following the Ohio State University animal policy in accordance with NIH guidelines. 0.5 million cells transfected with indicated siRNAs 24hr before injection were subcutaneously injected into the right flanks of 5-week-old female athymic nude mice (Jackson laboratory, 4 mice per group). Tumor initiation was observed and counted when a palpable tumor (approximately 50-60 mm³) formed. Tumor volume was determined by measuring the length and the width of the tumor mass and calculating the volume (Volume = (width)²(length)/2). The palpable mass was observed until the volume reached 100 mm³ to verify that the palpable mass is a tumor mass. The parental HCT116 and PC3 cells that were not transfected with siRNA were also injected, and the results of tumor-free survival with parental cells showed similar results with control siRNA-transfected cells. All athymic nude mice developed palpable tumors in 5 weeks after injection with the parental cells.

NanoString gene expression assay and data analysis. For NanoString Gene expression assay analyses, the nCounter Virtual Cell Cycle Gene Set was used, following manufacturer's instructions (NanoString Technologies). Briefly, total RNA (100ng) was used as input for nCounter mRNA sample preparation reactions. All sample preparation was performed according to manufacturer's instructions (NanoString Technologies). Hybridization reactions were performed according to manufacturer's instructions with 5µl of the 5-fold diluted sample preparation reaction. All hybridization reactions were incubated at 64°C for a minimum of 18 h. Hybridized probes were purified and counted on the nCounter Prep Station and Digital Analyzer (NanoString Technologies) following the manufacturer's instructions. For each assay, a high-density scan (600 fields of view) was performed. Data analysis was performed using the nSolver analysis software (NanoString Technologies) and dChip software.

Rapid amplification of cDNA ends (RACE). 5' and 3' RACE were performed using the SMARTer RACE cDNA Amplification Kit (Clontech). All procedures were done in

accordance with manufacturer's instruction. Total RNA from HT29 or SW620 was used. PCR of the internal region was performed when starting points of 5' and 3' RACE had an unamplified gap. All primers used for RACE are presented in Supplementary Table 5.

Cells, oligonucleotides and transfection. All human cell lines (HCT116, RKO, HT29 and SW620 from colorectal cancer; A549 from lung cancer; PC3 from prostate cancer; MCF7 and SKBR3 from breast cancer; HepG2 and SK-HEP-1 from liver cancer; CCD-18Co, CCD-33Co, CCD-112CoN and CCD-841CoN from normal colon) were purchased from ATCC and cultured in Eagle's Minimum Essential Medium with 10% heat-inactivated fetal bovine serum. All experiments with cells were done between passage 4-9. All custom siRNAs were designed by the Dharmacon custom siRNA design tool based on sequence information identified by RACE. For each MYC^{Lo}, 2 kinds of custom siRNAs were designed and used. All sequence information of the siRNAs is shown in Supplementary Table 6. The siRNAs targeting MYC were from Dharmacon (siMYC) or Santa Cruz Biotechnology (siMYC-2). Cells were transfected with Lipofectamine RNAiMAX (Invitrogen) for oligonucleotides, Lipofectamine LTX for plasmids and Lipofectamine 2000 for oligonucleotides/plasmids cotransfection in accordance with manufacturer's instructions. In all transfections of siRNAs, final concentration of siRNAs was 50nM for transfection of 1-3 oligonucleotides or 100nM for transfection of more than 3 oligonucleotides.

Quantitative real-time (qRT) –PCR. Total RNA was prepared from cells using TRIZOL (Invitrogen) in accordance with manufacturer's instructions. Total RNA was subjected to qRT-PCR. RNA levels were analyzed using TaqMan Gene Expression Assays, in accordance with manufacturer's instructions (Applied Biosystems). All RT reactions, including no-template controls and RT minus controls, were run in a GeneAmp PCR 9700 Thermocycler (Applied Biosystems). RNA concentrations were determined with a NanoDrop (NanoDrop Technologies, Inc.). Samples were normalized to GAPDH or OAZ1 for mRNAs and lncRNAs (Applied Biosystems). Gene expression levels were quantified using the ABI Prism 7900HT Sequence detection system (Applied Biosystems). Comparative real-time PCR was performed in triplicate, including no-

template controls. Relative expression was calculated using the comparative Ct method. Probes used for Taqman Assays are shown in Supplementary Table 6.

Cell proliferation assay. For cell proliferation assay, the MTS assay from Promega (CellTiter 96 AQueous One Solution Cell Proliferation Assay) was used following manufacturer's instruction. Briefly, cells in 96-wells plate were incubated for 72hr or 96 hr in a humidified 5% CO₂ atmosphere after transfection with indicated siRNAs, followed by addition of 20µl CellTiter 96 AQueous One Solution and 1-4hr incubation in humidified 5% CO₂ atmosphere. The absorbance at 490nm was recorded.

Flow cytometry analysis. For DNA content analysis, cells were fixed in methanol at -20° C, washed again, rehydrated, re-suspended in PBS containing 2 µg/ml propidium iodide (PI) and 5 µg/ml RNase A, and analyzed by BD FACS Calibur Flow Cytometer.

Luciferase reporter assay. Cells were plated in 24-well plates 24 hr before transfection. All plasmids constructed with pGL4-luc2P vectors were co-transfected with control Renilla luciferase plasmid (pGL4-hRluc/TK) and siRNAs as indicated by using Lipofectamine 2000 (Invitrogen). The ratio of experimental plasmid to control plasmid was 10:1. Luciferase assays were performed using the Dual-Luciferase Reporter Assay System (Promega). Briefly, 48 hr after transfection, cell lysates were prepared by incubating with 1×passive lysis buffer (PLB) for 15 min at room temperature. Cell lysates were transferred in triplicate to 96-well plates and analyzed using GloMax Luminometer (Promega) according to manufacturer's instructions. All primers used for cloning of luciferase constructs are presented in Supplementary Table 5.

Soft agar colony formation assay. Soft agar colony formation assay was performed with the CytoSelect cell transformation assay (Cell Biolab, Inc) in accordance with the manufacturer's instructions. The cells transfected with indicated siRNA were incubated for 24 hr followed by a soft agar colony formation assay.

RNA pull-down assay, Deletion Mapping, RIP, ChIP and Antibodies. RNA pull-down and deletion mapping were performed using a Magnetic RNA-Protein Pull-Down kit (Pierce) in accordance with the manufacturer's instructions. The full length or deleted

RNA samples were prepared using the LITMUS28i system and T7 *in vitro* transcription kit (NEB) followed by biotin-labeling at the 3' end of *in vitro* transcribed RNA using the RNA 3' End Desthiobiotinylation kit (Pierce). Nuclei from HeLa cells were prepared using the Qproteome Nuclear Protein kit (QIAGEN) and nuclear lysates from the nuclei were prepared as described (1). RIP was carried out using the Magna RIP RNA-Binding Protein Immunoprecipitation kit (Millipore). ChIP analysis was done with the Magna ChIP Chromatin Immunoprecipitation kit. The antibodies against HuR (4C8, mouse monoclonal) and hnRNPk (3C2, mouse monoclonal) were purchased from Abcam. The antibodies against p15 (D12, mouse monoclonal) and p53 (mouse monoclonal) were from Santa Cruz Biotechnology. The antibodies against MYC (D84C12, rabbit monoclonal), p21 (12D1, rabbit monoclonal), Miz-1 (rabbit monoclonal) and GAPDH (D16H11, rabbit monoclonal) were from Cell Signaling Technology. The antibodies were used for ChIP, RIP (~1-2ug) and Western Blot analyses (1:1000 dilution).

Statistics. All graph values represent means \pm S.D. from three independent experiments with each measured in triplicate. The differences between two groups were analyzed with unpaired two-sided Student's t-test. $P < 0.05$ was considered statistically significant and indicated with asterisks as described in figure legends. The Kaplan–Meier method was used to estimate survival curves, and the log-rank test was used to test for differences between curves using SPSS Statistical Software (SPSS Inc., Chicago, IL). All statistical tests were two-sided.

Data access. The raw data of microarray analysis are deposited in the Gene Expression Omnibus (GEO) under accession number GSE39846. Primary data of Nanostring gene expression analysis are deposited in the GEO under accession number GSE39077. Sequence information of MYC_{Lo}s is available in GenBank (Accession number: MYC_{Lo}-1, JX046909; MYC_{Lo}-2, JX046910; MYC_{Lo}-3 v1, JX046911; MYC_{Lo}-3 v2, JX628584).

Liquid chromatography-tandem mass spectrometry (LC-MS/MS).

LC-MS/MS was performed by the Campus Chemical Instrument Center (CCIC) Mass Spectrometry and Proteomics Facility at The Ohio State University (OSU).

Sample Preparation

In Gel Digestion Manual

Gels were digested with sequencing grade trypsin from Promega (Madison WI) or sequencing grade chymotrypsin from Roche T (Indianapolis, IN) using the Multiscreen Solvint Filter Plates from Millipore (Bedford, MA). Briefly, bands were trimmed as close as possible to minimize background polyacrylamide material. Gel pieces are then washed in nanopure water for 5 minutes. The wash step is repeated twice before gel pieces are washed and/or destained with 1:1 v/v methanol:50 mM ammonium bicarbonate for ten minutes twice. The gel pieces were dehydrated with 1:1 v/v acetonitrile: 50 mM ammonium bicarbonate. The gel bands were rehydrated and incubated with dithiothreitol (DTT) solution (25 mM in 100 mM ammonium bicarbonate) for 30 minutes prior to the addition of 55 mM Iodoacetamide in 100 mM ammonium bicarbonate solution. Iodoacetamide was incubated with the gel bands in dark for 30 min before removed. The gel bands were washed again with two cycles of water and dehydrated with 1:1 v/v acetonitrile: 50 mM ammonium bicarbonate. The protease is driven into the gel pieces by rehydrating them in 12 ng/ml trypsin in 0.01% ProteaseMAX Surfactant for 5 minutes. The gel piece is then overlaid with 40 ml of 0.01% ProteaseMAX surfactant:50 mM ammonium bicarbonate and gently mixed on a shaker for 1 hour. The digestion is stopped with addition of 0.5% TFA. The MS analysis is immediately performed to ensure high quality tryptic peptides with minimal non-specific cleavage or frozen at -80°C until samples can be analyzed.

In Gel Robot Digestion

Bands were trimmed as close as possible to minimize background polyacrylamide material and placed in 96 well plates or the Ettan Spot Handling Workstation was used to core protein spots of interest using a pick list and placed in a 96 well plate. The 96 well plates were placed inside the Robot for wash and digestion following the Ettan Spot Handling Workstation 2.1 User Manual from Amersham Biosciences. Briefly, gel pieces are washed in 100 µL of 50% methanol/5% acetic acid for 30 minutes. The wash step was repeated a total of 3 times and placed in a storage solution of 50 µL of 50% methanol/5% acetic acid until digestion. Gels were digested with sequencing grade trypsin from Promega (Madison WI). Digestion was carried out by adding 100 µL water for 10 minutes followed by 100 µL acetonitrile for 10 minutes. The water and acetonitrile were removed and the gel bands were rehydrated and incubated with dithiothreitol (DTT) (prepared as 5 mg/ml in 100 mM ammonium bicarbonate) for 30 minutes prior to the addition of iodoacetamide (prepared as 15 mg/ml Iodoacetamide in 100 mM ammonium bicarbonate solution). Iodoacetamide was incubated with the gel bands in dark for 30

minutes before removed. The gel bands were washed again with cycles of acetonitrile and 100 mM ammonium bicarbonate in 10 and 5 minute increments. The gels were dried for 10 minutes and the protease was driven into the gel pieces by rehydrating them in 25 μ L of sequencing grade modified trypsin prepared at 5 μ g/mL in 50 mM ammonium bicarbonate for 180 minutes. The peptides were extracted from the polyacrylamide with 50 μ L 50% acetonitrile and 5% formic acid a total of 3 times and pooled together. 50 μ L of acetonitrile was added to the extraction for 15 minutes. The extracted pools were dried for 15 minutes and removed immediately to prevent complete drying.

Mass Spectrometry

LTQ. Capillary-liquid chromatography tandem mass spectrometry (Cap-LC/MS/MS) was performed on a Thermo Finnigan LTQ mass spectrometer equipped with a CaptiveSpray source (Bruker Michrom Billerica, MA) operated in positive ion mode. The LC system was an UltiMate™ 3000 system from Dionex (Sunnyvale, CA). The solvent A was water containing 50mM acetic acid and the solvent B was acetonitrile. 5 μ L of each sample was first injected on to the μ -Precolumn Cartridge (Dionex, Sunnyvale, CA), and washed with 50 mM acetic acid. The injector port was switched to inject and the peptides were eluted off of the trap onto the column. A 0.2x150mm, 3 μ , 200A, Magic C18 (Bruker Michrom Billerica, MA) was used for chromatographic separations. Peptides were eluted directly off the column into the LTQ system using a gradient of 2-80%B over 45 minutes, with a flow rate of 2 μ l/min. The total run time was 65 minutes. The MS/MS was acquired according to standard conditions established in the lab. Briefly, a CaptiveSpray source operated with a spray voltage of 3 KV and a capillary temperature of 200P^oC is used. The scan sequence of the mass spectrometer was based on the TopTen™ method; the analysis was programmed for a full scan recorded between 350 – 2000 Da, and a MS/MS scan to generate product ion spectra to determine amino acid sequence in consecutive instrument scans of the ten most abundant peak in the spectrum. The AGC Target ion number was set at 30000 ions for full scan and 10000 ions for MS_n mode. Maximum ion injection time was set at 20 ms for full scan and 300 ms for MS_n mode. Micro scan number was set at 1 for both full scan and MS_n scan. The CID fragmentation energy was set to 35%. Dynamic exclusion was enabled with a repeat count of 2 within 10 seconds, a mass list size of 200, an exclusion duration 350 seconds, the low mass width was 0.5 and the high mass width was 1.5.

Sequence information from the MS/MS data was processed by converting the .raw files into a merged file (.mgf) using an in-house program, RAW2MZXML_n_MGF_batch (merge.pl, a Perl script). The resulting mgf files were searched using Mascot Daemon by Matrix Science version 2.3.2 (Boston, MA) and the database searched against the full SwissProt database version 2012_06 (536,489 sequences; 190,389,898 residues) or NCBI database version 20120515 (18,099,548 sequences; 6,208,559,787 residues). The mass accuracy of the precursor ions were set to 1.8 Da and the fragment mass accuracy was set to 0.8 Da. Considered variable modifications were methionine oxidation and deamidation NQ. Fixed modification for carbamidomethyl cysteine was considered. Two missed cleavages for the enzyme were permitted. A decoy database was searched to determine the false discovery rate (FDR) and peptides were filtered according to the FDR and proteins identified required bold red peptides. Protein identifications were checked manually and proteins with a Mascot score of 50 or higher with a minimum of

two unique peptides from one protein having a *-b* or *-y* ion sequence tag of five residues or better were accepted.

LTQ Orbitrap. Capillary-liquid chromatography-nanospray tandem mass spectrometry (Capillary-LC/MS/MS) of global protein identification was performed on a Thermo Finnigan LTQ orbitrap mass spectrometer equipped with a microspray source (Michrom Bioresources Inc, Auburn, CA) operated in positive ion mode. Samples were separated on a capillary column (0.2X150mm Magic C18AQ 3 μ 200A, Michrom Bioresources Inc, Auburn, CA) using an UltiMate™ 3000 HPLC system from LC-Packings A Dionex Co (Sunnyvale, CA). Each sample was injected into the μ -Precolumn Cartridge (Dionex, Sunnyvale, CA) and desalted with 50 mM acetic acid for 5 minutes. The injector port was then switched to inject and the peptides were eluted off of the trap onto the column. Mobile phase A was 50mM acetic acid in water and acetonitrile was used as mobile phase B. Flow rate was set at 2 μ l/min. Typically, mobile phase B was increased from 2% to 50% in 90-250 min, depending on the complexity of the sample, to separate the peptides. Mobile B was then increased from 50%-90% in 5 min and then kept at 90% for another 5 min before being brought back quickly to 2% in 1 min. The column was equilibrated at 2% of mobile phase B (or 98% A) for 30 min before the next sample injection. MS/MS data was acquired with a spray voltage of 2.2 KV and a capillary temperature of 175 °C is used. The scan sequence of the mass spectrometer was based on the preview mode data dependent TopFive™ method: the analysis was programmed for a full scan recorded between *m/z* 300 – 2000 and a MS/MS scan to generate product ion spectra to determine amino acid sequence in consecutive scans of the five most abundant peaks in the spectrum. To achieve high mass accuracy MS determination, the full scan was performed at FT mode and the resolution was set at 60,000. The AGC Target ion number for FT full scan was set at 1 x 10⁶ ions, maximum ion injection time was set at 1000 ms and micro scan number was set at 1. MSn was performed using ion trap mode to ensure the highest signal intensity of MSn spectra. The AGC Target ion number for ion trap MSn scan was set at 10000 ions, maximum ion injection time was set at 300 ms and micro scan number was set at 1. The CID fragmentation energy was set to 35%. Dynamic exclusion is enabled with a repeat count of 3 within 30 s, a mass list size limit of 200, exclusion duration of 350 s and a low mass width of 0.50 and high mass width of 1.50 Da.

Sequence information from the MS/MS data was processed by converting the .raw files into a merged file (.mgf) using an in-house program, RAW2MZXML_n_MGF_batch (merge.pl, a Perl script). Isotope distributions for the precursor ions of the MS/MS spectra were deconvoluted to obtain the charge states and monoisotopic *m/z* values of the precursor ions during the data conversion. The resulting mgf files were searched using

Mascot Daemon by Matrix Science version 2.3.2 (Boston, MA) and the database searched against the full SwissProt database version 2012_06 (536,489 sequences; 190,389,898 residues) or NCBI database version 20120515 (18,099,548 sequences; 6,208,559,787 residues). The mass accuracy of the precursor ions were set to 20ppm, accidental pick of ^{13}C peaks was also included into the search. The fragment mass tolerance was set to 0.5 Da. Considered variable modifications were oxidation (Met), deamidation (N and Q) and carbamidomethylation (Cys). Four missed cleavages for the enzyme were permitted. A decoy database was also searched to determine the false discovery rate (FDR) and peptides were filtered according to the FDR. The significance threshold was set at $p < 0.05$ and bold red peptides is required for valid peptide identification. Proteins with a Mascot score of 50 or higher with a minimum of two unique peptides from one protein having a *-b* or *-y* ion sequence tag of five residues or better were accepted. Any modifications or low score peptide/protein identifications were manually checked for validation.

Spectral Counting

Label Free Quantitation was performed using the spectral counting approach. Scaffold (version Scaffold_3.4.9, Proteome Software Inc., Portland, OR) was used to validate MS/MS based peptide and protein identifications. Peptide identifications were accepted if they could be established at greater than 95.0% probability as specified by the Peptide Prophet algorithm (Keller, A et al Anal. Chem. 2002;74(20):5383-92). Protein identifications were accepted if they could be established at greater than 95.0% probability and contained at least 1 identified peptides. Protein probabilities were assigned by the Protein Prophet algorithm (Nesvizhskii, AI Anal Chem. 2003 Sep 1;75(17):4646-58). Proteins that contained similar peptides and could not be differentiated based on MS/MS analysis alone were grouped to satisfy the principles of parsimony.

1. Tsai MC, Manor O, Wan Y, Mosammaparast N, Wang JK, Lan F, et al. Long noncoding RNA as modular scaffold of histone modification complexes. Science 2010;329(5992):689-93.

Supplementary Tables

Role of MYC-regulated long noncoding RNAs in cell cycle regulation and tumorigenesis

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Supplementary Table 1. The list of mRNAs and lncRNAs dysregulated in CRC.

Fold Change cut-off: 2.0

P-value cut-off: 0.05

Condition pairs: CRC_vs_Normal

ProbeName it represents probe name.

P-value, P-value calculated from unpaired t-test.

FDR, FDR is calculated from Benjamini Hochberg FDR.

FC (abs), the absolute ratio (no log scale) of normalized intensities between two conditions.

Regulation, it depicts which group has greater or lower intensity values wrt other group.

Supplementary Table 1-1. The list of mRNAs upregulated in CRC.

ProbeName	P-value and FDR		Fold change and Regulation		type	seqname	GeneSymbol	chrom	strand
	p-value	FDR	FCAbsolute	regulation					
ASHG19A3A000541	0.023479	0.189502	3.166926	up	coding	NM_000103	CYP19A1	chr15	-
ASHG19A3A000573	0.0244	0.192501	2.810487	up	coding	NM_000382	ALDH3A2	chr17	+
ASHG19A3A000639	0.014595	0.152608	2.017064	up	coding	NM_000973	RPL8	chr8	-
ASHG19A3A000640	0.000877	0.047999	2.133357	up	coding	NM_000977	RPL13	chr16	+
ASHG19A3A000702	0.041087	0.241118	2.410953	up	coding	NM_001002019	PUS1	chr12	+
ASHG19A3A000737	0.012756	0.14245	6.377234	up	coding	NM_001003396	TPD52L1	chr6	+
ASHG19A3A000738	0.008979	0.122004	7.488082	up	coding	NM_001003397	TPD52L1	chr6	+
ASHG19A3A000753	0.041383	0.241949	2.309692	up	coding	NM_001003704	MTP18	chr22	+
ASHG19A3A000762	0.017941	0.167008	2.199893	up	coding	NM_001003802	SMARCD3	chr7	-
ASHG19A3A000775	0.001616	0.060276	3.239024	up	coding	NM_001004340	FCGR1B	chr1	-
ASHG19A3A000787	0.045293	0.253239	2.929677	up	coding	NM_001005336	DNM1	chr9	+

ASHG19A3A000844	0.006419	0.106091	2.936929	up	coding	NM_001007088	ZNF182	chrX	-
ASHG19A3A000855	0.015383	0.155585	2.783668	up	coding	NM_001007273	DUSP13	chr10	-
ASHG19A3A000919	0.014341	0.151394	2.168044	up	coding	NM_001009943	ANKRD16	chr10	-
ASHG19A3A000938	0.020745	0.17855	2.591393	up	coding	NM_001011671	CHCHD7	chr8	+
ASHG19A3A001078	0.046556	0.256323	8.389398	up	coding	NM_001024024	GCH1	chr14	-
ASHG19A3A001079	0.020411	0.177218	8.17045	up	coding	NM_001024070	GCH1	chr14	-
ASHG19A3A001080	0.033577	0.221543	7.939452	up	coding	NM_001024071	GCH1	chr14	-
ASHG19A3A001170	0.036709	0.230049	4.502094	up	coding	NM_001031733	CALML4	chr15	-
ASHG19A3A001171	0.035143	0.225952	2.851474	up	coding	NM_001031739	ASB9	chrX	-
ASHG19A3A001172	0.000227	0.029723	18.54976	up	coding	NM_001031740	MANEAL	chr1	+
ASHG19A3A001174	0.015528	0.156379	35.16459	up	coding	NM_001031803	LLGL2	chr17	+
ASHG19A3A001178	0.040107	0.238697	2.678417	up	coding	NM_001032284	TMPO	chr12	+
ASHG19A3A001234	0.008276	0.11853	9.915642	up	coding	NM_145654	RDM1	chr17	-
ASHG19A3A001272	0.003209	0.081674	29.09617	up	coding	NM_001038603	MARVELD2	chr5	+
ASHG19A3A001325	0.037243	0.231712	2.386665	up	coding	NM_001040006	TCERG1	chr5	+
ASHG19A3A001344	0.003037	0.080155	3.783003	up	coding	NM_001040135	ACTR3B	chr7	+
ASHG19A3A001417	0.010678	0.131378	2.867689	up	coding	NM_001042453	MST4	chrX	+
ASHG19A3A001429	0.000283	0.031138	2.147888	up	coding	NM_016096	ZNF706	chr8	-
ASHG19A3A001470	0.036433	0.229406	2.949389	up	coding	NM_001048199	SNHG3-RCC1	chr1	+
ASHG19A3A001507	0.008351	0.118817	2.026706	up	coding	NM_001077441	BCLAF1	chr6	-
ASHG19A3A001573	0.001766	0.062085	2.331098	up	coding	NM_001080124	CASP8	chr2	+
ASHG19A3A001599	0.015563	0.156493	2.265888	up	coding	NM_001082486	ACD	chr16	-
ASHG19A3A001600	0.014534	0.152522	2.127417	up	coding	NM_001082487	ACD	chr16	-
ASHG19A3A001698	0.006751	0.109129	2.242801	up	coding	NM_001098786	C7orf68	chr7	+
ASHG19A3A001835	0.00099	0.050681	2.158015	up	coding	NM_001103160	SH2D5	chr1	-
ASHG19A3A001886	0.003432	0.083068	42.182	up	coding	NM_001113206	TSTD1	chr1	-
ASHG19A3A001889	0.007797	0.116887	4.870248	up	coding	NM_001113482	MANEAL	chr1	+
ASHG19A3A001890	0.002108	0.067384	2.308276	up	coding	NM_001113511	ARHGEF7	chr13	+
ASHG19A3A001898	0.005009	0.095955	2.635377	up	coding	NM_012410	SEZ6L2	chr16	-
ASHG19A3A001935	0.049341	0.26375	2.269858	up	coding	NM_001122630	CDKN1C	chr11	-

ASHG19A3A001957	0.002783	0.076178	10.54328	up	coding	NM_001126056	DMKN	chr19	-
ASHG19A3A001958	0.000148	0.026643	132.1146	up	coding	NM_001126057	DMKN	chr19	-
ASHG19A3A001959	0.000786	0.045956	12.72529	up	coding	NM_001126059	DMKN	chr19	-
ASHG19A3A001960	0.001361	0.055969	37.89222	up	coding	NM_001126061	DMKN	chr19	-
ASHG19A3A001961	0.000652	0.042495	59.48117	up	coding	NM_033317	DMKN	chr19	-
ASHG19A3A001963	0.015868	0.157779	2.430504	up	coding	NM_001126105	SLC7A7	chr14	-
ASHG19A3A002021	0.008165	0.118004	2.006941	up	coding	NM_001127496	SPRY4	chr5	-
ASHG19A3A002098	0.010251	0.128875	3.371576	up	coding	NM_032620	GTPBP3	chr19	+
ASHG19A3A002115	0.001012	0.051214	2.422407	up	coding	NM_001129728	PLEKHG4	chr16	+
ASHG19A3A002118	0.03022	0.21235	4.937256	up	coding	NM_001129826	CSAG3	chrX	+
ASHG19A3A002119	0.049957	0.264788	8.966136	up	coding	NM_001129828	CSAG3	chrX	+
ASHG19A3A002165	0.004308	0.090342	4.987612	up	coding	NM_001130159	STOX1	chr10	+
ASHG19A3A002166	0.018629	0.170157	4.328495	up	coding	NM_001130160	STOX1	chr10	+
ASHG19A3A002180	0.038941	0.236253	2.130229	up	coding	NM_001130519	ZNF195	chr11	-
ASHG19A3A002203	0.036176	0.228491	2.287528	up	coding	NM_001130858	PIIP5K1	chr15	-
ASHG19A3A002213	0.020723	0.178522	2.685264	up	coding	NM_001130921	RABL2B	chr22	-
ASHG19A3A002218	0.011415	0.135662	2.015102	up	coding	NM_001130976	DYSF	chr2	+
ASHG19A3A002226	0.029448	0.210017	2.640426	up	coding	NM_001131024	PEX5	chr12	+
ASHG19A3A002256	0.04492	0.252593	2.524265	up	coding	NM_001134431	TOR2A	chr9	-
ASHG19A3A002279	3.26E-05	0.016153	4.837586	up	coding	NM_001134852	TCF7	chr5	+
ASHG19A3A002361	0.019973	0.175878	9.784492	up	coding	NM_001135812	FAM60A	chr12	-
ASHG19A3A002382	0.001976	0.065264	2.061776	up	coding	NM_001136001	ABL2	chr1	-
ASHG19A3A002441	0.038597	0.235303	3.221481	up	coding	NM_001136504	SYT2	chr1	-
ASHG19A3A002443	0.031065	0.213978	2.249843	up	coding	NM_001136540	APOL1	chr22	+
ASHG19A3A002500	0.009961	0.127353	3.303087	up	coding	NM_001142350	THOC6	chr16	+
ASHG19A3A002505	0.019666	0.174937	3.101766	up	coding	NM_001142370	PTPN18	chr2	+
ASHG19A3A002553	0.005735	0.10188	2.172263	up	coding	NM_001142530	BHLHB9	chrX	+
ASHG19A3A002666	0.001798	0.0627	4.200184	up	coding	NM_001143994	RASSF7	chr11	+
ASHG19A3A002695	0.00233	0.070778	4.962551	up	coding	NM_001144887	CITED1	chrX	-
ASHG19A3A002764	4.92E-07	0.003088	3.166865	up	coding	NM_001145148	CRHR1	chr17	+

ASHG19A3A002815	0.010627	0.131368	2.080498	up	coding	NM_001145394	TSEN2	chr3	+
ASHG19A3A002834	0.005955	0.103105	2.978173	up	coding	NM_001145466	NCR3	chr6	-
ASHG19A3A002878	0.033616	0.221614	2.773279	up	coding	NM_001145860	POP1	chr8	+
ASHG19A3A002945	0.017647	0.165663	2.563436	up	coding	NM_001146259	PIP4K2C	chr12	+
ASHG19A3A002951	0.014192	0.150397	4.283405	up	coding	NM_001146274	TCF7L2	chr10	+
ASHG19A3A002966	0.00017	0.026643	2.195162	up	coding	NM_001146333	SUMF2	chr7	+
ASHG19A3A002971	0.004031	0.087853	2.584361	up	coding	NM_001146590	AGXT2L1	chr4	-
ASHG19A3A003009	0.001171	0.053795	13.70792	up	coding	NM_001159629	SLC27A2	chr15	+
ASHG19A3A003085	0.012722	0.142319	3.74154	up	coding	NM_001161357	FCHO1	chr19	+
ASHG19A3A003148	0.022994	0.18762	3.253503	up	coding	NM_001163122	RDM1	chr17	-
ASHG19A3A003162	0.000265	0.031138	2.107367	up	coding	NM_001163377	QPCTL	chr19	+
ASHG19A3A003178	0.035978	0.228089	3.82889	up	coding	NM_001163814	C10orf2	chr10	+
ASHG19A3A003257	0.003566	0.083739	2.235401	up	coding	NM_001164721	PTAFR	chr1	-
ASHG19A3A003336	0.048979	0.262507	30.82324	up	coding	NM_001166103	SPINT2	chr19	+
ASHG19A3A003340	0.003622	0.084313	2.379888	up	coding	NM_001166131	EME1	chr17	+
ASHG19A3A003344	0.046304	0.255817	5.993146	up	coding	NM_001166162	PPP1R9A	chr7	+
ASHG19A3A003345	0.007375	0.113291	4.341711	up	coding	NM_001166163	PPP1R9A	chr7	+
ASHG19A3A003353	0.009933	0.127353	2.30816	up	coding	NM_001166240	CGREF1	chr2	-
ASHG19A3A003465	1.44E-05	0.01403	82.23893	up	coding	NM_001168325	TESC	chr12	-
ASHG19A3A003471	0.001595	0.059848	2.15829	up	coding	NM_001168347	NSUN5	chr7	-
ASHG19A3A003484	0.004359	0.090814	2.022783	up	coding	NM_001168466	MAP7D2	chrX	-
ASHG19A3A003540	0.001433	0.057431	3.955848	up	coding	NM_001170796	ZFAND1	chr8	-
ASHG19A3A003553	0.015287	0.155107	3.200811	up	coding	NM_001171089	CLCN2	chr3	-
ASHG19A3A003659	0.040814	0.240602	2.277915	up	coding	NM_001172573	SSTR5	chr16	+
ASHG19A3A003708	0.005943	0.103084	6.860376	up	coding	NM_001173463	KIF21A	chr12	-
ASHG19A3A003711	0.043203	0.247447	2.09385	up	coding	NM_001173466	AAAS	chr12	-
ASHG19A3A003729	0.000762	0.045276	2.12697	up	coding	NM_001173990	TMEM216	chr11	+
ASHG19A3A003780	0.000938	0.049896	2.306507	up	coding	NM_001177549	SIGLEC6	chr19	-
ASHG19A3A003812	0.002061	0.066799	2.221901	up	coding	NM_001178029	DCI	chr16	-
ASHG19A3A003825	0.025033	0.194638	4.681359	up	coding	NM_001178076	ASNS	chr7	-

ASHG19A3A003826	0.004805	0.094061	2.696337	up	coding	NM_001178077	ASNS	chr7	-
ASHG19A3A003916	0.008491	0.11964	3.100616	up	coding	NM_001538	HSF4	chr16	+
ASHG19A3A003954	0.004881	0.094714	2.880291	up	coding	NM_001874	CPM	chr12	-
ASHG19A3A003963	0.002019	0.066013	2.134447	up	coding	NM_001919	DCI	chr16	-
ASHG19A3A004006	0.017511	0.165332	2.405932	up	coding	NM_002287	LAIR1	chr19	-
ASHG19A3A004017	0.000133	0.026643	3.377888	up	coding	NM_002376	MARK3	chr14	+
ASHG19A3A004167	0.006325	0.105194	2.003813	up	coding	NM_003616	SIP1	chr14	+
ASHG19A3A004178	0.014127	0.150369	4.983047	up	coding	NM_003710	SPINT1	chr15	+
ASHG19A3A004265	0.030329	0.212773	3.711117	up	coding	NM_004313	ARRB2	chr17	+
ASHG19A3A004285	0.00748	0.114158	12.12594	up	coding	NM_004428	EFNA1	chr1	+
ASHG19A3A004288	0.003457	0.083068	2.424141	up	coding	NM_004437	EPB41	chr1	+
ASHG19A3A004304	0.010205	0.128875	42.63385	up	coding	NM_004524	LLGL2	chr17	+
ASHG19A3A004363	0.008377	0.118908	3.829075	up	coding	NM_005063	SCD	chr10	+
ASHG19A3A004367	0.003345	0.083054	2.089586	up	coding	NM_005090	JMJD7-PLA2G4B	chr15	+
ASHG19A3A004396	0.005613	0.100699	3.369277	up	coding	NM_005367	MAGEA12	chrX	-
ASHG19A3A004425	0.019225	0.173143	2.106743	up	coding	NM_005685	GTF2IRD1	chr7	+
ASHG19A3A004433	0.018503	0.169813	2.383255	up	coding	NM_005754	G3BP1	chr5	+
ASHG19A3A004486	0.000946	0.049969	3.601666	up	coding	NM_006340	BAIAP2	chr17	+
ASHG19A3A004526	0.02023	0.176782	2.800609	up	coding	NM_006603	STAG2	chrX	+
ASHG19A3A004530	0.000207	0.028284	2.640979	up	coding	NM_006641	CCR9	chr3	+
ASHG19A3A004572	0.005836	0.102708	2.802954	up	coding	NM_007017	SOX30	chr5	-
ASHG19A3A004573	0.040846	0.240602	3.481687	up	coding	NM_007019	UBE2C	chr20	+
ASHG19A3A004584	0.036791	0.230413	2.577134	up	coding	NM_007097	CLTB	chr5	-
ASHG19A3A004602	0.00159	0.059794	2.008622	up	coding	NM_007294	BRCA1	chr17	-
ASHG19A3A004613	1.7E-05	0.015208	2.843573	up	coding	NM_007349	PAXIP1	chr7	-
ASHG19A3A004622	0.019417	0.174129	6.190633	up	coding	NM_012105	BACE2	chr21	+
ASHG19A3A004687	0.019603	0.174879	2.321116	up	coding	NM_013952	PAX8	chr2	-
ASHG19A3A004702	0.001235	0.054115	2.11654	up	coding	NM_014031	SLC27A6	chr5	+
ASHG19A3A004748	0.000701	0.044249	2.281509	up	coding	NM_014596	ZNRD1	chr6	+
ASHG19A3A004797	0.002503	0.071789	2.706043	up	coding	NM_015136	STAB1	chr3	+

ASHG19A3A004811	0.000813	0.046831	2.589689	up	coding	NM_015356	SCRIB	chr8	-
ASHG19A3A004854	0.001569	0.059794	5.859383	up	coding	NM_015925	LSR	chr19	+
ASHG19A3A004904	0.000221	0.029361	2.38154	up	coding	NM_016499	TMEM216	chr11	+
ASHG19A3A004941	0.02	0.175921	2.226051	up	coding	NM_017458	MVP	chr16	+
ASHG19A3A004993	0.00144	0.057575	2.038089	up	coding	NM_018000	MREG	chr2	-
ASHG19A3A005029	0.019543	0.174463	2.361979	up	coding	NM_018330	KIAA1598	chr10	-
ASHG19A3A005090	0.039235	0.236631	2.503006	up	coding	NM_018959	DAZAP1	chr19	+
ASHG19A3A005152	0.002592	0.072555	2.286278	up	coding	NM_020442	VAR52	chr6	+
ASHG19A3A005159	0.039861	0.238303	2.711251	up	coding	NM_020477	ANK1	chr8	-
ASHG19A3A005196	0.021922	0.182995	7.035093	up	coding	NM_021154	PSAT1	chr9	+
ASHG19A3A005221	0.014943	0.153769	2.092953	up	coding	NM_021723	ADAM22	chr7	+
ASHG19A3A005230	0.010681	0.131378	4.20257	up	coding	NM_021830	C10orf2	chr10	+
ASHG19A3A005233	0.005276	0.098632	4.427217	up	coding	NM_021907	DTNB	chr2	-
ASHG19A3A005255	0.017714	0.165833	2.35851	up	coding	NM_022138	SMOC2	chr6	+
ASHG19A3A005285	0.000186	0.027342	2.564525	up	coding	NM_022560	GH1	chr17	-
ASHG19A3A005358	0.034974	0.225239	2.779689	up	coding	NM_024507	KREMEN2	chr16	+
ASHG19A3A005387	0.023862	0.191098	2.168455	up	coding	NM_024918	DSN1	chr20	-
ASHG19A3A005408	0.015064	0.154264	3.573362	up	coding	NM_025259	MSH5	chr6	+
ASHG19A3A005458	0.044386	0.250834	3.099693	up	coding	NM_031311	CPVL	chr7	-
ASHG19A3A005531	0.000638	0.042459	10.17551	up	coding	NM_032521	PARD6B	chr20	+
ASHG19A3A005562	0.03947	0.237097	2.125345	up	coding	NM_032960	MAPKAPK2	chr1	+
ASHG19A3A005579	0.031276	0.214234	5.751629	up	coding	NM_033023	PDGFA	chr7	-
ASHG19A3A005650	0.002598	0.072555	2.397781	up	coding	NM_033508	GCK	chr7	-
ASHG19A3A005732	0.020042	0.175956	5.576812	up	coding	NM_080632	UPF3B	chrX	-
ASHG19A3A005906	0.008067	0.117217	5.041108	up	coding	NM_138991	BACE2	chr21	+
ASHG19A3A005907	0.017831	0.166331	6.272422	up	coding	NM_138992	BACE2	chr21	+
ASHG19A3A006038	0.015814	0.157775	6.141491	up	coding	NM_145810	CDCA7	chr2	+
ASHG19A3A006050	0.02337	0.189502	2.247825	up	coding	NM_145895	KLK12	chr19	-
ASHG19A3A006097	0.044889	0.252494	2.564595	up	coding	NM_148918	SHMT1	chr17	-
ASHG19A3A006107	0.014814	0.153113	2.787948	up	coding	NM_003790	TNFRSF25	chr1	-

ASHG19A3A006120	0.001215	0.054115	2.47657	up	coding	NM_152286	PNPLA7	chr9	-
ASHG19A3A006121	0.016499	0.160493	7.362182	up	coding	NM_152296	ATP1A3	chr19	-
ASHG19A3A006133	0.004097	0.088276	2.439167	up	coding	NM_152398	OCIAD2	chr4	-
ASHG19A3A006205	0.025011	0.194589	2.382274	up	coding	NM_153023	SPATA13	chr13	+
ASHG19A3A006209	0.013185	0.144355	3.054313	up	coding	NM_153187	SLC22A1	chr6	+
ASHG19A3A006215	0.008459	0.119591	2.027916	up	coding	NM_153278	SLC22A6	chr11	-
ASHG19A3A006230	0.021904	0.182965	2.326918	up	coding	NM_153453	VGLL2	chr6	+
ASHG19A3A006238	0.019614	0.174895	3.358312	up	coding	NM_153636	CPNE7	chr16	+
ASHG19A3A006241	0.017619	0.165563	2.203404	up	coding	NM_153693	HOXC6	chr12	+
ASHG19A3A006257	0.033649	0.221614	3.135752	up	coding	NM_153824	PYCR1	chr17	-
ASHG19A3A006278	0.006557	0.107381	2.064503	up	coding	NM_170738	MRPL11	chr11	-
ASHG19A3A006287	0.045548	0.253885	2.128122	up	coding	NM_172027	ABTB1	chr3	+
ASHG19A3A006352	0.039752	0.238034	2.957256	up	coding	NM_173089	CAPN3	chr15	+
ASHG19A3A006369	0.002908	0.078231	2.104941	up	coding	NM_173204	IL1F7	chr2	+
ASHG19A3A006398	0.012293	0.140003	2.013516	up	coding	NM_173841	IL1RN	chr2	+
ASHG19A3A006402	0.023409	0.189502	5.853781	up	coding	NM_174881	CRB3	chr19	+
ASHG19A3A006438	0.027689	0.203208	2.773149	up	coding	NM_175849	DNMT3B	chr20	+
ASHG19A3A006454	0.003814	0.086652	2.393847	up	coding	NM_177526	PPAP2C	chr19	-
ASHG19A3A006467	0.037998	0.233813	4.602328	up	coding	NM_177973	SULT2B1	chr19	+
ASHG19A3A006512	0.000338	0.03301	3.17873	up	coding	NM_178818	CMTM4	chr16	-
ASHG19A3A006548	0.031526	0.214448	2.242882	up	coding	NM_181472	CMTM7	chr3	+
ASHG19A3A006550	7.77E-05	0.023121	4.899088	up	coding	NM_181492	TCF20	chr22	-
ASHG19A3A006562	0.014634	0.152736	2.197804	up	coding	NM_181641	CKLF	chr16	+
ASHG19A3A006563	0.003193	0.081478	2.526129	up	coding	NM_181642	SPINT1	chr15	+
ASHG19A3A006566	0.019035	0.172094	3.542656	up	coding	NM_181655	C17orf58	chr17	-
ASHG19A3A006621	0.025004	0.194589	2.620154	up	coding	NM_182685	EFNA1	chr1	+
ASHG19A3A006637	0.003029	0.080124	3.251131	up	coding	NM_182746	MCM4	chr8	+
ASHG19A3A006650	0.028262	0.205575	2.596346	up	coding	NM_182847	ACCN4	chr2	+
ASHG19A3A006681	0.027116	0.201277	2.202531	up	coding	NM_183246	PHACTR3	chr20	+
ASHG19A3A006683	0.011981	0.138592	4.210996	up	coding	NM_183356	ASNS	chr7	-

ASHG19A3A006684	0.027316	0.201941	2.798765	up	coding	NM_183360	DTNB	chr2	-
ASHG19A3A006696	0.008641	0.120291	3.157446	up	coding	NM_183425	RBM38	chr20	+
ASHG19A3A006697	0.015542	0.156435	2.291895	up	coding	NM_184085	TRIM55	chr8	+
ASHG19A3A006712	0.002337	0.070865	3.685185	up	coding	NM_194431	RNASE4	chr14	+
ASHG19A3A006785	0.047145	0.258093	2.194922	up	coding	NM_198383	CACNA1G	chr17	+
ASHG19A3A006787	0.021042	0.180024	2.014628	up	coding	NM_018896	CACNA1G	chr17	+
ASHG19A3A006790	0.003127	0.080884	2.184738	up	coding	NM_198433	AURKA	chr20	-
ASHG19A3A006816	3.19E-05	0.016153	2.453158	up	coding	NM_198845	SIGLEC6	chr19	-
ASHG19A3A006832	0.001235	0.054115	2.120643	up	coding	NM_198971	HINFP	chr11	+
ASHG19A3A006842	0.042999	0.246622	2.125725	up	coding	NM_199078	CNNM3	chr2	+
ASHG19A3A006974	0.014172	0.150369	2.898422	up	coding	NM_203464	AK3L1	chr1	+
ASHG19A3A006984	0.002901	0.078231	2.702457	up	coding	NM_205834	LSR	chr19	+
ASHG19A3A006985	0.007182	0.111953	4.095625	up	coding	NM_205835	LSR	chr19	+
ASHG19A3A007032	0.00022	0.029361	2.695208	up	coding	NM_207121	FAM110A	chr20	+
ASHG19A3A007393	0.016014	0.158564	3.248468	up	coding	NM_001779	CD58	chr1	-
ASHG19A3A007985	0.031248	0.214234	2.778408	up	coding	NM_181716	CENPV	chr17	-
ASHG19A3A008003	0.03957	0.237338	3.184488	up	coding	NM_178836	PLD6	chr17	-
ASHG19A3A008023	0.027875	0.203809	2.817615	up	coding	NM_004169	SHMT1	chr17	-
ASHG19A3A008117	0.0019	0.063466	2.678473	up	coding	NM_138463	TLCD1	chr17	-
ASHG19A3A008118	0.005267	0.098632	3.420046	up	coding	NM_001160407	TLCD1	chr17	-
ASHG19A3A008121	2.78E-05	0.016153	4.067084	up	coding	NM_144683	DHRS13	chr17	-
ASHG19A3A008230	0.009961	0.127353	3.042349	up	coding	NM_198836	ACACA	chr17	-
ASHG19A3A008242	1.95E-09	3.67E-05	18.21404	up	coding	NM_001130677	C17orf96	chr17	-
ASHG19A3A008268	0.033779	0.222049	2.291819	up	coding	NM_021724	NR1D1	chr17	-
ASHG19A3A008279	0.007267	0.112538	7.637013	up	coding	NM_032865	TNS4	chr17	-
ASHG19A3A008333	0.035901	0.228021	2.543667	up	coding	NM_002278	KRT32	chr17	-
ASHG19A3A008417	0.032845	0.219108	2.008467	up	coding	NM_198475	FAM171A2	chr17	-
ASHG19A3A008448	0.000176	0.026643	2.217342	up	coding	NM_199282	ARHGAP27	chr17	-
ASHG19A3A008490	0.005555	0.100597	18.96959	up	coding	NM_199262	SP6	chr17	-
ASHG19A3A008503	0.002088	0.067209	2.05802	up	coding	NM_002145	HOXB2	chr17	-

ASHG19A3A008506	3.17E-05	0.016153	2.000614	up	coding	NM_024015	HOXB4	chr17	-
ASHG19A3A008512	0.007807	0.116887	8.286414	up	coding	NM_024016	HOXB8	chr17	-
ASHG19A3A008514	0.013841	0.148967	55.18008	up	coding	NM_024017	HOXB9	chr17	-
ASHG19A3A008668	0.000736	0.044848	3.400408	up	coding	NM_032043	BRIP1	chr17	-
ASHG19A3A008683	0.003955	0.08772	2.394317	up	coding	NM_172000	TEDDM1	chr1	-
ASHG19A3A008686	0.029004	0.208871	3.363411	up	coding	NM_001915	CYB561	chr17	-
ASHG19A3A008693	0.025082	0.194778	2.241868	up	coding	NM_003077	SMARCD2	chr17	-
ASHG19A3A008694	0.01666	0.161307	10.4873	up	coding	NM_002928	RGS16	chr1	-
ASHG19A3A008709	0.000126	0.026266	2.428412	up	coding	NM_007215	POLG2	chr17	-
ASHG19A3A008724	0.003015	0.079978	31.9848	up	coding	NM_004655	AXIN2	chr17	-
ASHG19A3A008777	0.002422	0.071184	2.191771	up	coding	NM_000835	GRIN2C	chr17	-
ASHG19A3A008782	0.038112	0.234	3.153017	up	coding	NM_030630	C17orf28	chr17	-
ASHG19A3A008797	0.021908	0.182965	2.781387	up	coding	NM_001142643	CASKIN2	chr17	-
ASHG19A3A008805	0.007545	0.11456	2.739214	up	coding	NM_033452	TRIM47	chr17	-
ASHG19A3A008858	0.008781	0.12054	2.077375	up	coding	NM_020649	CBX8	chr17	-
ASHG19A3A008905	0.036072	0.228108	3.348673	up	coding	NM_006907	PYCR1	chr17	-
ASHG19A3A008909	0.003887	0.086787	2.669128	up	coding	NM_016286	DCXR	chr17	-
ASHG19A3A008912	0.003265	0.082065	2.063448	up	coding	NM_022156	DUS1L	chr17	-
ASHG19A3A008913	0.014812	0.153113	2.775469	up	coding	NM_004104	FASN	chr17	-
ASHG19A3A008964	0.018572	0.170069	6.213954	up	coding	NM_001100398	RAP1GAP2	chr17	+
ASHG19A3A009026	0.006325	0.105194	2.771307	up	coding	NM_201566	SLC16A13	chr17	+
ASHG19A3A009031	0.005786	0.101967	2.462593	up	coding	NM_203414	C17orf81	chr17	+
ASHG19A3A009035	0.026411	0.198713	5.761616	up	coding	NM_001970	EIF5A	chr17	+
ASHG19A3A009037	0.000654	0.042495	2.098742	up	coding	NM_001143762	EIF5A	chr17	+
ASHG19A3A009042	0.007903	0.117056	3.426658	up	coding	NM_003985	TNK1	chr17	+
ASHG19A3A009050	0.020411	0.177218	2.727787	up	coding	NM_000747	CHRNA1	chr17	+
ASHG19A3A009191	0.00147	0.058292	2.712458	up	coding	NM_001994	F13B	chr1	-
ASHG19A3A009238	0.042455	0.244962	2.865713	up	coding	NM_001031806	ALDH3A2	chr17	+
ASHG19A3A009298	0.000743	0.045021	5.254494	up	coding	NM_014573	TMEM97	chr17	+
ASHG19A3A009353	0.001583	0.059794	2.577069	up	coding	NM_024857	ATAD5	chr17	+

ASHG19A3A009369	0.013861	0.148967	3.494123	up	coding	NM_032932	RAB11FIP4	chr17	+
ASHG19A3A009380	0.000458	0.037144	2.860989	up	coding	NM_003885	CDK5R1	chr17	+
ASHG19A3A009424	0.014242	0.150593	2.09909	up	coding	NM_004773	ZNHIT3	chr17	+
ASHG19A3A009429	0.001247	0.054115	2.42097	up	coding	NM_024864	MRM1	chr17	+
ASHG19A3A009688	2.34E-05	0.016153	21.59135	up	coding	NM_138281	DLX4	chr17	+
ASHG19A3A009747	0.006811	0.109609	3.095683	up	coding	NM_005486	TOM1L1	chr17	+
ASHG19A3A009756	0.047973	0.260909	2.729288	up	coding	NM_080588	PTPN7	chr1	-
ASHG19A3A009761	0.001188	0.054008	3.383994	up	coding	NM_170721	MSI2	chr17	+
ASHG19A3A009765	0.008748	0.12054	2.710038	up	coding	NM_138962	MSI2	chr17	+
ASHG19A3A009842	0.010411	0.129921	2.680414	up	coding	NM_181671	PITPNC1	chr17	+
ASHG19A3A009881	0.008208	0.118181	3.051551	up	coding	NM_000346	SOX9	chr17	+
ASHG19A3A009913	0.025986	0.197961	3.627967	up	coding	NM_004252	SLC9A3R1	chr17	+
ASHG19A3A009934	0.000122	0.025865	3.57267	up	coding	NM_207346	TSEN54	chr17	+
ASHG19A3A009935	0.008788	0.12054	12.58687	up	coding	NM_001015002	LLGL2	chr17	+
ASHG19A3A010025	0.000725	0.044771	19.11646	up	coding	NM_005189	CBX2	chr17	+
ASHG19A3A010047	0.018586	0.170069	2.05657	up	coding	NM_001144888	BAIAP2	chr17	+
ASHG19A3A010083	0.012994	0.143604	4.877258	up	coding	NM_207459	TEX19	chr17	+
ASHG19A3A010276	0.029208	0.209378	2.317701	up	coding	NM_001142467	HES4	chr1	-
ASHG19A3A010278	0.001195	0.054008	2.777596	up	coding	NM_021795	ELK4	chr1	-
ASHG19A3A010409	0.044636	0.251586	3.026144	up	coding	NM_001025100	MBP	chr18	-
ASHG19A3A010441	0.038422	0.234998	2.655991	up	coding	NM_003244	TGIF1	chr18	+
ASHG19A3A010556	0.023436	0.189502	4.612431	up	coding	NM_005640	TAF4B	chr18	+
ASHG19A3A010604	0.008638	0.120291	6.338059	up	coding	NM_017947	MOCOS	chr18	+
ASHG19A3A010676	0.000267	0.031138	76.43713	up	coding	NM_004852	ONECUT2	chr18	+
ASHG19A3A010683	0.00181	0.062815	2.363734	up	coding	NM_001144970	NEDD4L	chr18	+
ASHG19A3A010711	0.010955	0.133053	2.167236	up	coding	NM_001127641	LAMB3	chr1	-
ASHG19A3A010713	0.000771	0.045376	2.164636	up	coding	NM_080474	SERPINB12	chr18	+
ASHG19A3A010766	0.001892	0.063466	2.978437	up	coding	NM_171999	SALL3	chr18	+
ASHG19A3A010837	0.04792	0.260742	2.15344	up	coding	NM_020695	REXO1	chr19	-
ASHG19A3A010843	0.048446	0.261704	2.59079	up	coding	NM_199054	MKNK2	chr19	-

ASHG19A3A010850	0.003854	0.086652	2.305418	up	coding	NM_198532	C19orf35	chr19	-
ASHG19A3A010852	0.003787	0.086533	2.124623	up	coding	NM_016199	LSM7	chr19	-
ASHG19A3A010900	0.035473	0.226755	3.962981	up	coding	NM_032108	SEMA6B	chr19	-
ASHG19A3A010918	0.039074	0.236631	3.356022	up	coding	NM_001134316	PRR22	chr19	-
ASHG19A3A011048	0.008625	0.120291	2.234912	up	coding	NM_020812	DOCK6	chr19	-
ASHG19A3A011054	0.025606	0.196631	3.108404	up	coding	NM_001035223	RGL3	chr19	-
ASHG19A3A011077	0.04181	0.243388	2.504723	up	coding	NM_001080821	ZNF799	chr19	-
ASHG19A3A011103	0.004605	0.093019	3.088265	up	coding	NM_006563	KLF1	chr19	-
ASHG19A3A011184	0.007987	0.117056	3.583221	up	coding	NM_054113	CIB3	chr19	-
ASHG19A3A011248	0.000709	0.04432	2.467482	up	coding	NM_176880	NR2C2AP	chr19	-
ASHG19A3A011255	0.033903	0.22223	3.393323	up	coding	NM_025245	PBX4	chr19	-
ASHG19A3A011256	0.025135	0.194874	3.432663	up	coding	NM_004720	LPAR2	chr19	-
ASHG19A3A011323	0.025548	0.196375	38.37594	up	coding	NM_004364	CEBPA	chr19	-
ASHG19A3A011352	0.003539	0.083557	8.922809	up	coding	NM_207392	KRTDAP	chr19	-
ASHG19A3A011355	5.82E-05	0.02082	35.10731	up	coding	NM_001126058	DMKN	chr19	-
ASHG19A3A011432	0.001196	0.054008	2.18452	up	coding	NM_001145901	SARS2	chr19	-
ASHG19A3A011449	0.000166	0.026643	2.270461	up	coding	NM_001436	FBL	chr19	-
ASHG19A3A011482	0.000121	0.025865	2.961698	up	coding	NM_020158	EXOSC5	chr19	-
ASHG19A3A011497	0.036129	0.228317	2.671428	up	coding	NM_002088	GRIK5	chr19	-
ASHG19A3A011502	0.021688	0.182455	3.413022	up	coding	NM_002573	PAFAH1B3	chr19	-
ASHG19A3A011503	0.014269	0.150789	2.530645	up	coding	NM_032488	CNFN	chr19	-
ASHG19A3A011566	0.015251	0.154986	6.368606	up	coding	NM_145288	ZNF296	chr19	-
ASHG19A3A011569	0.039999	0.238412	2.421044	up	coding	NM_198478	NKPD1	chr19	-
ASHG19A3A011592	0.043977	0.249599	2.197571	up	coding	NM_001080469	FBXO46	chr19	-
ASHG19A3A011642	0.043251	0.247577	2.033921	up	coding	NM_000234	LIG1	chr19	-
ASHG19A3A011646	0.011302	0.135345	3.417103	up	coding	NM_144577	CCDC114	chr19	-
ASHG19A3A011652	0.006477	0.106393	15.62536	up	coding	NM_001080434	LMTK3	chr19	-
ASHG19A3A011656	0.004592	0.093019	3.058609	up	coding	NM_001352	DBP	chr19	-
ASHG19A3A011665	0.000461	0.037144	16.9873	up	coding	NM_000148	FUT1	chr19	-
ASHG19A3A011704	0.008649	0.120291	3.77811	up	coding	NM_172374	IL4I1	chr19	-

ASHG19A3A011711	0.026092	0.198289	2.0988	up	coding	NM_004977	KCNC3	chr19	-
ASHG19A3A011713	0.000835	0.047092	7.682115	up	coding	NM_138411	FAM71E1	chr19	-
ASHG19A3A011731	0.042312	0.244731	2.276895	up	coding	NM_001012964	KLK6	chr19	-
ASHG19A3A011733	0.000176	0.026643	3.441728	up	coding	NM_144505	KLK8	chr19	-
ASHG19A3A011745	0.00076	0.045264	2.213561	up	coding	NM_145232	CTU1	chr19	-
ASHG19A3A011801	0.031532	0.214448	2.052346	up	coding	NM_001136038	ZNF415	chr19	-
ASHG19A3A011864	3.07E-05	0.016153	27.94018	up	coding	NM_000363	TNNI3	chr19	-
ASHG19A3A011865	0.004201	0.089158	26.72829	up	coding	NM_178837	C19orf51	chr19	-
ASHG19A3A011886	0.002017	0.066013	4.303435	up	coding	NM_176820	NLRP9	chr19	-
ASHG19A3A011887	0.004097	0.088276	6.877076	up	coding	NM_145007	NLRP11	chr19	-
ASHG19A3A011920	0.014917	0.153761	2.461956	up	coding	NM_024762	ZNF552	chr19	-
ASHG19A3A011943	0.00048	0.037788	5.916534	up	coding	NM_198458	ZNF497	chr19	-
ASHG19A3A011948	0.000515	0.03796	3.305185	up	coding	NM_003433	ZNF132	chr19	-
ASHG19A3A011949	0.000164	0.026643	4.622308	up	coding	NM_012254	SLC27A5	chr19	-
ASHG19A3A011966	0.006072	0.103718	2.003761	up	coding	NM_001728	BSG	chr19	+
ASHG19A3A012002	0.04589	0.254701	3.440966	up	coding	NM_138393	REEP6	chr19	+
ASHG19A3A012070	0.042202	0.244591	2.032131	up	coding	NM_005483	CHAF1A	chr19	+
ASHG19A3A012138	0.003193	0.081478	6.293976	up	coding	NM_001127396	STXBP2	chr19	+
ASHG19A3A012218	0.000267	0.031138	2.418781	up	coding	NM_001136482	C19orf38	chr19	+
ASHG19A3A012319	0.005166	0.097577	2.080333	up	coding	NM_012377	OR7C2	chr19	+
ASHG19A3A012359	0.016064	0.158574	5.792704	up	coding	NM_024074	TMEM38A	chr19	+
ASHG19A3A012390	0.024107	0.191703	3.391846	up	coding	NM_198552	FAM89A	chr1	-
ASHG19A3A012396	0.003855	0.086652	2.91622	up	coding	NM_006332	IFI30	chr19	+
ASHG19A3A012503	0.035636	0.227147	2.933718	up	coding	NM_001105570	NUDT19	chr19	+
ASHG19A3A012515	0.020692	0.178453	2.561637	up	coding	NM_001806	CEBPG	chr19	+
ASHG19A3A012525	9.61E-05	0.023735	4.134269	up	coding	NM_032346	PDCD2L	chr19	+
ASHG19A3A012581	0.008027	0.117056	2.031148	up	coding	NM_052948	ARHGAP33	chr19	+
ASHG19A3A012629	0.035744	0.227486	43.96626	up	coding	NM_021102	SPINT2	chr19	+
ASHG19A3A012630	0.004373	0.090993	12.68689	up	coding	NM_033520	C19orf33	chr19	+
ASHG19A3A012633	0.003885	0.086787	2.156815	up	coding	NM_021185	CATSPERG	chr19	+

ASHG19A3A012727	0.020016	0.175921	4.592873	up	coding	NM_004706	ARHGEF1	chr19	+
ASHG19A3A012787	0.007506	0.114274	2.746104	up	coding	NM_005581	BCAM	chr19	+
ASHG19A3A012808	0.015827	0.157775	12.68809	up	coding	NM_177417	KLC3	chr19	+
ASHG19A3A012848	0.048187	0.261212	2.044786	up	coding	NM_015710	GLTSCR2	chr19	+
ASHG19A3A012857	0.016422	0.159902	3.473666	up	coding	NM_012451	SYNGR4	chr19	+
ASHG19A3A012858	0.022315	0.184784	9.832042	up	coding	NM_000836	GRIN2D	chr19	+
ASHG19A3A012872	0.00235	0.070872	2.621241	up	coding	NM_014330	PPP1R15A	chr19	+
ASHG19A3A012875	0.008567	0.120291	2.862498	up	coding	NM_014475	DHDH	chr19	+
ASHG19A3A012885	0.000348	0.033433	6.327558	up	coding	NM_003660	PPFIA3	chr19	+
ASHG19A3A012890	0.010662	0.131368	2.043294	up	coding	NM_153329	ALDH16A1	chr19	+
ASHG19A3A012921	0.000738	0.044848	2.237261	up	coding	NM_002691	POLD1	chr19	+
ASHG19A3A012929	0.004562	0.093019	2.363337	up	coding	NM_033068	ACPT	chr19	+
ASHG19A3A012997	0.000835	0.047092	2.495545	up	coding	NM_002739	PRKCG	chr19	+
ASHG19A3A013123	0.006091	0.103718	2.015227	up	coding	NM_001015878	AURKC	chr19	+
ASHG19A3A013142	0.010934	0.133053	2.187509	up	coding	NM_138347	ZNF551	chr19	+
ASHG19A3A013182	0.007205	0.112126	95.67187	up	coding	NM_001077710	FAM110C	chr2	-
ASHG19A3A013321	0.021371	0.181535	2.573368	up	coding	NM_001142286	SMC6	chr2	-
ASHG19A3A013341	0.040599	0.239899	2.223682	up	coding	NM_002997	SDC1	chr2	-
ASHG19A3A013413	0.002263	0.069865	3.537219	up	coding	NM_006569	CGREF1	chr2	-
ASHG19A3A013420	0.003043	0.080155	2.870952	up	coding	NM_021095	SLC5A6	chr2	-
ASHG19A3A013425	0.009181	0.122863	2.868805	up	coding	NM_003353	UCN	chr2	-
ASHG19A3A013430	0.028649	0.207188	2.001202	up	coding	NM_177983	PPM1G	chr2	-
ASHG19A3A013502	0.019116	0.172489	2.575611	up	coding	NM_022366	TFB2M	chr1	-
ASHG19A3A013561	0.016513	0.16051	2.194835	up	coding	NM_001083953	THADA	chr2	-
ASHG19A3A013566	0.002171	0.068508	2.426956	up	coding	NM_133259	LRPPRC	chr2	-
ASHG19A3A013583	0.036988	0.231032	2.436165	up	coding	NM_153213	ARHGEF19	chr1	-
ASHG19A3A013605	0.008914	0.121637	2.777948	up	coding	NM_020394	ZNF695	chr1	-
ASHG19A3A013653	0.002865	0.077844	2.879892	up	coding	NM_002453	MTIF2	chr2	-
ASHG19A3A013816	0.001253	0.054115	2.323362	up	coding	NM_032822	FAM136A	chr2	-
ASHG19A3A013818	0.007311	0.112726	2.166321	up	coding	NM_001099691	TGFA	chr2	-

ASHG19A3A013840	0.000329	0.0328	8.049524	up	coding	NM_001080410	FBXO41	chr2	-
ASHG19A3A013863	0.000386	0.034349	7.311338	up	coding	NM_001015055	RTKN	chr2	-
ASHG19A3A013940	0.032019	0.2164	2.077028	up	coding	NM_001747	CAPG	chr2	-
ASHG19A3A014047	0.003101	0.08044	8.214445	up	coding	NM_004418	DUSP2	chr2	-
ASHG19A3A014052	0.000826	0.046841	2.138661	up	coding	NM_198317	KLHL17	chr1	+
ASHG19A3A014090	0.002208	0.06942	3.100131	up	coding	NM_025244	TSGA10	chr2	-
ASHG19A3A014205	0.01244	0.140622	2.521114	up	coding	NM_022662	ANAPC1	chr2	-
ASHG19A3A014258	0.005995	0.103254	2.817858	up	coding	NM_182528	C1QL2	chr2	-
ASHG19A3A014309	0.012935	0.143381	2.463479	up	coding	NM_031445	AMMECR1L	chr2	-
ASHG19A3A014342	0.000321	0.032699	2.424633	up	coding	NM_022834	VWA1	chr1	+
ASHG19A3A014577	0.004569	0.093019	2.383555	up	coding	NM_002744	PRKCZ	chr1	+
ASHG19A3A014614	0.000104	0.024093	3.14849	up	coding	NM_024770	METTL8	chr2	-
ASHG19A3A014746	0.011094	0.133841	67.53662	up	coding	NM_014448	ARHGEF16	chr1	+
ASHG19A3A014925	0.018006	0.167286	2.392801	up	coding	NM_001127395	FAM119A	chr2	-
ASHG19A3A015005	0.007957	0.117056	2.846717	up	coding	NM_020935	USP37	chr2	-
ASHG19A3A015024	0.012805	0.142578	2.690127	up	coding	NM_006000	TUBA4A	chr2	-
ASHG19A3A015136	0.004073	0.088276	3.333767	up	coding	NM_001166217	MSL3L2	chr2	-
ASHG19A3A015160	0.026017	0.197961	2.4782	up	coding	NM_022449	RAB17	chr2	-
ASHG19A3A015166	0.00231	0.070288	12.68906	up	coding	NM_001142853	HES6	chr2	-
ASHG19A3A015211	0.000512	0.03796	3.928911	up	coding	NM_015148	PASK	chr2	-
ASHG19A3A015291	0.00187	0.06346	2.249087	up	coding	NM_032315	SLC25A33	chr1	+
ASHG19A3A015303	0.024042	0.191703	3.233406	up	coding	NM_198182	GRHL1	chr2	+
ASHG19A3A015311	5.52E-05	0.0208	2.22772	up	coding	NM_002149	HPCAL1	chr2	+
ASHG19A3A015317	0.000464	0.037144	2.095943	up	coding	NM_001130924	TMEM201	chr1	+
ASHG19A3A015433	0.002105	0.067384	5.421169	up	coding	NM_000221	KHK	chr2	+
ASHG19A3A015447	0.023306	0.189341	12.46447	up	coding	NM_001168364	KRTCAP3	chr2	+
ASHG19A3A015463	0.00092	0.04953	2.03663	up	coding	NM_002709	PPP1CB	chr2	+
ASHG19A3A015467	0.023256	0.189101	2.677432	up	coding	NM_015131	WDR43	chr2	+
ASHG19A3A015627	0.03985	0.238303	95.23085	up	coding	NM_002354	EPCAM	chr2	+
ASHG19A3A015676	0.02573	0.19721	2.169268	up	coding	NM_001136027	VRK2	chr2	+

ASHG19A3A015719	0.002399	0.070943	28.5536	up	coding	NM_014562	OTX1	chr2	+
ASHG19A3A015730	0.022785	0.18681	3.88971	up	coding	NM_014181	HSPC159	chr2	+
ASHG19A3A015819	0.023629	0.190032	2.634496	up	coding	NM_003124	SPR	chr2	+
ASHG19A3A015946	0.022908	0.187307	2.954955	up	coding	NM_144563	RPIA	chr2	+
ASHG19A3A016040	0.041003	0.240929	2.267598	up	coding	NM_145196	LIPT1	chr2	+
ASHG19A3A016178	0.011965	0.138585	9.717064	up	coding	NM_006538	BCL2L11	chr2	+
ASHG19A3A016194	0.022796	0.18681	11.872	up	coding	NM_006343	MERTK	chr2	+
ASHG19A3A016222	0.046315	0.255817	4.819178	up	coding	NM_012455	PSD4	chr2	+
ASHG19A3A016372	0.032906	0.21918	3.071614	up	coding	NM_052929	FHAD1	chr1	+
ASHG19A3A016534	0.005619	0.100699	8.868193	up	coding	NM_012198	GCA	chr2	+
ASHG19A3A016553	0.033656	0.221614	3.898261	up	coding	NM_203463	LASS6	chr2	+
ASHG19A3A016577	0.003649	0.084617	188.0127	up	coding	NM_001003845	SP5	chr2	+
ASHG19A3A016581	0.006966	0.110984	10.10518	up	coding	NM_013445	GAD1	chr2	+
ASHG19A3A016582	0.015352	0.155381	4.651753	up	coding	NM_000817	GAD1	chr2	+
ASHG19A3A016608	0.006115	0.10388	8.79811	up	coding	NM_031942	CDCA7	chr2	+
ASHG19A3A016702	9.55E-05	0.023735	2.006139	up	coding	NM_001144999	ITGAV	chr2	+
ASHG19A3A016758	0.006802	0.109582	3.735166	up	coding	NM_001080539	CCDC150	chr2	+
ASHG19A3A016767	0.001862	0.063402	3.368806	up	coding	NM_138395	MARS2	chr2	+
ASHG19A3A016991	0.003523	0.083557	23.26102	up	coding	NM_025216	WNT10A	chr2	+
ASHG19A3A016997	0.02751	0.202466	2.01491	up	coding	NM_016233	PADI3	chr1	+
ASHG19A3A017172	3.02E-05	0.016153	2.102002	up	coding	NM_016510	SCLY	chr2	+
ASHG19A3A017218	0.005191	0.097959	2.746842	up	coding	NM_032329	ING5	chr2	+
ASHG19A3A017231	0.021319	0.181418	2.711017	up	coding	NM_153269	C20orf96	chr20	-
ASHG19A3A017247	0.006083	0.103718	3.525788	up	coding	NM_018354	C20orf46	chr20	-
ASHG19A3A017332	0.012603	0.141741	14.47556	up	coding	NM_017671	FERMT1	chr20	-
ASHG19A3A017402	0.017407	0.164752	49.21108	up	coding	NM_021220	OVOL2	chr20	-
ASHG19A3A017551	0.002008	0.065872	3.291785	up	coding	NM_002657	PLAGL2	chr20	-
ASHG19A3A017578	0.004425	0.091547	2.69171	up	coding	NM_003908	EIF2S2	chr20	-
ASHG19A3A017647	4.92E-05	0.019284	2.083075	up	coding	NM_014657	KIAA0406	chr20	-
ASHG19A3A017857	0.00468	0.093255	2.681304	up	coding	NM_016045	SLMO2	chr20	-

ASHG19A3A017900	0.038257	0.234294	2.324991	up	coding	NM_080797	DIDO1	chr20	-
ASHG19A3A017952	0.008608	0.120291	4.011892	up	coding	NM_021158	TRIB3	chr20	+
ASHG19A3A017953	0.010733	0.131781	2.270841	up	coding	NM_031229	RBCK1	chr20	+
ASHG19A3A017988	0.00142	0.057151	2.537431	up	coding	NM_030811	MRPS26	chr20	+
ASHG19A3A018038	0.000417	0.034737	2.939923	up	coding	NM_001136204	RCC2	chr1	-
ASHG19A3A018100	0.014808	0.153113	2.719066	up	coding	NM_020689	SLC24A3	chr20	+
ASHG19A3A018105	0.001696	0.060953	2.037217	up	coding	NM_181527	NAA20	chr20	+
ASHG19A3A018157	0.048048	0.260925	3.321189	up	coding	NM_021067	GINS1	chr20	+
ASHG19A3A018228	0.000488	0.037875	3.274554	up	coding	NM_080825	C20orf144	chr20	+
ASHG19A3A018239	0.009679	0.12579	2.206432	up	coding	NM_004455	EXTL1	chr1	+
ASHG19A3A018270	0.009069	0.122347	2.906439	up	coding	NM_012156	EPB41L1	chr20	+
ASHG19A3A018271	0.01721	0.164351	2.919131	up	coding	NM_018715	RCC2	chr1	-
ASHG19A3A018278	0.041327	0.241772	2.168374	up	coding	NM_021809	TGIF2	chr20	+
ASHG19A3A018357	0.004198	0.089158	4.486085	up	coding	NM_001124756	PABPC1L	chr20	+
ASHG19A3A018359	0.020966	0.179877	2.295318	up	coding	NM_006282	STK4	chr20	+
ASHG19A3A018371	0.004438	0.091547	4.138139	up	coding	NM_001048224	DBNDD2	chr20	+
ASHG19A3A018382	0.013214	0.144592	2.947905	up	coding	NM_181802	UBE2C	chr20	+
ASHG19A3A018383	0.03068	0.213149	2.602952	up	coding	NM_181799	UBE2C	chr20	+
ASHG19A3A018525	0.008042	0.117056	58.06567	up	coding	NM_006142	SFN	chr1	+
ASHG19A3A018545	0.003768	0.086392	2.007035	up	coding	NM_006600	NUDC	chr1	+
ASHG19A3A018546	4.67E-05	0.019118	23.9044	up	coding	NM_016354	SLCO4A1	chr20	+
ASHG19A3A018549	0.002372	0.07092	2.318395	up	coding	NM_018270	C20orf20	chr20	+
ASHG19A3A018554	0.004117	0.088392	44.7285	up	coding	NM_001853	COL9A3	chr20	+
ASHG19A3A018559	0.026229	0.198323	6.006533	up	coding	NM_022082	SLC17A9	chr20	+
ASHG19A3A018584	0.000401	0.034548	4.726331	up	coding	NM_017806	LIME1	chr20	+
ASHG19A3A018605	0.030667	0.213149	2.042447	up	coding	NM_018257	PCMTD2	chr20	+
ASHG19A3A018628	0.000421	0.034859	10.14971	up	coding	NM_032872	SYTL1	chr1	+
ASHG19A3A018637	0.001128	0.053125	2.261045	up	coding	NM_005281	GPR3	chr1	+
ASHG19A3A018666	4.08E-07	0.003088	2.049503	up	coding	NM_002772	TMPRSS15	chr21	-
ASHG19A3A018786	0.003835	0.086652	2.399961	up	coding	NM_018944	C21orf45	chr21	-

ASHG19A3A018790	0.014058	0.150337	51.66965	up	coding	NM_014474	SMPDL3B	chr1	+
ASHG19A3A018794	0.020811	0.179035	2.146742	up	coding	NM_021254	C21orf59	chr21	-
ASHG19A3A018815	0.032269	0.216971	2.545243	up	coding	NM_000819	GART	chr21	-
ASHG19A3A018904	0.040663	0.240205	4.824529	up	coding	NM_001269	RCC1	chr1	+
ASHG19A3A019008	0.01768	0.16577	2.244104	up	coding	NM_194255	SLC19A1	chr21	-
ASHG19A3A019160	0.039918	0.238303	5.328999	up	coding	NM_058187	C21orf63	chr21	+
ASHG19A3A019294	0.00037	0.034338	2.00195	up	coding	NM_173568	UMODL1	chr21	+
ASHG19A3A019305	0.011673	0.137222	4.366991	up	coding	NM_018964	SLC37A1	chr21	+
ASHG19A3A019369	0.000497	0.037875	2.203537	up	coding	NM_130444	COL18A1	chr21	+
ASHG19A3A019485	0.000111	0.024541	15.17223	up	coding	NM_023004	RTN4R	chr22	-
ASHG19A3A019515	0.011875	0.138208	2.006448	up	coding	NM_030573	THAP7	chr22	-
ASHG19A3A019532	4.61E-05	0.019118	3.542489	up	coding	NM_001017964	YDJC	chr22	-
ASHG19A3A019550	0.048999	0.262507	23.23653	up	coding	NM_006115	PRAME	chr22	-
ASHG19A3A019645	0.007412	0.113562	2.290305	up	coding	NM_007194	CHEK2	chr22	-
ASHG19A3A019654	0.040538	0.239831	2.091692	up	coding	NM_001007279	RASL10A	chr22	-
ASHG19A3A019659	0.021536	0.182164	2.06896	up	coding	NM_003634	NIPSNAP1	chr22	-
ASHG19A3A019707	0.001166	0.053691	2.434496	up	coding	NM_173566	C22orf30	chr22	-
ASHG19A3A019829	0.038532	0.235108	3.090514	up	coding	NM_032884	C1orf94	chr1	+
ASHG19A3A019901	0.02582	0.197501	2.772412	up	coding	NM_173467	MCAT	chr22	-
ASHG19A3A019973	0.005479	0.100265	2.00775	up	coding	NM_015166	MLC1	chr22	-
ASHG19A3A019986	0.049482	0.263911	2.407749	up	coding	NM_178548	TFAP2E	chr1	+
ASHG19A3A020220	0.018944	0.171603	3.165355	up	coding	NM_001144931	LOC391322	chr22	+
ASHG19A3A020291	0.042237	0.244591	4.254935	up	coding	NM_001039570	KREMEN1	chr22	+
ASHG19A3A020305	0.020927	0.179763	2.729755	up	coding	NM_182527	CABP7	chr22	+
ASHG19A3A020314	0.008046	0.117056	3.201782	up	coding	NM_016498	MTP18	chr22	+
ASHG19A3A020481	0.032133	0.216841	2.453178	up	coding	NM_138435	FAM83F	chr22	+
ASHG19A3A020533	0.008201	0.11816	32.00468	up	coding	NM_001197	BIK	chr22	+
ASHG19A3A020702	0.015355	0.155381	2.443766	up	coding	NM_001136232	SEC13	chr3	-
ASHG19A3A020787	0.008074	0.11723	3.099529	up	coding	NM_001134380	TBC1D5	chr3	-
ASHG19A3A021003	0.000128	0.026534	3.559055	up	coding	NM_001134878	KIF9	chr3	-

ASHG19A3A021008	0.00482	0.094196	9.351858	up	coding	NM_173642	RIMKLA	chr1	+
ASHG19A3A021025	0.049386	0.263826	2.184801	up	coding	NM_002673	PLXNB1	chr3	-
ASHG19A3A021026	0.003434	0.083068	2.086777	up	coding	NM_024661	CCDC51	chr3	-
ASHG19A3A021037	5.86E-05	0.02082	2.063439	up	coding	NM_006347	PPIH	chr1	+
ASHG19A3A021053	0.017234	0.164416	2.089597	up	coding	NM_000884	IMPDH2	chr3	-
ASHG19A3A021082	0.048457	0.261704	3.285868	up	coding	NM_005879	TRAIP	chr3	-
ASHG19A3A021117	0.049583	0.263911	2.518113	up	coding	NM_001171904	VPRBP	chr3	-
ASHG19A3A021163	0.004663	0.093229	79.31767	up	coding	NM_018397	CHDH	chr3	-
ASHG19A3A021185	0.005676	0.101222	4.026732	up	coding	NM_003865	HESX1	chr3	-
ASHG19A3A021444	0.001108	0.05278	2.265097	up	coding	NM_001164346	ZBTB20	chr3	-
ASHG19A3A021484	0.006932	0.110825	2.903624	up	coding	NM_031458	PARP9	chr3	-
ASHG19A3A021505	0.000867	0.047926	4.873139	up	coding	NM_024628	SLC12A8	chr3	-
ASHG19A3A021636	0.005448	0.099807	2.105783	up	coding	NM_018133	MSL2	chr3	-
ASHG19A3A021670	0.012902	0.143259	2.199127	up	coding	NM_001130993	RBP1	chr3	-
ASHG19A3A021672	0.029938	0.211328	16.56109	up	coding	NM_178177	NMNAT3	chr3	-
ASHG19A3A021929	0.025895	0.197747	2.151146	up	coding	NM_001161561	TNIK	chr3	-
ASHG19A3A021975	0.044678	0.251606	2.064079	up	coding	NM_171830	KCNMB3	chr3	-
ASHG19A3A022025	0.012937	0.143381	3.53339	up	coding	NM_004366	CLCN2	chr3	-
ASHG19A3A022155	0.008909	0.121637	6.097376	up	coding	NM_147192	DMBX1	chr1	+
ASHG19A3A022159	0.007289	0.112695	5.949458	up	coding	NM_033316	MFI2	chr3	-
ASHG19A3A022249	0.009002	0.122111	2.404066	up	coding	NM_001018115	FANCD2	chr3	+
ASHG19A3A022412	0.000179	0.02679	15.65363	up	coding	NM_178868	CMTM8	chr3	+
ASHG19A3A022413	0.017304	0.164583	2.961103	up	coding	NM_138410	CMTM7	chr3	+
ASHG19A3A022464	0.000683	0.043424	3.856032	up	coding	NM_001106	ACVR2B	chr3	+
ASHG19A3A022500	0.042947	0.246559	5.032377	up	coding	NM_004624	VIPR1	chr3	+
ASHG19A3A022590	0.011199	0.134332	2.765281	up	coding	NM_016089	ZNF589	chr3	+
ASHG19A3A022634	0.008644	0.120291	3.227972	up	coding	NM_004186	SEMA3F	chr3	+
ASHG19A3A022669	0.002492	0.071789	2.290736	up	coding	NM_000688	ALAS1	chr3	+
ASHG19A3A022701	0.000824	0.046841	17.46892	up	coding	NM_018725	IL17RB	chr3	+
ASHG19A3A022810	0.047262	0.258579	2.024263	up	coding	NM_174907	PPP4R2	chr3	+

ASHG19A3A022882	0.008783	0.12054	2.135456	up	coding	NM_001080448	EPHA6	chr3	+
ASHG19A3A022919	0.000158	0.026643	3.516795	up	coding	NM_032359	C3orf26	chr3	+
ASHG19A3A022935	0.001813	0.062815	2.032299	up	coding	NM_017819	RG9MTD1	chr3	+
ASHG19A3A022980	0.001664	0.060728	2.965475	up	coding	NM_001145553	FLJ25363	chr3	+
ASHG19A3A023055	0.015236	0.154966	3.188655	up	coding	NM_015900	PLA1A	chr3	+
ASHG19A3A023147	0.027158	0.201378	2.355478	up	coding	NM_032343	CHCHD6	chr3	+
ASHG19A3A023152	0.003334	0.083052	3.577427	up	coding	NM_004526	MCM2	chr3	+
ASHG19A3A023224	0.00023	0.029723	3.182589	up	coding	NM_001113411	FGGY	chr1	+
ASHG19A3A023322	0.002235	0.069808	2.44134	up	coding	NM_001145319	PLS1	chr3	+
ASHG19A3A023513	0.008161	0.118004	19.1194	up	coding	NM_014373	GPR160	chr3	+
ASHG19A3A023519	0.032766	0.218732	2.244548	up	coding	NM_001145097	SKIL	chr3	+
ASHG19A3A023641	0.00874	0.12054	2.681951	up	coding	NM_032331	ECE2	chr3	+
ASHG19A3A023648	0.003745	0.086124	2.711714	up	coding	NM_006232	POLR2H	chr3	+
ASHG19A3A023649	0.029963	0.211328	3.363228	up	coding	NM_003741	CHRD	chr3	+
ASHG19A3A023826	0.00721	0.112126	16.56473	up	coding	NM_006651	CPLX1	chr4	-
ASHG19A3A023848	0.000277	0.031138	2.267532	up	coding	NM_005663	WHSC2	chr4	-
ASHG19A3A023920	0.036564	0.229691	11.54281	up	coding	NM_001130088	ABLIM2	chr4	-
ASHG19A3A023999	0.002094	0.067286	2.566967	up	coding	NM_017741	DCAF16	chr4	-
ASHG19A3A024145	0.030943	0.213765	4.714446	up	coding	NM_006587	CORIN	chr4	-
ASHG19A3A024148	0.000644	0.042495	2.79321	up	coding	NM_152995	NFXL1	chr4	-
ASHG19A3A024158	0.028137	0.204982	3.559655	up	coding	NM_001014446	OCIAD2	chr4	-
ASHG19A3A024202	0.004013	0.087853	103.2763	up	coding	NM_006681	NMU	chr4	-
ASHG19A3A024209	0.020733	0.178533	2.98233	up	coding	NM_002703	PPAT	chr4	-
ASHG19A3A024214	0.000324	0.032699	2.105248	up	coding	NM_032313	C4orf14	chr4	-
ASHG19A3A024618	0.019822	0.175242	2.258642	up	coding	NM_153426	PITX2	chr4	-
ASHG19A3A024624	0.000876	0.047999	3.272948	up	coding	NM_052864	TIFA	chr4	-
ASHG19A3A024627	0.001069	0.052289	2.040297	up	coding	NM_018392	C4orf21	chr4	-
ASHG19A3A025327	0.004067	0.088276	2.126153	up	coding	NM_025205	MED28	chr4	+
ASHG19A3A025635	0.006718	0.108788	3.027283	up	coding	NM_214711	C4orf40	chr4	+
ASHG19A3A025708	0.030589	0.212961	2.702947	up	coding	NM_020236	MRPL1	chr4	+

ASHG19A3A025713	0.036629	0.229791	8.500017	up	coding	NM_001166133	FRAS1	chr4	+
ASHG19A3A025937	0.015482	0.15608	4.422646	up	coding	NM_001128174	UGT8	chr4	+
ASHG19A3A026092	0.038389	0.234875	2.070485	up	coding	NM_003601	SMARCA5	chr4	+
ASHG19A3A026174	0.011165	0.134129	4.018385	up	coding	NM_032117	MND1	chr4	+
ASHG19A3A026251	0.032133	0.216841	11.35049	up	coding	NM_152487	TMEM56	chr1	+
ASHG19A3A026446	0.00417	0.088853	7.716201	up	coding	NM_006598	SLC12A7	chr5	-
ASHG19A3A026459	0.000407	0.0346	2.058289	up	coding	NM_024830	LPCAT1	chr5	-
ASHG19A3A026506	0.000162	0.026643	2.444196	up	coding	NM_024091	FASTKD3	chr5	-
ASHG19A3A026760	0.018101	0.167586	2.183808	up	coding	NM_183323	PAIP1	chr5	-
ASHG19A3A026795	0.000169	0.026643	73.82207	up	coding	NM_021147	CCNO	chr5	-
ASHG19A3A026977	0.033076	0.219945	2.951786	up	coding	NM_032367	ZBED3	chr5	-
ASHG19A3A027109	0.048981	0.262507	3.155203	up	coding	NM_020801	ARRDC3	chr5	-
ASHG19A3A027227	0.025889	0.197747	2.039457	up	coding	NM_004772	C5orf13	chr5	-
ASHG19A3A027426	0.026646	0.199921	2.504319	up	coding	NM_001040158	H2AFY	chr5	-
ASHG19A3A027511	0.044542	0.251142	8.149381	up	coding	NM_002587	PCDH1	chr5	-
ASHG19A3A027619	0.023663	0.190115	2.692475	up	coding	NM_015465	GEMIN5	chr5	-
ASHG19A3A027757	0.002403	0.070943	2.640479	up	coding	NM_006261	PROP1	chr5	-
ASHG19A3A027815	0.001046	0.05178	2.821395	up	coding	NM_152283	ZFP62	chr5	-
ASHG19A3A027821	0.036247	0.228825	3.06375	up	coding	NM_203296	TRIM7	chr5	-
ASHG19A3A027832	0.006083	0.103718	4.342499	up	coding	NM_153763	KCNC4	chr1	+
ASHG19A3A027846	0.00863	0.120291	3.315111	up	coding	NM_018140	CEP72	chr5	+
ASHG19A3A027849	0.000261	0.031138	4.498128	up	coding	NM_001166260	TRIP13	chr5	+
ASHG19A3A027853	0.047978	0.260909	2.840837	up	coding	NM_022768	RBM15	chr1	+
ASHG19A3A027854	0.009679	0.12579	12.89737	up	coding	NM_033120	NKD2	chr5	+
ASHG19A3A027891	0.037338	0.231912	2.040047	up	coding	NM_001145161	UBE2QL1	chr5	+
ASHG19A3A028103	0.047732	0.260288	9.477014	up	coding	NM_144722	SPEF2	chr5	+
ASHG19A3A028106	0.030708	0.213149	2.553523	up	coding	NM_181643	C1orf88	chr1	+
ASHG19A3A028111	0.029453	0.210017	2.029124	up	coding	NM_032637	SKP2	chr5	+
ASHG19A3A028152	0.016048	0.158564	2.161144	up	coding	NM_012176	FBXO4	chr5	+
ASHG19A3A028181	0.005351	0.099072	3.931918	up	coding	NM_016640	MRPS30	chr5	+

ASHG19A3A028321	0.014581	0.152608	7.038279	up	coding	NM_002538	OCLN	chr5	+
ASHG19A3A028353	0.000269	0.031138	2.433464	up	coding	NM_022132	MCCC2	chr5	+
ASHG19A3A028698	0.007816	0.116912	3.174574	up	coding	NM_207317	ZNF474	chr5	+
ASHG19A3A028740	0.011126	0.133887	2.745583	up	coding	NM_023927	GRAMD3	chr5	+
ASHG19A3A028748	0.040888	0.240719	2.002479	up	coding	NM_005573	LMNB1	chr5	+
ASHG19A3A028893	0.000168	0.026643	2.294731	up	coding	NM_018502	TMCO6	chr5	+
ASHG19A3A028997	0.039311	0.236673	3.01139	up	coding	NM_006706	TCERG1	chr5	+
ASHG19A3A029020	8.1E-05	0.023121	2.066514	up	coding	NM_152407	GRPEL2	chr5	+
ASHG19A3A029088	0.000149	0.026643	2.138516	up	coding	NM_017872	THG1L	chr5	+
ASHG19A3A029124	0.000539	0.03874	9.494075	up	coding	NM_001161661	WWC1	chr5	+
ASHG19A3A029176	0.03148	0.214448	6.183698	up	coding	NM_002449	MSX2	chr5	+
ASHG19A3A029216	0.000781	0.045821	23.07974	up	coding	NM_133369	UNC5A	chr5	+
ASHG19A3A029227	0.033104	0.219974	3.414114	up	coding	NM_006480	RGS14	chr5	+
ASHG19A3A029681	0.012845	0.142797	2.228512	up	coding	NM_001264	CDSN	chr6	-
ASHG19A3A029703	0.02685	0.20079	2.011088	up	coding	NM_033177	BAT4	chr6	-
ASHG19A3A029705	0.003262	0.082065	2.577011	up	coding	NM_021160	BAT5	chr6	-
ASHG19A3A029713	0.016474	0.160332	2.465856	up	coding	NM_025258	C6orf27	chr6	-
ASHG19A3A029787	0.021986	0.183319	2.132959	up	coding	NM_001141969	DAXX	chr6	-
ASHG19A3A029833	0.005786	0.101967	2.97994	up	coding	NM_052961	SLC26A8	chr6	-
ASHG19A3A029928	0.000403	0.034548	2.068462	up	coding	NM_199184	C6orf108	chr6	-
ASHG19A3A029967	0.020637	0.178323	3.015329	up	coding	NM_021572	ENPP5	chr6	-
ASHG19A3A030039	0.034568	0.22417	4.141369	up	coding	NM_016513	ICK	chr6	-
ASHG19A3A030275	0.028678	0.207322	2.997647	up	coding	NM_145332	MAP3K7	chr6	-
ASHG19A3A030455	0.014103	0.150369	2.717432	up	coding	NM_153255	MCM9	chr6	-
ASHG19A3A030525	0.00664	0.108362	4.757371	up	coding	NM_030908	OR2A4	chr6	-
ASHG19A3A030526	0.000631	0.042132	8.560802	up	coding	NM_001145659	CTAGE9	chr6	-
ASHG19A3A030566	0.015569	0.156493	2.184805	up	coding	NM_001145207	HBS1L	chr6	-
ASHG19A3A030641	0.000296	0.031812	2.995791	up	coding	NM_182503	ADAT2	chr6	-
ASHG19A3A030881	0.003296	0.082544	5.246237	up	coding	NM_003568	ANXA9	chr1	+
ASHG19A3A030894	0.009526	0.125185	2.12316	up	coding	NM_001012983	FAM136B	chr6	+

