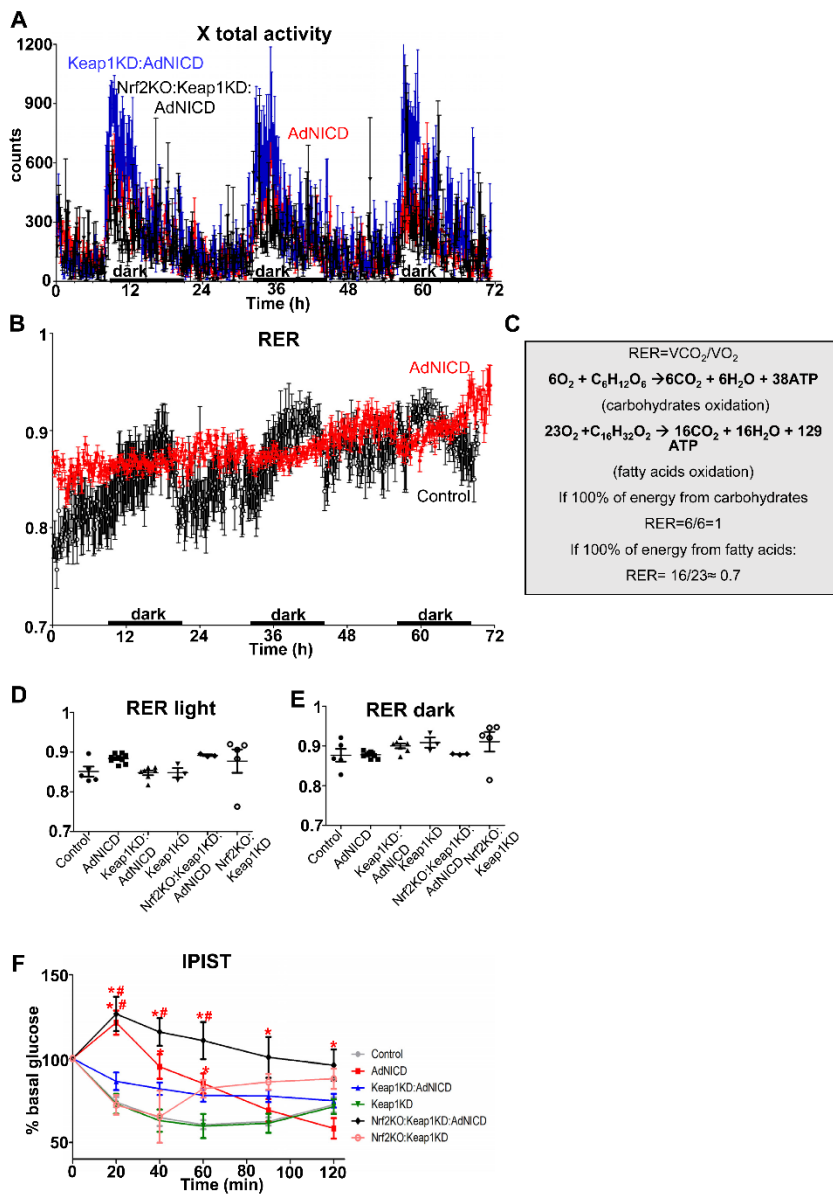
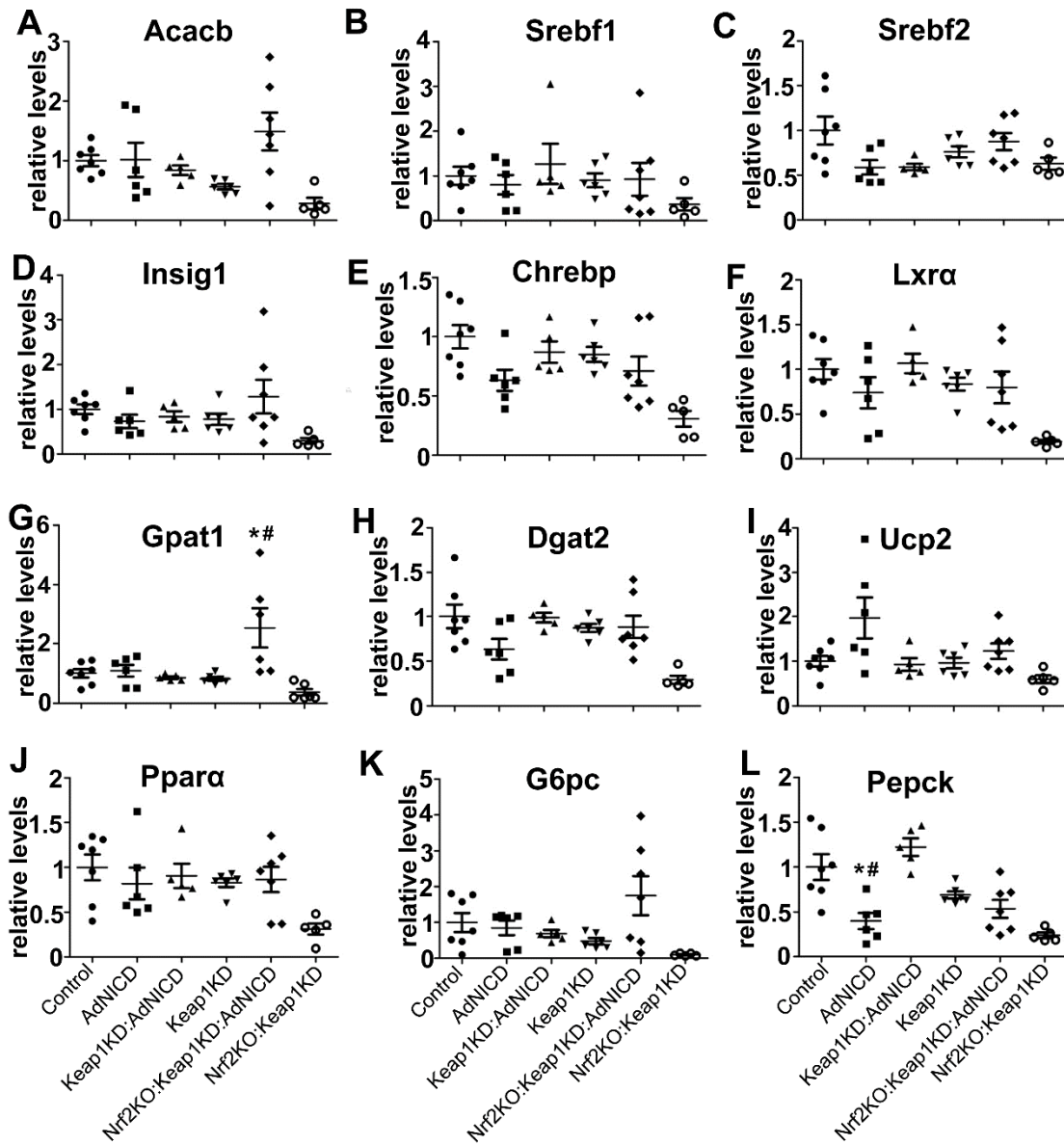


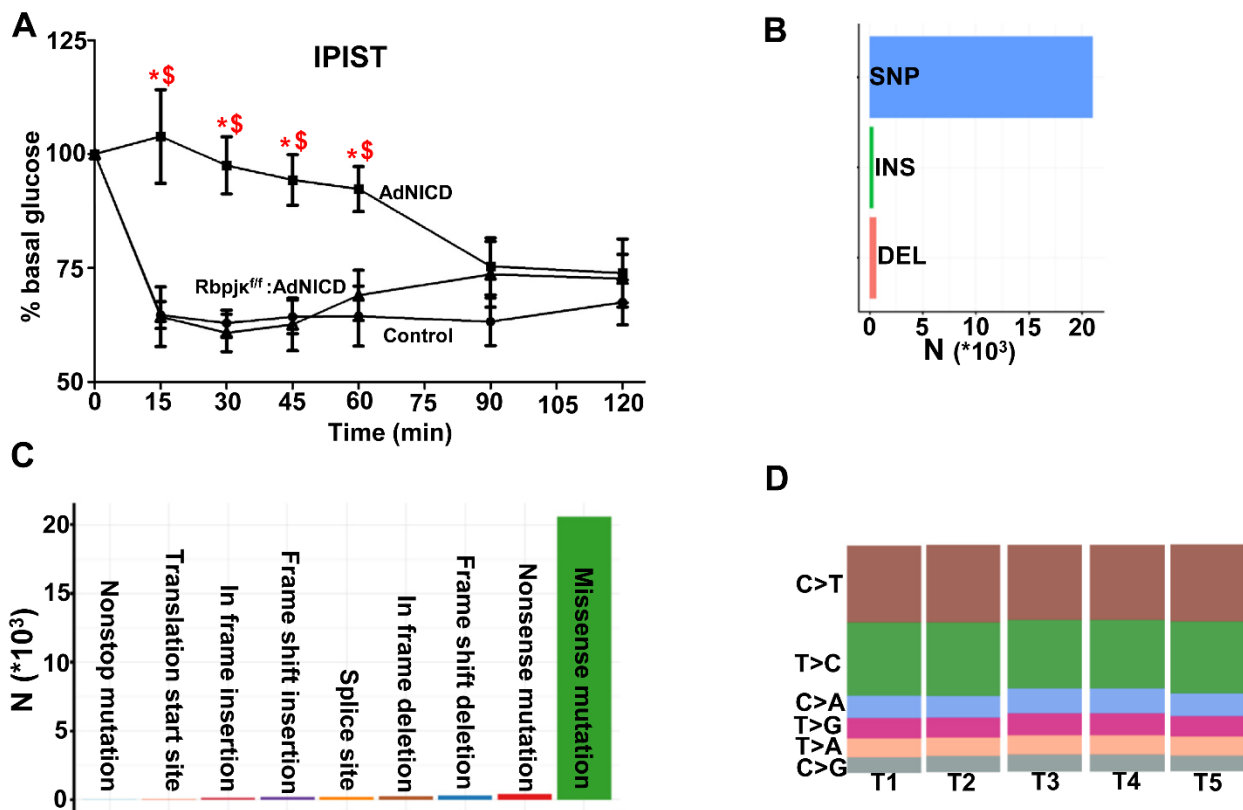
**Supplemental Figure 1. Notch1 overexpression in subcutaneous adipose tissue in retrovirals-treated patients and indirect calorimetry data in mice.** *NOTCH1* expression is induced in subcutaneous adipose tissue in HIV(+) humans treated with antiretrovirals for 18-24 months. Relative *NOTCH1* mRNA levels in subcutaneous adipose tissue before and after treatment with either (A) zidovudine (AZT), lamivudine (LAM) and efavirenz (EF) or (B) tenofovir (TDF), LAM and EF, for 18-24 months. Microarray RNA expression data were extracted from GEO under accession number GSE62117 using the Illumina BaseSpace Correlation Engine. All data represent mean  $\pm$  S.E.M. \* $P < 0.01$  (t-test) compared to the relative expression before treatment. (C) Food consumption assessment over a 3-day period, in 3-month old male mice. \* $P < 0.05$  compared to Control mice (one-way ANOVA). (D) Heat production in Control and AdNICD mice,  $n = 5$  and  $n = 9$ , respectively. (E) Energy expenditure assessment over a 3-day period in 2.5-month-old male mice plotted as per day body-weight (BW) corrected heat production. \* $P < 0.05$  (t-test) (F) Energy expenditure assessment without normalization to BW. ANCOVA analysis showed no statistically significant difference between the 2 groups.