ASHG19A3A031048	0.04995	0.264788	2.919698	up	coding	NM_003107	SOX4	chr6	+
ASHG19A3A031063	0.033781	0.222049	3.298756	up	coding	NM_001080	ALDH5A1	chr6	+
ASHG19A3A031099	0.026141	0.198323	3.18957	up	coding	NM_003542	HIST1H4C	chr6	+
ASHG19A3A031143	0.006418	0.106091	13.90455	up	coding	NM_005865	PRSS16	chr6	+
ASHG19A3A031167	0.011477	0.135767	6.944183	up	coding	NM_003447	ZNF165	chr6	+
ASHG19A3A031231	0.034745	0.2247	2.927945	up	coding	NM_004091	E2F2	chr1	-
ASHG19A3A031311	0.028441	0.20607	3.339949	up	coding	NM_002441	MSH5	chr6	+
ASHG19A3A031314	0.006221	0.10488	2.027433	up	coding	NM_001039651	C6orf26	chr6	+
ASHG19A3A031359	0.036003	0.228089	6.187098	up	coding	NM_014234	HSD17B8	chr6	+
ASHG19A3A031429	0.018554	0.170069	3.729189	up	coding	NM_002754	MAPK13	chr6	+
ASHG19A3A031474	0.038819	0.23597	2.10506	up	coding	NM_173080	SPRR4	chr1	+
ASHG19A3A031478	0.02346	0.189502	3.610924	up	coding	NM_003125	SPRR1B	chr1	+
ASHG19A3A031507	0.005498	0.100265	2.223358	up	coding	NM_005586	MDF1	chr6	+
ASHG19A3A031820	0.003632	0.084345	3.845257	up	coding	NM_001010853	PM20D2	chr6	+
ASHG19A3A031924	0.001181	0.054008	2.415782	up	coding	NM_003080	SMPD2	chr6	+
ASHG19A3A031942	0.034613	0.224228	8.0125	up	coding	NM_018593	SLC16A10	chr6	+
ASHG19A3A031980	0.012222	0.139575	2.283964	up	coding	NM_152729	NT5DC1	chr6	+
ASHG19A3A031993	0.003458	0.083068	2.231673	up	coding	NM_001010892	RSPH4A	chr6	+
ASHG19A3A032036	0.022569	0.186	6.593873	up	coding	NM_003287	TPD52L1	chr6	+
ASHG19A3A032374	0.023536	0.189657	2.639212	up	coding	NM_002607	PDGFA	chr7	-
ASHG19A3A032381	0.022613	0.186121	7.602376	up	coding	NM_006869	ADAP1	chr7	-
ASHG19A3A032390	0.04682	0.256983	6.791319	up	coding	NM_001097620	TMEM184A	chr7	-
ASHG19A3A032467	0.012653	0.141839	5.287628	up	coding	NM_004968	ICA1	chr7	-
ASHG19A3A032493	0.03464	0.224329	4.714192	up	coding	NM_001004320	TMEM195	chr7	-
ASHG19A3A032549	0.027067	0.201258	3.392036	up	coding	NM_013293	TRA2A	chr7	-
ASHG19A3A032589	0.013156	0.144292	3.302964	up	coding	NM_006896	HOXA7	chr7	-
ASHG19A3A032808	0.031331	0.214234	5.091538	up	coding	NM_015198	COBL	chr7	-
ASHG19A3A032921	0.00032	0.032699	3.580025	up	coding	NM_178558	ZNF680	chr7	-
ASHG19A3A032937	0.047626	0.259894	2.137035	up	coding	NM_000181	GUSB	chr7	-
ASHG19A3A032976	0.020978	0.179896	2.046719	up	coding	NM_031468	CALN1	chr7	-

ASHG19A3A033184	0.040012	0.238412	8.610316	up	coding	NM_000940	PON3	chr7	-
ASHG19A3A033186	0.021482	0.182093	2.904681	up	coding	NM_001160210	SLC25A13	chr7	-
ASHG19A3A033208	0.000924	0.04953	2.555668	up	coding	NM_018842	BAIAP2L1	chr7	-
ASHG19A3A033238	0.014574	0.152608	2.128712	up	coding	NM_181538	GJC3	chr7	-
ASHG19A3A033263	0.002679	0.074424	19.76286	up	coding	NM_003227	TFR2	chr7	-
ASHG19A3A033277	0.003834	0.086652	6.991657	up	coding	NM_003378	VGF	chr7	-
ASHG19A3A033283	0.031029	0.213884	2.005729	up	coding	NM_014343	CLDN15	chr7	-
ASHG19A3A033318	0.016031	0.158564	2.021165	up	coding	NM_014377	DNAJC2	chr7	-
ASHG19A3A033380	0.005277	0.098632	2.938867	up	coding	NM_032549	IMMP2L	chr7	-
ASHG19A3A033490	0.023391	0.189502	2.240707	up	coding	NM_176814	ZNF800	chr7	-
ASHG19A3A033501	0.00038	0.034338	2.716392	up	coding	NM_018077	RBM28	chr7	-
ASHG19A3A033608	0.000967	0.050297	2.68759	up	coding	NM_080660	ZC3HAV1L	chr7	-
ASHG19A3A033693	0.015818	0.157775	28.78494	up	coding	NM_001003702	ARHGEF35	chr7	-
ASHG19A3A033731	0.003487	0.083333	6.445045	up	coding	NM_001164458	ACTR3C	chr7	-
ASHG19A3A033816	0.003468	0.083068	3.92736	up	coding	NM_001165255	MNX1	chr7	-
ASHG19A3A033817	0.000791	0.04611	3.499113	up	coding	NM_005515	MNX1	chr7	-
ASHG19A3A033844	2.52E-05	0.016153	2.059396	up	coding	NM_017802	HEATR2	chr7	+
ASHG19A3A034073	0.015844	0.157775	2.050517	up	coding	NM_016587	CBX3	chr7	+
ASHG19A3A034075	0.00389	0.086787	23.50234	up	coding	NM_013322	SNX10	chr7	+
ASHG19A3A034276	0.001139	0.053195	2.095455	up	coding	NM_021130	PPIA	chr7	+
ASHG19A3A034329	0.008965	0.121993	2.296369	up	coding	NM_182595	POM121L12	chr7	+
ASHG19A3A034363	0.000471	0.037342	2.443111	up	coding	NM_015969	MRPS17	chr7	+
ASHG19A3A034482	0.046449	0.256201	3.056576	up	coding	NM_153033	KCTD7	chr7	+
ASHG19A3A034584	0.005498	0.100265	4.556877	up	coding	NM_007155	ZP3	chr7	+
ASHG19A3A034669	0.000265	0.031138	5.111835	up	coding	NM_021721	ADAM22	chr7	+
ASHG19A3A034726	0.006706	0.10868	6.539002	up	coding	NM_001166160	PPP1R9A	chr7	+
ASHG19A3A034740	0.02506	0.1947	2.181809	up	coding	NM_020186	ACN9	chr7	+
ASHG19A3A034749	0.000516	0.03796	2.018529	up	coding	NM_014916	LMTK2	chr7	+
ASHG19A3A034801	0.000527	0.038338	4.100761	up	coding	NM_175047	PILRB	chr7	+
ASHG19A3A034821	0.015014	0.153921	4.196763	up	coding	NM_000799	EPO	chr7	+

ASHG19A3A034847	0.011927	0.138388	3.350035	up	coding	NM_020979	SH2B2	chr7	+
ASHG19A3A034893	0.000196	0.02801	2.296182	up	coding	NM_181581	DUS4L	chr7	+
ASHG19A3A034942	0.002598	0.072555	4.556475	up	coding	NM_000245	MET	chr7	+
ASHG19A3A035026	0.001512	0.05887	2.826217	up	coding	NM_013332	C7orf68	chr7	+
ASHG19A3A035051	0.003697	0.08533	16.20111	up	coding	NM_178562	TSPAN33	chr7	+
ASHG19A3A035075	0.001234	0.054115	17.03702	up	coding	NM_177524	MEST	chr7	+
ASHG19A3A035158	0.027066	0.201258	2.256887	up	coding	NM_173569	UBN2	chr7	+
ASHG19A3A035173	0.025802	0.197501	2.071734	up	coding	NM_052853	ADCK2	chr7	+
ASHG19A3A035182	0.000177	0.026643	2.164561	up	coding	NM_003143	SSBP1	chr7	+
ASHG19A3A035185	0.008487	0.11964	2.175322	up	coding	NM_018980	TAS2R5	chr7	+
ASHG19A3A035235	0.002516	0.071789	5.462539	up	coding	NM_001008747	LOC441294	chr7	+
ASHG19A3A035259	0.00157	0.059794	3.309622	up	coding	NM_198495	CTAGE4	chr7	+
ASHG19A3A035266	0.003238	0.081978	17.5882	up	coding	NM_005435	ARHGEF5	chr7	+
ASHG19A3A035307	0.003353	0.083054	17.60581	up	coding	NM_001142928	LRRC61	chr7	+
ASHG19A3A035308	0.002876	0.078019	45.19085	up	coding	NM_138434	C7orf29	chr7	+
ASHG19A3A035311	0.004384	0.09113	2.615775	up	coding	NM_014374	REPIN1	chr7	+
ASHG19A3A035368	0.001755	0.062007	4.279801	up	coding	NM_020445	ACTR3B	chr7	+
ASHG19A3A035608	0.017261	0.164505	2.86635	up	coding	NM_003844	TNFRSF10A	chr8	-
ASHG19A3A035639	0.005431	0.099637	2.349906	up	coding	NM_000742	CHRNA2	chr8	-
ASHG19A3A035673	0.00611	0.10388	2.376767	up	coding	NM_001015508	PURG	chr8	-
ASHG19A3A035766	0.048442	0.261704	2.436075	up	coding	NM_015941	ATP6V1H	chr8	-
ASHG19A3A035780	0.000201	0.028229	2.458025	up	coding	NM_152417	TMEM68	chr8	-
ASHG19A3A035817	0.025962	0.197944	3.483465	up	coding	NM_000370	TTPA	chr8	-
ASHG19A3A035857	0.014353	0.151394	2.248795	up	coding	NM_016027	LACTB2	chr8	-
ASHG19A3A035879	0.000798	0.046401	55.56162	up	coding	NM_020647	JPH1	chr8	-
ASHG19A3A035895	0.012368	0.140397	4.197907	up	coding	NM_005079	TPD52	chr8	-
ASHG19A3A035914	0.002699	0.074583	2.322296	up	coding	NM_022133	SNX16	chr8	-
ASHG19A3A035918	0.010956	0.133053	10.59824	up	coding	NM_001099670	C8orf59	chr8	-
ASHG19A3A035963	0.032579	0.217794	3.133682	up	coding	NM_012415	RAD54B	chr8	-
ASHG19A3A036007	0.00096	0.050231	7.90872	up	coding	NM_003406	YWHAZ	chr8	-

ASHG19A3A036069	0.025324	0.195324	2.032311	up	coding	NM_003756	EIF3H	chr8	-
ASHG19A3A036070	0.00045	0.036675	2.631679	up	coding	NM_006265	RAD21	chr8	-
ASHG19A3A036091	0.002173	0.068508	6.814556	up	coding	NM_024094	DSCC1	chr8	-
ASHG19A3A036103	0.028703	0.20736	3.612164	up	coding	NM_014109	ATAD2	chr8	-
ASHG19A3A036110	0.035373	0.22646	3.492562	up	coding	NM_001003954	ANXA13	chr8	-
ASHG19A3A036118	0.02316	0.188616	3.398844	up	coding	NM_032026	TATDN1	chr8	-
ASHG19A3A036125	0.007915	0.117056	30.08031	up	coding	NM_174911	FAM84B	chr8	-
ASHG19A3A036191	0.011741	0.137842	7.303176	up	coding	NM_015193	ARC	chr8	-
ASHG19A3A036212	0.010734	0.131781	3.330588	up	coding	NM_052963	TOP1MT	chr8	-
ASHG19A3A036218	0.041063	0.241118	3.799054	up	coding	NM_001100878	C8orf73	chr8	-
ASHG19A3A036219	0.009613	0.125668	4.945273	up	coding	NM_145201	NAPRT1	chr8	-
ASHG19A3A036222	0.002842	0.077477	2.394365	up	coding	NM_001137669	RGSL1	chr1	+
ASHG19A3A036228	0.003429	0.083068	14.83943	up	coding	NM_198488	FAM83H	chr8	-
ASHG19A3A036244	0.027854	0.203809	6.117215	up	coding	NM_017570	OPLAH	chr8	-
ASHG19A3A036257	0.002592	0.072555	2.383997	up	coding	NM_017767	SLC39A4	chr8	-
ASHG19A3A036268	0.01387	0.148967	2.031807	up	coding	NM_001024678	LRRC24	chr8	-
ASHG19A3A036281	0.034984	0.225239	2.805968	up	coding	NM_001109689	ZNF250	chr8	-
ASHG19A3A036414	0.027881	0.203809	4.017648	up	coding	NM_182795	NPM2	chr8	+
ASHG19A3A036487	0.037249	0.231712	6.085387	up	coding	NM_017412	FZD3	chr8	+
ASHG19A3A036503	0.005096	0.096773	2.70801	up	coding	NM_007212	RNF2	chr1	+
ASHG19A3A036527	0.02526	0.195276	2.773998	up	coding	NM_032509	MAK16	chr8	+
ASHG19A3A036637	0.000177	0.026643	2.181157	up	coding	NM_001077619	UBXN2B	chr8	+
ASHG19A3A036643	0.028403	0.206039	3.118035	up	coding	NM_017780	CHD7	chr8	+
ASHG19A3A036720	0.017788	0.166328	4.418003	up	coding	NM_001444	FABP5	chr8	+
ASHG19A3A036723	0.004978	0.095751	30.91375	up	coding	NM_152284	CHMP4C	chr8	+
ASHG19A3A036730	0.003464	0.083068	3.582096	up	coding	NM_001083588	E2F5	chr8	+
ASHG19A3A036865	0.029557	0.210204	2.650132	up	coding	NM_032334	UTP23	chr8	+
ASHG19A3A036870	0.000511	0.03796	3.125008	up	coding	NM_080651	MED30	chr8	+
ASHG19A3A036882	0.04916	0.263156	5.099365	up	coding	NM_022045	MTBP	chr8	+
ASHG19A3A036954	0.024123	0.191703	4.021003	up	coding	NM_017444	CHRAC1	chr8	+

ASHG19A3A036978	0.000422	0.034859	5.953918	up	coding	NM_016647	C8orf55	chr8	+
ASHG19A3A037012	0.007276	0.112595	3.035221	up	coding	NM_001099280	HEATR7A	chr8	+
ASHG19A3A037026	0.021802	0.182857	2.062917	up	coding	NM_138431	MFSD3	chr8	+
ASHG19A3A037088	0.011789	0.137852	3.855591	up	coding	NM_005059	RLN2	chr9	-
ASHG19A3A037094	0.008022	0.117056	2.249849	up	coding	NM_024896	ERMP1	chr9	-
ASHG19A3A037139	0.023063	0.188017	2.689158	up	coding	NM_021144	PSIP1	chr9	-
ASHG19A3A037274	0.036807	0.230437	3.70248	up	coding	NM_020702	KIAA1161	chr9	-
ASHG19A3A037310	0.015078	0.154275	3.426247	up	coding	NM_032818	C9orf100	chr9	-
ASHG19A3A037367	0.001045	0.05178	5.461181	up	coding	NM_147195	ANKRD18A	chr9	-
ASHG19A3A037413	0.044099	0.249946	2.565917	up	coding	NM_001012419	ANKRD20A3	chr9	-
ASHG19A3A037567	0.034125	0.22306	2.565038	up	coding	NM_001128618	C9orf57	chr9	-
ASHG19A3A037672	0.025387	0.195457	12.20692	up	coding	NM_006378	SEMA4D	chr9	-
ASHG19A3A037689	0.048999	0.262507	2.063368	up	coding	NM_001698	AUH	chr9	-
ASHG19A3A037697	0.007183	0.111953	2.582785	up	coding	NM_002161	IARS	chr9	-
ASHG19A3A037708	0.030623	0.212961	3.043258	up	coding	NM_001003800	BICD2	chr9	-
ASHG19A3A037740	0.000105	0.024093	2.190579	up	coding	NM_000136	FANCC	chr9	-
ASHG19A3A037769	0.002513	0.071789	3.387818	up	coding	NM_001001662	ZNF782	chr9	-
ASHG19A3A037774	0.000704	0.044249	12.70092	up	coding	NM_001333	CTSL2	chr9	-
ASHG19A3A037798	0.01305	0.143918	2.367555	up	coding	NM_014788	TRIM14	chr9	-
ASHG19A3A037799	0.015416	0.15563	2.78419	up	coding	NM_003389	CORO2A	chr9	-
ASHG19A3A038013	9.63E-05	0.023735	2.280631	up	coding	NM_020924	ZBTB26	chr9	-
ASHG19A3A038029	0.001279	0.054115	2.567782	up	coding	NM_001489	NR6A1	chr9	-
ASHG19A3A038031	0.035142	0.225952	2.057624	up	coding	NM_001017404	LGR6	chr1	+
ASHG19A3A038062	0.00185	0.063402	2.1822	up	coding	NM_005489	SH2D3C	chr9	-
ASHG19A3A038092	0.016306	0.1597	2.42185	up	coding	NM_052844	WDR34	chr9	-
ASHG19A3A038199	0.00343	0.083068	2.167279	up	coding	NM_001012415	SOHLH1	chr9	-
ASHG19A3A038254	0.003525	0.083557	2.865619	up	coding	NM_203468	ENTPD2	chr9	-
ASHG19A3A038255	6.48E-05	0.021793	10.26923	up	coding	NM_178448	C9orf140	chr9	-
ASHG19A3A038263	0.001865	0.063402	4.309305	up	coding	NM_031297	RNF208	chr9	-
ASHG19A3A038269	0.032317	0.216983	30.2622	up	coding	NM_001004354	NRARP	chr9	-

ASHG19A3A038278	0.029695	0.210462	2.11522	up	coding	NM_138462	ZMYND19	chr9	-
ASHG19A3A038295	0.019758	0.175242	2.023778	up	coding	NM_015158	KANK1	chr9	+
ASHG19A3A038560	0.047581	0.259877	2.178238	up	coding	NM_032226	ZCCHC7	chr9	+
ASHG19A3A038749	0.003555	0.083577	2.250447	up	coding	NM_000144	FXN	chr9	+
ASHG19A3A038751	0.000398	0.034548	2.316704	up	coding	NM_001170414	TJP2	chr9	+
ASHG19A3A038880	0.021665	0.182455	2.405227	up	coding	NM_004938	DAPK1	chr9	+
ASHG19A3A038905	0.046478	0.256201	2.842408	up	coding	NM_001827	CKS2	chr9	+
ASHG19A3A038964	0.030304	0.212773	2.231299	up	coding	NM_194320	ZNF169	chr9	+
ASHG19A3A039073	0.003372	0.083054	5.080377	up	coding	NM_031919	FSD1L	chr9	+
ASHG19A3A039074	0.00341	0.083068	2.657104	up	coding	NM_207647	FSD1L	chr9	+
ASHG19A3A039121	0.019335	0.173754	4.896447	up	coding	NM_133465	KIAA1958	chr9	+
ASHG19A3A039131	0.001842	0.063301	4.818953	up	coding	NM_144488	RGS3	chr9	+
ASHG19A3A039191	0.007117	0.111447	2.172355	up	coding	NM_138777	MRRF	chr9	+
ASHG19A3A039275	0.000214	0.029048	2.622503	up	coding	NM_024112	C9orf16	chr9	+
ASHG19A3A039290	0.037761	0.233374	3.928161	up	coding	NM_001122821	SET	chr9	+
ASHG19A3A039293	0.015508	0.156257	3.504679	up	coding	NM_013355	PKN3	chr9	+
ASHG19A3A039343	0.00166	0.060728	10.99963	up	coding	NM_021619	PRDM12	chr9	+
ASHG19A3A039350	0.006034	0.103576	35.45818	up	coding	NM_031426	AIF1L	chr9	+
ASHG19A3A039388	0.000506	0.03796	2.342098	up	coding	NM_017503	SURF2	chr9	+
ASHG19A3A039452	0.000527	0.038338	7.656067	up	coding	NM_152571	C9orf163	chr9	+
ASHG19A3A039469	0.005695	0.10136	2.156149	up	coding	NM_021138	TRAF2	chr9	+
ASHG19A3A039476	0.000333	0.0328	2.424327	up	coding	NM_183241	C9orf142	chr9	+
ASHG19A3A039490	0.037098	0.23155	2.031297	up	coding	NM_199001	C9orf169	chr9	+
ASHG19A3A039501	0.034804	0.224937	2.104104	up	coding	NM_152285	ARRDC1	chr9	+
ASHG19A3A039544	0.00476	0.093712	2.895716	up	coding	NM_005044	PRKX	chrX	-
ASHG19A3A039617	0.001124	0.053047	2.099363	up	coding	NM_024087	ASB9	chrX	-
ASHG19A3A039759	0.007341	0.113039	2.954945	up	coding	NM_014053	FLVCR1	chr1	+
ASHG19A3A039965	0.030387	0.212773	2.508585	up	coding	NM_001010862	SPIN3	chrX	-
ASHG19A3A039981	0.014979	0.15381	2.388384	up	coding	NM_152424	FAM123B	chrX	-
ASHG19A3A040061	0.010036	0.127474	2.002359	up	coding	NM_001122670	PHKA1	chrX	-

ASHG19A3A040263	0.044337	0.250664	5.217742	up	coding	NM_022746	MOSC1	chr1	+
ASHG19A3A040311	0.020138	0.176389	2.054256	up	coding	NM_033495	KLHL13	chrX	-
ASHG19A3A040612	0.005089	0.096773	2.61899	up	coding	NM_001018025	MTCP1	chrX	-
ASHG19A3A040675	0.002345	0.070872	3.841609	up	coding	NM_001830	CLCN4	chrX	+
ASHG19A3A040694	0.049477	0.263911	2.355022	up	coding	NM_003611	OFD1	chrX	+
ASHG19A3A040718	0.006867	0.110159	3.47355	up	coding	NM_018360	TXLNG	chrX	+
ASHG19A3A040759	0.048184	0.261212	3.805004	up	coding	NM_001415	EIF2S3	chrX	+
ASHG19A3A040762	0.046766	0.256798	2.163375	up	coding	NM_005391	PDK3	chrX	+
ASHG19A3A040863	0.002155	0.068327	2.310086	up	coding	NM_001039590	USP9X	chrX	+
ASHG19A3A040909	0.003168	0.081393	2.339021	up	coding	NM_033018	CDK16	chrX	+
ASHG19A3A040930	0.017377	0.164752	5.079319	up	coding	NM_020247	CABC1	chr1	+
ASHG19A3A040948	0.005095	0.096773	2.098538	up	coding	NM_006579	EBP	chrX	+
ASHG19A3A041080	0.003408	0.083068	14.76148	up	coding	NM_174912	FAAH2	chrX	+
ASHG19A3A041147	0.025806	0.197501	3.838955	up	coding	NM_001166278	DLG3	chrX	+
ASHG19A3A041252	0.015581	0.156493	4.368842	up	coding	NM_021998	ZNF711	chrX	+
ASHG19A3A041304	0.033899	0.22223	3.143279	up	coding	NM_021029	RPL36A	chrX	+
ASHG19A3A041342	7.15E-05	0.022087	2.387494	up	coding	NM_001006639	TCEAL1	chrX	+
ASHG19A3A041471	0.022328	0.184784	2.153951	up	coding	NM_006777	ZBTB33	chrX	+
ASHG19A3A042018	0.00168	0.060728	2.307366	up	coding	NM_001037277	GGPS1	chr1	+
ASHG19A3A042263	0.005937	0.103084	3.173531	up	coding	NM_205768	ZNF238	chr1	+
ASHG19A3A042344	0.031353	0.214234	2.332164	up	coding	NM_015155	LARP4B	chr10	-
ASHG19A3A042592	0.034278	0.223597	3.246568	up	coding	NM_018287	ARHGAP12	chr10	-
ASHG19A3A042666	0.004772	0.093712	2.089535	up	coding	NM_001098205	HNRNPF	chr10	-
ASHG19A3A042729	0.02671	0.200238	2.343391	up	coding	NM_001137548	FAM25C	chr10	-
ASHG19A3A042769	0.004622	0.093083	2.564867	up	coding	NM_023009	MARCKSL1	chr1	-
ASHG19A3A042875	0.038518	0.235108	6.063277	up	coding	NM_201262	DNAJC12	chr10	-
ASHG19A3A042884	0.032342	0.216983	3.426448	up	coding	NM_001080449	DNA2	chr10	-
ASHG19A3A042910	0.000573	0.04011	2.366763	up	coding	NM_021129	PPA1	chr10	-
ASHG19A3A042920	0.001491	0.058762	3.516923	up	coding	NM_000281	PCBD1	chr10	-
ASHG19A3A042926	0.035982	0.228089	2.292109	up	coding	NM_022153	C10orf54	chr10	-

ASHG19A3A042943	0.018198	0.167894	2.010295	up	coding	NM_001625	AK2	chr1	-
ASHG19A3A042987	0.01365	0.148073	3.547072	up	coding	NM_144589	COMTD1	chr10	-
ASHG19A3A043057	0.003363	0.083054	3.57085	up	coding	NM_017551	GRID1	chr10	-
ASHG19A3A043162	0.00108	0.052289	3.349506	up	coding	NM_152309	PIK3AP1	chr10	-
ASHG19A3A043171	0.04714	0.258093	2.103857	up	coding	NM_015179	RRP12	chr10	-
ASHG19A3A043223	0.001199	0.054008	2.856542	up	coding	NM_001085398	TLX1NB	chr10	-
ASHG19A3A043235	0.001319	0.055247	3.652021	up	coding	NM_006993	NPM3	chr10	-
ASHG19A3A043248	0.027631	0.203009	2.448456	up	coding	NM_024886	C10orf95	chr10	-
ASHG19A3A043336	0.047197	0.258303	2.882713	up	coding	NM_001127211	KIAA1598	chr10	-
ASHG19A3A043359	0.012582	0.141627	2.649596	up	coding	NM_213649	SFXN4	chr10	-
ASHG19A3A043382	0.043886	0.249307	2.431804	up	coding	NM_001001976	ATE1	chr10	-
ASHG19A3A043384	0.027883	0.203809	2.538558	up	coding	NM_001167865	NSMCE4A	chr10	-
ASHG19A3A043626	0.014026	0.150161	2.211891	up	coding	NM_018518	MCM10	chr10	+
ASHG19A3A043635	0.038879	0.236109	33.54434	up	coding	NM_001099439	EPHA10	chr1	-
ASHG19A3A043645	0.01655	0.160573	3.339104	up	coding	NM_183005	RPP38	chr10	+
ASHG19A3A043729	0.013855	0.148967	2.098889	up	coding	NM_014317	PDSS1	chr10	+
ASHG19A3A043855	0.003669	0.084977	3.598652	up	coding	NM_145312	ZNF485	chr10	+
ASHG19A3A043877	0.006126	0.103938	2.568453	up	coding	NM_000698	ALOX5	chr10	+
ASHG19A3A043909	0.001513	0.05887	4.185274	up	coding	NM_153034	ZNF488	chr10	+
ASHG19A3A043976	0.016354	0.15979	3.382693	up	coding	NM_003201	TFAM	chr10	+
ASHG19A3A044029	8.52E-05	0.023249	2.273928	up	coding	NM_001142498	SIRT1	chr10	+
ASHG19A3A044040	0.001078	0.052289	17.9221	up	coding	NM_152709	STOX1	chr10	+
ASHG19A3A044041	0.002978	0.079547	2.558977	up	coding	NM_001130161	STOX1	chr10	+
ASHG19A3A044057	0.000497	0.037875	14.79367	up	coding	NM_145306	C10orf35	chr10	+
ASHG19A3A044060	0.015417	0.15563	11.14322	up	coding	NM_001033082	MYCL1	chr1	-
ASHG19A3A044061	0.000566	0.040042	15.46576	up	coding	NM_005376	MYCL1	chr1	-
ASHG19A3A044062	0.000805	0.046519	12.66465	up	coding	NM_178545	TMEM52	chr1	-
ASHG19A3A044063	0.004415	0.091547	2.036939	up	coding	NM_001033081	MYCL1	chr1	-
ASHG19A3A044171	0.042495	0.24503	2.086205	up	coding	NM_001099692	EIF5AL1	chr10	+
ASHG19A3A044199	0.00075	0.045141	2.188635	up	coding	NM_001010848	NRG3	chr10	+

ASHG19A3A044226	0.012388	0.14047	2.529867	up	coding	NM_001080116	LDB3	chr10	+
ASHG19A3A044334	0.000428	0.035225	2.702398	up	coding	NM_001134375	CCNJ	chr10	+
ASHG19A3A044366	0.021495	0.182093	8.38704	up	coding	NM_001010917	GOLGA7B	chr10	+
ASHG19A3A044380	0.021172	0.180493	3.641012	up	coding	NM_000392	ABCC2	chr10	+
ASHG19A3A044426	0.001394	0.056564	4.478343	up	coding	NM_024789	TMEM180	chr10	+
ASHG19A3A044431	0.008181	0.118059	2.739932	up	coding	NM_178858	SFXN2	chr10	+
ASHG19A3A044454	0.00227	0.069865	21.11201	up	coding	NM_183239	GSTO2	chr10	+
ASHG19A3A044499	0.039101	0.236631	2.439373	up	coding	NM_016234	ACSL5	chr10	+
ASHG19A3A044539	0.0275	0.202466	2.02796	up	coding	NM_006229	PNLIPRP1	chr10	+
ASHG19A3A044634	0.00872	0.12054	2.016786	up	coding	NM_016567	BCCIP	chr10	+
ASHG19A3A044817	0.000557	0.039766	2.389928	up	coding	NM_001005238	OR51G2	chr11	-
ASHG19A3A044961	0.011924	0.138388	22.51246	up	coding	NM_148976	PSMA1	chr11	-
ASHG19A3A045022	0.001268	0.054115	2.707115	up	coding	NM_030771	CCDC34	chr11	-
ASHG19A3A045023	0.025478	0.196	5.566586	up	coding	NM_080654	CCDC34	chr11	-
ASHG19A3A045252	0.015198	0.154958	14.291	up	coding	NM_004200	SYT7	chr11	-
ASHG19A3A045289	0.003243	0.081978	2.842552	up	coding	NM_018093	WDR74	chr11	-
ASHG19A3A045302	0.048562	0.261741	2.178785	up	coding	NM_007069	PLA2G16	chr11	-
ASHG19A3A045311	0.001743	0.061817	3.606576	up	coding	NM_014067	MACROD1	chr11	-
ASHG19A3A045327	0.032338	0.216983	2.492361	up	coding	NM_153819	RASGRP2	chr11	-
ASHG19A3A045390	0.007755	0.116556	2.117171	up	coding	NM_016050	MRPL11	chr11	-
ASHG19A3A045419	0.033552	0.221543	3.296504	up	coding	NM_181843	NUDT8	chr11	-
ASHG19A3A045435	0.011821	0.137852	4.863297	up	coding	NM_001039656	MTL5	chr11	-
ASHG19A3A045448	0.046217	0.255615	14.91898	up	coding	NM_005117	FGF19	chr11	-
ASHG19A3A045476	0.032149	0.216841	5.039543	up	coding	NM_006645	STARD10	chr11	-
ASHG19A3A045503	0.004019	0.087853	3.962181	up	coding	NM_001039548	KLHL35	chr11	-
ASHG19A3A045509	0.010533	0.130758	11.22572	up	coding	NM_004626	WNT11	chr11	-
ASHG19A3A045520	0.000158	0.026643	2.246777	up	coding	NM_001293	CLNS1A	chr11	-
ASHG19A3A045552	0.019339	0.173754	2.545559	up	coding	NM_001039618	CREBZF	chr11	-
ASHG19A3A045594	0.000462	0.037144	2.591467	up	coding	NM_024116	TAF1D	chr11	-
ASHG19A3A045608	0.007477	0.114158	2.235467	up	coding	NM_144664	FAM76B	chr11	-

ASHG19A3A045736	0.00363	0.084345	2.184161	up	coding	NM_021603	FXYD2	chr11	-
ASHG19A3A045767	0.016753	0.162038	2.447928	up	coding	NM_001164277	SLC37A4	chr11	-
ASHG19A3A045787	0.016229	0.159515	3.090732	up	coding	NM_002855	PVRL1	chr11	-
ASHG19A3A045867	0.017038	0.163449	6.010164	up	coding	NM_001142685	ARHGAP32	chr11	-
ASHG19A3A045876	0.01792	0.166896	2.314093	up	coding	NM_014155	ZBTB44	chr11	-
ASHG19A3A045920	0.00053	0.038338	26.83084	up	coding	NM_007183	PKP3	chr11	+
ASHG19A3A045930	0.015727	0.157449	4.424032	up	coding	NM_000797	DRD4	chr11	+
ASHG19A3A045933	0.041788	0.243388	2.828016	up	coding	NM_022772	EPS8L2	chr11	+
ASHG19A3A046099	0.003394	0.083068	3.687018	up	coding	NM_013250	ZNF215	chr11	+
ASHG19A3A046142	0.020168	0.176573	2.855338	up	coding	NM_001025390	AMPD3	chr11	+
ASHG19A3A046162	0.033366	0.220909	2.788948	up	coding	NM_001080521	RASSF10	chr11	+
ASHG19A3A046206	0.004694	0.093354	3.584884	up	coding	NM_001098523	HTATIP2	chr11	+
ASHG19A3A046207	0.014961	0.153769	2.506377	up	coding	NM_005788	PRMT3	chr11	+
ASHG19A3A046336	0.009092	0.122394	2.086134	up	coding	NM_000506	F2	chr11	+
ASHG19A3A046342	0.000472	0.037342	2.353675	up	coding	NM_001130102	NR1H3	chr11	+
ASHG19A3A046450	0.036427	0.229406	3.106033	up	coding	NM_004177	STX3	chr11	+
ASHG19A3A046478	0.034529	0.22417	2.541074	up	coding	NM_015533	DAK	chr11	+
ASHG19A3A046524	0.009585	0.125609	2.34263	up	coding	NM_001142538	LGALS12	chr11	+
ASHG19A3A046529	0.000227	0.029723	2.462781	up	coding	NM_017490	MARK2	chr11	+
ASHG19A3A046576	0.001747	0.061846	5.41925	up	coding	NM_003273	TM7SF2	chr11	+
ASHG19A3A046589	4.61E-05	0.019118	5.055593	up	coding	NM_145719	TIGD3	chr11	+
ASHG19A3A046619	0.005583	0.100699	3.381163	up	coding	NM_032027	TM2D1	chr1	-
ASHG19A3A046682	0.014651	0.152736	14.13582	up	coding	NM_138768	MYEOV	chr11	+
ASHG19A3A046720	0.034558	0.22417	14.98876	up	coding	NM_016729	FOLR1	chr11	+
ASHG19A3A046751	0.002847	0.077477	2.607364	up	coding	NM_014288	ITGB3BP	chr1	-
ASHG19A3A046773	0.001072	0.052289	7.203339	up	coding	NM_032564	DGAT2	chr11	+
ASHG19A3A046804	0.019977	0.175878	5.837808	up	coding	NM_145018	C11orf82	chr11	+
ASHG19A3A046810	0.023281	0.189222	2.168143	up	coding	NM_015885	PCF11	chr11	+
ASHG19A3A046819	0.001498	0.058762	2.095929	up	coding	NM_173556	CCDC83	chr11	+
ASHG19A3A046861	0.005788	0.101967	2.818012	up	coding	NM_033395	KIAA1731	chr11	+

ASHG19A3A046866	0.040549	0.239831	2.404737	up	coding	NM_014039	C11orf54	chr11	+
ASHG19A3A046875	0.0263	0.198352	5.13708	up	coding	NM_002033	FUT4	chr11	+
ASHG19A3A046912	0.024041	0.191703	2.305511	up	coding	NM_015423	AASDHPPT	chr11	+
ASHG19A3A046928	0.000802	0.046471	2.377889	up	coding	NM_001018067	SERBP1	chr1	-
ASHG19A3A046963	9.44E-07	0.00314	2.135966	up	coding	NM_017868	TTC12	chr11	+
ASHG19A3A047165	0.008385	0.118908	11.87691	up	coding	NM_138342	GLB1L2	chr11	+
ASHG19A3A047339	0.002373	0.07092	2.377053	up	coding	NM_005039	PRB1	chr12	-
ASHG19A3A047355	0.000977	0.050424	2.370648	up	coding	NM_001080555	GSG1	chr12	-
ASHG19A3A047554	0.006602	0.107838	5.903722	up	coding	NM_144593	RHEBL1	chr12	-
ASHG19A3A047564	0.00022	0.029361	3.33386	up	coding	NM_032130	FAM186B	chr12	-
ASHG19A3A047582	0.00484	0.094205	3.954226	up	coding	NM_001174129	SLC11A2	chr12	-
ASHG19A3A047595	0.004726	0.093712	5.528712	up	coding	NM_007210	GALNT6	chr12	-
ASHG19A3A047611	0.043449	0.248075	2.372781	up	coding	NM_017818	WDR8	chr1	-
ASHG19A3A047716	0.000138	0.026643	2.10585	up	coding	NM_014830	ZBTB39	chr12	-
ASHG19A3A047725	0.011102	0.133854	2.195249	up	coding	NM_001080156	ARHGAP9	chr12	-
ASHG19A3A047726	0.000499	0.037875	3.305648	up	coding	NM_001080157	ARHGAP9	chr12	-
ASHG19A3A047851	0.026395	0.198669	2.432994	up	coding	NM_014167	CCDC59	chr12	-
ASHG19A3A047905	0.001464	0.058292	2.892665	up	coding	NM_001127362	NR2C1	chr12	-
ASHG19A3A047929	0.003777	0.086428	2.466159	up	coding	NM_152788	ANKS1B	chr12	-
ASHG19A3A047935	0.008236	0.118382	29.86817	up	coding	NM_017600	GOLGA2B	chr12	-
ASHG19A3A047993	0.005162	0.097577	2.911409	up	coding	NM_001001655	ALKBH2	chr12	-
ASHG19A3A048027	0.0251	0.194782	10.40969	up	coding	NM_004658	RASAL1	chr12	-
ASHG19A3A048213	0.048548	0.261739	2.517212	up	coding	NM_213655	HSN2	chr12	+
ASHG19A3A048300	0.000353	0.033584	3.321669	up	coding	NM_080548	PTPN6	chr12	+
ASHG19A3A048353	0.002905	0.078231	2.699239	up	coding	NM_000350	ABCA4	chr1	-
ASHG19A3A048415	0.004017	0.087853	2.750458	up	coding	NM_030671	PTPRO	chr12	+
ASHG19A3A048466	0.039982	0.238412	2.473802	up	coding	NM_001145010	C12orf70	chr12	+
ASHG19A3A048553	0.023358	0.189502	2.951777	up	coding	NM_005430	WNT1	chr12	+
ASHG19A3A048609	0.030402	0.212773	2.038408	up	coding	NM_001077401	ACVRL1	chr12	+
ASHG19A3A048658	0.014733	0.152783	14.21393	up	coding	NM_014212	HOXC11	chr12	+

ASHG19A3A048699	0.010324	0.129408	11.19697	up	coding	NM_152637	METTL7B	chr12	+
ASHG19A3A048715	0.008116	0.117659	11.29975	up	coding	NM_001005915	ERBB3	chr12	+
ASHG19A3A048755	0.007549	0.11456	2.320854	up	coding	NM_024779	PIP4K2C	chr12	+
ASHG19A3A048837	0.020349	0.177153	3.30443	up	coding	NM_006530	YEATS4	chr12	+
ASHG19A3A048841	0.012126	0.139317	2.364239	up	coding	NM_175624	RAB3IP	chr12	+
ASHG19A3A048843	0.004748	0.093712	9.624068	up	coding	NM_175623	RAB3IP	chr12	+
ASHG19A3A048938	0.04978	0.264293	3.687959	up	coding	NM_152435	AMDHD1	chr12	+
ASHG19A3A049013	0.010384	0.129853	2.577252	up	coding	NM_014653	WSCD2	chr12	+
ASHG19A3A049029	0.001957	0.064873	3.401987	up	coding	NM_032829	C12orf34	chr12	+
ASHG19A3A049063	0.034886	0.225065	2.749019	up	coding	NM_002535	OAS2	chr12	+
ASHG19A3A049086	0.023712	0.190426	4.109015	up	coding	NM_001109903	RNFT2	chr12	+
ASHG19A3A049105	0.002586	0.072555	73.52969	up	coding	NM_207311	CCDC64	chr12	+
ASHG19A3A049182	0.017313	0.164583	2.21113	up	coding	NM_080626	BRI3BP	chr12	+
ASHG19A3A049225	1.68E-06	0.004529	2.446652	up	coding	NM_001170543	PGAM5	chr12	+
ASHG19A3A049357	0.032535	0.217592	83.82333	up	coding	NM_001265	CDX2	chr13	-
ASHG19A3A049409	0.039526	0.237281	2.224637	up	coding	NM_006402	HBXIP	chr1	-
ASHG19A3A049703	0.000205	0.028229	2.966517	up	coding	NM_032229	SLITRK6	chr13	-
ASHG19A3A049743	0.048963	0.262507	2.394853	up	coding	NM_005167	PPM1J	chr1	-
ASHG19A3A049790	0.015914	0.158066	37.30868	up	coding	NM_033132	ZIC5	chr13	-
ASHG19A3A049794	0.012987	0.143604	4.300046	up	coding	NM_003051	SLC16A1	chr1	-
ASHG19A3A049836	0.005341	0.099072	7.821966	up	coding	NM_017817	RAB20	chr13	-
ASHG19A3A049863	0.045605	0.254019	8.856573	up	coding	NM_024719	GRTP1	chr13	-
ASHG19A3A049955	0.01361	0.147985	4.454113	up	coding	NM_001166271	SPATA13	chr13	+
ASHG19A3A049996	0.031578	0.214527	5.666203	up	coding	NM_000209	PDX1	chr13	+
ASHG19A3A050034	0.024215	0.19182	3.231868	up	coding	NM_000059	BRCA2	chr13	+
ASHG19A3A050040	0.040527	0.239831	3.915847	up	coding	NM_015032	PDS5B	chr13	+
ASHG19A3A050048	0.02525	0.195276	2.814716	up	coding	NM_002915	RFC3	chr13	+
ASHG19A3A050196	0.010664	0.131368	2.508112	up	coding	NM_024570	RNASEH2B	chr13	+
ASHG19A3A050427	0.010518	0.130747	13.54451	up	coding	NM_007129	ZIC2	chr13	+
ASHG19A3A050598	0.020865	0.179416	2.723367	up	coding	NM_001130706	C14orf93	chr14	-

ASHG19A3A050632	0.002701	0.074583	6.507918	up	coding	NM_003917	APIG2	chr14	-
ASHG19A3A050796	0.027485	0.202466	3.649936	up	coding	NM_001202	BMP4	chr14	-
ASHG19A3A050804	0.042809	0.246455	6.358949	up	coding	NM_000161	GCH1	chr14	-
ASHG19A3A050866	2.16E-05	0.016153	6.374813	up	coding	NM_001008726	WDR89	chr14	-
ASHG19A3A050895	0.021791	0.182857	2.494857	up	coding	NM_016445	PLEK2	chr14	-
ASHG19A3A050974	0.003092	0.080421	5.242568	up	coding	NM_031464	RPS6KL1	chr14	-
ASHG19A3A051008	0.007091	0.111447	2.660097	up	coding	NM_213601	TMED8	chr14	-
ASHG19A3A051078	0.003316	0.082717	3.806126	up	coding	NM_001142594	ITPK1	chr14	-
ASHG19A3A051193	0.00715	0.111651	2.644574	up	coding	NM_177533	NUDT14	chr14	-
ASHG19A3A051302	0.015304	0.155135	5.061123	up	coding	NM_005794	DHRS2	chr14	+
ASHG19A3A051444	0.008974	0.122004	3.167275	up	coding	NM_016361	ACP6	chr1	-
ASHG19A3A051451	4.27E-05	0.019118	2.355496	up	coding	NM_181703	GJA5	chr1	-
ASHG19A3A051472	0.003273	0.082065	2.848668	up	coding	NM_207377	TOMM20L	chr14	+
ASHG19A3A051544	0.024238	0.191865	4.508148	up	coding	NM_001172	ARG2	chr14	+
ASHG19A3A051635	3.12E-05	0.016153	2.037105	up	coding	NM_004452	ESRRB	chr14	+
ASHG19A3A051648	0.025407	0.195528	19.0545	up	coding	NM_020431	TMEM63C	chr14	+
ASHG19A3A051723	0.035367	0.22646	2.29058	up	coding	NM_023112	OTUB2	chr14	+
ASHG19A3A052013	0.01983	0.175242	7.251813	up	coding	NM_001039905	C15orf56	chr15	-
ASHG19A3A052027	0.00487	0.094654	13.41341	up	coding	NM_133639	RHOV	chr15	-
ASHG19A3A052030	0.001117	0.05299	2.652641	up	coding	NM_152596	EXD1	chr15	-
ASHG19A3A052032	0.039261	0.236631	3.609479	up	coding	NM_007280	OIP5	chr15	-
ASHG19A3A052170	0.009598	0.12562	2.663475	up	coding	NM_130810	DYX1C1	chr15	-
ASHG19A3A052227	0.010003	0.127458	3.189668	up	coding	NM_178431	LCE3A	chr1	-
ASHG19A3A052258	0.000409	0.0346	2.958534	up	coding	NM_001014291	SPRR2G	chr1	-
ASHG19A3A052320	0.001287	0.054217	2.122828	up	coding	NM_006305	ANP32A	chr15	-
ASHG19A3A052394	0.046918	0.257368	3.251925	up	coding	NM_017793	RPP25	chr15	-
ASHG19A3A052445	0.035322	0.22646	7.846889	up	coding	NM_004390	CTSH	chr15	-
ASHG19A3A052451	0.00012	0.025865	2.456208	up	coding	NM_006441	MTHFS	chr15	-
ASHG19A3A052466	0.026987	0.201258	2.483741	up	coding	NM_014856	DENND4B	chr1	-
ASHG19A3A052784	0.043447	0.248075	17.24822	up	coding	NM_001130448	C15orf62	chr15	+

ASHG19A3A052884	0.003842	0.086652	2.897705	up	coding	NM_002044	GALK2	chr15	+
ASHG19A3A052887	0.003395	0.083068	8.057613	up	coding	NM_003645	SLC27A2	chr15	+
ASHG19A3A052911	0.029325	0.209824	4.449936	up	coding	NM_198524	TEX9	chr15	+
ASHG19A3A052916	0.024731	0.193409	5.331876	up	coding	NM_207036	TCF12	chr15	+
ASHG19A3A052928	0.004783	0.09382	3.354162	up	coding	NM_020980	AQP9	chr15	+
ASHG19A3A053067	0.000841	0.047109	2.218648	up	coding	NM_201526	ISLR	chr15	+
ASHG19A3A053072	0.019651	0.174937	2.040395	up	coding	NM_006465	ARID3B	chr15	+
ASHG19A3A053083	0.010641	0.131368	2.186847	up	coding	NM_015492	C15orf39	chr15	+
ASHG19A3A053129	0.015101	0.154388	3.145264	up	coding	NM_000745	CHRNA5	chr15	+
ASHG19A3A053215	0.014508	0.152381	2.635721	up	coding	NM_001113378	FANCI	chr15	+
ASHG19A3A053244	0.000972	0.050297	3.109029	up	coding	NM_000057	BLM	chr15	+
ASHG19A3A053333	0.002241	0.069808	3.090452	up	coding	NM_003502	AXIN1	chr16	-
ASHG19A3A053345	0.033806	0.222131	6.727789	up	coding	NM_153350	FBXL16	chr16	-
ASHG19A3A053388	0.000109	0.0244	2.339147	up	coding	NM_002528	NTHL1	chr16	-
ASHG19A3A053411	0.017376	0.164752	21.18046	up	coding	NM_022119	PRSS22	chr16	-
ASHG19A3A053434	0.003547	0.083557	3.039713	up	coding	NM_016292	TRAP1	chr16	-
ASHG19A3A053442	0.027523	0.202466	2.010823	up	coding	NM_003223	TFAP4	chr16	-
ASHG19A3A053444	0.009132	0.122749	2.206849	up	coding	NM_016069	TIMM16	chr16	-
ASHG19A3A053467	0.003231	0.081978	3.21602	up	coding	NM_015421	TMEM186	chr16	-
ASHG19A3A053496	0.021693	0.182455	2.632398	up	coding	NM_001130007	GSPT1	chr16	-
ASHG19A3A053512	0.041046	0.241102	2.516048	up	coding	NM_018427	RRN3	chr16	-
ASHG19A3A053525	0.045397	0.253461	18.2078	up	coding	NM_001878	CRABP2	chr1	-
ASHG19A3A053536	0.001454	0.058028	2.224458	up	coding	NM_001019	RPS15A	chr16	-
ASHG19A3A053624	0.001017	0.051214	11.44894	up	coding	NM_177536	SULT1A1	chr16	-
ASHG19A3A053664	0.003008	0.079913	2.380431	up	coding	NM_024096	DCTPP1	chr16	-
ASHG19A3A053670	0.030721	0.213149	2.254613	up	coding	NM_023931	ZNF747	chr16	-
ASHG19A3A053687	0.030924	0.213711	2.207862	up	coding	NM_001172668	ZNF668	chr16	-
ASHG19A3A053819	0.043077	0.24695	2.990904	up	coding	NM_181521	CMTM4	chr16	-
ASHG19A3A053826	0.017685	0.16577	2.978244	up	coding	NM_005894	CD5L	chr1	-
ASHG19A3A053869	0.03884	0.236018	2.453396	up	coding	NM_024939	ESRP2	chr16	-

ASHG19A3A053883	0.000271	0.031138	2.630464	up	coding	NM_014062	NOB1	chr16	-
ASHG19A3A053904	0.020277	0.176867	4.16166	up	coding	NM_145911	ZNF23	chr16	-
ASHG19A3A053932	0.04247	0.244962	56.55832	up	coding	NM_024306	FA2H	chr16	-
ASHG19A3A053941	0.011815	0.137852	2.043081	up	coding	NM_001005279	OR6K2	chr1	-
ASHG19A3A053981	0.042326	0.244731	2.342832	up	coding	NM_001100873	C16orf46	chr16	-
ASHG19A3A054024	0.014731	0.152783	2.826132	up	coding	NM_016095	GINS2	chr16	-
ASHG19A3A054048	0.036551	0.229691	4.845826	up	coding	NM_003486	SLC7A5	chr16	-
ASHG19A3A054054	0.007746	0.116508	5.206118	up	coding	NM_178310	SNAI3	chr16	-
ASHG19A3A054123	0.04984	0.264464	2.315828	up	coding	NM_138418	FAM195A	chr16	+
ASHG19A3A054140	0.001353	0.055969	4.228603	up	coding	NM_207112	HAGHL	chr16	+
ASHG19A3A054143	0.000189	0.027342	2.435572	up	coding	NM_022092	CHTF18	chr16	+
ASHG19A3A054147	0.026705	0.200238	9.444511	up	coding	NM_014587	SOX8	chr16	+
ASHG19A3A054184	0.006329	0.105194	2.042268	up	coding	NM_000548	TSC2	chr16	+
ASHG19A3A054195	0.038006	0.233813	2.811689	up	coding	NM_025108	C16orf59	chr16	+
ASHG19A3A054219	0.009141	0.122749	3.204778	up	coding	NM_024339	THOC6	chr16	+
ASHG19A3A054316	0.021067	0.180024	3.85247	up	coding	NM_001128423	MPV17L	chr16	+
ASHG19A3A054334	0.030353	0.212773	12.09731	up	coding	NM_016946	F11R	chr1	-
ASHG19A3A054345	0.006215	0.10488	20.21165	up	coding	NM_001113207	TSTD1	chr1	-
ASHG19A3A054435	0.03131	0.214234	2.397876	up	coding	NM_001178098	CD19	chr16	+
ASHG19A3A054466	0.040275	0.239195	2.446677	up	coding	NM_184043	ALDOA	chr16	+
ASHG19A3A054478	0.001675	0.060728	2.159791	up	coding	NM_152652	ZNF48	chr16	+
ASHG19A3A054593	0.005756	0.101967	8.456052	up	coding	NM_005853	IRX5	chr16	+
ASHG19A3A054600	0.003856	0.086652	2.441144	up	coding	NM_001043	SLC6A2	chr16	+
ASHG19A3A054660	0.002236	0.069808	2.486845	up	coding	NM_014157	CCDC113	chr16	+
ASHG19A3A054675	0.00784	0.116921	2.680299	up	coding	NM_001178020	BEAN	chr16	+
ASHG19A3A054698	0.016983	0.163179	4.19981	up	coding	NM_024712	ELMO3	chr16	+
ASHG19A3A054716	0.005276	0.098632	7.130817	up	coding	NM_001037281	PARD6A	chr16	+
ASHG19A3A054732	0.031461	0.214448	2.05825	up	coding	NM_173163	NFATC3	chr16	+
ASHG19A3A054742	0.036703	0.230049	9.550174	up	coding	NM_005329	HAS3	chr16	+
ASHG19A3A054747	0.033692	0.221614	2.08201	up	coding	NM_016101	NIP7	chr16	+

ASHG19A3A054763	0.019488	0.174349	2.037368	up	coding	NM_145059	FUK	chr16	+
ASHG19A3A054764	0.013091	0.143918	2.146112	up	coding	NM_012426	SF3B3	chr16	+
ASHG19A3A054771	0.015613	0.156727	26.0299	up	coding	NM_052858	MARVELD3	chr16	+
ASHG19A3A054772	0.015459	0.155929	87.97141	up	coding	NM_001017967	MARVELD3	chr16	+
ASHG19A3A054817	0.023618	0.190032	3.814239	up	coding	NM_016373	WVOX	chr16	+
ASHG19A3A054828	0.002243	0.069808	3.035852	up	coding	NM_198390	CMIP	chr16	+
ASHG19A3A054905	0.01625	0.159638	2.33809	up	coding	NM_030928	CDT1	chr16	+
ASHG19A3A054929	0.020246	0.176782	3.400587	up	coding	NM_014427	CPNE7	chr16	+
ASHG19A3A054959	0.046559	0.256323	2.054897	up	coding	NM_003585	DOC2B	chr17	-
ASHG19A3A055038	0.00237	0.07092	2.465468	up	coding	NM_001140	ALOX15	chr17	-
ASHG19A3A055041	0.019746	0.175242	10.76509	up	coding	NM_022059	CXCL16	chr17	-
ASHG19A3H0000524	0.004673	0.093229	2.105897	up	coding	NM_024017_intron2+	NM_024017	chr17	+
ASHG19A3H0000546	0.001898	0.063466	2.849617	up	coding	NM_019102_intron2+	NM_019102	chr7	+
ASHG19A3H0000579	0.029474	0.210089	2.021699	up	coding	NM_002146_Exon3+	NM_002146	chr17	+
ASHG19A3H0000623	0.015258	0.154986	2.408604	up	coding	NM_153631_Exon4+	NM_153631	chr7	+
CUST_2_PI426249100	0.005252	0.098602	46.25193	up	coding	NM_017410_Exon2+	NM_017410	chr12	+
CUST_27_PI426249100	0.001241	0.054115	2.825536	up	coding	NM_002146_Exon2-	NM_002146	chr17	-
CUST_30_PI426249100	0.000154	0.026643	2.766822	up	coding	NM_024015_Exon1-	NM_024015	chr17	-
CUST_38_PI426249100	0.029795	0.210837	3.25758	up	coding	NM_004502_Exon1-	NM_004502	chr17	-
CUST_39_PI426249100	0.006951	0.110944	7.729962	up	coding	NM_024016_Exon2-	NM_024016	chr17	-
CUST_41_PI426249100	0.012865	0.142939	71.33542	up	coding	NM_024017_Exon2-	NM_024017	chr17	-
CUST_6_PI426249100	0.009922	0.127353	15.32502	up	coding	NM_014212_Exon2+	NM_014212	chr12	+
CUST_7_PI426249100	0.001206	0.054115	2.360815	up	coding	NM_017409_Exon1+	NM_017409	chr12	+
CUST_84_PI426249100	0.015221	0.154966	3.363227	up	coding	NM_006896_Exon1-	NM_006896	chr7	-

Supplementary Table 1-2. The list of mRNAs downregulated in CRC.

P-value and FDR **Fold change and Regulation**

ProbeName	p-value	FDR	FCAbsolute	regulation	type	seqname	GeneSymbol	chrom	strand
ASHG19A3A000531	0.026609	0.199721	2.305781	down	coding	NM_000027	AGA	chr4	-
ASHG19A3A000539	0.000412	0.0346	31.79706	down	coding	NM_000088	COL1A1	chr17	-
ASHG19A3A000549	0.001109	0.05278	3.480583	down	coding	NM_000212	ITGB3	chr17	+
ASHG19A3A000567	0.02159	0.182328	2.097575	down	coding	NM_000366	TPM1	chr15	+
ASHG19A3A000572	0.036567	0.229691	2.426861	down	coding	NM_000380	XPA	chr9	-
ASHG19A3A000574	0.017217	0.164351	10.06112	down	coding	NM_000389	CDKN1A	chr6	+
ASHG19A3A000598	0.005774	0.101967	3.985405	down	coding	NM_000611	CD59	chr11	-
ASHG19A3A000608	0.024183	0.19176	2.747292	down	coding	NM_001006632	CHRM2	chr7	+
ASHG19A3A000628	0.013875	0.148967	2.213409	down	coding	NM_000919	PAM	chr5	+
ASHG19A3A000650	0.034062	0.222881	21.01558	down	coding	NM_001001389	CD44	chr11	+
ASHG19A3A000652	0.009469	0.124525	20.48569	down	coding	NM_001001391	CD44	chr11	+
ASHG19A3A000661	0.011815	0.137852	2.917001	down	coding	NM_001001486	ATP2C1	chr3	+
ASHG19A3A000693	0.000237	0.030336	7.630328	down	coding	NM_001001991	PAMR1	chr11	-
ASHG19A3A000724	0.002128	0.067702	2.582791	down	coding	NM_001002757	NFU1	chr2	-
ASHG19A3A000739	0.039298	0.236667	2.281184	down	coding	NM_001003398	BICD1	chr12	+
ASHG19A3A000773	0.002601	0.072555	5.813169	down	coding	NM_001004128	QSOX1	chr1	+
ASHG19A3A000795	0.020008	0.175921	4.991846	down	coding	NM_001005377	PLAUR	chr19	-
ASHG19A3A000808	0.012397	0.14047	2.495489	down	coding	NM_001005744	NUMB	chr14	-
ASHG19A3A000819	0.00257	0.072555	4.174943	down	coding	NM_001006613	WBP5	chrX	+
ASHG19A3A000822	0.018499	0.169813	2.593938	down	coding	NM_001006619	MAPKAP1	chr9	-
ASHG19A3A000836	0.001247	0.054115	5.83317	down	coding	NM_001006684	TCEAL8	chrX	-
ASHG19A3A000837	0.004014	0.087853	3.011917	down	coding	NM_001006933	TCEAL3	chrX	+
ASHG19A3A000843	0.015991	0.158497	2.089494	down	coding	NM_001007075	KLHL5	chr4	+
ASHG19A3A000865	0.006315	0.105194	6.387198	down	coding	NM_001007593	SMPD1	chr11	+
ASHG19A3A000868	0.000147	0.026643	3.347515	down	coding	NM_001008212	OPTN	chr10	+
ASHG19A3A000881	0.048908	0.262507	8.313128	down	coding	NM_001008660	PICALM	chr11	-
ASHG19A3A000910	0.033152	0.22014	3.067866	down	coding	NM_001009584	ARMCX6	chrX	-
ASHG19A3A000912	0.003984	0.087853	3.102782	down	coding	NM_001009813	MEIS3	chr19	-
ASHG19A3A000927	0.037526	0.232644	3.765482	down	coding	NM_001010935	RAP1A	chr1	+

ASHG19A3A000977	0.028397	0.206039	2.824109	down	coding	NM_001012959	DISC1	chr1	+
ASHG19A3A001043	0.029413	0.210017	3.176001	down	coding	NM_001017977	DCAF6	chr1	+
ASHG19A3A001047	0.000516	0.03796	6.209539	down	coding	NM_001018005	TPM1	chr15	+
ASHG19A3A001070	0.011604	0.136714	2.042806	down	coding	NM_001018161	PON2	chr7	-
ASHG19A3A001082	0.000385	0.034349	2.625202	down	coding	NM_001024216	FBLIM1	chr1	+
ASHG19A3A001091	0.01054	0.130758	6.28943	down	coding	NM_001024629	NRP1	chr10	-
ASHG19A3A001107	0.000882	0.048142	2.126548	down	coding	NM_001024940	TRIM17	chr1	-
ASHG19A3A001108	5.73E-05	0.02082	2.150347	down	coding	NM_001024941	TRIM17	chr1	-
ASHG19A3A001126	0.027294	0.201887	3.552508	down	coding	NM_001025239	TSPAN4	chr11	+
ASHG19A3A001162	0.000248	0.031123	212.8771	down	coding	NM_001031692	LRRC17	chr7	+
ASHG19A3A001249	0.019975	0.175878	7.863703	down	coding	NM_001037171	ACOT9	chrX	-
ASHG19A3A001277	0.012798	0.142578	2.69595	down	coding	NM_001039132	ICAM4	chr19	+
ASHG19A3A001279	0.011464	0.135767	4.525732	down	coding	NM_001039349	EFEMP1	chr2	-
ASHG19A3A001290	0.016358	0.15979	3.460564	down	coding	NM_001039492	FHL2	chr2	-
ASHG19A3A001305	0.001271	0.054115	6.887766	down	coding	NM_001039667	ANGPTL4	chr19	+
ASHG19A3A001332	0.00158	0.059794	11.59112	down	coding	NM_001040059	CD68	chr17	+
ASHG19A3A001337	0.048799	0.262417	3.824819	down	coding	NM_001040101	D4S234E	chr4	+
ASHG19A3A001392	0.003315	0.082717	3.201746	down	coding	NM_001042370	TROVE2	chr1	+
ASHG19A3A001450	0.000412	0.0346	4.606974	down	coding	NM_001042678	RHOC	chr1	-
ASHG19A3A001492	6.76E-05	0.022087	4.700281	down	coding	NM_001077206	SEC31A	chr4	-
ASHG19A3A001493	0.001574	0.059794	3.219818	down	coding	NM_001077208	SEC31A	chr4	-
ASHG19A3A001567	0.049019	0.262507	2.336605	down	coding	NM_001079877	RASA4	chr7	-
ASHG19A3A001670	2.07E-05	0.016153	6.415179	down	coding	NM_001098484	SLC4A4	chr4	+
ASHG19A3A001690	9.96E-05	0.023735	2.191135	down	coding	NM_001098631	IRF5	chr7	+
ASHG19A3A001734	0.019809	0.175242	2.275893	down	coding	NM_001099627	FAM54B	chr1	+
ASHG19A3A001777	0.004965	0.095751	2.76276	down	coding	NM_001100408	C17orf62	chr17	-
ASHG19A3A001796	0.00059	0.040703	9.35846	down	coding	NM_174933	PHYHD1	chr9	+
ASHG19A3A001800	0.046218	0.255615	10.30268	down	coding	NM_001101314	TMEM176B	chr7	-
ASHG19A3A001808	0.038201	0.234141	2.379023	down	coding	NM_001102	ACTN1	chr14	-
ASHG19A3A001861	0.009424	0.124363	2.250302	down	coding	NM_001109891	MAPK3	chr16	-

ASHG19A3A001913	0.009945	0.127353	5.849105	down	coding	NM_001114614	MFGE8	chr15	-
ASHG19A3A001922	0.001321	0.055247	28.53532	down	coding	NM_001114753	ENG	chr9	-
ASHG19A3A001931	0.001859	0.063402	5.673208	down	coding	NM_001118890	GLRX	chr5	-
ASHG19A3A002006	0.001323	0.055247	11.66888	down	coding	NM_001127383	CYBRD1	chr2	+
ASHG19A3A002009	0.001853	0.063402	4.866179	down	coding	NM_001127397	ERLEC1	chr2	+
ASHG19A3A002010	0.044708	0.251624	2.200877	down	coding	NM_001127398	ERLEC1	chr2	+
ASHG19A3A002012	0.001989	0.065484	5.006525	down	coding	NM_001127400	YPEL5	chr2	+
ASHG19A3A002027	0.025282	0.19529	2.18103	down	coding	NM_001127603	C9orf95	chr9	-
ASHG19A3A002035	0.01586	0.157775	3.708894	down	coding	NM_001127662	GSN	chr9	+
ASHG19A3A002102	7.64E-07	0.00314	5.674217	down	coding	NM_001128918	MARK3	chr14	+
ASHG19A3A002131	0.001094	0.052579	7.583353	down	coding	NM_001130004	ACTN1	chr14	-
ASHG19A3A002132	4.41E-05	0.019118	9.600384	down	coding	NM_001130005	ACTN1	chr14	-
ASHG19A3A002227	0.003827	0.086652	36.4283	down	coding	NM_001131027	PDLIM4	chr5	+
ASHG19A3A002233	0.04884	0.262507	2.072203	down	coding	NM_001131062	SAP30L	chr5	+
ASHG19A3A002239	0.014749	0.15286	2.275162	down	coding	NM_001134337	RNF24	chr20	-
ASHG19A3A002340	0.010501	0.130705	4.167109	down	coding	NM_001135670	MSRA	chr8	+
ASHG19A3A002349	0.021958	0.183217	2.092853	down	coding	NM_001135730	TOM1	chr22	+
ASHG19A3A002356	0.032913	0.21918	4.110115	down	coding	NM_001135753	ECD	chr10	-
ASHG19A3A002367	0.031516	0.214448	2.889236	down	coding	NM_001135911	PIK3IP1	chr22	-
ASHG19A3A002484	0.012157	0.139449	2.892193	down	coding	NM_001142293	ARFGAP3	chr22	-
ASHG19A3A002511	2.97E-05	0.016153	2.102876	down	coding	NM_001142402	CD164	chr6	-
ASHG19A3A002512	0.003891	0.086787	3.094657	down	coding	NM_001142403	CD164	chr6	-
ASHG19A3A002542	0.038921	0.236253	2.394168	down	coding	NM_001142478	C5orf13	chr5	-
ASHG19A3A002583	0.001964	0.065007	4.905863	down	coding	NM_001142598	P4HA2	chr5	-
ASHG19A3A002584	0.003751	0.086142	2.366761	down	coding	NM_001142599	P4HA2	chr5	-
ASHG19A3A002591	0.000102	0.024093	31.40866	down	coding	NM_001142625	RAB34	chr17	-
ASHG19A3A002592	0.000173	0.026643	10.73948	down	coding	NM_001144943	RAB34	chr17	-
ASHG19A3A002627	0.043613	0.248281	9.660958	down	coding	NM_001143805	BDNF	chr11	-
ASHG19A3A002631	0.041241	0.24171	7.822183	down	coding	NM_001143813	BDNF	chr11	-
ASHG19A3A002632	0.011334	0.135345	8.704183	down	coding	NM_001143814	BDNF	chr11	-
ASHG19A3A002650	0.042055	0.244213	2.276582	down	coding	NM_001143939	ZNF534	chr19	+

ASHG19A3A002655	0.045585	0.253981	5.049607	down	coding	NM_001143958	TMEM30A	chr6	-
ASHG19A3A002684	0.049877	0.264587	2.477092	down	coding	NM_001144759	PHLDB1	chr11	+
ASHG19A3A002728	5.02E-05	0.019284	24.81707	down	coding	NM_001144942	RAB34	chr17	-
ASHG19A3A002741	0.016324	0.1597	2.463701	down	coding	NM_007048	BTN3A1	chr6	+
ASHG19A3A002837	0.005886	0.10292	3.058259	down	coding	NM_001145522	RAI14	chr5	+
ASHG19A3A002843	0.022541	0.186	2.140244	down	coding	NM_001145546	GALP	chr19	+
ASHG19A3A002844	0.000501	0.037875	2.134732	down	coding	NM_001145635	TRIM45	chr1	-
ASHG19A3A002847	0.006318	0.105194	6.747529	down	coding	NM_001145646	APH1B	chr15	+
ASHG19A3A002869	0.001907	0.06357	3.044036	down	coding	NM_001145812	SH2B1	chr16	+
ASHG19A3A002887	0.026177	0.198323	4.272018	down	coding	NM_001145961	SLC12A4	chr16	-
ASHG19A3A002931	0.021641	0.182455	3.681581	down	coding	NM_001146191	MPZL1	chr1	+
ASHG19A3A003011	0.026572	0.199602	2.002648	down	coding	NM_001159651	BOD1	chr5	-
ASHG19A3A003015	0.000822	0.046841	16.50569	down	coding	NM_001159703	FHL1	chrX	+
ASHG19A3A003069	0.028832	0.207954	36.10538	down	coding	NM_001160355	LY6K	chr8	+
ASHG19A3A003073	0.024386	0.192472	2.597805	down	coding	NM_001160408	TULP3	chr12	+
ASHG19A3A003090	0.002454	0.071184	3.955037	down	coding	NM_001161403	LIMS2	chr2	-
ASHG19A3A003096	0.017693	0.16577	3.527165	down	coding	NM_001161427	ZNF610	chr19	+
ASHG19A3A003123	3.39E-05	0.016267	40.67369	down	coding	NM_001161708	SYNC	chr1	-
ASHG19A3A003198	0.034165	0.223249	3.519826	down	coding	NM_001164189	PLIN3	chr19	-
ASHG19A3A003199	0.02558	0.196543	3.883803	down	coding	NM_001164194	PLIN3	chr19	-
ASHG19A3A003224	0.037269	0.231712	5.67284	down	coding	NM_001164468	TMED7-TICAM2	chr5	-
ASHG19A3A003290	0.017282	0.164541	2.664423	down	coding	NM_001165416	LDHA	chr11	+
ASHG19A3A003333	0.002175	0.068508	2.425959	down	coding	NM_001166059	HMGCL	chr1	-
ASHG19A3A003360	0.012234	0.139627	25.51485	down	coding	NM_001166266	LTBP1	chr2	+
ASHG19A3A003385	0.002525	0.071931	3.619576	down	coding	NM_001166460	MPP1	chrX	-
ASHG19A3A003422	0.034428	0.224033	3.015539	down	coding	NM_001167830	TMED5	chr1	-
ASHG19A3A003429	0.000816	0.046841	6.957676	down	coding	NM_001167903	MFSD1	chr3	+
ASHG19A3A003433	0.022306	0.184784	9.945336	down	coding	NM_001167917	VEPH1	chr3	-
ASHG19A3A003437	0.007104	0.111447	3.360686	down	coding	NM_001167935	CCM2	chr7	+
ASHG19A3A003462	0.004904	0.094909	3.02152	down	coding	NM_001168320	TSPAN9	chr12	+
ASHG19A3A003483	0.0445	0.25113	2.176961	down	coding	NM_001168412	TSPAN3	chr15	-
ASHG19A3A003490	0.037695	0.233225	2.609728	down	coding	NM_001168618	IFT46	chr11	-
ASHG19A3A003516	0.001492	0.058762	2.015701	down	coding	NM_001170687	MIB2	chr1	+

ASHG19A3A003530	0.000617	0.041487	14.60176	down	coding	NM_001170751	SRPX	chrX	-
ASHG19A3A003531	0.003141	0.081034	15.54317	down	coding	NM_006307	SRPX	chrX	-
ASHG19A3A003532	0.003209	0.081674	14.84264	down	coding	NM_001170752	SRPX	chrX	-
ASHG19A3A003566	0.0068	0.109582	2.027544	down	coding	NM_001171167	CAMTA2	chr17	-
ASHG19A3A003581	0.037908	0.233598	5.829415	down	coding	NM_001171510	MCFD2	chr2	-
ASHG19A3A003582	0.031226	0.214234	2.883581	down	coding	NM_001171511	MCFD2	chr2	-
ASHG19A3A003591	0.00034	0.03301	5.356207	down	coding	NM_001171654	KLHL5	chr4	+
ASHG19A3A003604	0.025902	0.197747	3.716961	down	coding	NM_001171812	GBA	chr1	-
ASHG19A3A003623	0.011059	0.133589	2.043174	down	coding	NM_001171988	AGA	chr4	-
ASHG19A3A003683	0.028728	0.20736	2.937631	down	coding	NM_001172702	SLC38A6	chr14	+
ASHG19A3A003699	0.012539	0.141483	10.87711	down	coding	NM_001172897	CAV1	chr7	+
ASHG19A3A003720	0.008092	0.1174	2.683988	down	coding	NM_001173525	TROVE2	chr1	+
ASHG19A3A003731	0.038334	0.234613	2.885038	down	coding	NM_001174052	HYI	chr1	-
ASHG19A3A003734	0.045505	0.25388	4.137976	down	coding	NM_001174063	FGFR1	chr8	-
ASHG19A3A003736	0.042847	0.246455	5.897375	down	coding	NM_001174065	FGFR1	chr8	-
ASHG19A3A003851	0.008252	0.11845	23.85665	down	coding	NM_001178134	CXCL12	chr10	-
ASHG19A3A003870	0.033869	0.22223	2.27734	down	coding	NM_001184720	GYG1	chr3	+
ASHG19A3A003871	0.03646	0.229406	2.033449	down	coding	NM_001184721	GYG1	chr3	+
ASHG19A3A003879	0.010296	0.129259	25.88064	down	coding	NM_001223	CASP1	chr11	-
ASHG19A3A003897	0.011804	0.137852	2.863783	down	coding	NM_001401	LPAR1	chr9	-
ASHG19A3A003914	0.018771	0.170791	5.438047	down	coding	NM_001535	PRMT2	chr21	+
ASHG19A3A003929	0.003426	0.083068	4.832483	down	coding	NM_001684	ATP2B4	chr1	+
ASHG19A3A003961	0.018779	0.170791	6.349591	down	coding	NM_001908	CTSB	chr8	-
ASHG19A3A003977	0.001818	0.062815	154.0885	down	coding	NM_002026	FN1	chr2	-
ASHG19A3A003984	6.42E-05	0.021793	25.91413	down	coding	NM_002101	GYPC	chr2	+
ASHG19A3A004028	0.040312	0.239254	5.378469	down	coding	NM_002414	CD99	chrY	+
ASHG19A3A004060	0.046723	0.256751	25.38857	down	coding	NM_002658	PLAU	chr10	+
ASHG19A3A004079	0.024148	0.191712	4.269635	down	coding	NM_001135648	PTPRK	chr6	-
ASHG19A3A004101	0.00061	0.041299	2.237832	down	coding	NM_003085	SNCB	chr5	-
ASHG19A3A004112	0.000332	0.0328	35.95925	down	coding	NM_003186	TAGLN	chr11	+
ASHG19A3A004118	7.59E-05	0.023052	2.541747	down	coding	NM_003238	TGFB2	chr1	+
ASHG19A3A004144	0.005878	0.10292	4.386067	down	coding	NM_003373	VCL	chr10	+
ASHG19A3A004169	0.036447	0.229406	3.305577	down	coding	NM_003638	ITGA8	chr10	-

ASHG19A3A004170	0.006728	0.108842	2.454407	down	coding	NM_003652	CPZ	chr4	+
ASHG19A3A004186	0.031212	0.214234	2.429645	down	coding	NM_003778	B4GALT4	chr3	-
ASHG19A3A004203	0.043559	0.248267	3.815521	down	coding	NM_003879	CFLAR	chr2	+
ASHG19A3A004240	0.001834	0.063244	4.804994	down	coding	NM_004130	GYG1	chr3	+
ASHG19A3A004298	0.002961	0.079219	6.749077	down	coding	NM_004509	SP110	chr2	-
ASHG19A3A004310	0.037109	0.23155	2.148936	down	coding	NM_004587	RRBP1	chr20	-
ASHG19A3A004335	0.008187	0.118059	5.352974	down	coding	NM_004834	MAP4K4	chr2	+
ASHG19A3A004345	0.001861	0.063402	6.713923	down	coding	NM_004901	ENTPD4	chr8	-
ASHG19A3A004346	9.88E-05	0.023735	4.124887	down	coding	NM_004918	TCL1B	chr14	+
ASHG19A3A004369	0.045236	0.253239	4.643989	down	coding	NM_005112	WDR1	chr4	-
ASHG19A3A004370	0.032537	0.217592	2.283755	down	coding	NM_005115	MVP	chr16	+
ASHG19A3A004422	0.010029	0.127474	4.053011	down	coding	NM_005637	SS18	chr18	-
ASHG19A3A004465	0.02146	0.182093	2.690771	down	coding	NM_006084	IRF9	chr14	+
ASHG19A3A004476	0.006172	0.104341	2.487177	down	coding	NM_006182	DDR2	chr1	+
ASHG19A3A004520	0.000754	0.045177	6.217709	down	coding	NM_006549	CAMKK2	chr12	-
ASHG19A3A004552	0.007115	0.111447	2.196536	down	coding	NM_006812	OS9	chr12	+
ASHG19A3A004556	0.044218	0.250152	2.43952	down	coding	NM_006870	DSTN	chr20	+
ASHG19A3A004565	0.021241	0.180917	3.08792	down	coding	NM_006932	SMTN	chr22	+
ASHG19A3A004566	0.000253	0.031138	2.893527	down	coding	NM_006934	SLC6A9	chr1	-
ASHG19A3A004577	0.042192	0.244591	3.060939	down	coding	NM_007049	BTN2A1	chr6	+
ASHG19A3A004643	0.014956	0.153769	2.941938	down	coding	NM_012263	TLL1	chr22	-
ASHG19A3A004682	0.000365	0.03424	659.5348	down	coding	NM_013409	FST	chr5	+
ASHG19A3A004691	0.033264	0.22065	4.057472	down	coding	NM_013962	NRG1	chr8	+
ASHG19A3A004716	0.034326	0.223834	3.345204	down	coding	NM_014247	RAPGEF2	chr4	+
ASHG19A3A004749	0.028649	0.207188	3.12919	down	coding	NM_014622	VWA5A	chr11	+
ASHG19A3A004795	0.008674	0.12046	11.47749	down	coding	NM_015129	SEPT6	chrX	-
ASHG19A3A004802	0.040429	0.239593	2.27858	down	coding	NM_015219	EXOC7	chr17	-
ASHG19A3A004819	0.0119	0.138338	3.083796	down	coding	NM_015435	RNF19A	chr8	-
ASHG19A3A004828	0.009373	0.124218	4.314774	down	coding	NM_015543	RAB1A	chr2	-
ASHG19A3A004841	0.021485	0.182093	2.858539	down	coding	NM_015834	ADARB1	chr21	+
ASHG19A3A004843	0.000417	0.034737	9.422303	down	coding	NM_015837	FCN2	chr9	+
ASHG19A3A004856	0.019816	0.175242	2.125991	down	coding	NM_015927	TGFB111	chr16	+
ASHG19A3A004865	0.001034	0.051638	4.141249	down	coding	NM_016061	YPEL5	chr2	+

ASHG19A3A004869	2.31E-05	0.016153	3.127298	down	coding	NM_016102	TRIM17	chr1	-
ASHG19A3A004879	0.001147	0.053318	2.901935	down	coding	NM_001077207	SEC31A	chr4	-
ASHG19A3A004922	1.49E-05	0.01403	42.43371	down	coding	NM_016815	GYPC	chr2	+
ASHG19A3A004947	0.041447	0.242101	41.47807	down	coding	NM_017527	LY6K	chr8	+
ASHG19A3A005022	0.021721	0.182528	2.529476	down	coding	NM_018300	ZNF83	chr19	-
ASHG19A3A005085	0.005046	0.096477	2.412047	down	coding	NM_018925	PCDHGB5	chr5	+
ASHG19A3A005141	0.013864	0.148967	3.343376	down	coding	NM_020351	COL8A1	chr3	+
ASHG19A3A005144	0.001357	0.055969	4.064954	down	coding	NM_020372	SLC22A17	chr14	-
ASHG19A3A005146	0.008532	0.120074	4.598991	down	coding	NM_020403	PCDH9	chr13	-
ASHG19A3A005188	0.00039	0.034493	4.595431	down	coding	NM_021019	MYL6	chr12	+
ASHG19A3A005241	0.019752	0.175242	2.109042	down	coding	NM_021971	GMPPB	chr3	-
ASHG19A3A005243	0.004171	0.088853	4.849791	down	coding	NM_021980	OPTN	chr10	+
ASHG19A3A005273	0.000483	0.037875	5.190498	down	coding	NM_022470	ZMAT3	chr3	-
ASHG19A3A005296	0.006088	0.103718	27.11313	down	coding	NM_022664	ECM1	chr1	+
ASHG19A3A005297	0.030031	0.211497	3.673279	down	coding	NM_022716	PRRX1	chr1	+
ASHG19A3A005328	0.032254	0.216971	6.863965	down	coding	NM_023111	FGFR1	chr8	-
ASHG19A3A005401	0.000499	0.037875	2.260291	down	coding	NM_025188	TRIM45	chr1	-
ASHG19A3A005427	0.044934	0.252599	2.84037	down	coding	NM_030799	YIPF5	chr5	-
ASHG19A3A005446	0.031365	0.214234	3.158461	down	coding	NM_031207	HYI	chr1	-
ASHG19A3A005495	0.01727	0.164505	2.150209	down	coding	NM_032092	PCDHGA11	chr5	+
ASHG19A3A005528	0.041606	0.242668	2.10374	down	coding	NM_032493	AP1M1	chr19	+
ASHG19A3A005554	0.004899	0.094909	2.915178	down	coding	NM_032926	TCEAL3	chrX	+
ASHG19A3A005575	0.00193	0.064229	7.911408	down	coding	NM_033011	PLAT	chr8	-
ASHG19A3A005591	0.041555	0.24258	2.976769	down	coding	NM_033140	CALD1	chr7	+
ASHG19A3A005598	0.001222	0.054115	20.13387	down	coding	NM_033157	CALD1	chr7	+
ASHG19A3A005626	0.005239	0.098531	36.19259	down	coding	NM_033293	CASP1	chr11	-
ASHG19A3A005699	0.006464	0.106393	6.495205	down	coding	NM_057167	COL6A3	chr2	-
ASHG19A3A005704	0.022457	0.185503	7.01231	down	coding	NM_057177	PARD3B	chr2	+
ASHG19A3A005706	0.000284	0.031138	11.34688	down	coding	NM_058174	COL6A2	chr21	+
ASHG19A3A005715	8.99E-05	0.023512	2.90194	down	coding	NM_079423	MYL6	chr12	+
ASHG19A3A005723	0.00597	0.103105	3.153562	down	coding	NM_080591	PTGS1	chr9	+
ASHG19A3A005746	0.01283	0.142711	2.337496	down	coding	NM_080799	COL13A1	chr10	+
ASHG19A3A005748	0.013874	0.148967	4.483092	down	coding	NM_080809	COL13A1	chr10	+

ASHG19A3A005750	0.010958	0.133053	6.835329	down	coding	NM_080808	COL13A1	chr10	+
ASHG19A3A005751	0.037306	0.231823	12.42996	down	coding	NM_080805	COL13A1	chr10	+
ASHG19A3A005815	0.005143	0.097444	2.013869	down	coding	NM_133499	SYN1	chrX	-
ASHG19A3A005817	0.003113	0.080651	6.055458	down	coding	NM_133505	DCN	chr12	-
ASHG19A3A005829	0.014201	0.150411	2.984505	down	coding	NM_134270	SMTN	chr22	+
ASHG19A3A005898	0.014344	0.151394	2.514854	down	coding	NM_138822	PAM	chr5	+
ASHG19A3A005972	0.01281	0.142578	2.861229	down	coding	NM_144657	HDX	chrX	-
ASHG19A3A006049	0.010889	0.133053	2.579122	down	coding	NM_145893	A2BP1	chr16	+
ASHG19A3A006054	0.009294	0.123519	8.04499	down	coding	NM_145918	CTSL1	chr9	+
ASHG19A3A006056	0.008	0.117056	8.060528	down	coding	NM_146421	GSTM1	chr1	+
ASHG19A3A006067	0.003795	0.086533	4.084881	down	coding	NM_147184	TP53I3	chr2	-
ASHG19A3A006072	0.005603	0.100699	6.3216	down	coding	NM_147783	CTSB	chr8	-
ASHG19A3A006144	0.007768	0.116658	2.459313	down	coding	NM_152526	PARD3B	chr2	+
ASHG19A3A006157	0.004557	0.093019	3.603573	down	coding	NM_152724	RSU1	chr10	-
ASHG19A3A006182	0.009649	0.125668	2.069171	down	coding	NM_152862	ARPC2	chr2	+
ASHG19A3A006259	0.013473	0.14683	4.254257	down	coding	NM_153828	RTN4	chr2	-
ASHG19A3A006271	0.002454	0.071184	3.722906	down	coding	NM_170707	LMNA	chr1	+
ASHG19A3A006272	0.003437	0.083068	4.629408	down	coding	NM_170708	LMNA	chr1	+
ASHG19A3A006384	0.000657	0.042525	2.890698	down	coding	NM_173573	C11orf35	chr11	-
ASHG19A3A006404	0.038001	0.233813	5.288932	down	coding	NM_174908	CCDC50	chr3	+
ASHG19A3A006414	0.017051	0.163455	3.373326	down	coding	NM_174970	ST3GAL3	chr1	+
ASHG19A3A006449	0.026189	0.198323	2.038001	down	coding	NM_177414	PPAP2B	chr1	-
ASHG19A3A006453	0.045163	0.253128	2.664426	down	coding	NM_177452	TRAPPC6B	chr14	-
ASHG19A3A006492	7.91E-05	0.023121	11.31036	down	coding	NM_178237	EXOC1	chr4	+
ASHG19A3A006493	0.000598	0.040795	2.87017	down	coding	NM_178270	ATG4A	chrX	+
ASHG19A3A006511	0.042232	0.244591	2.34446	down	coding	NM_178586	PPP2R5C	chr14	+
ASHG19A3A006517	0.00114	0.053195	3.560237	down	coding	NM_181042	PBRM1	chr3	-
ASHG19A3A006556	0.001109	0.05278	29.30474	down	coding	NM_181526	MYL9	chr20	+
ASHG19A3A006574	0.03753	0.232644	3.802182	down	coding	NM_181702	GEM	chr8	-
ASHG19A3A006577	0.01524	0.154966	4.156525	down	coding	NM_181742	ORC4L	chr2	-
ASHG19A3A006579	0.033873	0.22223	2.44847	down	coding	NM_181762	UBE2A	chrX	+
ASHG19A3A006585	0.00115	0.053318	20.08444	down	coding	NM_181804	PKIG	chr20	+
ASHG19A3A006628	0.006573	0.107446	2.394681	down	coding	NM_182720	CREM	chr10	+

ASHG19A3A006630	0.003684	0.085124	2.805205	down	coding	NM_182724	CREM	chr10	+
ASHG19A3A006632	0.00159	0.059794	2.430909	down	coding	NM_182725	CREM	chr10	+
ASHG19A3A006647	0.010922	0.133053	15.66122	down	coding	NM_182826	SCARA3	chr8	+
ASHG19A3A006653	0.009444	0.124367	2.481383	down	coding	NM_182853	CREM	chr10	+
ASHG19A3A006658	0.016039	0.158564	2.271683	down	coding	NM_182923	KLC1	chr14	+
ASHG19A3A006666	0.0475	0.259505	3.403597	down	coding	NM_183013	CREM	chr10	+
ASHG19A3A006695	0.003048	0.080155	2.458052	down	coding	NM_183421	FBXO25	chr8	+
ASHG19A3A006717	0.006657	0.108511	2.168675	down	coding	NM_194447	CLEC4A	chr12	+
ASHG19A3A006735	0.012966	0.143459	5.941242	down	coding	NM_198042	PDLIM2	chr8	+
ASHG19A3A006768	0.002883	0.078019	4.105012	down	coding	NM_198252	GSN	chr9	+
ASHG19A3A006795	0.029396	0.210017	7.541676	down	coding	NM_198530	MXRA7	chr17	-
ASHG19A3A006826	0.014364	0.151394	3.391866	down	coding	NM_198902	TSPAN3	chr15	-
ASHG19A3A006838	0.00342	0.083068	2.352755	down	coding	NM_199039	KLHL5	chr4	+
ASHG19A3A006926	0.024564	0.19336	2.784067	down	coding	NM_201555	FHL2	chr2	-
ASHG19A3A006934	0.036549	0.229691	10.56163	down	coding	NM_201612	IKBIP	chr12	-
ASHG19A3A006935	0.027676	0.203194	4.810045	down	coding	NM_201613	IKBIP	chr12	-
ASHG19A3A006939	0.010199	0.128875	2.622002	down	coding	NM_201629	TJP2	chr9	+
ASHG19A3A007052	0.002386	0.070943	6.513905	down	coding	NM_207520	RTN4	chr2	-
ASHG19A3A007058	4.33E-05	0.019118	123.8474	down	coding	NM_212476	FN1	chr2	-
ASHG19A3A007059	0.001475	0.058344	144.7683	down	coding	NM_212474	FN1	chr2	-
ASHG19A3A007060	0.000705	0.044249	61.48272	down	coding	NM_212475	FN1	chr2	-
ASHG19A3A007069	0.004103	0.088276	3.282084	down	coding	NM_213633	PSG4	chr19	-
ASHG19A3A007077	0.001197	0.054008	4.231897	down	coding	NM_213662	STAT3	chr17	-
ASHG19A3A007817	0.027024	0.201258	2.173487	down	coding	NM_016041	DERL2	chr17	-
ASHG19A3A007818	0.002451	0.071184	13.58645	down	coding	NM_001162371	LOC728392	chr17	-
ASHG19A3A007819	0.006451	0.106376	17.6815	down	coding	NM_001033053	NLRP1	chr17	-
ASHG19A3A007820	0.00465	0.093229	2.681735	down	coding	NM_033004	NLRP1	chr17	-
ASHG19A3A007841	0.009238	0.123125	2.037341	down	coding	NM_007278	GABARAP	chr17	-
ASHG19A3A007847	0.010401	0.129921	2.304603	down	coding	NM_020360	PLSCR3	chr17	-
ASHG19A3A007919	0.005683	0.101251	3.277786	down	coding	NM_003762	VAMP4	chr1	-
ASHG19A3A008044	0.037261	0.231712	60.16317	down	coding	NM_002404	MFAP4	chr17	-
ASHG19A3A008090	0.022816	0.186813	3.484636	down	coding	NM_001076680	C17orf108	chr17	-
ASHG19A3A008116	0.001218	0.054115	7.788506	down	coding	NM_031934	RAB34	chr17	-

ASHG19A3A008135	0.012184	0.139449	2.437201	down	coding	NM_032854	CORO6	chr17	-
ASHG19A3A008255	0.027142	0.201378	4.172089	down	coding	NM_199248	CACNB1	chr17	-
ASHG19A3A008306	0.004027	0.087853	107.9669	down	coding	NM_031957	KRTAP1-5	chr17	-
ASHG19A3A008369	8.48E-05	0.023249	6.368273	down	coding	NM_012232	PTRF	chr17	-
ASHG19A3A008382	0.006794	0.109582	3.194623	down	coding	NM_006373	VAT1	chr17	-
ASHG19A3A008404	0.025804	0.197501	2.740719	down	coding	NM_001015053	HDAC5	chr17	-
ASHG19A3A008495	0.002285	0.069865	37.67219	down	coding	NM_016429	COPZ2	chr17	-
ASHG19A3A008604	0.02907	0.208902	10.09351	down	coding	NM_001085430	C17orf67	chr17	-
ASHG19A3A008680	0.00026	0.031138	2.881401	down	coding	NM_152598	MARCH10	chr17	-
ASHG19A3A008688	0.035637	0.227147	2.233428	down	coding	NM_030576	LIMD2	chr17	-
ASHG19A3A008727	0.009151	0.122749	2.164647	down	coding	NM_145036	CCDC46	chr17	-
ASHG19A3A008739	0.007947	0.117056	4.687761	down	coding	NM_017983	WIPI1	chr17	-
ASHG19A3A008778	0.009674	0.12579	2.06513	down	coding	NM_005717	ARPC5	chr1	-
ASHG19A3A008821	0.005028	0.09622	103.6854	down	coding	NM_134268	CYGB	chr17	-
ASHG19A3A008824	0.009752	0.126475	12.86157	down	coding	NM_001008528	MXRA7	chr17	-
ASHG19A3A008825	0.00139	0.056547	7.303493	down	coding	NM_001008529	MXRA7	chr17	-
ASHG19A3A008837	0.01417	0.150369	5.322567	down	coding	NM_052966	FAM129A	chr1	-
ASHG19A3A008851	0.028101	0.204801	9.432339	down	coding	NM_003255	TIMP2	chr17	-
ASHG19A3A008867	0.014862	0.153272	6.508284	down	coding	NM_000199	SGSH	chr17	-
ASHG19A3A008872	9.79E-05	0.023735	26.48601	down	coding	NM_002522	NPTX1	chr17	-
ASHG19A3A008938	0.019785	0.175242	2.796598	down	coding	NM_001013672	C17orf97	chr17	+
ASHG19A3A008994	0.000325	0.032699	2.059646	down	coding	NM_153827	MINK1	chr17	+
ASHG19A3A009040	0.017693	0.16577	3.08232	down	coding	NM_001002914	KCTD11	chr17	+
ASHG19A3A009044	0.002776	0.076098	2.990414	down	coding	NM_020795	NLGN2	chr17	+
ASHG19A3A009055	0.036027	0.228089	3.900542	down	coding	NM_003809	TNFSF12	chr17	+
ASHG19A3A009167	0.011331	0.135345	39.33126	down	coding	NM_016113	TRPV2	chr17	+
ASHG19A3A009178	0.000364	0.03424	11.79803	down	coding	NM_201274	MPRIIP	chr17	+
ASHG19A3A009229	0.025638	0.196745	8.831364	down	coding	NM_007148	RNF112	chr17	+
ASHG19A3A009408	0.008494	0.11964	3.336082	down	coding	NM_144975	SLFN5	chr17	+
ASHG19A3A009520	0.046242	0.255677	5.299121	down	coding	NM_021939	FKBP10	chr17	+
ASHG19A3A009558	0.018086	0.167574	5.31906	down	coding	NM_145041	TMEM106A	chr17	+
ASHG19A3A009579	0.01741	0.164752	7.167451	down	coding	NM_001466	FZD2	chr17	+
ASHG19A3A009634	0.009937	0.127353	2.131162	down	coding	NM_002476	MYL4	chr17	+