**Supplemental Figure 2. Total activity, RER in light and dark cycle and IPIST data. (A)** Total activity of 2.5-month old mice assessed over a 3-day period. Data are expressed as counts of beam breaks in periods of 10 minutes. (red line: AdNICD, blue line: Keap1KD:AdNICD, black line: Nrf2KO:Keap1KD:AdNICD with n=9, n=7 and n=3, correspondingly). **(B)** Respiratory exchange ratio (RER) tracing of mice of 2 genotypes (red line: AdNICD, black line: Control with n=9 and n=5 correspondingly) over a period of 72h. **(C)** Equation for calculation of RER and indicative oxidation reactions of carbohydrates and fatty acids. RER for all mouse genotypes during **(D)** light and **(E)** dark cycle over a period of 72h (one-way ANOVA). **(F)** Blood glucose levels expressed as % of basal glucose (time=0) during an intraperitoneal insulin sensitivity test (IPIST) in 2-month old mice of all genotypes. Control (n=7), AdNICD (n=4), Keap1KD:AdNICD (n=5), Keap1KD (n=6), Nrf2KO:Keap1KD:AdNICD (n=5), Nrf2KO:Keap1KD (n=5). All data represent mean  $\pm$  S.E.M. \*P<0.05 compared to Control mice. #P<0.05 compared to Keap1KD:AdNICD mice (two-way ANOVA).



**Supplemental Figure 3. Hepatic gene expression.** Quantitative real-time PCR-assessed liver mRNA levels of (A) mitochondrial acetyl-coA carboxylase *Acacb*, (B-F) transcription factors that drive lipogenic pathways, (G-H) triglyceride biosynthesis enzymes, (I-J) fatty acid oxidation enzymes and (K-L) gluconeogenesis enzymes. All data represent mean  $\pm$  S.E.M. \* $P < 0.05$  compared to Control mice. # $P < 0.05$  compared to Keap1KD:AdNICD mice. One-way ANOVA was used.



**Sup. Fig. 4. IPIST expressed as % basal glucose in *Rbpjk<sup>ff</sup>:AdNICD* mice and mutational burden in AdNICD tumors.** (A) Blood glucose levels expressed as % of basal glucose (time=0) during an intraperitoneal insulin sensitivity test (IPIST) in 2.5-month old mice. Control (n=6), AdNICD (n=4) and *Rbpjk<sup>ff</sup>:AdNICD* (n=4). All data represent mean  $\pm$  S.E.M. Two-way ANOVA was used for comparisons. (B) Variant types in the 5 AdNICD tumor samples (SNP; single nucleotide polymorphism, INS; insertion, DEL; deletion). (C) Variant classification in the 5 tumor samples. (D) Transitions and transversions in each one of the 5 tumor samples (T1 to T5).

**Supplemental Table 1.** Primer sequences used in real-time PCR

Gene	Primer 1 (forward)	Primer 2 (reverse)
<i>Fasn</i>	GGAGGTGGTGATAGCCGGTAT	TGGGTAATCCATAGAGCCCAG
<i>Acaca</i>	ATGGGCGGAATGGTCTCTTTC	TGGGGACCTTGTCTTCATCAT
<i>Acly</i>	AAGAAGGAGGGGAAGCTGAT	TCGCATGTCTGGGTTGTTTA
<i>Me1</i>	GCAGCTCTTCGAATAACCAAG	AAGTGAGCAATCCCCAAGG
<i>Pdhal</i>	GAAATGTGACCTTCATCGGCT	TGATCCGCCTTTAGCTCCATC
<i>Elovl1</i>	TCCAAAGCTACCCTCTGATGG	AGGGAGAGTATCACCAGTGAGA
<i>Elovl3</i>	GGACCTGATGCAACCCTATGA	TCCGCGTTCTCATGTAGGTCT
<i>Elovl6</i>	GAAAAGCAGTTCAACGAGAACG	AGATGCCGACCACCAAAGATA
<i>Scd1</i>	TTCTTGCGATACACTCTGGTGC	CGGGATTGAATGTTCTTGTCGT
<i>Scd2</i>	GCATTTGGGAGCCTTGTACG	AGCCGTGCCTTGTATGTTCTG
<i>Cd36</i>	AGATGACGTGGCAAAGAACAG	CCTTGGCTAGATAACGAACCTCTG
<i>Nrf2</i>	CCATTTACGGAGACCCACCGCCTG	CTCGTGTGAGATGAGCCTCTAAGCGG
<i>Nqo1</i>	GGCATCCTGCGTTTCTGTG	GGTTTCCAGACGTTTCTTCCAT
<i>Fgf21</i>	CAAGACACTGAAGCCCACCT	CACCCAGGATTTGAATGACC
<i>Nicd</i>	TGAGACAGGCAACAGTGAAG	CAGCATCTGAACGAGAGTATCG
<i>Hes1</i>	ATAGCTCCCGGCATTCCAAG	GCGCGGTATTTCCCCAACA
<i>Acacb</i>	CCTTTGGCAACAAGCAAGGTA	AGTCGTACACATAGGTGGTCC
<i>Srebf1</i>	GATGTGCGAACTGGACACAG	CATAGGGGGCGTCAAACAG
<i>Srebf2</i>	GCAGCAACGGGACCATTCT	CCCCATGACTAAGTCCTTCAACT
<i>Insig1</i>	CACGACCACGTCTGGA ACTAT	TGAGAAGAGCACTAGGCTCCG
<i>Chrebp</i>	CCAGCCTCAAGGTGAGCAA	CATGTCCCGCATCTGGTCA
<i>Lxra</i>	ACAGAGCTTCGTCCACAAAAG	GCGTGCTCCCTTGATGACA
<i>Gpat1</i>	ACAGTTGGCACAATAGACGTTT	CCTTCCATTTCAAGTGTGCAGA
<i>Dgat2</i>	GCGCTACTTCCGAGACTACTT	GGGCCTTATGCCAGGAAACT
<i>Ucp2</i>	ACTTTCCTCTGGATAACCGC	ACGGAGGCAAAGCTCATCTG
<i>Ppara</i>	AGAGCCCCATCTGTCCTCTC	ACTGGTAGTCTGCAAAACCAA
<i>G6pc</i>	CGACTCGCTATCTCCAAGTGA	GTTGAACCAGTCTCCGACCA
<i>Pepck</i>	CTGCATAACGGTCTGGACTTC	CAGCAACTGCCCGTACTCC
<i>Actb</i>	GGCTGTATTCCCCTCCATCG	CCAGTTGGTAACAATGCCATGT
<i>B2m</i>	TTCTGGTGCTTGTCTCACTGA	CAGTATGTTCCGGCTTCCCATT
<i>Rpl4</i>	CCGTCCCCTCATATCGGTGTA	GCATAGGGCTGTCTGTTGTTTT
<i>Rps29</i>	TCTACTGGAGTCACCCACGGAA	GGAAGCACTGGCGGCACA
<i>Tbp</i>	AAGAGAGCCACGGACA ACTG	TACTGAACTGCTGGTGGGTC