ASHG19A3A009692	0.018561	0.170069	4.88143	down	coding	NM_012396	PHLDA3	chr1	-
ASHG19A3A009696	0.00848	0.11964	5.30156	down	coding	NM_004078	CSRP1	chr1	-
ASHG19A3A009758	0.042967	0.246559	2.109199	down	coding	NM_021626	SCPEP1	chr17	+
ASHG19A3A009834	0.037179	0.23155	3.299728	down	coding	NM_001165933	RGS9	chr17	+
ASHG19A3A009875	0.005499	0.100265	2.944492	down	coding	NM_016243	CYB5R1	chr1	-
ASHG19A3A010036	0.039888	0.238303	6.385339	down	coding	NM_002256	KISS1	chr1	-
ASHG19A3A010059	0.017967	0.167125	8.740057	down	coding	NM_031945	TSPAN10	chr17	+
ASHG19A3A010209	0.010597	0.131205	9.047874	down	coding	NM_015461	ZNF521	chr18	-
ASHG19A3A010230	0.049603	0.263911	3.599188	down	coding	NM_001034172	MCART2	chr18	-
ASHG19A3A010308	0.002443	0.071184	3.797999	down	coding	NM_005904	SMAD7	chr18	-
ASHG19A3A010312	0.029888	0.211279	2.03905	down	coding	NM_001035005	C18orf32	chr18	-
ASHG19A3A010314	0.046061	0.255048	2.457366	down	coding	NM_006111	ACAA2	chr18	-
ASHG19A3A010332	0.048048	0.260925	6.435903	down	coding	NM_025214	CCDC68	chr18	-
ASHG19A3A010343	0.02982	0.210877	3.790347	down	coding	NM_005603	ATP8B1	chr18	-
ASHG19A3A010344	0.001663	0.060728	10.16335	down	coding	NM_052947	ALPK2	chr18	-
ASHG19A3A010473	0.012493	0.141052	4.628383	down	coding	NM_020648	TWSG1	chr18	+
ASHG19A3A010476	0.006495	0.10645	35.61887	down	coding	NM_006868	RAB31	chr18	+
ASHG19A3A010496	0.027087	0.201258	49.70506	down	coding	NM_032525	TUBB6	chr18	+
ASHG19A3A010506	0.004666	0.093229	3.07678	down	coding	NM_004338	C18orf1	chr18	+
ASHG19A3A010627	0.031444	0.214448	4.069867	down	coding	NM_213602	SIGLEC15	chr18	+
ASHG19A3A010658	0.043604	0.248281	2.263149	down	coding	NM_018696	ELAC1	chr18	+
ASHG19A3A010726	0.002284	0.069865	4.045822	down	coding	NM_002640	SERPINB8	chr18	+
ASHG19A3A010844	0.000308	0.032613	2.690858	down	coding	NM_130807	MOBKL2A	chr19	-
ASHG19A3A010883	0.02108	0.180033	2.762917	down	coding	NM_001348	DAPK3	chr19	-
ASHG19A3A010894	0.030974	0.213821	2.141259	down	coding	NM_003025	SH3GL1	chr19	-
ASHG19A3A011028	0.03166	0.214929	3.962841	down	coding	NM_004230	S1PR2	chr19	-
ASHG19A3A011110	0.001189	0.054008	2.453898	down	coding	NM_005583	LYL1	chr19	-
ASHG19A3A011138	0.00337	0.083054	2.73141	down	coding	NM_000955	PTGER1	chr19	-
ASHG19A3A011155	0.029041	0.208902	13.78169	down	coding	NM_000435	NOTCH3	chr19	-
ASHG19A3A011270	0.008577	0.120291	11.06998	down	coding	NM_001076675	ZNF626	chr19	-
ASHG19A3A011365	1E-06	0.00314	4.554074	down	coding	NM_144617	HSPB6	chr19	-
ASHG19A3A011376	0.000238	0.030336	43.38205	down	coding	NM_015526	CLIP3	chr19	-
ASHG19A3A011378	0.032665	0.218293	2.756272	down	coding	NM_152658	THAP8	chr19	-

ASHG19A3A011385	0.000242	0.030597	5.577766	down	coding	NM_133466	ZFP82	chr19	-
ASHG19A3A011465	0.00038	0.034338	2.204905	down	coding	NM_013376	SERTAD1	chr19	-
ASHG19A3A011495	0.00901	0.122111	3.234762	down	coding	NM_006423	RABAC1	chr19	-
ASHG19A3A011498	0.003078	0.080399	8.708505	down	coding	NM_002698	POU2F2	chr19	-
ASHG19A3A011516	0.006304	0.105194	10.80094	down	coding	NM_006905	PSG1	chr19	-
ASHG19A3A011539	0.014148	0.150369	3.764416	down	coding	NM_002659	PLAUR	chr19	-
ASHG19A3A011546	0.02851	0.206341	20.32427	down	coding	NM_001033719	ZNF404	chr19	-
ASHG19A3A011617	0.026452	0.19886	17.71914	down	coding	NM_145056	DACT3	chr19	-
ASHG19A3A011693	0.00646	0.106393	5.682001	down	coding	NM_006270	RRAS	chr19	-
ASHG19A3A011739	0.000972	0.050297	2.85617	down	coding	NM_001136032	KLK11	chr19	-
ASHG19A3A011854	0.006158	0.104193	3.798362	down	coding	NM_145057	CDC42EP5	chr19	-
ASHG19A3A011877	0.032415	0.217006	10.93533	down	coding	NM_000641	IL11	chr19	-
ASHG19A3A011896	0.001285	0.054217	6.921976	down	coding	NM_144690	ZNF582	chr19	-
ASHG19A3A011919	0.005416	0.099571	38.5892	down	coding	NM_024833	ZNF671	chr19	-
ASHG19A3A011969	0.023459	0.189502	4.216163	down	coding	NM_005860	FSTL3	chr19	+
ASHG19A3A011982	0.015774	0.157754	3.654412	down	coding	NM_138690	GRIN3B	chr19	+
ASHG19A3A012162	0.004731	0.093712	4.080854	down	coding	NM_139314	ANGPTL4	chr19	+
ASHG19A3A012200	0.003497	0.083478	4.423962	down	coding	NM_001544	ICAM4	chr19	+
ASHG19A3A012237	0.004576	0.093019	65.87797	down	coding	NM_001299	CNN1	chr19	+
ASHG19A3A012271	0.008049	0.117056	2.797067	down	coding	NM_153358	ZNF791	chr19	+
ASHG19A3A012323	0.010132	0.128321	25.87463	down	coding	NM_033025	SYDE1	chr19	+
ASHG19A3A012407	0.044104	0.249946	2.693113	down	coding	NM_012109	TMEM59L	chr19	+
ASHG19A3A012527	0.002693	0.074583	9.490215	down	coding	NM_001080436	WTIP	chr19	+
ASHG19A3A012664	0.008393	0.118927	3.323599	down	coding	NM_022835	PLEKHG2	chr19	+
ASHG19A3A012709	0.013342	0.145655	5.047855	down	coding	NM_001699	AXL	chr19	+
ASHG19A3A012769	0.003464	0.083068	2.765259	down	coding	NM_000081	LYST	chr1	-
ASHG19A3A012788	0.009868	0.127105	2.406136	down	coding	NM_002856	PVRL2	chr19	+
ASHG19A3A012846	0.006909	0.110581	16.70974	down	coding	NM_014601	EHD2	chr19	+
ASHG19A3A012851	0.005356	0.099072	2.147413	down	coding	NM_000554	CRX	chr19	+
ASHG19A3A012856	0.029802	0.210837	9.262881	down	coding	NM_001425	EMP3	chr19	+
ASHG19A3A012934	0.000283	0.031138	47.94802	down	coding	NM_014424	HSPB7	chr1	-
ASHG19A3A013173	0.000663	0.042765	3.036008	down	coding	NM_014322	OPN3	chr1	-
ASHG19A3A013327	0.027852	0.203809	30.49636	down	coding	NM_145260	OSR1	chr2	-

ASHG19A3A013335	0.000142	0.026643	3.140946	down	coding	NM_014713	LAPTM4A	chr2	-
ASHG19A3A013340	0.003427	0.083068	10.74154	down	coding	NM_005465	AKT3	chr1	-
ASHG19A3A013385	0.034549	0.22417	2.808659	down	coding	NM_175630	DNMT3A	chr2	-
ASHG19A3A013436	0.013116	0.144029	5.416619	down	coding	NM_022823	FNDC4	chr2	-
ASHG19A3A013506	8.42E-05	0.023249	9.332079	down	coding	NM_006449	CDC42EP3	chr2	-
ASHG19A3A013537	0.011618	0.136714	3.004745	down	coding	NM_001112801	SLC8A1	chr2	-
ASHG19A3A013538	0.049438	0.263893	2.114764	down	coding	NM_001112800	SLC8A1	chr2	-
ASHG19A3A013601	0.019523	0.174414	17.56106	down	coding	NM_022055	KCNK12	chr2	-
ASHG19A3A013645	0.001901	0.063466	4.114119	down	coding	NM_020532	RTN4	chr2	-
ASHG19A3A013800	0.006958	0.110944	2.150945	down	coding	NM_014911	AAK1	chr2	-
ASHG19A3A013839	0.000467	0.037289	2.240348	down	coding	NM_032319	C2orf7	chr2	-
ASHG19A3A013873	0.034661	0.224385	5.653828	down	coding	NM_032603	LOXL3	chr2	-
ASHG19A3A013955	0.016752	0.162038	2.573416	down	coding	NM_003896	ST3GAL5	chr2	-
ASHG19A3A013981	0.039381	0.236867	3.946772	down	coding	NM_016618	KRCC1	chr2	-
ASHG19A3A014044	0.002366	0.07092	6.344592	down	coding	NM_152486	SAMD11	chr1	+
ASHG19A3A014051	0.013865	0.148967	2.639352	down	coding	NM_017849	TMEM127	chr2	-
ASHG19A3A014098	0.008382	0.118908	5.623223	down	coding	NM_004854	CHST10	chr2	-
ASHG19A3A014193	0.000903	0.048989	22.72481	down	coding	NM_033514	LIMS3	chr2	-
ASHG19A3A014247	0.002358	0.07092	2.126365	down	coding	NM_001130413	SCNN1D	chr1	+
ASHG19A3A014525	0.000969	0.050297	2.395107	down	coding	NM_006983	MMP23B	chr1	+
ASHG19A3A014545	0.012214	0.139575	6.323966	down	coding	NM_002897	RBMS1	chr2	-
ASHG19A3A014562	0.046305	0.255817	2.280131	down	coding	NM_004460	FAP	chr2	-
ASHG19A3A014568	0.006437	0.106243	2.715435	down	coding	NM_018086	FIGN	chr2	-
ASHG19A3A014599	0.006155	0.104193	2.275985	down	coding	NM_003036	SKI	chr1	+
ASHG19A3A014695	0.001714	0.061148	8.757053	down	coding	NM_001135212	FKBP7	chr2	-
ASHG19A3A014756	0.039399	0.236897	2.011864	down	coding	NM_182752	TPRG1L	chr1	+
ASHG19A3A014759	8.72E-05	0.023451	87.27563	down	coding	NM_000393	COL5A2	chr2	-
ASHG19A3A014780	0.014562	0.1526	2.858595	down	coding	NM_007315	STAT1	chr2	-
ASHG19A3A014781	0.024916	0.194292	3.177765	down	coding	NM_139266	STAT1	chr2	-
ASHG19A3A014965	0.00139	0.056547	59.36468	down	coding	NM_054034	FN1	chr2	-
ASHG19A3A014981	0.003009	0.079913	583.7841	down	coding	NM_000599	IGFBP5	chr2	-
ASHG19A3A015022	0.000262	0.031138	5.37916	down	coding	NM_024506	GLB1L	chr2	-
ASHG19A3A015025	0.003533	0.083557	58.60394	down	coding	NM_002846	PTPRN	chr2	-

ASHG19A3A015092	0.001654	0.060728	6.265963	down	coding	NM_080424	SP110	chr2	-
ASHG19A3A015093	0.011966	0.138585	5.36041	down	coding	NM_004510	SP110	chr2	-
ASHG19A3A015114	0.036916	0.230819	6.314481	down	coding	NM_024409	NPPC	chr2	-
ASHG19A3A015328	0.002506	0.071789	3.773946	down	coding	NM_033090	GREB1	chr2	+
ASHG19A3A015330	0.036859	0.230685	3.899004	down	coding	NM_145693	LPIN1	chr2	+
ASHG19A3A015395	0.000198	0.028013	2.915916	down	coding	NM_022787	NMNAT1	chr1	+
ASHG19A3A015401	0.035009	0.225323	2.476816	down	coding	NM_003743	NCOA1	chr2	+
ASHG19A3A015432	0.002086	0.067209	109.6955	down	coding	NM_007046	EMILIN1	chr2	+
ASHG19A3A015466	0.001772	0.062152	3.344498	down	coding	NM_183416	KIF1B	chr1	+
ASHG19A3A015476	0.026384	0.198669	2.205823	down	coding	NM_001127401	YPEL5	chr2	+
ASHG19A3A015478	0.003009	0.079913	4.448613	down	coding	NM_030915	LBH	chr2	+
ASHG19A3A015512	0.04515	0.253128	6.213625	down	coding	NM_016441	CRIM1	chr2	+
ASHG19A3A015608	0.027852	0.203809	2.827838	down	coding	NM_012249	RHOQ	chr2	+
ASHG19A3A015654	0.001565	0.059794	3.045886	down	coding	NM_015701	ERLEC1	chr2	+
ASHG19A3A015698	0.001019	0.051214	3.60959	down	coding	NM_001143960	C2orf74	chr2	+
ASHG19A3A015710	0.002272	0.069865	2.691854	down	coding	NM_152516	COMMD1	chr2	+
ASHG19A3A015726	0.022265	0.184704	6.712384	down	coding	NM_006759	UGP2	chr2	+
ASHG19A3A015773	0.031563	0.214507	4.965642	down	coding	NM_018153	ANTXR1	chr2	+
ASHG19A3A015774	0.015927	0.158107	3.830051	down	coding	NM_053034	ANTXR1	chr2	+
ASHG19A3A015835	0.009787	0.126627	3.964074	down	coding	NM_001615	ACTG2	chr2	+
ASHG19A3A015901	0.002432	0.071184	3.803972	down	coding	NM_031283	TCF7L1	chr2	+
ASHG19A3A015911	0.032859	0.219124	12.75138	down	coding	NM_006634	VAMP5	chr2	+
ASHG19A3A015916	0.004331	0.090616	5.084669	down	coding	NM_032827	ATOH8	chr2	+
ASHG19A3A016195	0.000499	0.037875	3.237106	down	coding	NM_032824	TMEM87B	chr2	+
ASHG19A3A016241	0.004158	0.088853	19.57009	down	coding	NM_006474	PDPN	chr1	+
ASHG19A3A016290	0.011	0.133216	4.466207	down	coding	NM_005270	GLI2	chr2	+
ASHG19A3A016561	0.000909	0.049198	3.066167	down	coding	NM_152384	BBS5	chr2	+
ASHG19A3A016570	0.012726	0.142319	2.120533	down	coding	NM_015164	PLEKHM2	chr1	+
ASHG19A3A016605	0.000595	0.040795	2.837256	down	coding	NM_133646	ZAK	chr2	+
ASHG19A3A016698	0.019338	0.173754	3.916536	down	coding	NM_194250	ZNF804A	chr2	+
ASHG19A3A016710	0.001429	0.057388	6.0766	down	coding	NM_000090	COL3A1	chr2	+
ASHG19A3A016711	0.040735	0.240474	3.748006	down	coding	NM_001042704	CLCNKA	chr1	+
ASHG19A3A016733	0.049286	0.263603	4.381259	down	coding	NM_001031716	OBFC2A	chr2	+

ASHG19A3A016827	0.014664	0.152736	17.60839	down	coding	NM_003507	FZD7	chr2	+
ASHG19A3A016831	0.010987	0.133202	3.390706	down	coding	NM_001204	BMP2R2	chr2	+
ASHG19A3A016861	0.020694	0.178453	3.105815	down	coding	NM_018534	NRP2	chr2	+
ASHG19A3A017071	1.22E-05	0.012771	3.247169	down	coding	NM_007237	SP140	chr2	+
ASHG19A3A017073	0.035497	0.226768	3.057207	down	coding	NM_003113	SP100	chr2	+
ASHG19A3A017074	0.004577	0.093019	3.416792	down	coding	NM_001080391	SP100	chr2	+
ASHG19A3A017086	0.004121	0.088392	6.677537	down	coding	NM_025139	ARMC9	chr2	+
ASHG19A3A017173	0.001276	0.054115	28.73767	down	coding	NM_194312	ESPNL	chr2	+
ASHG19A3A017182	0.000205	0.028229	16.58816	down	coding	NM_057179	TWIST2	chr2	+
ASHG19A3A017190	0.020562	0.177873	4.219785	down	coding	NM_002081	GPC1	chr2	+
ASHG19A3A017458	0.00016	0.026643	2.078329	down	coding	NM_032264	NBPF3	chr1	+
ASHG19A3A017648	0.009251	0.123213	12.42314	down	coding	NM_004613	TGM2	chr20	-
ASHG19A3A017796	0.04409	0.249946	23.4102	down	coding	NM_002237	KCNG1	chr20	-
ASHG19A3A017845	0.001526	0.058898	18.92552	down	coding	NM_153360	APCDD1L	chr20	-
ASHG19A3A017961	0.006849	0.110056	11.94733	down	coding	NM_014723	SNPH	chr20	+
ASHG19A3A018017	0.016066	0.158574	2.682119	down	coding	NM_003818	CDS2	chr20	+
ASHG19A3A018041	0.029056	0.208902	4.135042	down	coding	NM_182797	PLCB4	chr20	+
ASHG19A3A018074	8.76E-06	0.010316	4.035931	down	coding	NM_013943	CLIC4	chr1	+
ASHG19A3A018242	0.007711	0.116328	3.620405	down	coding	NM_032514	MAP1LC3A	chr20	+
ASHG19A3A018276	0.001735	0.061656	25.46323	down	coding	NM_006097	MYL9	chr20	+
ASHG19A3A018358	0.001399	0.056656	3.400608	down	coding	NM_031286	SH3BGRL3	chr1	+
ASHG19A3A018555	0.033529	0.221543	7.000648	down	coding	NM_080750	DPH3B	chr20	+
ASHG19A3A018708	0.002883	0.078019	2.65858	down	coding	NM_177424	STX12	chr1	+
ASHG19A3A018712	0.001252	0.054115	6.461535	down	coding	NM_006988	ADAMTS1	chr21	-
ASHG19A3A018793	0.026321	0.198433	2.203097	down	coding	NM_018053	XKR8	chr1	+
ASHG19A3A019172	0.012028	0.138629	2.318882	down	coding	NM_000628	IL10RB	chr21	+
ASHG19A3A019181	0.001228	0.054115	2.484752	down	coding	NM_001001132	ITSN1	chr21	+
ASHG19A3A019216	0.037699	0.233225	22.16586	down	coding	NM_001236	CBR3	chr21	+
ASHG19A3A019281	0.034708	0.224535	3.374152	down	coding	NM_178865	SERINC2	chr1	+
ASHG19A3A019364	0.023437	0.189502	2.237465	down	coding	NM_015833	ADARB1	chr21	+
ASHG19A3A019368	0.009461	0.124511	2.240052	down	coding	NM_130445	COL18A1	chr21	+
ASHG19A3A019376	0.001661	0.060728	10.60877	down	coding	NM_001848	COL6A1	chr21	+
ASHG19A3A019382	0.004595	0.093019	64.38334	down	coding	NM_001849	COL6A2	chr21	+

ASHG19A3A019398	0.007302	0.112718	2.588628	down	coding	NM_206889	DIP2A	chr21	+
ASHG19A3A019400	0.012053	0.138767	4.488431	down	coding	NM_206962	PRMT2	chr21	+
ASHG19A3A019500	0.003941	0.087519	19.47217	down	coding	NM_153334	SCARF2	chr22	-
ASHG19A3A019642	0.024014	0.191703	17.59094	down	coding	NM_002430	MN1	chr22	-
ASHG19A3A019671	0.041875	0.243583	2.360443	down	coding	NM_031937	TBC1D10A	chr22	-
ASHG19A3A019689	0.011314	0.135345	5.848397	down	coding	NM_080430	SELM	chr22	-
ASHG19A3A019694	0.0304	0.212773	4.014707	down	coding	NM_052880	PIK3IP1	chr22	-
ASHG19A3A019814	0.013312	0.145418	2.350498	down	coding	NM_015374	SUN2	chr22	-
ASHG19A3A019854	0.008612	0.120291	5.224417	down	coding	NM_002676	PMM1	chr22	-
ASHG19A3A019869	0.027351	0.201988	2.183616	down	coding	NM_000262	NAGA	chr22	-
ASHG19A3A019890	0.03781	0.233426	2.774666	down	coding	NM_001165877	ATP5L2	chr22	-
ASHG19A3A019896	0.029442	0.210017	2.372332	down	coding	NM_014570	ARFGAP3	chr22	-
ASHG19A3A019920	0.001504	0.058762	2.899321	down	coding	NM_138415	PHF21B	chr22	-
ASHG19A3A020091	0.033283	0.220702	3.760355	down	coding	NM_002688	SEPT5	chr22	+
ASHG19A3A020100	0.007367	0.113256	3.981099	down	coding	NM_007310	COMT	chr22	+
ASHG19A3A020214	0.00038	0.034338	2.769337	down	coding	NM_018067	MAP7D1	chr1	+
ASHG19A3A020299	0.00701	0.111447	2.045927	down	coding	NM_003462	DNALI1	chr1	+
ASHG19A3A020327	0.008553	0.120202	2.778498	down	coding	NM_134269	SMTN	chr22	+
ASHG19A3A020446	0.045127	0.253128	5.709962	down	coding	NM_016657	KDEL3	chr22	+
ASHG19A3A020447	0.030017	0.211477	3.327404	down	coding	NM_006855	KDEL3	chr22	+
ASHG19A3A020460	0.045657	0.254155	6.066861	down	coding	NM_001006666	APOBEC3F	chr22	+
ASHG19A3A020462	0.004323	0.090547	4.587999	down	coding	NM_021822	APOBEC3G	chr22	+
ASHG19A3A020467	0.011424	0.135662	18.1185	down	coding	NM_145731	SYNGR1	chr22	+
ASHG19A3A020475	0.029966	0.211328	2.766367	down	coding	NM_012090	MACF1	chr1	+
ASHG19A3A020503	0.000284	0.031138	2.868846	down	coding	NM_014460	CSDC2	chr22	+
ASHG19A3A020526	0.00184	0.063301	4.275297	down	coding	NM_014509	SERHL2	chr22	+
ASHG19A3A020686	0.000323	0.032699	2.040438	down	coding	NM_022094	CIDEC	chr3	-
ASHG19A3A020690	0.009147	0.122749	2.446471	down	coding	NM_018447	TMEM111	chr3	-
ASHG19A3A020747	0.001979	0.065264	2.302558	down	coding	NM_001105530	CAP1	chr1	+
ASHG19A3A020882	0.000189	0.027342	14.55913	down	coding	NM_001134369	LRRFIP2	chr3	-
ASHG19A3A020951	0.000172	0.026643	4.770833	down	coding	NM_018075	ANO10	chr3	-
ASHG19A3A021029	0.01567	0.157046	3.723274	down	coding	NM_016479	SHISA5	chr3	-
ASHG19A3A021058	0.002114	0.067467	4.882337	down	coding	NM_002292	LAMB2	chr3	-

ASHG19A3A021081	0.003831	0.086652	5.368348	down	coding	NM_003335	UBA7	chr3	-
ASHG19A3A021189	0.016292	0.1597	2.512985	down	coding	NM_001660	ARF4	chr3	-
ASHG19A3A021233	0.024222	0.19182	2.641535	down	coding	NM_173654	C3orf64	chr3	-
ASHG19A3A021379	0.022686	0.186562	2.264662	down	coding	NM_001025079	CD47	chr3	-
ASHG19A3A021413	0.010767	0.132093	3.647024	down	coding	NM_199511	CCDC80	chr3	-
ASHG19A3A021467	6.31E-05	0.021793	67.39973	down	coding	NM_007085	FSTL1	chr3	-
ASHG19A3A021496	0.002026	0.066133	6.322225	down	coding	NM_053031	MYLK	chr3	-
ASHG19A3A021503	0.001589	0.059794	3.513473	down	coding	NM_020733	HEG1	chr3	-
ASHG19A3A021543	0.010245	0.128875	10.8742	down	coding	NM_001003794	MGLL	chr3	-
ASHG19A3A021712	0.000156	0.026643	7.797024	down	coding	NM_182943	PLOD2	chr3	-
ASHG19A3A021827	0.038054	0.233869	2.199621	down	coding	NM_007107	SSR3	chr3	-
ASHG19A3A021976	0.001891	0.063466	2.641029	down	coding	NM_171829	KCNMB3	chr3	-
ASHG19A3A022026	0.004297	0.090264	4.189737	down	coding	NM_001013615	C1orf190	chr1	+
ASHG19A3A022034	0.009647	0.125668	15.22469	down	coding	NM_001025266	C3orf70	chr3	-
ASHG19A3A022061	0.000942	0.049969	26.00054	down	coding	NM_139125	MASP1	chr3	-
ASHG19A3A022080	8.93E-05	0.023512	8.972922	down	coding	NM_018192	LEPREL1	chr3	-
ASHG19A3A022250	0.009976	0.127442	2.114137	down	coding	NM_018462	C3orf10	chr3	+
ASHG19A3A022423	0.004971	0.095751	3.398761	down	coding	NM_006371	CRTAP	chr3	+
ASHG19A3A022443	0.027465	0.202466	2.473119	down	coding	NM_078626	CDKN2C	chr1	+
ASHG19A3A022453	0.000253	0.031138	2.346282	down	coding	NM_014372	RNF11	chr1	+
ASHG19A3A022454	0.045046	0.252924	6.509538	down	coding	NM_015873	VILL	chr3	+
ASHG19A3A022608	0.012433	0.140622	7.23775	down	coding	NM_173546	KLHDC8B	chr3	+
ASHG19A3A022614	0.003579	0.08383	2.273073	down	coding	NM_022171	TCTA	chr3	+
ASHG19A3A022676	0.029075	0.208902	2.185222	down	coding	NM_001007099	SCP2	chr1	+
ASHG19A3A022729	0.022107	0.183967	3.510311	down	coding	NM_017771	PXK	chr3	+
ASHG19A3A022786	0.002172	0.068508	3.520387	down	coding	NM_006407	ARL6IP5	chr3	+
ASHG19A3A022790	0.007715	0.116328	4.927857	down	coding	NM_198178	MITF	chr3	+
ASHG19A3A022809	0.029705	0.210462	3.790658	down	coding	NM_001080393	GXYLT2	chr3	+
ASHG19A3A022917	0.019657	0.174937	4.788889	down	coding	NM_001850	COL8A1	chr3	+
ASHG19A3A022928	0.022611	0.186121	12.77339	down	coding	NM_018004	TMEM45A	chr3	+
ASHG19A3A022954	0.022724	0.186756	7.850178	down	coding	NM_001627	ALCAM	chr3	+
ASHG19A3A022983	0.009806	0.126657	7.895484	down	coding	NM_015480	PVRL3	chr3	+
ASHG19A3A023257	0.009931	0.127353	5.527957	down	coding	NM_002718	PPP2R3A	chr3	+

ASHG19A3A023401	0.003239	0.081978	3.159337	down	coding	NM_021038	MBNL1	chr3	+
ASHG19A3A023442	0.035378	0.22646	7.871845	down	coding	NM_002852	PTX3	chr3	+
ASHG19A3A023451	0.032359	0.216983	4.169968	down	coding	NM_022736	MFSD1	chr3	+
ASHG19A3A023697	0.03676	0.230294	3.775793	down	coding	NM_001167671	LPP	chr3	+
ASHG19A3A023803	0.004977	0.095751	4.885362	down	coding	NM_001122819	KIF17	chr1	-
ASHG19A3A023853	0.005632	0.100825	5.3641	down	coding	NM_017526	LEPROT	chr1	+
ASHG19A3A023908	0.031105	0.214095	2.894875	down	coding	NM_153376	CCDC96	chr4	-
ASHG19A3A023952	0.034604	0.224228	27.39349	down	coding	NM_053042	ZNF518B	chr4	-
ASHG19A3A023981	0.004024	0.087853	14.84116	down	coding	NM_032291	SGIP1	chr1	+
ASHG19A3A024027	0.000667	0.042871	2.548472	down	coding	NM_001130726	CCDC149	chr4	-
ASHG19A3A024069	0.024874	0.194139	2.829976	down	coding	NM_001085400	RELL1	chr4	-
ASHG19A3A024083	0.013871	0.148967	2.605269	down	coding	NM_024943	TMEM156	chr4	-
ASHG19A3A024173	0.001152	0.053318	5.568949	down	coding	NM_000232	SGCB	chr4	-
ASHG19A3A024180	0.01613	0.158949	2.651222	down	coding	NM_152540	SCFD2	chr4	-
ASHG19A3A024360	0.003153	0.081204	4.703635	down	coding	NM_005506	SCARB2	chr4	-
ASHG19A3A024394	0.003356	0.083054	20.46485	down	coding	NM_058172	ANTXR2	chr4	-
ASHG19A3A024479	0.039264	0.236631	11.25505	down	coding	NM_153757	NAP1L5	chr4	-
ASHG19A3A024511	0.007082	0.111447	3.546346	down	coding	NM_001968	EIF4E	chr4	-
ASHG19A3A024514	0.004739	0.093712	2.090578	down	coding	NM_000671	ADH5	chr4	-
ASHG19A3A024549	0.037772	0.233374	2.26474	down	coding	NM_005908	MANBA	chr4	-
ASHG19A3A024650	0.024824	0.193974	5.456981	down	coding	NM_003619	PRSS12	chr4	-
ASHG19A3A024654	0.011836	0.137928	6.20791	down	coding	NM_014822	SEC24D	chr4	-
ASHG19A3A024663	2.97E-05	0.016153	7.596591	down	coding	NM_033430	PDE5A	chr4	-
ASHG19A3A024664	0.001261	0.054115	6.219333	down	coding	NM_001083	PDE5A	chr4	-
ASHG19A3A024676	0.00723	0.11225	3.438355	down	coding	NM_001154	ANXA5	chr4	-
ASHG19A3A024680	0.006679	0.108511	2.211883	down	coding	NM_176824	BBS7	chr4	-
ASHG19A3A024716	0.038017	0.233813	2.070154	down	coding	NM_006320	PGRMC2	chr4	-
ASHG19A3A024822	0.018609	0.17012	2.57972	down	coding	NM_178835	ZNF827	chr4	-
ASHG19A3A024847	0.024649	0.193369	4.040461	down	coding	NM_007034	DNAJB4	chr1	+
ASHG19A3A024936	0.001718	0.061148	8.976865	down	coding	NM_001012414	TRIM61	chr4	-
ASHG19A3A025054	0.001022	0.051214	4.720944	down	coding	NM_001111319	CLDN22	chr4	-
ASHG19A3A025138	0.021583	0.182328	2.040129	down	coding	NM_001127178	PIGG	chr4	+
ASHG19A3A025229	0.017876	0.16665	2.229043	down	coding	NM_015274	MAN2B2	chr4	+

ASHG19A3A025264	0.007808	0.116887	17.96433	down	coding	NM_001554	CYR61	chr1	+
ASHG19A3A025315	0.042428	0.244962	2.666807	down	coding	NM_001145191	FAM200B	chr4	+
ASHG19A3A025375	0.03587	0.227906	3.148609	down	coding	NM_018317	TBC1D19	chr4	+
ASHG19A3A025388	0.002042	0.066427	29.46968	down	coding	NM_002589	PCDH7	chr4	+
ASHG19A3A025426	0.012261	0.139841	3.483861	down	coding	NM_138389	FAM114A1	chr4	+
ASHG19A3A025466	0.005366	0.099072	32.06183	down	coding	NM_001080505	SHISA3	chr4	+
ASHG19A3A025551	0.014159	0.150369	3.677932	down	coding	NM_206919	ARL9	chr4	+
ASHG19A3A025657	0.005372	0.09908	2.908221	down	coding	NM_003759	SLC4A4	chr4	+
ASHG19A3A025761	0.00416	0.088853	3.497394	down	coding	NM_031305	ARHGAP24	chr4	+
ASHG19A3A025810	0.038818	0.23597	3.791543	down	coding	NM_001011516	PDLIM5	chr4	+
ASHG19A3A026071	0.042461	0.244962	2.449512	down	coding	NM_032547	SCOC	chr4	+
ASHG19A3A026146	0.004339	0.090701	27.38671	down	coding	NM_006439	MAB21L2	chr4	+
ASHG19A3A026401	0.012007	0.138629	2.298075	down	coding	NM_015976	SNX7	chr1	+
ASHG19A3A026517	0.031364	0.214234	58.65465	down	coding	NM_003966	SEMA5A	chr5	-
ASHG19A3A026691	0.01372	0.148408	2.28386	down	coding	NM_023073	C5orf42	chr5	-
ASHG19A3A026808	0.021037	0.180024	7.782058	down	coding	NM_002184	IL6ST	chr5	-
ASHG19A3A026990	0.021105	0.180171	2.782615	down	coding	NM_000046	ARSB	chr5	-
ASHG19A3A027095	0.012007	0.138629	5.085946	down	coding	NM_002397	MEF2C	chr5	-
ASHG19A3A027127	0.004993	0.095909	4.317994	down	coding	NM_173665	C5orf36	chr5	-
ASHG19A3A027136	0.000937	0.049896	5.282652	down	coding	NM_002064	GLRX	chr5	-
ASHG19A3A027139	0.000398	0.034548	4.701994	down	coding	NM_012081	ELL2	chr5	-
ASHG19A3A027148	0.024119	0.191703	2.634403	down	coding	NM_001040458	ERAP1	chr5	-
ASHG19A3A027208	0.000986	0.050586	3.42829	down	coding	NM_014819	PJA2	chr5	-
ASHG19A3A027256	0.000256	0.031138	3.273907	down	coding	NM_021649	TICAM2	chr5	-
ASHG19A3A027257	0.003364	0.083054	2.028121	down	coding	NM_181836	TMED7	chr5	-
ASHG19A3A027334	0.007228	0.11225	2.432973	down	coding	NM_178450	MARCH3	chr5	-
ASHG19A3A027371	0.017971	0.167125	2.264147	down	coding	NM_020141	TMEM167B	chr1	+
ASHG19A3A027388	0.042686	0.24598	2.053571	down	coding	NM_015146	SEPT8	chr5	-
ASHG19A3A027394	0.016267	0.159663	2.5662	down	coding	NM_014423	AFF4	chr5	-
ASHG19A3A027425	0.004299	0.090264	4.438424	down	coding	NM_138609	H2AFY	chr5	-
ASHG19A3A027466	0.043297	0.24776	2.136672	down	coding	NM_152686	DNAJC18	chr5	-
ASHG19A3A027477	0.019504	0.174349	4.543494	down	coding	NM_001945	HBEGF	chr5	-
ASHG19A3A027596	0.003683	0.085124	35.97574	down	coding	NM_001155	ANXA6	chr5	-

ASHG19A3A027602	0.00319	0.081478	72.61874	down	coding	NM_003118	SPARC	chr5	-
ASHG19A3A027631	0.003903	0.086787	6.922477	down	coding	NM_000850	GSTM4	chr1	+
ASHG19A3A027653	0.004822	0.094196	3.413201	down	coding	NM_031908	C1QTNF2	chr5	-
ASHG19A3A027655	0.00944	0.124367	9.831684	down	coding	NM_000848	GSTM2	chr1	+
ASHG19A3A027672	0.041415	0.24206	3.42596	down	coding	NM_000561	GSTM1	chr1	+
ASHG19A3A027686	0.046737	0.256753	10.85728	down	coding	NM_000851	GSTM5	chr1	+
ASHG19A3A027698	0.045813	0.254423	4.416844	down	coding	NM_004417	DUSP1	chr5	-
ASHG19A3A027730	0.030176	0.212251	2.812152	down	coding	NM_172212	CSF1	chr1	+
ASHG19A3A027731	0.008448	0.119535	5.654368	down	coding	NM_000757	CSF1	chr1	+
ASHG19A3A027748	0.014546	0.152522	3.684972	down	coding	NM_203352	PDLIM7	chr5	-
ASHG19A3A027749	0.000581	0.040537	6.15777	down	coding	NM_213636	PDLIM7	chr5	-
ASHG19A3A027801	0.007416	0.113562	9.992582	down	coding	NM_005110	GFPT2	chr5	-
ASHG19A3A027980	0.04216	0.244591	2.085924	down	coding	NM_007118	TRIO	chr5	+
ASHG19A3A028000	0.002254	0.069808	307.3362	down	coding	NM_006317	BASP1	chr5	+
ASHG19A3A028066	0.007108	0.111447	6.072442	down	coding	NM_004932	CDH6	chr5	+
ASHG19A3A028096	0.019664	0.174937	4.106886	down	coding	NM_001145521	RAI14	chr5	+
ASHG19A3A028107	0.00592	0.103084	2.494928	down	coding	NM_002185	IL7R	chr5	+
ASHG19A3A028135	0.023425	0.189502	10.63406	down	coding	NM_001168355	OSMR	chr5	+
ASHG19A3A028136	0.008156	0.118004	7.916265	down	coding	NM_003999	OSMR	chr5	+
ASHG19A3A028197	0.035306	0.226456	2.536997	down	coding	NM_015946	PELO	chr5	+
ASHG19A3A028198	0.014698	0.152736	22.81886	down	coding	NM_181501	ITGA1	chr5	+
ASHG19A3A028205	0.000555	0.039761	65.00623	down	coding	NM_006350	FST	chr5	+
ASHG19A3A028355	0.005552	0.100597	19.37859	down	coding	NM_005909	MAP1B	chr5	+
ASHG19A3A028392	0.000269	0.031138	2.141258	down	coding	NM_016218	POLK	chr5	+
ASHG19A3A028445	0.019748	0.175242	3.642018	down	coding	NM_205548	FAM151B	chr5	+
ASHG19A3A028490	0.00358	0.08383	2.159276	down	coding	NM_152696	HIPK1	chr1	+
ASHG19A3A028503	0.007078	0.111447	83.76769	down	coding	NM_020190	OLFML3	chr1	+
ASHG19A3A028561	0.012722	0.142319	3.598396	down	coding	NM_001012761	RGMB	chr5	+
ASHG19A3A028704	0.00147	0.058292	4.073293	down	coding	NM_014035	SNX24	chr5	+
ASHG19A3A028778	0.003097	0.08044	31.79944	down	coding	NM_003687	PDLIM4	chr5	+
ASHG19A3A028779	0.004763	0.093712	3.705398	down	coding	NM_003059	SLC22A4	chr5	+
ASHG19A3A028822	0.011384	0.135662	2.969802	down	coding	NM_024715	TXNDC15	chr5	+
ASHG19A3A028908	0.021069	0.180024	3.053391	down	coding	NM_031852	PCDHA7	chr5	+

ASHG19A3A028948	0.008643	0.120291	4.066124	down	coding	NM_032086	PCDHGA6	chr5	+
ASHG19A3A028950	0.000381	0.034338	13.44321	down	coding	NM_032098	PCDHGB4	chr5	+
ASHG19A3A028952	0.002285	0.069865	7.472497	down	coding	NM_032099	PCDHGB5	chr5	+
ASHG19A3A028953	0.005238	0.098531	2.37937	down	coding	NM_032100	PCDHGB6	chr5	+
ASHG19A3A028970	0.016226	0.159515	15.65845	down	coding	NM_017709	FAM46C	chr1	+
ASHG19A3A029015	0.000487	0.037875	25.28648	down	coding	NM_000024	ADRB2	chr5	+
ASHG19A3A029019	0.029746	0.210672	3.914336	down	coding	NM_152406	AFAP1L1	chr5	+
ASHG19A3A029046	0.004262	0.089983	5.30583	down	coding	NM_007286	SYNPO	chr5	+
ASHG19A3A029065	0.005858	0.10292	3.145281	down	coding	NM_198321	GALNT10	chr5	+
ASHG19A3A029158	0.004351	0.090758	2.359289	down	coding	NM_003945	ATP6V0E1	chr5	+
ASHG19A3A029237	0.010497	0.130705	2.333553	down	coding	NM_017510	TMED9	chr5	+
ASHG19A3A029333	0.001497	0.058762	5.05824	down	coding	NM_001069	TUBB2A	chr6	-
ASHG19A3A029340	0.010084	0.127962	11.36278	down	coding	NM_183373	C6orf145	chr6	-
ASHG19A3A029414	0.035642	0.227147	2.642709	down	coding	NM_017770	ELOVL2	chr6	-
ASHG19A3A029448	0.024136	0.191708	3.010186	down	coding	NM_001105568	KIF13A	chr6	-
ASHG19A3A029528	0.011797	0.137852	3.383489	down	coding	NM_005319	HIST1H1C	chr6	-
ASHG19A3A029533	0.025282	0.19529	3.532447	down	coding	NM_003530	HIST1H3D	chr6	-
ASHG19A3A029542	0.003513	0.083557	2.892088	down	coding	NM_003543	HIST1H4H	chr6	-
ASHG19A3A029555	0.020719	0.178522	2.321298	down	coding	NM_080593	HIST1H2BK	chr6	-
ASHG19A3A029737	0.004432	0.091547	3.231409	down	coding	NM_030651	PRRT1	chr6	-
ASHG19A3A029744	0.026265	0.198323	3.056752	down	coding	NM_153713	LIX1L	chr1	+
ASHG19A3A029764	0.014051	0.150337	2.302152	down	coding	NM_003846	PEX11B	chr1	+
ASHG19A3A029765	0.047808	0.26055	8.305202	down	coding	NM_148919	PSMB8	chr6	-
ASHG19A3A029823	0.011093	0.133841	2.376887	down	coding	NM_003214	TEAD3	chr6	-
ASHG19A3A029846	0.02279	0.18681	2.660586	down	coding	NM_014341	MTCH1	chr6	-
ASHG19A3A029847	0.009047	0.122219	4.703787	down	coding	NM_145316	TMEM217	chr6	-
ASHG19A3A029848	0.007832	0.116921	3.470078	down	coding	NM_001162900	TMEM217	chr6	-
ASHG19A3A029879	0.00038	0.034338	2.325229	down	coding	NM_014455	RNF115	chr1	+
ASHG19A3A029913	0.017219	0.164351	3.14043	down	coding	NM_000322	PRPH2	chr6	-
ASHG19A3A029917	0.000148	0.026643	2.3834	down	coding	NM_001008739	C6orf226	chr6	-
ASHG19A3A029936	0.007187	0.111953	2.185647	down	coding	NM_015388	YIPF3	chr6	-
ASHG19A3A030022	0.048146	0.261157	5.495954	down	coding	NM_012288	TRAM2	chr6	-
ASHG19A3A030151	0.001122	0.053047	3.340374	down	coding	NM_012434	SLC17A5	chr6	-

ASHG19A3A030190	0.003771	0.086392	5.030171	down	coding	NM_017633	FAM46A	chr6	-
ASHG19A3A030350	0.009204	0.122934	3.158724	down	coding	NM_014028	OSTM1	chr6	-
ASHG19A3A030398	0.040226	0.239125	13.09949	down	coding	NM_001105206	LAMA4	chr6	-
ASHG19A3A030452	0.049824	0.264457	3.535468	down	coding	NM_001042475	C6orf204	chr6	-
ASHG19A3A030470	0.020138	0.176389	3.435689	down	coding	NM_020755	SERINC1	chr6	-
ASHG19A3A030488	0.006476	0.106393	3.781823	down	coding	NM_001040874	HIST2H2AA4	chr1	+
ASHG19A3A030520	0.022469	0.185503	2.965182	down	coding	NM_001431	EPB41L2	chr6	-
ASHG19A3A030524	0.024212	0.19182	2.275649	down	coding	NM_004830	MED23	chr6	-
ASHG19A3A030530	0.001524	0.058898	17.70577	down	coding	NM_001901	CTGF	chr6	-
ASHG19A3A030532	0.001697	0.060953	9.367432	down	coding	NM_015529	MOXD1	chr6	-
ASHG19A3A030538	0.007866	0.117005	15.08977	down	coding	NM_016274	PLEKHO1	chr1	+
ASHG19A3A030579	0.008831	0.120946	17.32369	down	coding	NM_024579	C1orf54	chr1	+
ASHG19A3A030585	0.001079	0.052289	6.3788	down	coding	NM_144697	C1orf51	chr1	+
ASHG19A3A030620	0.000674	0.043069	8.558419	down	coding	NM_006079	CITED2	chr6	-
ASHG19A3A030691	0.002253	0.069808	2.40297	down	coding	NM_032832	LRP11	chr6	-
ASHG19A3A030713	0.002742	0.075389	12.88261	down	coding	NM_004425	ECM1	chr1	+
ASHG19A3A030760	0.004657	0.093229	6.151358	down	coding	NM_025008	ADAMTSL4	chr1	+
ASHG19A3A030774	0.032283	0.216971	7.615586	down	coding	NM_019032	ADAMTSL4	chr1	+
ASHG19A3A030788	0.009574	0.125552	5.14774	down	coding	NM_020133	AGPAT4	chr6	-
ASHG19A3A030952	0.014366	0.151394	8.344891	down	coding	NM_006818	MLLT11	chr1	+
ASHG19A3A030958	0.017558	0.165417	2.256146	down	coding	NM_001718	BMP6	chr6	+
ASHG19A3A030995	0.021198	0.180637	3.141002	down	coding	NM_001168319	EDN1	chr6	+
ASHG19A3A031030	9.96E-05	0.023735	7.53023	down	coding	NM_006366	CAP2	chr6	+
ASHG19A3A031089	0.002452	0.071184	3.220884	down	coding	NM_006355	TRIM38	chr6	+
ASHG19A3A031100	0.026234	0.198323	2.991001	down	coding	NM_003512	HIST1H2AC	chr6	+
ASHG19A3A031119	0.032476	0.217339	2.09506	down	coding	NM_006995	BTN2A2	chr6	+
ASHG19A3A031154	0.017797	0.166328	2.511135	down	coding	NM_003521	HIST1H2BM	chr6	+
ASHG19A3A031156	0.027067	0.201258	2.050456	down	coding	NM_003520	HIST1H2BN	chr6	+
ASHG19A3A031180	0.00941	0.124339	2.199293	down	coding	NM_001007531	NKAPL	chr6	+
ASHG19A3A031345	0.042399	0.244962	3.955163	down	coding	NM_002800	PSMB9	chr6	+
ASHG19A3A031413	0.034862	0.225065	5.446328	down	coding	NM_178428	LCE2A	chr1	+
ASHG19A3A031441	0.022578	0.186	3.749301	down	coding	NM_078467	CDKN1A	chr6	+
ASHG19A3A031444	0.001252	0.054115	2.667005	down	coding	NM_152734	C6orf89	chr6	+

ASHG19A3A031790	0.047905	0.260742	22.72931	down	coding	NM_002526	NT5E	chr6	+
ASHG19A3A031818	0.02101	0.180024	2.704844	down	coding	NM_006813	PNRC1	chr6	+
ASHG19A3A031896	0.048959	0.262507	2.395202	down	coding	NM_020452	ATP8B2	chr1	+
ASHG19A3A031956	0.012055	0.138767	2.841883	down	coding	NM_001033564	C6orf225	chr6	+
ASHG19A3A032002	0.014173	0.150369	2.678621	down	coding	NM_173674	DCBLD1	chr6	+
ASHG19A3A032032	0.042843	0.246455	4.285369	down	coding	NM_152553	RNF217	chr6	+
ASHG19A3A032172	0.020073	0.176152	7.036558	down	coding	NM_025058	TRIM46	chr1	+
ASHG19A3A032174	0.005406	0.09955	9.335787	down	coding	NM_006834	RAB32	chr6	+
ASHG19A3A032350	0.030685	0.213149	2.438959	down	coding	NM_001029863	C6orf120	chr6	+
ASHG19A3A032439	0.036181	0.228491	2.275637	down	coding	NM_004227	CYTH3	chr7	-
ASHG19A3A032444	0.017594	0.165417	2.193895	down	coding	NM_006854	KDEL2	chr7	-
ASHG19A3A032460	0.006422	0.106091	3.234865	down	coding	NM_005572	LMNA	chr1	+
ASHG19A3A032545	0.00995	0.127353	5.721199	down	coding	NM_032581	FAM126A	chr7	-
ASHG19A3A032604	0.002352	0.070872	12.86758	down	coding	NM_175061	JAZF1	chr7	-
ASHG19A3A032621	0.001076	0.052289	3.823227	down	coding	NM_017946	FKBP14	chr7	-
ASHG19A3A032766	0.002309	0.070288	10.71033	down	coding	NM_001146334	NACAD	chr7	-
ASHG19A3A032817	0.013832	0.148967	9.457747	down	coding	NM_001080471	PEAR1	chr1	+
ASHG19A3A032959	0.029976	0.211328	2.134251	down	coding	NM_016038	SBDS	chr7	-
ASHG19A3A033020	0.030971	0.213821	2.666727	down	coding	NM_030893	CD1E	chr1	+
ASHG19A3A033040	0.014156	0.150369	7.726838	down	coding	NM_006072	CCL26	chr7	-
ASHG19A3A033092	0.009212	0.12295	13.89864	down	coding	NM_001010931	HGF	chr7	-
ASHG19A3A033093	0.00244	0.071184	54.69062	down	coding	NM_001010934	HGF	chr7	-
ASHG19A3A033248	0.01145	0.135767	8.272759	down	coding	NM_024637	GAL3ST4	chr7	-
ASHG19A3A033334	0.001017	0.051214	6.128471	down	coding	NM_003768	PEA15	chr1	+
ASHG19A3A033352	0.017269	0.164505	6.523724	down	coding	NM_175884	FLJ36031	chr7	-
ASHG19A3A033383	0.036396	0.229406	2.005161	down	coding	NM_005598	NHLH1	chr1	+
ASHG19A3A033456	0.042299	0.244731	5.406882	down	coding	NM_005763	AASS	chr7	-
ASHG19A3A033594	6.74E-06	0.009072	141.5115	down	coding	NM_002825	PTN	chr7	-
ASHG19A3A033625	0.002463	0.071236	5.335677	down	coding	NM_015689	DENND2A	chr7	-
ASHG19A3A033744	0.000169	0.026643	2.589165	down	coding	NM_014020	TMEM176B	chr7	-
ASHG19A3A034009	0.013169	0.144355	5.971297	down	coding	NM_014707	HDAC9	chr7	+
ASHG19A3A034044	0.002233	0.069808	12.63661	down	coding	NM_000600	IL6	chr7	+
ASHG19A3A034122	0.004206	0.089158	7.159461	down	coding	NM_002585	PBX1	chr1	+

ASHG19A3A034175	0.006486	0.106393	2.025034	down	coding	NM_004528	MGST3	chr1	+
ASHG19A3A034240	0.006157	0.104193	6.341619	down	coding	NM_024728	C7orf10	chr7	+
ASHG19A3A034340	0.045271	0.253239	4.28286	down	coding	NM_201283	EGFR	chr7	+
ASHG19A3A034343	0.017301	0.164583	2.337659	down	coding	NM_005228	EGFR	chr7	+
ASHG19A3A034478	0.010939	0.133053	7.189313	down	coding	NM_003596	TPST1	chr7	+
ASHG19A3A034542	0.037514	0.232644	2.543907	down	coding	NM_003953	MPZL1	chr1	+
ASHG19A3A034660	0.011528	0.13611	4.026975	down	coding	NM_021151	CROT	chr7	+
ASHG19A3A034794	0.007728	0.116424	3.762105	down	coding	NM_152755	CNPY4	chr7	+
ASHG19A3A034795	0.018584	0.170069	2.74418	down	coding	NM_203397	MBLAC1	chr7	+
ASHG19A3A034813	0.001614	0.060276	7.958926	down	coding	NM_002593	PCOLCE	chr7	+
ASHG19A3A034838	0.007042	0.111447	24.90954	down	coding	NM_000602	SERPINE1	chr7	+
ASHG19A3A034940	0.003067	0.080333	6.357848	down	coding	NM_001172895	CAV1	chr7	+
ASHG19A3A034941	0.020435	0.177343	6.042482	down	coding	NM_001172896	CAV1	chr7	+
ASHG19A3A035037	0.004649	0.093229	3.017439	down	coding	NM_001219	CALU	chr7	+
ASHG19A3A035038	0.028431	0.20607	2.735161	down	coding	NM_001130674	CALU	chr7	+
ASHG19A3A035110	0.029056	0.208902	6.261734	down	coding	NM_033138	CALD1	chr7	+
ASHG19A3A035167	0.024721	0.193409	2.11691	down	coding	NM_004905	PRDX6	chr1	+
ASHG19A3A035230	0.043337	0.247815	3.258836	down	coding	NM_001010972	ZYX	chr7	+
ASHG19A3A035240	0.00167	0.060728	6.959861	down	coding	NM_001130026	FAM115C	chr7	+
ASHG19A3A035448	1.06E-05	0.011744	2.864928	down	coding	NM_175075	C8orf42	chr8	-
ASHG19A3A035584	0.013149	0.144292	2.611031	down	coding	NM_024815	NUDT18	chr8	-
ASHG19A3A035610	0.001603	0.060008	135.7766	down	coding	NM_002318	LOXL2	chr8	-
ASHG19A3A035617	0.023893	0.191098	2.527659	down	coding	NM_000825	GNRH1	chr8	-
ASHG19A3A035618	0.036946	0.230922	2.243532	down	coding	NM_017634	KCTD9	chr8	-
ASHG19A3A035728	0.001049	0.05178	37.29164	down	coding	NM_000930	PLAT	chr8	-
ASHG19A3A035731	0.022942	0.187436	2.667673	down	coding	NM_006749	SLC20A2	chr8	-
ASHG19A3A035796	0.044538	0.251142	2.725678	down	coding	NM_017813	IMPAD1	chr8	-
ASHG19A3A035805	0.012616	0.141741	5.679744	down	coding	NM_014729	TOX	chr8	-
ASHG19A3A035861	0.015233	0.154966	8.157786	down	coding	NM_005098	MSC	chr8	-
ASHG19A3A035944	0.022165	0.184119	2.33277	down	coding	NM_018710	TMEM55A	chr8	-
ASHG19A3A035962	0.040358	0.239304	5.971763	down	coding	NM_005261	GEM	chr8	-
ASHG19A3A035971	0.00105	0.05178	5.620067	down	coding	NM_002826	QSOX1	chr1	+
ASHG19A3A035975	0.024497	0.193107	3.447828	down	coding	NM_001001557	GDF6	chr8	-

ASHG19A3A035987	0.018346	0.168811	4.450875	down	coding	NM_024759	NIPAL2	chr8	-
ASHG19A3A035996	0.000922	0.04953	2.552393	down	coding	NM_183419	RNF19A	chr8	-
ASHG19A3A036076	0.007452	0.113909	4.20269	down	coding	NM_000127	EXT1	chr8	-
ASHG19A3A036079	0.041254	0.24171	3.190777	down	coding	NM_001531	MR1	chr1	+
ASHG19A3A036186	0.021368	0.181535	12.41305	down	coding	NM_005293	GPR20	chr8	-
ASHG19A3A036234	0.019723	0.175242	2.320674	down	coding	NM_178564	NRBP2	chr8	-
ASHG19A3A036328	0.008326	0.118665	6.795882	down	coding	NM_002293	LAMC1	chr1	+
ASHG19A3A036335	0.019507	0.174349	3.286828	down	coding	NM_012331	MSRA	chr8	+
ASHG19A3A036347	0.030867	0.21347	3.70499	down	coding	NM_015458	MTMR9	chr8	+
ASHG19A3A036348	0.011425	0.135662	2.201785	down	coding	NM_054028	AMAC1L2	chr8	+
ASHG19A3A036381	0.034524	0.22417	4.170854	down	coding	NM_016353	ZDHHC2	chr8	+
ASHG19A3A036419	0.004842	0.094205	2.288676	down	coding	NM_022749	FAM160B2	chr8	+
ASHG19A3A036431	0.01092	0.133053	4.836692	down	coding	NM_005605	PPP3CC	chr8	+
ASHG19A3A036436	0.004296	0.090264	2.877943	down	coding	NM_001013842	C8orf58	chr8	+
ASHG19A3A036464	0.000387	0.034349	3.425867	down	coding	NM_004331	BNIP3L	chr8	+
ASHG19A3A036475	0.026009	0.197961	14.24684	down	coding	NM_016240	SCARA3	chr8	+
ASHG19A3A036510	0.007352	0.113117	5.907676	down	coding	NM_001008712	RBPMS	chr8	+
ASHG19A3A036695	0.006071	0.103718	19.4122	down	coding	NM_015364	LY96	chr8	+
ASHG19A3A036782	0.018802	0.170791	13.52911	down	coding	NM_016134	PGCP	chr8	+
ASHG19A3A036876	0.00938	0.124218	19.09703	down	coding	NM_002514	NOV	chr8	+
ASHG19A3A037167	0.032139	0.216841	2.163417	down	coding	NM_001010915	PTPLAD2	chr9	-
ASHG19A3A037248	0.043566	0.248267	3.04867	down	coding	NM_001497	B4GALT1	chr9	-
ASHG19A3A037277	0.030504	0.212948	2.030394	down	coding	NM_147202	C9orf25	chr9	-
ASHG19A3A037301	0.00789	0.117056	10.56445	down	coding	NM_025182	KIAA1539	chr9	-
ASHG19A3A037311	0.00355	0.083557	10.56885	down	coding	NM_213674	TPM2	chr9	-
ASHG19A3A037312	0.006867	0.110159	4.468755	down	coding	NM_003289	TPM2	chr9	-
ASHG19A3A037430	0.02059	0.178028	7.663465	down	coding	NM_052943	FAM46B	chr1	-
ASHG19A3A037557	0.018086	0.167574	6.808095	down	coding	NM_001206	KLF9	chr9	-
ASHG19A3A037602	0.017552	0.165417	2.128884	down	coding	NM_002072	GNAQ	chr9	-
ASHG19A3A037736	3.46E-05	0.016267	2.269972	down	coding	NM_000507	FBP1	chr9	-
ASHG19A3A037801	0.014239	0.150593	3.998112	down	coding	NM_018421	TBC1D2	chr9	-
ASHG19A3A037895	0.003269	0.082065	3.88035	down	coding	NM_057159	LPAR1	chr9	-
ASHG19A3A038025	0.01656	0.160581	10.50998	down	coding	NM_001017403	LGR6	chr1	+

ASHG19A3A038049	6.97E-05	0.022087	6.208708	down	coding	NM_012098	ANGPTL2	chr9	-
ASHG19A3A038064	0.002574	0.072555	3.02297	down	coding	NM_000118	ENG	chr9	-
ASHG19A3A038109	0.007092	0.111447	2.077915	down	coding	NM_199350	C9orf50	chr9	-
ASHG19A3A038368	0.022748	0.18676	3.277456	down	coding	NM_203403	C9orf150	chr9	+
ASHG19A3A038405	0.000294	0.031809	2.102121	down	coding	NM_006570	RRAGA	chr9	+
ASHG19A3A038511	0.01185	0.138013	4.549587	down	coding	NM_004512	IL11RA	chr9	+
ASHG19A3A038532	0.047052	0.257805	2.635921	down	coding	NM_174923	CCDC107	chr9	+
ASHG19A3A038534	0.004231	0.089521	2.920781	down	coding	NM_006368	CREB3	chr9	+
ASHG19A3A038550	0.006307	0.105194	4.219159	down	coding	NM_021111	RECK	chr9	+
ASHG19A3A038551	0.004535	0.093019	14.62378	down	coding	NM_022343	GLIPR2	chr9	+
ASHG19A3A038825	0.007997	0.117056	8.673454	down	coding	NM_007005	TLE4	chr9	+
ASHG19A3A038881	0.005586	0.100699	5.932941	down	coding	NM_001912	CTSL1	chr9	+
ASHG19A3A038988	0.026816	0.200714	2.419252	down	coding	NM_014282	HABP4	chr9	+
ASHG19A3A039024	0.035725	0.227467	3.233698	down	coding	NM_004612	TGFBR1	chr9	+
ASHG19A3A039115	0.045279	0.253239	2.450998	down	coding	NM_003358	UGCG	chr9	+
ASHG19A3A039192	0.00032	0.032699	4.843355	down	coding	NM_000962	PTGS1	chr9	+
ASHG19A3A039243	0.00799	0.117056	4.366135	down	coding	NM_006195	PBX3	chr9	+
ASHG19A3A039339	0.001356	0.055969	2.423662	down	coding	NM_001128826	NCS1	chr9	+
ASHG19A3A039355	0.002551	0.072451	104.7863	down	coding	NM_032728	PPAPDC3	chr9	+
ASHG19A3A039444	0.011599	0.136714	4.430513	down	coding	NM_019605	SERTAD4	chr1	+
ASHG19A3A039631	0.039109	0.236631	3.827075	down	coding	NM_003916	AP1S2	chrX	-
ASHG19A3A039846	0.005973	0.103105	5.063957	down	coding	NM_005660	SLC35A2	chrX	-
ASHG19A3A039857	0.015815	0.157775	7.571084	down	coding	NM_007213	PRAF2	chrX	-
ASHG19A3A039885	0.000131	0.026643	63.95008	down	coding	NM_018159	NUDT11	chrX	-
ASHG19A3A040051	0.039427	0.236991	6.08586	down	coding	NM_001024455	RGAG4	chrX	-
ASHG19A3A040105	0.029961	0.211328	7.766286	down	coding	NM_001029891	PGAM4	chrX	-
ASHG19A3A040194	0.026255	0.198323	2.301986	down	coding	NM_019007	ARMCX6	chrX	-
ASHG19A3A040428	0.025184	0.195011	12.97502	down	coding	NM_001078172	FAM127B	chrX	-
ASHG19A3A040448	0.024542	0.19336	3.559909	down	coding	NM_001173517	MAP7D3	chrX	-
ASHG19A3A040452	0.006816	0.109609	3.712542	down	coding	NM_004840	ARHGEF6	chrX	-
ASHG19A3A040453	0.005942	0.103084	18.5076	down	coding	NM_001146068	CAPN2	chr1	+
ASHG19A3A040501	0.000642	0.042495	2.422272	down	coding	NM_000202	IDS	chrX	-
ASHG19A3A040519	0.021844	0.182909	4.290939	down	coding	NM_031462	CD99L2	chrX	-

ASHG19A3A040566	0.008773	0.12054	3.402281	down	coding	NM_003676	DEGS1	chr1	+
ASHG19A3A040578	0.003792	0.086533	2.29095	down	coding	NM_001110556	FLNA	chrX	-
ASHG19A3A040898	0.031871	0.21579	3.985531	down	coding	NM_019886	CHST7	chrX	+
ASHG19A3A040920	0.025376	0.195453	3.77601	down	coding	NM_003254	TIMP1	chrX	+
ASHG19A3A041057	0.002908	0.078231	25.75565	down	coding	NM_001039705	TRO	chrX	+
ASHG19A3A041067	0.019064	0.172191	2.487232	down	coding	NM_016656	RRAGB	chrX	+
ASHG19A3A041239	0.021526	0.182164	2.63584	down	coding	NM_003022	SH3BGRL	chrX	+
ASHG19A3A041336	0.000404	0.034548	26.74027	down	coding	NM_152278	TCEAL7	chrX	+
ASHG19A3A041337	0.000106	0.024093	3.159613	down	coding	NM_001006612	WBP5	chrX	+
ASHG19A3A041403	0.007623	0.115303	2.46027	down	coding	NM_002578	PAK3	chrX	+
ASHG19A3A041518	0.013968	0.149715	8.496425	down	coding	NM_004794	RAB33A	chrX	+
ASHG19A3A041522	0.034393	0.224033	3.611615	down	coding	NM_004481	GALNT2	chr1	+
ASHG19A3A041548	0.020507	0.177561	2.311899	down	coding	NM_001101357	CCDC160	chrX	+
ASHG19A3A041642	0.035639	0.227147	3.327739	down	coding	NM_001012989	UBE2NL	chrX	+
ASHG19A3A042257	0.004771	0.093712	3.918635	down	coding	NM_014654	SDC3	chr1	-
ASHG19A3A042281	0.031558	0.214507	2.323813	down	coding	NM_001139459	CNST	chr1	+
ASHG19A3A042282	0.000317	0.032699	2.404253	down	coding	NM_152609	CNST	chr1	+
ASHG19A3A042390	0.000154	0.026643	10.49203	down	coding	NM_004102	FABP3	chr1	-
ASHG19A3A042489	0.005722	0.101746	3.48583	down	coding	NM_012425	RSU1	chr10	-
ASHG19A3A042497	7.98E-05	0.023121	6.452189	down	coding	NM_014241	PTPLA	chr10	-
ASHG19A3A042572	0.001376	0.056327	4.442615	down	coding	NM_020848	KIAA1462	chr10	-
ASHG19A3A042601	0.003192	0.081478	90.5494	down	coding	NM_144569	SPOCD1	chr1	-
ASHG19A3A042613	0.011792	0.137852	3.40167	down	coding	NM_003873	NRP1	chr10	-
ASHG19A3A042614	0.008767	0.12054	8.687599	down	coding	NM_001024628	NRP1	chr10	-
ASHG19A3A042623	0.024568	0.19336	11.78096	down	coding	NM_031866	FZD8	chr10	-
ASHG19A3A042636	0.031447	0.214448	2.015793	down	coding	NM_145011	ZNF25	chr10	-
ASHG19A3A042684	0.023113	0.188346	5.448168	down	coding	NM_199168	CXCL12	chr10	-
ASHG19A3A042721	0.020343	0.177153	3.10462	down	coding	NM_181519	SYT15	chr10	-
ASHG19A3A042722	0.005078	0.096773	6.395641	down	coding	NM_031912	SYT15	chr10	-
ASHG19A3A042756	0.049397	0.263826	7.524637	down	coding	NM_021226	ARHGAP22	chr10	-
ASHG19A3A042839	2.19E-05	0.016153	15.47505	down	coding	NM_030786	SYNC	chr1	-
ASHG19A3A042908	0.049619	0.263911	3.160287	down	coding	NM_001142648	SARIA	chr10	-
ASHG19A3A042952	0.002137	0.067858	2.327913	down	coding	NM_001142353	PPP3CB	chr10	-

ASHG19A3A043001	0.001713	0.061148	160.7367	down	coding	NM_002247	KCNMA1	chr10	-
ASHG19A3A043015	0.007604	0.115107	9.846286	down	coding	NM_153367	ZCCHC24	chr10	-
ASHG19A3A043062	0.013718	0.148408	2.584916	down	coding	NM_005271	GLUD1	chr10	-
ASHG19A3A043081	0.001379	0.056327	5.220418	down	coding	NM_001141945	ACTA2	chr10	-
ASHG19A3A043102	0.00077	0.045376	184.3236	down	coding	NM_005398	PPP1R3C	chr10	-
ASHG19A3A043121	0.040342	0.23928	3.607348	down	coding	NM_013451	MYOF	chr10	-
ASHG19A3A043177	0.008905	0.121637	2.648559	down	coding	NM_021732	AVPI1	chr10	-
ASHG19A3A043249	0.03057	0.212961	2.191981	down	coding	NM_005736	ACTR1A	chr10	-
ASHG19A3A043352	0.014945	0.153769	2.289507	down	coding	NM_004248	PRLHR	chr10	-
ASHG19A3A043376	0.013115	0.144029	3.171126	down	coding	NM_000141	FGFR2	chr10	-
ASHG19A3A043385	0.003446	0.083068	2.405912	down	coding	NM_145047	OSCP1	chr1	-
ASHG19A3A043455	0.012622	0.141741	18.29296	down	coding	NM_004052	BNIP3	chr10	-
ASHG19A3A043807	0.041606	0.242668	2.003132	down	coding	NM_004468	FHL3	chr1	-
ASHG19A3A043843	0.000598	0.040795	2.796534	down	coding	NM_022157	RRAGC	chr1	-
ASHG19A3A044001	0.021909	0.182965	8.046678	down	coding	NM_032199	ARID5B	chr10	+
ASHG19A3A044047	0.005292	0.098774	55.29548	down	coding	NM_002727	SRGN	chr10	+
ASHG19A3A044069	0.001704	0.061023	3.036505	down	coding	NM_004096	EIF4EBP2	chr10	+
ASHG19A3A044124	0.00957	0.125552	5.363882	down	coding	NM_014000	VCL	chr10	+
ASHG19A3A044261	0.027583	0.202826	7.48637	down	coding	NM_152871	FAS	chr10	+
ASHG19A3A044357	0.027066	0.201258	2.579106	down	coding	NM_024954	UBTD1	chr10	+
ASHG19A3A044364	0.00073	0.044771	3.158799	down	coding	NM_031484	MARVELD1	chr10	+
ASHG19A3A044432	0.000957	0.050231	2.229799	down	coding	NM_001083913	C10orf26	chr10	+
ASHG19A3A044444	0.000345	0.033308	16.36369	down	coding	NM_032727	INA	chr10	+
ASHG19A3A044526	0.010582	0.131111	2.78003	down	coding	NM_020940	FAM160B1	chr10	+
ASHG19A3A044564	0.010358	0.129692	3.223377	down	coding	NM_005308	GRK5	chr10	+
ASHG19A3A044671	0.011612	0.136714	3.667148	down	coding	NM_001143759	LRRC27	chr10	+
ASHG19A3A044676	0.038285	0.234392	2.301417	down	coding	NM_005539	INPP5A	chr10	+
ASHG19A3A044679	0.018632	0.170157	2.298812	down	coding	NM_001146310	C1orf86	chr1	-
ASHG19A3A044686	0.023735	0.190457	2.250355	down	coding	NM_152911	PAOX	chr10	+
ASHG19A3A044851	0.02789	0.203809	7.031557	down	coding	NM_145053	UBQLNL	chr11	-
ASHG19A3A044872	0.028891	0.208216	18.21071	down	coding	NM_145040	PRKCDBP	chr11	-
ASHG19A3A044921	0.001271	0.054115	9.585355	down	coding	NM_020645	NRIP3	chr11	-
ASHG19A3A044924	0.018605	0.17012	2.296214	down	coding	NM_015213	DENND5A	chr11	-

ASHG19A3A044947	0.000177	0.026643	6.305115	down	coding	NM_013253	DKK3	chr11	-
ASHG19A3A045029	0.008354	0.118817	3.132064	down	coding	NM_001143816	BDNF	chr11	-
ASHG19A3A045190	0.013089	0.143918	3.719923	down	coding	NM_004223	UBE2L6	chr11	-
ASHG19A3A045240	0.021353	0.181535	5.158592	down	coding	NM_016582	SLC15A3	chr11	-
ASHG19A3A045258	0.003254	0.082065	2.348484	down	coding	NM_021727	FADS3	chr11	-
ASHG19A3A045265	0.00195	0.064771	4.253802	down	coding	NM_001620	AHNAK	chr11	-
ASHG19A3A045339	0.040804	0.240602	4.757027	down	coding	NM_006795	EHD1	chr11	-
ASHG19A3A045371	0.001155	0.053318	58.04928	down	coding	NM_016938	EFEMP2	chr11	-
ASHG19A3A045382	0.000868	0.047926	715.2116	down	coding	NM_020404	CD248	chr11	-
ASHG19A3A045394	0.016865	0.162612	102.0806	down	coding	NM_003793	CTSF	chr11	-
ASHG19A3A045506	0.017007	0.163243	12.97556	down	coding	NM_207577	MAP6	chr11	-
ASHG19A3A045528	0.009284	0.123519	3.535499	down	coding	NM_001029859	KCTD21	chr11	-
ASHG19A3A045567	0.015128	0.154496	3.98639	down	coding	NM_012193	FZD4	chr11	-
ASHG19A3A045579	0.03813	0.234	20.73116	down	coding	NM_002867	RAB3B	chr1	-
ASHG19A3A045645	0.001526	0.058898	12.81139	down	coding	NM_033292	CASP1	chr11	-
ASHG19A3A045646	0.010446	0.130193	33.6623	down	coding	NM_052889	CARD16	chr11	-
ASHG19A3A045776	0.028291	0.205706	18.69746	down	coding	NM_006500	MCAM	chr11	-
ASHG19A3A045780	0.010636	0.131368	9.317824	down	coding	NM_015645	C1QTNF5	chr11	-
ASHG19A3A045845	0.000161	0.026643	6.092506	down	coding	NM_022549	FEZ1	chr11	-
ASHG19A3A046024	0.028851	0.208007	2.463245	down	coding	NM_003156	STIM1	chr11	+
ASHG19A3A046069	7.08E-05	0.022087	35.64395	down	coding	NM_006074	TRIM22	chr11	+
ASHG19A3A046087	0.000186	0.027342	14.50557	down	coding	NM_000543	SMPD1	chr11	+
ASHG19A3A046136	0.027806	0.203809	5.459568	down	coding	NM_001124	ADM	chr11	+
ASHG19A3A046159	0.00023	0.029723	3.703791	down	coding	NM_018222	PARVA	chr11	+
ASHG19A3A046179	0.005306	0.09884	2.538053	down	coding	NM_005013	NUCB2	chr11	+
ASHG19A3A046309	0.046024	0.255048	2.660402	down	coding	NM_003713	PPAP2B	chr1	-
ASHG19A3A046349	0.00188	0.063466	3.821902	down	coding	NM_001128225	SLC39A13	chr11	+
ASHG19A3A046491	0.0102	0.128875	3.556099	down	coding	NM_004265	FADS2	chr11	+
ASHG19A3A046569	0.004673	0.093229	3.493907	down	coding	NM_006244	PPP2R5B	chr11	+
ASHG19A3A046718	0.006265	0.105194	6.068674	down	coding	NM_000804	FOLR3	chr11	+
ASHG19A3A046732	0.030497	0.212948	2.697763	down	coding	NM_002564	P2RY2	chr11	+
ASHG19A3A046770	0.003541	0.083557	3.661512	down	coding	NM_001235	SERPINH1	chr11	+
ASHG19A3A046811	0.005434	0.099637	2.554982	down	coding	NM_182603	ANKRD42	chr11	+

ASHG19A3A046828	0.020923	0.179763	12.36944	down	coding	NM_007173	PRSS23	chr11	+
ASHG19A3A046911	0.004585	0.093019	2.009219	down	coding	NM_015139	SLC35D1	chr1	-
ASHG19A3A046937	6.32E-06	0.009072	68.44048	down	coding	NM_178834	LAYN	chr11	+
ASHG19A3A046962	0.011322	0.135345	2.024838	down	coding	NM_024911	WLS	chr1	-
ASHG19A3A046992	0.025016	0.194589	2.533382	down	coding	NM_001040455	SIDT2	chr11	+
ASHG19A3A047043	0.013069	0.143918	3.817527	down	coding	NM_178507	OAF	chr11	+
ASHG19A3A047221	0.049673	0.26395	2.648783	down	coding	NM_001065	TNFRSF1A	chr12	-
ASHG19A3A047232	0.007035	0.111447	2.242982	down	coding	NM_001039670	IFFO1	chr12	-
ASHG19A3A047256	0.001137	0.053195	6.944378	down	coding	NM_001733	C1R	chr12	-
ASHG19A3A047323	0.006681	0.108511	2.735065	down	coding	NM_007244	PRR4	chr12	-
ASHG19A3A047338	0.000322	0.032699	7.240738	down	coding	NM_002723	PRB4	chr12	-
ASHG19A3A047351	0.010777	0.132128	2.25563	down	coding	NM_015987	HEBP1	chr12	-
ASHG19A3A047530	0.01689	0.162612	2.843099	down	coding	NM_024686	TLL7	chr1	-
ASHG19A3A047558	0.00251	0.071789	17.59148	down	coding	NM_006009	TUBA1A	chr12	-
ASHG19A3A047585	0.005945	0.103084	2.605793	down	coding	NM_004388	CTBS	chr1	-
ASHG19A3A047635	0.01564	0.156921	2.483201	down	coding	NM_006301	MAP3K12	chr12	-
ASHG19A3A047660	0.003374	0.083054	32.81092	down	coding	NM_002205	ITGA5	chr12	-
ASHG19A3A047676	0.001003	0.051205	3.127209	down	coding	NM_001040034	CD63	chr12	-
ASHG19A3A047681	0.00056	0.039779	6.902719	down	coding	NM_002429	MMP19	chr12	-
ASHG19A3A047740	0.016086	0.158683	2.614929	down	coding	NM_005730	CTDSP2	chr12	-
ASHG19A3A047766	0.014419	0.151849	2.485784	down	coding	NM_002076	GNS	chr12	-
ASHG19A3A047884	0.000205	0.028229	22.29165	down	coding	NM_001920	DCN	chr12	-
ASHG19A3A047911	0.024184	0.19176	8.993002	down	coding	NM_021229	NTN4	chr12	-
ASHG19A3A047915	0.023531	0.189657	2.951449	down	coding	NM_002595	CDK17	chr12	-
ASHG19A3A047933	0.004593	0.093019	2.045078	down	coding	NM_015054	UHRF1BP1L	chr12	-
ASHG19A3A047942	0.001219	0.054115	18.22883	down	coding	NM_018284	GBP3	chr1	-
ASHG19A3A047965	0.01412	0.150369	2.300149	down	coding	NM_018171	APPL2	chr12	-
ASHG19A3A047967	0.008283	0.11853	2.53755	down	coding	NM_006825	CKAP4	chr12	-
ASHG19A3A047984	0.017553	0.165417	54.34435	down	coding	NM_181724	TMEM119	chr12	-
ASHG19A3A047995	0.002947	0.079182	3.223822	down	coding	NM_031954	KCTD10	chr12	-
ASHG19A3A048000	0.003975	0.087853	2.092169	down	coding	NM_016433	GLTP	chr12	-
ASHG19A3A048017	0.043805	0.249089	2.190144	down	coding	NM_002973	ATXN2	chr12	-
ASHG19A3A048074	8.04E-06	0.010094	6.259546	down	coding	NM_016281	TAOK3	chr12	-

ASHG19A3A048109	0.016846	0.162612	3.530563	down	coding	NM_172215	CAMKK2	chr12	-
ASHG19A3A048145	0.001563	0.059794	8.580439	down	coding	NM_025140	CCDC92	chr12	-
ASHG19A3A048232	0.001525	0.058898	4.34948	down	coding	NM_001006605	FAM69A	chr1	-
ASHG19A3A048257	0.001591	0.059794	12.46401	down	coding	NM_001102654	NTF3	chr12	+
ASHG19A3A048307	0.00347	0.083068	4.445485	down	coding	NM_201442	C1S	chr12	+
ASHG19A3A048365	0.005618	0.100699	7.895562	down	coding	NM_031412	GABARAPL1	chr12	+
ASHG19A3A048543	0.03114	0.214234	9.412302	down	coding	NM_001013635	C12orf68	chr12	+
ASHG19A3A048551	0.01891	0.171542	2.069129	down	coding	NM_000725	CACNB3	chr12	+
ASHG19A3A048572	3.4E-06	0.007121	2.293371	down	coding	NM_001031698	PRPF40B	chr12	+
ASHG19A3A048598	0.003137	0.081034	9.439014	down	coding	NM_000110	DPYD	chr1	-
ASHG19A3A048613	0.038134	0.234	8.348493	down	coding	NM_181711	GRASP	chr12	+
ASHG19A3A048645	0.002282	0.069865	3.274397	down	coding	NM_138473	SP1	chr12	+
ASHG19A3A048739	0.015421	0.15563	2.10723	down	coding	NM_002332	LRP1	chr12	+
ASHG19A3A048794	0.009389	0.12425	2.138952	down	coding	NM_020762	SRGAP1	chr12	+
ASHG19A3A048805	0.001259	0.054115	17.5001	down	coding	NM_001031679	MSRB3	chr12	+
ASHG19A3A048832	0.030099	0.211898	2.268722	down	coding	NM_002392	MDM2	chr12	+
ASHG19A3A048866	0.000697	0.044208	140.2249	down	coding	NM_006851	GLIPR1	chr12	+
ASHG19A3A048984	0.011941	0.138464	5.153988	down	coding	NM_001008394	EID3	chr12	+
ASHG19A3A049006	0.000728	0.044771	5.87492	down	coding	NM_152261	C12orf23	chr12	+
ASHG19A3A049014	0.008259	0.118461	4.991582	down	coding	NM_007076	FICD	chr12	+
ASHG19A3A049046	0.02764	0.203009	2.628468	down	coding	NM_005475	SH2B3	chr12	+
ASHG19A3A049115	0.005644	0.100942	3.492489	down	coding	NM_001037494	DYNLL1	chr12	+
ASHG19A3A049137	0.039133	0.236631	2.474447	down	coding	NM_002813	PSMD9	chr12	+
ASHG19A3A049140	0.011112	0.133887	4.400651	down	coding	NM_144668	WDR66	chr12	+
ASHG19A3A049204	0.026391	0.198669	2.177038	down	coding	NM_002959	SORT1	chr1	-
ASHG19A3A049279	0.009998	0.127458	9.932413	down	coding	NM_000849	GSTM3	chr1	-
ASHG19A3A049379	0.028728	0.20736	5.710613	down	coding	NM_004696	SLC16A4	chr1	-
ASHG19A3A049418	0.016385	0.159873	5.884577	down	coding	NM_178006	STARD13	chr13	-
ASHG19A3A049469	0.000156	0.026643	13.12496	down	coding	NM_005780	LHFP	chr13	-
ASHG19A3A049514	0.025542	0.196375	2.273028	down	coding	NM_183422	TSC22D1	chr13	-
ASHG19A3A049552	0.013009	0.143683	2.688115	down	coding	NM_001268	RCBTB2	chr13	-
ASHG19A3A049824	0.004287	0.090264	9.774613	down	coding	NM_001080396	FAM155A	chr13	-
ASHG19A3A049875	0.024098	0.191703	4.994802	down	coding	NM_000820	GAS6	chr13	-

ASHG19A3A050489	0.003045	0.080155	5.404711	down	coding	NM_181864	ACOT7	chr1	-
ASHG19A3A050517	0.013937	0.149462	2.484791	down	coding	NM_017905	TMCO3	chr13	+
ASHG19A3A050578	0.010974	0.133155	19.57444	down	coding	NM_005407	SALL2	chr14	-
ASHG19A3A050580	0.037855	0.233426	2.27053	down	coding	NM_001005466	OR10G2	chr14	-
ASHG19A3A050698	0.018763	0.170791	8.528029	down	coding	NM_138638	CFL2	chr14	-
ASHG19A3A050723	0.022549	0.186	4.961623	down	coding	NM_006364	SEC23A	chr14	-
ASHG19A3A050836	0.002956	0.079219	3.436699	down	coding	NM_022571	GPR135	chr14	-
ASHG19A3A050837	0.006768	0.109302	5.848105	down	coding	NM_144581	C14orf149	chr14	-
ASHG19A3A050893	0.007136	0.11153	2.445293	down	coding	NM_015994	ATP6V1D	chr14	-
ASHG19A3A050939	0.004607	0.093019	9.771679	down	coding	NM_012074	DPF3	chr14	-
ASHG19A3A050953	4.92E-05	0.019284	2.556939	down	coding	NM_006029	PNMA1	chr14	-
ASHG19A3A050959	0.000768	0.045376	2.947979	down	coding	NM_152445	FAM161B	chr14	-
ASHG19A3A050969	0.010234	0.128875	8.195278	down	coding	NM_000428	LTBP2	chr14	-
ASHG19A3A050984	0.005973	0.103105	3.048012	down	coding	NM_006827	TMED10	chr14	-
ASHG19A3A051028	0.000278	0.031138	2.179028	down	coding	NM_005065	SEL1L	chr14	-
ASHG19A3A051063	0.021814	0.182857	2.233343	down	coding	NM_001002811	PDE4DIP	chr1	-
ASHG19A3A051066	0.010517	0.130747	17.05519	down	coding	NM_001002810	PDE4DIP	chr1	-
ASHG19A3A051069	0.000399	0.034548	7.749404	down	coding	NM_006329	FBLN5	chr14	-
ASHG19A3A051070	0.008125	0.117704	2.339068	down	coding	NM_004239	TRIP11	chr14	-
ASHG19A3A051091	0.000614	0.041451	3.263726	down	coding	NM_032036	IFI27L2	chr14	-
ASHG19A3A051188	0.005904	0.103057	18.15518	down	coding	NM_138420	AHNAK2	chr14	-
ASHG19A3A051263	0.043314	0.24778	2.105618	down	coding	NM_014828	TOX4	chr14	+
ASHG19A3A051286	0.005607	0.100699	4.6301	down	coding	NM_014045	LRP10	chr14	+
ASHG19A3A051291	0.032907	0.21918	2.53908	down	coding	NM_017924	C14orf119	chr14	+
ASHG19A3A051293	0.020207	0.176751	2.046807	down	coding	NM_004050	BCL2L2	chr14	+
ASHG19A3A051353	0.003891	0.086787	2.618133	down	coding	NM_007077	AP4S1	chr14	+
ASHG19A3A051396	0.008231	0.118382	2.7266	down	coding	NM_001017923	C14orf28	chr14	+
ASHG19A3A051405	0.03153	0.214448	2.269678	down	coding	NM_172193	KLHDC1	chr14	+
ASHG19A3A051428	0.004909	0.094909	29.47624	down	coding	NM_000956	PTGER2	chr14	+
ASHG19A3A051467	0.008767	0.12054	2.158711	down	coding	NM_018477	ACTR10	chr14	+
ASHG19A3A051523	0.036033	0.228089	3.752528	down	coding	NM_014950	ZBTB1	chr14	+
ASHG19A3A051583	0.00886	0.121169	2.436949	down	coding	NM_000021	PSEN1	chr14	+
ASHG19A3A051621	0.002664	0.074104	3.589258	down	coding	NM_001024599	HIST2H2BF	chr1	-

ASHG19A3A051653	0.024677	0.193389	4.431399	down	coding	NM_003528	HIST2H2BE	chr1	-
ASHG19A3A051748	0.001891	0.063466	22.99529	down	coding	NM_000710	BDKRB1	chr14	+
ASHG19A3A051814	0.044538	0.251142	2.992196	down	coding	NM_001172631	TECPR2	chr14	+
ASHG19A3A051835	0.013069	0.143918	2.254791	down	coding	NM_005552	KLC1	chr14	+
ASHG19A3A051836	0.002403	0.070943	2.658431	down	coding	NM_001130107	KLC1	chr14	+
ASHG19A3A051871	0.022572	0.186	7.187081	down	coding	NM_000396	CTSK	chr1	-
ASHG19A3A051927	0.032375	0.216983	2.149348	down	coding	NM_000814	GABRB3	chr15	-
ASHG19A3A051965	0.040933	0.24078	2.13723	down	coding	NM_020371	AVEN	chr15	-
ASHG19A3A052110	0.048409	0.261704	2.723793	down	coding	NM_013309	SLC30A4	chr15	-
ASHG19A3A052122	0.005362	0.099072	3.288277	down	coding	NM_203349	SHC4	chr15	-
ASHG19A3A052136	0.00165	0.060728	3.182771	down	coding	NM_032802	SPPL2A	chr15	-
ASHG19A3A052142	0.005543	0.100597	2.254655	down	coding	NM_153374	LYSMD2	chr15	-
ASHG19A3A052240	0.005581	0.100699	3.857439	down	coding	NM_015920	RPS27L	chr15	-
ASHG19A3A052263	0.005408	0.09955	2.100691	down	coding	NM_002537	OAZ2	chr15	-
ASHG19A3A052368	0.004352	0.090758	4.342473	down	coding	NM_004809	STOML1	chr15	-
ASHG19A3A052390	0.017006	0.163243	2.247259	down	coding	NM_005697	SCAMP2	chr15	-
ASHG19A3A052410	0.009415	0.124339	7.672011	down	coding	NM_001897	CSPG4	chr15	-
ASHG19A3A052527	0.027196	0.201559	3.673299	down	coding	NM_178232	HAPLN3	chr15	-
ASHG19A3A052528	0.007056	0.111447	6.848945	down	coding	NM_005928	MFGE8	chr15	-
ASHG19A3A052728	0.011889	0.138293	9.322248	down	coding	NM_001144757	SCG5	chr15	+
ASHG19A3A052832	3.26E-05	0.016153	71.92554	down	coding	NM_002373	MAP1A	chr15	+
ASHG19A3A052865	0.033187	0.220296	3.59329	down	coding	NM_021199	SQRDL	chr15	+
ASHG19A3A052882	0.038798	0.23597	2.857623	down	coding	NM_014335	EID1	chr15	+
ASHG19A3A052896	0.029258	0.209498	2.999817	down	coding	NM_007112	THBS3	chr1	-
ASHG19A3A052962	0.007066	0.111447	30.81474	down	coding	NM_001018020	TPM1	chr15	+
ASHG19A3A052963	0.00642	0.106091	92.64877	down	coding	NM_001018006	TPM1	chr15	+
ASHG19A3A052965	0.031078	0.213987	8.39183	down	coding	NM_001018008	TPM1	chr15	+
ASHG19A3A052966	0.004258	0.089983	5.384413	down	coding	NM_171846	LACTB	chr15	+
ASHG19A3A052967	0.038562	0.235165	2.944278	down	coding	NM_032857	LACTB	chr15	+
ASHG19A3A052968	0.013084	0.143918	6.087493	down	coding	NM_016530	RAB8B	chr15	+
ASHG19A3A052969	0.005784	0.101967	6.504138	down	coding	NM_031301	APH1B	chr15	+
ASHG19A3A052978	0.049654	0.26395	3.0644	down	coding	NM_025201	PLEKHO2	chr15	+
ASHG19A3A052982	0.005324	0.09898	2.08936	down	coding	NM_001101362	KBTBD13	chr15	+

ASHG19A3A053051	0.005598	0.100699	2.296527	down	coding	NM_001172624	NEO1	chr15	+
ASHG19A3A053058	0.010307	0.12931	10.00434	down	coding	NM_005576	LOXL1	chr15	+
ASHG19A3A053061	0.022307	0.184784	2.400374	down	coding	NM_033249	PML	chr15	+
ASHG19A3A053080	0.002006	0.065872	2.745733	down	coding	NM_001178111	SCAMP5	chr15	+
ASHG19A3A053179	0.002569	0.072555	6.849242	down	coding	NM_023003	TM6SF1	chr15	+
ASHG19A3A053214	0.007503	0.114274	3.774065	down	coding	NM_006912	RIT1	chr1	-
ASHG19A3A053245	0.009623	0.125668	2.451923	down	coding	NM_002569	FURIN	chr15	+
ASHG19A3A053268	0.032001	0.2164	3.517365	down	coding	NM_001042572	CHD2	chr15	+
ASHG19A3A053286	0.038996	0.23636	3.5775	down	coding	NM_183376	ARRDC4	chr15	+
ASHG19A3A053448	0.040577	0.239846	4.085941	down	coding	NM_013399	C16orf5	chr16	-
ASHG19A3A053481	0.026968	0.201258	4.409708	down	coding	NM_003745	SOCS1	chr16	-
ASHG19A3A053510	0.005861	0.10292	2.675121	down	coding	NM_173474	NTAN1	chr16	-
ASHG19A3A053654	0.023469	0.189502	2.136877	down	coding	NM_002746	MAPK3	chr16	-
ASHG19A3A053731	1.93E-05	0.016153	2.357979	down	coding	NM_030790	ITFG1	chr16	-
ASHG19A3A053814	0.004001	0.087853	5.773508	down	coding	NM_001797	CDH11	chr16	-
ASHG19A3A053825	0.04846	0.261704	7.410132	down	coding	NM_001128850	RRAD	chr16	-
ASHG19A3A053829	0.007937	0.117056	5.374662	down	coding	NM_033309	B3GNT9	chr16	-
ASHG19A3A054011	0.048592	0.261823	4.466316	down	coding	NM_020947	KIAA1609	chr16	-
ASHG19A3A054112	0.021859	0.182956	4.466015	down	coding	NM_020664	DECR2	chr16	+
ASHG19A3A054117	0.048546	0.261739	6.919709	down	coding	NM_176677	NHLRC4	chr16	+
ASHG19A3A054163	0.007845	0.116921	25.25138	down	coding	NM_024600	TMEM204	chr16	+
ASHG19A3A054189	0.000531	0.038338	2.081857	down	coding	NM_001098398	COPA	chr1	-
ASHG19A3A054214	0.000155	0.026643	5.208822	down	coding	NM_032296	FLYWCH1	chr16	+
ASHG19A3A054229	0.018798	0.170791	5.658008	down	coding	NM_153028	ZNF75A	chr16	+
ASHG19A3A054244	0.003897	0.086787	12.87522	down	coding	NM_138440	VASN	chr16	+
ASHG19A3A054272	0.02427	0.19199	2.003344	down	coding	NM_024109	C16orf68	chr16	+
ASHG19A3A054280	0.039971	0.238412	2.188968	down	coding	NM_014117	C16orf72	chr16	+
ASHG19A3A054318	0.000526	0.038338	6.165914	down	coding	NM_033201	C16orf45	chr16	+
ASHG19A3A054346	0.003548	0.083557	17.67795	down	coding	NM_020314	C16orf62	chr16	+
ASHG19A3A054419	0.02275	0.18676	3.85193	down	coding	NM_000418	IL4R	chr16	+
ASHG19A3A054454	0.005531	0.100596	4.379931	down	coding	NM_145239	PRRT2	chr16	+
ASHG19A3A054459	0.049987	0.264874	2.098245	down	coding	NM_001083613	TMEM219	chr16	+
ASHG19A3A054497	0.004199	0.089158	9.029481	down	coding	NM_001142544	CTF1	chr16	+

ASHG19A3A054504	0.00562	0.100699	2.063069	down	coding	NM_004604	STX4	chr16	+
ASHG19A3A054524	0.000509	0.03796	7.961065	down	coding	NM_001164719	TGFB1I1	chr16	+
ASHG19A3A054553	0.002271	0.069865	2.066056	down	coding	NM_053282	SH2D1B	chr1	-
ASHG19A3A054574	0.048962	0.262507	3.525161	down	coding	NM_001114	ADCY7	chr16	+
ASHG19A3A054580	0.042714	0.246066	6.564141	down	coding	NM_003617	RGS5	chr1	-
ASHG19A3A054615	0.019472	0.174349	3.344288	down	coding	NM_005953	MT2A	chr16	+
ASHG19A3A054625	0.002249	0.069808	11.06681	down	coding	NM_005947	MT1B	chr16	+
ASHG19A3A054813	0.01516	0.154742	2.862274	down	coding	NM_020927	VAT1L	chr16	+
ASHG19A3A054860	0.006402	0.106091	8.169175	down	coding	NM_014732	KIAA0513	chr16	+
ASHG19A3A054874	0.007923	0.117056	145.9361	down	coding	NM_001451	FOXF1	chr16	+
ASHG19A3A054878	0.034834	0.224963	13.45468	down	coding	NM_005250	FOXL1	chr16	+
ASHG19A3A054963	0.031857	0.21579	6.182809	down	coding	NM_182705	FAM101B	chr17	-
ASHG19A3H0000576	0.01585	0.157775	2.948257	down	coding	NM_002145_Exon2+	NM_002145	chr17	+
CUST_18_PI418767722	0.006061	0.103718	3.982855	down	coding	NM_000754	COMT	chr22	+

Supplementary Table 1-3. The list of lncRNAs upregulated in CRC.

ProbeName	P-value and FDR		Fold change and Regulation			seqname	GeneSymbol	chrom	strand
	p-value	FDR	FCAbsolute	regulation	type				
ASHG19A3A000029	0.001638	0.066029	2.819092	up	noncoding	AY927440		chr22	+
ASHG19A3A000029	0.001638	0.066029	2.819092	up	noncoding	AY927440		chr22	+
ASHG19A3A000029	0.001638	0.066029	2.819092	up	noncoding	AY927440		chr22	+
ASHG19A3A000029	0.001638	0.066029	2.819092	up	noncoding	AY927440		chr22	+
ASHG19A3A000029	0.001638	0.066029	2.819092	up	noncoding	AY927440		chr22	+
ASHG19A3A000037	0.038338	0.229658	2.21816	up	noncoding	BC040186		chr10	-
ASHG19A3A000037	0.038338	0.229658	2.21816	up	noncoding	BC040186		chr10	-
ASHG19A3A000077	0.045394	0.244109	2.01564	up	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.045394	0.244109	2.01564	up	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.045394	0.244109	2.01564	up	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.045394	0.244109	2.01564	up	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.045394	0.244109	2.01564	up	noncoding	ENST00000398804	RP11-184I16.2	chr1	-

ASHG19A3A000077	0.045394	0.244109	2.01564	up	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.045394	0.244109	2.01564	up	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.045394	0.244109	2.01564	up	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.045394	0.244109	2.01564	up	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.045394	0.244109	2.01564	up	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.045394	0.244109	2.01564	up	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000081	0.047359	0.248703	2.109999	up	noncoding	ENST00000400430	RP11-350A18.1	chr13	-
ASHG19A3A000095	0.009411	0.126884	2.634995	up	noncoding	ENST00000412855	RP11-396C23.2	chr1	+
ASHG19A3A000107	0.047255	0.248703	2.117576	up	noncoding	ENST00000414677	RP5-828H9.3	chr20	-
ASHG19A3A000234	0.03905	0.230532	3.594741	up	noncoding	ENST00000435429	RP3-470L22.1	chr6	-
ASHG19A3A000302	0.005556	0.102884	2.148569	up	noncoding	ENST00000447511	ANTXRL	chr10	+
ASHG19A3A000356	6.03E-05	0.022687	3.376662	up	noncoding	ENST00000454647	C18orf20	chr18	-
ASHG19A3A000359	0.029749	0.205052	5.934716	up	noncoding	ENST00000455088	AL589743.1	chr14	+
ASHG19A3A000370	0.007257	0.113881	2.400172	up	noncoding	ENST00000457758	RP11-152N13.5	chr10	+
ASHG19A3A000370	0.007257	0.113881	2.400172	up	noncoding	ENST00000457758	RP11-152N13.5	chr10	+
ASHG19A3A000396	0.005738	0.104342	2.993695	up	noncoding	ENST00000486492	ZNF767	chr7	-
ASHG19A3A000401	0.003612	0.087271	7.959156	up	noncoding	ENST00000488846	RP11-305M3.3	chr7	+
ASHG19A3A000402	0.009343	0.126454	2.027554	up	noncoding	ENST00000488861	RP11-460N16.1	chr3	+
ASHG19A3A000456	0.000427	0.044424	2.061771	up	noncoding	ENST00000506049	AC005281.1	chr7	-
ASHG19A3A000456	0.000427	0.044424	2.061771	up	noncoding	ENST00000506049	AC005281.1	chr7	-
ASHG19A3A000529	0.040785	0.235508	2.06151	up	noncoding	M25803		chr8	+
ASHG19A3A007120	0.03606	0.223195	3.258807	up	noncoding	NR_003098	SNHG1	chr11	-
ASHG19A3A007120	0.03606	0.223195	3.258807	up	noncoding	NR_003098	SNHG1	chr11	-
ASHG19A3A007120	0.03606	0.223195	3.258807	up	noncoding	NR_003098	SNHG1	chr11	-
ASHG19A3A007152	0.006526	0.110509	2.105114	up	noncoding	uc002xul.3	C20orf199	chr20	+
ASHG19A3A007154	0.000273	0.03723	2.103685	up	noncoding	NR_003606	C20orf199	chr20	+
ASHG19A3A007162	0.000373	0.042176	3.703718	up	noncoding	NR_003697	C7orf40	chr7	-
ASHG19A3A007178	0.012235	0.141026	2.394465	up	noncoding	NR_015366	LOC388796	chr20	-
ASHG19A3A007190	0.001105	0.057823	3.324325	up	noncoding	NR_015429	LOC283050	chr10	-
ASHG19A3A007206	0.038622	0.23009	2.531431	up	noncoding	NR_023360	CHRAC1	chr8	+
ASHG19A3A007339	0.003105	0.082215	2.772343	up	noncoding	NR_024543	SNHG7	chr9	-
ASHG19A3A007409	0.001004	0.057323	12.58456	up	noncoding	NR_026762	C10orf75	chr10	+
ASHG19A3A007411	0.012222	0.141008	2.572408	up	noncoding	NR_026777	ZNF37B	chr10	-

ASHG19A3A007442	0.043107	0.238904	2.57141	up	noncoding	NR_026931	ALKBH2	chr12	-
ASHG19A3A007442	0.043107	0.238904	2.57141	up	noncoding	NR_026931	ALKBH2	chr12	-
ASHG19A3A007442	0.043107	0.238904	2.57141	up	noncoding	NR_026931	ALKBH2	chr12	-
ASHG19A3A007442	0.043107	0.238904	2.57141	up	noncoding	NR_026931	ALKBH2	chr12	-
ASHG19A3A007442	0.043107	0.238904	2.57141	up	noncoding	NR_026931	ALKBH2	chr12	-
ASHG19A3A007447	0.028816	0.202357	2.056573	up	noncoding	NR_026945	LOC257358	chr5	+
ASHG19A3A007493	0.002379	0.074687	4.183507	up	noncoding	NR_027244	LOC151009	chr2	-
ASHG19A3A007504	0.000239	0.035463	10.04693	up	noncoding	NR_027349	MIR17HG	chr13	+
ASHG19A3A007520	0.046056	0.245558	3.051035	up	noncoding	NR_027405	MTHFD2	chr2	+
ASHG19A3A007605	0.02708	0.196393	6.52376	up	noncoding	NR_027996	RDM1	chr17	-
ASHG19A3A007605	0.02708	0.196393	6.52376	up	noncoding	NR_027996	RDM1	chr17	-
ASHG19A3A007605	0.02708	0.196393	6.52376	up	noncoding	NR_027996	RDM1	chr17	-
ASHG19A3A007605	0.02708	0.196393	6.52376	up	noncoding	NR_027996	RDM1	chr17	-
ASHG19A3A007605	0.02708	0.196393	6.52376	up	noncoding	NR_027996	RDM1	chr17	-
ASHG19A3A007605	0.02708	0.196393	6.52376	up	noncoding	NR_027996	RDM1	chr17	-
ASHG19A3A007605	0.02708	0.196393	6.52376	up	noncoding	NR_027996	RDM1	chr17	-
ASHG19A3A007605	0.02708	0.196393	6.52376	up	noncoding	NR_027996	RDM1	chr17	-
ASHG19A3A007610	0.025981	0.193525	2.139541	up	noncoding	NR_028027	CREBZF	chr11	-
ASHG19A3A007730	0.049928	0.252541	3.599188	up	noncoding	NR_033196	ZFAND1	chr8	-
ASHG19A3A007730	0.049928	0.252541	3.599188	up	noncoding	NR_033196	ZFAND1	chr8	-
ASHG19A3A007730	0.049928	0.252541	3.599188	up	noncoding	NR_033196	ZFAND1	chr8	-
ASHG19A3A007731	0.00043	0.044424	5.836474	up	noncoding	NR_033193	ZFAND1	chr8	-
ASHG19A3A007731	0.00043	0.044424	5.836474	up	noncoding	NR_033193	ZFAND1	chr8	-
ASHG19A3A007731	0.00043	0.044424	5.836474	up	noncoding	NR_033193	ZFAND1	chr8	-
ASHG19A3A007755	0.000179	0.034555	2.226191	up	noncoding	NR_033308	RAB17	chr2	-
ASHG19A3A007857	0.001941	0.070266	5.935454	up	noncoding	U58658		chr17	-
ASHG19A3A007857	0.001941	0.070266	5.935454	up	noncoding	U58658		chr17	-
ASHG19A3A007857	0.001941	0.070266	5.935454	up	noncoding	U58658		chr17	-
ASHG19A3A007857	0.001941	0.070266	5.935454	up	noncoding	U58658		chr17	-
ASHG19A3A007857	0.001941	0.070266	5.935454	up	noncoding	U58658		chr17	-
ASHG19A3A007860	0.000349	0.041649	2.432845	up	noncoding	AK124743		chr17	-
ASHG19A3A007881	0.0001	0.030979	2.78921	up	noncoding	G42912		chr17	-
ASHG19A3A007881	0.0001	0.030979	2.78921	up	noncoding	G42912		chr17	-

ASHG19A3A008573	0.000509	0.045915	2.211158	up	noncoding	ENST00000513378	RP11-94C24.11	chr17	-
ASHG19A3A008643	0.0008	0.053868	2.413623	up	noncoding	CR616097		chr17	-
ASHG19A3A008672	0.012209	0.141008	2.362539	up	noncoding	HIT000332083		chr17	-
ASHG19A3A008687	0.001223	0.061238	2.407547	up	noncoding	ENST00000437254	AC046185.2	chr17	-
ASHG19A3A008701	0.012883	0.143422	2.823096	up	noncoding	CR597908		chr17	-
ASHG19A3A008701	0.012883	0.143422	2.823096	up	noncoding	CR597908		chr17	-
ASHG19A3A008701	0.012883	0.143422	2.823096	up	noncoding	CR597908		chr17	-
ASHG19A3A008701	0.012883	0.143422	2.823096	up	noncoding	CR597908		chr17	-
ASHG19A3A008840	0.00014	0.031585	2.121152	up	noncoding	G43544		chr17	-
ASHG19A3A008987	0.009027	0.125074	3.277005	up	noncoding	ENST00000497885	RP11-314A20.2	chr17	+
ASHG19A3A009065	0.023854	0.185695	3.176047	up	noncoding	NR_027462	SHBG	chr17	+
ASHG19A3A009065	0.023854	0.185695	3.176047	up	noncoding	NR_027462	SHBG	chr17	+
ASHG19A3A009065	0.023854	0.185695	3.176047	up	noncoding	NR_027462	SHBG	chr17	+
ASHG19A3A009065	0.023854	0.185695	3.176047	up	noncoding	NR_027462	SHBG	chr17	+
ASHG19A3A009065	0.023854	0.185695	3.176047	up	noncoding	NR_027462	SHBG	chr17	+
ASHG19A3A009088	0.008913	0.124411	2.742307	up	noncoding	AK123655		chr1	-
ASHG19A3A009088	0.008913	0.124411	2.742307	up	noncoding	AK123655		chr1	-
ASHG19A3A009111	0.002607	0.076804	3.295313	up	noncoding	AK098731		chr17	+
ASHG19A3A009198	0.032796	0.212892	2.130757	up	noncoding	ENST00000418183	AC127537.6	chr17	+
ASHG19A3A009234	0.030009	0.205799	4.458605	up	noncoding	ENST00000427400	AC025627.2	chr17	+
ASHG19A3A009263	0.01874	0.168032	4.110047	up	noncoding	ENST00000455244	SCDP1	chr17	+
ASHG19A3A009440	0.009263	0.126124	2.658236	up	noncoding	AF090924		chr17	+
ASHG19A3A009440	0.009263	0.126124	2.658236	up	noncoding	AF090924		chr17	+
ASHG19A3A009440	0.009263	0.126124	2.658236	up	noncoding	AF090924		chr17	+
ASHG19A3A009440	0.009263	0.126124	2.658236	up	noncoding	AF090924		chr17	+
ASHG19A3A009440	0.009263	0.126124	2.658236	up	noncoding	AF090924		chr17	+
ASHG19A3A009440	0.009263	0.126124	2.658236	up	noncoding	AF090924		chr17	+
ASHG19A3A009440	0.009263	0.126124	2.658236	up	noncoding	AF090924		chr17	+
ASHG19A3A009539	0.009961	0.129916	2.131233	up	noncoding	ENST00000479088	CTD-3193K9.1	chr17	+
ASHG19A3A009609	0.048209	0.250288	2.738912	up	noncoding	NR_027295	MGC57346	chr17	+
ASHG19A3A009611	0.00772	0.116643	4.509326	up	noncoding	NR_026905	C17orf69	chr17	+
ASHG19A3A009612	0.046879	0.248431	2.921857	up	noncoding	NR_026906	C17orf69	chr17	+
ASHG19A3A009622	0.008775	0.123403	2.459951	up	noncoding	BC018467		chr17	+

ASHG19A3A009725	0.015944	0.155608	2.361512	up	noncoding	uc002ist.1	AK090674	chr17	+
ASHG19A3A009824	0.004409	0.094569	3.90324	up	noncoding	ENST00000443294	RP11-480I12.5	chr1	-
ASHG19A3A009826	0.000505	0.045915	2.174077	up	noncoding	ENST00000463377	TCAM1	chr17	+
ASHG19A3A009922	0.041222	0.236689	2.058991	up	noncoding	ENST00000455685	AC111186.1	chr17	+
ASHG19A3A009980	0.032291	0.21224	4.036443	up	noncoding	NR_003013	SCARNA16	chr17	+
ASHG19A3A009980	0.032291	0.21224	4.036443	up	noncoding	NR_003013	SCARNA16	chr17	+
ASHG19A3A009981	0.010481	0.132357	2.874523	up	noncoding	ENST00000366365	C17orf86	chr17	+
ASHG19A3A009981	0.010481	0.132357	2.874523	up	noncoding	ENST00000366365	C17orf86	chr17	+
ASHG19A3A009982	0.007946	0.118775	2.888431	up	noncoding	NR_027058	C17orf86	chr17	+
ASHG19A3A009982	0.007946	0.118775	2.888431	up	noncoding	NR_027058	C17orf86	chr17	+
ASHG19A3A010010	0.002292	0.074504	2.482591	up	noncoding	NR_027083	AFMID	chr17	+
ASHG19A3A010010	0.002292	0.074504	2.482591	up	noncoding	NR_027083	AFMID	chr17	+
ASHG19A3A010010	0.002292	0.074504	2.482591	up	noncoding	NR_027083	AFMID	chr17	+
ASHG19A3A010069	0.049541	0.252234	2.309988	up	noncoding	NR_015454	LOC92659	chr17	+
ASHG19A3A010086	0.027955	0.199722	2.993757	up	noncoding	NR_027022	LOC127841	chr1	-
ASHG19A3A010114	0.043123	0.238904	2.426348	up	noncoding	HIT000089567		chr18	-
ASHG19A3A010116	0.003089	0.082215	2.716603	up	noncoding	NR_026659	LOC727896	chr18	-
ASHG19A3A010307	0.011121	0.135071	2.907499	up	noncoding	BX640937		chr18	-
ASHG19A3A010307	0.011121	0.135071	2.907499	up	noncoding	BX640937		chr18	-
ASHG19A3A010336	6.57E-05	0.022687	2.124053	up	noncoding	BC043263		chr18	-
ASHG19A3A010349	0.036863	0.225519	6.955436	up	noncoding	ENST00000398170	AC090377.3	chr18	-
ASHG19A3A010580	0.020509	0.174085	2.82828	up	noncoding	ENST00000485809	RP11-57G22.1	chr18	+
ASHG19A3A010640	0.007121	0.113542	3.51331	up	noncoding	AB027121		chr18	+
ASHG19A3A010696	0.012183	0.141008	4.330333	up	noncoding	ENST00000398175	AC090377.1	chr18	+
ASHG19A3A010765	0.003248	0.083681	3.794407	up	noncoding	AK055411		chr18	+
ASHG19A3A010847	0.000168	0.03366	3.033506	up	noncoding	uc002lvd.1	AX746733	chr19	-
ASHG19A3A010890	0.003845	0.089011	2.630356	up	noncoding	AK098628		chr19	-
ASHG19A3A010903	0.036097	0.223195	3.224466	up	noncoding	AK125589		chr19	-
ASHG19A3A010928	0.025116	0.191092	2.583952	up	noncoding	ENST00000356684	RP11-348H3.6	chr1	-
ASHG19A3A010932	0.014273	0.147962	4.23378	up	noncoding	NR_027285	LQK1	chr1	-
ASHG19A3A010947	0.00233	0.074687	3.031851	up	noncoding	ENST00000484151	RP11-554K11.1	chr1	-
ASHG19A3A010970	0.000409	0.044424	9.01022	up	noncoding	uc002mip.2	DKFZp761K0816	chr19	-
ASHG19A3A011177	0.004512	0.095403	2.635112	up	noncoding	ENST00000435424	AC005336.2	chr19	-

ASHG19A3A011180	0.022753	0.182545	2.214968	up	noncoding	AK056565		chr19	-
ASHG19A3A011180	0.022753	0.182545	2.214968	up	noncoding	AK056565		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011225	0.000205	0.034555	2.467201	up	noncoding	BX648739		chr19	-
ASHG19A3A011358	0.003393	0.084873	2.34581	up	noncoding	uc002oag.2	CR627053	chr19	-
ASHG19A3A011358	0.003393	0.084873	2.34581	up	noncoding	uc002oag.2	CR627053	chr19	-
ASHG19A3A011364	0.003096	0.082215	2.001698	up	noncoding	uc002obl.2	AL137752	chr19	-
ASHG19A3A011415	0.015398	0.153863	2.31204	up	noncoding	BC128427		chr19	-
ASHG19A3A011579	0.004426	0.094569	2.244757	up	noncoding	ENST00000415453	RP11-365O16.1	chr1	-
ASHG19A3A011709	0.045098	0.243678	2.069117	up	noncoding	ENST00000441809	CTA-520D8.2	chr1	-
ASHG19A3A011859	0.039147	0.230766	3.131876	up	noncoding	uc002qim.1	AL833150	chr19	-
ASHG19A3A011860	0.032448	0.212292	4.091875	up	noncoding	NR_027382	RDH13	chr19	-
ASHG19A3A011860	0.032448	0.212292	4.091875	up	noncoding	NR_027382	RDH13	chr19	-
ASHG19A3A011947	0.007816	0.117859	2.739245	up	noncoding	NR_027136	C1orf126	chr1	-
ASHG19A3A011947	0.007816	0.117859	2.739245	up	noncoding	NR_027136	C1orf126	chr1	-
ASHG19A3A011947	0.007816	0.117859	2.739245	up	noncoding	NR_027136	C1orf126	chr1	-

ASHG19A3A011989	0.00354	0.086063	2.663822	up	noncoding	ENST00000398858	AC011544.1	chr19	+
ASHG19A3A012089	0.002486	0.075264	3.163628	up	noncoding	ENST00000505358	AC004611.1	chr19	+
ASHG19A3A012184	0.003997	0.089784	3.039843	up	noncoding	AK127757		chr19	+
ASHG19A3A012338	0.011619	0.138062	30.72385	up	noncoding	NR_015379	UCA1	chr19	+
ASHG19A3A012339	0.028135	0.200153	3.788659	up	noncoding	ENST00000397381	UCA1	chr19	+
ASHG19A3A012413	0.031711	0.21046	2.004144	up	noncoding	HIT000329104		chr19	+
ASHG19A3A012413	0.031711	0.21046	2.004144	up	noncoding	HIT000329104		chr19	+
ASHG19A3A012413	0.031711	0.21046	2.004144	up	noncoding	HIT000329104		chr19	+
ASHG19A3A012669	0.010934	0.134717	2.63086	up	noncoding	AK092396		chr19	+
ASHG19A3A012674	0.003919	0.089172	2.593126	up	noncoding	ENST00000477483	AC005205.4	chr19	+
ASHG19A3A012738	0.021997	0.179745	2.57258	up	noncoding	ENST00000446199	RP11-293G6__B.5	chr1	-
ASHG19A3A012871	0.043962	0.241054	2.524176	up	noncoding	HIT000071394		chr19	+
ASHG19A3A012871	0.043962	0.241054	2.524176	up	noncoding	HIT000071394		chr19	+
ASHG19A3A012871	0.043962	0.241054	2.524176	up	noncoding	HIT000071394		chr19	+
ASHG19A3A013018	0.000342	0.041094	4.335707	up	noncoding	ENST00000433123	RP11-193H5.5	chr1	-
ASHG19A3A013134	0.012452	0.141895	2.084247	up	noncoding	AK054806		chr19	+
ASHG19A3A013175	0.00133	0.06217	2.423365	up	noncoding	AK054778		chr19	+
ASHG19A3A013242	0.002251	0.074362	2.585602	up	noncoding	ENST00000431336	AC097517.2	chr2	-
ASHG19A3A013318	0.032495	0.212294	2.490254	up	noncoding	AB074178		chr2	-
ASHG19A3A013347	0.036596	0.2248	3.400451	up	noncoding	ENST00000449391	AC012065.6	chr2	-
ASHG19A3A013358	0.004959	0.098474	2.014375	up	noncoding	ENST00000412424	AC009411.1	chr2	-
ASHG19A3A013360	0.003402	0.084873	2.323122	up	noncoding	ENST00000450551	AC068490.2	chr2	-
ASHG19A3A013419	0.003827	0.089011	2.34653	up	noncoding	ENST00000436954	AC013403.13	chr2	-
ASHG19A3A013424	0.017329	0.162668	2.06554	up	noncoding	ENST00000515139	AC013413.1	chr2	-
ASHG19A3A013424	0.017329	0.162668	2.06554	up	noncoding	ENST00000515139	AC013413.1	chr2	-
ASHG19A3A013484	0.02019	0.174085	2.132708	up	noncoding	ENST00000413713	AC069303.1	chr2	-
ASHG19A3A013527	0.003789	0.088847	2.542364	up	noncoding	G43628		chr2	-
ASHG19A3A013555	0.039629	0.232584	2.173512	up	noncoding	ENST00000457457	AC016735.1	chr2	-
ASHG19A3A013581	4.49E-05	0.021079	7.111443	up	noncoding	ENST00000416146	AC017078.1	chr2	-
ASHG19A3A013629	0.033644	0.214932	2.248679	up	noncoding	AK057710		chr2	-
ASHG19A3A013748	0.001523	0.064446	3.950133	up	noncoding	ENST00000455212	AC007386.3	chr2	-
ASHG19A3A013752	0.000151	0.031891	2.701094	up	noncoding	ENST00000427827	RP11-438F14.1	chr1	-
ASHG19A3A013817	0.001886	0.069271	2.084422	up	noncoding	AK124090		chr2	-

ASHG19A3A013848	0.026904	0.196339	6.473463	up	noncoding	ENST00000453103	AC073046.4	chr2	-
ASHG19A3A013848	0.026904	0.196339	6.473463	up	noncoding	ENST00000453103	AC073046.4	chr2	-
ASHG19A3A013902	0.033084	0.213622	2.998025	up	noncoding	NR_002714	REG1P	chr2	-
ASHG19A3A013975	0.036076	0.223195	3.231452	up	noncoding	NR_026846	LOC285074	chr2	-
ASHG19A3A014009	0.00167	0.066297	17.76822	up	noncoding	ENST00000426492	AC073464.8	chr2	-
ASHG19A3A014060	0.036011	0.223195	2.236909	up	noncoding	AK098629		chr2	-
ASHG19A3A014060	0.036011	0.223195	2.236909	up	noncoding	AK098629		chr2	-
ASHG19A3A014141	5.13E-05	0.021384	2.797283	up	noncoding	AK058000		chr2	-
ASHG19A3A014190	0.002569	0.076396	2.828764	up	noncoding	uc002tft.1	LOC440895	chr2	-
ASHG19A3A014194	0.001469	0.063576	3.763276	up	noncoding	ENST00000416774	RP11-465B22.5	chr1	+
ASHG19A3A014259	0.011972	0.140142	2.414057	up	noncoding	ENST00000454260	AC016736.2	chr2	-
ASHG19A3A014259	0.011972	0.140142	2.414057	up	noncoding	ENST00000454260	AC016736.2	chr2	-
ASHG19A3A014259	0.011972	0.140142	2.414057	up	noncoding	ENST00000454260	AC016736.2	chr2	-
ASHG19A3A014263	0.004006	0.089803	2.758697	up	noncoding	ENST00000441321	AC016691.2	chr2	-
ASHG19A3A014348	0.049917	0.252541	2.582889	up	noncoding	ENST00000417310	CYP4F11	chr2	-
ASHG19A3A014394	0.017914	0.165769	2.052227	up	noncoding	ENST00000440802	AC097532.2	chr2	-
ASHG19A3A014413	3.05E-05	0.017174	7.576586	up	noncoding	ENST00000397436	AC011999.1	chr2	-
ASHG19A3A014586	0.002958	0.081974	2.042965	up	noncoding	ENST00000444526	AC092601.1	chr2	-
ASHG19A3A014586	0.002958	0.081974	2.042965	up	noncoding	ENST00000444526	AC092601.1	chr2	-
ASHG19A3A014586	0.002958	0.081974	2.042965	up	noncoding	ENST00000444526	AC092601.1	chr2	-
ASHG19A3A014587	0.002354	0.074687	8.962453	up	noncoding	ENST00000397819	AC017070.1	chr2	-
ASHG19A3A014591	0.030956	0.208582	2.031548	up	noncoding	AF251187		chr2	-
ASHG19A3A014591	0.030956	0.208582	2.031548	up	noncoding	AF251187		chr2	-
ASHG19A3A014591	0.030956	0.208582	2.031548	up	noncoding	AF251187		chr2	-
ASHG19A3A014591	0.030956	0.208582	2.031548	up	noncoding	AF251187		chr2	-
ASHG19A3A014628	0.022302	0.181636	3.027206	up	noncoding	ENST00000455435	AC018712.3	chr2	-
ASHG19A3A014639	0.011684	0.138492	2.505258	up	noncoding	ENST00000444235	RPL5P7	chr2	-
ASHG19A3A014663	0.003714	0.088263	2.849218	up	noncoding	ENST00000458254	AC016751.2	chr2	-
ASHG19A3A014666	0.003467	0.085214	2.531293	up	noncoding	ENST00000440016	AC009336.21	chr2	-
ASHG19A3A014666	0.003467	0.085214	2.531293	up	noncoding	ENST00000440016	AC009336.21	chr2	-
ASHG19A3A014666	0.003467	0.085214	2.531293	up	noncoding	ENST00000440016	AC009336.21	chr2	-
ASHG19A3A014666	0.003467	0.085214	2.531293	up	noncoding	ENST00000440016	AC009336.21	chr2	-
ASHG19A3A014732	0.047512	0.249156	19.1201	up	noncoding	ENST00000450021	KRT8P10	chr2	-

ASHG19A3A014737	0.003075	0.082215	3.334504	up	noncoding	ENST00000442301	AC010747.2	chr2	-
ASHG19A3A014761	0.04915	0.25214	3.460653	up	noncoding	ENST00000395181	KRT18P19	chr2	-
ASHG19A3A014836	0.043407	0.239621	2.109	up	noncoding	uc002uvq.2	BC039445	chr2	-
ASHG19A3A014843	0.008244	0.120799	2.475975	up	noncoding	AK025184		chr2	-
ASHG19A3A014884	0.0185	0.166966	3.270573	up	noncoding	AF086549		chr2	-
ASHG19A3A014888	0.003395	0.084873	2.325344	up	noncoding	ENST00000413895	AC023271.2	chr2	-
ASHG19A3A014969	0.000599	0.049132	4.365276	up	noncoding	ENST00000413311	AC093382.1	chr2	-
ASHG19A3A014982	0.001149	0.058346	4.626397	up	noncoding	ENST00000433233	AC007563.4	chr2	-
ASHG19A3A015038	0.007249	0.113881	2.616478	up	noncoding	ENST00000438659	AC008281.1	chr2	-
ASHG19A3A015081	0.007634	0.115704	7.531637	up	noncoding	ENST00000331589	AC073065.4	chr2	-
ASHG19A3A015084	0.001904	0.069758	3.140903	up	noncoding	ENST00000432481	AC009410.1	chr2	-
ASHG19A3A015192	0.008222	0.120678	2.341617	up	noncoding	AK024254		chr2	-
ASHG19A3A015192	0.008222	0.120678	2.341617	up	noncoding	AK024254		chr2	-
ASHG19A3A015201	0.002386	0.074687	3.055273	up	noncoding	uc002waf.2	BC040629	chr2	-
ASHG19A3A015227	0.002289	0.074504	3.557071	up	noncoding	ENST00000431968	RP3-477M7.6	chr1	+
ASHG19A3A015296	0.025342	0.191965	2.710368	up	noncoding	CR598370		chr2	+
ASHG19A3A015304	0.04382	0.240635	2.286239	up	noncoding	BC009884		chr2	+
ASHG19A3A015520	0.001422	0.062929	2.995123	up	noncoding	AK057148		chr2	+
ASHG19A3A015536	0.031254	0.208947	2.904154	up	noncoding	ENST00000446719	AC009229.4	chr2	+
ASHG19A3A015843	0.006509	0.110473	3.252142	up	noncoding	CR613601		chr2	+
ASHG19A3A015955	0.031335	0.208981	2.091515	up	noncoding	HIT000324182_03		chr2	+
ASHG19A3A015974	0.000606	0.049456	2.361323	up	noncoding	ENST00000416118	AC128677.2	chr2	+
ASHG19A3A016031	0.002549	0.076252	2.567359	up	noncoding	AF119842		chr2	+
ASHG19A3A016059	0.005471	0.102582	2.780165	up	noncoding	AK098124		chr2	+
ASHG19A3A016151	0.005937	0.105277	2.666982	up	noncoding	AK023150		chr2	+
ASHG19A3A016165	0.000258	0.03723	11.1365	up	noncoding	uc002tfi.3	AK056084	chr2	+
ASHG19A3A016201	0.005305	0.101436	2.77019	up	noncoding	ENST00000449927	AC115115.4	chr2	+
ASHG19A3A016341	0.005048	0.099241	2.051456	up	noncoding	ENST00000444325	AC068137.4	chr2	+
ASHG19A3A016518	0.002203	0.073357	32.22546	up	noncoding	uc002ubt.1	AK027541	chr2	+
ASHG19A3A016519	0.006626	0.111318	15.87258	up	noncoding	ENST00000439050	AC009299.3	chr2	+
ASHG19A3A016567	0.006286	0.108642	8.264762	up	noncoding	uc002ufj.3	KLHL23	chr2	+
ASHG19A3A016567	0.006286	0.108642	8.264762	up	noncoding	uc002ufj.3	KLHL23	chr2	+
ASHG19A3A016579	0.002023	0.070664	15.0874	up	noncoding	ENST00000426475	AC007405.6	chr2	+

ASHG19A3A016645	0.045637	0.244445	15.42576	up	noncoding	ENST00000392131	AC079305.6	chr2	+
ASHG19A3A016653	0.024046	0.186353	2.53312	up	noncoding	ENST00000357045	AC073834.3	chr2	+
ASHG19A3A016697	0.001067	0.057323	2.988094	up	noncoding	ENST00000441026	AC093639.1	chr2	+
ASHG19A3A016901	0.004885	0.098198	2.063894	up	noncoding	ENST00000418459	AC013409.2	chr2	+
ASHG19A3A016908	0.002414	0.074687	2.379271	up	noncoding	AK055724		chr2	+
ASHG19A3A016918	0.01097	0.135046	2.570942	up	noncoding	ENST00000422990	AC105921.2	chr2	+
ASHG19A3A016918	0.01097	0.135046	2.570942	up	noncoding	ENST00000422990	AC105921.2	chr2	+
ASHG19A3A017114	0.026591	0.195292	2.949708	up	noncoding	NR_003008	SCARNA5	chr2	+
ASHG19A3A017114	0.026591	0.195292	2.949708	up	noncoding	NR_003008	SCARNA5	chr2	+
ASHG19A3A017114	0.026591	0.195292	2.949708	up	noncoding	NR_003008	SCARNA5	chr2	+
ASHG19A3A017114	0.026591	0.195292	2.949708	up	noncoding	NR_003008	SCARNA5	chr2	+
ASHG19A3A017270	0.042891	0.238803	3.025478	up	noncoding	AK021907		chr20	-
ASHG19A3A017297	0.049831	0.252541	2.135734	up	noncoding	uc002wka.1	BC012193	chr20	-
ASHG19A3A017297	0.049831	0.252541	2.135734	up	noncoding	uc002wka.1	BC012193	chr20	-
ASHG19A3A017297	0.049831	0.252541	2.135734	up	noncoding	uc002wka.1	BC012193	chr20	-
ASHG19A3A017331	0.010246	0.130859	7.059179	up	noncoding	BC019703		chr20	-
ASHG19A3A017334	0.005586	0.10303	4.928639	up	noncoding	ENST00000445589	RP5-859D4.3	chr20	-
ASHG19A3A017342	0.011895	0.139623	2.13673	up	noncoding	ENST00000439121	RP5-859I17.2	chr20	-
ASHG19A3A017413	0.023226	0.184275	11.93193	up	noncoding	ENST00000431038	RP11-379J5.4	chr20	-
ASHG19A3A017537	0.005562	0.102884	2.479844	up	noncoding	ENST00000412178	RP3-324O17.2	chr20	-
ASHG19A3A017537	0.005562	0.102884	2.479844	up	noncoding	ENST00000412178	RP3-324O17.2	chr20	-
ASHG19A3A017537	0.005562	0.102884	2.479844	up	noncoding	ENST00000412178	RP3-324O17.2	chr20	-
ASHG19A3A017655	0.001683	0.06636	2.787116	up	noncoding	uc002xig.3	LOC388796	chr20	-
ASHG19A3A017656	0.00088	0.054542	2.837725	up	noncoding	BX640887		chr20	-
ASHG19A3A017659	0.022484	0.18214	2.228618	up	noncoding	BC071821		chr20	-
ASHG19A3A017659	0.022484	0.18214	2.228618	up	noncoding	BC071821		chr20	-
ASHG19A3A017759	0.002704	0.078866	3.64568	up	noncoding	ENST00000425552	RPL35AP	chr20	-
ASHG19A3A017885	0.026379	0.195017	2.122138	up	noncoding	BC037164		chr20	-
ASHG19A3A017888	0.007224	0.113881	2.732989	up	noncoding	AK056716		chr20	-
ASHG19A3A017892	0.00098	0.057247	43.3089	up	noncoding	ENST00000412500	RP5-885L7.10	chr20	-
ASHG19A3A017893	0.003383	0.084873	16.31962	up	noncoding	uc002ydh.2	BC141903	chr20	-
ASHG19A3A017948	0.001348	0.062273	2.135034	up	noncoding	BC043438		chr20	+

ASHG19A3A018062	0.039785	0.233117	2.059787	up	noncoding	AK098701		chr1	+
ASHG19A3A018244	0.028058	0.199722	3.134202	up	noncoding	ENST00000450770	RP11-346K17.3	chr20	+
ASHG19A3A018251	0.001739	0.067157	5.423801	up	noncoding	NR_026685	PDIK1L	chr1	+
ASHG19A3A018297	0.043085	0.238904	2.46855	up	noncoding	ENST00000453698	SNHG11	chr20	+
ASHG19A3A018434	0.034773	0.219251	2.323677	up	noncoding	ENST00000411453	RP11-112L6.4	chr20	+
ASHG19A3A018451	0.03147	0.209592	2.821656	up	noncoding	AF095854		chr20	+
ASHG19A3A018455	0.000652	0.050176	4.727534	up	noncoding	ENST00000421642	RP4-715N11.2	chr20	+
ASHG19A3A018539	0.03265	0.212612	4.83693	up	noncoding	ENST00000433121	RP5-908M14.5	chr20	+
ASHG19A3A018675	0.001109	0.057833	7.718163	up	noncoding	ENST00000413190	RPS3AP1	chr21	-
ASHG19A3A018839	6.77E-05	0.022687	3.515975	up	noncoding	ENST00000431167	AF015726.1	chr21	-
ASHG19A3A018902	0.00108	0.057502	3.53699	up	noncoding	NR_024100	C21orf130	chr21	-
ASHG19A3A018968	0.045831	0.245047	2.549155	up	noncoding	ENST00000423310	AP001065.2	chr21	-
ASHG19A3A019087	0.037706	0.227525	2.791194	up	noncoding	ENST00000448908	RPL37P4	chr21	+
ASHG19A3A019278	0.013539	0.145745	8.407177	up	noncoding	AK023647		chr21	+
ASHG19A3A019318	0.024854	0.189676	2.324232	up	noncoding	CR624629		chr21	+
ASHG19A3A019396	0.026085	0.193675	2.357094	up	noncoding	ENST00000447478	RP4-534N18.2	chr1	+
ASHG19A3A019407	0.000155	0.032382	45.98661	up	noncoding	ENST00000447898	AP000525.8	chr22	-
ASHG19A3A019411	0.012366	0.141883	4.236474	up	noncoding	ENST00000412729	LA16c-60G3.6	chr22	-
ASHG19A3A019561	0.013612	0.145815	4.446118	up	noncoding	ENST00000415114	AP000344.1	chr22	-
ASHG19A3A019568	0.041418	0.236702	2.947516	up	noncoding	uc002zxc.3	LOC91316	chr22	-
ASHG19A3A019599	0.000181	0.034555	3.551738	up	noncoding	uc003aaz.3	DKFZp434K191	chr22	-
ASHG19A3A019649	0.01045	0.132114	2.247168	up	noncoding	ENST00000447099	CTA-292E10.7	chr22	-
ASHG19A3A019862	0.000193	0.034555	2.13438	up	noncoding	ENST00000333487	RP5-821D11.7	chr22	-
ASHG19A3A019868	0.021702	0.178416	2.318195	up	noncoding	ENST00000450250	SLC25A5P1	chr22	-
ASHG19A3A019880	0.000969	0.056823	14.13228	up	noncoding	ENST00000412060	Z83851.1	chr22	-
ASHG19A3A019881	0.000128	0.031585	2.785932	up	noncoding	uc003bcm.2	BC038245	chr22	-
ASHG19A3A019893	0.028703	0.202008	2.177128	up	noncoding	ENST00000428087	RP11-248I9.2	chr1	+
ASHG19A3A019905	0.008334	0.121096	2.118197	up	noncoding	BC069767		chr22	-
ASHG19A3A019910	0.000712	0.051625	4.31782	up	noncoding	AK125234		chr22	-
ASHG19A3A019949	0.010585	0.132404	2.987922	up	noncoding	ENST00000413815	RP11-191L9.5	chr22	-
ASHG19A3A020007	0.043891	0.240937	3.404692	up	noncoding	ENST00000440946	AP000525.10	chr22	+
ASHG19A3A020010	0.018158	0.166283	2.373694	up	noncoding	ENST00000435410	LA16c-59E1.2	chr22	+
ASHG19A3A020024	0.002942	0.081974	2.281783	up	noncoding	ENST00000450340	KB-67B5.11	chr22	+

ASHG19A3A020026	0.01016	0.13064	2.08618	up	noncoding	NR_001591	psiTPTE22	chr22	+
ASHG19A3A020080	0.023338	0.184707	2.365594	up	noncoding	AY927637		chr22	+
ASHG19A3A020183	0.016882	0.160188	2.810693	up	noncoding	NR_027426	LOC648691	chr22	+
ASHG19A3A020183	0.016882	0.160188	2.810693	up	noncoding	NR_027426	LOC648691	chr22	+
ASHG19A3A020183	0.016882	0.160188	2.810693	up	noncoding	NR_027426	LOC648691	chr22	+
ASHG19A3A020183	0.016882	0.160188	2.810693	up	noncoding	NR_027426	LOC648691	chr22	+
ASHG19A3A020183	0.016882	0.160188	2.810693	up	noncoding	NR_027426	LOC648691	chr22	+
ASHG19A3A020257	0.001142	0.058346	3.063087	up	noncoding	ENST00000420391	CTA-796E4.3	chr22	+
ASHG19A3A020346	0.014019	0.147447	2.421861	up	noncoding	ENST00000430449	CTA-342B11.1	chr22	+
ASHG19A3A020355	4.76E-07	0.002381	51.31315	up	noncoding	ENST00000452181	RP1-90G24.6	chr22	+
ASHG19A3A020522	0.006414	0.109722	3.147431	up	noncoding	ENST00000420096	Z83851.4	chr22	+
ASHG19A3A020529	0.00705	0.113157	4.42444	up	noncoding	ENST00000441462	AL049757.2	chr22	+
ASHG19A3A020532	0.014486	0.149014	2.661779	up	noncoding	ENST00000446663	AL022237.3	chr22	+
ASHG19A3A020549	5.45E-08	0.000409	2.570802	up	noncoding	ENST00000415702	CTA-397C4.2	chr22	+
ASHG19A3A020571	0.004642	0.09608	2.015541	up	noncoding	ENST00000416202	RP6-109B7.3	chr22	+
ASHG19A3A020584	0.035448	0.221372	2.305514	up	noncoding	ENST00000502868	AL021392.1	chr22	+
ASHG19A3A020598	0.004742	0.0969	3.479237	up	noncoding	uc003bip.2	BC037788	chr22	+
ASHG19A3A020653	0.011578	0.137737	2.136572	up	noncoding	ENST00000450418	AC023480.1	chr3	-
ASHG19A3A020726	0.038142	0.228969	4.271065	up	noncoding	ENST00000396959	KRT18P17	chr3	-
ASHG19A3A020788	5E-05	0.021384	2.182403	up	noncoding	ENST00000393779	AC104297.1	chr3	-
ASHG19A3A020850	0.000372	0.042176	30.92658	up	noncoding	BC035064		chr3	-
ASHG19A3A020927	0.005723	0.10433	2.032874	up	noncoding	AK025048		chr3	-
ASHG19A3A021162	0.003016	0.082215	133.7595	up	noncoding	AF088004		chr3	-
ASHG19A3A021313	0.006348	0.109338	3.295434	up	noncoding	ENST00000468470	RP11-159G9.4	chr3	-
ASHG19A3A021602	0.006774	0.112118	2.040901	up	noncoding	AK123415		chr3	-
ASHG19A3A021637	0.000567	0.047322	9.187368	up	noncoding	ENST00000477176	RP11-463H24.1	chr3	-
ASHG19A3A021664	0.042794	0.238618	2.21995	up	noncoding	ENST00000509986	RP11-306L14.1	chr3	-
ASHG19A3A021781	0.000621	0.049465	2.560498	up	noncoding	ENST00000428976	RP5-882O7.3	chr1	+
ASHG19A3A021781	0.000621	0.049465	2.560498	up	noncoding	ENST00000428976	RP5-882O7.3	chr1	+
ASHG19A3A021815	0.006204	0.10778	5.500088	up	noncoding	AK129645		chr3	-
ASHG19A3A021877	0.002582	0.076396	2.220826	up	noncoding	ENST00000489012	RP11-10O22.2	chr3	-
ASHG19A3A022052	0.03357	0.214768	2.300322	up	noncoding	BC039344		chr3	-
ASHG19A3A022109	0.00842	0.121805	2.082292	up	noncoding	ENST00000456816	RP11-513G11.1	chr3	-

ASHG19A3A022129	0.000421	0.044424	2.704511	up	noncoding	uc011bta.1	BC053580	chr3	-
ASHG19A3A022142	0.006524	0.110509	2.090081	up	noncoding	ENST00000455247	RP5-1109J22.3	chr1	+
ASHG19A3A022157	0.000384	0.042812	10.83329	up	noncoding	uc003fxi.2	MFI2	chr3	-
ASHG19A3A022243	0.011524	0.137737	6.520449	up	noncoding	AK128690		chr3	+
ASHG19A3A022263	0.009075	0.125275	4.112908	up	noncoding	ENST00000422216	RP1-18D14.7	chr1	+
ASHG19A3A022335	0.038158	0.228969	2.341129	up	noncoding	ENST00000448265	AC139618.1	chr3	+
ASHG19A3A022438	0.03222	0.212058	2.291924	up	noncoding	ENST00000454621	AC104308.2	chr3	+
ASHG19A3A022571	0.01589	0.155377	2.547184	up	noncoding	ENST00000437305	AC094020.1	chr3	+
ASHG19A3A022572	0.007341	0.114264	6.349899	up	noncoding	NR_024046	NRADDP	chr3	+
ASHG19A3A022693	0.003013	0.082215	2.149045	up	noncoding	ENST00000485935	RP11-5O17.1	chr3	+
ASHG19A3A022693	0.003013	0.082215	2.149045	up	noncoding	ENST00000485935	RP11-5O17.1	chr3	+
ASHG19A3A022693	0.003013	0.082215	2.149045	up	noncoding	ENST00000485935	RP11-5O17.1	chr3	+
ASHG19A3A022733	0.027549	0.198387	3.664276	up	noncoding	ENST00000412199	RP11-359I18.1	chr3	+
ASHG19A3A022807	0.008228	0.120678	3.474494	up	noncoding	ENST00000483483	RP11-654C22.1	chr3	+
ASHG19A3A022860	0.027188	0.197075	10.26408	up	noncoding	ENST00000473150	KRT8P25	chr3	+
ASHG19A3A022921	0.000682	0.051022	5.272865	up	noncoding	AK055026		chr3	+
ASHG19A3A022933	0.002954	0.081974	2.173912	up	noncoding	ENST00000468519	RP11-144C15.1	chr3	+
ASHG19A3A022933	0.002954	0.081974	2.173912	up	noncoding	ENST00000468519	RP11-144C15.1	chr3	+
ASHG19A3A023191	0.0004	0.044138	2.72947	up	noncoding	ENST00000509298	RP11-93K22.1	chr3	+
ASHG19A3A023286	0.004328	0.093653	3.237551	up	noncoding	ENST00000487630	RP11-117F22.1	chr3	+
ASHG19A3A023332	0.015104	0.152727	2.296505	up	noncoding	ENST00000416440	RP11-430G17.1	chr1	+
ASHG19A3A023427	0.009197	0.125952	2.428073	up	noncoding	ENST00000488873	RP11-100F22.1	chr3	+
ASHG19A3A023427	0.009197	0.125952	2.428073	up	noncoding	ENST00000488873	RP11-100F22.1	chr3	+
ASHG19A3A023427	0.009197	0.125952	2.428073	up	noncoding	ENST00000488873	RP11-100F22.1	chr3	+
ASHG19A3A023459	0.003406	0.084873	2.004072	up	noncoding	uc003fcz.1	CR607754	chr3	+
ASHG19A3A023474	0.033283	0.21454	2.44467	up	noncoding	AK055510		chr3	+
ASHG19A3A023526	0.043653	0.24045	17.92596	up	noncoding	ENST00000463294	KRT8P13	chr3	+
ASHG19A3A023611	0.007753	0.117025	3.493409	up	noncoding	uc003fln.1	BC013229	chr3	+
ASHG19A3A023612	0.004917	0.098355	6.370644	up	noncoding	uc003flo.2	BC040935	chr3	+
ASHG19A3A023782	0.012574	0.142131	4.682778	up	noncoding	CR601211		chr3	+
ASHG19A3A023873	0.042611	0.238285	4.840448	up	noncoding	ENST00000514073	AC226119.4	chr4	-
ASHG19A3A023980	0.042519	0.238285	2.252981	up	noncoding	AK026407		chr4	-
ASHG19A3A023992	0.004949	0.098474	3.852564	up	noncoding	uc003gpc.2	BC029598	chr4	-

ASHG19A3A024004	0.001088	0.057512	2.792532	up	noncoding	ENST00000505347	RP11-3J1.1	chr4	-
ASHG19A3A024019	0.010422	0.131883	2.01421	up	noncoding	ENST00000515267	AC006052.1	chr4	-
ASHG19A3A024034	0.013574	0.145812	4.797591	up	noncoding	ENST00000507819	RP11-302F12.8	chr4	-
ASHG19A3A024089	0.016481	0.157948	2.187799	up	noncoding	CR603564		chr4	-
ASHG19A3A024125	0.014269	0.147962	3.474055	up	noncoding	ENST00000509098	RP11-663P9.1	chr4	-
ASHG19A3A024179	0.030622	0.207791	2.911396	up	noncoding	ENST00000454756	AC104066.1	chr4	-
ASHG19A3A024188	0.003001	0.082215	2.089934	up	noncoding	ENST00000512628	RP11-545H22.1	chr4	-
ASHG19A3A024340	0.000955	0.056576	4.520595	up	noncoding	ENST00000513770	RP11-44F21.2	chr4	-
ASHG19A3A024375	0.000128	0.031585	4.886089	up	noncoding	ENST00000505100	CTB-179I1.3	chr4	-
ASHG19A3A024416	0.042388	0.238285	2.082346	up	noncoding	uc003hnq.2	KIAA0905	chr4	-
ASHG19A3A024457	0.025801	0.193125	2.202235	up	noncoding	ENST00000444365	RP11-397E7.3	chr4	-
ASHG19A3A024509	0.043109	0.238904	2.030333	up	noncoding	uc003huc.1	AK098333	chr4	-
ASHG19A3A024647	0.028503	0.201361	2.401216	up	noncoding	ENST00000441170	AC092661.2	chr4	-
ASHG19A3A024691	0.027042	0.196393	2.293722	up	noncoding	ENST00000480069	RP11-170N16.1	chr4	-
ASHG19A3A024810	0.009237	0.126124	2.279935	up	noncoding	ENST00000509609	RP13-539F13.2	chr4	-
ASHG19A3A024868	0.003042	0.082215	2.570968	up	noncoding	uc003ine.2	BC039551	chr4	-
ASHG19A3A024892	0.000339	0.041094	3.40572	up	noncoding	ENST00000514997	RP11-627H22.10	chr4	-
ASHG19A3A024896	0.031215	0.208947	2.366391	up	noncoding	ENST00000503214	RP11-627H22.6	chr4	-
ASHG19A3A024898	0.031298	0.208947	2.502308	up	noncoding	ENST00000506452	RP11-627H22.4	chr4	-
ASHG19A3A024899	0.022396	0.182011	3.369697	up	noncoding	ENST00000510572	RP11-627H22.3	chr4	-
ASHG19A3A025011	0.029884	0.205361	2.427541	up	noncoding	ENST00000503325	RP11-161D15.3	chr4	-
ASHG19A3A025094	0.027602	0.19852	2.353354	up	noncoding	AK095895		chr4	-
ASHG19A3A025096	0.018371	0.166877	2.189087	up	noncoding	ENST00000515328	SLC25A5P6	chr4	-
ASHG19A3A025216	0.022743	0.182545	3.8184	up	noncoding	uc003gid.2	BC025734	chr4	+
ASHG19A3A025224	0.001822	0.067812	2.356962	up	noncoding	G65572		chr4	+
ASHG19A3A025224	0.001822	0.067812	2.356962	up	noncoding	G65572		chr4	+
ASHG19A3A025295	0.01506	0.152587	2.747287	up	noncoding	ENST00000514103	RP11-1J7.1	chr4	+
ASHG19A3A025297	0.007359	0.114264	2.069319	up	noncoding	ENST00000515691	RP11-168E17.1	chr4	+
ASHG19A3A025333	0.048239	0.250288	3.61717	up	noncoding	ENST00000505463	RP11-414P19.1	chr4	+
ASHG19A3A025333	0.048239	0.250288	3.61717	up	noncoding	ENST00000505463	RP11-414P19.1	chr4	+
ASHG19A3A025395	0.038754	0.230358	19.51691	up	noncoding	ENST00000507715	RP11-802H3.1	chr4	+
ASHG19A3A025439	0.020034	0.173521	2.310096	up	noncoding	ENST00000506347	RP11-333E13.1	chr4	+
ASHG19A3A025439	0.020034	0.173521	2.310096	up	noncoding	ENST00000506347	RP11-333E13.1	chr4	+

ASHG19A3A025449	0.024487	0.188533	4.044128	up	noncoding	ENST00000481627	RP11-588L15.1	chr4	+
ASHG19A3A025449	0.024487	0.188533	4.044128	up	noncoding	ENST00000481627	RP11-588L15.1	chr4	+
ASHG19A3A025467	0.006799	0.112118	2.174179	up	noncoding	ENST00000463499	RP11-49F1.1	chr4	+
ASHG19A3A025467	0.006799	0.112118	2.174179	up	noncoding	ENST00000463499	RP11-49F1.1	chr4	+
ASHG19A3A025807	0.007206	0.113881	2.311675	up	noncoding	ENST00000478069	RP11-398J16.1	chr4	+
ASHG19A3A025851	0.00159	0.065335	2.158362	up	noncoding	ENST00000413177	RP11-289C17.1	chr4	+
ASHG19A3A025891	0.01583	0.15529	2.038346	up	noncoding	AK124503		chr1	+
ASHG19A3A025971	0.006635	0.111344	4.403507	up	noncoding	uc003ide.3	CR610292	chr4	+
ASHG19A3A025971	0.006635	0.111344	4.403507	up	noncoding	uc003ide.3	CR610292	chr4	+
ASHG19A3A025971	0.006635	0.111344	4.403507	up	noncoding	uc003ide.3	CR610292	chr4	+
ASHG19A3A026010	0.024275	0.187158	3.792041	up	noncoding	AK090904		chr4	+
ASHG19A3A026043	0.004778	0.097112	2.303804	up	noncoding	ENST00000503009	RP11-400D2.3	chr4	+
ASHG19A3A026093	0.00244	0.07493	2.572141	up	noncoding	BC041977		chr1	+
ASHG19A3A026163	0.047224	0.248687	2.828496	up	noncoding	BC034819		chr4	+
ASHG19A3A026327	0.000812	0.053939	2.323708	up	noncoding	ENST00000513552	RP11-753I4.1	chr4	+
ASHG19A3A026346	0.03186	0.211064	144.1995	up	noncoding	ENST00000423200	RP11-433O3.1	chr4	+
ASHG19A3A026395	0.016817	0.159853	2.079836	up	noncoding	ENST00000507644	RP11-11N5.1	chr4	+
ASHG19A3A026454	0.00115	0.058346	2.057443	up	noncoding	ENST00000434734	RP4-684L20.2	chr1	+
ASHG19A3A026589	0.005885	0.105103	2.504571	up	noncoding	ENST00000508480	RP11-432M8.19	chr5	-
ASHG19A3A026607	0.000774	0.053305	2.403021	up	noncoding	ENST00000509054	CTD-2272G21.3	chr5	-
ASHG19A3A026618	0.002764	0.080291	3.643077	up	noncoding	ENST00000507887	CTD-2306M5.1	chr5	-
ASHG19A3A026707	0.001648	0.066029	2.329411	up	noncoding	ENST00000508986	CTD-2108O9.1	chr5	-
ASHG19A3A026707	0.001648	0.066029	2.329411	up	noncoding	ENST00000508986	CTD-2108O9.1	chr5	-
ASHG19A3A026707	0.001648	0.066029	2.329411	up	noncoding	ENST00000508986	CTD-2108O9.1	chr5	-
ASHG19A3A026732	0.004882	0.098198	2.254031	up	noncoding	AL137450		chr5	-
ASHG19A3A026767	0.030143	0.206112	2.977172	up	noncoding	ENST00000503452	RP11-53O19.1	chr5	-
ASHG19A3A026841	0.047163	0.248625	13.42854	up	noncoding	ENST00000504812	RP11-109B6.2	chr5	-
ASHG19A3A026877	0.005869	0.105103	2.003531	up	noncoding	AK098535		chr5	-
ASHG19A3A026877	0.005869	0.105103	2.003531	up	noncoding	AK098535		chr5	-
ASHG19A3A026883	0.017587	0.164169	2.499584	up	noncoding	ENST00000514578	RP11-83M16.4	chr5	-
ASHG19A3A026995	0.028498	0.201361	5.485885	up	noncoding	BC021677		chr5	-
ASHG19A3A027004	0.023472	0.185051	2.666194	up	noncoding	ENST00000509131	CTC-431G16.3	chr5	-
ASHG19A3A027008	6.21E-05	0.022687	2.126	up	noncoding	ENST00000512910	RP11-168A11.3	chr5	-

ASHG19A3A027049	0.005287	0.101436	2.187613	up	noncoding	ENST00000510845	CTD-2015A6.2	chr5	-
ASHG19A3A027163	0.04462	0.242638	19.6635	up	noncoding	ENST00000512863	RP11-474J18.4	chr5	-
ASHG19A3A027275	0.026078	0.193675	2.745134	up	noncoding	ENST00000513004	RP11-74D3.1	chr5	-
ASHG19A3A027328	0.012947	0.143422	4.000606	up	noncoding	AK123774		chr5	-
ASHG19A3A027328	0.012947	0.143422	4.000606	up	noncoding	AK123774		chr5	-
ASHG19A3A027328	0.012947	0.143422	4.000606	up	noncoding	AK123774		chr5	-
ASHG19A3A027397	0.000787	0.053476	3.056607	up	noncoding	uc003kyl.2	AF086294	chr5	-
ASHG19A3A027398	0.003209	0.083261	2.753276	up	noncoding	ENST00000467206	CTB-49A3.1	chr5	-
ASHG19A3A027478	6.8E-05	0.022687	2.77602	up	noncoding	ENST00000507521	CTC-329D1.2	chr5	-
ASHG19A3A027478	6.8E-05	0.022687	2.77602	up	noncoding	ENST00000507521	CTC-329D1.2	chr5	-
ASHG19A3A027478	6.8E-05	0.022687	2.77602	up	noncoding	ENST00000507521	CTC-329D1.2	chr5	-
ASHG19A3A027478	6.8E-05	0.022687	2.77602	up	noncoding	ENST00000507521	CTC-329D1.2	chr5	-
ASHG19A3A027478	6.8E-05	0.022687	2.77602	up	noncoding	ENST00000507521	CTC-329D1.2	chr5	-
ASHG19A3A027478	6.8E-05	0.022687	2.77602	up	noncoding	ENST00000507521	CTC-329D1.2	chr5	-
ASHG19A3A027509	0.045521	0.244261	2.178154	up	noncoding	AK127336		chr5	-
ASHG19A3A027513	0.028936	0.202608	2.189214	up	noncoding	ENST00000515639	AC005740.3	chr5	-
ASHG19A3A027743	0.005843	0.104974	5.246702	up	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027743	0.005843	0.104974	5.246702	up	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027743	0.005843	0.104974	5.246702	up	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027743	0.005843	0.104974	5.246702	up	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027743	0.005843	0.104974	5.246702	up	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027743	0.005843	0.104974	5.246702	up	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027805	0.017234	0.162078	2.13386	up	noncoding	ENST00000502787	RP11-451H23.2	chr5	-
ASHG19A3A027856	0.03121	0.208947	3.213835	up	noncoding	AK125665		chr1	+
ASHG19A3A027856	0.03121	0.208947	3.213835	up	noncoding	AK125665		chr1	+
ASHG19A3A027856	0.03121	0.208947	3.213835	up	noncoding	AK125665		chr1	+
ASHG19A3A027856	0.03121	0.208947	3.213835	up	noncoding	AK125665		chr1	+
ASHG19A3A027856	0.03121	0.208947	3.213835	up	noncoding	AK125665		chr1	+
ASHG19A3A027865	0.010784	0.133412	3.413644	up	noncoding	ENST00000503386	CTD-2194D22.1	chr5	+
ASHG19A3A027953	0.045126	0.243678	3.224106	up	noncoding	AF009267		chr5	+
ASHG19A3A028023	0.028333	0.200961	2.432813	up	noncoding	ENST00000502928	RP11-811J10.1	chr5	+
ASHG19A3A028027	0.00062	0.049465	2.316743	up	noncoding	ENST00000503199	RP11-704G19.1	chr5	+
ASHG19A3A028053	0.021162	0.176675	3.022287	up	noncoding	ENST00000512207	RP11-42L13.2	chr5	+

ASHG19A3A028132	0.000622	0.049465	3.251348	up	noncoding	ENST00000500817	CTD-2196P11.1	chr5	+
ASHG19A3A028251	0.049838	0.252541	3.26587	up	noncoding	BC020897		chr5	+
ASHG19A3A028300	0.001091	0.057512	4.111572	up	noncoding	ENST00000515077	CTD-2187J20.1	chr5	+
ASHG19A3A028307	0.008337	0.121096	2.04987	up	noncoding	ENST00000515504	CTC-537E7.1	chr5	+
ASHG19A3A028338	0.001276	0.06217	3.666278	up	noncoding	uc001edc.1	BC047723	chr1	+
ASHG19A3A028338	0.001276	0.06217	3.666278	up	noncoding	uc001edc.1	BC047723	chr1	+
ASHG19A3A028412	0.000747	0.051923	6.94053	up	noncoding	ENST00000514114	CTC-564N23.3	chr5	+
ASHG19A3A028569	0.00152	0.064446	2.630196	up	noncoding	ENST00000514852	RP11-475J5.1	chr5	+
ASHG19A3A028678	0.014968	0.151895	2.419847	up	noncoding	ENST00000354355	CTB-161M19.3	chr5	+
ASHG19A3A028965	0.02035	0.174085	2.009099	up	noncoding	ENST00000496103	CTD-2024I7.1	chr5	+
ASHG19A3A028965	0.02035	0.174085	2.009099	up	noncoding	ENST00000496103	CTD-2024I7.1	chr5	+
ASHG19A3A028987	0.001438	0.062929	3.068346	up	noncoding	ENST00000511084	CTB-85P21.1	chr5	+
ASHG19A3A029023	0.005337	0.101513	3.204804	up	noncoding	AK055194		chr1	+
ASHG19A3A029234	0.013697	0.14631	2.162887	up	noncoding	ENST00000428930	BX571672.1	chr1	+
ASHG19A3A029278	0.041234	0.236689	2.372475	up	noncoding	ENST00000501148	CTC-205M6.1	chr5	+
ASHG19A3A029278	0.041234	0.236689	2.372475	up	noncoding	ENST00000501148	CTC-205M6.1	chr5	+
ASHG19A3A029299	0.015987	0.155645	3.623442	up	noncoding	ENST00000512030	AC138030.2	chr5	+
ASHG19A3A029307	0.015207	0.152873	2.078921	up	noncoding	uc003mti.1	AK093403	chr6	-
ASHG19A3A029401	0.003973	0.089603	3.867703	up	noncoding	ENST00000420389	RP1-290I10.3	chr6	-
ASHG19A3A029410	0.040975	0.236152	2.17327	up	noncoding	uc003mzj.1	CR622974	chr6	-
ASHG19A3A029410	0.040975	0.236152	2.17327	up	noncoding	uc003mzj.1	CR622974	chr6	-
ASHG19A3A029546	0.000956	0.056576	2.361129	up	noncoding	uc003nie.1	AK097539	chr6	-
ASHG19A3A029551	0.032371	0.212255	4.134469	up	noncoding	NR_026776	LOC100270746	chr6	-
ASHG19A3A029561	0.036386	0.223695	4.424059	up	noncoding	AK095259		chr6	-
ASHG19A3A029596	0.00047	0.045345	5.944977	up	noncoding	ENST00000457253	XXbac-BPG308K3.5	chr6	-
ASHG19A3A029631	0.021156	0.176675	2.698797	up	noncoding	uc003rsi.3	DKFZp762B162	chr6	-
ASHG19A3A029636	0.048846	0.251499	2.363669	up	noncoding	ENST00000453429	RPL7AP7	chr6	-
ASHG19A3A029773	0.012866	0.14335	3.503082	up	noncoding	ENST00000433582	HLA-DPA2	chr6	-
ASHG19A3A029827	0.002307	0.074504	2.208553	up	noncoding	NR_027117	LOC285847	chr6	-
ASHG19A3A029827	0.002307	0.074504	2.208553	up	noncoding	NR_027117	LOC285847	chr6	-
ASHG19A3A029891	0.003892	0.089011	4.146873	up	noncoding	ENST00000422246	RP13-235E23.1	chr6	-
ASHG19A3A029895	0.000225	0.035463	11.43034	up	noncoding	ENST00000440194	RP11-328M4.2	chr6	-
ASHG19A3A029895	0.000225	0.035463	11.43034	up	noncoding	ENST00000440194	RP11-328M4.2	chr6	-

ASHG19A3A029895	0.000225	0.035463	11.43034	up	noncoding	ENST00000440194	RP11-328M4.2	chr6	-
ASHG19A3A030087	0.024523	0.188533	2.144884	up	noncoding	ENST00000423899	XXbac-BPG55C20.1	chr6	-
ASHG19A3A030123	0.023963	0.185992	2.00697	up	noncoding	ENST00000404247	RP11-160A9.1	chr6	-
ASHG19A3A030134	0.000456	0.045084	2.274681	up	noncoding	ENST00000429832	RP11-257K9.2	chr6	-
ASHG19A3A030134	0.000456	0.045084	2.274681	up	noncoding	ENST00000429832	RP11-257K9.2	chr6	-
ASHG19A3A030134	0.000456	0.045084	2.274681	up	noncoding	ENST00000429832	RP11-257K9.2	chr6	-
ASHG19A3A030134	0.000456	0.045084	2.274681	up	noncoding	ENST00000429832	RP11-257K9.2	chr6	-
ASHG19A3A030134	0.000456	0.045084	2.274681	up	noncoding	ENST00000429832	RP11-257K9.2	chr6	-
ASHG19A3A030143	0.005926	0.105251	3.310354	up	noncoding	ENST00000421830	RP11-398K22.5	chr6	-
ASHG19A3A030150	0.011064	0.135071	7.364687	up	noncoding	ENST00000422157	RP6-74O6.3	chr1	+
ASHG19A3A030170	0.035468	0.221401	3.318444	up	noncoding	BX537762		chr6	-
ASHG19A3A030189	0.003219	0.083261	2.438748	up	noncoding	ENST00000415381	RP11-301M17.1	chr1	+
ASHG19A3A030232	0.000268	0.03723	2.27594	up	noncoding	ENST00000440916	RP11-666A1.4	chr1	+
ASHG19A3A030247	0.017715	0.164846	3.482303	up	noncoding	NR_002767	NCRNA00120	chr6	-
ASHG19A3A030374	0.006397	0.109654	6.36429	up	noncoding	uc010pbe.1	BC062745	chr1	+
ASHG19A3A030491	0.033689	0.215126	2.760035	up	noncoding	G43180		chr6	-
ASHG19A3A030529	0.022717	0.182507	5.694971	up	noncoding	ENST00000455305	RP1-131F15.2	chr6	-
ASHG19A3A030582	0.040286	0.234326	7.749765	up	noncoding	AJ420543		chr6	-
ASHG19A3A030624	2.21E-05	0.015802	2.090869	up	noncoding	ENST00000445585	RP5-899B16.2	chr6	-
ASHG19A3A030703	0.021003	0.176175	2.092961	up	noncoding	ENST00000445833	RP1-292B18.3	chr6	-
ASHG19A3A030838	0.007942	0.118775	2.067521	up	noncoding	ENST00000416709	RP11-503C24.5	chr6	-
ASHG19A3A030890	0.033641	0.214932	2.672106	up	noncoding	NR_026855	DKFZP686I15217	chr6	+
ASHG19A3A030916	0.00299	0.082215	3.312209	up	noncoding	AF210650		chr6	+
ASHG19A3A030993	0.004708	0.096398	4.451318	up	noncoding	ENST00000437559	RP11-456H18.2	chr6	+
ASHG19A3A031013	0.010781	0.133412	2.360727	up	noncoding	ENST00000447179	RP11-146I2.2	chr6	+
ASHG19A3A031136	0.005561	0.102884	4.047496	up	noncoding	ENST00000424968	RP11-373D17.1	chr6	+
ASHG19A3A031287	0.044925	0.243659	2.536365	up	noncoding	ENST00000420520	XXbac-BPG296P20.15	chr6	+
ASHG19A3A031287	0.044925	0.243659	2.536365	up	noncoding	ENST00000420520	XXbac-BPG296P20.15	chr6	+
ASHG19A3A031324	0.00172	0.067108	2.126424	up	noncoding	NR_026717	STK19	chr6	+
ASHG19A3A031324	0.00172	0.067108	2.126424	up	noncoding	NR_026717	STK19	chr6	+
ASHG19A3A031324	0.00172	0.067108	2.126424	up	noncoding	NR_026717	STK19	chr6	+
ASHG19A3A031508	2.86E-05	0.017174	3.950712	up	noncoding	ENST00000443470	RP4-696P19.2	chr6	+

ASHG19A3A031530	0.042031	0.238285	2.923225	up	noncoding	AK124352		chr6	+
ASHG19A3A031666	0.039456	0.231752	2.427901	up	noncoding	ENST00000406100	XXbac-BPG55C20.3	chr6	+
ASHG19A3A031670	0.000683	0.051022	3.384547	up	noncoding	ENST00000405686	RP11-448N11.2	chr6	+
ASHG19A3A031687	0.019793	0.172759	3.488421	up	noncoding	ENST00000441288	RP11-759F5.1	chr1	+
ASHG19A3A031732	0.00248	0.075264	2.432369	up	noncoding	ENST00000404728	RP11-9G10.1	chr6	+
ASHG19A3A031746	0.016686	0.159415	4.573456	up	noncoding	ENST00000406279	RP11-551A13.1	chr6	+
ASHG19A3A032019	0.018963	0.168824	2.331819	up	noncoding	ENST00000406156	RP11-129H15.2	chr6	+
ASHG19A3A032085	0.001416	0.062929	5.327291	up	noncoding	ENST00000402375	RP1-55C23.4	chr6	+
ASHG19A3A032113	0.009815	0.129201	2.132969	up	noncoding	ENST00000403956	RP3-406A7.1	chr6	+
ASHG19A3A032236	0.007545	0.115275	4.477402	up	noncoding	ENST00000405526	RP11-331O9.4	chr6	+
ASHG19A3A032394	0.000587	0.048475	16.74046	up	noncoding	ENST00000453348	AC074389.9	chr7	-
ASHG19A3A032418	0.013912	0.146871	2.606704	up	noncoding	ENST00000515163	AC092610.1	chr7	-
ASHG19A3A032430	0.02492	0.189893	2.569567	up	noncoding	G30758		chr7	-
ASHG19A3A032436	0.001446	0.062929	2.020839	up	noncoding	CR609520		chr1	+
ASHG19A3A032445	0.018136	0.166283	2.341049	up	noncoding	ENST00000496556	AC072052.7	chr7	-
ASHG19A3A032527	0.001498	0.063924	3.453042	up	noncoding	ENST00000435098	AC002486.3	chr7	-
ASHG19A3A032616	0.028933	0.202608	2.050134	up	noncoding	ENST00000442865	AC007255.7	chr7	-
ASHG19A3A032647	0.04228	0.238285	2.382883	up	noncoding	AK055377		chr1	+
ASHG19A3A032647	0.04228	0.238285	2.382883	up	noncoding	AK055377		chr1	+
ASHG19A3A032809	0.02287	0.1828	2.470807	up	noncoding	ENST00000444843	CTD-2021A8.2	chr7	-
ASHG19A3A032810	0.021002	0.176175	2.421308	up	noncoding	ENST00000434161	CTD-2021A8.3	chr7	-
ASHG19A3A032865	0.001942	0.070266	2.899183	up	noncoding	ENST00000452517	AC073057.5	chr7	-
ASHG19A3A032876	0.038159	0.228969	24.36996	up	noncoding	ENST00000414328	RP11-110J1.3	chr1	+
ASHG19A3A032878	0.010979	0.135046	6.079121	up	noncoding	ENST00000424595	RP11-196D18.4	chr7	-
ASHG19A3A032908	0.042087	0.238285	2.389226	up	noncoding	ENST00000507767	RP11-3N2.12	chr7	-
ASHG19A3A032948	0.000829	0.053939	4.475419	up	noncoding	ENST00000450353	GS1-124K5.3	chr7	-
ASHG19A3A032983	0.04139	0.236689	2.960832	up	noncoding	uc003twl.2	WBSCR20C	chr7	-
ASHG19A3A033019	0.018404	0.166892	3.180317	up	noncoding	ENST00000419670	NCF1C	chr7	-
ASHG19A3A033073	0.013411	0.145745	2.596216	up	noncoding	uc003ugj.1	BC037783	chr7	-
ASHG19A3A033105	0.012916	0.143422	2.180113	up	noncoding	ENST00000490124	AC074183.3	chr7	-
ASHG19A3A033116	0.032214	0.212058	2.524117	up	noncoding	uc003uig.2	BC035377	chr7	-
ASHG19A3A033116	0.032214	0.212058	2.524117	up	noncoding	uc003uig.2	BC035377	chr7	-
ASHG19A3A033116	0.032214	0.212058	2.524117	up	noncoding	uc003uig.2	BC035377	chr7	-

ASHG19A3A033130	0.042317	0.238285	2.493861	up	noncoding	ENST00000415667	AC002069.7	chr7	-
ASHG19A3A033181	0.019271	0.170454	2.050149	up	noncoding	AK094892		chr7	-
ASHG19A3A033181	0.019271	0.170454	2.050149	up	noncoding	AK094892		chr7	-
ASHG19A3A033181	0.019271	0.170454	2.050149	up	noncoding	AK094892		chr7	-
ASHG19A3A033181	0.019271	0.170454	2.050149	up	noncoding	AK094892		chr7	-
ASHG19A3A033181	0.019271	0.170454	2.050149	up	noncoding	AK094892		chr7	-
ASHG19A3A033267	0.007007	0.113157	3.054815	up	noncoding	ENST00000412754	RP11-126L15.4	chr7	-
ASHG19A3A033274	0.039064	0.230532	2.186395	up	noncoding	uc003uxn.1	AK096803	chr7	-
ASHG19A3A033447	0.003405	0.084873	2.526866	up	noncoding	BC040843		chr7	-
ASHG19A3A033499	0.000828	0.053939	2.882756	up	noncoding	uc003vmn.2	MGC27345	chr7	-
ASHG19A3A033507	0.002268	0.074497	4.495733	up	noncoding	ENST00000501627	AC010655.1	chr7	-
ASHG19A3A033507	0.002268	0.074497	4.495733	up	noncoding	ENST00000501627	AC010655.1	chr7	-
ASHG19A3A033563	0.024902	0.189853	2.102809	up	noncoding	ENST00000431248	AC093106.5	chr7	-
ASHG19A3A033583	0.007242	0.113881	2.18082	up	noncoding	AK056910		chr7	-
ASHG19A3A033601	0.009162	0.125764	3.994491	up	noncoding	ENST00000418798	AC013429.5	chr7	-
ASHG19A3A033601	0.009162	0.125764	3.994491	up	noncoding	ENST00000418798	AC013429.5	chr7	-
ASHG19A3A033662	0.023917	0.185925	2.636612	up	noncoding	ENST00000481590	TRBV8-1	chr7	-
ASHG19A3A033670	0.001337	0.06217	6.995287	up	noncoding	ENST00000496431	OR9P1P	chr7	-
ASHG19A3A033695	0.006706	0.112118	2.326037	up	noncoding	uc003wed.2	BC040701	chr7	-
ASHG19A3A033706	0.049123	0.25214	3.200554	up	noncoding	ENST00000434887	AC006004.1	chr7	-
ASHG19A3A033717	7.19E-05	0.023471	2.991913	up	noncoding	ENST00000461005	RP4-800G7.1	chr7	-
ASHG19A3A033718	0.019032	0.169037	2.360231	up	noncoding	AY927503		chr7	-
ASHG19A3A033729	0.001961	0.070296	4.19654	up	noncoding	ENST00000297369	RP11-728K20.1	chr7	-
ASHG19A3A033734	0.009049	0.125138	2.586257	up	noncoding	AL162065		chr7	-
ASHG19A3A033734	0.009049	0.125138	2.586257	up	noncoding	AL162065		chr7	-
ASHG19A3A033734	0.009049	0.125138	2.586257	up	noncoding	AL162065		chr7	-
ASHG19A3A033734	0.009049	0.125138	2.586257	up	noncoding	AL162065		chr7	-
ASHG19A3A033803	0.003237	0.08353	2.165363	up	noncoding	uc003wmd.1	AX747269	chr7	-
ASHG19A3A033813	0.002525	0.076115	4.649164	up	noncoding	ENST00000430825	AC005534.9	chr7	-
ASHG19A3A033813	0.002525	0.076115	4.649164	up	noncoding	ENST00000430825	AC005534.9	chr7	-
ASHG19A3A033813	0.002525	0.076115	4.649164	up	noncoding	ENST00000430825	AC005534.9	chr7	-
ASHG19A3A033815	0.001491	0.063791	3.088759	up	noncoding	AY927465		chr7	-
ASHG19A3A033815	0.001491	0.063791	3.088759	up	noncoding	AY927465		chr7	-

ASHG19A3A033955	0.013734	0.14631	26.95785	up	noncoding	ENST00000458624	AC007009.1	chr7	+
ASHG19A3A033955	0.013734	0.14631	26.95785	up	noncoding	ENST00000458624	AC007009.1	chr7	+
ASHG19A3A033955	0.013734	0.14631	26.95785	up	noncoding	ENST00000458624	AC007009.1	chr7	+
ASHG19A3A033959	0.002633	0.07733	5.882902	up	noncoding	ENST00000420684	AC009500.2	chr7	+
ASHG19A3A033994	0.025882	0.193215	2.833175	up	noncoding	ENST00000415878	AC073629.2	chr7	+
ASHG19A3A033994	0.025882	0.193215	2.833175	up	noncoding	ENST00000415878	AC073629.2	chr7	+
ASHG19A3A034023	0.009004	0.124989	5.520487	up	noncoding	ENST00000430859	AC005083.1	chr7	+
ASHG19A3A034069	0.04246	0.238285	2.967043	up	noncoding	BC047330		chr7	+
ASHG19A3A034130	0.0253	0.191812	2.014412	up	noncoding	BC016002		chr7	+
ASHG19A3A034159	0.019726	0.172446	2.080663	up	noncoding	ENST00000435239	AC018641.6	chr7	+
ASHG19A3A034164	0.018424	0.166892	5.017831	up	noncoding	uc003tcy.3	AK057321	chr7	+
ASHG19A3A034165	0.014741	0.150708	3.592288	up	noncoding	uc003tcz.1	AK127989	chr7	+
ASHG19A3A034212	0.000551	0.046773	3.680598	up	noncoding	ENST00000448974	AC009196.2	chr7	+
ASHG19A3A034212	0.000551	0.046773	3.680598	up	noncoding	ENST00000448974	AC009196.2	chr7	+
ASHG19A3A034212	0.000551	0.046773	3.680598	up	noncoding	ENST00000448974	AC009196.2	chr7	+
ASHG19A3A034224	0.04515	0.243678	16.39649	up	noncoding	ENST00000423953	KRT8P20	chr7	+
ASHG19A3A034236	0.013257	0.145223	2.134628	up	noncoding	ENST00000422100	RP11-7G12.1	chr1	+
ASHG19A3A034421	0.009964	0.129916	2.665695	up	noncoding	ENST00000429970	RP5-965K10.3	chr7	+
ASHG19A3A034435	0.008599	0.122299	5.647383	up	noncoding	ENST00000395413	RP11-165H4.3	chr7	+
ASHG19A3A034470	0.023854	0.185695	2.169731	up	noncoding	NR_003110	CCT6P1	chr7	+
ASHG19A3A034568	0.033556	0.214768	2.595775	up	noncoding	NR_033322	NSUN5P1	chr7	+
ASHG19A3A034617	0.000316	0.039856	2.307488	up	noncoding	ENST00000450028	RPL13AP17	chr7	+
ASHG19A3A034671	0.002544	0.076252	14.81696	up	noncoding	AL133090		chr7	+
ASHG19A3A034671	0.002544	0.076252	14.81696	up	noncoding	AL133090		chr7	+
ASHG19A3A034671	0.002544	0.076252	14.81696	up	noncoding	AL133090		chr7	+
ASHG19A3A034745	0.025153	0.19124	2.014763	up	noncoding	ENST00000441505	AC007875.2	chr7	+
ASHG19A3A034842	0.001087	0.057512	14.18806	up	noncoding	ENST00000419422	RP11-132A1.4	chr7	+
ASHG19A3A034850	0.032866	0.213033	2.078208	up	noncoding	ENST00000484974	RP11-163E9.2	chr7	+
ASHG19A3A034900	0.008314	0.121096	2.189053	up	noncoding	ENST00000433617	AC005046.5	chr7	+
ASHG19A3A034914	0.041227	0.236689	2.347069	up	noncoding	ENST00000491764	RP1-81F6.2	chr1	+
ASHG19A3A034923	0.007344	0.114264	2.664959	up	noncoding	ENST00000432581	AC002463.2	chr7	+
ASHG19A3A034976	0.025609	0.192438	17.39509	up	noncoding	uc003vkf.1	AK057037	chr7	+
ASHG19A3A035008	0.004401	0.094564	4.819006	up	noncoding	ENST00000453278	RP11-807H17.1	chr7	+

ASHG19A3A035027	0.008691	0.122758	3.119958	up	noncoding	ENST00000478818	EFCAB3	chr7	+
ASHG19A3A035033	0.01649	0.157948	2.491569	up	noncoding	NR_024368	FLJ45340	chr7	+
ASHG19A3A035058	0.000201	0.034555	12.2169	up	noncoding	uc003voy.2	BC035417	chr7	+
ASHG19A3A035093	0.006399	0.109654	3.965046	up	noncoding	uc003vrd.1	AK097607	chr7	+
ASHG19A3A035226	0.0035	0.085616	2.635487	up	noncoding	G30863		chr7	+
ASHG19A3A035261	0.008884	0.124348	14.64937	up	noncoding	ENST00000479102	OR2A9P	chr7	+
ASHG19A3A035309	0.005929	0.105251	7.596927	up	noncoding	AL359058		chr7	+
ASHG19A3A035363	0.038245	0.229396	3.114943	up	noncoding	ENST00000477993	FABP5L3	chr7	+
ASHG19A3A035366	0.041875	0.238139	3.549907	up	noncoding	NR_027387	LOC100128822	chr7	+
ASHG19A3A035379	0.034754	0.219251	2.180519	up	noncoding	NR_028090	LOC202781	chr7	+
ASHG19A3A035407	1.77E-05	0.014741	28.36524	up	noncoding	uc003wne.1	LOC645249	chr7	+
ASHG19A3A035408	0.000122	0.031585	20.38934	up	noncoding	BC094870		chr7	+
ASHG19A3A035430	0.002893	0.081533	3.04114	up	noncoding	ENST00000457337	AC019084.7	chr7	+
ASHG19A3A035579	0.011723	0.138492	3.68705	up	noncoding	ENST00000465586	AC100802.2	chr8	-
ASHG19A3A035619	0.034142	0.216634	2.349771	up	noncoding	ENST00000493797	RP11-34P13.14	chr1	-
ASHG19A3A035667	0.00172	0.067108	3.75252	up	noncoding	ENST00000509266	AC026979.1	chr8	-
ASHG19A3A035683	0.006138	0.107564	2.968259	up	noncoding	ENST00000468780	RP1-155O2.1	chr8	-
ASHG19A3A035777	0.001771	0.067459	2.348463	up	noncoding	BC030747		chr8	-
ASHG19A3A035832	1.86E-05	0.014741	3.069549	up	noncoding	NR_002599	SNHG6	chr8	-
ASHG19A3A035833	0.00969	0.128705	4.849506	up	noncoding	ENST00000502076	SNHG6	chr8	-
ASHG19A3A035876	0.033559	0.214768	2.155822	up	noncoding	AK123531		chr8	-
ASHG19A3A035881	0.002863	0.081298	13.51727	up	noncoding	uc003yao.3	BC062758	chr8	-
ASHG19A3A035898	0.016769	0.159743	56.45736	up	noncoding	BC004287		chr8	-
ASHG19A3A035911	0.000535	0.04646	4.048334	up	noncoding	ENST00000507690	AC132219.1	chr8	-
ASHG19A3A035912	0.000893	0.054744	2.808063	up	noncoding	NR_033194	ZFAND1	chr8	-
ASHG19A3A035912	0.000893	0.054744	2.808063	up	noncoding	NR_033194	ZFAND1	chr8	-
ASHG19A3A035912	0.000893	0.054744	2.808063	up	noncoding	NR_033194	ZFAND1	chr8	-
ASHG19A3A036002	0.023587	0.185283	2.134842	up	noncoding	ENST00000461683	KB-1434A12.1	chr8	-
ASHG19A3A036010	0.03915	0.230766	2.5494	up	noncoding	BC045564		chr8	-
ASHG19A3A036127	0.006587	0.111033	12.85072	up	noncoding	uc003ysa.1	AK125310	chr8	-
ASHG19A3A036131	0.00937	0.126554	3.836727	up	noncoding	uc003ysg.2	BC042052	chr8	-
ASHG19A3A036148	0.01108	0.135071	2.136444	up	noncoding	NR_026684	HPYR1	chr8	-
ASHG19A3A036166	0.000341	0.041094	2.11286	up	noncoding	AK127771		chr8	-

ASHG19A3A036214	0.000432	0.044424	11.15122	up	noncoding	NR_026785	C8orf51	chr8	-
ASHG19A3A036327	0.01302	0.143896	4.781045	up	noncoding	uc003wsp.1	BC017578	chr8	+
ASHG19A3A036446	0.003777	0.088847	5.789102	up	noncoding	uc003xdb.1	AK124295	chr8	+
ASHG19A3A036488	0.021017	0.176175	9.479265	up	noncoding	BC042009		chr8	+
ASHG19A3A036488	0.021017	0.176175	9.479265	up	noncoding	BC042009		chr8	+
ASHG19A3A036583	0.001592	0.065335	3.9377	up	noncoding	ENST00000511103	RP11-790L1.1	chr8	+
ASHG19A3A036696	0.001367	0.062419	3.878051	up	noncoding	ENST00000479876	RP11-6I2.1	chr8	+
ASHG19A3A036847	0.000739	0.051923	2.045341	up	noncoding	AF209975		chr8	+
ASHG19A3A036847	0.000739	0.051923	2.045341	up	noncoding	AF209975		chr8	+
ASHG19A3A036889	0.013772	0.146386	2.91972	up	noncoding	ENST00000434983	RP11-309H21.2	chr1	+
ASHG19A3A036926	0.048275	0.250288	3.617507	up	noncoding	ENST00000512617	PVT1	chr8	+
ASHG19A3A037010	0.018296	0.166717	2.087028	up	noncoding	NR_024207	KIAA1875	chr8	+
ASHG19A3A037085	0.001231	0.061392	2.047681	up	noncoding	ENST00000422953	RP11-39K24.9	chr9	-
ASHG19A3A037234	0.021331	0.177265	2.006921	up	noncoding	ENST00000422717	RP11-550E18.1	chr9	-
ASHG19A3A037247	0.02546	0.192173	2.521699	up	noncoding	ENST00000418613	RP11-448G4.3	chr1	+
ASHG19A3A037247	0.02546	0.192173	2.521699	up	noncoding	ENST00000418613	RP11-448G4.3	chr1	+
ASHG19A3A037260	0.003529	0.086049	3.388987	up	noncoding	ENST00000434350	RP11-255A11.4	chr9	-
ASHG19A3A037327	0.007162	0.113829	2.244822	up	noncoding	ENST00000320491	RP11-113A10.1	chr9	-
ASHG19A3A037364	0.004935	0.098435	12.60141	up	noncoding	ENST00000504791	RP11-392E22.5	chr9	-
ASHG19A3A037402	0.032658	0.212612	4.022986	up	noncoding	ENST00000450520	RP11-216M21.7	chr9	-
ASHG19A3A037409	0.006731	0.112118	14.26918	up	noncoding	uc004acs.2	DQ587119	chr9	-
ASHG19A3A037410	0.013919	0.146871	8.518988	up	noncoding	NR_026759	FAM95B1	chr9	-
ASHG19A3A037466	0.046869	0.248431	2.482877	up	noncoding	ENST00000430302	RP11-111F5.4	chr9	-
ASHG19A3A037492	0.04922	0.252187	2.509884	up	noncoding	uc004aen.1	AQP7P1	chr9	-
ASHG19A3A037588	0.024029	0.186338	2.526069	up	noncoding	NR_023352	C9orf95	chr9	-
ASHG19A3A037588	0.024029	0.186338	2.526069	up	noncoding	NR_023352	C9orf95	chr9	-
ASHG19A3A037588	0.024029	0.186338	2.526069	up	noncoding	NR_023352	C9orf95	chr9	-
ASHG19A3A037655	0.012776	0.143078	4.283471	up	noncoding	ENST00000434455	RP11-276H19.2	chr9	-
ASHG19A3A037679	0.000202	0.034555	2.12243	up	noncoding	ENST00000449990	RP11-555F9.2	chr9	-
ASHG19A3A037695	0.017883	0.165587	3.751038	up	noncoding	ENST00000415471	RP11-100G15.10	chr9	-
ASHG19A3A037743	0.000656	0.050176	10.13241	up	noncoding	ENST00000433644	RP11-435O5.2	chr9	-
ASHG19A3A037744	0.012708	0.142757	3.044798	up	noncoding	uc009wzz.1	AK055590	chr1	+
ASHG19A3A037809	0.030831	0.20838	4.410123	up	noncoding	uc004baj.3	BC030123	chr9	-

ASHG19A3A037818	0.006859	0.112461	4.56094	up	noncoding	BC015133		chr9	-
ASHG19A3A037855	0.032496	0.212294	2.53155	up	noncoding	ENST00000418656	RP11-508N12.2	chr9	-
ASHG19A3A037864	0.022376	0.181953	3.04228	up	noncoding	ENST00000435770	RPL36AP6	chr9	-
ASHG19A3A037881	0.049111	0.25214	2.754441	up	noncoding	NR_026918	PTPN3	chr9	-
ASHG19A3A037881	0.049111	0.25214	2.754441	up	noncoding	NR_026918	PTPN3	chr9	-
ASHG19A3A037881	0.049111	0.25214	2.754441	up	noncoding	NR_026918	PTPN3	chr9	-
ASHG19A3A037881	0.049111	0.25214	2.754441	up	noncoding	NR_026918	PTPN3	chr9	-
ASHG19A3A037881	0.049111	0.25214	2.754441	up	noncoding	NR_026918	PTPN3	chr9	-
ASHG19A3A037881	0.049111	0.25214	2.754441	up	noncoding	NR_026918	PTPN3	chr9	-
ASHG19A3A037894	0.017825	0.165357	2.814608	up	noncoding	ENST00000446460	RP13-461N9.2	chr9	-
ASHG19A3A037894	0.017825	0.165357	2.814608	up	noncoding	ENST00000446460	RP13-461N9.2	chr9	-
ASHG19A3A037894	0.017825	0.165357	2.814608	up	noncoding	ENST00000446460	RP13-461N9.2	chr9	-
ASHG19A3A037974	0.004316	0.093534	2.554086	up	noncoding	ENST00000490225	PTPRV	chr1	+
ASHG19A3A038016	0.022632	0.182257	4.046111	up	noncoding	NR_026677	C9orf45	chr9	-
ASHG19A3A038027	0.002283	0.074504	10.4577	up	noncoding	BC027988		chr9	-
ASHG19A3A038052	0.025538	0.192321	2.086111	up	noncoding	AK124330		chr9	-
ASHG19A3A038100	0.001653	0.066029	4.165596	up	noncoding	BX648304		chr9	-
ASHG19A3A038100	0.001653	0.066029	4.165596	up	noncoding	BX648304		chr9	-
ASHG19A3A038100	0.001653	0.066029	4.165596	up	noncoding	BX648304		chr9	-
ASHG19A3A038195	0.010487	0.132357	3.550706	up	noncoding	AK094119		chr9	-
ASHG19A3A038233	0.00088	0.054542	2.881432	up	noncoding	CR599011		chr9	-
ASHG19A3A038288	0.045461	0.244109	2.867902	up	noncoding	ENST00000421620	XXYac-YRM2039.1	chr9	+
ASHG19A3A038293	0.001676	0.066297	3.649672	up	noncoding	ENST00000455592	RP11-165F24.2	chr9	+
ASHG19A3A038314	0.000444	0.044913	2.5956	up	noncoding	ENST00000422150	RP11-252M18.3	chr9	+
ASHG19A3A038314	0.000444	0.044913	2.5956	up	noncoding	ENST00000422150	RP11-252M18.3	chr9	+
ASHG19A3A038487	0.00037	0.042176	4.287206	up	noncoding	ENST00000433357	RP11-255A11.21	chr9	+
ASHG19A3A038537	0.008527	0.122132	33.82339	up	noncoding	ENST00000431981	RP11-112J3.16	chr9	+
ASHG19A3A038578	0.002375	0.074687	2.724184	up	noncoding	AK057054		chr9	+
ASHG19A3A038585	0.000171	0.033859	12.91731	up	noncoding	NR_027294	C9orf122	chr9	+
ASHG19A3A038616	0.004796	0.097218	4.204895	up	noncoding	uc004acg.2	FAM95B1	chr9	+
ASHG19A3A038625	0.010629	0.13248	2.861696	up	noncoding	ENST00000455231	AC129778.6	chr9	+
ASHG19A3A038626	0.020324	0.174085	2.025921	up	noncoding	ENST00000416720	AC129778.3	chr9	+
ASHG19A3A038649	0.025212	0.191438	2.153312	up	noncoding	ENST00000411931	RP11-160N1.1	chr9	+