**Supplemental Table 2. SNPs that are located in gene coding areas in AdNICD liposarcomas.**

GENE	CHR	START	STOP	NSNPS	ZSTAT	P
ACSF2	11	94557101	94601786	1	1.8118	0.03501
KRT83	15	101485129	101491512	4	1.6791	0.046568
GM21119	8	19729575	20063170	6	1.6159	0.05306
KRT85	15	101431013	101491303	6	1.5116	0.065321
ZNF41-PS	4	145789514	145831978	5	1.3613	0.086704
CDH11	8	102632094	102785111	3	1.3134	0.094522
VMN2R88	14	51411000	51418882	5	1.1116	0.13315
5031410I06RIK	5	26098667	26105314	1	1.0621	0.1441
GM10635	9	79444036	79519302	1	1.0056	0.1573
DUX	10	58230650	58232675	3	0.96117	0.16823
VMN2R112	17	22601147	22619133	5	0.95645	0.16942
ZFP936	7	43177587	43192109	5	0.84622	0.19871
KRT86	15	101473477	101479983	2	0.70703	0.23977
PCNX2	8	125751507	125898317	2	0.69639	0.24309
SFI1	11	3131849	3193463	9	0.60802	0.27159
TMEM131L	3	83898286	84040161	1	0.58225	0.2802
TRIM43A	9	88581035	88588819	1	0.58225	0.2802
TAF15	11	83473107	83506740	1	0.58225	0.2802
PPP4R2	6	100833637	100868717	1	0.56805	0.285
ATRNL1	19	57611033	58133340	4	0.56715	0.28531
GM20767	13	120140245	120155335	3	0.50193	0.30786
PISD-PS1	11	3124020	3131944	1	0.49245	0.3112
6430706D22RIK	1	88263112	88269408	6	0.48152	0.31507
COPZ1	15	103272917	103299864	2	0.47961	0.31575
FBXW8	5	118064980	118155458	1	0.40647	0.3422
SPEER4E	5	14933630	14938475	5	0.33443	0.36903
SP100	1	85649987	85683118	3	0.20205	0.41994
ASS1	2	31470269	31520670	1	0.13679	0.4456
GM5424	2	31470307	31520629	1	0.13679	0.4456
RPH3A	5	120940499	121008484	1	0.060195	0.476
MAP2K5	9	63163769	63377852	1	0.060195	0.476
CSNK1G1	9	65909009	66045014	1	0.060195	0.476
GSTA4	9	78191965	78209349	1	0.060195	0.476
BCL2A1A	9	88956919	88962416	1	0.060195	0.476
GM10220	5	26114763	26121425	2	0.05314	0.47881
DIABLO	5	123511329	123524164	3	0.05314	0.47881
NEDD4	9	72662346	72749848	1	0.051409	0.4795
NME9	9	99456242	99479899	1	0.051409	0.4795
ARMC8	9	99478390	99568899	1	0.051409	0.4795
ZFP984	4	147753973	147809788	10	0.050698	0.47978
VMN2R116	17	23384802	23401864	6	0.042204	0.48317
MROH1	15	76380512	76453039	2	0.028548	0.48861

ZFP180	7	24081896	24107708	1	0.024567	0.4902
CINP	12	110872609	110889145	4	0.013066	0.49479
VMN1R2	4	3172082	3173003	1	-0.00577	0.5023
ZFP600	4	146156826	146198756	1	-0.00577	0.5023
NPHP3	9	104002543	104016686	1	-0.00577	0.5023
RPL17	18	75000476	75003381	1	-0.00577	0.5023
HJURP	1	88258855	88277579	45	-0.01427	0.50569
MUP2	4	61300018	61439702	1	-0.06271	0.525
MUP14	4	61300036	61303998	1	-0.06271	0.525
GM1979	5	26000171	26004727	1	-0.06271	0.525
PLSCR4	9	92457377	92492516	1	-0.06798	0.5271
GM14391	2	175869237	175988574	3	-0.06857	0.52733
UGT1A1	1	88211958	88220002	18	-0.13421	0.55338
2410131K14RIK	5	118245226	118263114	2	-0.18865	0.57481
MROH2A	1	88227019	88262289	183	-0.2134	0.58449
A730008H23RIK	1	88264827	88277557	43	-0.2148	0.58504
UGT1A10	1	88055410	88220002	21	-0.22806	0.5902
UGT1A9	1	88070778	88220002	21	-0.22806	0.5902
UGT1A7C	1	88095000	88220002	21	-0.22806	0.5902
UGT1A6B	1	88103256	88218998	21	-0.22806	0.5902
UGT1A6A	1	88134808	88220002	21	-0.22806	0.5902
UGT1A5	1	88166011	88220002	21	-0.22806	0.5902
UGT1A2	1	88200610	88220002	21	-0.22806	0.5902
ZFP987	4	146097311	146126623	8	-0.24139	0.59537
SP110	1	85576898	85598810	6	-0.2422	0.59569
PFDN2	1	171345698	171358170	2	-0.25843	0.60196
HIST4H4	6	136803992	136804431	2	-0.26366	0.60398
USP17LE	7	104768048	104777470	4	-0.26677	0.60518
CGNL1	9	71626506	71771602	4	-0.2685	0.60584
EU599041	7	43214038	43226842	7	-0.29323	0.61533
MUP18	4	61670177	61674094	3	-0.33458	0.63103
B3GNT4	5	123510459	123511882	3	-0.36752	0.64338
SYTL3	17	6673609	6738044	2	-0.3694	0.64409
NPM1	11	33152497	33163206	3	-0.37136	0.64482
4930572O03RIK	5	15652287	15657059	2	-0.38153	0.64859
RAB8B	9	66843663	66919705	2	-0.3838	0.64944
LOC105242399	5	15576946	15582097	3	-0.39708	0.65435
NLRP5	7	23385888	23441923	10	-0.41069	0.65935
MUP5	4	61831318	61835180	2	-0.4488	0.67321
IL1RN	2	24336859	24351491	2	-0.44956	0.67349
GM13212	4	145585199	145625343	6	-0.45792	0.6765
SIRPB1B	3	15495753	15575065	11	-0.47339	0.68203
TRIM43C	9	88839163	88848190	3	-0.48914	0.68763
TPM1	9	67022592	67043871	3	-0.49033	0.68805
ZFP981	4	146501999	146539395	2	-0.49535	0.68982

1700095A21RIK	4	146519038	146546873	2	-0.49535	0.68982
MUC6	7	141633971	141655319	4	-0.50072	0.69172
DDX17	15	79527695	79532917	1	-0.52526	0.7003
0610010B08RIK	2	175192004	175338212	2	-0.54878	0.70842
GM14440	2	175275124	175286805	2	-0.54878	0.70842
KPNA4	3	69072220	69127092	1	-0.55251	0.7097
PDGFC	3	81036415	81214031	1	-0.55251	0.7097
VCPKMT	12	69577627	69583028	1	-0.55251	0.7097
TOP1MT	15	75657032	75678790	1	-0.55251	0.7097
GPAA1	15	76331293	76334899	1	-0.55251	0.7097
LRRC71	3	87736922	87748623	2	-0.55586	0.71085
HECTD4	5	121220218	121368577	2	-0.55586	0.71085
ALDH2	5	121566026	121593824	2	-0.55586	0.71085
DAPK2	9	66158225	66272242	2	-0.55586	0.71085
6820431F20RIK	8	20268285	20297432	3	-0.55837	0.71117
CHRNA9	5	65967123	65977486	2	-0.5621	0.71298
TTK	9	83834688	83869493	2	-0.56777	0.7149
CHD5	4	152338650	152390194	1	-0.57543	0.7175
MAMDC4	2	25563114	25571316	1	-0.59237	0.7232
FGA	3	83026152	83033617	1	-0.59237	0.7232
CD5L	3	87357880	87371074	1	-0.59237	0.7232
MUP9	4	60418045	60421952	1	-0.59237	0.7232
GM10354	5	14974496	14978899	1	-0.59237	0.7232
PRKAB1	5	116013589	116024428	1	-0.59237	0.7232
OAS1A	5	120896256	120907525	1	-0.59237	0.7232
RPL6	5	121204500	121209241	1	-0.59237	0.7232
TRAFD1	5	121371724	121385615	1	-0.59237	0.7232
ARPC3	5	122391877	122406181	1	-0.59237	0.7232
ANAPC7	5	122422443	122444911	1	-0.59237	0.7232
SETD1B	5	123142192	123168630	1	-0.59237	0.7232
LRRC43	5	123489324	123508205	1	-0.59237	0.7232
CLIP1	5	123577793	123684361	1	-0.59237	0.7232
HIP1R	5	123973627	124003215	1	-0.59237	0.7232
CDK2AP1	5	124345438	124354628	1	-0.59237	0.7232
SBNO1	5	124368701	124425914	1	-0.59237	0.7232
TUBB3	8	123411563	123422010	1	-0.59237	0.7232
SPESP1	9	62270728	62282179	1	-0.59237	0.7232
ITGA11	9	62677854	62783979	1	-0.59237	0.7232
IQCH	9	63421448	63602493	1	-0.59237	0.7232
SMAD3	9	63646766	63757994	1	-0.59237	0.7232
IGDCC3	9	65141188	65185870	1	-0.59237	0.7232
PARP16	9	65214689	65239219	1	-0.59237	0.7232
CLPX	9	65294259	65330658	1	-0.59237	0.7232
PDCD7	9	65346067	65359643	1	-0.59237	0.7232
RASL12	9	65398487	65412707	1	-0.59237	0.7232