ASHG19A3A038655	0.018806	0.168175	5.146408	up	noncoding	uc004adi.3	FAM27E3	chr9	+
ASHG19A3A038664	0.04309	0.238904	2.021227	up	noncoding	NR_024060	FAM27A	chr9	+
ASHG19A3A038797	0.036077	0.223195	4.382804	up	noncoding	AK023096		chr9	+
ASHG19A3A038797	0.036077	0.223195	4.382804	up	noncoding	AK023096		chr9	+
ASHG19A3A038834	0.040235	0.234326	2.06004	up	noncoding	uc004amd.2	BC036431	chr9	+
ASHG19A3A038970	0.024305	0.187294	2.279895	up	noncoding	uc004auu.2	CR593779	chr9	+
ASHG19A3A038985	0.004992	0.098523	2.046157	up	noncoding	ENST00000432132	RP11-569G13.1	chr9	+
ASHG19A3A039091	0.047478	0.249063	2.202209	up	noncoding	ENST00000394891	RP11-240E2.2	chr9	+
ASHG19A3A039292	0.013641	0.145926	2.687054	up	noncoding	NR_026817	LOC148696	chr1	+
ASHG19A3A039321	0.024658	0.188902	2.647961	up	noncoding	uc004bxu.2	BC094873	chr9	+
ASHG19A3A039342	0.007028	0.113157	2.02887	up	noncoding	ENST00000423330	RP11-57C19.2	chr9	+
ASHG19A3A039369	0.001858	0.068734	2.577986	up	noncoding	BX537622		chr9	+
ASHG19A3A039481	0.002094	0.072143	2.717841	up	noncoding	ENST00000456356	RP11-229P13.23	chr9	+
ASHG19A3A039548	0.045027	0.243678	2.112689	up	noncoding	ENST00000456563	RP11-706O15.3	chrX	-
ASHG19A3A039551	0.01312	0.144357	2.582488	up	noncoding	ENST00000381105	RP11-706O15.7	chrX	-
ASHG19A3A039555	0.001567	0.065335	2.536702	up	noncoding	ENST00000422914	RP11-733O18.1	chrX	-
ASHG19A3A039560	0.000312	0.039856	2.019186	up	noncoding	ENST00000437297	RP11-459A10.1	chrX	-
ASHG19A3A039561	0.003943	0.089575	3.046605	up	noncoding	BC071808		chr1	+
ASHG19A3A039576	0.002851	0.0811	2.949524	up	noncoding	ENST00000436419	RP11-66N5.2	chrX	-
ASHG19A3A039614	0.031078	0.208908	2.045708	up	noncoding	ENST00000448018	RP13-928P6.3	chrX	-
ASHG19A3A039664	0.047616	0.249442	2.402598	up	noncoding	ENST00000500992	AL732366.3	chrX	-
ASHG19A3A039668	0.003449	0.085066	3.609815	up	noncoding	NR_023358	SCARNA9L	chrX	-
ASHG19A3A039690	0.027441	0.198139	2.027968	up	noncoding	ENST00000496795	RP11-298C3.2	chrX	-
ASHG19A3A039733	0.017696	0.164768	2.137832	up	noncoding	ENST00000455438	RP11-87M18.2	chrX	-
ASHG19A3A039778	0.013418	0.145745	2.317413	up	noncoding	ENST00000448015	RP11-460I13.2	chr1	-
ASHG19A3A039778	0.013418	0.145745	2.317413	up	noncoding	ENST00000448015	RP11-460I13.2	chr1	-
ASHG19A3A039778	0.013418	0.145745	2.317413	up	noncoding	ENST00000448015	RP11-460I13.2	chr1	-
ASHG19A3A039788	0.049907	0.252541	16.55874	up	noncoding	ENST00000398010	KRT8P14	chrX	-
ASHG19A3A039792	0.007248	0.113881	3.376207	up	noncoding	ENST00000456532	RP5-1158E12.3	chrX	-
ASHG19A3A039798	0.003858	0.089011	8.709258	up	noncoding	uc004dgl.1	BC015977	chrX	-
ASHG19A3A040002	0.000566	0.047322	2.201694	up	noncoding	ENST00000438308	RP11-30M20.2	chrX	-
ASHG19A3A040066	0.00373	0.088504	16.22666	up	noncoding	NR_026594	CXorf50B	chrX	-
ASHG19A3A040082	0.000321	0.039856	2.041048	up	noncoding	uc004ebq.1	AK125301	chrX	-

ASHG19A3A040120	0.005611	0.1031	4.561561	up	noncoding	ENST00000395439	RP4-581F12.2	chrX	-
ASHG19A3A040177	0.016209	0.156457	2.335425	up	noncoding	uc004egm.2	CR623706	chrX	-
ASHG19A3A040183	0.00512	0.099876	2.418729	up	noncoding	ENST00000416788	RP11-410C4.1	chr1	+
ASHG19A3A040313	0.010339	0.131374	2.210358	up	noncoding	ENST00000413074	RP11-378J18.3	chr1	+
ASHG19A3A040313	0.010339	0.131374	2.210358	up	noncoding	ENST00000413074	RP11-378J18.3	chr1	+
ASHG19A3A040313	0.010339	0.131374	2.210358	up	noncoding	ENST00000413074	RP11-378J18.3	chr1	+
ASHG19A3A040340	0.047655	0.249532	3.685658	up	noncoding	NR_027131	CXorf42	chrX	-
ASHG19A3A040361	0.027801	0.199208	2.369513	up	noncoding	ENST00000426367	RP1-315G1.3	chrX	-
ASHG19A3A040361	0.027801	0.199208	2.369513	up	noncoding	ENST00000426367	RP1-315G1.3	chrX	-
ASHG19A3A040361	0.027801	0.199208	2.369513	up	noncoding	ENST00000426367	RP1-315G1.3	chrX	-
ASHG19A3A040361	0.027801	0.199208	2.369513	up	noncoding	ENST00000426367	RP1-315G1.3	chrX	-
ASHG19A3A040404	0.000302	0.039771	4.401667	up	noncoding	ENST00000394346	RP11-512H23.2	chrX	-
ASHG19A3A040406	0.003798	0.088847	2.641625	up	noncoding	NR_026975	LOC286467	chrX	-
ASHG19A3A040476	0.00507	0.099406	2.439375	up	noncoding	ENST00000419392	RP11-51C14.2	chrX	-
ASHG19A3A040661	0.025884	0.193215	3.474743	up	noncoding	BC131500		chrX	+
ASHG19A3A040661	0.025884	0.193215	3.474743	up	noncoding	BC131500		chrX	+
ASHG19A3A040661	0.025884	0.193215	3.474743	up	noncoding	BC131500		chrX	+
ASHG19A3A040661	0.025884	0.193215	3.474743	up	noncoding	BC131500		chrX	+
ASHG19A3A040802	0.015876	0.155353	2.109687	up	noncoding	ENST00000378958	CKS1BP6	chrX	+
ASHG19A3A040881	0.000271	0.03723	2.553269	up	noncoding	ENST00000443767	RP5-1158H2.3	chrX	+
ASHG19A3A040970	0.00311	0.082215	4.831091	up	noncoding	ENST00000447187	CTD-2090I13.3	chr1	+
ASHG19A3A041010	0.000199	0.034555	2.458684	up	noncoding	NR_024485	LOC100130093	chr1	+
ASHG19A3A041010	0.000199	0.034555	2.458684	up	noncoding	NR_024485	LOC100130093	chr1	+
ASHG19A3A041100	0.000511	0.045915	2.345229	up	noncoding	NR_024127	SNHG12	chr1	-
ASHG19A3A041235	0.01342	0.145745	2.970869	up	noncoding	ENST00000431935	RP11-325E14.1	chrX	+
ASHG19A3A041284	0.001268	0.06217	3.539261	up	noncoding	ENST00000414863	RP11-29L10.1	chrX	+
ASHG19A3A041291	0.039331	0.23138	2.382965	up	noncoding	ENST00000414579	RP3-347M6.2	chrX	+
ASHG19A3A041417	0.000541	0.04646	3.46663	up	noncoding	NR_033260	LOC100329135	chrX	+
ASHG19A3A041417	0.000541	0.04646	3.46663	up	noncoding	NR_033260	LOC100329135	chrX	+
ASHG19A3A041417	0.000541	0.04646	3.46663	up	noncoding	NR_033260	LOC100329135	chrX	+
ASHG19A3A041417	0.000541	0.04646	3.46663	up	noncoding	NR_033260	LOC100329135	chrX	+
ASHG19A3A041480	0.00651	0.110473	2.676565	up	noncoding	ENST00000436852	RP11-229N15.1	chrX	+
ASHG19A3A041534	0.037353	0.226944	2.095977	up	noncoding	ENST00000405943	RP4-765F13.3	chrX	+

ASHG19A3A041628	1.75E-05	0.014741	3.978469	up	noncoding	ENST00000399253	RP3-507I15.1	chrX	+
ASHG19A3A041704	0.039892	0.233399	16.01032	up	noncoding	ENST00000434750	AC108171.5	chrX	+
ASHG19A3A041900	0.031213	0.208947	2.285288	up	noncoding	NR_028083	FAM41AY1	chrY	-
ASHG19A3A042047	0.02957	0.204659	2.92198	up	noncoding	ENST00000454315	AC025731.3	chrY	+
ASHG19A3A042164	0.007362	0.114264	2.18947	up	noncoding	ENST00000449148	OFD1P8	chrY	+
ASHG19A3A042255	0.002826	0.080918	2.474113	up	noncoding	ENST00000427498	RP11-513D4.2	chr1	+
ASHG19A3A042255	0.002826	0.080918	2.474113	up	noncoding	ENST00000427498	RP11-513D4.2	chr1	+
ASHG19A3A042255	0.002826	0.080918	2.474113	up	noncoding	ENST00000427498	RP11-513D4.2	chr1	+
ASHG19A3A042353	0.033276	0.21454	2.142088	up	noncoding	ENST00000438372	RP11-69C17.1	chr10	-
ASHG19A3A042396	0.01821	0.166564	2.16697	up	noncoding	ENST00000401075	RP11-439L8.2	chr1	-
ASHG19A3A042399	0.022267	0.181462	2.151337	up	noncoding	NR_033494	IL15RA	chr10	-
ASHG19A3A042399	0.022267	0.181462	2.151337	up	noncoding	NR_033494	IL15RA	chr10	-
ASHG19A3A042401	0.04394	0.241054	2.434182	up	noncoding	ENST00000397237	RP11-414H17.2	chr10	-
ASHG19A3A042424	0.038488	0.229658	21.20405	up	noncoding	ENST00000451609	RP11-543F8.1	chr10	-
ASHG19A3A042433	0.010175	0.13072	3.3698	up	noncoding	BC035155		chr10	-
ASHG19A3A042435	0.018678	0.16763	2.092216	up	noncoding	ENST00000437825	RP1-251M9.3	chr10	-
ASHG19A3A042439	0.015162	0.152727	2.614503	up	noncoding	ENST00000500991	AC026887.1	chr10	-
ASHG19A3A042439	0.015162	0.152727	2.614503	up	noncoding	ENST00000500991	AC026887.1	chr10	-
ASHG19A3A042439	0.015162	0.152727	2.614503	up	noncoding	ENST00000500991	AC026887.1	chr10	-
ASHG19A3A042439	0.015162	0.152727	2.614503	up	noncoding	ENST00000500991	AC026887.1	chr10	-
ASHG19A3A042544	0.034698	0.219148	2.183689	up	noncoding	NR_026795	NCRNA00202	chr10	-
ASHG19A3A042687	0.000996	0.057323	2.186894	up	noncoding	uc001jbk.1	AK056518	chr10	-
ASHG19A3A042687	0.000996	0.057323	2.186894	up	noncoding	uc001jbk.1	AK056518	chr10	-
ASHG19A3A042752	0.040895	0.235869	2.0635	up	noncoding	uc009xny.1	AK309922	chr10	-
ASHG19A3A042759	0.033542	0.214768	2.180059	up	noncoding	ENST00000440750	RP11-534L6.2	chr10	-
ASHG19A3A042866	0.011749	0.138503	2.276051	up	noncoding	ENST00000412976	RP11-386C23.1	chr10	-
ASHG19A3A042901	0.008996	0.124986	7.941494	up	noncoding	ENST00000425216	RP11-343J3.6	chr10	-
ASHG19A3A042964	0.043536	0.240172	2.781335	up	noncoding	CR590180		chr10	-
ASHG19A3A042964	0.043536	0.240172	2.781335	up	noncoding	CR590180		chr10	-
ASHG19A3A043128	0.000744	0.051923	4.324246	up	noncoding	ENST00000419353	RP11-429H9.4	chr10	-
ASHG19A3A043128	0.000744	0.051923	4.324246	up	noncoding	ENST00000419353	RP11-429H9.4	chr10	-
ASHG19A3A043152	0.002888	0.081533	2.228799	up	noncoding	BC031678		chr10	-
ASHG19A3A043154	0.028336	0.200961	2.938027	up	noncoding	ENST00000429734	RP11-44D15.3	chr10	-

ASHG19A3A043157	0.023525	0.185273	2.033444	up	noncoding	uc010ohs.1	GJB3	chr1	-
ASHG19A3A043157	0.023525	0.185273	2.033444	up	noncoding	uc010ohs.1	GJB3	chr1	-
ASHG19A3A043334	0.0092	0.125952	8.508284	up	noncoding	uc001lcv.1	DQ596646	chr10	-
ASHG19A3A043335	0.021895	0.179301	3.660447	up	noncoding	ENST00000453491	RP11-539I5.1	chr10	-
ASHG19A3A043375	0.024776	0.189469	2.254612	up	noncoding	ENST00000433839	RP11-159H3.1	chr10	-
ASHG19A3A043456	0.025476	0.192173	2.703389	up	noncoding	ENST00000414106	RP11-140A10.3	chr10	-
ASHG19A3A043569	0.002257	0.074362	17.23903	up	noncoding	uc001ijl.2	AY007155	chr10	+
ASHG19A3A043570	0.005466	0.102582	5.294116	up	noncoding	AF088007		chr10	+
ASHG19A3A043632	0.019872	0.17297	2.148154	up	noncoding	ENST00000440878	RP11-295P9.3	chr10	+
ASHG19A3A043676	0.0098	0.129114	2.419537	up	noncoding	ENST00000419987	RP11-188P8.2	chr10	+
ASHG19A3A043688	0.000538	0.04646	2.571726	up	noncoding	ENST00000457930	RP11-565H13.3	chr10	+
ASHG19A3A043755	0.023709	0.185644	2.211374	up	noncoding	ENST00000497342	RP11-192N10.2	chr10	+
ASHG19A3A043831	0.022695	0.182469	2.874379	up	noncoding	ENST00000432557	RP11-291L22.4	chr10	+
ASHG19A3A043835	0.002476	0.075264	2.457777	up	noncoding	ENST00000423877	RP11-453N3.2	chr10	+
ASHG19A3A043900	0.035994	0.223195	2.581809	up	noncoding	ENST00000399377	FAM25HP	chr10	+
ASHG19A3A044109	0.003338	0.084755	2.467923	up	noncoding	uc001jtu.1	BC033983	chr10	+
ASHG19A3A044109	0.003338	0.084755	2.467923	up	noncoding	uc001jtu.1	BC033983	chr10	+
ASHG19A3A044144	0.001319	0.06217	2.94694	up	noncoding	BC040978		chr10	+
ASHG19A3A044144	0.001319	0.06217	2.94694	up	noncoding	BC040978		chr10	+
ASHG19A3A044144	0.001319	0.06217	2.94694	up	noncoding	BC040978		chr10	+
ASHG19A3A044144	0.001319	0.06217	2.94694	up	noncoding	BC040978		chr10	+
ASHG19A3A044385	0.006735	0.112118	8.644303	up	noncoding	ENST00000454935	C10orf75	chr10	+
ASHG19A3A044415	0.004272	0.092902	14.0006	up	noncoding	ENST00000448759	RP11-342M1.7	chr1	-
ASHG19A3A044425	0.00144	0.062929	3.095726	up	noncoding	uc001kvq.1	AL050035	chr10	+
ASHG19A3A044455	0.016545	0.15827	7.158304	up	noncoding	uc001kyd.1	AK094859	chr10	+
ASHG19A3A044475	7.05E-06	0.011766	2.434299	up	noncoding	AF086000		chr10	+
ASHG19A3A044475	7.05E-06	0.011766	2.434299	up	noncoding	AF086000		chr10	+
ASHG19A3A044525	0.01825	0.166625	3.03582	up	noncoding	ENST00000400856	RP11-106M7.2	chr10	+
ASHG19A3A044556	0.017054	0.161291	2.716348	up	noncoding	NR_026941	CASC2	chr10	+
ASHG19A3A044597	0.000702	0.05142	2.268857	up	noncoding	ENST00000442754	RP5-891H21.1	chr1	-
ASHG19A3A044786	0.031559	0.209725	2.561873	up	noncoding	uc001lxx.2	znfp104	chr11	-
ASHG19A3A044856	0.004389	0.094444	2.109275	up	noncoding	ENST00000435078	OR52T1P	chr11	-
ASHG19A3A044929	0.02816	0.200153	2.400735	up	noncoding	BC036621		chr11	-

ASHG19A3A045925	0.010605	0.13248	6.803083	up	noncoding	uc001lpy.2	AX748330	chr11	+
ASHG19A3A045951	0.010772	0.133412	2.023383	up	noncoding	uc001lsz.2	MUC5AC	chr11	+
ASHG19A3A046014	0.007981	0.118895	2.530968	up	noncoding	AK024684		chr1	-
ASHG19A3A046172	0.019914	0.173018	3.165377	up	noncoding	ENST00000363013	AC127033.1	chr11	+
ASHG19A3A046289	0.006501	0.110473	5.981735	up	noncoding	ENST00000489849	RP11-124G5.1	chr11	+
ASHG19A3A046290	0.01417	0.147861	3.045381	up	noncoding	NR_024625	API5	chr11	+
ASHG19A3A046290	0.01417	0.147861	3.045381	up	noncoding	NR_024625	API5	chr11	+
ASHG19A3A046290	0.01417	0.147861	3.045381	up	noncoding	NR_024625	API5	chr11	+
ASHG19A3A046314	0.011134	0.135071	2.442152	up	noncoding	ENST00000421838	RP11-377K22.3	chr1	-
ASHG19A3A046346	0.009701	0.128705	2.084296	up	noncoding	AK128134		chr11	+
ASHG19A3A046346	0.009701	0.128705	2.084296	up	noncoding	AK128134		chr11	+
ASHG19A3A046433	0.000864	0.054271	2.614835	up	noncoding	ENST00000359225	AP000445.1	chr11	+
ASHG19A3A046533	0.001132	0.058346	2.480513	up	noncoding	ENST00000443012	RP4-782L23.2	chr1	-
ASHG19A3A046533	0.001132	0.058346	2.480513	up	noncoding	ENST00000443012	RP4-782L23.2	chr1	-
ASHG19A3A046655	0.002373	0.074687	2.568455	up	noncoding	NR_024469	LOC100130987	chr11	+
ASHG19A3A046655	0.002373	0.074687	2.568455	up	noncoding	NR_024469	LOC100130987	chr11	+
ASHG19A3A046655	0.002373	0.074687	2.568455	up	noncoding	NR_024469	LOC100130987	chr11	+
ASHG19A3A046736	0.004914	0.098355	2.090871	up	noncoding	AK094727		chr11	+
ASHG19A3A046763	0.006965	0.113153	2.117568	up	noncoding	uc010rrn.1	DQ583960	chr11	+
ASHG19A3A046805	0.002017	0.070664	5.233741	up	noncoding	ENST00000474462	RP11-659G9.1	chr11	+
ASHG19A3A047067	0.011086	0.135071	2.062886	up	noncoding	HIT000386803		chr11	+
ASHG19A3A047171	0.001959	0.070296	2.188959	up	noncoding	NR_026823	FAM138D	chr12	-
ASHG19A3A047216	0.016082	0.155694	2.284107	up	noncoding	uc001qnj.1	BC031884	chr12	-
ASHG19A3A047249	0.02242	0.182011	2.223483	up	noncoding	uc001qrf.1	AK097957	chr12	-
ASHG19A3A047349	0.00848	0.122132	4.541934	up	noncoding	ENST00000464893	RP11-59H1.1	chr12	-
ASHG19A3A047363	0.002256	0.074362	5.01023	up	noncoding	ENST00000495304	RP11-515B12.1	chr12	-
ASHG19A3A047439	0.024211	0.186855	2.037607	up	noncoding	ENST00000500230	AC009318.1	chr12	-
ASHG19A3A047448	2.8E-05	0.017174	5.636748	up	noncoding	uc001rjq.1	AK096360	chr12	-
ASHG19A3A047448	2.8E-05	0.017174	5.636748	up	noncoding	uc001rjq.1	AK096360	chr12	-
ASHG19A3A047448	2.8E-05	0.017174	5.636748	up	noncoding	uc001rjq.1	AK096360	chr12	-
ASHG19A3A047450	0.020427	0.174085	4.201434	up	noncoding	uc001rjz.2	DKFZp434C0631	chr12	-
ASHG19A3A047456	0.013378	0.145745	2.089748	up	noncoding	ENST00000471002	RP11-820K3.1	chr12	-
ASHG19A3A047470	0.047322	0.248703	5.356315	up	noncoding	ENST00000439132	RP11-548C21.1	chr1	-

ASHG19A3A047503	0.018238	0.166613	2.389696	up	noncoding	ENST00000480555	RP11-101K23.1	chr12	-
ASHG19A3A047685	0.02645	0.195017	4.671046	up	noncoding	HIT000066907		chr12	-
ASHG19A3A047685	0.02645	0.195017	4.671046	up	noncoding	HIT000066907		chr12	-
ASHG19A3A047761	0.006156	0.107612	2.832703	up	noncoding	AK095383		chr12	-
ASHG19A3A047767	0.026986	0.196393	3.113246	up	noncoding	ENST00000481157	RP11-766N7.1	chr12	-
ASHG19A3A047769	0.043782	0.240512	3.695855	up	noncoding	ENST00000399791	AC079948.1	chr12	-
ASHG19A3A047769	0.043782	0.240512	3.695855	up	noncoding	ENST00000399791	AC079948.1	chr12	-
ASHG19A3A047769	0.043782	0.240512	3.695855	up	noncoding	ENST00000399791	AC079948.1	chr12	-
ASHG19A3A047769	0.043782	0.240512	3.695855	up	noncoding	ENST00000399791	AC079948.1	chr12	-
ASHG19A3A047770	0.00182	0.067812	6.831516	up	noncoding	uc010ssu.1	BC043551	chr12	-
ASHG19A3A048036	0.028178	0.200153	16.05126	up	noncoding	uc001tvk.1	AK096932	chr12	-
ASHG19A3A048040	0.005491	0.102653	2.023826	up	noncoding	AL133652		chr1	-
ASHG19A3A048061	2.42E-05	0.016497	48.7793	up	noncoding	NR_031766	TESC	chr12	-
ASHG19A3A048061	2.42E-05	0.016497	48.7793	up	noncoding	NR_031766	TESC	chr12	-
ASHG19A3A048127	0.002839	0.080919	2.325549	up	noncoding	AB209530		chr12	-
ASHG19A3A048337	0.033772	0.215485	2.549767	up	noncoding	ENST00000433774	RP5-837O21.6	chr1	-
ASHG19A3A048350	0.000234	0.035463	3.515557	up	noncoding	NR_024374	LOC642846	chr12	+
ASHG19A3A048379	0.012785	0.143078	2.589021	up	noncoding	ENST00000358818	AC007537.1	chr12	+
ASHG19A3A048512	0.048211	0.250288	2.430398	up	noncoding	ENST00000442418	RP11-86H7.1	chr1	-
ASHG19A3A048512	0.048211	0.250288	2.430398	up	noncoding	ENST00000442418	RP11-86H7.1	chr1	-
ASHG19A3A048538	0.049505	0.252234	2.16994	up	noncoding	AK124266		chr12	+
ASHG19A3A048538	0.049505	0.252234	2.16994	up	noncoding	AK124266		chr12	+
ASHG19A3A048667	0.0023	0.074504	2.311884	up	noncoding	NR_026655	FLJ12825	chr12	+
ASHG19A3A048706	0.018812	0.168175	2.707567	up	noncoding	BC008292		chr12	+
ASHG19A3A048706	0.018812	0.168175	2.707567	up	noncoding	BC008292		chr12	+
ASHG19A3A048761	0.012555	0.142131	2.231865	up	noncoding	ENST00000480739	RP11-571M6.1	chr12	+
ASHG19A3A048907	0.001243	0.061401	2.594591	up	noncoding	HIT000242541		chr12	+
ASHG19A3A048907	0.001243	0.061401	2.594591	up	noncoding	HIT000242541		chr12	+
ASHG19A3A049089	0.000613	0.049465	5.277038	up	noncoding	BC053353		chr1	-
ASHG19A3A049183	0.009339	0.126454	3.080446	up	noncoding	CR622106		chr12	+
ASHG19A3A049207	0.002448	0.075047	2.314787	up	noncoding	ENST00000497352	RP11-495K9.1	chr12	+
ASHG19A3A049214	0.027048	0.196393	2.583924	up	noncoding	G65566		chr12	+
ASHG19A3A049218	0.032313	0.21224	2.428107	up	noncoding	AK124307		chr1	-

ASHG19A3A049218	0.032313	0.21224	2.428107	up	noncoding	AK124307		chr1	-
ASHG19A3A049218	0.032313	0.21224	2.428107	up	noncoding	AK124307		chr1	-
ASHG19A3A049218	0.032313	0.21224	2.428107	up	noncoding	AK124307		chr1	-
ASHG19A3A049275	0.043383	0.239621	3.021974	up	noncoding	CR596712		chr13	-
ASHG19A3A049322	0.044939	0.243659	2.183193	up	noncoding	ENST00000434100	TPTE2P1	chr13	-
ASHG19A3A049346	0.015966	0.155608	4.733243	up	noncoding	ENST00000444744	RP11-428O18.4	chr13	-
ASHG19A3A049468	0.001035	0.057323	2.257695	up	noncoding	ENST00000399049	RP11-527F15.1	chr13	-
ASHG19A3A049493	0.016228	0.156468	2.140674	up	noncoding	ENST00000419933	OR7E36P	chr13	-
ASHG19A3A049548	0.00534	0.101513	4.250356	up	noncoding	ENST00000474415	RP11-305D15.6	chr13	-
ASHG19A3A049612	0.006969	0.113153	2.201997	up	noncoding	ENST00000457065	RP11-640E11.2	chr13	-
ASHG19A3A049617	0.017222	0.162064	2.276837	up	noncoding	ENST00000398005	RP11-334O13.1	chr13	-
ASHG19A3A049662	0.020298	0.174085	4.235261	up	noncoding	ENST00000420287	RP11-505F3.4	chr13	-
ASHG19A3A049669	0.021844	0.179084	2.393584	up	noncoding	ENST00000451540	RP11-159J2.1	chr13	-
ASHG19A3A049691	0.012668	0.142406	3.493464	up	noncoding	AK021576		chr13	-
ASHG19A3A049801	0.017474	0.163413	3.041085	up	noncoding	ENST00000397387	RP11-190K16.2	chr13	-
ASHG19A3A049857	0.007988	0.118895	10.71649	up	noncoding	ENST00000446789	RP11-120K24.2	chr13	-
ASHG19A3A049902	0.030246	0.206387	2.101465	up	noncoding	ENST00000438640	RP11-76K19.5	chr13	+
ASHG19A3A049975	0.005129	0.099919	2.735941	up	noncoding	ENST00000435725	RP11-165I9.6	chr13	+
ASHG19A3A050160	0.023578	0.185283	2.454533	up	noncoding	ENST00000432820	RP11-214O11.1	chr13	+
ASHG19A3A050209	0.025808	0.193125	4.006735	up	noncoding	ENST00000439042	RP11-381L18.2	chr13	+
ASHG19A3A050209	0.025808	0.193125	4.006735	up	noncoding	ENST00000439042	RP11-381L18.2	chr13	+
ASHG19A3A050317	0.002345	0.074687	2.93327	up	noncoding	AY927590		chr13	+
ASHG19A3A050378	0.000222	0.035463	14.56661	up	noncoding	NR_027350	MIR17HG	chr13	+
ASHG19A3A050430	0.001013	0.057323	2.085002	up	noncoding	AK128004		chr13	+
ASHG19A3A050430	0.001013	0.057323	2.085002	up	noncoding	AK128004		chr13	+
ASHG19A3A050501	3.48E-06	0.008708	8.752384	up	noncoding	uc001vso.2	BC035340	chr13	+
ASHG19A3A050582	0.002456	0.075121	2.174325	up	noncoding	ENST00000303519	OR4E1P	chr14	-
ASHG19A3A050599	0.004611	0.095927	2.729347	up	noncoding	AK023121		chr14	-
ASHG19A3A050599	0.004611	0.095927	2.729347	up	noncoding	AK023121		chr14	-
ASHG19A3A050599	0.004611	0.095927	2.729347	up	noncoding	AK023121		chr14	-
ASHG19A3A050730	0.045889	0.245254	15.03206	up	noncoding	ENST00000454391	AL358913.1	chr14	-
ASHG19A3A050816	0.001489	0.063791	2.710407	up	noncoding	NR_027123	C14orf33	chr14	-
ASHG19A3A050816	0.001489	0.063791	2.710407	up	noncoding	NR_027123	C14orf33	chr14	-

ASHG19A3A050816	0.001489	0.063791	2.710407	up	noncoding	NR_027123	C14orf33	chr14	-
ASHG19A3A050816	0.001489	0.063791	2.710407	up	noncoding	NR_027123	C14orf33	chr14	-
ASHG19A3A050847	0.042512	0.238285	2.095498	up	noncoding	ENST00000427452	BX004987.1	chr1	-
ASHG19A3A050894	0.009747	0.129005	2.434895	up	noncoding	G43222		chr14	-
ASHG19A3A050929	0.001283	0.06217	29.10477	up	noncoding	uc001xmj.1	DQ594515	chr14	-
ASHG19A3A050942	0.031573	0.209725	3.72604	up	noncoding	NR_024510	LOC728855	chr1	-
ASHG19A3A050967	0.043412	0.239621	3.196501	up	noncoding	uc001eky.3	LOC728875	chr1	-
ASHG19A3A051119	0.026547	0.195066	2.200744	up	noncoding	ENST00000412239	RP11-315I20.1	chr1	-
ASHG19A3A051119	0.026547	0.195066	2.200744	up	noncoding	ENST00000412239	RP11-315I20.1	chr1	-
ASHG19A3A051223	0.000285	0.038184	58.63407	up	noncoding	uc001vvl.3	AK022914	chr14	+
ASHG19A3A051266	0.00129	0.06217	2.5212	up	noncoding	uc001wbn.2	TRV3J34	chr14	+
ASHG19A3A051440	0.001363	0.062406	4.227502	up	noncoding	CR589979		chr14	+
ASHG19A3A051440	0.001363	0.062406	4.227502	up	noncoding	CR589979		chr14	+
ASHG19A3A051440	0.001363	0.062406	4.227502	up	noncoding	CR589979		chr14	+
ASHG19A3A051440	0.001363	0.062406	4.227502	up	noncoding	CR589979		chr14	+
ASHG19A3A051452	0.0062	0.10778	2.077043	up	noncoding	ENST00000487479	RPL13AP3	chr14	+
ASHG19A3A051460	0.014285	0.147962	2.515495	up	noncoding	ENST00000467870	RP11-108M12.1	chr14	+
ASHG19A3A051479	0.009608	0.128384	5.363681	up	noncoding	ENST00000428035	RP11-495P10.6	chr1	-
ASHG19A3A051514	0.006787	0.112118	2.533664	up	noncoding	BC041985		chr14	+
ASHG19A3A051516	0.000832	0.053939	4.114329	up	noncoding	ENST00000497246	CTD-2302E22.1	chr14	+
ASHG19A3A051720	0.02561	0.192438	2.007429	up	noncoding	NR_024183	C14orf48	chr14	+
ASHG19A3A051822	0.001325	0.06217	2.067389	up	noncoding	ENST00000488133	CTD-2538G10.1	chr14	+
ASHG19A3A051828	0.01036	0.131419	2.955341	up	noncoding	uc001ymo.1	CR611781	chr14	+
ASHG19A3A051863	0.047455	0.249029	2.559619	up	noncoding	AK124813		chr14	+
ASHG19A3A051969	0.016062	0.155694	2.124013	up	noncoding	ENST00000456396	RP11-68I18.2	chr1	-
ASHG19A3A052036	0.002125	0.072257	2.644497	up	noncoding	uc001exo.2	BC021024	chr1	-
ASHG19A3A052244	0.040402	0.234463	3.800035	up	noncoding	uc002aml.2	AK093077	chr15	-
ASHG19A3A052244	0.040402	0.234463	3.800035	up	noncoding	uc002aml.2	AK093077	chr15	-
ASHG19A3A052298	0.022258	0.181462	2.52134	up	noncoding	ENST00000469688	RP11-13J17.1	chr15	-
ASHG19A3A052506	0.009863	0.129467	2.234456	up	noncoding	uc002blm.2	DQ598270	chr15	-
ASHG19A3A052573	0.001988	0.070561	3.289782	up	noncoding	AK054700		chr15	-
ASHG19A3A052591	0.006541	0.11058	2.990006	up	noncoding	ENST00000471472	CTD-3221M10.1	chr15	-
ASHG19A3A052796	0.005591	0.10303	2.186112	up	noncoding	NR_026757	LOC729082	chr15	+

ASHG19A3A052831	0.003627	0.087297	2.758076	up	noncoding	BC100296		chr15	+
ASHG19A3A052831	0.003627	0.087297	2.758076	up	noncoding	BC100296		chr15	+
ASHG19A3A052831	0.003627	0.087297	2.758076	up	noncoding	BC100296		chr15	+
ASHG19A3A052838	0.002834	0.080918	2.776085	up	noncoding	uc001zsy.2	BC062349	chr15	+
ASHG19A3A052838	0.002834	0.080918	2.776085	up	noncoding	uc001zsy.2	BC062349	chr15	+
ASHG19A3A052880	0.000132	0.031585	3.184419	up	noncoding	L37698		chr15	+
ASHG19A3A052953	0.002482	0.075264	2.560394	up	noncoding	AK126077		chr15	+
ASHG19A3A053119	0.003661	0.087426	2.163347	up	noncoding	ENST00000456382	RP11-29H23.4	chr1	-
ASHG19A3A053266	0.003076	0.082215	2.719253	up	noncoding	ENST00000484702	RP11-386M24.1	chr15	+
ASHG19A3A053289	0.026255	0.194534	2.791692	up	noncoding	AL109706		chr15	+
ASHG19A3A053353	0.029266	0.203645	3.314809	up	noncoding	uc002ckm.1	BC098409	chr16	-
ASHG19A3A053433	0.015636	0.154374	3.137649	up	noncoding	BC035759		chr16	-
ASHG19A3A053597	0.028397	0.201176	2.988337	up	noncoding	HIT000218714		chr16	-
ASHG19A3A053617	1.05E-05	0.014362	19.85958	up	noncoding	uc002dpc.1	AX746995	chr16	-
ASHG19A3A053635	0.000659	0.050176	2.526381	up	noncoding	ENST00000437413	AC009086.1	chr16	-
ASHG19A3A053753	0.008213	0.120678	3.413581	up	noncoding	ENST00000411236	AC084058.2	chr16	-
ASHG19A3A053782	0.00065	0.050176	2.379591	up	noncoding	HIT000337391		chr16	-
ASHG19A3A053802	0.000416	0.044424	2.013225	up	noncoding	G43512		chr16	-
ASHG19A3A053802	0.000416	0.044424	2.013225	up	noncoding	G43512		chr16	-
ASHG19A3A053984	0.03669	0.224917	2.386806	up	noncoding	NR_033247	LOC100329108	chr16	-
ASHG19A3A054022	0.002155	0.072257	3.268959	up	noncoding	AL832093		chr16	-
ASHG19A3A054046	0.004633	0.09608	2.830155	up	noncoding	NR_024488	LOC100129637	chr16	-
ASHG19A3A054091	0.04198	0.238285	2.578708	up	noncoding	ENST00000430178	DDX11L10	chr16	+
ASHG19A3A054092	0.007403	0.114276	22.8868	up	noncoding	uc002cfh.2	BC032901	chr16	+
ASHG19A3A054110	0.001628	0.065924	3.172458	up	noncoding	NR_024453	LOC100134368	chr16	+
ASHG19A3A054360	0.001736	0.067157	3.033685	up	noncoding	NR_026675	NCRNA00169	chr16	+
ASHG19A3A054360	0.001736	0.067157	3.033685	up	noncoding	NR_026675	NCRNA00169	chr16	+
ASHG19A3A054409	0.048579	0.25108	2.938665	up	noncoding	AF143879		chr16	+
ASHG19A3A054441	0.03117	0.208947	2.626614	up	noncoding	NR_003369	RRN3P2	chr16	+
ASHG19A3A054484	0.000957	0.056576	3.421835	up	noncoding	uc002dyp.1	AK056973	chr16	+
ASHG19A3A054559	0.002009	0.070654	2.083229	up	noncoding	AK123174		chr16	+
ASHG19A3A054575	0.021295	0.177265	37.59144	up	noncoding	AK023784		chr16	+
ASHG19A3A054621	0.004353	0.09407	3.03998	up	noncoding	NR_003658	MT1DP	chr16	+

ASHG19A3A054735	0.031886	0.211064	3.982872	up	noncoding	G65644		chr1	-
ASHG19A3A054787	0.004528	0.095403	2.611429	up	noncoding	uc002fcj.1	AK021563	chr16	+
ASHG19A3A054787	0.004528	0.095403	2.611429	up	noncoding	uc002fcj.1	AK021563	chr16	+
ASHG19A3A054858	0.03086	0.20838	2.163677	up	noncoding	ENST00000443090	RP4-702J19.1	chr1	-
ASHG19A3A054858	0.03086	0.20838	2.163677	up	noncoding	ENST00000443090	RP4-702J19.1	chr1	-
ASHG19A3A054858	0.03086	0.20838	2.163677	up	noncoding	ENST00000443090	RP4-702J19.1	chr1	-
ASHG19A3A054858	0.03086	0.20838	2.163677	up	noncoding	ENST00000443090	RP4-702J19.1	chr1	-
ASHG19A3A054935	0.012058	0.140376	4.846883	up	noncoding	uc002fon.1	AK096286	chr16	+
ASHG19A3A054938	0.01321	0.14482	6.320725	up	noncoding	BC035173		chr16	+
ASHG19A3A054938	0.01321	0.14482	6.320725	up	noncoding	BC035173		chr16	+
ASHG19A3A054958	0.010581	0.132404	2.708766	up	noncoding	uc002fqw.2	BC071667	chr16	+
ASHG19A3A054993	0.007515	0.114935	2.183375	up	noncoding	HIT000249148		chr17	-
ASHG19A3A055081	0.019878	0.17297	2.343166	up	noncoding	uc001hpx.2	BC032899	chr1	+
ASHG19A3A055133	0.007482	0.114935	2.042301	up	noncoding	uc002fke.2	FLJ00104	chr16	-
ASHG19A3A055144	0.017493	0.163487	4.858126	up	noncoding	uc002lal.1	LOC647946	chr18	-
ASHG19A3A055154	0.023745	0.185665	2.318928	up	noncoding	uc002qgt.1	BC131616	chr19	+
ASHG19A3A055278	0.000495	0.045345	2.070978	up	noncoding	uc010egm.1	BC110060	chr19	-
ASHG19A3A055287	0.003906	0.089011	3.279195	up	noncoding	uc010guv.1	BC054862	chr22	-
ASHG19A3H0000054	0.00583	0.104857	2.697629	up	noncoding	nc-HOXB4-176-	nc-HOXB4-176	chr17	-
ASHG19A3H0000085	0.011715	0.138492	6.10898	up	noncoding	nc-HOXA5-68-	nc-HOXA5-68	chr7	-
ASHG19A3H0000098	0.002172	0.072533	2.484767	up	noncoding	nc-HOXC10-119-	nc-HOXC10-119	chr12	+
ASHG19A3H0000160	0.010055	0.130183	2.718901	up	noncoding	nc-HOXC9-138-	nc-HOXC9-138	chr12	+
ASHG19A3H0000195	0.005725	0.10433	2.249965	up	noncoding	nc-HOXD4-32-	nc-HOXD4-32	chr2	+
ASHG19A3L0000009	0.044404	0.24227	2.79617	up	noncoding	BX104325	lincRNA-FAM102B-1	chr1	+
ASHG19A3L0000033	0.002798	0.080655	2.775014	up	noncoding	DA807888	lincRNA-LMX1A	chr1	+
ASHG19A3L0000039	0.001923	0.070261	4.456934	up	noncoding	AV722915	lincRNA-PTGS2-2	chr1	+
ASHG19A3L0000057	0.003192	0.083261	3.028718	up	noncoding	chr1:198335952-198347302-39116163-39128263+	lincRNA-NEK7	chr1	-
ASHG19A3L0000128	0.043065	0.238904	2.192684	up	noncoding	39128263+	lincRNA-RRAGC-1	chr1	+
ASHG19A3L0000140	0.005646	0.103529	2.314505	up	noncoding	exon90+	lincRNA-KNCN	chr1	+
ASHG19A3L0000208	0.002145	0.072257	2.317311	up	noncoding	BX101441	lincRNA-C10orf46-1	chr10	+
ASHG19A3L0000269	0.000372	0.042176	3.016129	up	noncoding	BG722956	lincRNA-EGR2	chr10	-

ASHG19A3L0000269	0.000372	0.042176	3.016129	up	noncoding	BG722956	lincRNA-EGR2	chr10	-
ASHG19A3L0000269	0.000372	0.042176	3.016129	up	noncoding	BG722956	lincRNA-EGR2	chr10	-
ASHG19A3L0000269	0.000372	0.042176	3.016129	up	noncoding	BG722956	lincRNA-EGR2	chr10	-
ASHG19A3L0000329	0.023348	0.184707	2.555031	up	noncoding	BI059095	lincRNA-UBASH3B-1	chr11	+
ASHG19A3L0000388	0.044241	0.241882	2.559413	up	noncoding	DA706379	lincRNA-C1QTNF4	chr11	-
ASHG19A3L0000469	0.001324	0.06217	3.291176	up	noncoding	BU657491	lincRNA-CACNA1C	chr12	-
ASHG19A3L0000512	0.002957	0.081974	3.410225	up	noncoding	BQ222987	lincRNA-SLC16A7-7	chr12	-
ASHG19A3L0000538	0.022458	0.18214	2.322814	up	noncoding	CD242216	lincRNA-ALX1-1	chr12	-
ASHG19A3L0000591	0.042441	0.238285	2.455789	up	noncoding	CD102777	lincRNA-TPTE2	chr13	-
ASHG19A3L0000696	0.010837	0.133744	2.185569	up	noncoding	AI902205	lincRNA-OXGR1-2	chr13	-
ASHG19A3L0000711	0.008419	0.121805	2.92045	up	noncoding	chr14:25152560-25164885-	lincRNA-GZMB	chr14	-
ASHG19A3L0000775	0.034166	0.216699	20.36229	up	noncoding	AB208948	lincRNA-STON2-2	chr14	-
ASHG19A3L0000868	0.005187	0.100612	79.57489	up	noncoding	AF289584	lincRNA-NKD1	chr16	+
ASHG19A3L0000868	0.005187	0.100612	79.57489	up	noncoding	AF289584	lincRNA-NKD1	chr16	+
ASHG19A3L0000868	0.005187	0.100612	79.57489	up	noncoding	AF289584	lincRNA-NKD1	chr16	+
ASHG19A3L0001003	0.005925	0.105251	2.209038	up	noncoding	CB069168	lincRNA-GALR1-4	chr18	-
ASHG19A3L0001037	0.029648	0.204946	2.643216	up	noncoding	chr2:113359154-113374304- chr2:129541655-	lincRNA-CHCHD5-1	chr2	-
ASHG19A3L0001061	0.007362	0.114264	3.253568	up	noncoding	129552355- chr2:174248004-	lincRNA-HS6ST1-6	chr2	-
ASHG19A3L0001108	0.021107	0.176601	2.52088	up	noncoding	174261129+	lincRNA-SP3-2	chr2	+
ASHG19A3L0001123	0.005289	0.101436	2.850827	up	noncoding	BF108976	lincRNA-MYO1B-4	chr2	+
ASHG19A3L0001175	0.000723	0.051727	3.645009	up	noncoding	CR625452		chr2	-
ASHG19A3L0001177	0.043185	0.238984	2.23916	up	noncoding	AW177676	lincRNA-CAPN13	chr2	-
ASHG19A3L0001205	0.001735	0.067157	2.075238	up	noncoding	CN289466	lincRNA-MEIS1-1	chr2	-
ASHG19A3L0001226	0.037443	0.227009	3.071357	up	noncoding	DA330754	lincRNA-TMSB10	chr2	-
ASHG19A3L0001238	0.003378	0.084873	2.781365	up	noncoding	chr2:91595323-91623173+	lincRNA-TEKT4-3	chr2	+
ASHG19A3L0001261	0.000867	0.054271	2.739739	up	noncoding	exon2439+	lincRNA-PTPN1-2	chr20	+
ASHG19A3L0001452	0.008774	0.123403	2.044952	up	noncoding	BG677629	lincRNA-ARSJ-2	chr4	-
ASHG19A3L0001614	0.000473	0.045345	2.664309	up	noncoding	chr5:171107070-171142645+	lincRNA-FBXW11-3	chr5	+

ASHG19A3L0001655	0.023132	0.183821	2.067026	up	noncoding	chr5:49632068-49662143-	lincRNA-HCN1-1	chr5	-
ASHG19A3L0001686	0.001715	0.067108	2.214762	up	noncoding	AW452601	lincRNA-MTX3	chr5	-
ASHG19A3L0001706	0.001991	0.070561	5.845898	up	noncoding	CD000492	lincRNA-WISP3-2	chr6	+
ASHG19A3L0001719	0.002417	0.074687	3.291554	up	noncoding	EL949266	lincRNA-CENPW-2	chr6	+
ASHG19A3L0001747	0.003648	0.087309	2.112016	up	noncoding	chr6:150606082-150619632-	lincRNA-PPP1R14C	chr6	-
ASHG19A3L0001752	0.018168	0.166283	2.230671	up	noncoding	BE439827	lincRNA-MAS1	chr6	-
ASHG19A3L0001782	0.00309	0.082215	3.566291	up	noncoding	AW072314	lincRNA-OR2J2	chr6	-
ASHG19A3L0001794	0.001595	0.065335	2.97968	up	noncoding	chr6:3775751-3789451-	lincRNA-C6orf145-2	chr6	-
ASHG19A3L0001818	0.030668	0.207805	3.240873	up	noncoding	chr6:63073666-63086291+	lincRNA-LGSN	chr6	+
ASHG19A3L0001877	0.03588	0.223048	2.235852	up	noncoding	chr7:143147778-143169303-	lincRNA-TAS2R60	chr7	-
ASHG19A3L0001982	0.020453	0.174085	2.526349	up	noncoding	BU624419	lincRNA-HAS2-3	chr8	+
ASHG19A3L0001985	0.000308	0.039856	2.27709	up	noncoding	AI004797	lincRNA-HAS2-1	chr8	-
ASHG19A3L0002005	0.000234	0.035463	2.443858	up	noncoding	AA528614	lincRNA-MYC-10	chr8	-
ASHG19A3L0002080	0.013286	0.145333	2.330023	up	noncoding	chr8:37531517-37542367+	lincRNA-ZNF703-1	chr8	+
ASHG19A3L0002181	0.003425	0.084956	2.826239	up	noncoding	exon4209-	lincRNA-NIPAL2-2	chr8	-
ASHG19A3L0002216	0.007365	0.114264	2.178215	up	noncoding	BG427746	lincRNA-VLDLR-2	chr9	-
ASHG19A3L0002222	0.007845	0.118054	2.491698	up	noncoding	AK021739	lincRNA-JAK2-2	chr9	+
ASHG19A3L0002261	0.007084	0.113409	2.212441	up	noncoding	BF509048	lincRNA-FAM9C-3	chrX	-
ASHG19A3L0002327	0.027753	0.199057	2.50003	up	noncoding	BX096636	lincRNA-STARD8	chrX	+
ASHG19A3L0002480	0.007052	0.113157	2.451262	up	noncoding	BC037864	lincRNA-CD247	chr1	+
ASHG19A3L0002480	0.007052	0.113157	2.451262	up	noncoding	BC037864	lincRNA-CD247	chr1	+
ASHG19A3L0002480	0.007052	0.113157	2.451262	up	noncoding	BC037864	lincRNA-CD247	chr1	+
ASHG19A3L0002515	0.04374	0.240512	11.36495	up	noncoding	AF191495	lincRNA-F11R	chr1	-
ASHG19A3L0002515	0.04374	0.240512	11.36495	up	noncoding	AF191495	lincRNA-F11R	chr1	-
ASHG19A3L0002515	0.04374	0.240512	11.36495	up	noncoding	AF191495	lincRNA-F11R	chr1	-
ASHG19A3L0002515	0.04374	0.240512	11.36495	up	noncoding	AF191495	lincRNA-F11R	chr1	-
ASHG19A3L0002554	0.010643	0.132542	2.31827	up	noncoding	AW879648	lincRNA-SLC37A3-2	chr7	+
ASHG19A3L0002628	0.021421	0.177744	2.081036	up	noncoding	DW449276	lincRNA-CHD2-2	chr15	+
ASHG19A3L0002669	0.000425	0.044424	2.231204	up	noncoding	DB349013	lincRNA-DCTD	chr4	+

ASHG19A3L0002720	0.005974	0.105807	5.358188	up	noncoding	BX102989	lincRNA-SPATA19-2	chr11	-
ASHG19A3L0002750	0.045063	0.243678	2.902004	up	noncoding	EB386665	lincRNA-SLN	chr11	-
ASHG19A3L0002753	0.04705	0.248467	2.395737	up	noncoding	BG977395	lincRNA-PSTPIP1	chr15	+
ASHG19A3L0002884	0.001061	0.057323	2.301621	up	noncoding	chrX:11801246-11812911+	lincRNA-FRMPD4	chrX	+
ASHG19A3L0002908	0.000112	0.031537	2.1058	up	noncoding	AA628127	lincRNA-PRDM14	chr8	+
ASHG19A3L0002967	0.01393	0.146871	2.649706	up	noncoding	AU185412	lincRNA-LIG3	chr17	+
ASHG19A3L0003045	0.008403	0.121805	3.40029	up	noncoding	chr14:93595225-93603463+	lincRNA-MOAP1	chr14	+
ASHG19A3L0003063	0.014386	0.148592	3.295149	up	noncoding	BG197454	lincRNA-NRSN1-4	chr6	+
ASHG19A3L0003067	0.037175	0.226567	2.828724	up	noncoding	AK125314		chr6	+
ASHG19A3L0003067	0.037175	0.226567	2.828724	up	noncoding	AK125314		chr6	+
ASHG19A3L0003067	0.037175	0.226567	2.828724	up	noncoding	AK125314		chr6	+
ASHG19A3L0003067	0.037175	0.226567	2.828724	up	noncoding	AK125314		chr6	+
ASHG19A3L0003067	0.037175	0.226567	2.828724	up	noncoding	AK125314		chr6	+
ASHG19A3L0003071	0.006743	0.112118	4.353722	up	noncoding	chr6:13349175-13352025-	lincRNA-TBC1D7	chr6	-
ASHG19A3L0003118	0.021147	0.176675	2.130693	up	noncoding	AA219324	lincRNA-PDE4D-1	chr5	+
ASHG19A3L0003271	0.012031	0.140291	4.061936	up	noncoding	chr8:49776604-49779322+	lincRNA-SNAI2-1	chr8	+
ASHG19A3L0003298	0.003651	0.087309	2.154043	up	noncoding	AW269809	lincRNA-KPNA1	chr3	-
ASHG19A3L0003432	0.018288	0.166717	3.109658	up	noncoding	chr9:81993205-81999034-	lincRNA-PSAT1-1	chr9	-
ASHG19A3L0003458	0.011476	0.137737	3.071161	up	noncoding	AA136769	lincRNA-INSIG2-2	chr2	-
ASHG19A3L0003534	0.018357	0.166877	3.284287	up	noncoding	AA368654	lincRNA-OPTC	chr1	-
CUST_107_PI426075208	0.000272	0.03723	2.423003	up	noncoding	nc-HOXC10-128+	nc-HOXC10-128	chr12	-
CUST_117_PI426075208	0.033435	0.214768	2.139586	up	noncoding	nc-HOXC11-115+	nc-HOXC11-115	chr12	-
CUST_122_PI426075208	0.029845	0.205361	2.134366	up	noncoding	nc-HOXC13-102+	nc-HOXC13-102	chr12	-
CUST_126_PI426075208	0.00542	0.102521	2.830932	up	noncoding	nc-HOXC4-264+	nc-HOXC4-264	chr12	-
CUST_134_PI426075208	0.000744	0.051923	2.673461	up	noncoding	nc-HOXC6-240+	nc-HOXC6-240	chr12	-
CUST_134_PI426075208	0.000744	0.051923	2.673461	up	noncoding	nc-HOXC6-240+	nc-HOXC6-240	chr12	-
CUST_146_PI426075208	0.003031	0.082215	2.052998	up	noncoding	nc-HOXC6-252+	nc-HOXC6-252	chr12	-
CUST_146_PI426075208	0.003031	0.082215	2.052998	up	noncoding	nc-HOXC6-252+	nc-HOXC6-252	chr12	-
CUST_146_PI426075208	0.003031	0.082215	2.052998	up	noncoding	nc-HOXC6-252+	nc-HOXC6-252	chr12	-
CUST_163_PI426075208	0.001763	0.067369	2.282472	up	noncoding	nc-HOXC9-142+	nc-HOXC9-142	chr12	-

CUST_18_PI426073487	0.007388	0.114276	6.517431	up	noncoding	uc.19+	uc.19	chr1	+
CUST_199_PI426073487	0.000205	0.034555	3.412107	up	noncoding	uc.201+	uc.201	chr6	+
CUST_2_PI426075208	0.022724	0.182507	2.579227	up	noncoding	nc-HOXA10-82+	nc-HOXA10-82	chr7	+
CUST_454_PI426073487	0.009511	0.127832	8.7915	up	noncoding	uc.456+	uc.456	chr20	+
CUST_642_PI426073487	0.003528	0.086049	2.16376	up	noncoding	uc.163-	uc.163	chr5	-
CUST_761_PI426073487	0.012111	0.140629	2.61045	up	noncoding	uc.282-	uc.282	chr9	-
CUST_761_PI426073487	0.012111	0.140629	2.61045	up	noncoding	uc.282-	uc.282	chr9	-
CUST_761_PI426073487	0.012111	0.140629	2.61045	up	noncoding	uc.282-	uc.282	chr9	-
CUST_761_PI426073487	0.012111	0.140629	2.61045	up	noncoding	uc.282-	uc.282	chr9	-
CUST_761_PI426073487	0.012111	0.140629	2.61045	up	noncoding	uc.282-	uc.282	chr9	-
CUST_772_PI426073487	0.004489	0.095366	2.360559	up	noncoding	uc.293-	uc.293	chr10	-
CUST_787_PI426073487	0.000858	0.054175	2.165603	up	noncoding	uc.308-	uc.308	chr10	-
CUST_787_PI426073487	0.000858	0.054175	2.165603	up	noncoding	uc.308-	uc.308	chr10	-
CUST_941_PI426073487	0.004274	0.092902	2.392708	up	noncoding	uc.462-	uc.462	chrX	-

Supplementary Table 1-4. The list of lncRNAs downregulated in CRC.

ProbeName	P-value and FDR		Fold change and Regulation		type	seqname	GeneSymbol	chrom	strand
	p-value	FDR	FCAbsolute	regulation					
ASHG19A3A000013	0.035355	0.221291	11.18315	down	noncoding	AK091713		chr11	-
ASHG19A3A000145	0.048419	0.250586	4.056488	down	noncoding	ENST00000420855	RP11-561O23.6	chr9	-
ASHG19A3A000339	0.00295	0.081974	2.153523	down	noncoding	ENST00000452637	RP11-403I13.7	chr1	+
ASHG19A3A007146	0.013608	0.145815	2.141658	down	noncoding	NR_003530	MEG3	chr14	+
ASHG19A3A007147	0.000667	0.050329	3.945284	down	noncoding	NR_003531	MEG3	chr14	+
ASHG19A3A007176	0.003887	0.089011	2.815475	down	noncoding	NR_015359	C4orf12	chr4	+
ASHG19A3A007237	0.003282	0.083828	3.278426	down	noncoding	NR_024123	PBX3	chr9	+
ASHG19A3A007237	0.003282	0.083828	3.278426	down	noncoding	NR_024123	PBX3	chr9	+
ASHG19A3A007250	0.038755	0.230358	2.020224	down	noncoding	NR_024148	RNF121	chr11	+
ASHG19A3A007259	0.016458	0.15794	2.187696	down	noncoding	NR_024174	MKNK1	chr1	-
ASHG19A3A007259	0.016458	0.15794	2.187696	down	noncoding	NR_024174	MKNK1	chr1	-
ASHG19A3A007259	0.016458	0.15794	2.187696	down	noncoding	NR_024174	MKNK1	chr1	-

ASHG19A3A007261	0.009241	0.126124	3.740524	down	noncoding	NR_024179	PDLIM5	chr4	+
ASHG19A3A007261	0.009241	0.126124	3.740524	down	noncoding	NR_024179	PDLIM5	chr4	+
ASHG19A3A007261	0.009241	0.126124	3.740524	down	noncoding	NR_024179	PDLIM5	chr4	+
ASHG19A3A007261	0.009241	0.126124	3.740524	down	noncoding	NR_024179	PDLIM5	chr4	+
ASHG19A3A007268	0.039025	0.230484	2.820669	down	noncoding	NR_024203	ECD	chr10	-
ASHG19A3A007268	0.039025	0.230484	2.820669	down	noncoding	NR_024203	ECD	chr10	-
ASHG19A3A007268	0.039025	0.230484	2.820669	down	noncoding	NR_024203	ECD	chr10	-
ASHG19A3A007268	0.039025	0.230484	2.820669	down	noncoding	NR_024203	ECD	chr10	-
ASHG19A3A007278	0.02474	0.189386	3.488631	down	noncoding	NR_024248	LOC650368	chr11	+
ASHG19A3A007337	0.008177	0.120639	26.85088	down	noncoding	NR_024537	GSTM3	chr1	-
ASHG19A3A007338	0.005314	0.101436	3.530916	down	noncoding	NR_024538	GSTM4	chr1	+
ASHG19A3A007338	0.005314	0.101436	3.530916	down	noncoding	NR_024538	GSTM4	chr1	+
ASHG19A3A007347	1.05E-05	0.014362	11.71695	down	noncoding	NR_024575	RAB34	chr17	-
ASHG19A3A007347	1.05E-05	0.014362	11.71695	down	noncoding	NR_024575	RAB34	chr17	-
ASHG19A3A007347	1.05E-05	0.014362	11.71695	down	noncoding	NR_024575	RAB34	chr17	-
ASHG19A3A007347	1.05E-05	0.014362	11.71695	down	noncoding	NR_024575	RAB34	chr17	-
ASHG19A3A007347	1.05E-05	0.014362	11.71695	down	noncoding	NR_024575	RAB34	chr17	-
ASHG19A3A007383	0.025546	0.192321	4.240425	down	noncoding	NR_026571	NOX4	chr11	-
ASHG19A3A007383	0.025546	0.192321	4.240425	down	noncoding	NR_026571	NOX4	chr11	-
ASHG19A3A007383	0.025546	0.192321	4.240425	down	noncoding	NR_026571	NOX4	chr11	-
ASHG19A3A007388	0.015448	0.153961	3.219756	down	noncoding	NR_026645	DET1	chr15	-
ASHG19A3A007388	0.015448	0.153961	3.219756	down	noncoding	NR_026645	DET1	chr15	-
ASHG19A3A007443	0.011715	0.138492	2.859855	down	noncoding	NR_026936	C5orf27	chr5	+
ASHG19A3A007459	0.022808	0.182698	2.916357	down	noncoding	NR_027026	GUSBP1	chr5	+
ASHG19A3A007513	0.006207	0.10778	11.20635	down	noncoding	NR_027391	SLC15A3	chr11	-
ASHG19A3A007513	0.006207	0.10778	11.20635	down	noncoding	NR_027391	SLC15A3	chr11	-
ASHG19A3A007513	0.006207	0.10778	11.20635	down	noncoding	NR_027391	SLC15A3	chr11	-
ASHG19A3A007518	5.89E-05	0.022687	6.170377	down	noncoding	NR_027400	SMPD1	chr11	+
ASHG19A3A007518	5.89E-05	0.022687	6.170377	down	noncoding	NR_027400	SMPD1	chr11	+
ASHG19A3A007546	0.016285	0.156884	5.570852	down	noncoding	NR_027638	ADAM9	chr8	+
ASHG19A3A007546	0.016285	0.156884	5.570852	down	noncoding	NR_027638	ADAM9	chr8	+
ASHG19A3A007546	0.016285	0.156884	5.570852	down	noncoding	NR_027638	ADAM9	chr8	+
ASHG19A3A007546	0.016285	0.156884	5.570852	down	noncoding	NR_027638	ADAM9	chr8	+

ASHG19A3A007650	0.033306	0.214597	2.000181	down	noncoding	NR_028400	TSNAX-DISC1	chr1	+
ASHG19A3A007650	0.033306	0.214597	2.000181	down	noncoding	NR_028400	TSNAX-DISC1	chr1	+
ASHG19A3A007650	0.033306	0.214597	2.000181	down	noncoding	NR_028400	TSNAX-DISC1	chr1	+
ASHG19A3A007650	0.033306	0.214597	2.000181	down	noncoding	NR_028400	TSNAX-DISC1	chr1	+
ASHG19A3A007650	0.033306	0.214597	2.000181	down	noncoding	NR_028400	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007652	0.035376	0.221291	3.183747	down	noncoding	NR_028398	TSNAX-DISC1	chr1	+
ASHG19A3A007677	0.000493	0.045345	6.7526	down	noncoding	NR_028503	C17orf91	chr17	-
ASHG19A3A007677	0.000493	0.045345	6.7526	down	noncoding	NR_028503	C17orf91	chr17	-
ASHG19A3A007678	0.000114	0.031537	8.084557	down	noncoding	NR_028505	C17orf91	chr17	-

ASHG19A3A007678	0.000114	0.031537	8.084557	down	noncoding	NR_028505	C17orf91	chr17	-
ASHG19A3A007708	0.014608	0.149756	2.385397	down	noncoding	NR_030775	SHISA4	chr1	+
ASHG19A3A007764	0.000633	0.049752	12.1949	down	noncoding	NR_033360	MEG3	chr14	+
ASHG19A3A007770	0.010006	0.130183	2.399211	down	noncoding	NR_033390	TYROBP	chr19	-
ASHG19A3A007770	0.010006	0.130183	2.399211	down	noncoding	NR_033390	TYROBP	chr19	-
ASHG19A3A007770	0.010006	0.130183	2.399211	down	noncoding	NR_033390	TYROBP	chr19	-
ASHG19A3A007770	0.010006	0.130183	2.399211	down	noncoding	NR_033390	TYROBP	chr19	-
ASHG19A3A007789	0.030536	0.207536	2.175735	down	noncoding	NR_033440	PAM	chr5	+
ASHG19A3A007789	0.030536	0.207536	2.175735	down	noncoding	NR_033440	PAM	chr5	+
ASHG19A3A007789	0.030536	0.207536	2.175735	down	noncoding	NR_033440	PAM	chr5	+
ASHG19A3A007789	0.030536	0.207536	2.175735	down	noncoding	NR_033440	PAM	chr5	+
ASHG19A3A007789	0.030536	0.207536	2.175735	down	noncoding	NR_033440	PAM	chr5	+
ASHG19A3A007799	0.005473	0.102582	3.548022	down	noncoding	NR_033655	AGA	chr4	-
ASHG19A3A007799	0.005473	0.102582	3.548022	down	noncoding	NR_033655	AGA	chr4	-
ASHG19A3A007982	0.006619	0.111318	2.549635	down	noncoding	uc001gix.1	AK127238	chr1	-
ASHG19A3A008016	0.049289	0.252234	2.511591	down	noncoding	ENST00000430089	AC087163.3	chr17	-
ASHG19A3A008016	0.049289	0.252234	2.511591	down	noncoding	ENST00000430089	AC087163.3	chr17	-
ASHG19A3A008016	0.049289	0.252234	2.511591	down	noncoding	ENST00000430089	AC087163.3	chr17	-
ASHG19A3A008016	0.049289	0.252234	2.511591	down	noncoding	ENST00000430089	AC087163.3	chr17	-
ASHG19A3A008039	0.042785	0.238618	2.892474	down	noncoding	uc002gva.1	BC058012	chr17	-
ASHG19A3A008094	0.018077	0.166283	3.789972	down	noncoding	U00949		chr17	-
ASHG19A3A008245	0.013763	0.146386	4.893795	down	noncoding	ENST00000426575	RP11-318C24.2	chr1	-
ASHG19A3A008547	0.023355	0.184707	2.553106	down	noncoding	AF086173		chr1	-
ASHG19A3A008551	0.012307	0.141526	2.616068	down	noncoding	ENST00000509424	RP5-875H18.2	chr17	-
ASHG19A3A008551	0.012307	0.141526	2.616068	down	noncoding	ENST00000509424	RP5-875H18.2	chr17	-
ASHG19A3A008642	0.009169	0.125764	3.188566	down	noncoding	AF130062		chr17	-
ASHG19A3A008652	0.026244	0.194534	2.552466	down	noncoding	NR_030732	LOC645638	chr17	-
ASHG19A3A008736	0.016089	0.155694	7.877248	down	noncoding	HIT000016017		chr17	-
ASHG19A3A008876	0.001588	0.065335	3.825272	down	noncoding	uc002jyv.1	AK127919	chr17	-
ASHG19A3A008876	0.001588	0.065335	3.825272	down	noncoding	uc002jyv.1	AK127919	chr17	-
ASHG19A3A008927	0.008986	0.124963	3.14114	down	noncoding	HIT000022845		chr17	-
ASHG19A3A009180	0.019635	0.172352	2.999795	down	noncoding	ENST00000423783	AC055811.5	chr17	+
ASHG19A3A009251	0.025389	0.192173	3.224276	down	noncoding	uc010cqz.2	AK310665	chr17	+

ASHG19A3A009258	0.015152	0.152727	6.221829	down	noncoding	ENST00000340731	AC087499.3	chr17	+
ASHG19A3A009385	0.01611	0.155802	2.698186	down	noncoding	BC016000		chr1	-
ASHG19A3A009453	0.015709	0.154761	2.893547	down	noncoding	uc002hrb.1	AK090935	chr17	+
ASHG19A3A009819	0.019669	0.172352	11.84083	down	noncoding	CR594811		chr17	+
ASHG19A3A009878	1.3E-05	0.014741	4.799091	down	noncoding	ENST00000412707	AC118653.1	chr17	+
ASHG19A3A009987	0.004379	0.094352	6.798641	down	noncoding	ENST00000432760	RP11-397P13.6	chr1	-
ASHG19A3A010085	0.000778	0.05336	3.766683	down	noncoding	G36948		chr17	+
ASHG19A3A010085	0.000778	0.05336	3.766683	down	noncoding	G36948		chr17	+
ASHG19A3A010100	0.024813	0.189557	2.352687	down	noncoding	ENST00000513236	AC139099.3	chr17	+
ASHG19A3A010146	0.010122	0.130494	2.64879	down	noncoding	G36902		chr18	-
ASHG19A3A010146	0.010122	0.130494	2.64879	down	noncoding	G36902		chr18	-
ASHG19A3A010146	0.010122	0.130494	2.64879	down	noncoding	G36902		chr18	-
ASHG19A3A010352	0.038929	0.230384	17.53229	down	noncoding	BC071787		chr18	-
ASHG19A3A010628	0.006221	0.107899	8.913055	down	noncoding	G36872		chr18	+
ASHG19A3A010636	0.000116	0.031537	3.885074	down	noncoding	AK090802		chr18	+
ASHG19A3A010639	0.009709	0.128705	3.299163	down	noncoding	ENST00000432117	AC037473.1	chr18	+
ASHG19A3A010699	0.044429	0.24227	2.334582	down	noncoding	ENST00000417675	AC090771.2	chr18	+
ASHG19A3A010706	0.029899	0.205361	3.823626	down	noncoding	ENST00000475372	RP11-640A1.1	chr18	+
ASHG19A3A010990	0.012221	0.141008	3.083144	down	noncoding	ENST00000436983	RP11-365D23.2	chr1	-
ASHG19A3A011011	0.026148	0.194031	8.936636	down	noncoding	AK024250		chr19	-
ASHG19A3A011353	0.022619	0.182257	3.654702	down	noncoding	ENST00000448432	RP11-453O22.1	chr1	-
ASHG19A3A011437	0.010016	0.130183	2.028761	down	noncoding	AK095904		chr1	-
ASHG19A3A011526	0.021992	0.179745	5.14609	down	noncoding	ENST00000489959	CEACAMP10	chr19	-
ASHG19A3A011547	0.010748	0.133399	11.76546	down	noncoding	uc002oxl.2	BC041923	chr19	-
ASHG19A3A011548	0.005787	0.104589	9.932334	down	noncoding	ENST00000498944	AC006213.1	chr19	-
ASHG19A3A011551	0.016376	0.157656	3.30478	down	noncoding	NR_033341	LOC100379224	chr19	-
ASHG19A3A011551	0.016376	0.157656	3.30478	down	noncoding	NR_033341	LOC100379224	chr19	-
ASHG19A3A011746	0.002983	0.082215	5.512335	down	noncoding	BC045766		chr19	-
ASHG19A3A011746	0.002983	0.082215	5.512335	down	noncoding	BC045766		chr19	-
ASHG19A3A011815	0.009014	0.125	3.507328	down	noncoding	ENST00000413496	AC008440.5	chr19	-
ASHG19A3A011815	0.009014	0.125	3.507328	down	noncoding	ENST00000413496	AC008440.5	chr19	-
ASHG19A3A011815	0.009014	0.125	3.507328	down	noncoding	ENST00000413496	AC008440.5	chr19	-
ASHG19A3A011815	0.009014	0.125	3.507328	down	noncoding	ENST00000413496	AC008440.5	chr19	-

ASHG19A3A011815	0.009014	0.125	3.507328	down	noncoding	ENST00000413496	AC008440.5	chr19	-
ASHG19A3A012021	0.013764	0.146386	9.538083	down	noncoding	ENST00000400795	RP1-21O18.3	chr1	-
ASHG19A3A012021	0.013764	0.146386	9.538083	down	noncoding	ENST00000400795	RP1-21O18.3	chr1	-
ASHG19A3A012021	0.013764	0.146386	9.538083	down	noncoding	ENST00000400795	RP1-21O18.3	chr1	-
ASHG19A3A012021	0.013764	0.146386	9.538083	down	noncoding	ENST00000400795	RP1-21O18.3	chr1	-
ASHG19A3A012151	0.023206	0.184214	3.163317	down	noncoding	NR_030717	SNAPC2	chr19	+
ASHG19A3A012183	0.030912	0.20838	2.069286	down	noncoding	uc002mlv.2	AK097685	chr19	+
ASHG19A3A012255	0.002115	0.072257	22.79775	down	noncoding	NR_027049	ZNF788	chr19	+
ASHG19A3A012492	0.048324	0.250288	2.963188	down	noncoding	CR608123		chr19	+
ASHG19A3A012595	0.02051	0.174085	14.71244	down	noncoding	NR_029389	LOC100134317	chr19	+
ASHG19A3A012742	0.009705	0.128705	2.355698	down	noncoding	uc010eif.1	AK311181	chr19	+
ASHG19A3A012742	0.009705	0.128705	2.355698	down	noncoding	uc010eif.1	AK311181	chr19	+
ASHG19A3A012742	0.009705	0.128705	2.355698	down	noncoding	uc010eif.1	AK311181	chr19	+
ASHG19A3A012742	0.009705	0.128705	2.355698	down	noncoding	uc010eif.1	AK311181	chr19	+
ASHG19A3A012742	0.009705	0.128705	2.355698	down	noncoding	uc010eif.1	AK311181	chr19	+
ASHG19A3A012742	0.009705	0.128705	2.355698	down	noncoding	uc010eif.1	AK311181	chr19	+
ASHG19A3A012742	0.009705	0.128705	2.355698	down	noncoding	uc010eif.1	AK311181	chr19	+
ASHG19A3A012742	0.009705	0.128705	2.355698	down	noncoding	uc010eif.1	AK311181	chr19	+
ASHG19A3A012742	0.009705	0.128705	2.355698	down	noncoding	uc010eif.1	AK311181	chr19	+
ASHG19A3A012829	0.04055	0.234961	4.169305	down	noncoding	ENST00000503632	AC011551.1	chr19	+
ASHG19A3A012995	0.029652	0.204946	2.866009	down	noncoding	uc001hyk.1	BC133032	chr1	-
ASHG19A3A013056	0.007179	0.113881	27.93711	down	noncoding	ENST00000509804	AC010327.1	chr19	+
ASHG19A3A013056	0.007179	0.113881	27.93711	down	noncoding	ENST00000509804	AC010327.1	chr19	+
ASHG19A3A013103	0.001575	0.065335	4.521599	down	noncoding	uc002qnf.2	BC110411	chr19	+
ASHG19A3A013156	0.030878	0.20838	3.932695	down	noncoding	AK024582		chr19	+
ASHG19A3A013166	0.006077	0.106868	3.095311	down	noncoding	uc002qse.2	BC040926	chr19	+
ASHG19A3A013166	0.006077	0.106868	3.095311	down	noncoding	uc002qse.2	BC040926	chr19	+
ASHG19A3A013222	0.041395	0.236689	2.994889	down	noncoding	uc002qyd.1	BC113076	chr2	-
ASHG19A3A013222	0.041395	0.236689	2.994889	down	noncoding	uc002qyd.1	BC113076	chr2	-
ASHG19A3A013223	0.04773	0.249618	3.498675	down	noncoding	ENST00000335179	AC010907.3	chr2	-
ASHG19A3A013223	0.04773	0.249618	3.498675	down	noncoding	ENST00000335179	AC010907.3	chr2	-
ASHG19A3A013333	0.02065	0.174829	9.270667	down	noncoding	U79271		chr1	-
ASHG19A3A013333	0.02065	0.174829	9.270667	down	noncoding	U79271		chr1	-

ASHG19A3A013333	0.02065	0.174829	9.270667	down	noncoding	U79271		chr1	-
ASHG19A3A013333	0.02065	0.174829	9.270667	down	noncoding	U79271		chr1	-
ASHG19A3A013336	0.01732	0.162668	29.33265	down	noncoding	BC019085		chr1	-
ASHG19A3A013336	0.01732	0.162668	29.33265	down	noncoding	BC019085		chr1	-
ASHG19A3A013336	0.01732	0.162668	29.33265	down	noncoding	BC019085		chr1	-
ASHG19A3A013346	0.000489	0.045345	2.287773	down	noncoding	ENST00000500120	AC023137.2	chr2	-
ASHG19A3A013489	0.01372	0.14631	18.43	down	noncoding	AF075027		chr2	-
ASHG19A3A013500	0.044479	0.242389	2.123935	down	noncoding	ENST00000415722	AC007390.4	chr2	-
ASHG19A3A013505	0.000103	0.030979	9.098105	down	noncoding	AK055915		chr2	-
ASHG19A3A013536	0.000142	0.031585	3.714486	down	noncoding	AK125406		chr2	-
ASHG19A3A013585	0.017762	0.165106	3.801989	down	noncoding	BC087862		chr2	-
ASHG19A3A013604	0.015601	0.154374	3.198511	down	noncoding	ENST00000444514	AC006509.8	chr2	-
ASHG19A3A013715	0.038427	0.229658	2.204061	down	noncoding	ENST00000428700	RP11-511I11.1	chr2	-
ASHG19A3A013944	0.020019	0.17349	2.737409	down	noncoding	AK054569		chr2	-
ASHG19A3A013979	0.026607	0.195313	3.159135	down	noncoding	ENST00000398171	AC133644.3	chr2	-
ASHG19A3A014010	0.025346	0.191965	2.697106	down	noncoding	uc001abu.1	AK056486	chr1	+
ASHG19A3A014040	0.003486	0.085407	11.00742	down	noncoding	AK057592		chr2	-
ASHG19A3A014064	0.00864	0.122455	3.662216	down	noncoding	ENST00000421314	MTL1	chr1	-
ASHG19A3A014229	0.036207	0.223231	8.674489	down	noncoding	uc002tjx.3	AY343891	chr2	-
ASHG19A3A014232	0.042427	0.238285	2.025713	down	noncoding	ENST00000416673	RPL23AP7	chr2	-
ASHG19A3A014232	0.042427	0.238285	2.025713	down	noncoding	ENST00000416673	RPL23AP7	chr2	-
ASHG19A3A014246	0.003075	0.082215	2.174546	down	noncoding	ENST00000446992	AC068542.2	chr2	-
ASHG19A3A014246	0.003075	0.082215	2.174546	down	noncoding	ENST00000446992	AC068542.2	chr2	-
ASHG19A3A014325	0.001017	0.057323	3.071506	down	noncoding	NR_026740	LOC389033	chr2	-
ASHG19A3A014435	0.045414	0.244109	3.145097	down	noncoding	D55639		chr2	-
ASHG19A3A014435	0.045414	0.244109	3.145097	down	noncoding	D55639		chr2	-
ASHG19A3A014505	0.00994	0.129916	2.28808	down	noncoding	ENST00000431457	AC092662.2	chr2	-
ASHG19A3A014530	0.007328	0.114264	56.91847	down	noncoding	ENST00000412746	AC010093.2	chr2	-
ASHG19A3A014530	0.007328	0.114264	56.91847	down	noncoding	ENST00000412746	AC010093.2	chr2	-
ASHG19A3A014551	0.044024	0.241226	7.573611	down	noncoding	uc002ubv.3	BC073897	chr2	-
ASHG19A3A014552	0.042344	0.238285	10.53441	down	noncoding	ENST00000482477	AC009299.5	chr2	-
ASHG19A3A014625	0.033059	0.213573	2.125273	down	noncoding	ENST00000442417	AC093818.1	chr2	-
ASHG19A3A014625	0.033059	0.213573	2.125273	down	noncoding	ENST00000442417	AC093818.1	chr2	-

ASHG19A3A014625	0.033059	0.213573	2.125273	down	noncoding	ENST00000442417	AC093818.1	chr2	-
ASHG19A3A014636	0.0309	0.20838	2.865903	down	noncoding	ENST00000440938	AC073465.3	chr2	-
ASHG19A3A014668	0.026974	0.196393	9.081688	down	noncoding	uc002ukq.2	BC034000	chr2	-
ASHG19A3A014815	0.006784	0.112118	5.785222	down	noncoding	AK096309		chr2	-
ASHG19A3A014997	0.000182	0.034555	3.662478	down	noncoding	AF116702		chr2	-
ASHG19A3A014997	0.000182	0.034555	3.662478	down	noncoding	AF116702		chr2	-
ASHG19A3A015058	0.001794	0.067636	3.088519	down	noncoding	ENST00000430194	AC079120.1	chr2	-
ASHG19A3A015117	0.036895	0.225596	2.225605	down	noncoding	ENST00000441266	AC068134.8	chr2	-
ASHG19A3A015118	0.035596	0.221947	3.14945	down	noncoding	NR_028501	ECEL1P2	chr2	-
ASHG19A3A015226	0.002173	0.072533	2.484464	down	noncoding	ENST00000417267	AC114730.7	chr2	-
ASHG19A3A015323	0.04063	0.235063	6.192812	down	noncoding	ENST00000456674	AC018463.4	chr2	+
ASHG19A3A015324	0.003057	0.082215	2.973678	down	noncoding	ENST00000433548	AC018463.5	chr2	+
ASHG19A3A015518	0.007491	0.114935	2.326994	down	noncoding	AK125997		chr2	+
ASHG19A3A015519	0.003954	0.089575	2.11214	down	noncoding	ENST00000438935	AC007390.6	chr2	+
ASHG19A3A015598	0.01741	0.163163	2.013939	down	noncoding	ENST00000423051	AC012354.8	chr2	+
ASHG19A3A015618	0.012613	0.142131	2.669461	down	noncoding	AK023940		chr2	+
ASHG19A3A015661	0.020279	0.174085	3.37092	down	noncoding	NR_002229	RPL23AP32	chr2	+
ASHG19A3A015807	0.001961	0.070296	3.054201	down	noncoding	ENST00000437460	AC007881.4	chr2	+
ASHG19A3A015882	0.036677	0.224917	3.358419	down	noncoding	ENST00000417406	AC109638.1	chr2	+
ASHG19A3A015904	0.001135	0.058346	2.70274	down	noncoding	AL133438		chr2	+
ASHG19A3A015904	0.001135	0.058346	2.70274	down	noncoding	AL133438		chr2	+
ASHG19A3A015904	0.001135	0.058346	2.70274	down	noncoding	AL133438		chr2	+
ASHG19A3A015904	0.001135	0.058346	2.70274	down	noncoding	AL133438		chr2	+
ASHG19A3A016022	0.006733	0.112118	7.0753	down	noncoding	uc010yvb.1	BC032409	chr2	+
ASHG19A3A016026	0.047885	0.249813	2.970673	down	noncoding	uc002syc.1	BC039374	chr2	+
ASHG19A3A016038	0.040397	0.234463	4.870813	down	noncoding	ENST00000424783	AC019097.7	chr2	+
ASHG19A3A016038	0.040397	0.234463	4.870813	down	noncoding	ENST00000424783	AC019097.7	chr2	+
ASHG19A3A016090	0.048061	0.250288	2.241573	down	noncoding	ENST00000414265	AC018880.2	chr2	+
ASHG19A3A016134	0.009879	0.129467	3.739757	down	noncoding	ENST00000440793	AC023672.1	chr2	+
ASHG19A3A016168	0.006822	0.112118	2.294043	down	noncoding	ENST00000418944	AC092664.1	chr2	+
ASHG19A3A016168	0.006822	0.112118	2.294043	down	noncoding	ENST00000418944	AC092664.1	chr2	+
ASHG19A3A016168	0.006822	0.112118	2.294043	down	noncoding	ENST00000418944	AC092664.1	chr2	+
ASHG19A3A016168	0.006822	0.112118	2.294043	down	noncoding	ENST00000418944	AC092664.1	chr2	+

ASHG19A3A016181	0.020141	0.174085	7.115367	down	noncoding	ENST00000449539	AC068491.3	chr2	+
ASHG19A3A016318	0.042114	0.238285	2.391559	down	noncoding	ENST00000423267	AC012306.2	chr2	+
ASHG19A3A016370	0.011291	0.136209	5.548814	down	noncoding	ENST00000449922	RHOQP2	chr2	+
ASHG19A3A016391	0.004851	0.098065	14.23489	down	noncoding	uc002ttu.1	BC008215	chr2	+
ASHG19A3A016391	0.004851	0.098065	14.23489	down	noncoding	uc002ttu.1	BC008215	chr2	+
ASHG19A3A016462	0.000372	0.042176	2.790123	down	noncoding	ENST00000427218	AC007394.2	chr2	+
ASHG19A3A016487	0.012927	0.143422	4.819317	down	noncoding	ENST00000412323	ATP5A1P2	chr2	+
ASHG19A3A016591	1.71E-05	0.014741	8.65126	down	noncoding	ENST00000416361	AC068039.4	chr2	+
ASHG19A3A016859	0.023094	0.183619	7.102555	down	noncoding	ENST00000451828	RP11-108M9.3	chr1	+
ASHG19A3A016885	0.018221	0.166565	2.25137	down	noncoding	ENST00000430494	AC007879.7	chr2	+
ASHG19A3A016902	0.00207	0.071625	2.129033	down	noncoding	ENST00000416092	AC013409.3	chr2	+
ASHG19A3A017025	0.006899	0.112625	2.527661	down	noncoding	uc002vms.1	AX747413	chr2	+
ASHG19A3A017042	0.029735	0.205052	2.493746	down	noncoding	ENST00000446594	AC012512.1	chr2	+
ASHG19A3A017050	0.011037	0.135071	2.95069	down	noncoding	G36718		chr2	+
ASHG19A3A017061	0.031243	0.208947	2.557795	down	noncoding	ENST00000427790	AC007677.1	chr2	+
ASHG19A3A017163	0.016042	0.155694	4.247936	down	noncoding	ENST00000437898	RP1-43E13.2	chr1	+
ASHG19A3A017163	0.016042	0.155694	4.247936	down	noncoding	ENST00000437898	RP1-43E13.2	chr1	+
ASHG19A3A017208	0.013164	0.144636	2.243787	down	noncoding	AF116718		chr2	+
ASHG19A3A017208	0.013164	0.144636	2.243787	down	noncoding	AF116718		chr2	+
ASHG19A3A017233	0.012437	0.141895	2.132583	down	noncoding	ENST00000442637	RP5-1103G7.4	chr20	-
ASHG19A3A017233	0.012437	0.141895	2.132583	down	noncoding	ENST00000442637	RP5-1103G7.4	chr20	-
ASHG19A3A017346	0.014216	0.147861	2.654346	down	noncoding	AK057535		chr1	+
ASHG19A3A017346	0.014216	0.147861	2.654346	down	noncoding	AK057535		chr1	+
ASHG19A3A017346	0.014216	0.147861	2.654346	down	noncoding	AK057535		chr1	+
ASHG19A3A017346	0.014216	0.147861	2.654346	down	noncoding	AK057535		chr1	+
ASHG19A3A017431	0.038113	0.228969	3.492784	down	noncoding	ENST00000445304	RPL17P1	chr20	-
ASHG19A3A017463	0.013822	0.146497	6.601245	down	noncoding	ENST00000396692	CYB5P4	chr20	-
ASHG19A3A017645	0.003055	0.082215	9.207128	down	noncoding	ENST00000423261	GLRXP	chr20	-
ASHG19A3A017672	0.000837	0.053973	3.407851	down	noncoding	ENST00000432563	RP5-1121H13.1	chr20	-
ASHG19A3A017722	0.010496	0.132365	3.825801	down	noncoding	ENST00000440968	HNRPA1P3	chr20	-
ASHG19A3A017853	0.008536	0.122132	2.726115	down	noncoding	Z70769		chr20	-
ASHG19A3A017853	0.008536	0.122132	2.726115	down	noncoding	Z70769		chr20	-
ASHG19A3A017853	0.008536	0.122132	2.726115	down	noncoding	Z70769		chr20	-

ASHG19A3A017853	0.008536	0.122132	2.726115	down	noncoding	Z70769		chr20	-
ASHG19A3A017853	0.008536	0.122132	2.726115	down	noncoding	Z70769		chr20	-
ASHG19A3A017853	0.008536	0.122132	2.726115	down	noncoding	Z70769		chr20	-
ASHG19A3A017853	0.008536	0.122132	2.726115	down	noncoding	Z70769		chr20	-
ASHG19A3A018234	0.011426	0.137292	4.047805	down	noncoding	ENST00000425307	RP5-1125A11.5	chr20	+
ASHG19A3A018253	0.002797	0.080655	4.02102	down	noncoding	ENST00000421424	C20orf127	chr20	+
ASHG19A3A018277	0.00073	0.051923	36.35272	down	noncoding	AK130977		chr20	+
ASHG19A3A018501	0.014312	0.148139	7.823103	down	noncoding	ENST00000439558	RP5-907D15.2	chr20	+
ASHG19A3A018826	0.021228	0.176853	8.2489	down	noncoding	AK095069		chr21	-
ASHG19A3A018826	0.021228	0.176853	8.2489	down	noncoding	AK095069		chr21	-
ASHG19A3A018826	0.021228	0.176853	8.2489	down	noncoding	AK095069		chr21	-
ASHG19A3A018848	0.007048	0.113157	7.778324	down	noncoding	ENST00000432988	AP000689.8	chr21	-
ASHG19A3A018873	0.042565	0.238285	2.171538	down	noncoding	ENST00000423089	AP001434.1	chr21	-
ASHG19A3A018957	0.00049	0.045345	19.21256	down	noncoding	ENST00000449877	MYL6P	chr21	-
ASHG19A3A019036	0.000159	0.032748	14.55338	down	noncoding	ENST00000332473	FGF7P2	chr21	+
ASHG19A3A019090	0.03746	0.227009	2.954595	down	noncoding	ENST00000414214	FDPSP	chr21	+
ASHG19A3A019100	0.006311	0.10895	2.22675	down	noncoding	ENST00000425213	EEF1A1P	chr21	+
ASHG19A3A019152	0.015648	0.154374	2.561177	down	noncoding	ENST00000458495	TPT1P	chr21	+
ASHG19A3A019175	0.00429	0.093118	2.066616	down	noncoding	DQ655932		chr21	+
ASHG19A3A019322	0.023301	0.184707	2.224949	down	noncoding	uc002zdzj.1	DQ577420	chr21	+
ASHG19A3A019363	0.049594	0.252234	2.514907	down	noncoding	NR_027673	ADARB1	chr21	+
ASHG19A3A019363	0.049594	0.252234	2.514907	down	noncoding	NR_027673	ADARB1	chr21	+
ASHG19A3A019363	0.049594	0.252234	2.514907	down	noncoding	NR_027673	ADARB1	chr21	+
ASHG19A3A019363	0.049594	0.252234	2.514907	down	noncoding	NR_027673	ADARB1	chr21	+
ASHG19A3A019378	0.01172	0.138492	4.238784	down	noncoding	ENST00000451618	AP001476.2	chr21	+
ASHG19A3A019402	0.013513	0.145745	2.255067	down	noncoding	ENST00000427757	RPL23AP4	chr21	+
ASHG19A3A019766	0.000278	0.03759	6.923479	down	noncoding	ENST00000447905	CITF22-45C1.3	chr22	-
ASHG19A3A019811	0.010571	0.132404	2.070328	down	noncoding	uc003awd.2	BC036921	chr22	-
ASHG19A3A019811	0.010571	0.132404	2.070328	down	noncoding	uc003awd.2	BC036921	chr22	-
ASHG19A3A019811	0.010571	0.132404	2.070328	down	noncoding	uc003awd.2	BC036921	chr22	-
ASHG19A3A020180	0.023781	0.185665	4.890538	down	noncoding	ENST00000438037	ASH2LP1	chr22	+
ASHG19A3A020193	0.042615	0.238285	4.115841	down	noncoding	ENST00000415639	AP000361.2	chr22	+
ASHG19A3A020292	0.026004	0.193525	2.120453	down	noncoding	ENST00000437933	FTHL1	chr1	+

ASHG19A3A020380	0.012448	0.141895	17.43706	down	noncoding	ENST00000414048	CTA-714B7.4	chr22	+
ASHG19A3A020450	0.049164	0.25214	2.708272	down	noncoding	ENST00000418803	RP3-508I15.19	chr22	+
ASHG19A3A020450	0.049164	0.25214	2.708272	down	noncoding	ENST00000418803	RP3-508I15.19	chr22	+
ASHG19A3A020450	0.049164	0.25214	2.708272	down	noncoding	ENST00000418803	RP3-508I15.19	chr22	+
ASHG19A3A020525	0.004711	0.096398	3.616907	down	noncoding	NR_027786	SERHL	chr22	+
ASHG19A3A020662	0.042076	0.238285	6.129087	down	noncoding	ENST00000497982	RP1-144F13.4	chr1	+
ASHG19A3A020687	0.047096	0.248623	2.022526	down	noncoding	ENST00000418255	RP1-118J21.5	chr1	+
ASHG19A3A020687	0.047096	0.248623	2.022526	down	noncoding	ENST00000418255	RP1-118J21.5	chr1	+
ASHG19A3A020693	0.001749	0.06735	2.307896	down	noncoding	NR_002786	CIDECP	chr3	-
ASHG19A3A020693	0.001749	0.06735	2.307896	down	noncoding	NR_002786	CIDECP	chr3	-
ASHG19A3A020694	0.001391	0.06264	2.502995	down	noncoding	ENST00000432401	CIDECP	chr3	-
ASHG19A3A020694	0.001391	0.06264	2.502995	down	noncoding	ENST00000432401	CIDECP	chr3	-
ASHG19A3A020721	0.002354	0.074687	9.654985	down	noncoding	uc003bwp.1	NR_003112	chr3	-
ASHG19A3A020789	0.009773	0.129005	2.006482	down	noncoding	ENST00000417487	AC104297.2	chr3	-
ASHG19A3A020827	0.02163	0.178416	2.249533	down	noncoding	ENST00000426040	AC098614.1	chr3	-
ASHG19A3A020853	0.032587	0.212573	7.605163	down	noncoding	ENST00000451877	AC104306.4	chr3	-
ASHG19A3A020867	0.043776	0.240512	2.175925	down	noncoding	CR622191		chr3	-
ASHG19A3A020867	0.043776	0.240512	2.175925	down	noncoding	CR622191		chr3	-
ASHG19A3A020868	0.037948	0.228356	2.514679	down	noncoding	G43299		chr3	-
ASHG19A3A020868	0.037948	0.228356	2.514679	down	noncoding	G43299		chr3	-
ASHG19A3A020938	0.003804	0.088847	5.090117	down	noncoding	ENST00000438017	RP4-613B23.1	chr3	-
ASHG19A3A020938	0.003804	0.088847	5.090117	down	noncoding	ENST00000438017	RP4-613B23.1	chr3	-
ASHG19A3A020973	0.027532	0.198387	3.336636	down	noncoding	ENST00000425889	RP11-852E15.1	chr3	-
ASHG19A3A021015	0.038466	0.229658	5.374559	down	noncoding	ENST00000444020	RP11-1029M24.1	chr3	-
ASHG19A3A021028	0.024203	0.186855	2.831341	down	noncoding	HIT000086181		chr3	-
ASHG19A3A021028	0.024203	0.186855	2.831341	down	noncoding	HIT000086181		chr3	-
ASHG19A3A021028	0.024203	0.186855	2.831341	down	noncoding	HIT000086181		chr3	-
ASHG19A3A021028	0.024203	0.186855	2.831341	down	noncoding	HIT000086181		chr3	-
ASHG19A3A021095	0.010283	0.131219	5.509587	down	noncoding	ENST00000439215	ATP6V1E1P1	chr1	+
ASHG19A3A021270	0.008913	0.124411	2.397999	down	noncoding	ENST00000487255	RP11-803B1.3	chr3	-
ASHG19A3A021271	0.004537	0.09544	2.513867	down	noncoding	ENST00000462675	RP11-803B1.7	chr3	-
ASHG19A3A021320	0.023318	0.184707	3.166499	down	noncoding	ENST00000491722	RP11-778P17.2	chr3	-
ASHG19A3A021320	0.023318	0.184707	3.166499	down	noncoding	ENST00000491722	RP11-778P17.2	chr3	-

ASHG19A3A021320	0.023318	0.184707	3.166499	down	noncoding	ENST00000491722	RP11-778P17.2	chr3	-
ASHG19A3A021320	0.023318	0.184707	3.166499	down	noncoding	ENST00000491722	RP11-778P17.2	chr3	-
ASHG19A3A021337	0.020364	0.174085	2.846528	down	noncoding	ENST00000444386	RP11-506B15.6	chr1	+
ASHG19A3A021337	0.020364	0.174085	2.846528	down	noncoding	ENST00000444386	RP11-506B15.6	chr1	+
ASHG19A3A021370	0.000735	0.051923	7.232469	down	noncoding	NR_028303	LOC100302640	chr3	-
ASHG19A3A021371	0.005761	0.104491	3.954788	down	noncoding	ENST00000477210	RP11-280F2.2	chr3	-
ASHG19A3A021436	0.022631	0.182257	2.249054	down	noncoding	ENST00000465850	RP11-274J15.2	chr3	-
ASHG19A3A021438	0.001549	0.06482	3.824534	down	noncoding	ENST00000473625	RP11-553L6.3	chr3	-
ASHG19A3A021495	0.021678	0.178416	8.293546	down	noncoding	BC033713		chr3	-
ASHG19A3A021511	0.022607	0.182257	3.340554	down	noncoding	ENST00000468859	RP11-379B18.5	chr3	-
ASHG19A3A021552	0.013099	0.14434	5.562556	down	noncoding	ENST00000480365	RP11-722C17.1	chr3	-
ASHG19A3A021650	0.003904	0.089011	4.027526	down	noncoding	G43503		chr3	-
ASHG19A3A021650	0.003904	0.089011	4.027526	down	noncoding	G43503		chr3	-
ASHG19A3A021650	0.003904	0.089011	4.027526	down	noncoding	G43503		chr3	-
ASHG19A3A021926	0.003686	0.08774	6.67303	down	noncoding	ENST00000490941	KLF7P1	chr3	-
ASHG19A3A022009	0.023399	0.184707	2.274875	down	noncoding	ENST00000426289	RP4-533D7.3	chr1	+
ASHG19A3A022009	0.023399	0.184707	2.274875	down	noncoding	ENST00000426289	RP4-533D7.3	chr1	+
ASHG19A3A022071	0.011683	0.138492	4.985112	down	noncoding	HIT000097222		chr3	-
ASHG19A3A022172	0.04455	0.242635	3.025626	down	noncoding	ENST00000452862	AC144530.1	chr3	-
ASHG19A3A022386	0.008259	0.120896	3.454973	down	noncoding	ENST00000368528	AC098614.2	chr3	+
ASHG19A3A022428	0.012192	0.141008	2.896711	down	noncoding	NR_027868	PDCD6IP	chr3	+
ASHG19A3A022428	0.012192	0.141008	2.896711	down	noncoding	NR_027868	PDCD6IP	chr3	+
ASHG19A3A022470	0.000129	0.031585	5.155115	down	noncoding	ENST00000399472	RP11-331G2.4	chr3	+
ASHG19A3A022479	0.015144	0.152727	4.624481	down	noncoding	ENST00000413128	RP11-420K5.1	chr3	+
ASHG19A3A022518	0.00312	0.082215	3.359555	down	noncoding	AF007132		chr3	+
ASHG19A3A022524	0.003155	0.082688	41.79669	down	noncoding	AB074163		chr1	+
ASHG19A3A022785	0.001348	0.062273	2.016172	down	noncoding	ENST00000482368	CTD-2013N24.2	chr3	+
ASHG19A3A022785	0.001348	0.062273	2.016172	down	noncoding	ENST00000482368	CTD-2013N24.2	chr3	+
ASHG19A3A022830	0.003467	0.085214	5.796337	down	noncoding	ENST00000476047	RP11-550F7.1	chr3	+
ASHG19A3A022844	0.006606	0.11122	3.193001	down	noncoding	ENST00000427917	RP5-866L20.3	chr1	+
ASHG19A3A022924	0.000833	0.053939	10.70153	down	noncoding	ENST00000486325	RP11-15N24.3	chr3	+
ASHG19A3A022949	0.023389	0.184707	4.036379	down	noncoding	ENST00000457291	RP11-238M12.1	chr3	+
ASHG19A3A022960	0.02672	0.195728	2.718451	down	noncoding	AK055934		chr3	+

ASHG19A3A022961	0.008877	0.124348	5.065429	down	noncoding	NR_028301	LOC344595	chr3	+
ASHG19A3A022962	0.018122	0.166283	3.693568	down	noncoding	uc003dwh.1	AX747913	chr3	+
ASHG19A3A023100	0.042458	0.238285	2.005134	down	noncoding	NR_024618	LOC100129550	chr3	+
ASHG19A3A023182	0.006677	0.111795	2.000593	down	noncoding	NR_026991	C3orf47	chr3	+
ASHG19A3A023234	0.019712	0.17243	3.395176	down	noncoding	ENST00000502370	RP11-79L21.1	chr3	+
ASHG19A3A023287	0.014214	0.147861	3.180287	down	noncoding	ENST00000495704	RP11-117F22.2	chr3	+
ASHG19A3A023293	0.013483	0.145745	2.843697	down	noncoding	ENST00000515247	RP11-319G6.1	chr3	+
ASHG19A3A023293	0.013483	0.145745	2.843697	down	noncoding	ENST00000515247	RP11-319G6.1	chr3	+
ASHG19A3A023293	0.013483	0.145745	2.843697	down	noncoding	ENST00000515247	RP11-319G6.1	chr3	+
ASHG19A3A023293	0.013483	0.145745	2.843697	down	noncoding	ENST00000515247	RP11-319G6.1	chr3	+
ASHG19A3A023293	0.013483	0.145745	2.843697	down	noncoding	ENST00000515247	RP11-319G6.1	chr3	+
ASHG19A3A023293	0.013483	0.145745	2.843697	down	noncoding	ENST00000515247	RP11-319G6.1	chr3	+
ASHG19A3A023293	0.013483	0.145745	2.843697	down	noncoding	ENST00000515247	RP11-319G6.1	chr3	+
ASHG19A3A023415	0.041389	0.236689	2.894329	down	noncoding	ENST00000488408	RP11-217E22.1	chr3	+
ASHG19A3A023534	0.026419	0.195017	2.858395	down	noncoding	ENST00000420943	RP11-263C16.2	chr3	+
ASHG19A3A023615	0.036037	0.223195	2.284452	down	noncoding	ENST00000474767	RP11-14I2.2	chr3	+
ASHG19A3A023713	0.021799	0.178806	2.601071	down	noncoding	AK055652		chr3	+
ASHG19A3A023713	0.021799	0.178806	2.601071	down	noncoding	AK055652		chr3	+
ASHG19A3A023791	0.022667	0.182365	5.099007	down	noncoding	ENST00000442855	RP11-182I10.1	chr1	+
ASHG19A3A023802	0.007497	0.114935	2.813463	down	noncoding	ENST00000392362	AC073135.2	chr3	+
ASHG19A3A023823	0.008311	0.121096	2.799468	down	noncoding	AK130823		chr4	-
ASHG19A3A023978	0.013194	0.144754	3.000481	down	noncoding	G36472		chr4	-
ASHG19A3A023993	0.046999	0.248431	2.554655	down	noncoding	ENST00000485777	RP11-333E5.1	chr4	-
ASHG19A3A024063	0.047961	0.249942	4.249107	down	noncoding	ENST00000514630	RP11-640B6.1	chr4	-
ASHG19A3A024159	0.048629	0.25108	3.214049	down	noncoding	ENST00000513630	RP11-317G22.1	chr4	-
ASHG19A3A024240	0.00861	0.122339	2.305121	down	noncoding	ENST00000513351	RP11-63H19.6	chr4	-
ASHG19A3A024245	0.023638	0.18529	2.924402	down	noncoding	NR_023916	PIN1L	chr1	+
ASHG19A3A024325	0.002125	0.072257	5.101989	down	noncoding	ENST00000502804	RP11-88J6.1	chr4	-
ASHG19A3A024382	0.029433	0.204315	3.424427	down	noncoding	ENST00000505767	RP11-777B9.3	chr4	-
ASHG19A3A024385	0.00315	0.082688	7.783318	down	noncoding	ENST00000509878	RP11-792D21.1	chr4	-
ASHG19A3A024393	0.008841	0.124101	21.56271	down	noncoding	CR612147		chr4	-
ASHG19A3A024567	0.007283	0.113938	4.160033	down	noncoding	ENST00000505438	AC004069.1	chr4	-
ASHG19A3A024572	0.023748	0.185665	2.650154	down	noncoding	ENST00000501580	AC004066.1	chr4	-

ASHG19A3A024613	0.012839	0.143152	4.246755	down	noncoding	ENST00000503770	RP11-433B3.1	chr4	-
ASHG19A3A024649	0.048631	0.25108	12.04387	down	noncoding	CR601629		chr4	-
ASHG19A3A024660	0.04464	0.242654	3.36297	down	noncoding	ENST00000505994	RP11-548H18.2	chr4	-
ASHG19A3A024788	0.034332	0.217476	3.99438	down	noncoding	AK001013		chr4	-
ASHG19A3A024871	0.042556	0.238285	2.556731	down	noncoding	ENST00000393938	ANXA2P1	chr4	-
ASHG19A3A024871	0.042556	0.238285	2.556731	down	noncoding	ENST00000393938	ANXA2P1	chr4	-
ASHG19A3A024958	0.007565	0.115351	5.649623	down	noncoding	ENST00000425922	ADH5P2	chr1	+
ASHG19A3A024984	0.044572	0.242635	2.369627	down	noncoding	ENST00000515331	RP11-213L8.1	chr4	-
ASHG19A3A025052	0.031608	0.209869	2.150953	down	noncoding	NR_024008	C4orf38	chr4	-
ASHG19A3A025061	0.011095	0.135071	8.172324	down	noncoding	ENST00000503948	RP11-162O12.2	chr4	-
ASHG19A3A025173	0.046536	0.247406	2.584371	down	noncoding	ENST00000509843	RP11-478C1.3	chr4	+
ASHG19A3A025365	0.010667	0.132734	4.104628	down	noncoding	ENST00000506450	RP11-302F12.2	chr4	+
ASHG19A3A025438	0.023516	0.185273	2.291263	down	noncoding	ENST00000447415	RP4-612B15.2	chr1	+
ASHG19A3A025565	0.001604	0.065366	6.88057	down	noncoding	ENST00000489235	RP11-25L5.1	chr4	+
ASHG19A3A025580	0.019524	0.171886	2.349331	down	noncoding	ENST00000514397	RP11-63H19.1	chr4	+
ASHG19A3A025603	0.004966	0.098474	3.537666	down	noncoding	ENST00000294916	RP11-4I17.1	chr4	+
ASHG19A3A025736	0.005549	0.102884	6.434039	down	noncoding	ENST00000512222	RP11-263F19.1	chr4	+
ASHG19A3A025762	0.018808	0.168175	2.435052	down	noncoding	ENST00000415545	HSP90B3P	chr1	+
ASHG19A3A025825	0.006047	0.106589	5.614554	down	noncoding	ENST00000399181	FAM177A2	chr4	+
ASHG19A3A025877	0.027787	0.199204	2.816616	down	noncoding	G36724		chr4	+
ASHG19A3A025889	0.015185	0.152759	2.423603	down	noncoding	ENST00000500526	AC004051.2	chr4	+
ASHG19A3A025889	0.015185	0.152759	2.423603	down	noncoding	ENST00000500526	AC004051.2	chr4	+
ASHG19A3A026190	0.026545	0.195066	3.534843	down	noncoding	ENST00000506966	RP11-21G20.1	chr4	+
ASHG19A3A026254	0.031307	0.208947	10.78878	down	noncoding	ENST00000509378	RP11-39C10.1	chr4	+
ASHG19A3A026307	0.01999	0.173343	3.834238	down	noncoding	ENST00000439625	RP4-736I12.1	chr1	+
ASHG19A3A026334	0.019196	0.16989	4.058234	down	noncoding	BC063870		chr4	+
ASHG19A3A026355	0.036307	0.223527	5.488152	down	noncoding	ENST00000514910	RP11-451F20.1	chr4	+
ASHG19A3A026376	0.025179	0.191284	2.495069	down	noncoding	ENST00000448700	RP4-672J20.1	chr1	+
ASHG19A3A026403	0.020313	0.174085	2.266451	down	noncoding	ENST00000393497	RP11-713C19.2	chr4	+
ASHG19A3A026472	0.020156	0.174085	2.155375	down	noncoding	ENST00000510731	RP11-692C23.1	chr5	-
ASHG19A3A026568	1.27E-08	0.00019	2.796743	down	noncoding	NR_027253	LOC285696	chr5	-
ASHG19A3A026656	0.027505	0.198387	12.77906	down	noncoding	AK001058		chr5	-
ASHG19A3A026804	0.008075	0.119838	7.627451	down	noncoding	ENST00000503994	RP11-175M2.1	chr5	-

ASHG19A3A026804	0.008075	0.119838	7.627451	down	noncoding	ENST00000503994	RP11-175M2.1	chr5	-
ASHG19A3A026804	0.008075	0.119838	7.627451	down	noncoding	ENST00000503994	RP11-175M2.1	chr5	-
ASHG19A3A026806	0.000451	0.044913	9.097064	down	noncoding	uc003jqp.2	BC071555	chr5	-
ASHG19A3A026806	0.000451	0.044913	9.097064	down	noncoding	uc003jqp.2	BC071555	chr5	-
ASHG19A3A026806	0.000451	0.044913	9.097064	down	noncoding	uc003jqp.2	BC071555	chr5	-
ASHG19A3A026852	0.020483	0.174085	3.658369	down	noncoding	ENST00000506094	CTD-2244C20.1	chr5	-
ASHG19A3A026908	0.021726	0.178416	3.478669	down	noncoding	NR_024438	LOC648740	chr1	+
ASHG19A3A026960	0.000199	0.034555	4.27293	down	noncoding	ENST00000511329	CTC-366B18.2	chr5	-
ASHG19A3A027006	0.038933	0.230384	2.625516	down	noncoding	ENST00000419651	RP11-123D12.1	chr1	+
ASHG19A3A027032	0.036916	0.225596	4.066395	down	noncoding	ENST00000505694	CTC-459I6.1	chr5	-
ASHG19A3A027223	0.049189	0.25214	2.578624	down	noncoding	ENST00000505795	CTD-2367A17.2	chr5	-
ASHG19A3A027285	0.037527	0.227009	2.536195	down	noncoding	ENST00000505780	CTD-2158P22.4	chr5	-
ASHG19A3A027361	0.020268	0.174085	2.392981	down	noncoding	ENST00000414070	RP11-20O24.4	chr1	+
ASHG19A3A027361	0.020268	0.174085	2.392981	down	noncoding	ENST00000414070	RP11-20O24.4	chr1	+
ASHG19A3A027361	0.020268	0.174085	2.392981	down	noncoding	ENST00000414070	RP11-20O24.4	chr1	+
ASHG19A3A027437	0.037093	0.226461	2.81316	down	noncoding	NR_026763	SMAD5OS	chr5	-
ASHG19A3A027437	0.037093	0.226461	2.81316	down	noncoding	NR_026763	SMAD5OS	chr5	-
ASHG19A3A027437	0.037093	0.226461	2.81316	down	noncoding	NR_026763	SMAD5OS	chr5	-
ASHG19A3A027516	0.006812	0.112118	3.82943	down	noncoding	G42992		chr5	-
ASHG19A3A027516	0.006812	0.112118	3.82943	down	noncoding	G42992		chr5	-
ASHG19A3A027516	0.006812	0.112118	3.82943	down	noncoding	G42992		chr5	-
ASHG19A3A027516	0.006812	0.112118	3.82943	down	noncoding	G42992		chr5	-
ASHG19A3A027516	0.006812	0.112118	3.82943	down	noncoding	G42992		chr5	-
ASHG19A3A027516	0.006812	0.112118	3.82943	down	noncoding	G42992		chr5	-
ASHG19A3A027516	0.006812	0.112118	3.82943	down	noncoding	G42992		chr5	-
ASHG19A3A027661	0.003643	0.087309	18.86381	down	noncoding	ENST00000309178	GLRXP3	chr5	-
ASHG19A3A027808	0.003218	0.083261	6.50671	down	noncoding	AK054653		chr5	-
ASHG19A3A027843	0.019983	0.173343	2.255969	down	noncoding	uc011cly.1	BC013821	chr5	+
ASHG19A3A028035	0.014412	0.148615	3.094103	down	noncoding	ENST00000438995	CTD-2138O14.1	chr5	+
ASHG19A3A028233	0.035906	0.223117	3.977179	down	noncoding	ENST00000467688	RPL17P22	chr5	+
ASHG19A3A028260	0.032815	0.212892	2.729314	down	noncoding	ENST00000509515	CTD-2085F10.1	chr5	+
ASHG19A3A028260	0.032815	0.212892	2.729314	down	noncoding	ENST00000509515	CTD-2085F10.1	chr5	+
ASHG19A3A028260	0.032815	0.212892	2.729314	down	noncoding	ENST00000509515	CTD-2085F10.1	chr5	+
ASHG19A3A028260	0.032815	0.212892	2.729314	down	noncoding	ENST00000509515	CTD-2085F10.1	chr5	+

ASHG19A3A028358	0.046507	0.247406	4.079621	down	noncoding	ENST00000509441	CTC-349J22.1	chr5	+
ASHG19A3A028414	0.005471	0.102582	3.279983	down	noncoding	G43036		chr5	+
ASHG19A3A028425	0.008958	0.124804	3.462593	down	noncoding	ENST00000510759	CTC-422A18.2	chr5	+
ASHG19A3A028526	0.020893	0.175843	2.299624	down	noncoding	ENST00000506586	CTC-303L1.1	chr5	+
ASHG19A3A028526	0.020893	0.175843	2.299624	down	noncoding	ENST00000506586	CTC-303L1.1	chr5	+
ASHG19A3A028562	0.024573	0.188533	2.387645	down	noncoding	ENST00000504105	CTD-2007H13.2	chr5	+
ASHG19A3A028596	0.006045	0.106589	5.664057	down	noncoding	HIT000070642		chr5	+
ASHG19A3A028651	0.018771	0.168175	2.059919	down	noncoding	G43610		chr5	+
ASHG19A3A028794	0.017774	0.165106	5.456941	down	noncoding	ENST00000505029	RP11-485M7.1	chr5	+
ASHG19A3A028810	0.035805	0.222764	2.739237	down	noncoding	BC034282		chr5	+
ASHG19A3A029083	0.013426	0.145745	3.184575	down	noncoding	G36711		chr5	+
ASHG19A3A029295	0.026062	0.193675	4.105301	down	noncoding	uc003mnq.2	BC016291	chr5	+
ASHG19A3A029300	0.029892	0.205361	2.010119	down	noncoding	ENST00000476406	AC138031.1	chr5	+
ASHG19A3A029363	0.020205	0.174085	2.886518	down	noncoding	ENST00000407959	RP1-182O16.1	chr6	-
ASHG19A3A029407	0.028528	0.201411	2.914596	down	noncoding	ENST00000407436	RP11-360O19.5	chr6	-
ASHG19A3A029407	0.028528	0.201411	2.914596	down	noncoding	ENST00000407436	RP11-360O19.5	chr6	-
ASHG19A3A029462	0.038904	0.230384	2.186458	down	noncoding	BC040832		chr1	+
ASHG19A3A029486	0.048583	0.25108	2.428325	down	noncoding	AK022008		chr1	+
ASHG19A3A029519	0.006507	0.110473	2.909741	down	noncoding	ENST00000454426	HIST1H2APS2	chr6	-
ASHG19A3A029632	0.033351	0.214702	5.909695	down	noncoding	ENST00000441380	IFITM4P	chr6	-
ASHG19A3A029637	0.035422	0.2213	2.414398	down	noncoding	ENST00000416822	MICG	chr6	-
ASHG19A3A029828	0.018564	0.166966	2.780416	down	noncoding	AK094536		chr1	-
ASHG19A3A029828	0.018564	0.166966	2.780416	down	noncoding	AK094536		chr1	-
ASHG19A3A029834	0.014604	0.149756	2.78322	down	noncoding	ENST00000453556	RP1-179N16.3	chr6	-
ASHG19A3A029834	0.014604	0.149756	2.78322	down	noncoding	ENST00000453556	RP1-179N16.3	chr6	-
ASHG19A3A029834	0.014604	0.149756	2.78322	down	noncoding	ENST00000453556	RP1-179N16.3	chr6	-
ASHG19A3A029834	0.014604	0.149756	2.78322	down	noncoding	ENST00000453556	RP1-179N16.3	chr6	-
ASHG19A3A029988	0.00334	0.084755	4.334074	down	noncoding	ENST00000404962	RP4-724P12.1	chr6	-
ASHG19A3A030018	0.023959	0.185992	2.703322	down	noncoding	ENST00000471856	RP11-337C18.5	chr1	+
ASHG19A3A030063	0.014325	0.148177	13.13178	down	noncoding	ENST00000374318	RP11-337C18.4	chr1	+
ASHG19A3A030174	0.028592	0.201607	4.738704	down	noncoding	ENST00000405542	RP3-508D13.1	chr6	-
ASHG19A3A030183	0.041238	0.236689	4.13516	down	noncoding	ENST00000404330	RP11-250B2.1	chr6	-
ASHG19A3A030199	0.045329	0.244109	2.065022	down	noncoding	uc003pju.1	AK023685	chr6	-

ASHG19A3A030199	0.045329	0.244109	2.065022	down	noncoding	uc003pju.1	AK023685	chr6	-
ASHG19A3A030199	0.045329	0.244109	2.065022	down	noncoding	uc003pju.1	AK023685	chr6	-
ASHG19A3A030199	0.045329	0.244109	2.065022	down	noncoding	uc003pju.1	AK023685	chr6	-
ASHG19A3A030199	0.045329	0.244109	2.065022	down	noncoding	uc003pju.1	AK023685	chr6	-
ASHG19A3A030199	0.045329	0.244109	2.065022	down	noncoding	uc003pju.1	AK023685	chr6	-
ASHG19A3A030209	0.004526	0.095403	120.2876	down	noncoding	ENST00000405071	RP11-132M7.2	chr6	-
ASHG19A3A030281	0.02179	0.178806	2.463486	down	noncoding	ENST00000406314	RP11-40G16.1	chr6	-
ASHG19A3A030300	0.001071	0.057323	2.96113	down	noncoding	ENST00000403144	RP11-111D3.1	chr6	-
ASHG19A3A030382	0.008186	0.120648	6.154982	down	noncoding	NR_002932	GSTM2P1	chr6	-
ASHG19A3A030429	0.03257	0.212573	2.636913	down	noncoding	ENST00000404319	RP1-136O14.1	chr6	-
ASHG19A3A030476	0.006823	0.112118	4.679781	down	noncoding	ENST00000439075	RP11-510H23.1	chr6	-
ASHG19A3A030502	0.036086	0.223195	3.422497	down	noncoding	ENST00000426826	RP11-458I7.1	chr1	+
ASHG19A3A030533	0.035311	0.221215	3.144302	down	noncoding	AK129530		chr6	-
ASHG19A3A030552	0.015878	0.155353	5.197078	down	noncoding	ENST00000406512	FTHL26	chr6	-
ASHG19A3A030609	0.043084	0.238904	2.598437	down	noncoding	ENST00000405630	RP11-390P2.2	chr6	-
ASHG19A3A030767	0.030475	0.207389	4.245669	down	noncoding	BC041951		chr6	-
ASHG19A3A030767	0.030475	0.207389	4.245669	down	noncoding	BC041951		chr6	-
ASHG19A3A030796	0.034109	0.216612	9.841676	down	noncoding	CR601496		chr6	-
ASHG19A3A030796	0.034109	0.216612	9.841676	down	noncoding	CR601496		chr6	-
ASHG19A3A030796	0.034109	0.216612	9.841676	down	noncoding	CR601496		chr6	-
ASHG19A3A030796	0.034109	0.216612	9.841676	down	noncoding	CR601496		chr6	-
ASHG19A3A030949	0.005359	0.101629	4.772798	down	noncoding	ENST00000379928	RP11-69L16.4	chr6	+
ASHG19A3A031059	0.037642	0.227412	2.292322	down	noncoding	ENST00000403629	RP11-31K13.1	chr6	+
ASHG19A3A031123	0.001375	0.062595	3.616034	down	noncoding	uc011dkm.1	BTN2A3	chr6	+
ASHG19A3A031189	0.02594	0.193525	2.325818	down	noncoding	ENST00000396818	RPL13P	chr6	+
ASHG19A3A031219	0.013709	0.14631	2.053944	down	noncoding	NR_001434	HLA-H	chr6	+
ASHG19A3A031242	0.013833	0.146518	2.095116	down	noncoding	ENST00000437516	HLA-N	chr6	+
ASHG19A3A031389	0.005282	0.101436	13.16932	down	noncoding	ENST00000429998	RP11-513I15.6	chr6	+
ASHG19A3A031622	0.017091	0.161406	2.025658	down	noncoding	ENST00000408043	SLC25A20P1	chr6	+
ASHG19A3A031655	0.000404	0.044339	2.78088	down	noncoding	AF086156		chr6	+
ASHG19A3A031719	0.001042	0.057323	3.846177	down	noncoding	ENST00000441363	RP11-398K22.12	chr6	+
ASHG19A3A031724	0.016702	0.159472	2.29884	down	noncoding	ENST00000501658	AL590431.2	chr1	+
ASHG19A3A031724	0.016702	0.159472	2.29884	down	noncoding	ENST00000501658	AL590431.2	chr1	+

ASHG19A3A031724	0.016702	0.159472	2.29884	down	noncoding	ENST00000501658	AL590431.2	chr1	+
ASHG19A3A031724	0.016702	0.159472	2.29884	down	noncoding	ENST00000501658	AL590431.2	chr1	+
ASHG19A3A031724	0.016702	0.159472	2.29884	down	noncoding	ENST00000501658	AL590431.2	chr1	+
ASHG19A3A031741	0.048994	0.251915	3.524844	down	noncoding	ENST00000402607	RP11-474L11.3	chr6	+
ASHG19A3A031771	0.049175	0.25214	2.438773	down	noncoding	AJ420536		chr6	+
ASHG19A3A031816	0.009593	0.128384	3.027449	down	noncoding	ENST00000401460	RP1-72A23.3	chr6	+
ASHG19A3A031817	6.73E-05	0.022687	2.131872	down	noncoding	ENST00000403367	RP1-72A23.1	chr6	+
ASHG19A3A031863	0.035802	0.222764	3.876024	down	noncoding	ENST00000413107	RP11-758C21.1	chr6	+
ASHG19A3A031885	0.00144	0.062929	6.659364	down	noncoding	G36625		chr6	+
ASHG19A3A031903	0.038763	0.230358	4.090974	down	noncoding	AK095376		chr6	+
ASHG19A3A031919	0.007221	0.113881	4.26401	down	noncoding	ENST00000441999	RP11-425D10.1	chr6	+
ASHG19A3A032054	0.03201	0.211507	2.016953	down	noncoding	ENST00000406671	RP3-351K20.4	chr6	+
ASHG19A3A032152	0.049908	0.252541	2.244214	down	noncoding	ENST00000402141	RP1-20N2.2	chr6	+
ASHG19A3A032162	0.011207	0.135519	3.817202	down	noncoding	G43356		chr6	+
ASHG19A3A032162	0.011207	0.135519	3.817202	down	noncoding	G43356		chr6	+
ASHG19A3A032162	0.011207	0.135519	3.817202	down	noncoding	G43356		chr6	+
ASHG19A3A032162	0.011207	0.135519	3.817202	down	noncoding	G43356		chr6	+
ASHG19A3A032162	0.011207	0.135519	3.817202	down	noncoding	G43356		chr6	+
ASHG19A3A032162	0.011207	0.135519	3.817202	down	noncoding	G43356		chr6	+
ASHG19A3A032162	0.011207	0.135519	3.817202	down	noncoding	G43356		chr6	+
ASHG19A3A032162	0.011207	0.135519	3.817202	down	noncoding	G43356		chr6	+
ASHG19A3A032250	0.020813	0.175618	3.43502	down	noncoding	ENST00000404107	RP11-486M3.2	chr6	+
ASHG19A3A032260	0.045352	0.244109	3.189319	down	noncoding	ENST00000402808	RP11-230C9.1	chr6	+
ASHG19A3A032321	0.027632	0.19852	2.582895	down	noncoding	G43611		chr6	+
ASHG19A3A032359	0.008199	0.120678	2.523375	down	noncoding	AJ420589		chr6	+
ASHG19A3A032389	0.00161	0.065366	5.218877	down	noncoding	AK124993		chr7	-
ASHG19A3A032442	0.002564	0.076396	2.482969	down	noncoding	G31709		chr7	-
ASHG19A3A032442	0.002564	0.076396	2.482969	down	noncoding	G31709		chr7	-
ASHG19A3A032507	0.024836	0.189636	4.453213	down	noncoding	ENST00000428816	AC098592.8	chr7	-
ASHG19A3A032544	0.000772	0.053305	16.66683	down	noncoding	ENST00000421730	AC005682.8	chr7	-
ASHG19A3A032777	0.03828	0.22951	3.016037	down	noncoding	ENST00000455449	AC073115.5	chr7	-
ASHG19A3A032793	0.045022	0.243678	3.941491	down	noncoding	ENST00000429312	AC006024.3	chr7	-
ASHG19A3A032925	0.04259	0.238285	3.529915	down	noncoding	ENST00000422823	RP11-416N13.1	chr7	-

ASHG19A3A032949	2.89E-05	0.017174	2.794889	down	noncoding	ENST00000474858	GS1-124K5.9	chr7	-
ASHG19A3A032982	0.001026	0.057323	3.53899	down	noncoding	AK094163		chr1	+
ASHG19A3A033094	2.32E-06	0.006955	9.319608	down	noncoding	uc003uhq.1	AK092048	chr7	-
ASHG19A3A033226	0.047026	0.248431	3.308885	down	noncoding	ENST00000434352	AC073063.10	chr7	-
ASHG19A3A033226	0.047026	0.248431	3.308885	down	noncoding	ENST00000434352	AC073063.10	chr7	-
ASHG19A3A033226	0.047026	0.248431	3.308885	down	noncoding	ENST00000434352	AC073063.10	chr7	-
ASHG19A3A033313	0.004992	0.098523	2.435038	down	noncoding	ENST00000426806	RP11-401L13.5	chr7	-
ASHG19A3A033406	0.015964	0.155608	3.857624	down	noncoding	uc003vhn.1	BC040208	chr7	-
ASHG19A3A033493	0.001072	0.057323	2.577972	down	noncoding	ENST00000490314	AC073934.6	chr7	-
ASHG19A3A033513	0.02102	0.176175	3.113834	down	noncoding	G36725		chr7	-
ASHG19A3A033513	0.02102	0.176175	3.113834	down	noncoding	G36725		chr7	-
ASHG19A3A033513	0.02102	0.176175	3.113834	down	noncoding	G36725		chr7	-
ASHG19A3A033513	0.02102	0.176175	3.113834	down	noncoding	G36725		chr7	-
ASHG19A3A033513	0.02102	0.176175	3.113834	down	noncoding	G36725		chr7	-
ASHG19A3A033513	0.02102	0.176175	3.113834	down	noncoding	G36725		chr7	-
ASHG19A3A033521	1.83E-05	0.014741	4.47363	down	noncoding	ENST00000433622	RP11-309L24.6	chr7	-
ASHG19A3A033677	0.019337	0.170867	5.524348	down	noncoding	ENST00000464866	AC073342.13	chr7	-
ASHG19A3A033680	0.000194	0.034555	3.654149	down	noncoding	ENST00000429630	AC093673.5	chr7	-
ASHG19A3A033680	0.000194	0.034555	3.654149	down	noncoding	ENST00000429630	AC093673.5	chr7	-
ASHG19A3A033690	0.012066	0.140376	13.32712	down	noncoding	NR_015421	LOC154761	chr7	-
ASHG19A3A033768	0.037527	0.227009	3.845496	down	noncoding	BC015321		chr7	-
ASHG19A3A033980	0.002719	0.07915	138.6382	down	noncoding	uc001gch.1	AF268386	chr1	+
ASHG19A3A034012	0.010798	0.133478	12.19594	down	noncoding	CR622072		chr7	+
ASHG19A3A034014	0.029107	0.203139	9.968241	down	noncoding	HIT000325634		chr7	+
ASHG19A3A034046	0.040756	0.235431	6.680309	down	noncoding	ENST00000422542	AC005682.5	chr7	+
ASHG19A3A034058	0.016017	0.155645	6.474757	down	noncoding	ENST00000436576	AC079780.3	chr7	+
ASHG19A3A034296	0.004864	0.098196	7.547039	down	noncoding	ENST00000459691	EPS15L2	chr7	+
ASHG19A3A034460	0.049042	0.251991	2.487485	down	noncoding	ENST00000441415	RP11-460N20.5	chr7	+
ASHG19A3A034505	0.013621	0.145815	2.753145	down	noncoding	ENST00000433493	RP5-859M6.1	chr7	+
ASHG19A3A034534	0.03737	0.226954	2.126708	down	noncoding	G31743		chr7	+
ASHG19A3A034625	1.22E-05	0.014741	13.5162	down	noncoding	ENST00000426835	AC004945.2	chr7	+
ASHG19A3A034638	0.007088	0.113409	7.155247	down	noncoding	ENST00000434994	AC004006.2	chr7	+
ASHG19A3A034674	0.013614	0.145815	2.259887	down	noncoding	ENST00000450915	AC006988.3	chr7	+

ASHG19A3A034723	0.014685	0.150416	3.072643	down	noncoding	ENST00000398143	AC104700.2	chr7	+
ASHG19A3A034771	0.012538	0.14212	2.138134	down	noncoding	G43349		chr7	+
ASHG19A3A034771	0.012538	0.14212	2.138134	down	noncoding	G43349		chr7	+
ASHG19A3A034771	0.012538	0.14212	2.138134	down	noncoding	G43349		chr7	+
ASHG19A3A034771	0.012538	0.14212	2.138134	down	noncoding	G43349		chr7	+
ASHG19A3A034771	0.012538	0.14212	2.138134	down	noncoding	G43349		chr7	+
ASHG19A3A034871	0.041669	0.237597	4.06049	down	noncoding	ENST00000488019	RP4-778K6.2	chr7	+
ASHG19A3A034909	0.012359	0.141883	4.976108	down	noncoding	ENST00000453261	AC073387.2	chr7	+
ASHG19A3A035128	0.033344	0.214702	3.649608	down	noncoding	ENST00000453822	AC108510.2	chr7	+
ASHG19A3A035186	3.09E-05	0.017174	12.6108	down	noncoding	ENST00000477911	MYL6P4	chr7	+
ASHG19A3A035361	0.015379	0.153863	9.386026	down	noncoding	ENST00000469999	RP11-208G20.1	chr7	+
ASHG19A3A035481	0.000464	0.045345	2.619459	down	noncoding	ENST00000421457	AF228730.8	chr8	-
ASHG19A3A035516	0.011777	0.138709	2.51532	down	noncoding	AJ291676		chr8	-
ASHG19A3A035518	0.001402	0.062848	5.706585	down	noncoding	AF124367		chr8	-
ASHG19A3A035597	0.04138	0.236689	2.130626	down	noncoding	NR_027715	FLJ14107	chr8	-
ASHG19A3A035684	0.048389	0.250516	2.42813	down	noncoding	ENST00000495560	AC090453.1	chr8	-
ASHG19A3A035883	0.003038	0.082215	6.492832	down	noncoding	NR_024360	LOC100192378	chr8	-
ASHG19A3A035959	0.018321	0.166769	2.834178	down	noncoding	ENST00000466433	CTC-788C1.1	chr8	-
ASHG19A3A036028	0.007136	0.113604	2.284243	down	noncoding	NR_027071	C8orf56	chr8	-
ASHG19A3A036028	0.007136	0.113604	2.284243	down	noncoding	NR_027071	C8orf56	chr8	-
ASHG19A3A036068	0.042636	0.238313	2.640584	down	noncoding	ENST00000503142	RP11-46A10.6	chr1	+
ASHG19A3A036185	0.010213	0.130859	14.94876	down	noncoding	AK026750		chr8	-
ASHG19A3A036362	0.002432	0.074845	2.996973	down	noncoding	NR_027425	FAM66D	chr8	+
ASHG19A3A036369	0.008775	0.123403	2.670081	down	noncoding	uc003wvz.1	AX747586	chr8	+
ASHG19A3A036382	0.032129	0.212008	3.283994	down	noncoding	AK123645		chr8	+
ASHG19A3A036422	0.002147	0.072257	2.174543	down	noncoding	NR_033403	BMP1	chr8	+
ASHG19A3A036422	0.002147	0.072257	2.174543	down	noncoding	NR_033403	BMP1	chr8	+
ASHG19A3A036507	0.040573	0.235004	5.563537	down	noncoding	ENST00000508840	CTD-2345M20.1	chr8	+
ASHG19A3A036512	0.002833	0.080918	9.087708	down	noncoding	AK025893		chr8	+
ASHG19A3A036512	0.002833	0.080918	9.087708	down	noncoding	AK025893		chr8	+
ASHG19A3A036512	0.002833	0.080918	9.087708	down	noncoding	AK025893		chr8	+
ASHG19A3A036514	0.016231	0.156468	4.740026	down	noncoding	AK024192		chr8	+
ASHG19A3A036514	0.016231	0.156468	4.740026	down	noncoding	AK024192		chr8	+

ASHG19A3A036514	0.016231	0.156468	4.740026	down	noncoding	AK024192		chr8	+
ASHG19A3A036612	0.034486	0.218083	3.119907	down	noncoding	ENST00000471393	RP11-400K9.1	chr8	+
ASHG19A3A036727	0.008071	0.119838	4.331977	down	noncoding	ENST00000329349	AC091175.1	chr8	+
ASHG19A3A037212	0.00461	0.095927	4.560463	down	noncoding	ENST00000417716	RP11-332L8.1	chr1	+
ASHG19A3A037272	0.040264	0.234326	2.54045	down	noncoding	ENST00000372214	RP11-571F15.3	chr9	-
ASHG19A3A037272	0.040264	0.234326	2.54045	down	noncoding	ENST00000372214	RP11-571F15.3	chr9	-
ASHG19A3A037272	0.040264	0.234326	2.54045	down	noncoding	ENST00000372214	RP11-571F15.3	chr9	-
ASHG19A3A037272	0.040264	0.234326	2.54045	down	noncoding	ENST00000372214	RP11-571F15.3	chr9	-
ASHG19A3A037272	0.040264	0.234326	2.54045	down	noncoding	ENST00000372214	RP11-571F15.3	chr9	-
ASHG19A3A037297	0.000297	0.039457	3.201295	down	noncoding	BC043003		chr1	+
ASHG19A3A037344	0.041331	0.236689	2.06408	down	noncoding	ENST00000422509	RP11-405L18.4	chr9	-
ASHG19A3A037352	0.002302	0.074504	2.777125	down	noncoding	NR_024872	MCART1	chr9	-
ASHG19A3A037361	0.002317	0.074682	2.634896	down	noncoding	ENST00000443069	RP11-403F21.1	chr9	-
ASHG19A3A037398	0.000241	0.035463	16.88789	down	noncoding	NR_003670	KGFLP2	chr9	-
ASHG19A3A037399	0.001849	0.068556	9.923002	down	noncoding	ENST00000454645	RP11-204M4.2	chr9	-
ASHG19A3A037424	0.017461	0.163396	3.395892	down	noncoding	ENST00000417687	RP11-24B13.1	chr9	-
ASHG19A3A037435	0.000108	0.031537	15.22223	down	noncoding	ENST00000377549	RP11-475I24.1	chr9	-
ASHG19A3A037469	0.000147	0.031585	21.73758	down	noncoding	ENST00000514120	RP11-96J15.2	chr9	-
ASHG19A3A037500	0.035195	0.220893	2.066877	down	noncoding	ENST00000433508	RP11-452D2.1	chr9	-
ASHG19A3A037510	0.016816	0.159853	3.098071	down	noncoding	NR_002836	PGM5P2	chr9	-
ASHG19A3A037527	0.027842	0.199314	3.179578	down	noncoding	ENST00000377415	RP11-460E7.1	chr9	-
ASHG19A3A037565	0.000855	0.054175	5.166579	down	noncoding	uc011lsc.1	HSPBL2	chr9	-
ASHG19A3A037566	0.047177	0.248625	2.073175	down	noncoding	ENST00000423240	RP11-346E17.4	chr9	-
ASHG19A3A037754	0.004525	0.095403	2.480792	down	noncoding	NR_023390	C9orf130	chr9	-
ASHG19A3A037824	0.015958	0.155608	6.197553	down	noncoding	ENST00000418219	RP11-490D19.8	chr9	-
ASHG19A3A037865	0.039262	0.231061	3.845357	down	noncoding	ENST00000449233	RP11-380I20.2	chr9	-
ASHG19A3A037995	0.030403	0.207085	7.063537	down	noncoding	AK123875		chr9	-
ASHG19A3A038091	0.043411	0.239621	2.044077	down	noncoding	ENST00000434999	RP11-216B9.6	chr9	-
ASHG19A3A038091	0.043411	0.239621	2.044077	down	noncoding	ENST00000434999	RP11-216B9.6	chr9	-
ASHG19A3A038091	0.043411	0.239621	2.044077	down	noncoding	ENST00000434999	RP11-216B9.6	chr9	-
ASHG19A3A038091	0.043411	0.239621	2.044077	down	noncoding	ENST00000434999	RP11-216B9.6	chr9	-
ASHG19A3A038091	0.043411	0.239621	2.044077	down	noncoding	ENST00000434999	RP11-216B9.6	chr9	-
ASHG19A3A038311	0.022168	0.180848	3.209501	down	noncoding	ENST00000427722	RP11-509J21.3	chr9	+

ASHG19A3A038341	0.019371	0.171035	2.161473	down	noncoding	ENST00000456723	RP11-307L3.2	chr9	+
ASHG19A3A038374	0.027936	0.199699	8.209703	down	noncoding	ENST00000396994	RP11-280O24.1	chr9	+
ASHG19A3A038434	0.003322	0.084719	3.913802	down	noncoding	ENST00000444041	RP11-370B11.1	chr9	+
ASHG19A3A038468	0.000101	0.030979	7.661961	down	noncoding	BC030746		chr9	+
ASHG19A3A038500	0.024095	0.186538	6.262717	down	noncoding	ENST00000419794	RP11-571F15.6	chr9	+
ASHG19A3A038545	0.04014	0.234123	2.181286	down	noncoding	NR_024283	LOC158376	chr9	+
ASHG19A3A038589	0.049738	0.252541	3.762691	down	noncoding	ENST00000453646	RP11-290L7.2	chr9	+
ASHG19A3A038633	0.011509	0.137737	2.190275	down	noncoding	ENST00000357305	BX649597.1	chr9	+
ASHG19A3A038634	0.009899	0.129615	5.847817	down	noncoding	ENST00000433223	ATP5A1P5	chr9	+
ASHG19A3A038646	0.019449	0.171434	2.070278	down	noncoding	ENST00000411556	RBPIP6	chr9	+
ASHG19A3A038663	0.03261	0.212573	2.285148	down	noncoding	ENST00000423863	RP11-187C18.3	chr9	+
ASHG19A3A038697	0.000137	0.031585	12.27055	down	noncoding	ENST00000443706	RP11-262H14.11	chr9	+
ASHG19A3A038722	0.032377	0.212255	9.48755	down	noncoding	ENST00000416700	RP11-58A12.3	chr9	+
ASHG19A3A038731	0.006127	0.107494	2.139958	down	noncoding	ENST00000411645	RP11-6B6.3	chr1	+
ASHG19A3A038731	0.006127	0.107494	2.139958	down	noncoding	ENST00000411645	RP11-6B6.3	chr1	+
ASHG19A3A038764	0.01238	0.141895	2.807529	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.01238	0.141895	2.807529	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.01238	0.141895	2.807529	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.01238	0.141895	2.807529	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.01238	0.141895	2.807529	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.01238	0.141895	2.807529	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.01238	0.141895	2.807529	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.01238	0.141895	2.807529	down	noncoding	CR618740		chr9	+
ASHG19A3A038877	0.047616	0.249442	5.335159	down	noncoding	ENST00000488829	CDC20P	chr9	+
ASHG19A3A038879	0.027049	0.196393	2.830017	down	noncoding	ENST00000454946	RP11-497K15.1	chr9	+
ASHG19A3A038889	0.006557	0.110651	4.025325	down	noncoding	NR_033405	LOC1518	chr9	+
ASHG19A3A038927	0.04896	0.251824	2.001802	down	noncoding	AF116613		chr9	+
ASHG19A3A038935	0.04546	0.244109	2.095932	down	noncoding	ENST00000367276	C9orf44	chr9	+
ASHG19A3A039038	0.001328	0.06217	6.126758	down	noncoding	ENST00000418987	RP11-394D2.1	chr9	+
ASHG19A3A039112	0.038962	0.230384	3.806202	down	noncoding	AK098037		chr9	+
ASHG19A3A039112	0.038962	0.230384	3.806202	down	noncoding	AK098037		chr9	+
ASHG19A3A039269	0.045611	0.244393	2.334335	down	noncoding	ENST00000425991	RP11-228B15.4	chr9	+
ASHG19A3A039269	0.045611	0.244393	2.334335	down	noncoding	ENST00000425991	RP11-228B15.4	chr9	+
ASHG19A3A039402	0.00521	0.100845	2.427133	down	noncoding	NR_015427	NCRNA00094	chr9	+

ASHG19A3A039449	0.014523	0.149298	20.57671	down	noncoding	AK021425		chr1	+
ASHG19A3A039513	0.004749	0.096912	2.372807	down	noncoding	AK000561		chrM	-
ASHG19A3A039536	0.021231	0.176853	7.356849	down	noncoding	ENST00000445107	RP11-146D5.3	chrX	-
ASHG19A3A039536	0.021231	0.176853	7.356849	down	noncoding	ENST00000445107	RP11-146D5.3	chrX	-
ASHG19A3A039536	0.021231	0.176853	7.356849	down	noncoding	ENST00000445107	RP11-146D5.3	chrX	-
ASHG19A3A039536	0.021231	0.176853	7.356849	down	noncoding	ENST00000445107	RP11-146D5.3	chrX	-
ASHG19A3A039536	0.021231	0.176853	7.356849	down	noncoding	ENST00000445107	RP11-146D5.3	chrX	-
ASHG19A3A039596	0.032798	0.212892	2.460965	down	noncoding	ENST00000443728	RP11-2N21.2	chrX	-
ASHG19A3A039651	0.022946	0.183115	4.950625	down	noncoding	ENST00000358001	RP3-499B10.3	chrX	-
ASHG19A3A039796	0.001597	0.065335	6.359612	down	noncoding	ENST00000417985	RP1-30G7.1	chrX	-
ASHG19A3A039832	0.013055	0.144064	4.708259	down	noncoding	ENST00000423117	AF196972.10	chrX	-
ASHG19A3A039840	0.019894	0.173013	5.668854	down	noncoding	ENST00000406301	AF196969.5	chrX	-
ASHG19A3A039867	0.034899	0.219771	2.202011	down	noncoding	ENST00000448722	HSPBL3	chrX	-
ASHG19A3A039908	0.008483	0.122132	4.642297	down	noncoding	ENST00000443639	RP11-552J9.14	chrX	-
ASHG19A3A039966	0.023635	0.18529	2.673061	down	noncoding	ENST00000404529	RP11-445O16.2	chrX	-
ASHG19A3A040065	0.00114	0.058346	3.135217	down	noncoding	ENST00000458170	RP11-69A21.2	chrX	-
ASHG19A3A040085	0.039013	0.230484	3.580671	down	noncoding	ENST00000393214	AC004386.4	chrX	-
ASHG19A3A040122	0.047328	0.248703	5.135335	down	noncoding	ENST00000422893	RP1-223D17.1	chrX	-
ASHG19A3A040178	0.009258	0.126124	3.305411	down	noncoding	ENST00000412087	RP1-146H21.4	chrX	-
ASHG19A3A040463	0.023094	0.183619	4.451013	down	noncoding	ENST00000419413	RP1-20J23.1	chrX	-
ASHG19A3A040499	0.042537	0.238285	2.084939	down	noncoding	ENST00000411473	U40455.1	chrX	-
ASHG19A3A040667	0.029456	0.204343	3.523707	down	noncoding	ENST00000434191	RP11-430A19.2	chrX	+
ASHG19A3A040682	0.01202	0.140265	4.603967	down	noncoding	ENST00000457574	GS1-324M7.3	chrX	+
ASHG19A3A040713	0.003789	0.088847	9.564547	down	noncoding	G43551		chrX	+
ASHG19A3A040770	0.000882	0.054542	3.647644	down	noncoding	uc001hpe.1	AK124056	chr1	+
ASHG19A3A040803	0.027867	0.199371	6.172551	down	noncoding	ENST00000431458	FTLL2	chrX	+
ASHG19A3A040846	0.008624	0.122429	2.945082	down	noncoding	ENST00000317902	AF241726.2	chrX	+
ASHG19A3A040862	0.002146	0.072257	3.985041	down	noncoding	ENST00000422221	RP11-469E19.1	chrX	+
ASHG19A3A040936	0.018472	0.166966	6.400502	down	noncoding	ENST00000445444	RP11-344N17.11	chrX	+
ASHG19A3A040940	0.012253	0.141057	3.505521	down	noncoding	ENST00000433136	RP11-344N17.13	chrX	+
ASHG19A3A041023	0.010244	0.130859	4.742773	down	noncoding	ENST00000435089	RP11-552J9.12	chrX	+
ASHG19A3A041023	0.010244	0.130859	4.742773	down	noncoding	ENST00000435089	RP11-552J9.12	chrX	+
ASHG19A3A041023	0.010244	0.130859	4.742773	down	noncoding	ENST00000435089	RP11-552J9.12	chrX	+

ASHG19A3A041024	0.013582	0.145812	5.032326	down	noncoding	ENST00000454598	RP11-552J9.13	chrX	+
ASHG19A3A041095	0.00714	0.113604	4.096691	down	noncoding	ENST00000422965	RP3-323B6.2	chrX	+
ASHG19A3A041165	0.031836	0.211006	3.024299	down	noncoding	ENST00000424182	RP11-402P6.6	chrX	+
ASHG19A3A041193	0.032585	0.212573	4.983157	down	noncoding	ENST00000431339	RP13-204A15.2	chrX	+
ASHG19A3A041244	0.003685	0.08774	2.228994	down	noncoding	ENST00000416893	RP11-121C22.1	chrX	+
ASHG19A3A041302	0.036089	0.223195	2.735035	down	noncoding	ENST00000331267	RP1-164F3.6	chrX	+
ASHG19A3A041311	0.003614	0.087271	2.003221	down	noncoding	ENST00000372828	RP4-545K15.3	chrX	+
ASHG19A3A041314	0.029648	0.204946	2.184023	down	noncoding	AF085872		chrX	+
ASHG19A3A041412	0.039925	0.233464	4.080636	down	noncoding	ENST00000438679	RP5-1065P14.1	chr1	+
ASHG19A3A041441	0.007028	0.113157	3.592461	down	noncoding	ENST00000438228	RP3-378P9.1	chrX	+
ASHG19A3A041525	0.002396	0.074687	2.603365	down	noncoding	ENST00000408950	FAM45B	chrX	+
ASHG19A3A041538	0.003262	0.083828	2.589478	down	noncoding	AF093744		chrX	+
ASHG19A3A042040	0.00709	0.113409	5.736906	down	noncoding	ENST00000431631	ATP5JP1	chrY	+
ASHG19A3A042078	3.38E-05	0.017465	2.851208	down	noncoding	ENST00000435433	AC002992.1	chrY	+
ASHG19A3A042242	0.027968	0.199722	3.034529	down	noncoding	ENST00000413994	RP11-527D7.1	chr1	+
ASHG19A3A042296	0.04824	0.250288	5.295049	down	noncoding	ENST00000397642	RP11-488L18.1	chr1	+
ASHG19A3A042342	0.040842	0.235654	3.072673	down	noncoding	ENST00000441274	RP11-490K7.1	chr1	-
ASHG19A3A042362	0.000207	0.034555	12.5369	down	noncoding	ENST00000454470	RP11-67B16.1	chr10	-
ASHG19A3A042488	0.017098	0.161406	3.781459	down	noncoding	AK024109		chr10	-
ASHG19A3A042488	0.017098	0.161406	3.781459	down	noncoding	AK024109		chr10	-
ASHG19A3A042493	0.001352	0.062273	4.94326	down	noncoding	uc001iot.1	BC078172	chr10	-
ASHG19A3A042511	0.035223	0.220975	3.718084	down	noncoding	ENST00000427935	RP11-265G8.3	chr10	-
ASHG19A3A042589	0.005713	0.10433	5.309177	down	noncoding	ENST00000450834	RP11-192P3.1	chr10	-
ASHG19A3A042589	0.005713	0.10433	5.309177	down	noncoding	ENST00000450834	RP11-192P3.1	chr10	-
ASHG19A3A042589	0.005713	0.10433	5.309177	down	noncoding	ENST00000450834	RP11-192P3.1	chr10	-
ASHG19A3A042589	0.005713	0.10433	5.309177	down	noncoding	ENST00000450834	RP11-192P3.1	chr10	-
ASHG19A3A042604	0.000706	0.051454	4.438465	down	noncoding	BC043009		chr10	-
ASHG19A3A042668	0.000718	0.051625	2.588207	down	noncoding	ENST00000417455	RP11-402L1.1	chr10	-
ASHG19A3A042676	0.010722	0.133192	4.028219	down	noncoding	NR_002726	HNRNPA3P1	chr10	-
ASHG19A3A042706	0.010239	0.130859	2.190655	down	noncoding	ENST00000373604	RP4-622L5.7	chr1	-
ASHG19A3A042706	0.010239	0.130859	2.190655	down	noncoding	ENST00000373604	RP4-622L5.7	chr1	-
ASHG19A3A042706	0.010239	0.130859	2.190655	down	noncoding	ENST00000373604	RP4-622L5.7	chr1	-
ASHG19A3A042708	0.028537	0.201411	3.11771	down	noncoding	ENST00000424552	RP11-671E7.1	chr10	-

ASHG19A3A042723	0.034405	0.217771	2.047591	down	noncoding	ENST00000422732	RP11-314P12.2	chr10	-
ASHG19A3A042726	0.001445	0.062929	12.00997	down	noncoding	uc001jef.2	LOC643650	chr10	-
ASHG19A3A042764	0.02267	0.182365	2.260298	down	noncoding	ENST00000428825	RP11-523O18.5	chr10	-
ASHG19A3A042862	0.013558	0.145763	7.739795	down	noncoding	ENST00000448009	RP11-111N20.3	chr10	-
ASHG19A3A042869	0.010142	0.130631	2.3206	down	noncoding	ENST00000436904	MYL6P3	chr10	-
ASHG19A3A043064	0.004206	0.09195	8.886827	down	noncoding	uc009xtc.2	LOC728190	chr10	-
ASHG19A3A043066	0.009829	0.12926	3.229511	down	noncoding	BC071814		chr10	-
ASHG19A3A043320	0.034041	0.216455	2.466507	down	noncoding	G64298		chr1	-
ASHG19A3A043414	0.044221	0.241862	2.176672	down	noncoding	ENST00000431701	RP11-359B3.1	chr10	-
ASHG19A3A043670	0.043656	0.24045	2.28825	down	noncoding	ENST00000413342	RP11-139J15.4	chr10	+
ASHG19A3A043697	0.020448	0.174085	5.252088	down	noncoding	ENST00000426373	RP11-108B14.4	chr10	+
ASHG19A3A043750	0.037785	0.22791	2.719056	down	noncoding	NR_003930	LOC387647	chr10	+
ASHG19A3A043950	0.001799	0.067636	2.105985	down	noncoding	ENST00000435916	RP11-56A21.4	chr10	+
ASHG19A3A044013	0.005478	0.102582	3.006893	down	noncoding	NR_027182	LOC84989	chr10	+
ASHG19A3A044017	0.038929	0.230384	3.509979	down	noncoding	ENST00000404883	ANXA2P3	chr10	+
ASHG19A3A044026	0.022482	0.18214	3.818296	down	noncoding	ENST00000454107	RP11-57G10.1	chr10	+
ASHG19A3A044068	0.015155	0.152727	10.98292	down	noncoding	ENST00000430943	C10orf37	chr10	+
ASHG19A3A044113	0.011785	0.138709	2.087223	down	noncoding	ENST00000442133	RP11-137L10.6	chr10	+
ASHG19A3A044113	0.011785	0.138709	2.087223	down	noncoding	ENST00000442133	RP11-137L10.6	chr10	+
ASHG19A3A044113	0.011785	0.138709	2.087223	down	noncoding	ENST00000442133	RP11-137L10.6	chr10	+
ASHG19A3A044113	0.011785	0.138709	2.087223	down	noncoding	ENST00000442133	RP11-137L10.6	chr10	+
ASHG19A3A044262	0.009094	0.125418	7.642342	down	noncoding	HIT000009469		chr10	+
ASHG19A3A044264	0.009256	0.126124	3.261174	down	noncoding	ENST00000354541	RP11-149I23.3	chr10	+
ASHG19A3A044340	0.000911	0.055207	2.599001	down	noncoding	AF124819		chr10	+
ASHG19A3A044362	0.041994	0.238285	3.228205	down	noncoding	ENST00000424567	RP11-163G10.3	chr1	-
ASHG19A3A044374	0.018491	0.166966	3.772486	down	noncoding	uc001kpt.2	chromosome 10 open reading frame 139	chr10	+
ASHG19A3A044641	0.00085	0.054093	3.364377	down	noncoding	ENST00000333854	RP11-181G12.2	chr1	-
ASHG19A3A044641	0.00085	0.054093	3.364377	down	noncoding	ENST00000333854	RP11-181G12.2	chr1	-
ASHG19A3A044641	0.00085	0.054093	3.364377	down	noncoding	ENST00000333854	RP11-181G12.2	chr1	-
ASHG19A3A044659	0.007951	0.118775	5.603111	down	noncoding	ENST00000417351	CTAGE7	chr10	+
ASHG19A3A044752	0.005223	0.100967	5.050505	down	noncoding	ENST00000441772	AC139143.2	chr11	-
ASHG19A3A044932	0.007948	0.118775	6.40422	down	noncoding	AL359337		chr11	-

ASHG19A3A044944	0.00289	0.081533	9.728115	down	noncoding	AB073355		chr11	-
ASHG19A3A044969	0.016913	0.160364	4.242487	down	noncoding	ENST00000396351	AC100865.1	chr11	-
ASHG19A3A045126	0.003883	0.089011	2.914674	down	noncoding	HIT000280604		chr11	-
ASHG19A3A045126	0.003883	0.089011	2.914674	down	noncoding	HIT000280604		chr11	-
ASHG19A3A045291	0.037252	0.226789	3.214816	down	noncoding	ENST00000413752	RP4-666O22.1	chr1	-
ASHG19A3A045303	0.019174	0.1698	2.685124	down	noncoding	uc001nxj.1	CR936784	chr11	-
ASHG19A3A045441	0.001041	0.057323	20.70794	down	noncoding	AK130416		chr11	-
ASHG19A3A045462	0.005495	0.102653	3.614238	down	noncoding	uc001oqx.1	BC073927	chr11	-
ASHG19A3A045462	0.005495	0.102653	3.614238	down	noncoding	uc001oqx.1	BC073927	chr11	-
ASHG19A3A045462	0.005495	0.102653	3.614238	down	noncoding	uc001oqx.1	BC073927	chr11	-
ASHG19A3A045598	0.040736	0.235403	4.473664	down	noncoding	uc001pen.1	AF086184	chr11	-
ASHG19A3A045598	0.040736	0.235403	4.473664	down	noncoding	uc001pen.1	AF086184	chr11	-
ASHG19A3A045671	0.049346	0.252234	2.176949	down	noncoding	ENST00000415310	AC009294.1	chr11	-
ASHG19A3A045875	0.004025	0.089819	2.091745	down	noncoding	AF086183		chr11	-
ASHG19A3A045875	0.004025	0.089819	2.091745	down	noncoding	AF086183		chr11	-
ASHG19A3A045875	0.004025	0.089819	2.091745	down	noncoding	AF086183		chr11	-
ASHG19A3A045875	0.004025	0.089819	2.091745	down	noncoding	AF086183		chr11	-
ASHG19A3A045901	0.004528	0.095403	2.970535	down	noncoding	HIT000043100		chr11	-
ASHG19A3A045901	0.004528	0.095403	2.970535	down	noncoding	HIT000043100		chr11	-
ASHG19A3A046011	0.001294	0.06217	2.733661	down	noncoding	ENST00000439410	AP006294.1	chr11	+
ASHG19A3A046160	0.030555	0.207557	5.069189	down	noncoding	AK128814		chr11	+
ASHG19A3A046189	0.017166	0.161945	4.272684	down	noncoding	CR608259		chr11	+
ASHG19A3A046263	0.011419	0.137292	5.302986	down	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.011419	0.137292	5.302986	down	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.011419	0.137292	5.302986	down	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.011419	0.137292	5.302986	down	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.011419	0.137292	5.302986	down	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.011419	0.137292	5.302986	down	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.011419	0.137292	5.302986	down	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.011419	0.137292	5.302986	down	noncoding	AK095453		chr11	+
ASHG19A3A046275	0.040913	0.235885	3.71107	down	noncoding	AK123567		chr11	+
ASHG19A3A046275	0.040913	0.235885	3.71107	down	noncoding	AK123567		chr11	+
ASHG19A3A046275	0.040913	0.235885	3.71107	down	noncoding	AK123567		chr11	+

ASHG19A3A046275	0.040913	0.235885	3.71107	down	noncoding	AK123567		chr11	+
ASHG19A3A046275	0.040913	0.235885	3.71107	down	noncoding	AK123567		chr11	+
ASHG19A3A046275	0.040913	0.235885	3.71107	down	noncoding	AK123567		chr11	+
ASHG19A3A046275	0.040913	0.235885	3.71107	down	noncoding	AK123567		chr11	+
ASHG19A3A046275	0.040913	0.235885	3.71107	down	noncoding	AK123567		chr11	+
ASHG19A3A046830	0.03868	0.230253	2.942005	down	noncoding	uc001pcf.2	BC041984	chr11	+
ASHG19A3A046864	0.041842	0.23804	7.486897	down	noncoding	ENST00000453850	RP4-535B20.3	chr1	-
ASHG19A3A046900	0.046943	0.248431	2.603736	down	noncoding	AJ293406		chr11	+
ASHG19A3A046995	0.027524	0.198387	18.56181	down	noncoding	uc001pqq.1	AK126420	chr11	+
ASHG19A3A047051	0.001431	0.062929	2.194791	down	noncoding	ENST00000422107	RP4-677H15.4	chr1	-
ASHG19A3A047051	0.001431	0.062929	2.194791	down	noncoding	ENST00000422107	RP4-677H15.4	chr1	-
ASHG19A3A047276	0.001754	0.06735	2.129986	down	noncoding	ENST00000479743	RP11-113C12.1	chr12	-
ASHG19A3A047405	0.009285	0.12631	5.442654	down	noncoding	NR_024064	DAD1L	chr12	-
ASHG19A3A047405	0.009285	0.12631	5.442654	down	noncoding	NR_024064	DAD1L	chr12	-
ASHG19A3A047405	0.009285	0.12631	5.442654	down	noncoding	NR_024064	DAD1L	chr12	-
ASHG19A3A047408	0.015545	0.154305	6.63341	down	noncoding	ENST00000431536	RP4-706L14.2	chr1	-
ASHG19A3A047523	0.028024	0.199722	2.672499	down	noncoding	uc001diz.3	BC036594	chr1	-
ASHG19A3A047528	0.001026	0.057323	3.023191	down	noncoding	BC042023		chr1	-
ASHG19A3A047742	0.045039	0.243678	3.127871	down	noncoding	uc001sqo.2	CR602022	chr12	-
ASHG19A3A047778	0.004555	0.09548	6.779348	down	noncoding	ENST00000417216	RBMS1P1	chr12	-
ASHG19A3A047778	0.004555	0.09548	6.779348	down	noncoding	ENST00000417216	RBMS1P1	chr12	-
ASHG19A3A047816	0.003797	0.088847	5.176577	down	noncoding	ENST00000435350	AC087886.1	chr12	-
ASHG19A3A047972	0.022573	0.182257	3.119957	down	noncoding	uc001tma.2	AK055712	chr12	-
ASHG19A3A048046	0.038885	0.230384	2.220403	down	noncoding	ENST00000486088	RP11-1028N23.1	chr12	-
ASHG19A3A048292	0.021184	0.176756	3.254332	down	noncoding	ENST00000504533	U47924.7	chr12	+
ASHG19A3A048327	0.041089	0.236584	3.234059	down	noncoding	NR_026788	FAM66C	chr12	+
ASHG19A3A048336	0.015448	0.153961	41.30951	down	noncoding	uc009zgg.1	RIMKLB	chr12	+
ASHG19A3A048347	0.044436	0.24227	2.513113	down	noncoding	ENST00000449232	RP11-374C13.1	chr1	-
ASHG19A3A048584	0.026661	0.195521	5.055162	down	noncoding	ENST00000484004	RP5-871P9.1	chr1	-
ASHG19A3A048873	0.047903	0.249813	2.372537	down	noncoding	ENST00000485945	RP11-613M5.2	chr12	+
ASHG19A3A048978	0.032304	0.21224	5.097007	down	noncoding	ENST00000432567	RP11-364B6.3	chr1	-
ASHG19A3A049007	0.001292	0.06217	6.23109	down	noncoding	AK123931		chr12	+
ASHG19A3A049245	0.023037	0.183353	2.900678	down	noncoding	ENST00000452841	RP11-442J17.1	chr13	-

ASHG19A3A049485	0.009065	0.12525	8.714871	down	noncoding	ENST00000400429	RP11-74J13.2	chr13	-
ASHG19A3A049522	0.015497	0.154038	2.852348	down	noncoding	AK057884		chr13	-
ASHG19A3A049522	0.015497	0.154038	2.852348	down	noncoding	AK057884		chr13	-
ASHG19A3A049637	0.014207	0.147861	26.85351	down	noncoding	AF070632		chr1	-
ASHG19A3A049708	0.015351	0.153863	2.644502	down	noncoding	ENST00000414323	RP11-72M14.1	chr1	-
ASHG19A3A049769	0.041705	0.23771	3.076499	down	noncoding	ENST00000430810	RP11-295B17.4	chr13	-
ASHG19A3A049853	0.043357	0.239621	2.885406	down	noncoding	AK125472		chr13	-
ASHG19A3A049878	0.012757	0.143078	12.37485	down	noncoding	AK092053		chr13	-
ASHG19A3A049943	0.00173	0.067157	5.038536	down	noncoding	G36555		chr13	+
ASHG19A3A050182	0.007202	0.113881	2.378545	down	noncoding	ENST00000436946	RP11-236M15.1	chr13	+
ASHG19A3A050271	0.032149	0.212008	2.433872	down	noncoding	ENST00000424532	RP11-430K22.2	chr13	+
ASHG19A3A050297	0.009783	0.129005	2.254783	down	noncoding	ENST00000419499	RP11-459P23.1	chr13	+
ASHG19A3A050305	0.000385	0.042812	2.097002	down	noncoding	ENST00000499458	AL137244.1	chr13	+
ASHG19A3A050305	0.000385	0.042812	2.097002	down	noncoding	ENST00000499458	AL137244.1	chr13	+
ASHG19A3A050337	0.04503	0.243678	4.295851	down	noncoding	ENST00000452282	RP11-173N7.1	chr13	+
ASHG19A3A050530	0.014456	0.148815	3.018801	down	noncoding	AK090595		chr13	+
ASHG19A3A050619	0.012832	0.143152	2.072243	down	noncoding	uc001ehx.1	CR598865	chr1	-
ASHG19A3A050725	0.003154	0.082688	2.088119	down	noncoding	uc001wvd.2	BC015671	chr14	-
ASHG19A3A050725	0.003154	0.082688	2.088119	down	noncoding	uc001wvd.2	BC015671	chr14	-
ASHG19A3A050725	0.003154	0.082688	2.088119	down	noncoding	uc001wvd.2	BC015671	chr14	-
ASHG19A3A050725	0.003154	0.082688	2.088119	down	noncoding	uc001wvd.2	BC015671	chr14	-
ASHG19A3A050780	0.005441	0.102582	3.767627	down	noncoding	AK022437		chr14	-
ASHG19A3A050780	0.005441	0.102582	3.767627	down	noncoding	AK022437		chr14	-
ASHG19A3A050857	0.001994	0.070561	3.515333	down	noncoding	U85044		chr14	-
ASHG19A3A050857	0.001994	0.070561	3.515333	down	noncoding	U85044		chr14	-
ASHG19A3A050938	0.000122	0.031585	34.5203	down	noncoding	uc010arh.1	AK024141	chr14	-
ASHG19A3A050946	0.044313	0.242041	2.028324	down	noncoding	uc001xnx.2	BC044305	chr14	-
ASHG19A3A051006	0.000962	0.056677	3.332491	down	noncoding	uc001elu.1	AX747132	chr1	-
ASHG19A3A051034	0.033451	0.214768	2.683517	down	noncoding	G36692		chr14	-
ASHG19A3A051073	0.02456	0.188533	4.675818	down	noncoding	BC014090		chr14	-
ASHG19A3A051159	0.008568	0.122132	2.369026	down	noncoding	ENST00000447626	RP11-661D19.1	chr14	-
ASHG19A3A051262	0.028633	0.201801	2.847589	down	noncoding	ENST00000480068	RP11-689J19.1	chr14	+
ASHG19A3A051262	0.028633	0.201801	2.847589	down	noncoding	ENST00000480068	RP11-689J19.1	chr14	+

ASHG19A3A051330	0.005671	0.103871	4.138465	down	noncoding	NR_024442	LOC728989	chr1	-
ASHG19A3A051350	0.042138	0.238285	2.452051	down	noncoding	uc001wqo.2	CR625477	chr14	+
ASHG19A3A051731	0.043072	0.238904	6.057288	down	noncoding	CR603341		chr14	+
ASHG19A3A051784	0.000645	0.050176	8.264106	down	noncoding	NR_033359	MEG3	chr14	+
ASHG19A3A051785	0.00239	0.074687	2.84253	down	noncoding	CR620657		chr14	+
ASHG19A3A051788	0.004112	0.090799	2.178032	down	noncoding	NR_024149	MEG8	chr14	+
ASHG19A3A051931	0.026946	0.196393	2.028621	down	noncoding	ENST00000397937	AC136896.2	chr15	-
ASHG19A3A052015	0.04273	0.238571	2.116592	down	noncoding	ENST00000471253	RP11-133K1.1	chr15	-
ASHG19A3A052048	0.003478	0.085354	34.82423	down	noncoding	ENST00000417705	RP11-54O7.3	chr1	-
ASHG19A3A052109	0.012149	0.14084	6.010033	down	noncoding	BC042520		chr15	-
ASHG19A3A052323	0.001392	0.06264	7.99503	down	noncoding	ENST00000500759	AC027237.1	chr15	-
ASHG19A3A052323	0.001392	0.06264	7.99503	down	noncoding	ENST00000500759	AC027237.1	chr15	-
ASHG19A3A052323	0.001392	0.06264	7.99503	down	noncoding	ENST00000500759	AC027237.1	chr15	-
ASHG19A3A052323	0.001392	0.06264	7.99503	down	noncoding	ENST00000500759	AC027237.1	chr15	-
ASHG19A3A052329	0.042702	0.238507	4.415361	down	noncoding	ENST00000513467	AC009434.1	chr15	-
ASHG19A3A052426	0.019001	0.168942	2.333645	down	noncoding	AL355738		chr15	-
ASHG19A3A052449	0.018101	0.166283	3.258839	down	noncoding	ENST00000493002	RP11-591L14.1	chr15	-
ASHG19A3A052656	9.33E-05	0.029823	9.276166	down	noncoding	AF319524		chr15	+
ASHG19A3A052693	0.009851	0.129437	4.341265	down	noncoding	uc001zej.2	BC018626	chr15	+
ASHG19A3A052723	0.020516	0.174085	12.74628	down	noncoding	uc001zgs.1	BC037839	chr15	+
ASHG19A3A052760	0.004061	0.090256	61.29226	down	noncoding	BC015134		chr15	+
ASHG19A3A052768	0.010218	0.130859	2.409871	down	noncoding	uc001zlf.1	AL832909	chr15	+
ASHG19A3A052890	0.001591	0.065335	4.366128	down	noncoding	AF090911		chr15	+
ASHG19A3A052923	0.006379	0.109654	2.456248	down	noncoding	NR_002188	GBAP1	chr1	-
ASHG19A3A052958	0.009516	0.127832	2.25459	down	noncoding	AK056250		chr1	-
ASHG19A3A053030	0.008374	0.121518	7.555235	down	noncoding	G36947		chr15	+
ASHG19A3A053030	0.008374	0.121518	7.555235	down	noncoding	G36947		chr15	+
ASHG19A3A053125	0.005513	0.102738	3.629733	down	noncoding	uc001flf.2	BC041646	chr1	-
ASHG19A3A053143	0.04596	0.245388	2.343269	down	noncoding	NR_028330	C15orf37	chr15	+
ASHG19A3A053143	0.04596	0.245388	2.343269	down	noncoding	NR_028330	C15orf37	chr15	+
ASHG19A3A053143	0.04596	0.245388	2.343269	down	noncoding	NR_028330	C15orf37	chr15	+
ASHG19A3A053425	0.001431	0.062929	2.900928	down	noncoding	ENST00000407390	AC025283.2	chr16	-
ASHG19A3A053436	0.011884	0.139623	4.366891	down	noncoding	BC012429		chr16	-

ASHG19A3A053539	0.036272	0.223527	2.86519	down	noncoding	G36733		chr16	-
ASHG19A3A053655	0.009772	0.129005	3.959807	down	noncoding	NR_002556	LOC388242	chr16	-
ASHG19A3A053655	0.009772	0.129005	3.959807	down	noncoding	NR_002556	LOC388242	chr16	-
ASHG19A3A053894	0.001774	0.067459	2.428627	down	noncoding	ENST00000494583	RP11-529K1.1	chr16	-
ASHG19A3A053927	0.003846	0.089011	2.36405	down	noncoding	NR_027265	GLG1	chr16	-
ASHG19A3A053927	0.003846	0.089011	2.36405	down	noncoding	NR_027265	GLG1	chr16	-
ASHG19A3A053927	0.003846	0.089011	2.36405	down	noncoding	NR_027265	GLG1	chr16	-
ASHG19A3A054027	0.014094	0.147514	2.235527	down	noncoding	ENST00000484096	RP11-568J23.1	chr16	-
ASHG19A3A054145	0.011	0.135071	5.024681	down	noncoding	uc002ckl.1	CR596832	chr16	+
ASHG19A3A054390	0.007327	0.114264	3.050813	down	noncoding	ENST00000502891	AC008870.1	chr16	+
ASHG19A3A054390	0.007327	0.114264	3.050813	down	noncoding	ENST00000502891	AC008870.1	chr16	+
ASHG19A3A054429	0.005508	0.102738	2.754958	down	noncoding	CR590687		chr16	+
ASHG19A3A054573	0.012563	0.142131	2.158562	down	noncoding	ENST00000434394	RP11-331H2.3	chr1	-
ASHG19A3A054616	0.002941	0.081974	87.4809	down	noncoding	NR_001447	MT1L	chr16	+
ASHG19A3A054898	0.025785	0.193125	2.560496	down	noncoding	ENST00000504545	AC138028.1	chr16	+
ASHG19A3A054899	0.020497	0.174085	3.797844	down	noncoding	NR_024399	MGC23284	chr16	+
ASHG19A3A054899	0.020497	0.174085	3.797844	down	noncoding	NR_024399	MGC23284	chr16	+
ASHG19A3A054987	0.008689	0.122758	2.689043	down	noncoding	NR_028502	C17orf91	chr17	-
ASHG19A3A054987	0.008689	0.122758	2.689043	down	noncoding	NR_028502	C17orf91	chr17	-
ASHG19A3A054988	0.001997	0.070561	7.645748	down	noncoding	NR_028504	C17orf91	chr17	-
ASHG19A3A054988	0.001997	0.070561	7.645748	down	noncoding	NR_028504	C17orf91	chr17	-
ASHG19A3A055116	0.045578	0.244393	2.316783	down	noncoding	uc001yuj.1	IGH	chr15	-
ASHG19A3A055187	0.003639	0.087309	2.662583	down	noncoding	uc003but.2	CICE	chr3	-
ASHG19A3A055187	0.003639	0.087309	2.662583	down	noncoding	uc003but.2	CICE	chr3	-
ASHG19A3A055195	0.004378	0.094352	2.656326	down	noncoding	ENST00000507702	C4orf10	chr4	+
ASHG19A3A055229	0.000693	0.051279	2.170607	down	noncoding	uc003qir.2	BC039503	chr6	+
ASHG19A3A055248	0.028442	0.201305	3.235438	down	noncoding	uc004apn.1	L25629	chr9	+
ASHG19A3A055279	0.045815	0.245047	2.440397	down	noncoding	uc010fjq.2	LIMS3	chr2	+
ASHG19A3A055279	0.045815	0.245047	2.440397	down	noncoding	uc010fjq.2	LIMS3	chr2	+
ASHG19A3A055303	0.003181	0.08323	2.585502	down	noncoding	uc010txe.1	MEG3	chr14	+
ASHG19A3A055309	0.001479	0.063664	7.850217	down	noncoding	uc010vhg.1	MTE	chr16	+
ASHG19A3H0000118	0.000109	0.031537	2.081386	down	noncoding	nc-HOXC11-116-	nc-HOXC11-116	chr12	+
ASHG19A3L0000086	0.010051	0.130183	3.677443	down	noncoding	BI048312	lincRNA-WNT9A	chr1	+

ASHG19A3L0000086	0.010051	0.130183	3.677443	down	noncoding	BI048312	lincRNA-WNT9A	chr1	+
ASHG19A3L0000086	0.010051	0.130183	3.677443	down	noncoding	BI048312	lincRNA-WNT9A	chr1	+
ASHG19A3L0000086	0.010051	0.130183	3.677443	down	noncoding	BI048312	lincRNA-WNT9A	chr1	+
ASHG19A3L0000086	0.010051	0.130183	3.677443	down	noncoding	BI048312	lincRNA-WNT9A	chr1	+
ASHG19A3L0000086	0.010051	0.130183	3.677443	down	noncoding	BI048312	lincRNA-WNT9A	chr1	+
ASHG19A3L0000086	0.010051	0.130183	3.677443	down	noncoding	BI048312	lincRNA-WNT9A	chr1	+
ASHG19A3L0000086	0.010051	0.130183	3.677443	down	noncoding	BI048312	lincRNA-WNT9A	chr1	+
ASHG19A3L0000086	0.010051	0.130183	3.677443	down	noncoding	BI048312	lincRNA-WNT9A	chr1	+
ASHG19A3L0000086	0.010051	0.130183	3.677443	down	noncoding	BI048312	lincRNA-WNT9A	chr1	+
ASHG19A3L0000183	0.003041	0.082215	2.489694	down	noncoding	BC036122	lincRNA-LRRC8D-2	chr1	+
ASHG19A3L0000325	0.01163	0.138082	5.014368	down	noncoding	AK302893	lincRNA-MICAL2-1	chr11	+
ASHG19A3L0000481	0.010076	0.130347	4.706431	down	noncoding	AK297025	lincRNA-FGD4	chr12	+
ASHG19A3L0000534	0.000931	0.055903	10.18482	down	noncoding	AA405014	lincRNA-TMTC2	chr12	-
ASHG19A3L0000808	0.028186	0.200153	3.092472	down	noncoding	AK226132	lincRNA-ZFP106	chr15	-
ASHG19A3L0001156	0.014395	0.148592	5.074471	down	noncoding	AB058771	lincRNA-B3GNT7	chr2	+
ASHG19A3L0001362	1.97E-05	0.014795	13.60183	down	noncoding	BX641108	lincRNA-TPRG1-2	chr3	+
ASHG19A3L0001362	1.97E-05	0.014795	13.60183	down	noncoding	BX641108	lincRNA-TPRG1-2	chr3	+
ASHG19A3L0001362	1.97E-05	0.014795	13.60183	down	noncoding	BX641108	lincRNA-TPRG1-2	chr3	+
ASHG19A3L0001362	1.97E-05	0.014795	13.60183	down	noncoding	BX641108	lincRNA-TPRG1-2	chr3	+
ASHG19A3L0001414	0.000541	0.04646	2.722835	down	noncoding	BI753279	lincRNA-EIF4E3-2	chr3	+
ASHG19A3L0001595	0.033479	0.214768	3.541889	down	noncoding	AK225978	lincRNA-SPARC	chr5	+
ASHG19A3L0001595	0.033479	0.214768	3.541889	down	noncoding	AK225978	lincRNA-SPARC	chr5	+
ASHG19A3L0001595	0.033479	0.214768	3.541889	down	noncoding	AK225978	lincRNA-SPARC	chr5	+
ASHG19A3L0001595	0.033479	0.214768	3.541889	down	noncoding	AK225978	lincRNA-SPARC	chr5	+
ASHG19A3L0001595	0.033479	0.214768	3.541889	down	noncoding	AK225978	lincRNA-SPARC	chr5	+
ASHG19A3L0001595	0.033479	0.214768	3.541889	down	noncoding	AK225978	lincRNA-SPARC	chr5	+
ASHG19A3L0001595	0.033479	0.214768	3.541889	down	noncoding	AK225978	lincRNA-SPARC	chr5	+
ASHG19A3L0001595	0.033479	0.214768	3.541889	down	noncoding	AK225978	lincRNA-SPARC	chr5	+
ASHG19A3L0003228	0.000316	0.039856	2.625938	down	noncoding	AK289744	lincRNA-SUN2	chr22	-
ASHG19A3L0003228	0.000316	0.039856	2.625938	down	noncoding	AK289744	lincRNA-SUN2	chr22	-
ASHG19A3L0003228	0.000316	0.039856	2.625938	down	noncoding	AK289744	lincRNA-SUN2	chr22	-
ASHG19A3L0003228	0.000316	0.039856	2.625938	down	noncoding	AK289744	lincRNA-SUN2	chr22	-

ASHG19A3L0003327	0.018548	0.166966	2.032522	down	noncoding	chr19:22497397-22499384+	lincRNA-ZNF98	chr19	+
ASHG19A3L0003398	0.013155	0.144636	4.390163	down	noncoding	AI218855	lincRNA-RPS14-2	chr5	-
CUST_187_P1426075208	0.008428	0.121805	9.407727	down	noncoding	nc-HOXD4-22+	nc-HOXD4-22	chr2	-
CUST_187_P1426075208	0.008428	0.121805	9.407727	down	noncoding	nc-HOXD4-22+	nc-HOXD4-22	chr2	-
CUST_187_P1426075208	0.008428	0.121805	9.407727	down	noncoding	nc-HOXD4-22+	nc-HOXD4-22	chr2	-
CUST_188_P1426075208	0.007598	0.115434	2.454258	down	noncoding	nc-HOXD4-23+	nc-HOXD4-23	chr2	-
CUST_201_P1426075208	0.039821	0.233165	4.937065	down	noncoding	nc-HOXD8-20+	nc-HOXD8-20	chr2	-
CUST_278_P1426073487	0.0012	0.06047	3.308688	down	noncoding	uc.280+	uc.280	chr9	+
CUST_278_P1426073487	0.0012	0.06047	3.308688	down	noncoding	uc.280+	uc.280	chr9	+
CUST_43_P1426073487	0.024665	0.188902	3.22484	down	noncoding	uc.45+	uc.45	chr1	+
CUST_43_P1426073487	0.024665	0.188902	3.22484	down	noncoding	uc.45+	uc.45	chr1	+
CUST_470_P1426073487	0.020358	0.174085	2.486254	down	noncoding	uc.472+	uc.472	chrX	+
CUST_470_P1426073487	0.020358	0.174085	2.486254	down	noncoding	uc.472+	uc.472	chrX	+
CUST_470_P1426073487	0.020358	0.174085	2.486254	down	noncoding	uc.472+	uc.472	chrX	+
CUST_633_P1426073487	0.013868	0.146786	2.33579	down	noncoding	uc.154-	uc.154	chr5	-
CUST_633_P1426073487	0.013868	0.146786	2.33579	down	noncoding	uc.154-	uc.154	chr5	-
CUST_652_P1426073487	0.011195	0.135489	3.517401	down	noncoding	uc.173-	uc.173	chr5	-
CUST_725_P1426073487	0.033583	0.214768	2.494235	down	noncoding	uc.246-	uc.246	chr8	-
CUST_817_P1426073487	0.033788	0.215485	3.631841	down	noncoding	uc.338-	uc.338	chr12	-
CUST_817_P1426073487	0.033788	0.215485	3.631841	down	noncoding	uc.338-	uc.338	chr12	-
CUST_817_P1426073487	0.033788	0.215485	3.631841	down	noncoding	uc.338-	uc.338	chr12	-
CUST_817_P1426073487	0.033788	0.215485	3.631841	down	noncoding	uc.338-	uc.338	chr12	-
CUST_817_P1426073487	0.033788	0.215485	3.631841	down	noncoding	uc.338-	uc.338	chr12	-
CUST_817_P1426073487	0.033788	0.215485	3.631841	down	noncoding	uc.338-	uc.338	chr12	-
CUST_817_P1426073487	0.033788	0.215485	3.631841	down	noncoding	uc.338-	uc.338	chr12	-
CUST_95_P1426075208	0.018938	0.168786	2.500969	down	noncoding	nc-HOXB9-199+	nc-HOXB9-199	chr17	+

Supplementary Table 2. The list of lncRNAs regulated by MYC in HCT116.

Fold Change cut-off: 2.0

P-value cut-off: 0.05

Condition pairs: CRC_vs_Normal

ProbeName it represents probe name.

P-value, P-value calculated from unpaired t-test.

FDR, FDR is calculated from Benjamini Hochberg FDR.

FC (abs), the absolute ratio (no log scale) of normalized intensities between two conditions.

Regulation, it depicts which group has greater or lower intensity values wrt other group.

Supplementary Table 2-1. The list of lncRNAs upregulated by MYC knockdown (downregulated by MYC) in HCT116.

ProbeName	P-value and FDR		Fold change and Regulation		type	seqname	GeneSymbol	chrom	strand
	p-value	FDR	FCAbsolute	regulation					
ASHG19A3A000199	0.000563	0.037057	2.017265	up	noncoding	ENST00000430151	HLA-K	chr6	+
ASHG19A3A000494	0.019802	0.179923	3.137632	up	noncoding	ENST00000512530	AC007497.1	chr16	+
ASHG19A3A000494	0.019802	0.179923	3.137632	up	noncoding	ENST00000512530	AC007497.1	chr16	+
ASHG19A3A008039	0.004164	0.084406	2.015549	up	noncoding	uc002gva.1	BC058012	chr17	-
ASHG19A3A008508	4.04E-05	0.018643	2.241927	up	noncoding	AK000839		chr17	-
ASHG19A3A008836	0.000185	0.028311	2.803208	up	noncoding	uc002juh.2	BC041417	chr17	-
ASHG19A3A008836	0.000185	0.028311	2.803208	up	noncoding	uc002juh.2	BC041417	chr17	-
ASHG19A3A009560	0.012169	0.138481	2.216662	up	noncoding	uc010wia.1	AK027091	chr17	+
ASHG19A3A013496	0.001119	0.050055	2.293798	up	noncoding	CR603904		chr2	-
ASHG19A3A013970	0.001767	0.060443	2.082581	up	noncoding	ENST00000417574	AC111200.7	chr2	-
ASHG19A3A013970	0.001767	0.060443	2.082581	up	noncoding	ENST00000417574	AC111200.7	chr2	-
ASHG19A3A015940	4.34E-05	0.018643	2.020596	up	noncoding	ENST00000431142	AC108479.2	chr2	+

ASHG19A3A016026	0.005924	0.099524	2.001573	up	noncoding	uc002syc.1	BC039374	chr2	+
ASHG19A3A017894	0.000514	0.036159	3.367631	up	noncoding	ENST00000431361	RP5-885L7.11	chr20	-
ASHG19A3A019494	0.000127	0.024495	2.786413	up	noncoding	ENST00000434754	XXbac- B33L19.10	chr22	-
ASHG19A3A020145	0.000996	0.047955	2.26848	up	noncoding	ENST00000457627	AP000552.7	chr22	+
ASHG19A3A021090	4.66E-05	0.018796	5.334716	up	noncoding	ENST00000421735	U73167.7	chr3	-
ASHG19A3A021090	4.66E-05	0.018796	5.334716	up	noncoding	ENST00000421735	U73167.7	chr3	-
ASHG19A3A021776	0.001482	0.057397	2.138887	up	noncoding	AK056150		chr1	+
ASHG19A3A022071	0.026219	0.203277	2.410596	up	noncoding	HIT000097222		chr3	-
ASHG19A3A022374	0.005698	0.098373	2.076622	up	noncoding	ENST00000425396	AC093416.3	chr3	+
ASHG19A3A023873	0.004785	0.090119	2.011103	up	noncoding	ENST00000514073	AC226119.4	chr4	-
ASHG19A3A027163	0.02991	0.217116	2.14159	up	noncoding	ENST00000512863	RP11-474J18.4	chr5	-
ASHG19A3A028512	0.022711	0.190558	2.615294	up	noncoding	CR624187		chr5	+
ASHG19A3A029575	0.00085	0.043696	2.076509	up	noncoding	ENST00000405092	RP1-193B12.5	chr6	-
ASHG19A3A029632	0.00296	0.074349	2.520881	up	noncoding	ENST00000441380	IFITM4P	chr6	-
ASHG19A3A029633	4.06E-05	0.018643	2.22908	up	noncoding	NR_001590	IFITM4P	chr6	-
ASHG19A3A029813	7.67E-05	0.02304	2.226069	up	noncoding	ENST00000339867	RP3-391O22.3	chr6	-
ASHG19A3A030189	0.031582	0.223077	2.008133	up	noncoding	ENST00000415381	RP11-301M17.1	chr1	+
ASHG19A3A031215	0.000291	0.031912	2.204207	up	noncoding	ENST00000429037	HLA-90	chr6	+
ASHG19A3A031628	0.002206	0.065842	2.08374	up	noncoding	NR_033327	EFHC1	chr6	+
ASHG19A3A031628	0.002206	0.065842	2.08374	up	noncoding	NR_033327	EFHC1	chr6	+
ASHG19A3A031863	0.008285	0.115005	3.241657	up	noncoding	ENST00000413107	RP11-758C21.1	chr6	+
ASHG19A3A032427	0.000552	0.036814	2.042036	up	noncoding	AK024405		chr7	-
ASHG19A3A032455	0.002526	0.06949	2.041729	up	noncoding	ENST00000490376	RP11-740N7.3	chr7	-
ASHG19A3A032860	0.005894	0.099319	3.627916	up	noncoding	ENST00000433031	RP11-1217F2.1	chr7	-
ASHG19A3A034012	0.005446	0.096221	2.012757	up	noncoding	CR622072		chr7	+
ASHG19A3A034265	0.001049	0.048635	2.095644	up	noncoding	ENST00000445938	AC017116.11	chr7	+
ASHG19A3A034274	0.003629	0.080236	2.501207	up	noncoding	ENST00000413189	RP4-781L3.1	chr1	-
ASHG19A3A034368	0.002822	0.07278	2.369199	up	noncoding	ENST00000442064	RP4-725G10.3	chr7	+
ASHG19A3A037374	0.004172	0.084406	2.150761	up	noncoding	ENST00000507347	CTD-2173L22.1	chr9	-
ASHG19A3A038204	0.017552	0.170277	2.84764	up	noncoding	uc004cgv.3	AK308497	chr9	-
ASHG19A3A039112	0.000841	0.043638	2.318056	up	noncoding	AK098037		chr9	+
ASHG19A3A039112	0.000841	0.043638	2.318056	up	noncoding	AK098037		chr9	+

ASHG19A3A040123	0.006571	0.103872	2.876674	up	noncoding	ENST00000399580	RP11-62C22.1	chrX	-
ASHG19A3A040456	0.005214	0.093706	2.048666	up	noncoding	ENST00000435597	RP11-1114A5.4	chrX	-
ASHG19A3A040757	0.000891	0.044744	2.596254	up	noncoding	NR_027783	SAT1	chrX	+
ASHG19A3A041020	0.000124	0.024243	2.247585	up	noncoding	ENST00000366761	AL136378.2	chr1	+
ASHG19A3A041020	0.000124	0.024243	2.247585	up	noncoding	ENST00000366761	AL136378.2	chr1	+
ASHG19A3A041823	5.45E-05	0.020077	2.038077	up	noncoding	ENST00000434155	AC012068.2	chrY	-
ASHG19A3A044434	2.5E-05	0.018643	2.039652	up	noncoding	ENST00000369884	CYP17A1OS	chr10	+
ASHG19A3A045606	0.002221	0.065924	2.014532	up	noncoding	uc001pfj.2	CR603982	chr11	-
ASHG19A3A045974	0.002889	0.073546	2.208289	up	noncoding	AK057652		chr1	-
ASHG19A3A046263	0.00161	0.058485	2.408616	up	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.00161	0.058485	2.408616	up	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.00161	0.058485	2.408616	up	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.00161	0.058485	2.408616	up	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.00161	0.058485	2.408616	up	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.00161	0.058485	2.408616	up	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.00161	0.058485	2.408616	up	noncoding	AK095453		chr11	+
ASHG19A3A046263	0.00161	0.058485	2.408616	up	noncoding	AK095453		chr11	+
ASHG19A3A052124	0.001949	0.062641	2.212647	up	noncoding	AL109705		chr15	-
ASHG19A3A052124	0.001949	0.062641	2.212647	up	noncoding	AL109705		chr15	-
ASHG19A3A052923	1.11E-05	0.018643	2.321991	up	noncoding	NR_002188	GBAP1	chr1	-
ASHG19A3A053561	0.0001	0.024021	2.016137	up	noncoding	AK027199		chr16	-
ASHG19A3A055195	0.006935	0.10663	2.383615	up	noncoding	ENST00000507702	C4orf10	chr4	+
ASHG19A3A055216	0.000233	0.029695	2.300963	up	noncoding	uc003myw.2	BC037167	chr6	+
ASHG19A3A055216	0.000233	0.029695	2.300963	up	noncoding	uc003myw.2	BC037167	chr6	+
ASHG19A3A055216	0.000233	0.029695	2.300963	up	noncoding	uc003myw.2	BC037167	chr6	+
ASHG19A3A055219	0.000222	0.029256	2.192829	up	noncoding	uc003nov.3	HLA-F	chr6	+
ASHG19A3H0000044	0.01067	0.129544	2.20826	up	noncoding	nc-HOXB2-164-	nc-HOXB2-164	chr17	-
ASHG19A3H0000090	0.000492	0.035742	2.419742	up	noncoding	nc-HOXB4-168-	nc-HOXB4-168	chr17	-
ASHG19A3H0000203	0.044498	0.264263	2.255156	up	noncoding	nc-HOXD9-17-	nc-HOXD9-17	chr2	+
ASHG19A3L0000820	0.028893	0.212408	2.467595	up	noncoding	BC036541	lincRNA-ZNF280D	chr15	-
ASHG19A3L0000820	0.028893	0.212408	2.467595	up	noncoding	BC036541	lincRNA-ZNF280D	chr15	-
ASHG19A3L0000820	0.028893	0.212408	2.467595	up	noncoding	BC036541	lincRNA-	chr15	-

ASHG19A3L0000820	0.028893	0.212408	2.467595	up	noncoding	BC036541	ZNF280D	chr15	-
ASHG19A3L0000820	0.028893	0.212408	2.467595	up	noncoding	BC036541	lincRNA-ZNF280D	chr15	-
ASHG19A3L0000820	0.028893	0.212408	2.467595	up	noncoding	BC036541	lincRNA-ZNF280D	chr15	-
ASHG19A3L0000820	0.028893	0.212408	2.467595	up	noncoding	BC036541	lincRNA-ZNF280D	chr15	-
ASHG19A3L0001033	0.033168	0.227984	2.198509	up	noncoding	chr2:107718693-107737818+	lincRNA-RGPD4-2	chr2	+
CUST_454_PI426073487	0.00546	0.096364	2.626805	up	noncoding	uc.456+	uc.456	chr20	+

Supplementary Table 2-2. The list of lncRNAs downregulated by c-MYC knockdown (upregulated by c-MYC) in HCT116.