OAZ2	9	65676547	65690300	1	-0.59237	0.7232
ZFP609	9	65691582	65827564	1	-0.59237	0.7232
FAM96A	9	66126610	66138968	1	-0.59237	0.7232
CAR12	9	66713685	66766845	1	-0.59237	0.7232
CCNB2	9	70407688	70421554	1	-0.59237	0.7232
RNF111	9	70425428	70503725	1	-0.59237	0.7232
TCF12	9	71844251	72111201	1	-0.59237	0.7232
ZFP280D	9	72274887	72363771	1	-0.59237	0.7232
RFX7	9	72532239	72622949	1	-0.59237	0.7232
ARPP19	9	75037613	75060313	1	-0.59237	0.7232
MYO5C	9	75232013	75305450	1	-0.59237	0.7232
GNB5	9	75306287	75345923	1	-0.59237	0.7232
TMOD3	9	75497783	75559657	1	-0.59237	0.7232
SCG3	9	75643365	75684056	1	-0.59237	0.7232
GCLC	9	77754534	77794489	1	-0.59237	0.7232
OMT2A	9	78311971	78314048	1	-0.59237	0.7232
OMT2B	9	78328029	78329620	1	-0.59237	0.7232
CD109	9	78615545	78716260	1	-0.59237	0.7232
MYO6	9	80165033	80311729	1	-0.59237	0.7232
PHIP	9	82866158	82975489	1	-0.59237	0.7232
SNAP91	9	86765926	86880397	1	-0.59237	0.7232
SNHG5	9	88521052	88522897	1	-0.59237	0.7232
GM7104	12	88282866	88287070	1	-0.59237	0.7232
CRHBP	13	95431375	95444831	1	-0.59237	0.7232
4921509O07RIK	13	113446287	113502844	1	-0.59237	0.7232
GM5797	14	7323987	7332395	1	-0.59237	0.7232
TROAP	15	99074972	99083409	1	-0.59237	0.7232
KDELR3	15	79516407	79527739	1	-0.59267	0.7233
TOMM22	15	79670867	79672862	1	-0.59267	0.7233
SREBF2	15	82147268	82204960	1	-0.59267	0.7233
ZFP966	2	175372461	175385279	2	-0.59481	0.72401
ZFP967	2	175372461	175385279	2	-0.59481	0.72401
ACAD10	5	121621028	121660510	2	-0.59481	0.72401
IFT81	5	122550203	122614518	2	-0.59481	0.72401
ANP32A	9	62341342	62378805	2	-0.59481	0.72401
AAGAB	9	63602654	63641889	2	-0.59481	0.72401
F2RL1	13	95511729	95525240	5	-0.59481	0.72401
MUCL1	15	103751922	103899300	1	-0.60858	0.7286
AMY2A3	3	113279836	113291449	3	-0.61352	0.73023
AMY2A4	3	113279836	113291449	3	-0.61352	0.73023
AMY2A2	3	113279836	113291449	3	-0.61352	0.73023
TOPBP1	9	103305326	103350427	2	-0.61957	0.73223
VMN2R115	17	23343976	23360128	79	-0.62087	0.73266
MCM7	5	138164588	138171862	1	-0.62892	0.7353
LNCPPARA	15	85703772	85707524	1	-0.63014	0.7357

GM7827	8	71140368	71171456	8	-0.634	0.73696
SAPCD2	2	25372034	25378213	1	-0.63873	0.7385
CLIC3	2	25456842	25458772	1	-0.63873	0.7385
GM14393	2	175061548	175067769	1	-0.63873	0.7385
GM7361	5	26257761	26262188	1	-0.63873	0.7385
RNFT2	5	118190735	118244861	1	-0.63873	0.7385
2610005L07RIK	8	20385781	20424814	1	-0.63873	0.7385
AF529169	9	89590034	89622986	1	-0.63873	0.7385
B430319G15RIK	9	92538800	92542869	1	-0.63873	0.7385
RBP2	9	98490536	98509771	1	-0.63873	0.7385
IL20RB	9	100457718	100486473	1	-0.63873	0.7385
ZFP9	6	118461949	118479273	2	-0.64096	0.73923
SP1	15	102406315	102436404	2	-0.644	0.74021
MUP16	4	61515592	61519486	3	-0.65289	0.74309
GM10406	14	7006114	7027449	1	-0.65573	0.744
TRIM2	3	84160438	84304775	4	-0.66557	0.74716
LOC100038947	3	15795146	15848487	6	-0.67035	0.74868
RN45S	17	39842996	39848829	1	-0.67166	0.7491
SPEER8-PS1	5	14945293	14978541	2	-0.67295	0.74951
4933438K21RIK	4	147063365	147068436	2	-0.679	0.75143
GM7609	1	85199610	85213762	1	-0.67922	0.7515
NIT1	1	171342236	171345645	1	-0.67922	0.7515
NSMF	2	25054378	25062881	1	-0.67922	0.7515
UAP1L1	2	25361491	25365626	1	-0.67922	0.7515
C8G	2	25498649	25500506	1	-0.67922	0.7515
FBXW5	2	25500777	25505470	1	-0.67922	0.7515
EDF1	2	25557899	25562082	1	-0.67922	0.7515
METTL5	2	69871194	69885615	1	-0.67922	0.7515
GM9733	3	15296550	15332302	1	-0.67922	0.7515
SPRR2A1	3	92215834	92222491	1	-0.67922	0.7515
SPRR2A2	3	92215834	92222491	1	-0.67922	0.7515
GM9125	3	93936632	93943543	1	-0.67922	0.7515
GM17019	5	15028949	15033007	1	-0.67922	0.7515
SPEER4COS	5	15680709	15714596	1	-0.67922	0.7515
SPEER4C	5	15709504	15714271	1	-0.67922	0.7515
TBC1D14	5	36490603	36582397	1	-0.67922	0.7515
GM5591	7	38518138	38528193	1	-0.67922	0.7515
PRR23A2	9	98856590	98857352	1	-0.67922	0.7515
CDV3	9	103353101	103364979	1	-0.67922	0.7515
DNAJC13	9	104151596	104262930	1	-0.67922	0.7515
ICE1	13	70588688	70637634	1	-0.67922	0.7515
EXOC6	19	37550417	37683249	1	-0.67922	0.7515
ARHGAP21	2	20847918	20967721	3	-0.6799	0.75172
TBPL2	2	24071365	24096595	2	-0.68129	0.75216
TBX18	9	87702799	87731260	2	-0.68345	0.75284

KCTD16	18	40258360	40531184	2	-0.68868	0.75449
UNC13C	9	73479423	73933567	6	-0.70819	0.76059
CYP3A16	5	145436308	145469723	2	-0.71015	0.76119
SLC9A9	9	94669891	95230452	3	-0.73518	0.76889
GM10639	9	78289927	78305525	5	-0.73987	0.77031
VMN2R-PS159	4	156331102	156339499	19	-0.77437	0.78064
VMN2R123	4	156331125	156339496	19	-0.77437	0.78064
PLSCR1	9	92250193	92272561	14	-0.77858	0.78189
COL12A1	9	79598986	79718722	3	-0.80692	0.79015
LOC101056073	4	145510758	145538251	3	-0.80952	0.79089
CYB5R4	9	87022028	87077774	4	-0.83322	0.79764
VMN2R29	7	7212995	7278289	15	-0.83581	0.79837
9330159M07RIK	9	88841797	88858801	4	-0.83657	0.79858
A530032D15RIK	1	85088138	85109853	6	-0.83919	0.79932
GM21188	13	120034604	120052204	5	-0.85387	0.80341
ZFP991	4	146270384	146468233	9	-0.88307	0.8114
VMN2R89	14	51451961	51461293	10	-0.9094	0.81843
SNX1	9	66088126	66124886	4	-0.91754	0.82057
SERPINI2	3	75242356	75270078	3	-0.9266	0.82293
LCN12	2	25490844	25493911	2	-0.92698	0.82303
GM8994	6	136327538	136329983	12	-0.95369	0.82988
LRP1B	2	40596772	42653598	11	-0.95705	0.83073
ZFP985	4	147553276	147585201	4	-0.96357	0.83237
NOXA1	2	25085669	25095205	5	-0.96363	0.83238
PCCB	9	100982031	101034884	8	-0.98843	0.83853
SPG21	9	65460936	65488470	4	-1.0006	0.84149
FAM198B	3	79885929	79946278	10	-1.0032	0.84211
CSNK1E	15	79417851	79442057	2	-1.0037	0.84225
MCHR1	15	81235498	81238964	2	-1.0037	0.84225
SLC24A1	9	64922860	64951607	3	-1.0057	0.84272
DPP8	9	65032457	65082651	3	-1.0057	0.84272
PIF1	9	65587204	65595962	3	-1.0057	0.84272
N4BP2	5	65763520	65826784	5	-1.0195	0.84601
H2AFJ	6	136808247	136810074	4	-1.0209	0.84634
TMEM184B	15	79360683	79402919	5	-1.0527	0.85376
SNHG14	7	59272736	60450177	12	-1.0561	0.85454
ZFP979	4	147611935	147642508	4	-1.0634	0.85621
CBY1	15	79659226	79667660	2	-1.0753	0.85888
GM13238	4	145837218	145837992	2	-1.0806	0.86006
GGA1	15	78877189	78894585	7	-1.0834	0.86068
RAET1A	10	22158608	22374139	3	-1.0872	0.86153
RAET1B	10	22173874	22374113	3	-1.0872	0.86153
RAET1C	10	22173901	22374139	3	-1.0872	0.86153
ETV3	3	87525577	87540158	2	-1.0874	0.86158
CIT	5	115845655	116006341	2	-1.0874	0.86158