ProbeName	P-value and FDR		Fold change and Regulation		type	seqname	GeneSymbol	chrom	strand
	p-value	FDR	FCAbsolute	regulation					
ASHG19A3A000082	0.040231	0.251132	2.274344	down	noncoding	ENST00000400783	AC097374.2	chr2	-
ASHG19A3A000371	0.006859	0.106334	2.237174	down	noncoding	ENST00000457804	RP11-322I2.1	chr10	+
ASHG19A3A000426	1.91E-05	0.018643	3.013427	down	noncoding	ENST00000501177	AC108084.1	chr16	-
ASHG19A3A000437	4.18E-05	0.018643	2.91158	down	noncoding	ENST00000503797	RP11-115G5.1	chr4	-
ASHG19A3A000508	0.00012	0.024021	2.881525	down	noncoding	ENST00000514406	AC123779.2	chr8	-
ASHG19A3A007162	0.000109	0.024021	2.270137	down	noncoding	NR_003697	C7orf40	chr7	-
ASHG19A3A007442	0.026151	0.203189	2.72713	down	noncoding	NR_026931	ALKBH2	chr12	-
ASHG19A3A007442	0.026151	0.203189	2.72713	down	noncoding	NR_026931	ALKBH2	chr12	-
ASHG19A3A007442	0.026151	0.203189	2.72713	down	noncoding	NR_026931	ALKBH2	chr12	-
ASHG19A3A007442	0.026151	0.203189	2.72713	down	noncoding	NR_026931	ALKBH2	chr12	-
ASHG19A3A007442	0.026151	0.203189	2.72713	down	noncoding	NR_026931	ALKBH2	chr12	-
ASHG19A3A007504	5.4E-06	0.013518	3.402997	down	noncoding	NR_027349	MIR17HG	chr13	+
ASHG19A3A007593	0.000315	0.032325	3.984488	down	noncoding	NR_027910	CALB2	chr16	+
ASHG19A3A007593	0.000315	0.032325	3.984488	down	noncoding	NR_027910	CALB2	chr16	+
ASHG19A3A007747	0.007812	0.111853	2.90777	down	noncoding	NR_033249	GCSH	chr16	-
ASHG19A3A008259	0.038287	0.244797	2.047189	down	noncoding	AK024690		chr17	-

ASHG19A3A008259	0.038287	0.244797	2.047189	down	noncoding	AK024690		chr17	-
ASHG19A3A008482	0.016622	0.165003	2.122172	down	noncoding	uc002ilk.1	AX748120	chr17	-
ASHG19A3A008482	0.016622	0.165003	2.122172	down	noncoding	uc002ilk.1	AX748120	chr17	-
ASHG19A3A008657	0.003384	0.078193	2.728499	down	noncoding	NR_002999	SCARNA20	chr17	-
ASHG19A3A009002	0.00071	0.040651	2.475946	down	noncoding	ENST00000413077	AC012146.7	chr17	+
ASHG19A3A009060	0.002059	0.064415	2.008288	down	noncoding	U79273		chr17	+
ASHG19A3A009060	0.002059	0.064415	2.008288	down	noncoding	U79273		chr17	+
ASHG19A3A009139	9.06E-06	0.018643	2.199228	down	noncoding	NR_026880	MGC12916	chr17	+
ASHG19A3A009686	0.000763	0.041786	2.233412	down	noncoding	ENST00000515049	RP11-304F15.5	chr17	+
ASHG19A3A009968	0.000419	0.035608	2.530851	down	noncoding	AB073602		chr17	+
ASHG19A3A009982	0.001283	0.053246	2.158636	down	noncoding	NR_027058	C17orf86	chr17	+
ASHG19A3A009982	0.001283	0.053246	2.158636	down	noncoding	NR_027058	C17orf86	chr17	+
ASHG19A3A010004	0.018892	0.175531	2.166825	down	noncoding	ENST00000479457	RP11-450D21.1	chr1	-
ASHG19A3A010017	0.006173	0.100779	2.011119	down	noncoding	AK124361		chr17	+
ASHG19A3A010171	0.002256	0.066531	2.426395	down	noncoding	ENST00000399857	AP001357.1	chr18	-
ASHG19A3A010460	0.000337	0.033299	3.532144	down	noncoding	ENST00000425161	RP11-343H5.6	chr1	-
ASHG19A3A010460	0.000337	0.033299	3.532144	down	noncoding	ENST00000425161	RP11-343H5.6	chr1	-
ASHG19A3A010489	8E-05	0.023106	3.024333	down	noncoding	CR593590		chr18	+
ASHG19A3A011120	3.22E-05	0.018643	2.489126	down	noncoding	BX640708		chr19	-
ASHG19A3A013825	0.004351	0.086138	2.067818	down	noncoding	ENST00000422761	AC007040.7	chr2	-
ASHG19A3A013848	0.000352	0.033833	2.844302	down	noncoding	ENST00000453103	AC073046.4	chr2	-
ASHG19A3A013848	0.000352	0.033833	2.844302	down	noncoding	ENST00000453103	AC073046.4	chr2	-
ASHG19A3A013860	0.002912	0.073865	2.236995	down	noncoding	ENST00000414130	AC005041.10	chr2	-
ASHG19A3A013990	0.000583	0.037388	2.064166	down	noncoding	uc001abs.2	AK091100	chr1	+
ASHG19A3A014202	0.000301	0.03198	2.028582	down	noncoding	uc002the.2	LOC541471	chr2	-
ASHG19A3A014260	0.032009	0.224484	2.136927	down	noncoding	G36767		chr2	-
ASHG19A3A014260	0.032009	0.224484	2.136927	down	noncoding	G36767		chr2	-
ASHG19A3A014260	0.032009	0.224484	2.136927	down	noncoding	G36767		chr2	-
ASHG19A3A014884	4.09E-05	0.018643	3.045718	down	noncoding	AF086549		chr2	-
ASHG19A3A015051	4.12E-05	0.018643	4.098347	down	noncoding	HIT000098852		chr2	-
ASHG19A3A015052	0.000396	0.035162	3.165391	down	noncoding	AK090760		chr2	-
ASHG19A3A015582	0.049534	0.280632	2.021646	down	noncoding	ENST00000450782	RP11-340B24.3	chr1	+
ASHG19A3A016165	0.000107	0.024021	2.130734	down	noncoding	uc002tfi.3	AK056084	chr2	+

ASHG19A3A016166	0.001862	0.062097	2.181304	down	noncoding	ENST00000436665	AC013268.5	chr2	+
ASHG19A3A017270	0.000379	0.034986	2.206407	down	noncoding	AK021907		chr20	-
ASHG19A3A017655	0.000992	0.047955	2.259914	down	noncoding	uc002xig.3	LOC388796	chr20	-
ASHG19A3A017659	0.003697	0.080477	2.182246	down	noncoding	BC071821		chr20	-
ASHG19A3A017659	0.003697	0.080477	2.182246	down	noncoding	BC071821		chr20	-
ASHG19A3A017663	0.003306	0.077336	2.507642	down	noncoding	ENST00000421494	HSPEP1	chr20	-
ASHG19A3A017977	6.15E-05	0.020516	2.542543	down	noncoding	NR_027700	NOP56	chr20	+
ASHG19A3A018266	0.005478	0.096458	2.016948	down	noncoding	ENST00000424137	BXDC1P	chr20	+
ASHG19A3A018897	0.002464	0.069163	2.191489	down	noncoding	NR_002909	SNHG3	chr1	+
ASHG19A3A019347	0.001436	0.056754	2.234768	down	noncoding	NR_026547	C21orf90	chr21	+
ASHG19A3A020283	0.011989	0.137642	2.556643	down	noncoding	NR_026962	LOC284900	chr22	+
ASHG19A3A020288	0.003216	0.076753	2.083415	down	noncoding	ENST00000458080	CTA-292E10.6	chr22	+
ASHG19A3A020288	0.003216	0.076753	2.083415	down	noncoding	ENST00000458080	CTA-292E10.6	chr22	+
ASHG19A3A020505	0.024157	0.196607	2.402698	down	noncoding	AF052148		chr22	+
ASHG19A3A020636	0.004569	0.087751	7.813613	down	noncoding	ENST00000426177	RP11-306H5.1	chr3	-
ASHG19A3A020788	0.000111	0.024021	2.014607	down	noncoding	ENST00000393779	AC104297.1	chr3	-
ASHG19A3A021044	0.000637	0.0384	2.24325	down	noncoding	uc001chr.2	AF086102	chr1	+
ASHG19A3A021313	0.018996	0.175678	2.040654	down	noncoding	ENST00000468470	RP11-159G9.4	chr3	-
ASHG19A3A021370	0.015755	0.160038	2.275568	down	noncoding	NR_028303	LOC100302640	chr3	-
ASHG19A3A021836	0.000114	0.024021	2.903847	down	noncoding	ENST00000487061	RP11-6F2.3	chr3	-
ASHG19A3A022107	0.001307	0.053506	2.105874	down	noncoding	ENST00000418353	RP11-135A1.2	chr3	-
ASHG19A3A022243	0.00113	0.050055	2.182996	down	noncoding	AK128690		chr3	+
ASHG19A3A022485	0.014903	0.155491	2.102504	down	noncoding	HIT000092017		chr3	+
ASHG19A3A023486	0.006834	0.106334	2.078898	down	noncoding	ENST00000454471	RP11-450H5.2	chr3	+
ASHG19A3A024179	0.000105	0.024021	2.689181	down	noncoding	ENST00000454756	AC104066.1	chr4	-
ASHG19A3A024387	0.005975	0.099662	2.198081	down	noncoding	BC043279		chr4	-
ASHG19A3A024387	0.005975	0.099662	2.198081	down	noncoding	BC043279		chr4	-
ASHG19A3A025516	0.017048	0.16678	2.377363	down	noncoding	ENST00000444958	KIAA0114	chr4	+
ASHG19A3A025529	0.000118	0.024021	2.165969	down	noncoding	ENST00000493291	RP11-601I15.1	chr4	+
ASHG19A3A025664	0.005686	0.098359	2.056781	down	noncoding	ENST00000430198	HMGA1L2	chr4	+
ASHG19A3A025664	0.005686	0.098359	2.056781	down	noncoding	ENST00000430198	HMGA1L2	chr4	+
ASHG19A3A026236	5.26E-06	0.013518	2.42773	down	noncoding	ENST00000515543	RP11-815N9.3	chr4	+
ASHG19A3A026327	0.001741	0.060107	2.281463	down	noncoding	ENST00000513552	RP11-753I4.1	chr4	+

ASHG19A3A027046	0.007845	0.112186	2.103103	down	noncoding	ENST00000510378	RPS23P5	chr5	-
ASHG19A3A027296	0.004376	0.086138	2.066406	down	noncoding	ENST00000503529	CTC-210G5.1	chr5	-
ASHG19A3A027743	0.00021	0.029256	3.103727	down	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027743	0.00021	0.029256	3.103727	down	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027743	0.00021	0.029256	3.103727	down	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027743	0.00021	0.029256	3.103727	down	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027743	0.00021	0.029256	3.103727	down	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027743	0.00021	0.029256	3.103727	down	noncoding	uc003mgt.2	BC041422	chr5	-
ASHG19A3A027896	0.000757	0.041783	2.140852	down	noncoding	AK125452		chr5	+
ASHG19A3A028338	0.014468	0.152808	2.20798	down	noncoding	uc001edc.1	BC047723	chr1	+
ASHG19A3A028338	0.014468	0.152808	2.20798	down	noncoding	uc001edc.1	BC047723	chr1	+
ASHG19A3A028520	0.001574	0.058205	2.085501	down	noncoding	ENST00000395970	AC008500.1	chr5	+
ASHG19A3A028617	0.006088	0.10027	2.074838	down	noncoding	NR_015370	NCRNA00219	chr5	+
ASHG19A3A028618	0.000629	0.038258	2.355921	down	noncoding	ENST00000413221	NCRNA00219	chr5	+
ASHG19A3A028827	0.000132	0.024829	2.410724	down	noncoding	AK092789		chr5	+
ASHG19A3A028827	0.000132	0.024829	2.410724	down	noncoding	AK092789		chr5	+
ASHG19A3A028827	0.000132	0.024829	2.410724	down	noncoding	AK092789		chr5	+
ASHG19A3A028827	0.000132	0.024829	2.410724	down	noncoding	AK092789		chr5	+
ASHG19A3A028882	0.000188	0.028311	2.39712	down	noncoding	AK123765		chr1	+
ASHG19A3A029023	0.000963	0.047404	2.555463	down	noncoding	AK055194		chr1	+
ASHG19A3A029343	0.02391	0.195987	2.200637	down	noncoding	ENST00000404787	RP1-140K8.2	chr6	-
ASHG19A3A029375	0.004167	0.084406	2.296957	down	noncoding	ENST00000407097	RP11-320C15.1	chr6	-
ASHG19A3A029387	0.004461	0.086752	2.593491	down	noncoding	NR_003703	SCARNA27	chr6	-
ASHG19A3A029387	0.004461	0.086752	2.593491	down	noncoding	NR_003703	SCARNA27	chr6	-
ASHG19A3A029809	0.021438	0.185451	2.30793	down	noncoding	AK025759		chr6	-
ASHG19A3A029844	0.034047	0.231941	2.095789	down	noncoding	AK056236		chr6	-
ASHG19A3A029895	0.001514	0.057397	3.325704	down	noncoding	ENST00000440194	RP11-328M4.2	chr6	-
ASHG19A3A029895	0.001514	0.057397	3.325704	down	noncoding	ENST00000440194	RP11-328M4.2	chr6	-
ASHG19A3A029895	0.001514	0.057397	3.325704	down	noncoding	ENST00000440194	RP11-328M4.2	chr6	-
ASHG19A3A030533	0.003929	0.082373	2.866055	down	noncoding	AK129530		chr6	-
ASHG19A3A030728	0.004237	0.084966	2.024644	down	noncoding	AK124909		chr6	-
ASHG19A3A031389	0.036054	0.23865	3.070639	down	noncoding	ENST00000429998	RP11-513I15.6	chr6	+
ASHG19A3A031674	8.82E-05	0.024021	2.128389	down	noncoding	ENST00000444820	RP11-442B12.1	chr6	+

ASHG19A3A032321	0.009164	0.121311	2.012604	down	noncoding	G43611		chr6	+
ASHG19A3A032369	0.000139	0.024883	2.675762	down	noncoding	ENST00000462565	AC093627.9	chr7	-
ASHG19A3A032394	0.000214	0.029256	3.025514	down	noncoding	ENST00000453348	AC074389.9	chr7	-
ASHG19A3A032601	0.000589	0.037483	2.509309	down	noncoding	ENST00000450406	AC073150.6	chr7	-
ASHG19A3A033116	0.000109	0.024021	2.084207	down	noncoding	uc003uig.2	BC035377	chr7	-
ASHG19A3A033116	0.000109	0.024021	2.084207	down	noncoding	uc003uig.2	BC035377	chr7	-
ASHG19A3A033116	0.000109	0.024021	2.084207	down	noncoding	uc003uig.2	BC035377	chr7	-
ASHG19A3A033267	0.000511	0.036159	2.006793	down	noncoding	ENST00000412754	RP11-126L15.4	chr7	-
ASHG19A3A034763	0.003642	0.080236	2.425386	down	noncoding	AK096529		chr7	+
ASHG19A3A034763	0.003642	0.080236	2.425386	down	noncoding	AK096529		chr7	+
ASHG19A3A034763	0.003642	0.080236	2.425386	down	noncoding	AK096529		chr7	+
ASHG19A3A035027	0.001689	0.059538	2.275492	down	noncoding	ENST00000478818	EFCAB3	chr7	+
ASHG19A3A035241	0.009902	0.124903	2.464553	down	noncoding	ENST00000462572	RP11-307I2.2	chr7	+
ASHG19A3A035353	0.000262	0.030488	2.922981	down	noncoding	ENST00000467458	RP11-796I2.2	chr7	+
ASHG19A3A035363	0.010766	0.129669	2.04143	down	noncoding	ENST00000477993	FABP5L3	chr7	+
ASHG19A3A035408	0.013028	0.144406	2.9376	down	noncoding	BC094870		chr7	+
ASHG19A3A035737	0.002106	0.064836	2.152423	down	noncoding	ENST00000505046	RP11-783P22.1	chr8	-
ASHG19A3A035869	0.006206	0.101019	2.717236	down	noncoding	HIT000389365		chr8	-
ASHG19A3A036543	0.006114	0.10027	2.411664	down	noncoding	BC015455		chr8	+
ASHG19A3A036947	0.008185	0.114351	2.107676	down	noncoding	uc010meg.2	CR619813	chr8	+
ASHG19A3A036947	0.008185	0.114351	2.107676	down	noncoding	uc010meg.2	CR619813	chr8	+
ASHG19A3A037063	0.001071	0.049332	2.604694	down	noncoding	AK021913		chr9	-
ASHG19A3A037064	0.000301	0.03198	2.531632	down	noncoding	BC045653		chr9	-
ASHG19A3A037065	0.006514	0.10358	3.212884	down	noncoding	BC034707		chr9	-
ASHG19A3A037085	0.000134	0.024829	2.304157	down	noncoding	ENST00000422953	RP11-39K24.9	chr9	-
ASHG19A3A037151	0.000519	0.036159	3.616969	down	noncoding	NR_003009	SCARNA8	chr9	-
ASHG19A3A037995	0.000765	0.041786	2.669721	down	noncoding	AK123875		chr9	-
ASHG19A3A038424	0.001819	0.061532	2.130336	down	noncoding	ENST00000427983	RP11-473O3.1	chr9	+
ASHG19A3A038468	3.86E-05	0.018643	2.047819	down	noncoding	BC030746		chr9	+
ASHG19A3A038568	0.007253	0.108539	2.559295	down	noncoding	uc004aaa.2	BC014180	chr9	+
ASHG19A3A038655	0.000312	0.032286	2.012922	down	noncoding	uc004adi.3	FAM27E3	chr9	+
ASHG19A3A038656	0.007066	0.107256	2.341534	down	noncoding	ENST00000421848	RP11-374M1.4	chr9	+
ASHG19A3A039668	2.53E-05	0.018643	2.115835	down	noncoding	NR_023358	SCARNA9L	chrX	-

ASHG19A3A045142	0.001202	0.051719	2.167283	down	noncoding	ENST00000413181	AC135977.1	chr11	-
ASHG19A3A045231	0.000227	0.029324	2.030851	down	noncoding	ENST00000458175	AP000640.1	chr11	-
ASHG19A3A045231	0.000227	0.029324	2.030851	down	noncoding	ENST00000458175	AP000640.1	chr11	-
ASHG19A3A045304	0.003506	0.079534	2.175969	down	noncoding	ENST00000435576	RP4-683M8.1	chr1	-
ASHG19A3A045403	0.040025	0.25049	2.391066	down	noncoding	ENST00000393967	AP001157.3	chr11	-
ASHG19A3A045689	0.000384	0.034986	2.111987	down	noncoding	ENST00000428428	PPIHP1	chr11	-
ASHG19A3A045868	0.015192	0.155978	3.238504	down	noncoding	AK127847		chr11	-
ASHG19A3A046198	0.001364	0.055202	2.163716	down	noncoding	uc001mow.1	AK097654	chr11	+
ASHG19A3A047254	0.00075	0.041544	2.228388	down	noncoding	NR_003010	SCARNA12	chr12	-
ASHG19A3A047254	0.00075	0.041544	2.228388	down	noncoding	NR_003010	SCARNA12	chr12	-
ASHG19A3A047447	1.25E-05	0.018643	2.146197	down	noncoding	ENST00000419107	RP11-472F19.1	chr1	-
ASHG19A3A048056	0.000612	0.038165	3.225339	down	noncoding	AK094730		chr12	-
ASHG19A3A048072	0.040963	0.252778	2.969401	down	noncoding	CR598968		chr12	-
ASHG19A3A048152	0.001894	0.062594	2.401207	down	noncoding	ENST00000501992	AC122688.1	chr12	-
ASHG19A3A048554	0.0016	0.058485	2.433533	down	noncoding	ENST00000499273	AC011603.2	chr12	+
ASHG19A3A048554	0.0016	0.058485	2.433533	down	noncoding	ENST00000499273	AC011603.2	chr12	+
ASHG19A3A048554	0.0016	0.058485	2.433533	down	noncoding	ENST00000499273	AC011603.2	chr12	+
ASHG19A3A048554	0.0016	0.058485	2.433533	down	noncoding	ENST00000499273	AC011603.2	chr12	+
ASHG19A3A048554	0.0016	0.058485	2.433533	down	noncoding	ENST00000499273	AC011603.2	chr12	+
ASHG19A3A048566	0.00012	0.024021	2.387967	down	noncoding	NR_033267	LOC100335030	chr12	+
ASHG19A3A048932	9.65E-05	0.024021	3.081294	down	noncoding	ENST00000470084	RP11-129B9.1	chr12	+
ASHG19A3A049043	0.00048	0.035742	3.117953	down	noncoding	uc001trz.2	AJ276555	chr12	+
ASHG19A3A049089	0.003222	0.076753	2.026229	down	noncoding	BC053353		chr1	-
ASHG19A3A049376	0.000389	0.034986	9.073339	down	noncoding	AK022310		chr13	-
ASHG19A3A049420	0.015111	0.155978	2.776176	down	noncoding	ENST00000439831	RP11-141M1.4	chr13	-
ASHG19A3A049765	4.09E-05	0.018643	2.037277	down	noncoding	ENST00000432229	RP11-111L24.3	chr13	-
ASHG19A3A049878	0.000411	0.035547	2.022411	down	noncoding	AK092053		chr13	-
ASHG19A3A050188	2.47E-05	0.018643	2.557953	down	noncoding	NR_002605	DLEU1	chr13	+
ASHG19A3A050209	6E-05	0.020516	2.144924	down	noncoding	ENST00000439042	RP11-381L18.2	chr13	+
ASHG19A3A050209	6E-05	0.020516	2.144924	down	noncoding	ENST00000439042	RP11-381L18.2	chr13	+
ASHG19A3A050378	0.048493	0.277666	3.628139	down	noncoding	NR_027350	MIR17HG	chr13	+
ASHG19A3A050551	0.000403	0.035207	2.435864	down	noncoding	NR_002312	RPPH1	chr14	-
ASHG19A3A050551	0.000403	0.035207	2.435864	down	noncoding	NR_002312	RPPH1	chr14	-

ASHG19A3A050815	0.001399	0.055891	2.186032	down	noncoding	uc001xbz.2	C14orf33	chr14	-
ASHG19A3A050815	0.001399	0.055891	2.186032	down	noncoding	uc001xbz.2	C14orf33	chr14	-
ASHG19A3A050815	0.001399	0.055891	2.186032	down	noncoding	uc001xbz.2	C14orf33	chr14	-
ASHG19A3A050815	0.001399	0.055891	2.186032	down	noncoding	uc001xbz.2	C14orf33	chr14	-
ASHG19A3A050816	0.0015	0.057397	2.318456	down	noncoding	NR_027123	C14orf33	chr14	-
ASHG19A3A050816	0.0015	0.057397	2.318456	down	noncoding	NR_027123	C14orf33	chr14	-
ASHG19A3A050816	0.0015	0.057397	2.318456	down	noncoding	NR_027123	C14orf33	chr14	-
ASHG19A3A050816	0.0015	0.057397	2.318456	down	noncoding	NR_027123	C14orf33	chr14	-
ASHG19A3A050894	0.006737	0.105406	2.014826	down	noncoding	G43222		chr14	-
ASHG19A3A051108	0.00072	0.040817	2.434784	down	noncoding	NR_026779	C14orf139	chr14	-
ASHG19A3A052295	0.003413	0.078474	2.462751	down	noncoding	NR_004388	SCARNA14	chr15	-
ASHG19A3A052760	3.14E-06	0.011793	3.029637	down	noncoding	BC015134		chr15	+
ASHG19A3A052838	0.000172	0.027481	3.083918	down	noncoding	uc001zsy.2	BC062349	chr15	+
ASHG19A3A052838	0.000172	0.027481	3.083918	down	noncoding	uc001zsy.2	BC062349	chr15	+
ASHG19A3A053140	0.003049	0.075673	2.240793	down	noncoding	AL109713		chr15	+
ASHG19A3A053737	0.000456	0.035632	2.26129	down	noncoding	AK093598		chr16	-
ASHG19A3A053984	0.001242	0.052678	2.027038	down	noncoding	NR_033247	LOC100329108	chr16	-
ASHG19A3A054863	0.001869	0.062097	2.341124	down	noncoding	AF052103		chr16	+
ASHG19A3A055053	0.001737	0.060107	2.020393	down	noncoding	U23864		chr8	+
ASHG19A3A055053	0.001737	0.060107	2.020393	down	noncoding	U23864		chr8	+
ASHG19A3A055053	0.001737	0.060107	2.020393	down	noncoding	U23864		chr8	+
ASHG19A3A055132	0.00061	0.038165	2.432834	down	noncoding	uc002ehu.1	PNAS-108	chr16	-
ASHG19A3L0000810	0.00296	0.074349	2.376687	down	noncoding	CR741480	lincRNA-FBN1	chr15	-
ASHG19A3L0001126	0.000249	0.030488	2.252127	down	noncoding	DB027866	lincRNA-SDPR-2	chr2	+
ASHG19A3L0002222	0.005619	0.098168	3.063093	down	noncoding	AK021739	lincRNA-JAK2-2	chr9	+
ASHG19A3L0002851	0.000636	0.0384	2.258101	down	noncoding	AK125219	lincRNA-HAUS7	chrX	-
ASHG19A3L0002851	0.000636	0.0384	2.258101	down	noncoding	AK125219	lincRNA-HAUS7	chrX	-
CUST_339_PI426073487	0.041864	0.255382	2.010776	down	noncoding	uc.341+	uc.341	chr12	+

ASHG19A3A007245	0.012353	0.112173	2.058932	up	noncoding	NR_024142	NCRNA00081	chr10	-
ASHG19A3A007276	0.006722	0.084068	2.111212	up	noncoding	NR_024240	HLA-J	chr6	+
ASHG19A3A007344	0.000446	0.029788	2.347034	up	noncoding	ENST00000465539	ZNF271	chr18	+
ASHG19A3A007344	0.000446	0.029788	2.347034	up	noncoding	ENST00000465539	ZNF271	chr18	+
ASHG19A3A007345	0.004952	0.073128	2.432584	up	noncoding	NR_024566	ZNF271	chr18	+
ASHG19A3A007345	0.004952	0.073128	2.432584	up	noncoding	NR_024566	ZNF271	chr18	+
ASHG19A3A007355	0.041661	0.192595	2.539343	up	noncoding	NR_024601	DIABLO	chr12	-
ASHG19A3A007355	0.041661	0.192595	2.539343	up	noncoding	NR_024601	DIABLO	chr12	-
ASHG19A3A007610	0.012308	0.111948	2.292819	up	noncoding	NR_028027	CREBZF	chr11	-
ASHG19A3A007677	7.86E-05	0.021847	3.817335	up	noncoding	NR_028503	C17orf91	chr17	-
ASHG19A3A007677	7.86E-05	0.021847	3.817335	up	noncoding	NR_028503	C17orf91	chr17	-
ASHG19A3A007678	0.000117	0.021847	2.910028	up	noncoding	NR_028505	C17orf91	chr17	-
ASHG19A3A007678	0.000117	0.021847	2.910028	up	noncoding	NR_028505	C17orf91	chr17	-
ASHG19A3A007882	0.031893	0.17088	2.204438	up	noncoding	NR_024447	LOC100128288	chr17	-
ASHG19A3A007910	0.010342	0.102124	2.203824	up	noncoding	ENST00000450334	RP4-798A17.5	chr1	-
ASHG19A3A007995	0.008938	0.096095	2.7581	up	noncoding	ENST00000414673	KRT16P2	chr17	-
ASHG19A3A008077	0.003607	0.06538	2.457461	up	noncoding	ENST00000340898	AC126365.2	chr17	-
ASHG19A3A008094	0.048221	0.208123	3.023487	up	noncoding	U00949		chr17	-
ASHG19A3A008508	0.001739	0.04821	3.007466	up	noncoding	AK000839		chr17	-
ASHG19A3A008642	0.001745	0.04821	2.536693	up	noncoding	AF130062		chr17	-
ASHG19A3A008732	0.000843	0.038458	2.385413	up	noncoding	ENST00000453838	KRT18P28	chr1	-
ASHG19A3A008736	0.028782	0.162756	5.799156	up	noncoding	HIT000016017		chr17	-
ASHG19A3A008836	0.004534	0.071744	2.548224	up	noncoding	uc002juh.2	BC041417	chr17	-
ASHG19A3A008836	0.004534	0.071744	2.548224	up	noncoding	uc002juh.2	BC041417	chr17	-
ASHG19A3A008883	0.000916	0.039493	2.113648	up	noncoding	AK023363		chr1	-
ASHG19A3A009251	0.035714	0.179334	3.323271	up	noncoding	uc010cqz.2	AK310665	chr17	+
ASHG19A3A009264	0.014361	0.119422	5.834251	up	noncoding	uc002gyd.1	CR620692	chr17	+
ASHG19A3A009335	0.026581	0.157397	2.785018	up	noncoding	ENST00000456678	RP11-401A10.2	chr1	-
ASHG19A3A009342	0.000719	0.036619	2.157465	up	noncoding	NR_033420	SH3GL1P2	chr17	+
ASHG19A3A009701	0.022422	0.146012	5.706751	up	noncoding	ENST00000511179	RP11-893F2.7	chr17	+
ASHG19A3A009819	0.000167	0.021847	2.615332	up	noncoding	CR594811		chr17	+
ASHG19A3A009878	0.006757	0.084149	2.678366	up	noncoding	ENST00000412707	AC118653.1	chr17	+
ASHG19A3A010149	0.004146	0.068504	2.390057	up	noncoding	ENST00000399792	AP000902.2	chr18	-

ASHG19A3A010592	0.000133	0.021847	2.062217	up	noncoding	CR597075		chr18	+
ASHG19A3A010592	0.000133	0.021847	2.062217	up	noncoding	CR597075		chr18	+
ASHG19A3A010592	0.000133	0.021847	2.062217	up	noncoding	CR597075		chr18	+
ASHG19A3A010596	1.08E-05	0.012425	2.42567	up	noncoding	NR_024565	ZNF271	chr18	+
ASHG19A3A010596	1.08E-05	0.012425	2.42567	up	noncoding	NR_024565	ZNF271	chr18	+
ASHG19A3A010628	0.015752	0.123899	2.471543	up	noncoding	G36872		chr18	+
ASHG19A3A010732	0.034628	0.177079	2.345659	up	noncoding	ENST00000430751	RP3-434O14.8	chr1	-
ASHG19A3A010732	0.034628	0.177079	2.345659	up	noncoding	ENST00000430751	RP3-434O14.8	chr1	-
ASHG19A3A010930	0.000244	0.023452	2.157291	up	noncoding	uc002mej.1	AK056073	chr19	-
ASHG19A3A010983	0.00294	0.058797	2.061182	up	noncoding	uc002mjt.3	BC014506	chr19	-
ASHG19A3A012829	0.045883	0.202504	3.408291	up	noncoding	ENST00000503632	AC011551.1	chr19	+
ASHG19A3A013000	0.007009	0.085867	2.197471	up	noncoding	AK055160		chr19	+
ASHG19A3A013222	0.000215	0.022938	2.295244	up	noncoding	uc002qyd.1	BC113076	chr2	-
ASHG19A3A013222	0.000215	0.022938	2.295244	up	noncoding	uc002qyd.1	BC113076	chr2	-
ASHG19A3A013223	2.02E-06	0.012395	2.335202	up	noncoding	ENST00000335179	AC010907.3	chr2	-
ASHG19A3A013223	2.02E-06	0.012395	2.335202	up	noncoding	ENST00000335179	AC010907.3	chr2	-
ASHG19A3A013317	0.024797	0.152261	4.174778	up	noncoding	ENST00000444710	AC008069.2	chr2	-
ASHG19A3A013343	0.044866	0.199717	4.606711	up	noncoding	ENST00000438989	AC007041.2	chr2	-
ASHG19A3A013406	0.034671	0.177238	5.115662	up	noncoding	ENST00000274516	AC011740.3	chr2	-
ASHG19A3A013996	0.024298	0.150424	5.038191	up	noncoding	ENST00000415481	RP11-206L10.13	chr1	+
ASHG19A3A014172	0.007375	0.087696	2.795083	up	noncoding	ENST00000443543	AC010095.6	chr2	-
ASHG19A3A014344	0.018995	0.135724	3.530564	up	noncoding	ENST00000449160	AC132479.4	chr2	-
ASHG19A3A014359	0.00865	0.094754	2.241754	up	noncoding	ENST00000425793	NEK2P4	chr2	-
ASHG19A3A014464	0.004506	0.071744	2.452381	up	noncoding	ENST00000445497	AC105402.1	chr2	-
ASHG19A3A014732	0.000291	0.026229	5.501525	up	noncoding	ENST00000450021	KRT8P10	chr2	-
ASHG19A3A014815	0.000356	0.027381	2.482721	up	noncoding	AK096309		chr2	-
ASHG19A3A014880	0.003137	0.060549	2.095315	up	noncoding	ENST00000405197	AC064836.3	chr2	-
ASHG19A3A014980	0.026781	0.157939	2.066323	up	noncoding	ENST00000425162	AC073321.2	chr2	-
ASHG19A3A014997	0.031023	0.168145	2.411215	up	noncoding	AF116702		chr2	-
ASHG19A3A014997	0.031023	0.168145	2.411215	up	noncoding	AF116702		chr2	-
ASHG19A3A015058	0.020776	0.140518	3.489507	up	noncoding	ENST00000430194	AC079120.1	chr2	-
ASHG19A3A015399	0.033792	0.175128	6.845215	up	noncoding	ENST00000437531	RP11-219F1.2	chr2	+
ASHG19A3A015399	0.033792	0.175128	6.845215	up	noncoding	ENST00000437531	RP11-219F1.2	chr2	+

ASHG19A3A015399	0.033792	0.175128	6.845215	up	noncoding	ENST00000437531	RP11-219F1.2	chr2	+
ASHG19A3A015558	0.001248	0.043667	2.256709	up	noncoding	G43245		chr2	+
ASHG19A3A015661	0.003886	0.06684	2.439393	up	noncoding	NR_002229	RPL23AP32	chr2	+
ASHG19A3A015815	0.040444	0.189467	2.288252	up	noncoding	ENST00000438808	RP5-934G17.6	chr1	+
ASHG19A3A015882	0.002844	0.057716	2.875478	up	noncoding	ENST00000417406	AC109638.1	chr2	+
ASHG19A3A016331	0.049865	0.211919	2.711655	up	noncoding	ENST00000416089	AC018865.7	chr2	+
ASHG19A3A016370	0.035413	0.178599	5.428622	up	noncoding	ENST00000449922	RHOQP2	chr2	+
ASHG19A3A016645	0.000126	0.021847	3.169645	up	noncoding	ENST00000392131	AC079305.6	chr2	+
ASHG19A3A016946	0.006201	0.080771	3.618566	up	noncoding	AK125369		chr2	+
ASHG19A3A017050	0.000933	0.039493	2.249507	up	noncoding	G36718		chr2	+
ASHG19A3A017463	0.038879	0.186198	5.299093	up	noncoding	ENST00000396692	CYB5P4	chr20	-
ASHG19A3A017645	0.013246	0.11573	2.615317	up	noncoding	ENST00000423261	GLRXP	chr20	-
ASHG19A3A017793	5.41E-05	0.019365	2.418281	up	noncoding	ENST00000415187	TMSL6	chr20	-
ASHG19A3A017793	5.41E-05	0.019365	2.418281	up	noncoding	ENST00000415187	TMSL6	chr20	-
ASHG19A3A017793	5.41E-05	0.019365	2.418281	up	noncoding	ENST00000415187	TMSL6	chr20	-
ASHG19A3A017894	0.000677	0.036432	5.923132	up	noncoding	ENST00000431361	RP5-885L7.11	chr20	-
ASHG19A3A018873	0.00466	0.071865	3.053674	up	noncoding	ENST00000423089	AP001434.1	chr21	-
ASHG19A3A018957	0.035561	0.179044	11.75438	up	noncoding	ENST00000449877	MYL6P	chr21	-
ASHG19A3A019090	0.039047	0.186591	5.023523	up	noncoding	ENST00000414214	FDPSP	chr21	+
ASHG19A3A019214	0.046857	0.204692	2.308407	up	noncoding	ENST00000399188	RPS9P1	chr21	+
ASHG19A3A019321	0.020456	0.139397	2.863579	up	noncoding	ENST00000398116	RPL31P1	chr21	+
ASHG19A3A019413	0.036232	0.180501	2.299679	up	noncoding	ENST00000429435	LA16c-58F10.2	chr22	-
ASHG19A3A020013	0.033524	0.174703	3.145031	up	noncoding	ENST00000438441	NEK2P2	chr22	+
ASHG19A3A020151	0.00043	0.029577	2.693323	up	noncoding	ENST00000449424	KB-1323B2.6	chr22	+
ASHG19A3A020380	0.049856	0.211919	5.726899	up	noncoding	ENST00000414048	CTA-714B7.4	chr22	+
ASHG19A3A020450	0.0259	0.155471	2.027084	up	noncoding	ENST00000418803	RP3-508I15.19	chr22	+
ASHG19A3A020450	0.0259	0.155471	2.027084	up	noncoding	ENST00000418803	RP3-508I15.19	chr22	+
ASHG19A3A020450	0.0259	0.155471	2.027084	up	noncoding	ENST00000418803	RP3-508I15.19	chr22	+
ASHG19A3A020550	4.43E-05	0.019365	3.212838	up	noncoding	ENST00000435622	KRT18P23	chr22	+
ASHG19A3A020662	0.04605	0.202882	4.607315	up	noncoding	ENST00000497982	RP1-144F13.4	chr1	+
ASHG19A3A020748	0.032114	0.171159	4.79897	up	noncoding	ENST00000430724	RP11-115D7.3	chr1	+
ASHG19A3A020789	0.024367	0.150603	2.096424	up	noncoding	ENST00000417487	AC104297.2	chr3	-
ASHG19A3A020867	0.04403	0.197634	2.205079	up	noncoding	CR622191		chr3	-

ASHG19A3A020867	0.04403	0.197634	2.205079	up	noncoding	CR622191		chr3	-
ASHG19A3A020868	0.002132	0.053191	2.230648	up	noncoding	G43299		chr3	-
ASHG19A3A020868	0.002132	0.053191	2.230648	up	noncoding	G43299		chr3	-
ASHG19A3A020870	0.000194	0.022938	6.274893	up	noncoding	ENST00000413425	KRT8P18	chr3	-
ASHG19A3A020891	0.009292	0.097936	4.424297	up	noncoding	ENST00000440724	RP11-815I22.1	chr3	-
ASHG19A3A020920	0.036201	0.180501	2.689414	up	noncoding	ENST00000433516	RP11-20O23.1	chr3	-
ASHG19A3A021090	0.010026	0.100991	3.005395	up	noncoding	ENST00000421735	U73167.7	chr3	-
ASHG19A3A021090	0.010026	0.100991	3.005395	up	noncoding	ENST00000421735	U73167.7	chr3	-
ASHG19A3A021203	0.000143	0.021847	2.513669	up	noncoding	ENST00000462623	RP11-154D3.1	chr3	-
ASHG19A3A021318	0.001421	0.044381	2.014725	up	noncoding	ENST00000474651	PROSP	chr3	-
ASHG19A3A021433	0.034931	0.177846	2.893011	up	noncoding	ENST00000425915	AC079944.1	chr3	-
ASHG19A3A021577	4.81E-05	0.019365	2.063059	up	noncoding	ENST00000434244	RP5-1198O20.4	chr1	+
ASHG19A3A021650	0.013362	0.1159	2.585882	up	noncoding	G43503		chr3	-
ASHG19A3A021650	0.013362	0.1159	2.585882	up	noncoding	G43503		chr3	-
ASHG19A3A021650	0.013362	0.1159	2.585882	up	noncoding	G43503		chr3	-
ASHG19A3A021703	0.000711	0.036545	2.324909	up	noncoding	BC040051		chr3	-
ASHG19A3A021862	0.0351	0.178219	4.49526	up	noncoding	ENST00000446155	RP4-697E16.1	chr1	+
ASHG19A3A021900	0.029997	0.165639	6.542614	up	noncoding	ENST00000471495	RP11-603B13.1	chr3	-
ASHG19A3A022071	0.012626	0.113365	2.270848	up	noncoding	HIT000097222		chr3	-
ASHG19A3A022117	0.004102	0.068173	2.739683	up	noncoding	ENST00000455557	AC108676.1	chr3	-
ASHG19A3A022172	0.025566	0.154644	2.573411	up	noncoding	ENST00000452862	AC144530.1	chr3	-
ASHG19A3A022584	0.032214	0.171214	3.540357	up	noncoding	ENST00000427885	RP11-395P16.1	chr3	+
ASHG19A3A022860	0.023322	0.147746	6.864423	up	noncoding	ENST00000473150	KRT8P25	chr3	+
ASHG19A3A022880	0.011656	0.108779	2.268048	up	noncoding	ENST00000471403	RP11-346M10.2	chr3	+
ASHG19A3A022949	0.027194	0.158616	5.513943	up	noncoding	ENST00000457291	RP11-238M12.1	chr3	+
ASHG19A3A022953	0.019643	0.136965	3.257247	up	noncoding	ENST00000486888	RP11-281P11.1	chr3	+
ASHG19A3A023201	0.026432	0.157033	3.234314	up	noncoding	ENST00000412562	RP4-794H19.3	chr1	+
ASHG19A3A023469	0.00065	0.035914	5.001135	up	noncoding	uc003fdp.1	BC125159	chr3	+
ASHG19A3A023526	0.000226	0.022938	7.206053	up	noncoding	ENST00000463294	KRT8P13	chr3	+
ASHG19A3A023787	0.011753	0.109112	3.11462	up	noncoding	uc011buh.1	AK128818	chr3	+
ASHG19A3A023802	0.000934	0.039493	2.617124	up	noncoding	ENST00000392362	AC073135.2	chr3	+
ASHG19A3A023978	0.000131	0.021847	2.317168	up	noncoding	G36472		chr4	-
ASHG19A3A024044	0.022147	0.144791	2.478344	up	noncoding	ENST00000511723	RP11-293A21.2	chr4	-

ASHG19A3A024044	0.022147	0.144791	2.478344	up	noncoding	ENST00000511723	RP11-293A21.2	chr4	-
ASHG19A3A024044	0.022147	0.144791	2.478344	up	noncoding	ENST00000511723	RP11-293A21.2	chr4	-
ASHG19A3A024092	0.000722	0.036619	2.113259	up	noncoding	uc003gun.1	CR591173	chr4	-
ASHG19A3A024106	0.026271	0.156733	2.053182	up	noncoding	AL080130		chr4	-
ASHG19A3A024106	0.026271	0.156733	2.053182	up	noncoding	AL080130		chr4	-
ASHG19A3A024106	0.026271	0.156733	2.053182	up	noncoding	AL080130		chr4	-
ASHG19A3A024106	0.026271	0.156733	2.053182	up	noncoding	AL080130		chr4	-
ASHG19A3A024106	0.026271	0.156733	2.053182	up	noncoding	AL080130		chr4	-
ASHG19A3A024106	0.026271	0.156733	2.053182	up	noncoding	AL080130		chr4	-
ASHG19A3A024469	0.015462	0.122868	3.518973	up	noncoding	ENST00000508008	RP11-113G13.2	chr4	-
ASHG19A3A024573	0.000329	0.027161	2.694778	up	noncoding	ENST00000502488	AC004066.2	chr4	-
ASHG19A3A024933	0.014856	0.120102	3.066556	up	noncoding	ENST00000495104	RP11-366M4.2	chr4	-
ASHG19A3A025395	0.001126	0.042382	3.341378	up	noncoding	ENST00000507715	RP11-802H3.1	chr4	+
ASHG19A3A025440	0.029263	0.163561	3.397437	up	noncoding	ENST00000508931	RP11-333E13.3	chr4	+
ASHG19A3A025935	0.000116	0.021847	2.036375	up	noncoding	BC127918		chr4	+
ASHG19A3A025941	0.036807	0.181664	2.535135	up	noncoding	ENST00000515767	RP11-447B21.1	chr4	+
ASHG19A3A025977	0.025784	0.155024	4.585734	up	noncoding	ENST00000412158	RP11-364P2.1	chr4	+
ASHG19A3A026019	0.000916	0.039493	2.266985	up	noncoding	ENST00000501498	AC108062.1	chr4	+
ASHG19A3A026103	0.013366	0.1159	2.977801	up	noncoding	ENST00000504966	KRT18P51	chr4	+
ASHG19A3A026365	0.025415	0.153957	2.549896	up	noncoding	uc003iwb.1	AK001394	chr4	+
ASHG19A3A026435	0.008627	0.094754	2.134108	up	noncoding	AK055000		chr5	-
ASHG19A3A026464	0.040323	0.189074	2.201412	up	noncoding	uc003jcp.3	LOC728613	chr5	-
ASHG19A3A026573	0.003406	0.063251	2.412927	up	noncoding	ENST00000515372	RP11-321E2.13	chr5	-
ASHG19A3A026841	8.32E-05	0.021847	6.10132	up	noncoding	ENST00000504812	RP11-109B6.2	chr5	-
ASHG19A3A026852	0.000686	0.036491	2.466867	up	noncoding	ENST00000506094	CTD-2244C20.1	chr5	-
ASHG19A3A026994	0.014604	0.119693	2.224695	up	noncoding	ENST00000418362	RP11-364B6.1	chr1	+
ASHG19A3A027122	0.009838	0.100197	2.01187	up	noncoding	ENST00000510254	RP11-65F13.2	chr5	-
ASHG19A3A027129	0.010654	0.104246	2.551712	up	noncoding	AF222858		chr5	-
ASHG19A3A027163	8.81E-05	0.021847	4.782634	up	noncoding	ENST00000512863	RP11-474J18.4	chr5	-
ASHG19A3A027282	0.026105	0.15602	3.618805	up	noncoding	ENST00000504479	RP11-950K24.1	chr5	-
ASHG19A3A027285	0.005454	0.075982	2.657094	up	noncoding	ENST00000505780	CTD-2158P22.4	chr5	-
ASHG19A3A027332	0.020288	0.139066	3.040016	up	noncoding	ENST00000508631	RP11-434D11.1	chr5	-

ASHG19A3A027516	0.01633	0.126164	2.280027	up	noncoding	G42992		chr5	-
ASHG19A3A027516	0.01633	0.126164	2.280027	up	noncoding	G42992		chr5	-
ASHG19A3A027516	0.01633	0.126164	2.280027	up	noncoding	G42992		chr5	-
ASHG19A3A027516	0.01633	0.126164	2.280027	up	noncoding	G42992		chr5	-
ASHG19A3A027516	0.01633	0.126164	2.280027	up	noncoding	G42992		chr5	-
ASHG19A3A027516	0.01633	0.126164	2.280027	up	noncoding	G42992		chr5	-
ASHG19A3A027661	0.026311	0.15675	5.180238	up	noncoding	ENST00000309178	GLRXP3	chr5	-
ASHG19A3A028102	0.01974	0.13732	2.249683	up	noncoding	ENST00000510160	CTD-2046J7.1	chr5	+
ASHG19A3A028102	0.01974	0.13732	2.249683	up	noncoding	ENST00000510160	CTD-2046J7.1	chr5	+
ASHG19A3A028102	0.01974	0.13732	2.249683	up	noncoding	ENST00000510160	CTD-2046J7.1	chr5	+
ASHG19A3A028102	0.01974	0.13732	2.249683	up	noncoding	ENST00000510160	CTD-2046J7.1	chr5	+
ASHG19A3A028102	0.01974	0.13732	2.249683	up	noncoding	ENST00000510160	CTD-2046J7.1	chr5	+
ASHG19A3A028102	0.01974	0.13732	2.249683	up	noncoding	ENST00000510160	CTD-2046J7.1	chr5	+
ASHG19A3A028253	0.0265	0.157191	2.249041	up	noncoding	ENST00000504014	CTD-2037L6.1	chr5	+
ASHG19A3A028260	0.041663	0.192595	3.94521	up	noncoding	ENST00000509515	CTD-2085F10.1	chr5	+
ASHG19A3A028260	0.041663	0.192595	3.94521	up	noncoding	ENST00000509515	CTD-2085F10.1	chr5	+
ASHG19A3A028260	0.041663	0.192595	3.94521	up	noncoding	ENST00000509515	CTD-2085F10.1	chr5	+
ASHG19A3A028260	0.041663	0.192595	3.94521	up	noncoding	ENST00000509515	CTD-2085F10.1	chr5	+
ASHG19A3A028414	0.047774	0.206719	2.39923	up	noncoding	G43036		chr5	+
ASHG19A3A028425	0.011374	0.107768	3.571644	up	noncoding	ENST00000510759	CTC-422A18.2	chr5	+
ASHG19A3A028596	0.005901	0.079292	2.104443	up	noncoding	HIT000070642		chr5	+
ASHG19A3A028602	0.016865	0.127494	5.002802	up	noncoding	ENST00000505048	KRT18P42	chr5	+
ASHG19A3A028891	0.017099	0.128536	3.178492	up	noncoding	ENST00000505275	RP11-515C16.2	chr5	+
ASHG19A3A029003	0.040531	0.189807	2.977963	up	noncoding	ENST00000509352	CTC-327F10.3	chr5	+
ASHG19A3A029381	0.005026	0.07357	2.283714	up	noncoding	AF143325		chr6	-
ASHG19A3A029381	0.005026	0.07357	2.283714	up	noncoding	AF143325		chr6	-
ASHG19A3A029491	0.000302	0.026395	2.294555	up	noncoding	AL110159		chr6	-
ASHG19A3A029491	0.000302	0.026395	2.294555	up	noncoding	AL110159		chr6	-
ASHG19A3A029601	0.008111	0.091933	2.72051	up	noncoding	ENST00000452408	KRT18P1	chr6	-
ASHG19A3A030063	0.027013	0.158169	3.945852	up	noncoding	ENST00000374318	RP11-337C18.4	chr1	+
ASHG19A3A030243	0.033908	0.175245	2.071536	up	noncoding	ENST00000406493	RP3-382I10.3	chr6	-
ASHG19A3A030300	0.006171	0.080669	3.300088	up	noncoding	ENST00000403144	RP11-111D3.1	chr6	-
ASHG19A3A030379	0.030688	0.167477	2.468895	up	noncoding	ENST00000405355	RP11-346C16.4	chr6	-

ASHG19A3A030403	0.041415	0.192158	5.849321	up	noncoding	ENST00000439811	RP11-506B6.2	chr6	-
ASHG19A3A030468	0.03972	0.187773	2.55432	up	noncoding	ENST00000406327	RP3-438G17.1	chr6	-
ASHG19A3A030498	0.002586	0.056252	2.05949	up	noncoding	ENST00000407841	RP11-325O24.2	chr6	-
ASHG19A3A031041	0.014341	0.119326	3.031232	up	noncoding	ENST00000449496	KRT18P38	chr6	+
ASHG19A3A031105	0.001539	0.045337	2.245546	up	noncoding	BC042589		chr6	+
ASHG19A3A031184	3.17E-05	0.017887	2.008886	up	noncoding	uc010jrd.2	CR619760	chr6	+
ASHG19A3A031220	0.016923	0.1277	3.075348	up	noncoding	ENST00000429813	HLA-16	chr6	+
ASHG19A3A031242	0.008868	0.095474	2.03869	up	noncoding	ENST00000437516	HLA-N	chr6	+
ASHG19A3A031389	0.01555	0.123148	2.819092	up	noncoding	ENST00000429998	RP11-513I15.6	chr6	+
ASHG19A3A031395	0.029796	0.164881	3.302817	up	noncoding	ENST00000334441	RP11-140K17.2	chr6	+
ASHG19A3A031420	0.020324	0.139066	5.554195	up	noncoding	ENST00000403727	RP3-510O8.3	chr6	+
ASHG19A3A032209	0.042851	0.19498	2.085511	up	noncoding	ENST00000392260	RP11-472G23.7	chr6	+
ASHG19A3A032250	0.044117	0.197673	2.707177	up	noncoding	ENST00000404107	RP11-486M3.2	chr6	+
ASHG19A3A032389	5.88E-05	0.019365	2.059804	up	noncoding	AK124993		chr7	-
ASHG19A3A032552	0.04121	0.191773	2.557238	up	noncoding	ENST00000416636	CLK2P	chr7	-
ASHG19A3A032712	0.032061	0.171159	2.716562	up	noncoding	ENST00000438427	AC011290.5	chr7	-
ASHG19A3A032829	0.030036	0.165701	4.453899	up	noncoding	ENST00000448566	RP11-310H4.5	chr7	-
ASHG19A3A032876	0.000153	0.021847	5.975135	up	noncoding	ENST00000414328	RP11-110J1.3	chr1	+
ASHG19A3A033132	0.036508	0.181022	3.489198	up	noncoding	ENST00000419546	AC002069.5	chr7	-
ASHG19A3A033231	0.003091	0.060296	2.053433	up	noncoding	ENST00000500980	AC005020.1	chr7	-
ASHG19A3A033231	0.003091	0.060296	2.053433	up	noncoding	ENST00000500980	AC005020.1	chr7	-
ASHG19A3A033231	0.003091	0.060296	2.053433	up	noncoding	ENST00000500980	AC005020.1	chr7	-
ASHG19A3A033231	0.003091	0.060296	2.053433	up	noncoding	ENST00000500980	AC005020.1	chr7	-
ASHG19A3A033406	0.012289	0.111948	2.240048	up	noncoding	uc003vhn.1	BC040208	chr7	-
ASHG19A3A033768	0.000225	0.022938	2.271348	up	noncoding	BC015321		chr7	-
ASHG19A3A033784	0.01481	0.120056	2.683296	up	noncoding	ENST00000427666	AC104843.4	chr7	-
ASHG19A3A034215	0.036353	0.180828	7.392929	up	noncoding	ENST00000437554	AC018634.9	chr7	+
ASHG19A3A034224	0.004079	0.068139	7.303258	up	noncoding	ENST00000423953	KRT8P20	chr7	+
ASHG19A3A034337	0.041179	0.191771	3.014895	up	noncoding	ENST00000431058	GS1-18A18.3	chr7	+
ASHG19A3A034424	0.044327	0.198195	4.886113	up	noncoding	ENST00000418558	RP11-340I6.4	chr7	+
ASHG19A3A034443	0.017301	0.128941	4.085518	up	noncoding	ENST00000456056	RP11-321E8.2	chr7	+
ASHG19A3A034495	0.000648	0.035914	2.223484	up	noncoding	uc003tvu.2	BC017910	chr7	+
ASHG19A3A034619	0.026853	0.157939	4.351187	up	noncoding	ENST00000442074	AC007237.2	chr7	+

ASHG19A3A035186	0.001536	0.045337	5.447666	up	noncoding	ENST00000477911	MYL6P4	chr7	+
ASHG19A3A035518	0.049577	0.211112	2.584116	up	noncoding	AF124367		chr8	-
ASHG19A3A036727	0.034397	0.176397	2.723936	up	noncoding	ENST00000329349	AC091175.1	chr8	+
ASHG19A3A036842	0.020991	0.141058	3.238829	up	noncoding	ENST00000395830	RP11-778D12.1	chr8	+
ASHG19A3A036886	0.024554	0.151262	3.025609	up	noncoding	ENST00000442838	AC016405.1	chr8	+
ASHG19A3A037069	0.048288	0.208224	3.790333	up	noncoding	ENST00000433885	RP11-255J3.3	chr9	-
ASHG19A3A037229	0.019167	0.135982	2.050615	up	noncoding	ENST00000438438	RP11-255N24.1	chr9	-
ASHG19A3A037303	0.042762	0.19498	2.298744	up	noncoding	ENST00000358828	RP11-182N22.7	chr9	-
ASHG19A3A037361	0.043076	0.195349	2.673444	up	noncoding	ENST00000443069	RP11-403F21.1	chr9	-
ASHG19A3A037545	0.004515	0.071744	2.292962	up	noncoding	AB209630		chr9	-
ASHG19A3A037545	0.004515	0.071744	2.292962	up	noncoding	AB209630		chr9	-
ASHG19A3A037545	0.004515	0.071744	2.292962	up	noncoding	AB209630		chr9	-
ASHG19A3A037545	0.004515	0.071744	2.292962	up	noncoding	AB209630		chr9	-
ASHG19A3A037545	0.004515	0.071744	2.292962	up	noncoding	AB209630		chr9	-
ASHG19A3A037545	0.004515	0.071744	2.292962	up	noncoding	AB209630		chr9	-
ASHG19A3A037565	0.034917	0.177846	2.41572	up	noncoding	uc011lsc.1	HSPBL2	chr9	-
ASHG19A3A037571	0.006937	0.085404	2.740582	up	noncoding	ENST00000457473	RP11-28P17.2	chr9	-
ASHG19A3A037606	0.047119	0.205361	3.049023	up	noncoding	ENST00000344739	RP11-507F17.1	chr9	-
ASHG19A3A037824	0.045557	0.201598	6.183415	up	noncoding	ENST00000418219	RP11-490D19.8	chr9	-
ASHG19A3A037907	0.000101	0.021847	2.490594	up	noncoding	uc010muh.1	AK095652	chr9	-
ASHG19A3A038311	0.00286	0.057744	2.205756	up	noncoding	ENST00000427722	RP11-509J21.3	chr9	+
ASHG19A3A038340	0.029457	0.163926	2.671654	up	noncoding	ENST00000445989	RP11-279E1.1	chr9	+
ASHG19A3A038460	0.020574	0.139691	3.501882	up	noncoding	ENST00000452970	RP11-441F11.1	chr9	+
ASHG19A3A038500	0.006099	0.080205	2.253213	up	noncoding	ENST00000419794	RP11-571F15.6	chr9	+
ASHG19A3A038536	0.0027	0.057202	2.655141	up	noncoding	BC014254		chr9	+
ASHG19A3A038732	0.043259	0.195625	2.09557	up	noncoding	ENST00000455242	RP11-460N11.2	chr9	+
ASHG19A3A038879	0.007891	0.090952	4.113872	up	noncoding	ENST00000454946	RP11-497K15.1	chr9	+
ASHG19A3A038897	0.032933	0.173032	2.44928	up	noncoding	ENST00000375867	RP11-1E11.1	chr9	+
ASHG19A3A038927	0.000179	0.021968	2.093202	up	noncoding	AF116613		chr9	+
ASHG19A3A039038	0.026309	0.15675	3.411801	up	noncoding	ENST00000418987	RP11-394D2.1	chr9	+
ASHG19A3A039095	0.046462	0.203893	3.776081	up	noncoding	ENST00000394889	RP11-3J11.1	chr9	+
ASHG19A3A039112	0.026511	0.157191	2.033408	up	noncoding	AK098037		chr9	+
ASHG19A3A039112	0.026511	0.157191	2.033408	up	noncoding	AK098037		chr9	+

ASHG19A3A039209	0.007236	0.086947	4.747197	up	noncoding	ENST00000432816	RP11-163B6.2	chr9	+
ASHG19A3A039303	0.015603	0.123323	2.063152	up	noncoding	ENST00000429208	RP11-385M4.3	chr1	+
ASHG19A3A039373	0.000137	0.021847	2.013914	up	noncoding	ENST00000426171	RP11-415H23.4	chr9	+
ASHG19A3A039601	0.000168	0.021847	2.156653	up	noncoding	ENST00000412485	GS1-600G8.5	chrX	-
ASHG19A3A039706	0.00131	0.043868	2.032888	up	noncoding	ENST00000416765	RP1-22N22.1	chrX	-
ASHG19A3A039788	1.95E-05	0.016206	3.825712	up	noncoding	ENST00000398010	KRT8P14	chrX	-
ASHG19A3A039796	0.030656	0.167477	3.573438	up	noncoding	ENST00000417985	RP1-30G7.1	chrX	-
ASHG19A3A039798	0.011951	0.109984	2.414788	up	noncoding	uc004dgl.1	BC015977	chrX	-
ASHG19A3A039800	0.007214	0.086891	4.198456	up	noncoding	ENST00000425487	RP11-75A9.2	chrX	-
ASHG19A3A039825	0.013604	0.116817	9.055902	up	noncoding	ENST00000433189	RP11-344N17.2	chrX	-
ASHG19A3A039874	0.025226	0.153726	2.172236	up	noncoding	NR_026742	LOC158572	chrX	-
ASHG19A3A040520	0.01405	0.11848	2.459464	up	noncoding	G36544		chrX	-
ASHG19A3A040555	0.007401	0.087873	2.195727	up	noncoding	ENST00000434763	RP11-66N11.5	chrX	-
ASHG19A3A040667	0.009226	0.097712	3.221881	up	noncoding	ENST00000434191	RP11-430A19.2	chrX	+
ASHG19A3A040702	0.003678	0.065718	2.364419	up	noncoding	G43559		chrX	+
ASHG19A3A040702	0.003678	0.065718	2.364419	up	noncoding	G43559		chrX	+
ASHG19A3A040729	0.036629	0.181044	4.992445	up	noncoding	ENST00000439908	RP3-499B10.5	chrX	+
ASHG19A3A040757	0.002363	0.054571	2.694194	up	noncoding	NR_027783	SAT1	chrX	+
ASHG19A3A040838	0.000225	0.022938	2.172772	up	noncoding	ENST00000447051	RP4-669K10.3	chr1	-
ASHG19A3A040838	0.000225	0.022938	2.172772	up	noncoding	ENST00000447051	RP4-669K10.3	chr1	-
ASHG19A3A040838	0.000225	0.022938	2.172772	up	noncoding	ENST00000447051	RP4-669K10.3	chr1	-
ASHG19A3A040838	0.000225	0.022938	2.172772	up	noncoding	ENST00000447051	RP4-669K10.3	chr1	-
ASHG19A3A040860	0.001338	0.043868	4.920728	up	noncoding	ENST00000456333	RP11-169L17.2	chrX	+
ASHG19A3A041043	0.013231	0.115698	2.619691	up	noncoding	ENST00000362552	Z97054.1	chrX	+
ASHG19A3A041109	0.031155	0.168272	2.685121	up	noncoding	ENST00000412159	RP11-133K18.1	chrX	+
ASHG19A3A041195	0.020409	0.139376	6.167691	up	noncoding	ENST00000425964	USMG5P1	chrX	+
ASHG19A3A041441	0.039698	0.187745	2.713338	up	noncoding	ENST00000438228	RP3-378P9.1	chrX	+
ASHG19A3A041629	0.022482	0.146112	2.213188	up	noncoding	ENST00000425910	GS1-164F24.1	chrX	+
ASHG19A3A041704	0.000465	0.030536	4.825973	up	noncoding	ENST00000434750	AC108171.5	chrX	+
ASHG19A3A041823	0.000214	0.022938	2.201619	up	noncoding	ENST00000434155	AC012068.2	chrY	-
ASHG19A3A042272	0.012239	0.111174	2.158465	up	noncoding	NR_026588	EFCAB2	chr1	+
ASHG19A3A042272	0.012239	0.111174	2.158465	up	noncoding	NR_026588	EFCAB2	chr1	+
ASHG19A3A042340	5.58E-05	0.019365	2.032376	up	noncoding	ENST00000396714	SEPW1P	chr1	-

ASHG19A3A042424	1.89E-05	0.016206	5.757999	up	noncoding	ENST00000451609	RP11-543F8.1	chr10	-
ASHG19A3A042495	0.029019	0.16302	3.093023	up	noncoding	G43223		chr10	-
ASHG19A3A042519	0.013756	0.117587	2.061119	up	noncoding	BC041955		chr10	-
ASHG19A3A042580	0.001839	0.049656	2.146334	up	noncoding	ENST00000438347	RP11-449I17.5	chr10	-
ASHG19A3A042708	0.014597	0.119693	3.625568	up	noncoding	ENST00000424552	RP11-671E7.1	chr10	-
ASHG19A3A042993	0.010168	0.101468	2.186152	up	noncoding	ENST00000416656	SPA17P1	chr10	-
ASHG19A3A043163	0.017551	0.129596	6.969642	up	noncoding	ENST00000412164	RP11-153G4.2	chr10	-
ASHG19A3A043163	0.017551	0.129596	6.969642	up	noncoding	ENST00000412164	RP11-153G4.2	chr10	-
ASHG19A3A043163	0.017551	0.129596	6.969642	up	noncoding	ENST00000412164	RP11-153G4.2	chr10	-
ASHG19A3A043175	0.046446	0.203893	2.093756	up	noncoding	ENST00000417456	RP11-244H3.1	chr1	-
ASHG19A3A043254	0.028578	0.162372	2.446327	up	noncoding	ENST00000438729	RP11-753C18.8	chr10	-
ASHG19A3A043330	0.005158	0.074419	2.196631	up	noncoding	ENST00000449709	RP11-295O23.4	chr10	-
ASHG19A3A043670	0.046278	0.203588	3.159642	up	noncoding	ENST00000413342	RP11-139J15.4	chr10	+
ASHG19A3A043806	0.013094	0.115205	8.61482	up	noncoding	ENST00000431356	RP13-331H15.1	chr10	+
ASHG19A3A043901	0.043537	0.196304	2.352069	up	noncoding	ENST00000406997	RP11-420K8.2	chr1	-
ASHG19A3A043904	0.022107	0.144738	2.171889	up	noncoding	ENST00000457349	CTD-2173J9.4	chr10	+
ASHG19A3A043933	0.018393	0.133075	4.3543	up	noncoding	ENST00000420752	RP11-507K13.4	chr10	+
ASHG19A3A044017	0.030401	0.166698	2.980075	up	noncoding	ENST00000404883	ANXA2P3	chr10	+
ASHG19A3A044203	0.018956	0.135697	3.134835	up	noncoding	ENST00000391458	HMG2L8	chr10	+
ASHG19A3A044362	6.24E-05	0.019365	2.390877	up	noncoding	ENST00000424567	RP11-163G10.3	chr1	-
ASHG19A3A044415	0.014589	0.119693	2.782919	up	noncoding	ENST00000448759	RP11-342M1.7	chr1	-
ASHG19A3A044463	0.0011	0.041819	2.069295	up	noncoding	ENST00000393174	RP11-45P22.1	chr10	+
ASHG19A3A044944	0.006034	0.079912	2.134895	up	noncoding	AB073355		chr11	-
ASHG19A3A044970	0.001022	0.040796	2.01983	up	noncoding	BC032761		chr11	-
ASHG19A3A045297	0.000638	0.035731	2.314795	up	noncoding	ENST00000371865	RP11-543D5.3	chr1	-
ASHG19A3A045432	0.000119	0.021847	2.385538	up	noncoding	ENST00000440986	CFLP2	chr1	-
ASHG19A3A045441	0.022956	0.146898	2.799275	up	noncoding	AK130416		chr11	-
ASHG19A3A045606	0.004077	0.068139	3.226755	up	noncoding	uc001pfj.2	CR603982	chr11	-
ASHG19A3A045680	0.000482	0.031329	2.891494	up	noncoding	ENST00000425960	AP000925.2	chr11	-
ASHG19A3A045784	0.000114	0.021847	4.501198	up	noncoding	ENST00000440275	KRT8P7	chr11	-
ASHG19A3A045793	0.00435	0.070474	3.622078	up	noncoding	G36614		chr11	-
ASHG19A3A045793	0.00435	0.070474	3.622078	up	noncoding	G36614		chr11	-
ASHG19A3A045793	0.00435	0.070474	3.622078	up	noncoding	G36614		chr11	-

ASHG19A3A045793	0.00435	0.070474	3.622078	up	noncoding	G36614		chr11	-
ASHG19A3A045793	0.00435	0.070474	3.622078	up	noncoding	G36614		chr11	-
ASHG19A3A045793	0.00435	0.070474	3.622078	up	noncoding	G36614		chr11	-
ASHG19A3A045793	0.00435	0.070474	3.622078	up	noncoding	G36614		chr11	-
ASHG19A3A046319	0.000843	0.038458	2.287747	up	noncoding	NR_027134	DKFZp779M0652	chr11	+
ASHG19A3A046768	0.001247	0.043667	4.57528	up	noncoding	ENST00000430203	CFLP3	chr1	-
ASHG19A3A046768	0.001247	0.043667	4.57528	up	noncoding	ENST00000430203	CFLP3	chr1	-
ASHG19A3A047100	0.019213	0.136141	3.025481	up	noncoding	HIT000047909		chr11	+
ASHG19A3A047408	0.01561	0.123323	5.284373	up	noncoding	ENST00000431536	RP4-706L14.2	chr1	-
ASHG19A3A047453	0.023365	0.147746	2.140282	up	noncoding	ENST00000513923	AL136324.1	chr1	-
ASHG19A3A047453	0.023365	0.147746	2.140282	up	noncoding	ENST00000513923	AL136324.1	chr1	-
ASHG19A3A047758	0.024718	0.151839	2.972998	up	noncoding	ENST00000473404	RP11-415I12.1	chr12	-
ASHG19A3A047820	0.00129	0.043722	2.651765	up	noncoding	ENST00000344556	AC123904.1	chr12	-
ASHG19A3A048039	0.003749	0.066321	2.312626	up	noncoding	ENST00000440817	RP11-413E1.2	chr1	-
ASHG19A3A048332	0.014526	0.119693	2.216318	up	noncoding	ENST00000421414	RP5-837O21.9	chr1	-
ASHG19A3A048395	0.000681	0.036491	2.297843	up	noncoding	uc001rbb.3	TVAS4	chr12	+
ASHG19A3A048463	0.005363	0.075336	2.012476	up	noncoding	BC056670		chr12	+
ASHG19A3A049485	0.048409	0.20831	7.536938	up	noncoding	ENST00000400429	RP11-74J13.2	chr13	-
ASHG19A3A049578	0.009888	0.100274	2.29065	up	noncoding	AF086440		chr13	-
ASHG19A3A049769	0.012297	0.111948	3.970603	up	noncoding	ENST00000430810	RP11-295B17.4	chr13	-
ASHG19A3A050085	0.007547	0.088894	2.346305	up	noncoding	AF085832		chr13	+
ASHG19A3A050085	0.007547	0.088894	2.346305	up	noncoding	AF085832		chr13	+
ASHG19A3A050290	0.026813	0.157939	4.891389	up	noncoding	ENST00000437000	RP11-505F3.2	chr13	+
ASHG19A3A050375	0.000212	0.022938	2.912277	up	noncoding	ENST00000427733	KRT18P27	chr13	+
ASHG19A3A050424	0.034978	0.177846	4.175693	up	noncoding	ENST00000436148	RP11-214F16.5	chr13	+
ASHG19A3A050730	0.000134	0.021847	3.52227	up	noncoding	ENST00000454391	AL358913.1	chr14	-
ASHG19A3A050823	0.023151	0.147646	2.537251	up	noncoding	ENST00000439302	BX571672.5	chr1	-
ASHG19A3A050997	0.030656	0.167477	4.842603	up	noncoding	ENST00000469811	RP11-488C13.1	chr14	-
ASHG19A3A051049	0.014149	0.118581	3.788318	up	noncoding	ENST00000461458	RP11-439L12.1	chr14	-
ASHG19A3A051292	0.02115	0.141622	5.854395	up	noncoding	AK057381		chr14	+
ASHG19A3A051574	0.040215	0.188981	2.284791	up	noncoding	uc001esd.2	CR617196	chr1	-
ASHG19A3A051574	0.040215	0.188981	2.284791	up	noncoding	uc001esd.2	CR617196	chr1	-
ASHG19A3A051731	0.02709	0.158254	5.84883	up	noncoding	CR603341		chr14	+

ASHG19A3A052048	0.00367	0.065705	2.333731	up	noncoding	ENST00000417705	RP11-54O7.3	chr1	-
ASHG19A3A052066	0.029359	0.163646	3.712378	up	noncoding	uc001zqs.1	CR599671	chr15	-
ASHG19A3A052579	0.044043	0.197634	2.976561	up	noncoding	ENST00000505622	RP11-522B15.2	chr15	-
ASHG19A3A053143	0.001165	0.04271	2.337481	up	noncoding	NR_028330	C15orf37	chr15	+
ASHG19A3A053143	0.001165	0.04271	2.337481	up	noncoding	NR_028330	C15orf37	chr15	+
ASHG19A3A053143	0.001165	0.04271	2.337481	up	noncoding	NR_028330	C15orf37	chr15	+
ASHG19A3A053801	0.00025	0.023763	2.183214	up	noncoding	ENST00000501095	AC009118.2	chr16	-
ASHG19A3A053801	0.00025	0.023763	2.183214	up	noncoding	ENST00000501095	AC009118.2	chr16	-
ASHG19A3A053801	0.00025	0.023763	2.183214	up	noncoding	ENST00000501095	AC009118.2	chr16	-
ASHG19A3A054241	0.000162	0.021847	2.214978	up	noncoding	uc002cvu.2	BC095475	chr16	+
ASHG19A3A054988	0.000387	0.028192	2.764476	up	noncoding	NR_028504	C17orf91	chr17	-
ASHG19A3A054988	0.000387	0.028192	2.764476	up	noncoding	NR_028504	C17orf91	chr17	-
ASHG19A3A055128	0.002436	0.05493	2.827158	up	noncoding	uc002dtq.1	BC041466	chr16	+
ASHG19A3A055218	0.033861	0.175169	2.955056	up	noncoding	ENST00000376792	HLA-J	chr6	+
ASHG19A3A055285	0.026685	0.157664	2.229054	up	noncoding	uc010gtf.1	AK308704	chr22	+
ASHG19A3H0000080	0.02595	0.155649	3.070578	up	noncoding	nc-HOXA13-96-	nc-HOXA13-96	chr7	-
ASHG19A3L0001164	0.002451	0.055096	2.594421	up	noncoding	BF185848	lincRNA-SH3BP4-4	chr2	+
ASHG19A3L0001218	0.020846	0.140521	4.976152	up	noncoding	AY034104	lincRNA-TACR1-2	chr2	+
ASHG19A3L0001362	0.011871	0.109558	5.944884	up	noncoding	BX641108	lincRNA-TPRG1-2	chr3	+
ASHG19A3L0001362	0.011871	0.109558	5.944884	up	noncoding	BX641108	lincRNA-TPRG1-2	chr3	+
ASHG19A3L0001362	0.011871	0.109558	5.944884	up	noncoding	BX641108	lincRNA-TPRG1-2	chr3	+
ASHG19A3L0001362	0.011871	0.109558	5.944884	up	noncoding	BX641108	lincRNA-TPRG1-2	chr3	+
ASHG19A3L0002752	2.19E-06	0.012395	3.355898	up	noncoding	EC495588	lincRNA-RCN2	chr15	-
CUST_186_PI426073487	0.009645	0.099362	2.198396	up	noncoding	uc.188+	uc.188	chr6	+
CUST_186_PI426073487	0.009645	0.099362	2.198396	up	noncoding	uc.188+	uc.188	chr6	+
CUST_28_PI426075208	0.006197	0.080771	2.213516	up	noncoding	nc-HOXA4-66+	nc-HOXA4-66	chr7	+
CUST_404_PI426073487	0.000158	0.021847	2.547203	up	noncoding	uc.406+	uc.406	chr16	+
CUST_404_PI426073487	0.000158	0.021847	2.547203	up	noncoding	uc.406+	uc.406	chr16	+
CUST_404_PI426073487	0.000158	0.021847	2.547203	up	noncoding	uc.406+	uc.406	chr16	+
CUST_404_PI426073487	0.000158	0.021847	2.547203	up	noncoding	uc.406+	uc.406	chr16	+
CUST_404_PI426073487	0.000158	0.021847	2.547203	up	noncoding	uc.406+	uc.406	chr16	+
CUST_895_PI426073487	0.004949	0.073128	2.624665	up	noncoding	uc.416-	uc.416	chr17	-
CUST_95_PI426075208	0.031046	0.168165	3.198076	up	noncoding	nc-HOXB9-199+	nc-HOXB9-199	chr17	+

Supplementary Table 3-2. The list of lncRNAs downregulated by c-MYC knockdown (upregulated by c-MYC) in RKO.

ProbeName	P-value and FDR		Fold change and Regulation		type	seqname	GeneSymbol	chrom	strand
	p-value	FDR	FCAbsolute	regulation					
ASHG19A3A000043	0.00307	0.060294	2.162093	down	noncoding	BC063571		chr11	-
ASHG19A3A000043	0.00307	0.060294	2.162093	down	noncoding	BC063571		chr11	-
ASHG19A3A000043	0.00307	0.060294	2.162093	down	noncoding	BC063571		chr11	-
ASHG19A3A000077	0.03942	0.187234	2.142671	down	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.03942	0.187234	2.142671	down	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.03942	0.187234	2.142671	down	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.03942	0.187234	2.142671	down	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.03942	0.187234	2.142671	down	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.03942	0.187234	2.142671	down	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.03942	0.187234	2.142671	down	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.03942	0.187234	2.142671	down	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.03942	0.187234	2.142671	down	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.03942	0.187234	2.142671	down	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000077	0.03942	0.187234	2.142671	down	noncoding	ENST00000398804	RP11-184I16.2	chr1	-
ASHG19A3A000081	0.040235	0.189019	2.212386	down	noncoding	ENST00000400430	RP11-350A18.1	chr13	-
ASHG19A3A000095	0.002538	0.056079	2.086428	down	noncoding	ENST00000412855	RP11-396C23.2	chr1	+
ASHG19A3A000102	0.015072	0.120916	2.293979	down	noncoding	ENST00000413915	RP11-613M10.6	chr9	+
ASHG19A3A000456	0.024098	0.149621	2.092354	down	noncoding	ENST00000506049	AC005281.1	chr7	-
ASHG19A3A000456	0.024098	0.149621	2.092354	down	noncoding	ENST00000506049	AC005281.1	chr7	-
ASHG19A3A000474	0.037138	0.18222	2.032016	down	noncoding	ENST00000509318	AC068648.1	chr12	+
ASHG19A3A007120	8.36E-06	0.012425	2.383303	down	noncoding	NR_003098	SNHG1	chr11	-
ASHG19A3A007120	8.36E-06	0.012425	2.383303	down	noncoding	NR_003098	SNHG1	chr11	-
ASHG19A3A007120	8.36E-06	0.012425	2.383303	down	noncoding	NR_003098	SNHG1	chr11	-
ASHG19A3A007125	0.013036	0.114969	2.668877	down	noncoding	NR_003111	RPL32P3	chr3	-
ASHG19A3A007254	0.042248	0.193839	2.314003	down	noncoding	NR_024165	ZNF323	chr6	-
ASHG19A3A007254	0.042248	0.193839	2.314003	down	noncoding	NR_024165	ZNF323	chr6	-

ASHG19A3A007254	0.042248	0.193839	2.314003	down	noncoding	NR_024165	ZNF323	chr6	-
ASHG19A3A007254	0.042248	0.193839	2.314003	down	noncoding	NR_024165	ZNF323	chr6	-
ASHG19A3A007294	4.29E-05	0.019365	2.402498	down	noncoding	NR_024361	FLJ10661	chr8	+
ASHG19A3A007339	6.32E-05	0.019365	2.413918	down	noncoding	NR_024543	SNHG7	chr9	-
ASHG19A3A007505	0.007691	0.089564	2.028393	down	noncoding	NR_027353	CD8A	chr2	-
ASHG19A3A007505	0.007691	0.089564	2.028393	down	noncoding	NR_027353	CD8A	chr2	-
ASHG19A3A007505	0.007691	0.089564	2.028393	down	noncoding	NR_027353	CD8A	chr2	-
ASHG19A3A007544	0.00039	0.028299	2.01724	down	noncoding	NR_027624	BZW2	chr7	+
ASHG19A3A007544	0.00039	0.028299	2.01724	down	noncoding	NR_027624	BZW2	chr7	+
ASHG19A3A007544	0.00039	0.028299	2.01724	down	noncoding	NR_027624	BZW2	chr7	+
ASHG19A3A007958	0.00534	0.075241	4.434238	down	noncoding	ENST00000441860	AC005773.1	chr17	-
ASHG19A3A008350	0.02993	0.165384	3.929718	down	noncoding	ENST00000441371	RP4-798P15.2	chr1	-
ASHG19A3A008388	0.018867	0.135313	2.446695	down	noncoding	NR_027412	LOC100130581	chr17	-
ASHG19A3A008665	0.010895	0.105638	2.440909	down	noncoding	AK021817		chr17	-
ASHG19A3A008665	0.010895	0.105638	2.440909	down	noncoding	AK021817		chr17	-
ASHG19A3A008707	0.035742	0.179356	2.38518	down	noncoding	ENST00000461109	AC016489.1	chr17	-
ASHG19A3A008756	0.019023	0.135777	2.195179	down	noncoding	uc002jiu.1	AK094963	chr17	-
ASHG19A3A009027	0.006509	0.082996	3.146909	down	noncoding	ENST00000483947	CTD-2545G14.1	chr17	+
ASHG19A3A009060	0.007273	0.087242	2.006337	down	noncoding	U79273		chr17	+
ASHG19A3A009060	0.007273	0.087242	2.006337	down	noncoding	U79273		chr17	+
ASHG19A3A009198	0.00226	0.054139	5.276909	down	noncoding	ENST00000418183	AC127537.6	chr17	+
ASHG19A3A009234	0.033262	0.173942	4.087737	down	noncoding	ENST00000427400	AC025627.2	chr17	+
ASHG19A3A009467	0.010701	0.104568	2.224452	down	noncoding	G43039		chr17	+
ASHG19A3A009539	0.003708	0.06594	3.454953	down	noncoding	ENST00000479088	CTD-3193K9.1	chr17	+
ASHG19A3A009697	0.01341	0.115935	2.232435	down	noncoding	ENST00000504601	RP11-893F2.4	chr17	+
ASHG19A3A009727	0.030649	0.167477	2.566121	down	noncoding	ENST00000487833	RP11-506D12.1	chr17	+
ASHG19A3A009968	0.001351	0.043868	2.023269	down	noncoding	AB073602		chr17	+
ASHG19A3A009975	0.028464	0.162131	2.363752	down	noncoding	AK055500		chr17	+
ASHG19A3A010001	0.010576	0.103753	2.768025	down	noncoding	AK057984		chr17	+
ASHG19A3A010020	0.028109	0.161381	2.186669	down	noncoding	AK123925		chr17	+
ASHG19A3A010086	0.005061	0.073943	2.083228	down	noncoding	NR_027022	LOC127841	chr1	-
ASHG19A3A010192	0.024521	0.151183	2.630584	down	noncoding	ENST00000473394	RP11-268I9.1	chr18	-
ASHG19A3A010242	0.010985	0.106026	2.030374	down	noncoding	ENST00000479112	RP11-115P21.1	chr18	-

ASHG19A3A010242	0.010985	0.106026	2.030374	down	noncoding	ENST00000479112	RP11-115P21.1	chr18	-
ASHG19A3A010242	0.010985	0.106026	2.030374	down	noncoding	ENST00000479112	RP11-115P21.1	chr18	-
ASHG19A3A010242	0.010985	0.106026	2.030374	down	noncoding	ENST00000479112	RP11-115P21.1	chr18	-
ASHG19A3A010947	0.001207	0.043464	5.116287	down	noncoding	ENST00000484151	RP11-554K11.1	chr1	-
ASHG19A3A011180	0.030413	0.166704	2.552866	down	noncoding	AK056565		chr19	-
ASHG19A3A011180	0.030413	0.166704	2.552866	down	noncoding	AK056565		chr19	-
ASHG19A3A011203	0.007694	0.089564	2.11929	down	noncoding	AK125289		chr19	-
ASHG19A3A011203	0.007694	0.089564	2.11929	down	noncoding	AK125289		chr19	-
ASHG19A3A011856	0.035245	0.178551	2.743323	down	noncoding	DQ655905		chr19	-
ASHG19A3A011856	0.035245	0.178551	2.743323	down	noncoding	DQ655905		chr19	-
ASHG19A3A012534	0.001342	0.043868	2.219482	down	noncoding	ENST00000509942	AC008555.5	chr19	+
ASHG19A3A012590	0.004266	0.069883	2.153714	down	noncoding	ENST00000418525	RP11-169K16.4	chr1	-
ASHG19A3A012590	0.004266	0.069883	2.153714	down	noncoding	ENST00000418525	RP11-169K16.4	chr1	-
ASHG19A3A012656	0.000309	0.026401	2.482131	down	noncoding	ENST00000426692	RP4-597N16.1	chr1	-
ASHG19A3A012678	0.011696	0.108967	2.160779	down	noncoding	ENST00000463711	AC006133.3	chr19	+
ASHG19A3A012738	0.009739	0.099918	2.362186	down	noncoding	ENST00000446199	RP11-293G6__B.5	chr1	-
ASHG19A3A012871	0.03643	0.180995	2.18615	down	noncoding	HIT000071394		chr19	+
ASHG19A3A012871	0.03643	0.180995	2.18615	down	noncoding	HIT000071394		chr19	+
ASHG19A3A012871	0.03643	0.180995	2.18615	down	noncoding	HIT000071394		chr19	+
ASHG19A3A012874	0.001158	0.04271	2.188006	down	noncoding	AF086466		chr19	+
ASHG19A3A012991	0.016226	0.125874	2.045192	down	noncoding	ENST00000422045	AC008440.10	chr19	+
ASHG19A3A013120	0.010089	0.101049	3.275296	down	noncoding	ENST00000478259	CTC-258N23.1	chr19	+
ASHG19A3A013247	0.045955	0.202643	2.006413	down	noncoding	ENST00000418970	AC017076.4	chr2	-
ASHG19A3A013358	0.030832	0.167769	2.705147	down	noncoding	ENST00000412424	AC009411.1	chr2	-
ASHG19A3A013408	0.04163	0.19256	2.32624	down	noncoding	uc002rhy.1	AK125769	chr2	-
ASHG19A3A013487	0.018644	0.134381	2.443641	down	noncoding	ENST00000431951	AC068274.1	chr2	-
ASHG19A3A013527	0.037663	0.183536	5.155232	down	noncoding	G43628		chr2	-
ASHG19A3A014148	0.002245	0.054139	2.288278	down	noncoding	ENST00000413151	AC009505.4	chr2	-
ASHG19A3A014272	0.025658	0.154644	2.955955	down	noncoding	ENST00000441053	AC067960.1	chr2	-
ASHG19A3A014394	0.001622	0.046467	2.372394	down	noncoding	ENST00000440802	AC097532.2	chr2	-
ASHG19A3A014483	0.013491	0.116312	2.273059	down	noncoding	ENST00000502203	AL691432.1	chr1	+
ASHG19A3A014618	0.001503	0.044934	2.154153	down	noncoding	AK095742		chr2	-
ASHG19A3A014639	0.031133	0.168272	3.224505	down	noncoding	ENST00000444235	RPL5P7	chr2	-

ASHG19A3A014683	0.002938	0.058797	2.150046	down	noncoding	uc002ulk.1	DKFZp451M2119	chr2	-
ASHG19A3A014836	0.023044	0.147275	2.253832	down	noncoding	uc002uvq.2	BC039445	chr2	-
ASHG19A3A014843	0.006974	0.085581	2.626284	down	noncoding	AK025184		chr2	-
ASHG19A3A014874	0.020367	0.139166	2.821379	down	noncoding	ENST00000409819	AC079354.3	chr2	-
ASHG19A3A014888	0.006663	0.083598	3.696429	down	noncoding	ENST00000413895	AC023271.2	chr2	-
ASHG19A3A015051	0.000564	0.034138	2.394651	down	noncoding	HIT000098852		chr2	-
ASHG19A3A015115	0.03811	0.184219	3.254772	down	noncoding	ENST00000413841	AC105461.1	chr2	-
ASHG19A3A015534	0.014383	0.119483	2.330377	down	noncoding	ENST00000431999	C2orf58	chr2	+
ASHG19A3A015827	0.001474	0.044913	2.264637	down	noncoding	ENST00000437188	AC074008.1	chr2	+
ASHG19A3A015953	0.034055	0.175525	2.047068	down	noncoding	HIT000324184_03		chr2	+
ASHG19A3A015961	0.019005	0.135728	2.104943	down	noncoding	HIT000342137		chr2	+
ASHG19A3A016031	0.047837	0.206894	2.218634	down	noncoding	AF119842		chr2	+
ASHG19A3A016059	0.039917	0.188172	2.056385	down	noncoding	AK098124		chr2	+
ASHG19A3A016342	0.014789	0.120056	3.182251	down	noncoding	ENST00000419523	AC068137.5	chr2	+
ASHG19A3A016697	0.001396	0.044032	2.116423	down	noncoding	ENST00000441026	AC093639.1	chr2	+
ASHG19A3A016941	0.029111	0.16325	2.199422	down	noncoding	ENST00000415479	AC093850.2	chr2	+
ASHG19A3A017270	0.044182	0.197844	2.578533	down	noncoding	AK021907		chr20	-
ASHG19A3A017415	0.005199	0.074637	3.651162	down	noncoding	ENST00000419888	RP5-1068E13.4	chr20	-
ASHG19A3A017527	0.005132	0.074236	4.579414	down	noncoding	ENST00000418346	MLLT10L	chr20	-
ASHG19A3A017834	0.013204	0.115563	2.359772	down	noncoding	ENST00000503777	AL035541.1	chr20	-
ASHG19A3A017977	0.000235	0.023089	2.293037	down	noncoding	NR_027700	NOP56	chr20	+
ASHG19A3A018539	0.003903	0.06684	2.263966	down	noncoding	ENST00000433121	RP5-908M14.5	chr20	+
ASHG19A3A018934	0.023757	0.148498	2.677749	down	noncoding	ENST00000431150	AP001628.6	chr21	-
ASHG19A3A019019	0.03912	0.186699	3.486542	down	noncoding	ENST00000443593	RP1-212P9.2	chr1	+
ASHG19A3A019065	0.046374	0.203893	2.131759	down	noncoding	AF130090		chr21	+
ASHG19A3A019299	0.036208	0.180501	2.39234	down	noncoding	NR_027085	LOC284551	chr1	+
ASHG19A3A019429	0.005612	0.077321	3.22122	down	noncoding	ENST00000429106	AC006946.12	chr22	-
ASHG19A3A019456	0.005081	0.07395	2.961613	down	noncoding	ENST00000481698	AC000095.8	chr22	-
ASHG19A3A019863	6.46E-06	0.012425	2.690193	down	noncoding	AK128410		chr22	-
ASHG19A3A019885	5.29E-05	0.019365	2.48524	down	noncoding	ENST00000357802	RP1-222E13.10	chr22	-
ASHG19A3A019886	5.78E-05	0.019365	2.446533	down	noncoding	uc003bcs.2	RRP7B	chr22	-
ASHG19A3A019905	0.044225	0.197978	4.347225	down	noncoding	BC069767		chr22	-
ASHG19A3A019949	0.002393	0.054571	2.798728	down	noncoding	ENST00000413815	RP11-191L9.5	chr22	-