ACAD12	5	121598280	121618938	2	-1.0874	0.86158
IGDCC4	9	65101485	65137947	2	-1.0874	0.86158
CILP	9	65265179	65280605	6	-1.0874	0.86158
MTFMT	9	65435781	65453054	2	-1.0874	0.86158
RBPMS2	9	65630581	65660518	4	-1.0874	0.86158
TRIP4	9	65828925	65885173	2	-1.0874	0.86158
RAB27A	9	73044809	73097614	2	-1.0874	0.86158
SH3BGRL2	9	83548337	83600291	2	-1.0874	0.86158
GTPBP1	15	79690895	79721479	2	-1.0892	0.86196
ATP1B3	9	96332674	96364299	2	-1.0961	0.86348
RACGAP1	15	99620495	99651656	4	-1.0974	0.86377
SP140	1	85600702	85645036	10	-1.0979	0.86388
TMEM108	9	103482935	103761837	3	-1.1099	0.86648
AMHR2	15	102445366	102454639	7	-1.1133	0.8672
ENTPD2	2	25395873	25401323	3	-1.1233	0.86935
RAN	5	129020155	129024321	9	-1.1335	0.87149
ME1	9	86581362	86687277	4	-1.138	0.87244
MROH4	15	74606027	74636318	2	-1.1404	0.87293
ENTPD8	2	25080322	25085719	2	-1.1469	0.87429
PPM1L	3	69316917	69555396	2	-1.1481	0.87453
PTPA	2	30416049	30447807	2	-1.1503	0.87499
PTK2	15	73205104	73423191	2	-1.1503	0.87499
4933427E11RIK	15	74709160	74710374	2	-1.1503	0.87499
9030619P08RIK	15	75427605	75431829	2	-1.1503	0.87499
NT5E	9	88327608	88372089	2	-1.1506	0.87504
TMED3	9	89699202	89705043	2	-1.1525	0.87545
CBX7	15	79915806	79932646	14	-1.1647	0.87794
LMNTD1	6	145397234	145434925	20	-1.1737	0.87974
LY6A	15	74994876	74998031	10	-1.1774	0.88048
UCHL1	5	66676120	66687234	15	-1.1786	0.88073
TMEM161B	13	84222295	84295966	4	-1.1807	0.88114
NOL12	15	78934932	78941910	7	-1.1872	0.88243
CYP3A41B	5	145558663	145584730	11	-1.188	0.88259
CYP3A41A	5	145558663	145584730	11	-1.188	0.88259
FCRLS	3	87250964	87263524	5	-1.1906	0.8831
IBTK	9	85687359	85749334	5	-1.1906	0.8831
FHDC1	3	84442195	84479491	6	-1.1941	0.88378
MUC4	16	32735885	32782390	10	-1.1957	0.8841
AQP2	15	99579055	99584545	6	-1.2022	0.88536
PPARA	15	85735563	85806851	7	-1.2071	0.8863
ADGRB1	15	74516195	74589464	12	-1.2092	0.88671
MASTL	2	23116543	23156024	2	-1.2118	0.8872
IL1F5	2	24276953	24282432	2	-1.2118	0.8872
PSD4	2	24385396	24408729	2	-1.2118	0.8872
ABCA2	2	25428673	25448539	2	-1.2118	0.8872

SNX14	9	88376746	88438951	2	-1.2118	0.8872
ANKRD34C	9	89728248	89738475	2	-1.2118	0.8872
KSR2	5	117414001	117767988	6	-1.2228	0.88931
CTSO	3	81932600	81956725	11	-1.2269	0.89006
XRCC6	15	82016368	82040084	7	-1.2378	0.8921
ERP27	6	136907386	136922180	37	-1.2386	0.89225
NOS1	5	117866838	117958840	7	-1.2425	0.89297
PLEKHO2	9	65552576	65580087	4	-1.2627	0.89666
PBP2	6	135309128	135310384	8	-1.2687	0.89773
MUG2	6	122006797	122085967	16	-1.2766	0.89913
ESYT3	9	99309966	99358530	7	-1.2816	0.90002
MEGF11	9	64385625	64700975	3	-1.2834	0.90032
LRRC1	9	77430822	77544059	4	-1.2949	0.90233
CSF2RB2	15	78282507	78305721	47	-1.2968	0.90266
NCF4	15	78244810	78262580	13	-1.3023	0.90359
FAM227A	15	79609575	79658956	5	-1.3077	0.90451
ESM1	13	113209658	113218104	3	-1.3111	0.90509
SNX22	9	66065175	66069731	4	-1.3263	0.90763
PCOLCE2	9	95637627	95695551	3	-1.3349	0.90905
LY6G	15	75155260	75159128	5	-1.3363	0.90928
REX2	4	147021849	147060799	4	-1.3484	0.91123
CYP3A44	5	145773982	145805874	4	-1.3506	0.9116
AQP9	9	71110658	71162633	2	-1.3561	0.91247
TFDP2	9	96196274	96323646	2	-1.362	0.91341
KIF23	9	61917277	61946799	5	-1.3622	0.91344
LIMCH1	5	66745839	67057159	3	-1.3693	0.91454
SUN2	15	79724067	79742536	3	-1.3693	0.91454
CYP11B1	15	74834891	74841643	3	-1.3706	0.91475
FAIM2	15	99497004	99528165	3	-1.3711	0.91484
BC147527	13	120300391	120308841	4	-1.3776	0.91583
MIEF1	15	80234079	80253371	6	-1.3953	0.91853
LY6C2	15	75108160	75111949	12	-1.3999	0.91923
CDC42EP1	15	78842646	78850902	6	-1.4	0.91924
COL5A1	2	27886424	28039510	135	-1.4045	0.91991
TMEM144	3	79813152	79842662	16	-1.4088	0.92055
E330021D16RIK	6	136400318	136415569	4	-1.4104	0.92079
CENPM	15	82233775	82244336	4	-1.4104	0.92079
NAGA	15	82329531	82338826	4	-1.4104	0.92079
FAM135B	15	71445677	71727838	6	-1.4191	0.92207
SLC45A4	15	73580290	73596526	6	-1.4191	0.92207
VPS28	15	76622085	76626084	6	-1.4191	0.92207
RRS1	1	9545407	9547455	5	-1.4206	0.92229
DENND3	15	73512559	73572242	16	-1.4235	0.9227
STAG1	9	100643622	100958544	5	-1.4244	0.92283
MYG1	15	102331708	102338138	7	-1.4274	0.92327

PNPLA7	2	24976032	25054072	9	-1.4277	0.92332
PVALB	15	78191111	78204237	3	-1.4295	0.92357
HAPLN1	13	89540635	89611832	11	-1.4313	0.92383
NCOR2	5	125017152	125179214	3	-1.4315	0.92385
PAQR5	9	61953737	62026790	3	-1.4315	0.92385
LEO1	9	75441523	75466432	3	-1.4315	0.92385
IMPG1	9	80313329	80465438	3	-1.4315	0.92385
CEP162	9	87191962	87255532	3	-1.4315	0.92385
ZFP992	4	146449029	146469440	6	-1.445	0.92577
NEK11	9	105162466	105395287	14	-1.4471	0.92607
TMEM267	13	119488038	119610459	15	-1.4513	0.92665
ETL4	2	20289912	20810535	8	-1.4546	0.92711
ATP5G2	15	102662867	102671047	4	-1.4555	0.92723
GM1995	12	87861349	87865690	7	-1.4577	0.92754
SLITRK3	3	73048124	73056943	3	-1.4586	0.92767
CSF2RB	15	78325989	78351001	17	-1.4624	0.92819
DNAH10	5	124725084	124834308	16	-1.463	0.92827
ADAMTS7	9	90162977	90200102	4	-1.4709	0.92934
TMBIM6	15	99392946	99410049	20	-1.4714	0.92941
VMN2R114	17	23290933	23312313	47	-1.4771	0.93017
GRIA2	3	80684935	80802791	20	-1.4795	0.9305
D730005E14RIK	15	79889531	79893138	13	-1.5033	0.93361
VAV2	2	27262103	27427608	25	-1.5052	0.93387
MGAT3	15	80173720	80215519	26	-1.5103	0.93451
RBM47	5	66016548	66098179	4	-1.5108	0.93458
NAA16	14	79334506	79390668	5	-1.5162	0.93526
CERK	15	86139100	86186141	19	-1.5202	0.93576
RHPN1	15	75704287	75714419	4	-1.5209	0.93585
LY6C1	15	75044017	75048837	13	-1.528	0.93675
HCN1	13	117602319	117981028	9	-1.5309	0.93711
PARP8	13	116854823	117025516	38	-1.5312	0.93714
NCKAP5L	15	99422033	99457748	16	-1.5312	0.93714
MAP9	3	82358071	82395268	7	-1.5428	0.93856
GM2022	12	87892833	87896722	4	-1.5496	0.93938
CELSR1	15	85898757	86033777	45	-1.5504	0.93947
ADAMTSL2	2	27079380	27108613	8	-1.556	0.94015
DMC1	15	79561497	79605109	9	-1.5593	0.94054
TRF	9	103208875	103230286	3	-1.5603	0.94066
VMN2R117	17	23459674	23479597	35	-1.5604	0.94067
ZC3H7B	15	81744847	81796269	5	-1.5605	0.94068
GPR107	2	31152315	31216567	10	-1.5753	0.9424
GM10471	5	26082171	26089264	3	-1.5853	0.94355
SPEER4D	5	15619098	15623864	2	-1.5884	0.9439
DGKH	14	78569608	78644451	21	-1.5885	0.94391
ARHGEF11	3	87618750	87738033	5	-1.5959	0.94475

SMCO3	6	136829930	136835450	6	-1.5986	0.94504
UBE2CBP	9	86307233	86464916	5	-1.5987	0.94506
RIBC2	15	85132098	85144569	6	-1.606	0.94586
SMC1B	15	85064688	85131957	41	-1.6157	0.94692
ZFP982	4	147175865	147513420	35	-1.6194	0.94732
NSUN7	5	66259897	66297062	5	-1.6201	0.9474
COL22A1	15	71798475	72034227	35	-1.6412	0.94963
COX7C	13	86044797	86046795	9	-1.6427	0.94977
CACNA1I	15	80287237	80398292	6	-1.6482	0.95035
DOPEY1	9	86467153	86555806	7	-1.6491	0.95043
FAM234B	6	135197986	135236240	35	-1.6534	0.95088
BCL2A1D	9	88723287	88731850	2	-1.6616	0.95171
ACO2	15	81872462	81915137	10	-1.6652	0.95207
PLOD2	9	92542222	92608427	8	-1.666	0.95214
NNT	13	119334316	119409011	64	-1.6739	0.95292
FAM118A	15	85037061	85062830	7	-1.6758	0.95311
WDR5	2	27515146	27536538	6	-1.6786	0.95339
SIS	3	72888559	72966866	47	-1.6837	0.95388
LY6E	15	74955050	74959905	6	-1.6921	0.95468
POLR2F	15	79141324	79151774	5	-1.6938	0.95485
NCS1	2	31245922	31295471	6	-1.6966	0.95511
APOBEC3	15	79892407	79908429	41	-1.7032	0.95573
CARD10	15	78775135	78803042	6	-1.7085	0.95623
ASTE1	9	105395391	105405756	2	-1.7091	0.95628
PICK1	15	79229172	79249466	8	-1.7131	0.95665
PPIB	9	66060168	66066629	2	-1.7147	0.9568
CLSTN2	9	97444394	98033167	2	-1.7209	0.95737
1700034J05RIK	6	146951300	146954421	8	-1.7231	0.95756
MYZAP	9	71504346	71592360	8	-1.7339	0.95853
PDGFB	15	79995875	80014808	7	-1.7339	0.95853
BAIAP2L2	15	79258194	79285509	8	-1.7349	0.95862
EPS8	6	137477244	137519895	30	-1.7381	0.9589
TM7SF3	6	146602275	146634592	30	-1.7386	0.95895
PPFIBP1	6	146888493	147032023	65	-1.7414	0.95919
APH1B	9	66775486	66795423	8	-1.7414	0.9592
CALCOCO1	15	102706776	102722178	7	-1.7457	0.95957
IL1F10	2	24291195	24293820	3	-1.7485	0.95981
SH3BP1	15	78899767	78912052	24	-1.7486	0.95982
EIF3L	15	79075222	79094400	24	-1.7504	0.95997
MROH5	15	73786935	73839671	7	-1.7597	0.96077
AAAS	15	102338246	102350759	15	-1.7617	0.96094
ZC3H3	15	75754446	75841908	3	-1.7637	0.96111
IL1F8	2	24153171	24160103	2	-1.7683	0.9615
SIRPB1A	3	15371826	15426427	2	-1.7771	0.96222
ZNHIT1	5	136982193	136986904	2	-1.7785	0.96234

GRAMD4	15	86057694	86137636	11	-1.7785	0.96234
TBC1D2B	9	90202048	90270769	8	-1.7847	0.96284
RAPGEF2	3	79062510	79144887	14	-1.7892	0.96321
DDX47	6	135011611	135023776	15	-1.7898	0.96325
SARDH	2	27188392	27247303	7	-1.7904	0.96331
GRIN2B	6	135729804	136173511	29	-1.7908	0.96333
SRPRB	9	103188032	103202065	4	-1.8023	0.96425
RPL3	15	80077780	80083406	13	-1.8071	0.96463
PTGDS	2	25466711	25469749	2	-1.8101	0.96486
GM9758	5	14910123	14914889	2	-1.82	0.96562
SUDS3	5	117091677	117115993	4	-1.8207	0.96567
DPPA5A	9	78367053	78368199	2	-1.8221	0.96578
CEP63	9	102586577	102626124	4	-1.8234	0.96588
TBC1D22A	15	86214458	86498503	16	-1.8244	0.96595
NPDC1	2	25403049	25409494	2	-1.8277	0.9662
SPEER4A	5	26034269	26039505	2	-1.8277	0.9662
GUCY2C	6	136697283	136781742	67	-1.8385	0.96701
CHL1	6	103510875	103733035	27	-1.8421	0.96727
FGFR1OP2	6	146577902	146599198	21	-1.856	0.96827
AGO2	15	73101624	73184947	9	-1.8598	0.96854
TONSL	15	76626236	76639929	9	-1.8598	0.96854
MRPL3	9	105053267	105077476	3	-1.88	0.96994
C130026I21RIK	1	85246343	85270566	4	-1.888	0.97049
INTS14	9	64960831	64986981	5	-1.8889	0.97055
P2RX7	5	122643910	122684289	3	-1.8943	0.97091
THBS4	13	92751585	92794818	10	-1.9009	0.97134
ITPR2	6	146108298	146502223	24	-1.9081	0.97181
PEAR1	3	87749096	87768953	13	-1.9116	0.97204
4833420G17RIK	13	119462758	119486117	39	-1.9232	0.97278
CYTH4	15	78597046	78622019	6	-1.9246	0.97286
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MYO1E	9	70207349	70400067	6	-1.9302	0.97321
SLC30A9	5	67306954	67356142	11	-1.9315	0.97329
CASC1	6	145174871	145210970	36	-1.9329	0.97338
GTSE1	15	85859706	85876573	32	-1.9505	0.97444
ART4	6	136848450	136857600	14	-1.9953	0.977
REERG	6	137054824	137169718	13	-1.9953	0.977
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TRAPPC9	15	72589619	73055812	13	-2.0064	0.97759
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CYP2D40	15	82759832	82764122	20	-2.0425	0.97945



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DERA	6	137754576	137837872	18	-2.092	0.98178
THAP1	8	26158168	26164151	16	-2.1077	0.98247
PAIP1	13	119428599	119460323	16	-2.1203	0.98301
A630019I02RIK	13	93094832	93098968	39	-2.1356	0.98364
MEI1	15	82070116	82126814	20	-2.1365	0.98368
SMCO2	6	146850109	146871404	35	-2.139	0.98378
TLN2	9	67217084	67559703	34	-2.1405	0.98384
WBP11	6	136813653	136828216	22	-2.1422	0.98391
PTPRO	6	137252298	137464633	133	-2.15	0.98422
PLCZ1	6	139989721	140041417	45	-2.1927	0.98583
SLC15A5	6	137983589	138079916	23	-2.2086	0.9864
MUG-PS1	6	122176052	122248566	3	-2.2124	0.98653
HERC1	9	66350449	66508775	11	-2.223	0.98689
DIS3L	9	64306755	64340457	5	-2.2253	0.98697
FCNB	2	28076478	28084878	11	-2.2391	0.98742
FBXO21	5	117976769	118010197	4	-2.2432	0.98756
VPS13C	9	67840395	67995634	28	-2.2541	0.98791
CMYA5	13	93040714	93144724	79	-2.2611	0.98812
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STRAP	6	137735081	137751930	31	-2.2999	0.98927
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ATF7IP	6	136518850	136607379	42	-2.3825	0.9914
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PDZRN3	6	101149606	101377897	4	-4.2649	0.99999
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CNTN6	6	104493043	104863405	12	-4.2649	0.99999
CNTN4	6	105677744	106674270	19	-4.2649	0.99999
WNT5B	6	119432530	119544347	1	-4.2649	0.99999
FBXL14	6	119479667	119483886	1	-4.2649	0.99999
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PCBP2	15	102470631	102500059	2	-4.2052	0.99999
MAP3K12	15	102497646	102517004	4	-4.2649	0.99999
TARBP2	15	102518191	102523676	1	-4.2649	0.99999
HOXC11	15	102954525	102956701	1	-4.2649	0.99999
HOXC4	15	103034394	103036852	1	-4.2649	0.99999
DGKG	16	22466568	22657231	1	-4.2649	0.99999
DHX36	3	62468641	62506988	3	-5.1848	1
RXFP1	3	79644715	79737794	4	-5.2725	1
TDO2	3	81958413	81975728	6	-5.0653	1
ZFP980	4	145670696	145704437	2	-6.0908	1
HEBP1	6	135137518	135168215	7	-4.9145	1
SKIV2L2	13	112867779	112927380	5	-4.8943	1
ATF4	15	80255183	80257545	3	-4.7411	1
RANGAP1	15	81704247	81729919	7	-4.794	1
PHF5A	15	81864515	81871892	4	-4.9288	1
CYP2D11	15	82389153	82394022	8	-4.5208	1
TTLL1	15	83483768	83510907	8	-4.4779	1
FBLN1	15	85205948	85251885	5	-4.8847	1
TRMU	15	85879326	85897393	6	-4.6514	1
AQP6	15	99601399	99605477	4	-4.9409	1