ASHG19A3A020026	0.044523	0.198661	2.259463	down	noncoding	NR_001591	psiTPTE22	chr22	+
ASHG19A3A020174	0.003661	0.065705	2.289567	down	noncoding	ENST00000436538	LL22NC03-80A10.11	chr22	+
ASHG19A3A020532	0.00249	0.055492	2.128411	down	noncoding	ENST00000446663	AL022237.3	chr22	+
ASHG19A3A020538	0.036079	0.180207	2.071712	down	noncoding	ENST00000450750	RP4-754E20__A.5	chr22	+
ASHG19A3A020608	0.016884	0.127494	2.107308	down	noncoding	ENST00000450408	RP3-355C18.7	chr22	+
ASHG19A3A020639	0.022717	0.146434	2.033758	down	noncoding	ENST00000449338	AC026214.2	chr3	-
ASHG19A3A021021	0.013833	0.117908	2.129387	down	noncoding	ENST00000426743	RP11-163G10.2	chr1	+
ASHG19A3A021412	0.007226	0.08694	2.266138	down	noncoding	AK126393		chr3	-
ASHG19A3A021571	2.64E-05	0.01651	2.345718	down	noncoding	uc003emb.2	RPL32P3	chr3	-
ASHG19A3A021587	0.023514	0.14785	2.445559	down	noncoding	ENST00000504655	RP11-93K22.8	chr3	-
ASHG19A3A021742	0.007102	0.08637	2.358985	down	noncoding	ENST00000483312	RP11-2G17.1	chr3	-
ASHG19A3A021832	0.003962	0.067099	3.780819	down	noncoding	uc003fax.1	AK056401	chr3	-
ASHG19A3A021835	0.002992	0.059511	2.012518	down	noncoding	NR_003284	PA2G4P4	chr3	-
ASHG19A3A021877	0.024237	0.150235	2.746739	down	noncoding	ENST00000489012	RP11-10O22.2	chr3	-
ASHG19A3A021986	0.019709	0.137167	3.183862	down	noncoding	uc003fko.2	DKFZp434A128	chr3	-
ASHG19A3A022165	0.003664	0.065705	2.261224	down	noncoding	ENST00000453454	AC024560.3	chr3	-
ASHG19A3A022277	0.000125	0.021847	2.167829	down	noncoding	CR612570		chr3	+
ASHG19A3A022356	0.00269	0.057065	2.411235	down	noncoding	ENST00000418085	AC114477.1	chr3	+
ASHG19A3A022543	0.002182	0.053387	2.492305	down	noncoding	ENST00000442319	RP11-681O4.1	chr3	+
ASHG19A3A022543	0.002182	0.053387	2.492305	down	noncoding	ENST00000442319	RP11-681O4.1	chr3	+
ASHG19A3A022825	0.002045	0.052424	2.127032	down	noncoding	ENST00000489078	RP11-413E6.7	chr3	+
ASHG19A3A023035	0.035348	0.178599	3.905619	down	noncoding	CR598744		chr3	+
ASHG19A3A023286	0.001941	0.050705	6.921262	down	noncoding	ENST00000487630	RP11-117F22.1	chr3	+
ASHG19A3A023688	0.008009	0.091309	2.202531	down	noncoding	AK127405		chr3	+
ASHG19A3A023836	0.041686	0.192641	3.985595	down	noncoding	NR_033182	LOC100130872- SPON2	chr4	-
ASHG19A3A023836	0.041686	0.192641	3.985595	down	noncoding	NR_033182	LOC100130872- SPON2	chr4	-
ASHG19A3A023836	0.041686	0.192641	3.985595	down	noncoding	NR_033182	LOC100130872- SPON2	chr4	-
ASHG19A3A023959	0.000241	0.023374	2.147077	down	noncoding	ENST00000506899	RP11-22A3.2	chr4	-
ASHG19A3A023980	0.003719	0.06594	6.443847	down	noncoding	AK026407		chr4	-
ASHG19A3A024034	0.018654	0.134381	6.388343	down	noncoding	ENST00000507819	RP11-302F12.8	chr4	-
ASHG19A3A024430	0.013592	0.116817	2.380555	down	noncoding	ENST00000513707	RP11-576N17.4	chr4	-

ASHG19A3A024893	0.003577	0.065203	2.056789	down	noncoding	ENST00000505004	RP11-627H22.11	chr4	-
ASHG19A3A024896	0.017673	0.12998	3.123033	down	noncoding	ENST00000503214	RP11-627H22.6	chr4	-
ASHG19A3A024899	0.026941	0.158057	5.821969	down	noncoding	ENST00000510572	RP11-627H22.3	chr4	-
ASHG19A3A024969	0.004305	0.070276	2.332269	down	noncoding	ENST00000456663	RP11-2B19.1	chr1	+
ASHG19A3A025250	0.029098	0.16325	2.090549	down	noncoding	uc001dla.1	AK125723	chr1	+
ASHG19A3A025250	0.029098	0.16325	2.090549	down	noncoding	uc001dla.1	AK125723	chr1	+
ASHG19A3A025250	0.029098	0.16325	2.090549	down	noncoding	uc001dla.1	AK125723	chr1	+
ASHG19A3A025295	0.008687	0.094819	3.618345	down	noncoding	ENST00000514103	RP11-1J7.1	chr4	+
ASHG19A3A025369	0.002779	0.057664	2.110192	down	noncoding	ENST00000510905	RP11-302F12.10	chr4	+
ASHG19A3A025419	0.000628	0.035659	2.060977	down	noncoding	ENST00000503465	RP11-83C7.1	chr4	+
ASHG19A3A025486	0.047683	0.206564	2.05572	down	noncoding	AK094991		chr4	+
ASHG19A3A025620	0.012847	0.114126	2.831374	down	noncoding	ENST00000510090	RP11-618I10.2	chr4	+
ASHG19A3A025665	0.017158	0.128662	2.117902	down	noncoding	ENST00000502790	RP11-692D12.1	chr4	+
ASHG19A3A025665	0.017158	0.128662	2.117902	down	noncoding	ENST00000502790	RP11-692D12.1	chr4	+
ASHG19A3A025767	0.004893	0.072676	2.04069	down	noncoding	ENST00000480094	RP11-397E7.1	chr4	+
ASHG19A3A025807	0.036247	0.180501	2.740955	down	noncoding	ENST00000478069	RP11-398J16.1	chr4	+
ASHG19A3A025936	0.008861	0.095464	2.069558	down	noncoding	ENST00000508637	RP11-362M19.1	chr4	+
ASHG19A3A025953	4.13E-06	0.012395	2.439759	down	noncoding	NR_003584	SNHG8	chr4	+
ASHG19A3A026341	0.001091	0.041739	2.064588	down	noncoding	ENST00000472309	RP11-84H6.1	chr4	+
ASHG19A3A026486	0.043232	0.195574	2.654474	down	noncoding	ENST00000514848	CTD-2297D10.1	chr5	-
ASHG19A3A026732	0.000945	0.039493	2.134951	down	noncoding	AL137450		chr5	-
ASHG19A3A027046	0.012842	0.114126	2.141644	down	noncoding	ENST00000510378	RPS23P5	chr5	-
ASHG19A3A027174	0.038937	0.186238	2.584382	down	noncoding	ENST00000504798	RP11-475J5.2	chr5	-
ASHG19A3A027275	0.036236	0.180501	2.478824	down	noncoding	ENST00000513004	RP11-74D3.1	chr5	-
ASHG19A3A027509	0.048906	0.209384	2.602209	down	noncoding	AK127336		chr5	-
ASHG19A3A027634	0.010641	0.104185	4.526038	down	noncoding	AK055284		chr5	-
ASHG19A3A027646	0.008791	0.095255	2.186181	down	noncoding	AL833484		chr5	-
ASHG19A3A027712	0.030911	0.168027	2.864985	down	noncoding	ENST00000377300	CTC-281M20.1	chr5	-
ASHG19A3A027912	0.000354	0.027381	2.151156	down	noncoding	ENST00000502001	RP11-480D4.3	chr5	+
ASHG19A3A027931	0.01383	0.117908	2.023562	down	noncoding	HIT000062015		chr5	+
ASHG19A3A028053	0.042356	0.194098	3.785611	down	noncoding	ENST00000512207	RP11-42L13.2	chr5	+
ASHG19A3A028616	0.000148	0.021847	2.992423	down	noncoding	uc003kps.2	tiga1	chr5	+
ASHG19A3A028617	0.002095	0.053063	2.274443	down	noncoding	NR_015370	NCRNA00219	chr5	+

ASHG19A3A032114	0.037122	0.18222	2.321634	down	noncoding	ENST00000407767	RP3-406A7.3	chr6	+
ASHG19A3A032114	0.037122	0.18222	2.321634	down	noncoding	ENST00000407767	RP3-406A7.3	chr6	+
ASHG19A3A032114	0.037122	0.18222	2.321634	down	noncoding	ENST00000407767	RP3-406A7.3	chr6	+
ASHG19A3A032114	0.037122	0.18222	2.321634	down	noncoding	ENST00000407767	RP3-406A7.3	chr6	+
ASHG19A3A032114	0.037122	0.18222	2.321634	down	noncoding	ENST00000407767	RP3-406A7.3	chr6	+
ASHG19A3A032148	0.032716	0.172589	2.879538	down	noncoding	ENST00000417650	RP11-439L18.1	chr6	+
ASHG19A3A032328	0.003205	0.061295	2.236158	down	noncoding	ENST00000455390	RP11-514O12.2	chr6	+
ASHG19A3A032343	0.033024	0.173401	3.457418	down	noncoding	ENST00000457340	RP11-503C24.1	chr6	+
ASHG19A3A032394	0.000863	0.038861	2.50985	down	noncoding	ENST00000453348	AC074389.9	chr7	-
ASHG19A3A032436	0.016617	0.126992	2.060706	down	noncoding	CR609520		chr1	+
ASHG19A3A032607	0.014701	0.11973	2.274067	down	noncoding	ENST00000454851	AC005105.2	chr7	-
ASHG19A3A032607	0.014701	0.11973	2.274067	down	noncoding	ENST00000454851	AC005105.2	chr7	-
ASHG19A3A032607	0.014701	0.11973	2.274067	down	noncoding	ENST00000454851	AC005105.2	chr7	-
ASHG19A3A032616	0.024007	0.149299	2.656628	down	noncoding	ENST00000442865	AC007255.7	chr7	-
ASHG19A3A032731	0.003517	0.064818	2.279475	down	noncoding	ENST00000457315	AC004692.4	chr7	-
ASHG19A3A032916	0.003812	0.066583	2.232323	down	noncoding	ENST00000430604	RP11-3N2.4	chr7	-
ASHG19A3A033019	0.014812	0.120056	2.366472	down	noncoding	ENST00000419670	NCF1C	chr7	-
ASHG19A3A033130	0.020828	0.140521	2.648028	down	noncoding	ENST00000415667	AC002069.7	chr7	-
ASHG19A3A033168	0.00619	0.080771	2.333249	down	noncoding	ENST00000426330	RP11-419N10.5	chr1	+
ASHG19A3A033662	0.042376	0.194098	2.163888	down	noncoding	ENST00000481590	TRBV8-1	chr7	-
ASHG19A3A033718	0.033763	0.175037	2.615068	down	noncoding	AY927503		chr7	-
ASHG19A3A033727	0.022712	0.146434	2.038019	down	noncoding	NR_027040	LOC401431	chr7	-
ASHG19A3A033727	0.022712	0.146434	2.038019	down	noncoding	NR_027040	LOC401431	chr7	-
ASHG19A3A033760	0.00034	0.027381	2.475469	down	noncoding	ENST00000445535	RP11-25K21.4	chr1	+
ASHG19A3A033764	6.11E-05	0.019365	2.531321	down	noncoding	NR_024151	HSPA7	chr1	+
ASHG19A3A034227	0.016706	0.127366	2.743767	down	noncoding	ENST00000426456	AC011290.3	chr7	+
ASHG19A3A034298	0.01449	0.119693	2.23764	down	noncoding	ENST00000400978	FMO9P	chr1	+
ASHG19A3A034389	0.030747	0.167739	2.989755	down	noncoding	ENST00000419236	RP11-1217F2.10	chr7	+
ASHG19A3A034529	0.000807	0.037891	2.01463	down	noncoding	ENST00000417100	RP11-483G21.3	chr7	+
ASHG19A3A034675	0.025162	0.153619	2.384607	down	noncoding	ENST00000444032	AC002127.4	chr7	+
ASHG19A3A034857	0.036132	0.18041	2.103186	down	noncoding	uc003vag.1	BC085014	chr7	+
ASHG19A3A034857	0.036132	0.18041	2.103186	down	noncoding	uc003vag.1	BC085014	chr7	+
ASHG19A3A034900	0.009791	0.100197	2.971946	down	noncoding	ENST00000433617	AC005046.5	chr7	+

ASHG19A3A035132	0.017407	0.128941	2.480264	down	noncoding	uc003vts.1	AK094915	chr7	+
ASHG19A3A035156	0.008733	0.095045	2.614748	down	noncoding	ENST00000433683	RP11-296O14.1	chr1	+
ASHG19A3A035205	0.022787	0.146629	2.052684	down	noncoding	ENST00000456572	TRBV26	chr7	+
ASHG19A3A035252	0.033427	0.174321	2.212143	down	noncoding	ENST00000473586	OR2A41P	chr7	+
ASHG19A3A035430	0.004697	0.071916	2.776921	down	noncoding	ENST00000457337	AC019084.7	chr7	+
ASHG19A3A035504	0.006183	0.080753	2.758265	down	noncoding	BC040270		chr8	-
ASHG19A3A035504	0.006183	0.080753	2.758265	down	noncoding	BC040270		chr8	-
ASHG19A3A035579	0.015747	0.123899	5.508182	down	noncoding	ENST00000465586	AC100802.2	chr8	-
ASHG19A3A035683	0.002822	0.057716	6.326741	down	noncoding	ENST00000468780	RP1-155O2.1	chr8	-
ASHG19A3A035890	0.004564	0.071744	2.353622	down	noncoding	ENST00000463217	RP11-508K19.1	chr8	-
ASHG19A3A036148	0.019793	0.137395	3.080754	down	noncoding	NR_026684	HPYR1	chr8	-
ASHG19A3A036183	0.007051	0.086119	2.959763	down	noncoding	ENST00000414169	RP1-223H12.4	chr1	+
ASHG19A3A036302	0.000502	0.032189	2.910167	down	noncoding	ENST00000438784	AF228730.4	chr8	+
ASHG19A3A037162	0.024974	0.153072	2.291163	down	noncoding	AK127092		chr9	-
ASHG19A3A037162	0.024974	0.153072	2.291163	down	noncoding	AK127092		chr9	-
ASHG19A3A037201	0.033304	0.174069	2.184918	down	noncoding	uc003zpr.2	CR627240	chr9	-
ASHG19A3A037359	0.023361	0.147746	2.448487	down	noncoding	uc004aaz.1	CR607939	chr9	-
ASHG19A3A037646	0.011067	0.106507	2.648641	down	noncoding	ENST00000439544	RP11-213G2.2	chr9	-
ASHG19A3A037864	0.030685	0.167477	3.239076	down	noncoding	ENST00000435770	RPL36AP6	chr9	-
ASHG19A3A038189	0.025036	0.153164	2.215969	down	noncoding	ENST00000452377	RP11-399H11.3	chr9	-
ASHG19A3A038233	0.002118	0.053191	2.322086	down	noncoding	CR599011		chr9	-
ASHG19A3A038293	0.002344	0.054416	2.749617	down	noncoding	ENST00000455592	RP11-165F24.2	chr9	+
ASHG19A3A038362	0.045222	0.200587	2.259926	down	noncoding	ENST00000437701	RP11-87N24.1	chr9	+
ASHG19A3A038474	0.01044	0.102891	2.04048	down	noncoding	BC043200		chr9	+
ASHG19A3A038625	0.028956	0.16302	2.865199	down	noncoding	ENST00000455231	AC129778.6	chr9	+
ASHG19A3A038705	0.018446	0.133388	2.253162	down	noncoding	ENST00000444223	RP11-236F9.6	chr9	+
ASHG19A3A038741	0.016791	0.12738	2.043936	down	noncoding	ENST00000419576	RP11-561O23.7	chr9	+
ASHG19A3A038755	0.036912	0.181768	2.137951	down	noncoding	ENST00000421166	RP4-681L3.2	chr1	+
ASHG19A3A038755	0.036912	0.181768	2.137951	down	noncoding	ENST00000421166	RP4-681L3.2	chr1	+
ASHG19A3A038764	0.040679	0.190213	2.647594	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.040679	0.190213	2.647594	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.040679	0.190213	2.647594	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.040679	0.190213	2.647594	down	noncoding	CR618740		chr9	+

ASHG19A3A038764	0.040679	0.190213	2.647594	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.040679	0.190213	2.647594	down	noncoding	CR618740		chr9	+
ASHG19A3A038764	0.040679	0.190213	2.647594	down	noncoding	CR618740		chr9	+
ASHG19A3A038834	0.013424	0.115935	2.42742	down	noncoding	uc004amd.2	BC036431	chr9	+
ASHG19A3A038911	0.011528	0.108484	2.707468	down	noncoding	ENST00000444374	RP11-316P17.2	chr9	+
ASHG19A3A039231	0.035983	0.180022	2.001748	down	noncoding	ENST00000438380	RP11-175D17.3	chr9	+
ASHG19A3A039231	0.035983	0.180022	2.001748	down	noncoding	ENST00000438380	RP11-175D17.3	chr9	+
ASHG19A3A039371	0.015452	0.122859	2.338008	down	noncoding	ENST00000499608	AL445645.1	chr9	+
ASHG19A3A039371	0.015452	0.122859	2.338008	down	noncoding	ENST00000499608	AL445645.1	chr9	+
ASHG19A3A039371	0.015452	0.122859	2.338008	down	noncoding	ENST00000499608	AL445645.1	chr9	+
ASHG19A3A039424	0.029116	0.16325	2.183145	down	noncoding	ENST00000455039	RP11-426A6.7	chr9	+
ASHG19A3A039457	0.00303	0.060046	2.278195	down	noncoding	uc004cib.1	AX747706	chr9	+
ASHG19A3A039749	0.037602	0.183473	2.664808	down	noncoding	ENST00000431646	RP11-157D23.1	chrX	-
ASHG19A3A039869	0.01659	0.126992	2.011057	down	noncoding	G65570		chrX	-
ASHG19A3A039869	0.01659	0.126992	2.011057	down	noncoding	G65570		chrX	-
ASHG19A3A040120	0.000412	0.029082	7.86327	down	noncoding	ENST00000395439	RP4-581F12.2	chrX	-
ASHG19A3A040177	0.000763	0.037247	2.62497	down	noncoding	uc004egm.2	CR623706	chrX	-
ASHG19A3A040183	0.038425	0.184851	3.628567	down	noncoding	ENST00000416788	RP11-410C4.1	chr1	+
ASHG19A3A040339	0.021688	0.143365	2.010708	down	noncoding	ENST00000429708	RP3-525N14.3	chrX	-
ASHG19A3A040476	0.006372	0.081861	2.05439	down	noncoding	ENST00000419392	RP11-51C14.2	chrX	-
ASHG19A3A040552	0.001915	0.050453	2.112628	down	noncoding	ENST00000445091	MOAP1	chrX	-
ASHG19A3A041047	0.010953	0.105992	2.212874	down	noncoding	ENST00000426602	RP11-161N3.3	chrX	+
ASHG19A3A041414	0.034383	0.176397	2.1125	down	noncoding	NR_033132	ALG13	chrX	+
ASHG19A3A041414	0.034383	0.176397	2.1125	down	noncoding	NR_033132	ALG13	chrX	+
ASHG19A3A041414	0.034383	0.176397	2.1125	down	noncoding	NR_033132	ALG13	chrX	+
ASHG19A3A041414	0.034383	0.176397	2.1125	down	noncoding	NR_033132	ALG13	chrX	+
ASHG19A3A041480	0.002898	0.058351	3.899499	down	noncoding	ENST00000436852	RP11-229N15.1	chrX	+
ASHG19A3A041790	0.022625	0.146364	2.162416	down	noncoding	uc004fnm.2	U00684	chrX	+
ASHG19A3A042082	0.03805	0.184074	2.08893	down	noncoding	NR_001545	TTY15	chrY	+
ASHG19A3A042183	0.047609	0.20642	2.077628	down	noncoding	ENST00000444350	AC009947.2	chrY	+
ASHG19A3A042255	0.015574	0.123238	3.285196	down	noncoding	ENST00000427498	RP11-513D4.2	chr1	+
ASHG19A3A042255	0.015574	0.123238	3.285196	down	noncoding	ENST00000427498	RP11-513D4.2	chr1	+
ASHG19A3A042255	0.015574	0.123238	3.285196	down	noncoding	ENST00000427498	RP11-513D4.2	chr1	+

ASHG19A3A042258	0.001118	0.042382	2.212714	down	noncoding	ENST00000439562	RP11-261C10.5	chr1	+
ASHG19A3A042258	0.001118	0.042382	2.212714	down	noncoding	ENST00000439562	RP11-261C10.5	chr1	+
ASHG19A3A042258	0.001118	0.042382	2.212714	down	noncoding	ENST00000439562	RP11-261C10.5	chr1	+
ASHG19A3A042645	0.019627	0.136913	2.620278	down	noncoding	ENST00000446298	AL031601.3	chr10	-
ASHG19A3A042723	0.024203	0.150085	2.356218	down	noncoding	ENST00000422732	RP11-314P12.2	chr10	-
ASHG19A3A042725	0.003362	0.062823	2.212923	down	noncoding	ENST00000421426	RP11-314P12.3	chr10	-
ASHG19A3A042752	0.038826	0.186067	2.078831	down	noncoding	uc009xny.1	AK309922	chr10	-
ASHG19A3A043676	0.008259	0.09291	2.316288	down	noncoding	ENST00000419987	RP11-188P8.2	chr10	+
ASHG19A3A043876	0.003569	0.065203	2.296736	down	noncoding	ENST00000436165	OR6D1P	chr10	+
ASHG19A3A044734	0.016463	0.126598	2.128987	down	noncoding	ENST00000515874	AP006623.1	chr11	-
ASHG19A3A044734	0.016463	0.126598	2.128987	down	noncoding	ENST00000515874	AP006623.1	chr11	-
ASHG19A3A044734	0.016463	0.126598	2.128987	down	noncoding	ENST00000515874	AP006623.1	chr11	-
ASHG19A3A044734	0.016463	0.126598	2.128987	down	noncoding	ENST00000515874	AP006623.1	chr11	-
ASHG19A3A044734	0.016463	0.126598	2.128987	down	noncoding	ENST00000515874	AP006623.1	chr11	-
ASHG19A3A044734	0.016463	0.126598	2.128987	down	noncoding	ENST00000515874	AP006623.1	chr11	-
ASHG19A3A044734	0.016463	0.126598	2.128987	down	noncoding	ENST00000515874	AP006623.1	chr11	-
ASHG19A3A044734	0.016463	0.126598	2.128987	down	noncoding	ENST00000515874	AP006623.1	chr11	-
ASHG19A3A045508	0.003555	0.065189	2.080518	down	noncoding	AL117542		chr11	-
ASHG19A3A045560	0.004151	0.068507	2.239852	down	noncoding	AK129942		chr11	-
ASHG19A3A045615	0.00981	0.100197	3.405255	down	noncoding	ENST00000454802	RP4-800M22.4	chr1	-
ASHG19A3A045615	0.00981	0.100197	3.405255	down	noncoding	ENST00000454802	RP4-800M22.4	chr1	-
ASHG19A3A045615	0.00981	0.100197	3.405255	down	noncoding	ENST00000454802	RP4-800M22.4	chr1	-
ASHG19A3A046700	0.034436	0.176397	2.042752	down	noncoding	BC015237		chr11	+
ASHG19A3A046728	0.019887	0.137577	2.263417	down	noncoding	ENST00000500163	AP003065.3	chr11	+
ASHG19A3A046728	0.019887	0.137577	2.263417	down	noncoding	ENST00000500163	AP003065.3	chr11	+
ASHG19A3A046728	0.019887	0.137577	2.263417	down	noncoding	ENST00000500163	AP003065.3	chr11	+
ASHG19A3A046729	0.000551	0.033694	2.795194	down	noncoding	ENST00000464109	RP11-31L22.2	chr11	+
ASHG19A3A046729	0.000551	0.033694	2.795194	down	noncoding	ENST00000464109	RP11-31L22.2	chr11	+
ASHG19A3A046729	0.000551	0.033694	2.795194	down	noncoding	ENST00000464109	RP11-31L22.2	chr11	+
ASHG19A3A046736	0.029165	0.163281	2.208656	down	noncoding	AK094727		chr11	+
ASHG19A3A046931	0.008618	0.094754	2.129808	down	noncoding	BC063618		chr11	+
ASHG19A3A047171	0.025385	0.153928	2.274155	down	noncoding	NR_026823	FAM138D	chr12	-
ASHG19A3A047181	0.020094	0.138032	2.294235	down	noncoding	ENST00000415549	RP4-650F12.4	chr1	-
ASHG19A3A047181	0.020094	0.138032	2.294235	down	noncoding	ENST00000415549	RP4-650F12.4	chr1	-

ASHG19A3A047181	0.020094	0.138032	2.294235	down	noncoding	ENST00000415549	RP4-650F12.4	chr1	-
ASHG19A3A047186	0.009242	0.097712	2.154858	down	noncoding	uc001qiy.2	BC039168	chr12	-
ASHG19A3A047456	0.02163	0.143176	2.497087	down	noncoding	ENST00000471002	RP11-820K3.1	chr12	-
ASHG19A3A047650	0.033143	0.173745	4.493712	down	noncoding	ENST00000513381	RP11-834C11.5	chr12	-
ASHG19A3A047767	0.005071	0.07395	4.405399	down	noncoding	ENST00000481157	RP11-766N7.1	chr12	-
ASHG19A3A048280	0.038652	0.185526	2.339947	down	noncoding	S79267		chr12	+
ASHG19A3A048280	0.038652	0.185526	2.339947	down	noncoding	S79267		chr12	+
ASHG19A3A048280	0.038652	0.185526	2.339947	down	noncoding	S79267		chr12	+
ASHG19A3A048280	0.038652	0.185526	2.339947	down	noncoding	S79267		chr12	+
ASHG19A3A048280	0.038652	0.185526	2.339947	down	noncoding	S79267		chr12	+
ASHG19A3A048667	0.046764	0.204467	2.449514	down	noncoding	NR_026655	FLJ12825	chr12	+
ASHG19A3A048932	0.003817	0.066583	2.050917	down	noncoding	ENST00000470084	RP11-129B9.1	chr12	+
ASHG19A3A049214	0.047116	0.205361	2.121479	down	noncoding	G65566		chr12	+
ASHG19A3A049322	0.008025	0.091309	2.550608	down	noncoding	ENST00000434100	TPTE2P1	chr13	-
ASHG19A3A049530	0.039892	0.188111	2.070249	down	noncoding	NR_029429	LOC441897	chr1	-
ASHG19A3A049818	0.016341	0.12618	2.303545	down	noncoding	ENST00000415853	RP11-357L1.1	chr13	-
ASHG19A3A050188	0.000105	0.021847	2.689466	down	noncoding	NR_002605	DLEU1	chr13	+
ASHG19A3A050616	0.031004	0.16813	2.011503	down	noncoding	BC045654		chr14	-
ASHG19A3A050816	0.004671	0.071878	2.127847	down	noncoding	NR_027123	C14orf33	chr14	-
ASHG19A3A050816	0.004671	0.071878	2.127847	down	noncoding	NR_027123	C14orf33	chr14	-
ASHG19A3A050816	0.004671	0.071878	2.127847	down	noncoding	NR_027123	C14orf33	chr14	-
ASHG19A3A050816	0.004671	0.071878	2.127847	down	noncoding	NR_027123	C14orf33	chr14	-
ASHG19A3A051052	0.005951	0.079302	2.185089	down	noncoding	AK055958		chr14	-
ASHG19A3A051129	0.015771	0.123899	2.042552	down	noncoding	uc009wiv.1	GnRHRII	chr1	-
ASHG19A3A051129	0.015771	0.123899	2.042552	down	noncoding	uc009wiv.1	GnRHRII	chr1	-
ASHG19A3A051129	0.015771	0.123899	2.042552	down	noncoding	uc009wiv.1	GnRHRII	chr1	-
ASHG19A3A051348	0.037208	0.182443	2.152385	down	noncoding	ENST00000475149	RP11-114O13.1	chr14	+
ASHG19A3A051423	0.034319	0.176333	2.025373	down	noncoding	ENST00000504267	AL079307.3	chr14	+
ASHG19A3A051564	0.023442	0.147796	2.006614	down	noncoding	NR_027055	FAM41C	chr1	-
ASHG19A3A051645	0.029344	0.163646	2.252188	down	noncoding	AK125200		chr14	+
ASHG19A3A051822	0.014956	0.120462	3.589393	down	noncoding	ENST00000488133	CTD-2538G10.1	chr14	+
ASHG19A3A051829	0.028348	0.161844	2.502509	down	noncoding	ENST00000494237	RP11-45P15.2	chr14	+
ASHG19A3A051859	0.034556	0.176831	2.074716	down	noncoding	ENST00000450804	AL512356.1	chr14	+

ASHG19A3A051878	0.002601	0.056279	2.166295	down	noncoding	BC038771		chr14	+
ASHG19A3A051942	0.002165	0.053387	2.074328	down	noncoding	HIT000019412		chr15	-
ASHG19A3A052204	0.00368	0.065718	2.34537	down	noncoding	AK025072		chr15	-
ASHG19A3A052363	0.000763	0.037247	2.280311	down	noncoding	AL360257		chr15	-
ASHG19A3A052552	0.002631	0.056689	2.48072	down	noncoding	AL110293		chr15	-
ASHG19A3A052606	0.00041	0.029074	2.010359	down	noncoding	AK130759		chr15	-
ASHG19A3A053171	0.043807	0.197167	2.841649	down	noncoding	ENST00000499050	AC105339.2	chr15	+
ASHG19A3A053171	0.043807	0.197167	2.841649	down	noncoding	ENST00000499050	AC105339.2	chr15	+
ASHG19A3A053289	0.001486	0.044913	2.315183	down	noncoding	AL109706		chr15	+
ASHG19A3A053463	0.02078	0.140518	2.164876	down	noncoding	CR600549		chr16	-
ASHG19A3A053463	0.02078	0.140518	2.164876	down	noncoding	CR600549		chr16	-
ASHG19A3A053583	0.004844	0.072568	2.903362	down	noncoding	NR_027460	RRN3P3	chr16	-
ASHG19A3A053813	0.0108	0.105139	2.189526	down	noncoding	ENST00000487776	CTD-2503H21.1	chr16	-
ASHG19A3A054016	0.008139	0.092117	2.260309	down	noncoding	AK000958		chr16	-
ASHG19A3A054225	0.011614	0.108779	2.054807	down	noncoding	uc002cuo.1	FLJ39639	chr16	+
ASHG19A3A054483	0.028374	0.16185	2.385237	down	noncoding	uc002dy1.1	CR613685	chr16	+
ASHG19A3A054924	0.019917	0.13766	2.273617	down	noncoding	ENST00000426573	RP4-738P11.4	chr1	-
ASHG19A3A054953	0.010305	0.102108	2.374051	down	noncoding	HIT000221810_04		chr16	+
ASHG19A3A055081	0.003582	0.065203	2.394999	down	noncoding	uc001hpx.2	BC032899	chr1	+
ASHG19A3A055190	0.014603	0.119693	2.027972	down	noncoding	uc003eie.3	LOC100125556	chr3	+
ASHG19A3A055190	0.014603	0.119693	2.027972	down	noncoding	uc003eie.3	LOC100125556	chr3	+
ASHG19A3A055191	0.001043	0.041423	2.274979	down	noncoding	uc003enb.1	CR593374	chr3	+
ASHG19A3A055287	0.049889	0.211924	2.470194	down	noncoding	uc010guv.1	BC054862	chr22	-
ASHG19A3H0000054	0.027755	0.16033	3.653583	down	noncoding	nc-HOXB4-176-	nc-HOXB4-176	chr17	-
ASHG19A3H0000106	0.007436	0.08808	2.864333	down	noncoding	nc-HOXC10-127-	nc-HOXC10-127	chr12	+
ASHG19A3L0000009	0.023223	0.147746	2.115111	down	noncoding	BX104325	lincRNA-FAM102B-1	chr1	+
ASHG19A3L0000018	0.004875	0.072676	2.571236	down	noncoding	chr1:116797827-116838952-	lincRNA-C1orf161	chr1	-
ASHG19A3L0000032	0.034486	0.176531	2.17103	down	noncoding	DB327252	lincRNA-PBX1-3	chr1	-
ASHG19A3L0000065	0.039811	0.18793	2.396782	down	noncoding	chr1:203164802-203174902+	lincRNA-CHIT1	chr1	+
ASHG19A3L0000128	0.033147	0.173745	2.01786	down	noncoding	chr1:39116163-39128263+	lincRNA-RRAGC-1	chr1	+
ASHG19A3L0000144	0.023866	0.148837	2.746458	down	noncoding	exon95+	lincRNA-KNCN	chr1	+
ASHG19A3L0000208	0.011661	0.108779	2.064264	down	noncoding	BX101441	lincRNA-C10orf46-1	chr10	+

ASHG19A3L0000311	0.02339	0.147746	2.304509	down	noncoding	exon848+	lincRNA-ZW10	chr11	+
ASHG19A3L0000337	0.000494	0.031999	2.20037	down	noncoding	W19582	lincRNA-ETS1-2	chr11	+
ASHG19A3L0000343	0.010525	0.103385	2.037713	down	noncoding	CV346902	lincRNA-TMEM45B-1	chr11	+
ASHG19A3L0000397	0.038424	0.184851	2.651217	down	noncoding	BG946037	lincRNA-MYEOV-3	chr11	+
ASHG19A3L0000455	0.040104	0.188697	2.072451	down	noncoding	chr12:132296472-132307497-	lincRNA-SFSWAP-1	chr12	-
ASHG19A3L0000591	0.032106	0.171159	2.560613	down	noncoding	CD102777	lincRNA-TPTE2	chr13	-
ASHG19A3L0001043	0.019283	0.136226	2.553375	down	noncoding	DB335899	lincRNA-TMEM177	chr2	-
ASHG19A3L0001167	0.037494	0.183129	2.006733	down	noncoding	chr2:237543636-237554786-	lincRNA-CXCR7-1	chr2	-
ASHG19A3L0001205	0.017868	0.130554	2.396946	down	noncoding	CN289466	lincRNA-MEIS1-1	chr2	-
ASHG19A3L0001219	0.023597	0.148111	2.073582	down	noncoding	BX101700	lincRNA-TACR1-1	chr2	-
ASHG19A3L0001452	0.025657	0.154644	2.086607	down	noncoding	BG677629	lincRNA-ARSJ-2	chr4	-
ASHG19A3L0001655	0.024678	0.151729	2.251444	down	noncoding	chr5:49632068-49662143-	lincRNA-HCN1-1	chr5	-
ASHG19A3L0001712	0.04687	0.204692	2.540981	down	noncoding	AA935188	lincRNA-MCM9	chr6	+
ASHG19A3L0001747	0.001941	0.050705	3.579691	down	noncoding	chr6:150606082-150619632-	lincRNA-PPP1R14C	chr6	-
ASHG19A3L0001752	0.02401	0.149299	2.262814	down	noncoding	BE439827	lincRNA-MAS1	chr6	-
ASHG19A3L0001877	0.032895	0.172925	2.628164	down	noncoding	chr7:143147778-143169303-	lincRNA-TAS2R60	chr7	-
ASHG19A3L0001899	0.002336	0.054416	2.112652	down	noncoding	BF056782	lincRNA-ABCB5	chr7	+
ASHG19A3L0002180	0.042289	0.193875	2.330969	down	noncoding	chr8:99342599-99355474+	lincRNA-KCNS2-1	chr8	+
ASHG19A3L0002286	0.039519	0.187234	2.284666	down	noncoding	chrX:20419404-20431504+	lincRNA-CNKS2-2	chrX	+
ASHG19A3L0002436	0.004616	0.071865	2.041173	down	noncoding	chr9:20028084-20041430+	lincRNA-MLLT3-1	chr9	+
ASHG19A3L0002544	0.00696	0.085581	2.143154	down	noncoding	BM805159	lincRNA-THSD7A-2	chr7	+
ASHG19A3L0002704	0.033031	0.173401	2.27156	down	noncoding	BG210561	lincRNA-AGRP-2	chr16	-
ASHG19A3L0002906	0.023412	0.147746	2.369174	down	noncoding	CF887548	lincRNA-NEDD1-3	chr12	+
ASHG19A3L0002962	0.002688	0.057065	2.148681	down	noncoding	AA769057	lincRNA-UBE2G1	chr17	-
ASHG19A3L0003029	0.02362	0.148118	2.078042	down	noncoding	DB090998	lincRNA-GPHN-3	chr14	+
ASHG19A3L0003458	0.02043	0.139376	4.208564	down	noncoding	AA136769	lincRNA-INSIG2-2	chr2	-
ASHG19A3L0003479	0.005173	0.07456	2.407279	down	noncoding	AL599814	lincRNA-ITGA6-1	chr2	+
ASHG19A3L0003534	0.044515	0.198661	2.127515	down	noncoding	AA368654	lincRNA-OPTC	chr1	-
CUST_124_PI426075208	0.040598	0.189891	2.897282	down	noncoding	nc-HOXC4-153+	nc-HOXC4-153	chr12	-
CUST_210_PI426075208	0.006002	0.079639	2.03916	down	noncoding	nc-HOXD10-15+	nc-HOXD10-15	chr2	-
CUST_424_PI426073487	0.013289	0.11573	2.939458	down	noncoding	uc.426+	uc.426	chr18	+
CUST_761_PI426073487	0.032292	0.171321	2.607432	down	noncoding	uc.282-	uc.282	chr9	-

CUST_761_PI426073487	0.032292	0.171321	2.607432	down	noncoding	uc.282-	uc.282	chr9	-
CUST_761_PI426073487	0.032292	0.171321	2.607432	down	noncoding	uc.282-	uc.282	chr9	-
CUST_761_PI426073487	0.032292	0.171321	2.607432	down	noncoding	uc.282-	uc.282	chr9	-
CUST_761_PI426073487	0.032292	0.171321	2.607432	down	noncoding	uc.282-	uc.282	chr9	-

Supplementary Table 4. The list of genes dysregulated by siMYC or siMYCLo in HCT116.

Supplementary Table 4-1. The list of genes dysregulated by siMYC in HCT116

*Filtering criteria: more than 1.5 fold change, p-value<0.05

probe set	siCTRL	siMYC	fold change	lower bound of FC	upper bound of FC	t statistic	P value	paired t statistic	paired P value
MYC	1262.7	537.93	-2.35	-2.13	-2.61	-19.61	0.0002	-35.97	0.0008
CDC7	161.81	92.12	-1.76	-1.67	-1.85	-14.53	0.0024	-19.04	0.0027
POLR1D	1019.3	599.49	-1.7	-1.62	-1.78	-15.82	0.0014	-24.01	0.0017
BUB1B	430.26	270.56	-1.59	-1.49	-1.7	-12.78	0.0004	-47.58	0.0004
ATR	139.09	88.75	-1.57	-1.47	-1.67	-13.14	0.0005	-12.38	0.0065
ORC5	78.39	50.52	-1.55	-1.47	-1.63	-11.91	0.0038	-9.732	0.0104
PIK3R1	118.28	177.71	1.5	1.35	1.68	6.52	0.0029	5.376	0.0329
GSK3B	518.49	781.13	1.51	1.38	1.65	7.642	0.0017	5.474	0.0318
HDAC8	61.52	93.26	1.52	1.26	1.9	4.123	0.0424	4.572	0.0447
E2F1	99.05	157.67	1.59	1.38	1.83	5.193	0.0113	5.38	0.0329
TGFB1	72.2	115.79	1.6	1.45	1.78	7.327	0.0034	8.392	0.0139
CFL1	2875	4642	1.61	1.52	1.71	14.857	0.0002	17.648	0.0032
CREB3	59.43	96.16	1.62	1.41	1.85	5.087	0.021	4.805	0.0407
YWHAB	83.11	136.81	1.65	1.48	1.81	6.452	0.0223	6.436	0.0233
SMAD3	437.88	762.72	1.74	1.52	2.02	6.97	0.0023	5.83	0.0282
ANAPC2	45.06	78.65	1.75	1.5	2.05	6.099	0.0039	5.225	0.0347
CDC25B	284.59	497.72	1.75	1.57	1.94	7.175	0.0118	6.622	0.0221
ARF3	590.73	1086.7	1.84	1.65	2.04	8.305	0.006	6.402	0.0235
RELA	64.35	118.49	1.84	1.65	2.06	9.173	0.0012	36.102	0.0008
CCNG2	101.8	189.26	1.86	1.6	2.13	5.897	0.0178	5.482	0.0317
MAD1L1	70.12	131.07	1.87	1.77	1.98	21.405	4E-05	16.226	0.0038
CDKN1C	85.05	160.53	1.89	1.48	2.49	4.37	0.0123	4.341	0.0492
HDAC4	50.87	97.61	1.92	1.62	2.25	5.678	0.0153	5.964	0.027
CDKN2D	59.2	117.55	1.99	1.77	2.26	12.406	0.002	10.944	0.0082
JUN	39.21	78.35	2	1.5	2.97	4.915	0.0316	6.548	0.0225

CCND1	990.69	2007.5	2.03	1.88	2.18	14.412	0.0007	10.775	0.0085
CDKN1A	257.29	535.87	2.08	1.91	2.29	17.429	0.0003	12.911	0.0059
SFN	467.92	971.07	2.08	1.92	2.26	19.943	0.0004	22.525	0.002
CDKN2B	41.52	89.38	2.15	1.86	2.53	10.129	0.0006	138.03	5E-05
CCNE2	115.59	263.69	2.28	2.06	2.53	12.209	0.0012	13.302	0.0056
CDH1	118.65	272.58	2.3	1.87	2.8	5.748	0.016	5.591	0.0305
DTX4	9.67	22.35	2.31	1.76	2.96	4.187	0.0403	6.074	0.0261
CREB3L3	4.47	10.92	2.45	1.78	3.55	4.63	0.0134	11.152	0.0079

\$ 33 genes satisfied the comparison filtering criteria

Supplementary Table 4-2. The list of genes dysregulated by siMYCLo-1 in HCT116

*Filtering criteria: more than 1.5 fold change, p-value<0.05

probe set	siMYCLo-1	siCTRL	fold change	lower bound of FC	upper bound of FC	t statistic	P value	paired t statistic	paired P value
CCNA2	489.21	773.78	1.58	1.28	2.05	4.064	0.04436	4.802	0.04074
CDC14A	63.39	41.74	-1.52	-1.34	-1.71	-4.87	0.02348	-6.466	0.02309
MAD1L1	91.22	59.81	-1.53	-1.38	-1.67	-6.567	0.00994	-10.576	0.00882
POLR1C	309.48	201.44	-1.54	-1.4	-1.68	-6.533	0.01733	-8.415	0.01383
HDAC1	1353.12	872.43	-1.55	-1.47	-1.63	-12.81	0.00103	-14.686	0.0046
HDAC8	81.36	52.47	-1.55	-1.26	-1.96	-3.745	0.02448	-9.447	0.01102
ARF3	791.61	503.79	-1.57	-1.41	-1.74	-6.293	0.01011	-12.386	0.00646
CDC14B	134.34	85.57	-1.57	-1.43	-1.73	-7.933	0.00139	-53.066	0.00036
NEK1	47.92	30.48	-1.57	-1.32	-1.9	-4.561	0.011	-4.561	0.04487
RAD50	127.67	79.13	-1.61	-1.44	-1.82	-7.765	0.00194	-10.553	0.00886
ORC3	406.48	243.67	-1.67	-1.5	-1.85	-6.789	0.01312	-6.868	0.02055
ORC4	438.56	256.08	-1.71	-1.56	-1.89	-10.174	0.00053	-16.218	0.00378
ABL1	147.38	83.68	-1.76	-1.46	-2.16	-4.912	0.00915	-5.395	0.03268
NFKBIA	468.85	263.93	-1.78	-1.53	-2.05	-5.605	0.01497	-8.803	0.01266
HDAC5	69.93	38.03	-1.84	-1.45	-2.29	-3.722	0.04543	-5.374	0.03293
CDKN2B	69.98	35.41	-1.98	-1.59	-2.45	-4.569	0.02428	-4.765	0.04133

DTX4	20.14	8.25	-2.44	-1.91	-3.08	-4.884	0.02789	-6.13	0.02559
CDH1	247.99	101.19	-2.45	-2.11	-2.88	-9.809	0.00132	-22.829	0.00191
CDKN1A	623.31	219.43	-2.84	-2.47	-3.26	-9.572	0.00629	-8.707	0.01293
\$	19 genes satisfied the comparison filtering criteria								

Supplementary Table 4-3. The list of genes dysregulated by siMYCLo-2 in HCT116

*Filtering criteria: more than 1.5 fold change, p-value<0.05

probe set	siMYCLo-2	siCTRL	fold change	lower bound of FC	upper bound of FC	t statistic	P value	paired t statistic	paired P value
CREB3L4	7.68	16.35	2.13	1.88	2.45	11.512	0.0004	42.853	0.0005
CCNG2	59.94	114.53	1.91	1.77	2.06	10.661	0.0068	9.118	0.0118
YWHAZ	2647.7	4373.1	1.65	1.63	1.68	60.773	7E-06	50.912	0.0004
PTTG1	1699.1	1130.4	-1.5	-1.3	-1.72	-4.053	0.0479	-5.264	0.0342
GADD45A	927.68	612.43	-1.51	-1.46	-1.58	-21.56	0.002	-19.92	0.0025
YWHAH	1001.4	661.74	-1.51	-1.31	-1.75	-4.573	0.0144	-15.92	0.0039
HDAC2	2655.3	1741.2	-1.52	-1.45	-1.61	-13.61	0.0002	-15.49	0.0041
CDC14B	172.9	112.88	-1.53	-1.28	-1.8	-3.658	0.0473	-4.308	0.0499
MRE11A	198.08	129.81	-1.53	-1.28	-1.86	-4.237	0.0169	-13.18	0.0057
E2F3	181.32	117.48	-1.54	-1.36	-1.73	-5.121	0.0251	-7.457	0.0175
MNAT1	495.42	322.66	-1.54	-1.38	-1.72	-7.763	0.0087	-8.567	0.0134
NFKBIA	537.04	348.17	-1.54	-1.4	-1.71	-7.689	0.0017	-11.15	0.008
ARF1	2787.9	1792.1	-1.56	-1.45	-1.66	-10.04	0.0018	-21.25	0.0022
SFN	829.29	526.44	-1.58	-1.4	-1.77	-6.127	0.0067	-11.2	0.0079
CFL1	5175.3	3234.6	-1.6	-1.48	-1.73	-9.522	0.0018	-23.68	0.0018
MDM2	805.53	496.95	-1.62	-1.54	-1.71	-14.31	0.0004	-24.58	0.0017
ORC6	519.48	317.63	-1.64	-1.5	-1.8	-11.07	0.0039	-17.4	0.0033
MAPK8	441.07	265.22	-1.66	-1.54	-1.78	-9.514	0.0073	-9.503	0.0109
ANAPC10	376.39	220.7	-1.71	-1.57	-1.85	-9.967	0.0015	-25.96	0.0015
ANAPC11	59.54	34.7	-1.72	-1.64	-1.79	-19.17	0.0003	-40.77	0.0006
ATR	270.89	156.49	-1.73	-1.56	-1.91	-7.04	0.0176	-6.597	0.0222
CDC14A	95.26	55.06	-1.73	-1.62	-1.86	-14.41	0.0001	-154.5	4E-05

CREBBP	84.45	48.82	-1.73	-1.35	-2.21	-3.384	0.0424	-5.622	0.0302
RAD51	207.18	119.92	-1.73	-1.37	-2.3	-4.402	0.0219	-5.591	0.0305
SMAD2	387.14	222.73	-1.74	-1.56	-1.93	-8.14	0.003	-12.18	0.0067
ORC4	590.25	337.82	-1.75	-1.52	-1.99	-6.059	0.0118	-7.698	0.0165
E2F5	265.94	150.62	-1.77	-1.43	-2.13	-3.962	0.0434	-6.003	0.0266
TFDP2	340.22	189.78	-1.79	-1.56	-2.09	-8.017	0.0021	-17	0.0034
FBXW7	172.98	95.76	-1.81	-1.51	-2.11	-4.656	0.0368	-5.905	0.0275
YWHAQ	2984.2	1651.3	-1.81	-1.65	-1.98	-8.829	0.0071	-13.22	0.0057
DBF4	521.91	281.81	-1.85	-1.73	-1.98	-13.7	0.0013	-14.12	0.005
SKP2	401.75	217.35	-1.85	-1.71	-2.01	-15.56	0.0002	-11.21	0.0079
YWHAB	177.76	93.5	-1.9	-1.79	-2.01	-14.25	0.0042	-15.25	0.0043
NACA	59.67	30.99	-1.93	-1.64	-2.22	-5.465	0.0285	-4.789	0.0409
HDAC8	134.31	69.21	-1.94	-1.55	-2.49	-4.906	0.0089	-10.58	0.0088
EP300	292.79	147.59	-1.98	-1.66	-2.37	-5.55	0.015	-7.85	0.0158
CDKN1A	598.7	289.47	-2.07	-1.84	-2.33	-9.425	0.0023	-19.81	0.0025
GADD45B	85.04	39.76	-2.14	-1.78	-2.57	-5.94	0.0129	-11	0.0082
SKP1	75.13	34.11	-2.2	-1.84	-2.68	-7.591	0.002	-28.99	0.0012
CDK6	230.44	103.16	-2.23	-2.07	-2.42	-17.55	0.0002	-28.72	0.0012
E2F1	251.44	111.44	-2.26	-1.95	-2.61	-7.769	0.0074	-12.73	0.0061
TGFB1	190.08	81.23	-2.34	-2.04	-2.66	-8.309	0.0089	-10.31	0.0093
CDC25A	207.34	87.31	-2.37	-2.19	-2.58	-17.39	0.0002	-17.51	0.0032
CCNE1	424.24	173.01	-2.45	-2.29	-2.63	-18.99	0.0006	-32.2	0.001
CDKN2B	121.69	46.71	-2.61	-2.28	-3.03	-17.02	0.0005	-13.49	0.0055
POLR1A	20.72	7.9	-2.62	-1.74	-4.76	-4.215	0.0136	-5.3	0.0338
CCND3	90.91	32.49	-2.8	-2.28	-3.47	-7.425	0.0067	-10.9	0.0083
CCNE2	420.01	130.04	-3.23	-2.99	-3.51	-37.08	6E-06	-26.49	0.0014
DHFR	111.54	30.28	-3.68	-3.02	-4.54	-9.29	0.0052	-7.36	0.018

\$ 49 genes satisfied the comparison filtering criteria

Supplementary Table 4-4. The list of genes dysregulated by siMYCLO-3 in HCT116

*Filtering criteria: more than 1.5 fold change, p-value<0.05

probe set	siMYCLO-3	siCTRL	fold change	lower bound of FC	upper bound of FC	t statistic	P value	paired t statistic	paired P value	
PIK3R1	39.1	120.77	3.09	2.66	3.61	11.461	0.002	8.705	0.0129	
CDKN1A	85.75	262.71	3.06	2.48	3.93	9.873	0.0008	11.584	0.0074	
CREB3L4	5.39	14.84	2.75	1.93	4.74	6.556	0.0135	7.038	0.0196	
YWHAE	1112.8	2503.4	2.25	2.13	2.38	19.456	0.001	23.725	0.0018	
MCM4	536.87	1188.6	2.21	2.08	2.35	18.946	0.0005	25.102	0.0016	
RAD50	43.81	94.73	2.16	1.61	3.19	4.96	0.01	9.57	0.0107	
CDC7	83.08	165.21	1.99	1.73	2.32	9.806	0.0011	10.189	0.0095	
MNAT1	148.85	292.84	1.97	1.6	2.49	5.572	0.0052	4.73	0.0419	
ARF3	320.59	603.18	1.88	1.75	2.02	11.871	0.0031	16.841	0.0035	
TBC1D8	85.64	133.9	1.56	1.41	1.74	6.769	0.0039	4.887	0.0394	
CDC25B	437.32	290.59	-1.5	-1.4	-1.61	-9.2	0.0015	-28.62	0.0012	
E2F5	210.93	136.7	-1.54	-1.4	-1.71	-8.635	0.0043	-8.568	0.0133	
DHFR	58.9	27.48	-2.14	-1.82	-2.58	-8.826	0.001	-8.588	0.0133	
\$	13 genes satisfied the comparison filtering criteria									

Supplementary Table 5. List of primers used for RACE, PCR, Sequencing and Cloning.

Target LncRNA or Region	Name & Description	Usage	Sequence
MYCLo-1 (AK021907)	MYCLo-1 5 RACE	5'RACE	GCATTCTGACTTCTTGCTTGAAAACCCCTGG
MYCLo-1 (AK021907)	MYCLo-1 5 NESTED	5' nested PCR & Sequencing	TTAGTGGATAAGCACCTGTAACTCCAGGA
MYCLo-1 (AK021907)	MYCLo-1 INTERNAL- Forward	Internal-F & Sequencing	TTATTTTAACCGTCGTGAATACATCAAAAT
MYCLo-1 (AK021907)	MYCLo-1 INTERNAL- Reverse	Internal-R & Sequencing	TGGATTATAGCCCACCCAATCCTATTTT
MYCLo-1 (AK021907)	MYCLo-1 3 RACE	3'RACE	CCAGGGGTTTTCAAGCAAGAAGTCAGAATGC
MYCLo-1 (AK021907)	MYCLo-1 3 NESTED	3' nested PCR & Sequencing	AAATAGGATTGGGTGGGCTATAATCCA
MYCLo-2 (AC074389.9)	MYCLo-2 5 RACE	5'RACE	TGCTCTTGCAAGTGGCAGGAGGAGCTCCA
MYCLo-2 (AC074389.9)	MYCLo-2 5 NESTED	5' nested PCR & Sequencing	CTCCAACATGAATTAAGTAAATAACCAAG
MYCLo-2 (AC074389.9)	MYCLo-2 INTERNAL- Forward	Internal-F & Sequencing	AATTCCTCTCAGCCCCACCTAGTTTAAA
MYCLo-2 (AC074389.9)	MYCLo-2 INTERNAL- Reverse	Internal-R & Sequencing	AAGAGGAAGCAGAGCCAGCGCAT
MYCLo-2 (AC074389.9)	MYCLo-2 3 RACE	3'RACE	TGGAGCTCCTCTGCCACTGCAAGAGCA
MYCLo-2 (AC074389.9)	MYCLo-2 3 NESTED	3' nested PCR & Sequencing	AAGAGCAGGAGCTGTGTGCCTG
MYCLo-3 (KTN-AS1)	MYCLo-3 5 RACE	5'RACE	GGGAGGTCTACAGATCCCACCTTTACGC
MYCLo-3 (KTN-AS1)	MYCLo-3 5 NESTED	5' nested PCR & Sequencing	TGGCAGATAATTTTCAGTCATCTTTAATCT
MYCLo-3 (KTN-AS1)	MYCLo-3 INTERNAL- Forward	Internal-F & Sequencing	TCTGCACTGTGCTCTTTTGACCTGT
MYCLo-3 (KTN-AS1)	MYCLo-3 INTERNAL- Reverse	Internal-R & Sequencing	TCTCTGTCCTCATTTAATCCATTAATTTCC
MYCLo-3	MYCLo-3 3 RACE	3'RACE	CTCAAGACATCCCTGGAGCCTTTCAAGG

(KTN-AS1)			
MYCLO-3 (KTN-AS1)	MYCLO-3 3 NESTED	3' nested PCR & Sequencing	AAATTTGGGCAGAAGTAGGTAGAGAGGTA
MYCLO-1 5' promoter	MYCLO-1 5' promoter- Forward	Amplification of 5' promoter region of MYCLO-1	GGGAGGCTTATTTCTAATTGCTAGA
MYCLO-1 5' promoter	MYCLO-1 5' promoter- Reverse	Amplification of 5' promoter region of MYCLO-1	TGCAGTTTATAGCTATACATTATTTTTAAAAATCCC
MYCLO-1 5' promoter	MYCLO-1 5' promoter- Forward w/ Xho1	Insert into pGL4 w/ Xho1 digestion	CCGCTCGAGGGGAGGCTTATTTCTAATTGCTAGA
MYCLO-1 5' promoter	MYCLO-1 5' promoter- Reverse w/ Xho1	Insert into pGL4 w/ Xho1 digestion	CCGCTCGAGTGCAGTTTATAGCTATACATTATTTTTAAAAATCCC
MYCLO-2 5' promoter	MYCLO-2 5' promoter- Forward	Amplification of 5' promoter region of MYCLO-2	GATAGAGAAATGGGTGTGTTTGCTT
MYCLO-2 5' promoter	MYCLO-2 5' promoter- Reverse	Amplification of 5' promoter region of MYCLO-2	TGTTTCCTGCATGCATGCAACAT
MYCLO-2 5' promoter	MYCLO-2 5' promoter- Forward w/ Xho1	Insert into pGL4 w/ Xho1 digestion	CCGCTCGAGGATAGAGAAATGGGTGTGTTTGCTT
MYCLO-2 5' promoter	MYCLO-2 5' promoter- Reverse w/ Xho1	Insert into pGL4 w/Hind3 digestion	CCCAAGCTTTGTTTCCTGCATGCATGCAACAT
MYCLO-3 5' promoter	MYCLO-3 5' promoter- Forward	Amplification of 5' promoter region of MYCLO-3	CTGAAGGGGTCAGGCCGAAT
MYCLO-3 5' promoter	MYCLO-3 5' promoter- Reverse	Amplification of 5' promoter region of MYCLO-3	TTGCGGACAGCTTGGAGTGT
MYCLO-3 5' promoter	MYCLO-3 5' promoter- Forward w/ Xho1	Insert into pGL4 w/ Xho1 digestion	CCGCTCGAGCTGAAGGGGTCAGGCCGAAT
MYCLO-3 5' promoter	MYCLO-3 5' promoter- Reverse w/ Xho1	Insert into pGL4 w/ Xho1 digestion	CCGCTCGAGTTGCGGACAGCTTGGAGTGT
CDKN1A 5' promoter	CDKN1A 5' promoter (726bp) -Forward	Insert into pGL4 w/ Hind3 digestion	CACACAAGCTTATAGAGGTGATATTGTGGGGCTTTTCT
CDKN1A 5' promoter	CDKN1A 5' promoter (726bp) -Reverse	Insert into pGL4 w/ Hind3 digestion	CACACAAGCTTCAGAAACACCTGTGAACGCAGCA
CDKN1A 5' promoter	CDKN1A 5' promoter (1.8kb) -Forward w/	Insert into pGL4 w/ Nhe1 digestion	CTAGCTAGCTCAGTTTGCCCATTAATATTATAGGTCT

Nhe1

CDKN1A 5' promoter	CDKN1A 5' promoter (1.8kb) -Reverse w/ Xho1	Insert into pGL4 w/ Xho1 digestion	CCGCTCGAGACAAAATAGCCACCAGCCTCTTCTA
CDKN2B 5' promoter	CDKN2B 5' promoter (455bp) -Forward	Insert into pGL4 w/ Hind3 digestion	CACACAAGCTTGGTCTCCTAGGAAGGAGAGAGT
CDKN2B 5' promoter	CDKN2B 5' promoter (455bp) -Reverse	Insert into pGL4 w/ Hind3 digestion	CACACAAGCTTCAATGTCTCTCTTTAGGATTTTTGCTGG
CDKN2B 5' promoter	CDKN2B 5' promoter (2kb) -Forward w/ Xho1	Insert into pGL4 w/ Xho1 digestion	CCGCTCGAGTTGTCTGTAAAATTGAAATATGGACACATG
CDKN2B 5' promoter	CDKN2B 5' promoter (2kb) -Reverse w/ Xho1	Insert into pGL4 w/ Xho1 digestion	CCGCTCGAGATGTCCAGTAAAGCCAAGGCTAATATT
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-1 Forward	ChIP assay of CDKN1A 5' promoter	AAAGTGCTGGGATTACAGGCGTAA
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-1 Reverse	ChIP assay of CDKN1A 5' promoter	TTAGTAATTTTCAGTTTGCTCATGTTTCCTA
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-2 Forward	ChIP assay of CDKN1A 5' promoter	GTA CTTCAGATTTGTGATGCTAGGAA
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-2 Reverse	ChIP assay of CDKN1A 5' promoter	CACCATGCCAGCTAATATTTGTATTT
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-3 Forward	ChIP assay of CDKN1A 5' promoter	TGAGGCAGAATTGCTTGAACCTG
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-3 Reverse	ChIP assay of CDKN1A 5' promoter	CAGCCCTGGCTTTTTGTTTTTCATTT
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-4 Forward	ChIP assay of CDKN1A 5' promoter	TGCCACTGCTGACTTTGTCTCAA
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-4 Reverse	ChIP assay of CDKN1A 5' promoter	AAGAAGTGAGACCCCAGAGAAGA
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-5 Forward	ChIP assay of CDKN1A 5' promoter	AATAATGTTCTATCTTTGTTCCGCCTCT
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-5 Reverse	ChIP assay of CDKN1A 5' promoter	AAAGAGACTGGGGAGTCCCAAATA
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-6 Forward	ChIP assay of CDKN1A 5' promoter	TGTGTGAAGGTGAATTCCTCTGAAA
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-6 Reverse	ChIP assay of CDKN1A 5' promoter	TAGGAAGGGAGAGGAAGTGCT
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-7 Forward	ChIP assay of CDKN1A 5' promoter	TTGGGCTTTCCACCTTTCACCATT

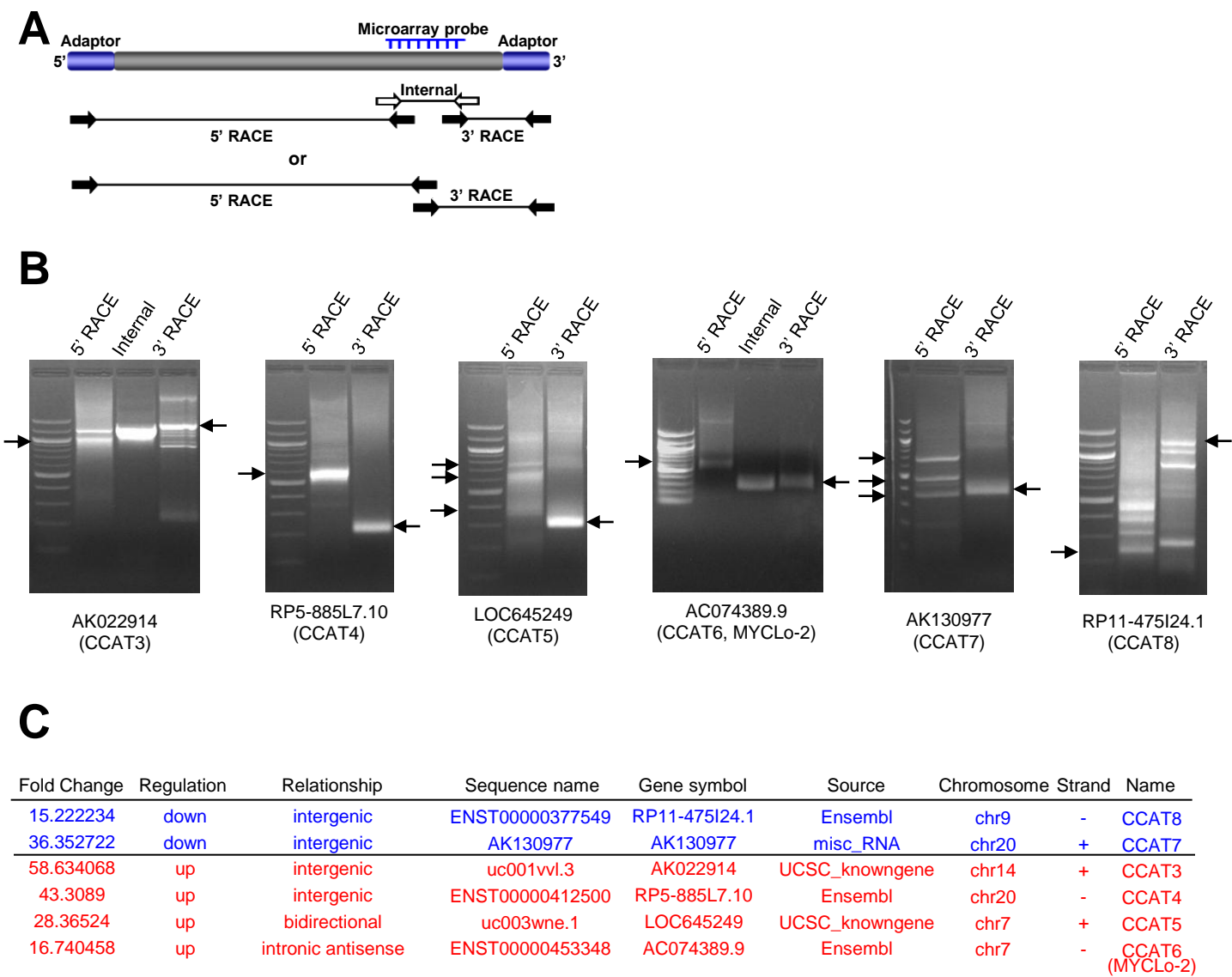
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-7 Reverse	ChIP assay of CDKN1A 5' promoter	AAGCATGTTCTCCTGGGAAGCAG
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-8 Forward	ChIP assay of CDKN1A 5' promoter	AACATGTCCCAACATGTTGAGCT
CDKN1A 5' promoter	CDKN1A 5' promoter ChIP-8 Reverse	ChIP assay of CDKN1A 5' promoter	TTTAGAGGTCTCCTGTCTCCTA
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-1 Forward	ChIP assay of CDKN2B 5' promoter	ATAAAAATAAGATACCTGACAAAGTGGGT
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-1 Reverse	ChIP assay of CDKN2B 5' promoter	TTATACTTTAAGAATCTGAGATCCCAGTTT
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-2 Forward	ChIP assay of CDKN2B 5' promoter	CAAAGATTTACTGTACAAATATGATGAAACTG
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-2 Reverse	ChIP assay of CDKN2B 5' promoter	AAAAGTAGTTCGAGATTGAGAGTGG
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-3 Forward	ChIP assay of CDKN2B 5' promoter	TTTTGTCTTATGTGTGCCAGGTTG
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-3 Reverse	ChIP assay of CDKN2B 5' promoter	GAATCATGTTTTGCGTGTGCTTTTTAATTC
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-4 Forward	ChIP assay of CDKN2B 5' promoter	TTCTCTTTTAAGGGTTGTATCCATAATGCA
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-4 Reverse	ChIP assay of CDKN2B 5' promoter	TGTCTTTCTGTTTGAATTAGTCAACCATAAAAAAT
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-5 Forward	ChIP assay of CDKN2B 5' promoter	AAACAGAAAGACACATCCAAGAGAAAATTG
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-5 Reverse	ChIP assay of CDKN2B 5' promoter	TCTGCACCTGTCATACAAGTTAAATTCAT
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-6 Forward	ChIP assay of CDKN2B 5' promoter	TTATGAAACTTGTGAAGCCCAAGTACT
CDKN2B 5' promoter	CDKN2B 5' promoter ChIP-6 Reverse	ChIP assay of CDKN2B 5' promoter	AGTCATTCAAATAACTCCGTGTTTCTTAAG

Supplementary Table 6. Information of custom and prebuilt siRNAs.

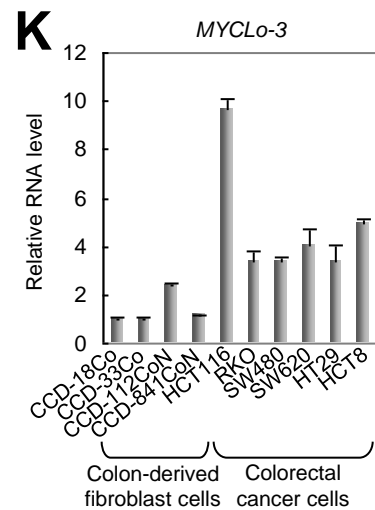
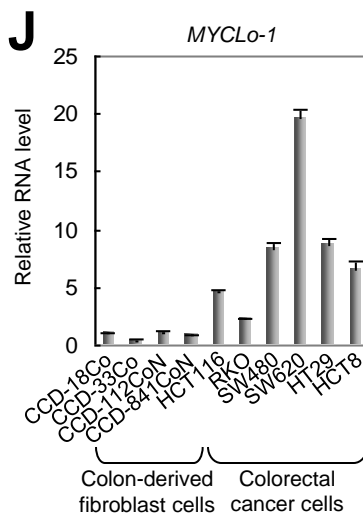
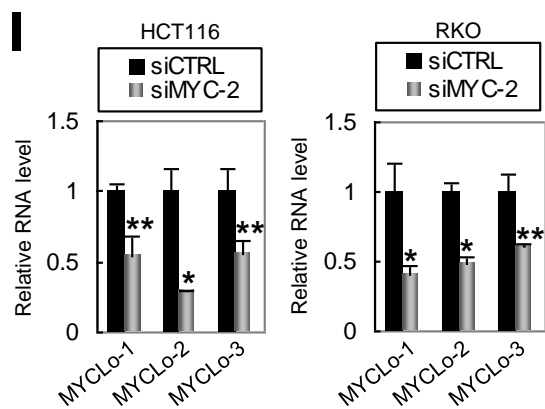
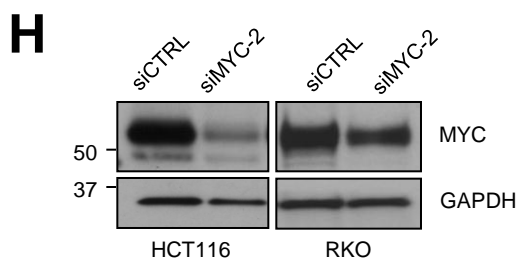
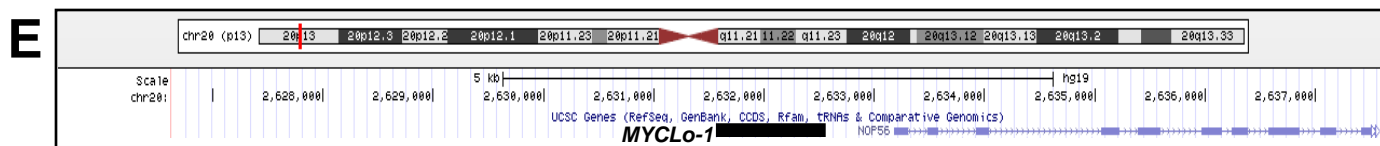
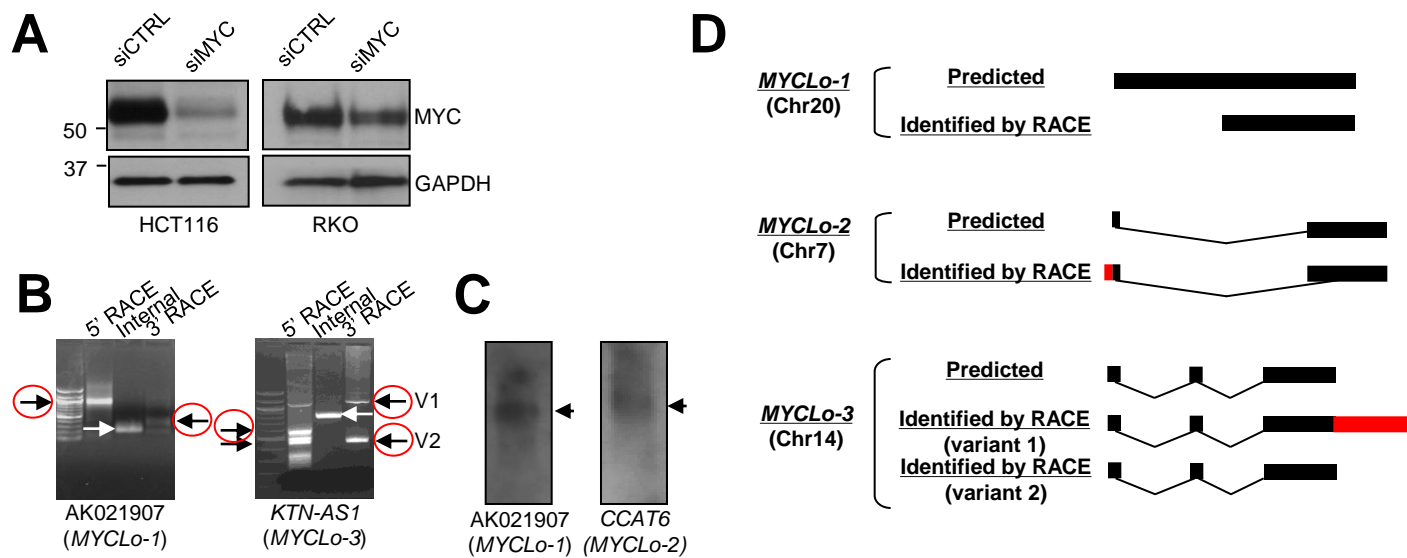
Name	Target LncRNA or mRNA	sequence	Information
siMYCLo-1 (-1)	MYCLo-1	CCUAAAUGUGGUUGGUA	Dharmacon custom siRNA
siMYCLo-1 (-2)	MYCLo-1	UUGUUAAGCGAUUGAGUUA	Dharmacon custom siRNA
siMYCLo-2 (-1)	MYCLo-2	CCTTTAATCTCTTGCTCAA	Dharmacon custom siRNA
siMYCLo-2 (-2)	MYCLo-2	CCACAAUCGUAUACACCUU	Dharmacon custom siRNA
siMYCLo-3 (-1)	MYCLo-3	GUGUAAAUCUUCAGGUAUA	Dharmacon custom siRNA
siMYCLo-3 (-2)	MYCLo-3	ACAGAAAGGUGCUUCAUAA	Dharmacon custom siRNA
siMYC	MYC (c-MYC mRNA)	N/A	Dharmacon ON-TARGETplus SMARTpool - Human MYC
siMYC-2	MYC (c-MYC mRNA)	N/A	Santa Cruz Biotechnology - Human MYC
siHuR	HuR (ELAVL1)	N/A	Dharmacon ON-TARGETplus SMARTpool - Human MYC
siCTRL	None	N/A	Dharmacon ON-TARGETplus Non-targeting Pool

Supplementary Table 7. Probes for qRT-PCR (Taqman Assay).

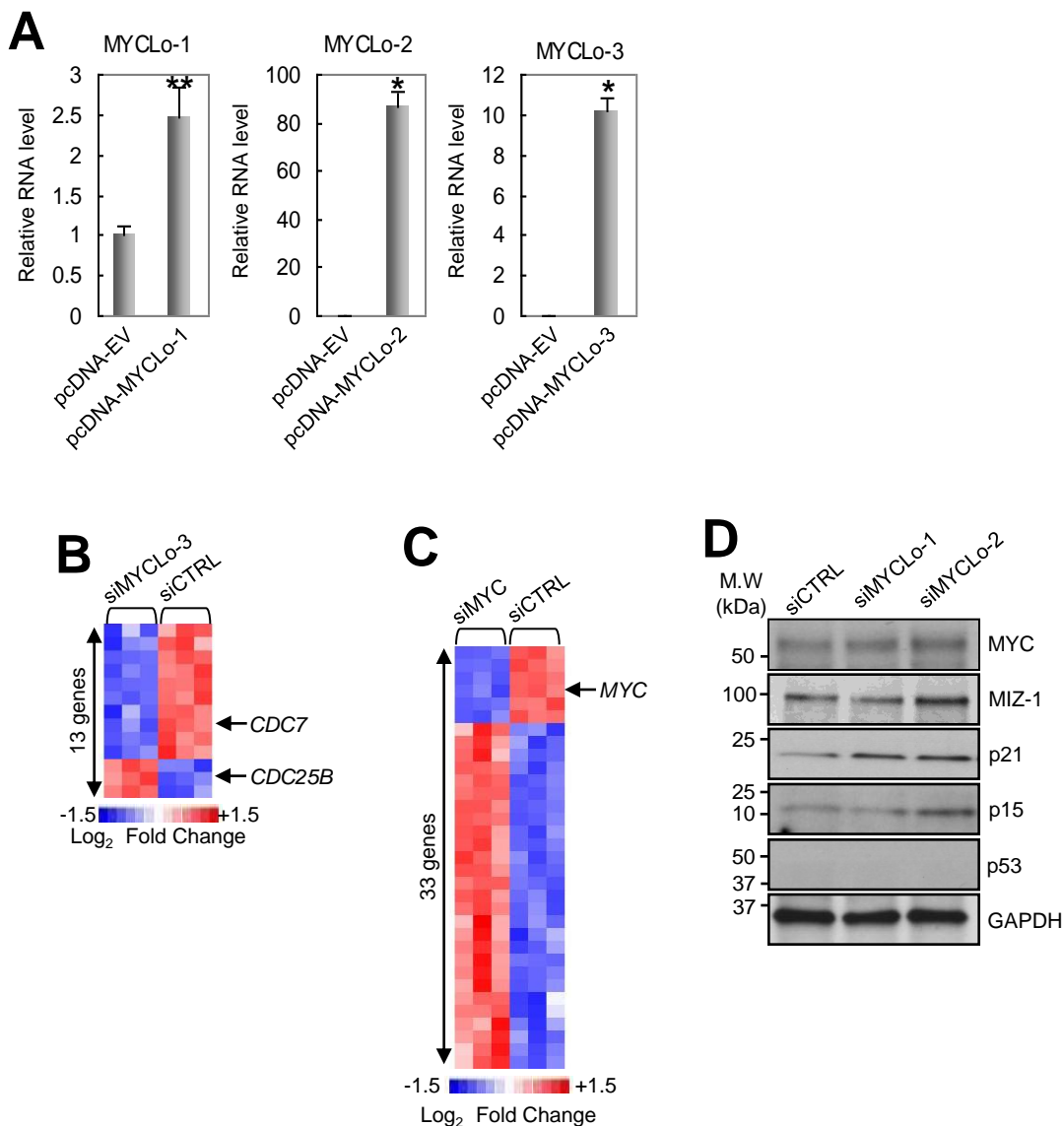
Target LncRNA or mRNA	Assay ID
MYCLo-1 (AK021907)	Hs01008390_s1
MYCLo-2 (AC074389.9)	Hs00419350_m1
MYCLo-3 (KTN-AS1)	Hs00872315_m1
MYC (c-MYC)	Hs00905030_m1
CDKN1A (p21)	Hs00355782_m1
CDKN2B (p15)	Hs00793225_m1
HNRNPK	Hs03989611_gH
ELAVL1 (HuR)	Hs00171309_m1
YWHAB	Hs00793604_m1
CFL1	Hs02621564_g1
SFN	Hs00968567_s1



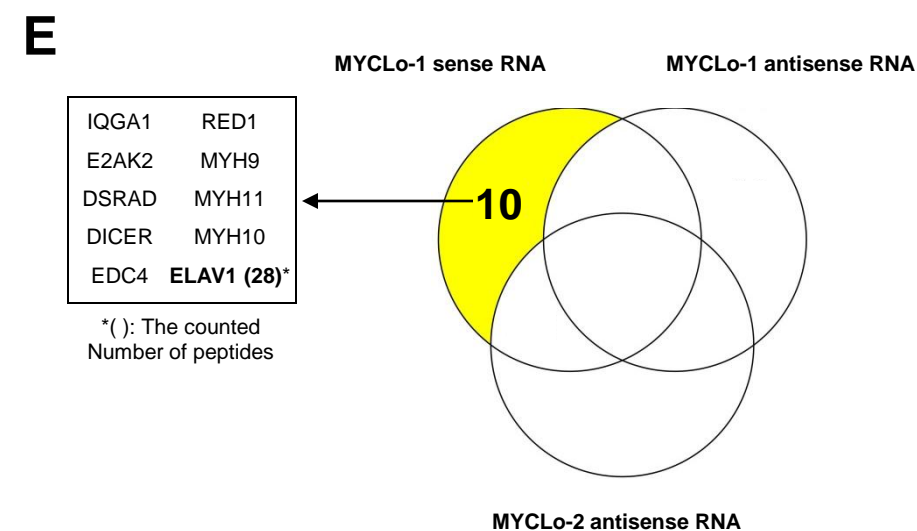
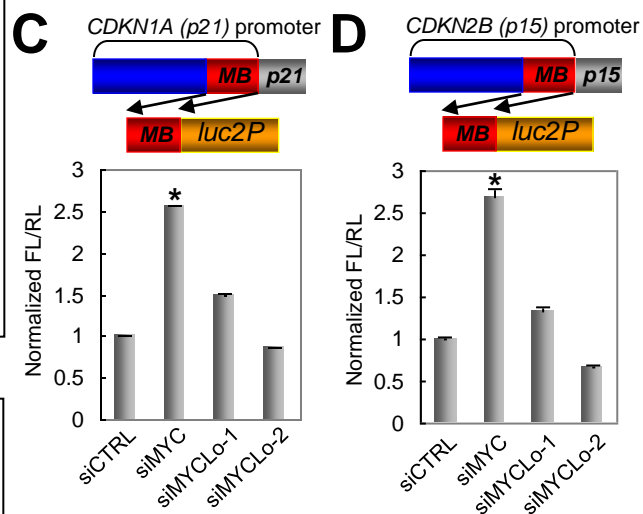
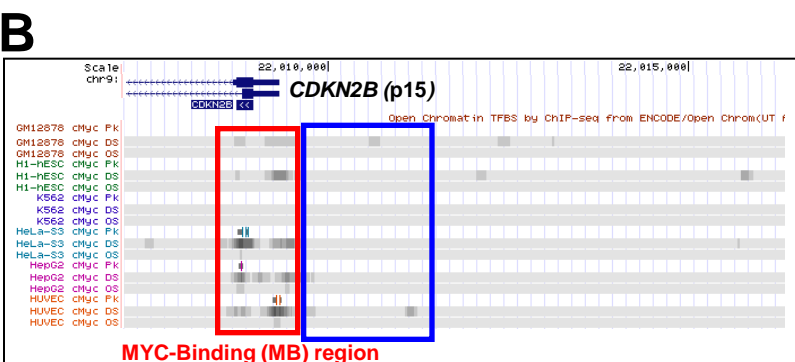
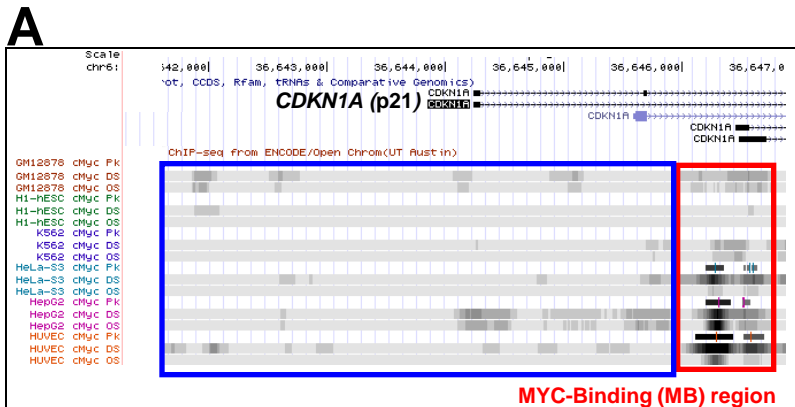
Supplementary Figure 1 (related to Figure 1). Identification of lncRNAs differentially expressed in colorectal cancer (CRC). A) Schematic view of the strategy of 5' and 3' RACE of lncRNAs. B) 5' (left lane) and 3' (right lane) RACE and amplification of internal region (middle lane) covering the both starting points of 5' and 3' RACE. Black arrows indicate appropriate 5' and 3' RACE products. The bands were confirmed by direct sequencing. C) Information of the identified Colorectal Cancer-Associated transcripts (CCATs).



Supplementary Figure 2 (related to Figure 2). Identification of MYC-regulated lncRNAs (MYCLOs) in colorectal cancer (CRC). A) Western blot analysis showing MYC protein levels decreased by siRNA targeting MYC. B) 5' (left lane) and 3' (right lane) RACE and amplification of internal region (middle lane) covering the both starting points of 5' and 3' RACE. Black arrows indicate appropriate 5' and 3' RACE products and white arrows indicate products of internal PCR. The bands were confirmed by direct sequencing. C) Northern blot analysis of the MYC-regulated lncRNAs (MYCLOs). D) Schematic view of MYCLOs identified by 5' and 3' RACE. The regions in red indicate additional sequence identified by RACE. E-G) Genomic localization of MYCLOs, MYCLO-1 in chromosome 20 (E), MYCLO-2 in chromosome 7 (F), MYCLO-3 in chromosome 14 (G). H) Western blot showing knockdown effect of an additional siRNA targeting MYC (siMYC-2) in HCT116 (left) and RKO (right). I) Decreased RNA levels of MYCLO-1, -2 and -3 by siMYC-2 in HCT116 (left) and RKO (right). Data are mean \pm S.D. of three independent experiments and each measured in triplicate (**, $P < 0.05$; *, $P = < 0.01$). J and K) qRT-PCR results showing predominant expression levels of MYCLO-1 (J) and MYCLO-3 (K) in CRC-derived cell lines. Data are mean \pm S.D. of three independent experiments and each measured in triplicate.



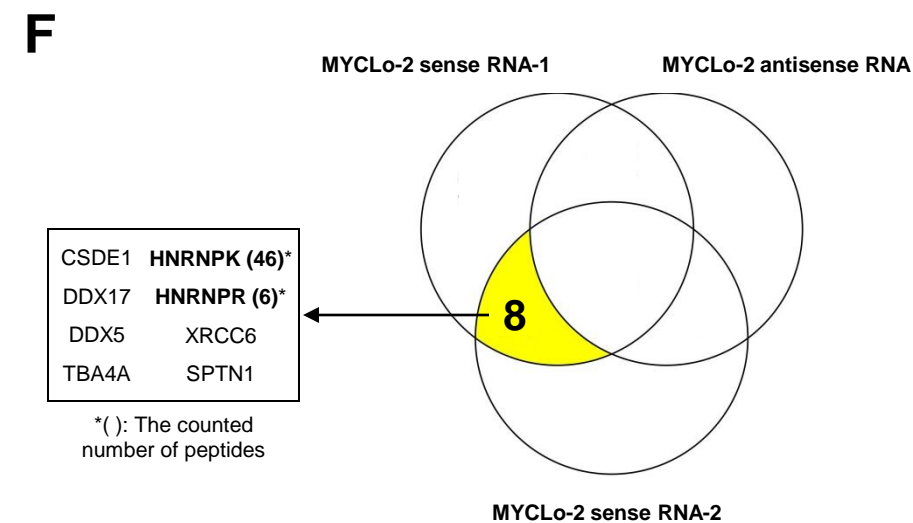
Supplementary Figure 3 (related to Figure 3). *MYC* regulates expression of various cell cycle-related genes. A) Confirmation of overexpression of MYCLO-1, -2, and -3 using expression vector. Data are mean \pm S.D. of three independent experiments and each measured in triplicate (**, $P < 0.05$; *, $P < 0.01$). B-C) Heatmaps representing cell cycle regulator genes dysregulated by MYCLO-3 (B) and MYC (C). The genes that are commonly regulated by MYC are indicated (B). Expression values displayed in gradient of red and blue are Log₂-transformed fold change. The list of the dysregulated genes is available in SupplementaryTable 4. D) Western blot analysis to confirm MYCLO-mediated regulation of CDKN1A (p21) and CDKN2B (p15), independent of MYC, MIZ-1 and p53.



G

RNA	HuR binding probability	
	RF classifier	SVM classifier
MYCLo-1	0.7	0.9
MYCLo-1 (401~690bp)	0.65	0.95
CDH2	0.8	0.91
DEK	0.6	0.77

- RIPSeq range 0~1
- Positive >0.5

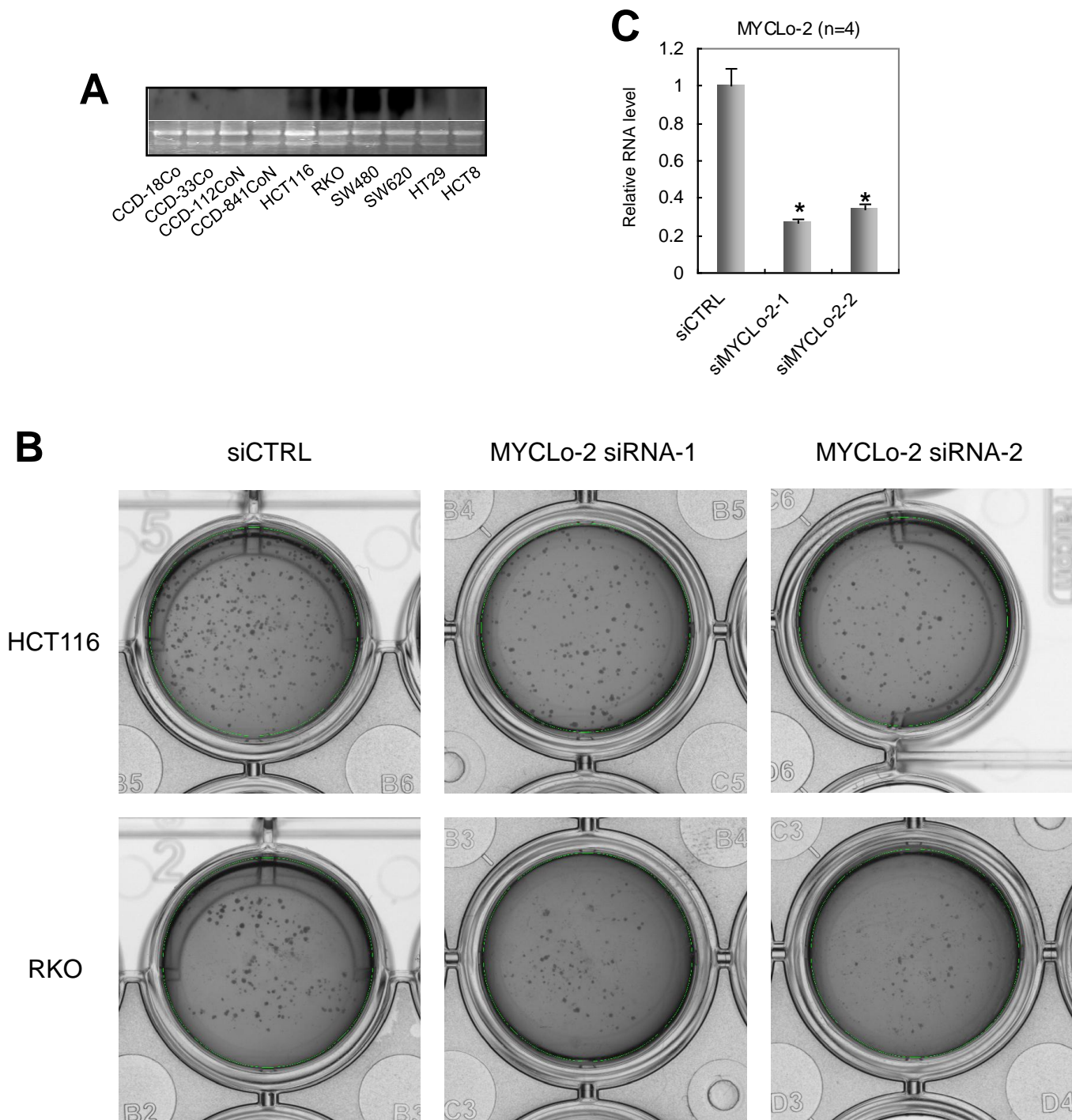


H

RNA	hnRNP binding probability	
	RF classifier	SVM classifier
MYCLo-2	0.7	0.56
MYCLo-2 (61-180)	0.55	0.72
MYCLo-2 (608-658)	0.5	0.76
lincRNA-p21 (Mus musculus)	0.7	0.69
COX2	0.7	0.97
CYTB	0.6	0.96

- RIPSeq range 0~1
- Positive >0.5

Supplementary Figure 4 (related to Figure 4). Interaction of MYCLOs with RNA binding proteins, such as HuR and hnRNPk, modulate 5' promoter activities of *CDKN1A* and *CDKN2B*, independent of MYC binding. A) Schematic view of *CDKN1A* (p21) 5' promoter and MYC binding region (Database of open chromatin TFBS by ChIP-seq from ENCODE/Open Chrom (UT Austin)). Boxed regions indicate the 5' promoter region cloned into pGL4 luciferase vectors (red box, Supplementary Figure 4C; blue box, Figure 4A). B) Schematic view of *CDKN2B* (p15) 5' promoter and MYC binding region (Database of open chromatin TFBS by ChIP-seq from ENCODE/Open Chrom (UT Austin)). Boxed regions indicate the 5' promoter region cloned into pGL4 luciferase vectors (red box, Supplementary Figure 4D; blue box, Figure 4B). C and D) (Top) Schematics of pGL4 luciferase vectors inserted with proximal MYC binding regions in 5' promoters of *CDKN1A* (C) and *CDKN2B* (D). (Bottom) Luciferase reporter assays representing transcription activity of the proximal MYC binding regions of *CDKN1A* (C) and *CDKN2B* (D) in HCT116 cells transfected with the pGL4 luciferase vectors and siRNAs as indicated. Data are mean \pm S.D. of three independent experiments and each measured in triplicate (**, $P < 0.05$; *, $P = < 0.01$). E and F) Identification of specific MYCLO-1 (E) and MYCLO-2 (F) binding proteins using LC-MS/MS. G and H) Prediction results of interaction probability of HuR/MYCLO-1 (G) and hnRNPk/MYCLO-2 (H). Similar to the prediction results using full-length sequence of MYCLO-1/2, the prediction results using partial sequence of MYCLO-1 (G) and MYCLO-2 (H) are also highlighted with red boxes. Other RNAs known to interact with the RNA-binding proteins were used as positive controls.



Supplementary Figure 5 (related to Figure 5). The expression and function of MYCLO-2 in CRC. A) Northern blot analysis of *MYCLO-2* RNA level in colon-derived cell lines is shown with 18s/28s quantification. B) Representative images of soft agar colony formation assays shown in Figure 5D. C) qRT-PCR results showing the knockdown effect of siRNAs targeting *MYCLO-2* on 10 days after transfection in HCT116 cells. Data are mean \pm S.D. of four independent experiments and each measured in triplicate (*, $P < 0.01$).