**Supplemental Table 3. Indels that are located in gene coding areas in AdNICD liposarcomas.**

GENE	CHR	START	STOP	Nindels	ZSTAT	P
ZFP148	16	33380774	33503903	1	3.0643	0.00109
IL5	11	53720793	53725103	1	2.7266	0.0032
RAD50	11	53649518	53707319	1	2.4072	0.00804
ICOS	1	60977913	61000321	1	2.0118	0.02212
RET	6	118151747	118197744	1	1.7692	0.03843
ZFP9	6	118461949	118479273	2	1.5759	0.05753
NIT1	1	171342236	171345645	1	1.5321	0.06275
SLC9B1	3	135348036	135397827	1	1.5321	0.06275
ADGRV1	13	81095067	81633144	1	1.5321	0.06275
SF3B1	1	54985169	55027478	1	1.4725	0.07044
RASSF4	6	116633007	116673836	1	1.4725	0.07044
SOCS5	17	87107678	87137588	1	1.428	0.07664
MYO1B	1	51749757	51915978	1	1.2329	0.1088
TRIM34A	7	104244456	104262236	1	1.0621	0.1441
MTUS1	8	40990911	41041931	1	1.0621	0.1441
B430010I23RIK	8	41017467	41024216	1	1.0621	0.1441
TADA2A	11	84078919	84129568	1	1.0621	0.1441
TSPAN11	6	127887621	127953031	1	1.0503	0.1468
WNK1	6	119923968	120038655	2	0.96361	0.16762
ST3GAL6	16	58470540	58523312	1	0.94825	0.1715
BTNL5-PS	17	34487405	34497429	1	0.94825	0.1715
GLRB	3	80843598	80912118	1	0.85347	0.1967
WDR19	5	65199695	65260415	1	0.85347	0.1967
4930525G20RIK	13	67796593	67830985	1	0.79985	0.2119
ZFP273	13	67813815	67827000	1	0.79985	0.2119
CNTN6	6	104493043	104863405	2	0.7477	0.22732
NUP107	10	117750642	117792705	1	0.65573	0.256
TAOK1	11	77529161	77607815	1	0.63045	0.2642
SFXN5	6	85213050	85333422	1	0.58225	0.2802
HS3ST2	7	121392295	121501768	1	0.58225	0.2802
6820431F20RIK	8	20268285	20297432	1	0.58225	0.2802
CAR12	9	66713685	66766845	1	0.58225	0.2802
MRPL3	9	105053267	105077476	1	0.58225	0.2802
DDR2	1	169972306	170088944	1	0.56805	0.285
ITPR1	6	108213095	108551116	2	0.55805	0.2884
WDFY3	5	101832952	102069921	1	0.49698	0.3096
OAS2	5	120730332	120749848	1	0.49698	0.3096
HDHD5	6	120509493	120531299	1	0.49698	0.3096
PIK3C2B	1	133046011	133108688	1	0.49443	0.3105
NMD3	3	69722054	69749046	1	0.49443	0.3105
OAS1F	5	120847366	120857986	1	0.49443	0.3105
USP18	6	121245905	121270917	1	0.49443	0.3105
VMN2R117	17	23459674	23479597	1	0.49443	0.3105
RGS1	1	144244668	144249104	1	0.49245	0.3112
ATG7	6	114643096	114860614	1	0.49245	0.3112

ALOX5	6	116410070	116461178	1	0.49245	0.3112
TMEM72	6	116692724	116716758	1	0.49245	0.3112
BEAN1	8	104170512	104219097	1	0.49245	0.3112
ADAD2	8	119612746	119616926	1	0.49245	0.3112
JARID2	13	44730773	44921643	1	0.49245	0.3112
APBB3	18	36671158	36679366	1	0.49245	0.3112
UGT1A10	1	88055410	88220002	4	0.45683	0.3239
UGT1A9	1	88070778	88220002	4	0.45683	0.3239
UGT1A7C	1	88095000	88220002	4	0.45683	0.3239
UGT1A6B	1	88103256	88218998	4	0.45683	0.3239
UGT1A6A	1	88134808	88220002	4	0.45683	0.3239
UGT1A5	1	88166011	88220002	4	0.45683	0.3239
UGT1A2	1	88200610	88220002	4	0.45683	0.3239
HJURP	1	88258855	88277579	1	0.44766	0.3272
A730008H23RIK	1	88264827	88277557	1	0.44766	0.3272
VMN2R115	17	23343976	23360128	1	0.41984	0.3373
ANO2	6	125690418	126040128	6	0.41089	0.34058
HERC1	9	66350449	66508775	2	0.38954	0.34844
VWF	6	125552947	125686679	1	0.34513	0.365
IDH2	7	80094846	80115350	1	0.34513	0.365
CNTN4	6	105677744	106674270	2	0.30146	0.38153
CILP	9	65265179	65280605	2	0.18502	0.42661
ATP2C1	9	105411361	105521257	3	0.14946	0.4406
1700034J05RIK	6	146951300	146954421	1	0.13679	0.4456
GPR107	2	31152315	31216567	1	0.08734	0.4652
RND3	2	51130438	51149111	1	0.08734	0.4652
ABCC12	8	86504840	86566590	1	0.08734	0.4652
VMN2R89	14	51451961	51461293	1	0.08734	0.4652
MBD4	6	115840696	115853341	3	0.06717	0.47322
VPS13D	4	144972621	145190666	1	0.0602	0.476
1700007G11RIK	5	98329303	98802019	1	0.0602	0.476
MAPK10	5	102908548	103058392	1	0.0602	0.476
SBNO1	5	124368701	124425914	1	0.0602	0.476
DNAH10	5	124725084	124834308	1	0.0602	0.476
TYK2	9	21104067	21131275	1	0.0602	0.476
DNM2	9	21424907	21507146	1	0.0602	0.476
PARP16	9	65214689	65239219	1	0.0602	0.476
COLEC11	12	28594171	28623330	1	0.0602	0.476
PTK2	15	73205104	73423191	1	0.0602	0.476
ELOVL5	9	77917364	77984519	1	0.05141	0.4795
STAG1	9	100643622	100958544	1	0.05141	0.4795
KCNH3	15	99224975	99242817	1	0.05141	0.4795
SP1	15	102406315	102436404	1	0.05141	0.4795
CCDC91	6	147475870	147632612	2	0.02345	0.49065
CTRC	4	141838239	141846359	1	0.01479	0.4941
TAOK3	5	117120128	117275098	1	-0.00577	0.5023
SNX14	9	88376746	88438951	1	-0.00577	0.5023
ACAD11	9	104063702	104127646	1	-0.00577	0.5023



ASTE1	9	105395391	105405756	1	-0.00577	0.5023
PRL2C4	13	12790817	12800058	1	-0.00577	0.5023
PRL2C3	13	12790820	12800079	1	-0.00577	0.5023
1300017J02RIK	9	103250529	103288297	1	-0.01253	0.505
VWA8	14	78849177	79065272	4	-0.02752	0.51098
SFMBT2	2	10370450	10595253	1	-0.06271	0.525
MIR297A-3	2	10472253	10511772	1	-0.06271	0.525
NOS1	5	117866838	117958840	1	-0.06271	0.525
RAN	5	129020155	129024321	1	-0.06271	0.525
CACNA1C	6	118587239	118757974	1	-0.06271	0.525
3110021A11RIK	6	119848192	119849016	1	-0.06271	0.525
MUG-PS1	6	122176052	122248566	1	-0.06271	0.525
TBX18	9	87702799	87731260	1	-0.06271	0.525
ADAMTS7	9	90162977	90200102	1	-0.06271	0.525
PCOLCE2	9	95637627	95695551	1	-0.06271	0.525
GM2022	12	87892833	87896722	1	-0.06271	0.525
VMN2R114	17	23290933	23312313	1	-0.06271	0.525
PLPP1	13	112800776	112867894	1	-0.06798	0.5271
EXOC6	19	37550417	37683249	1	-0.06798	0.5271
MICAL3	6	120931545	121131022	4	-0.09	0.53586
MICALL1	15	79108982	79136901	2	-0.10253	0.54083
RPL32	6	115805513	115808743	1	-0.11102	0.5442
RHO	6	115931926	115938830	1	-0.11102	0.5442
WDR48	9	119894894	119926579	1	-0.12137	0.5483
UGT1A1	1	88211958	88220002	3	-0.17487	0.56941
RN45S	17	39842996	39848829	5	-0.21549	0.58531
CPNE4	9	104569787	105034544	2	-0.22195	0.58782
MEI1	15	82070116	82126814	3	-0.23245	0.5919
CELSR1	15	85898757	86033777	3	-0.26466	0.60436
NCKAP5L	15	99422033	99457748	3	-0.28822	0.61341
ADH4	3	138415496	138430892	1	-0.33875	0.6326
ZNF41-PS	4	145789514	145831978	2	-0.33983	0.63301
MROH2A	1	88227019	88262289	11	-0.38198	0.64876
ZFP982	4	147175865	147513420	7	-0.39139	0.65225
A330015K06RIK	3	65133058	65302685	2	-0.43122	0.66684
CDK8	5	146231674	146302874	2	-0.44662	0.67242
PCCB	9	100982031	101034884	2	-0.44956	0.67349
ANKRD26	6	118502563	118562256	2	-0.45038	0.67378
SMG6	11	74925871	75164448	1	-0.46016	0.6773
RERGL	6	139493181	139501909	1	-0.50779	0.6942
ZFP957	14	79212354	79247367	1	-0.50779	0.6942
NDUFA6	15	82350138	82354291	1	-0.50779	0.6942
CYP2D12	15	82555097	82559413	1	-0.50779	0.6942
ARFGAP3	15	83299739	83350247	1	-0.50779	0.6942
RBP2	9	98490536	98509771	2	-0.50892	0.6946
CHRNA9	5	65967123	65977486	1	-0.52526	0.7003
GM7827	8	71140368	71171456	1	-0.52526	0.7003
PSIP1	4	83455680	83486448	1	-0.53884	0.705

MUG2	6	122006797	122085967	1	-0.53884	0.705
HAPLN1	13	89540635	89611832	3	-0.55191	0.70949
ADAMTS13	2	26973415	27009625	1	-0.55251	0.7097
TDO2	3	81958413	81975728	1	-0.55251	0.7097
PPP4R2	6	100833637	100868717	1	-0.55251	0.7097
SLC15A5	6	137983589	138079916	1	-0.55251	0.7097
PDXP	15	78913918	78919517	1	-0.57543	0.7175
VPS28	15	76622085	76626084	1	-0.57958	0.7189
RPN2	2	157279097	157326318	1	-0.59237	0.7232
FGA	3	83026152	83033617	1	-0.59237	0.7232
FCRLS	3	87250964	87263524	1	-0.59237	0.7232
SPEER4D	5	15619098	15623864	1	-0.59237	0.7232
COQ2	5	100654725	100674256	1	-0.59237	0.7232
PPP1CC	5	122158278	122175269	1	-0.59237	0.7232
TCTN1	5	122239494	122264460	1	-0.59237	0.7232
DIABLO	5	123511329	123524164	1	-0.59237	0.7232
MCM7	5	138164588	138171862	1	-0.59237	0.7232
TIA1	6	86404218	86433405	1	-0.59237	0.7232
MED21	6	146642578	146650600	1	-0.59237	0.7232
HACD3	9	64986982	65021717	1	-0.59237	0.7232
IGDCC4	9	65101485	65137947	1	-0.59237	0.7232
CLPX	9	65294259	65330658	1	-0.59237	0.7232
SLC51B	9	65412752	65422773	1	-0.59237	0.7232
SPG21	9	65460936	65488470	1	-0.59237	0.7232
SNX1	9	66088126	66124886	1	-0.59237	0.7232
MYO1E	9	70207349	70400067	1	-0.59237	0.7232
MYZAP	9	71504346	71592360	1	-0.59237	0.7232
CGNL1	9	71626506	71771602	1	-0.59237	0.7232
NEDD4	9	72662346	72749848	1	-0.59237	0.7232
OMT2A	9	78311971	78314048	1	-0.59237	0.7232
CD109	9	78615545	78716260	1	-0.59237	0.7232
MYO6	9	80165033	80311729	1	-0.59237	0.7232
IMPG1	9	80313329	80465438	1	-0.59237	0.7232
HMGN3	9	83109941	83146607	1	-0.59237	0.7232
IBTK	9	85687359	85749334	1	-0.59237	0.7232
DOPEY1	9	86467153	86555806	1	-0.59237	0.7232
ZFP949	9	88548019	88571086	1	-0.59237	0.7232
TRIM43B	9	89084623	89092835	1	-0.59237	0.7232
FAIML	9	99229375	99237239	1	-0.59237	0.7232
EPHB1	9	101922127	102354693	1	-0.59237	0.7232
TRF	9	103208875	103230286	1	-0.59237	0.7232
NPHP3	9	104002543	104016686	1	-0.59237	0.7232
ANKRD34B	13	92425968	92441658	1	-0.59237	0.7232
JMY	13	93430096	93499808	1	-0.59237	0.7232
CYP2D37-PS	15	82688749	82690058	1	-0.59237	0.7232
ANO6	15	95790842	95975472	1	-0.59237	0.7232
CATSPERD	17	56628142	56664456	1	-0.59237	0.7232
ARHGAP28	17	67842707	68004108	1	-0.59237	0.7232

ZBBX	3	75037894	75143772	1	-0.59267	0.7233
MEMO1	17	74200699	74294863	1	-0.59267	0.7233
LEO1	9	75441523	75466432	2	-0.59481	0.72401
ZFP987	4	146097311	146126623	1	-0.60858	0.7286
RICTOR	15	6708380	6800400	1	-0.60858	0.7286
GM6083	5	29537948	29538624	1	-0.62892	0.7353
PVALB	15	78191111	78204237	1	-0.62892	0.7353
NOL12	15	78934932	78941910	1	-0.62892	0.7353
MUCL1	15	103751922	103899300	1	-0.62892	0.7353
RAP2B	3	61364506	61368703	1	-0.63014	0.7357
SLC30A9	5	67306954	67356142	1	-0.63014	0.7357
SLC38A9	13	112660765	112738752	1	-0.63014	0.7357
MKL1	15	81012280	81190757	1	-0.63014	0.7357
RIBC2	15	85132098	85144569	1	-0.63014	0.7357
DPH7	2	24962421	24973471	1	-0.63873	0.7385
RABL6	2	25583017	25608446	1	-0.63873	0.7385
GM21949	3	67892219	68626482	1	-0.63873	0.7385
SCHIP1	3	68064801	68626482	1	-0.63873	0.7385
GM7361	5	26257761	26262188	1	-0.63873	0.7385
CHD4	6	125095980	125130591	1	-0.63873	0.7385
TBC1D2B	9	90202048	90270769	1	-0.63873	0.7385
NEK11	9	105162466	105395287	1	-0.63873	0.7385
LYRM4	13	35978796	36117357	1	-0.63873	0.7385
FCNB	2	28076478	28084878	1	-0.65573	0.744
VMN2R29	7	7212995	7278289	1	-0.65573	0.744
AAAS	15	102338246	102350759	1	-0.65573	0.744
GUCY1B3	3	82032003	82074711	1	-0.67166	0.7491
ATP2B2	6	113743830	113891539	1	-0.67166	0.7491
COX7C	13	86044797	86046795	1	-0.67166	0.7491
PHYH	2	4918995	4938743	1	-0.67922	0.7515
IL1F5	2	24276953	24282432	1	-0.67922	0.7515
UAP1L1	2	25361491	25365626	1	-0.67922	0.7515
RALYL	3	13471654	14182287	1	-0.67922	0.7515
MTFR1L	4	134525554	134535268	1	-0.67922	0.7515
WASHC2	6	116208032	116262671	1	-0.67922	0.7515
CCDC77	6	120324321	120357469	1	-0.67922	0.7515
PRMT8	6	127689008	127769159	1	-0.67922	0.7515
TRPC1	9	95705066	95750358	1	-0.67922	0.7515
CLDN18	9	99690796	99710063	1	-0.67922	0.7515
CEP63	9	102586577	102626124	1	-0.67922	0.7515
TOPBP1	9	103305326	103350427	1	-0.67922	0.7515
CDV3	9	103353101	103364979	1	-0.67922	0.7515
1700088E04RIK	15	79134654	79141251	1	-0.67922	0.7515
PIK3C2G	6	139715858	139969283	5	-0.69008	0.75493
ARNTL2	6	146805529	146833529	4	-0.70686	0.76017
VMN2R-PS159	4	156331102	156339499	2	-0.71015	0.76119
VMN2R123	4	156331125	156339496	2	-0.71015	0.76119
TSEN2	6	115544703	115578336	2	-0.73414	0.76857

SFI1	11	3131849	3193463	3	-0.73698	0.76943
DERA	6	137754576	137837872	2	-0.74678	0.7724
MGAT3	15	80173720	80215519	5	-0.81991	0.79387
ATF7IP	6	136518850	136607379	5	-0.85149	0.80275
GUCY2C	6	136697283	136781742	5	-0.88964	0.81317
BC147527	13	120300391	120308841	2	-0.98042	0.83656
TLN2	9	67217084	67559703	3	-1.0057	0.84272
DESI1	15	81992522	82016140	2	-1.0103	0.84382
FAM114A1	5	64970074	65041901	3	-1.0512	0.85341
STRAP	6	137735081	137751930	2	-1.0846	0.86094
KRAS	6	145216698	145250231	2	-1.0846	0.86094
KIF23	9	61917277	61946799	2	-1.0874	0.86158
VPS13C	9	67840395	67995634	2	-1.0874	0.86158
SMCO2	6	146850109	146871404	4	-1.1116	0.86684
GRAMD4	15	86057694	86137636	2	-1.1225	0.86918
FAM198B	3	79885929	79946278	3	-1.1284	0.87042
LY6C2	15	75108160	75111949	2	-1.1503	0.87499
KCNAB1	3	65109367	65378225	5	-1.1662	0.87823
ATP8A1	5	67618138	67847431	2	-1.1776	0.88052
RAPGEF2	3	79062510	79144887	4	-1.1871	0.88241
EIF3L	15	79075222	79094400	5	-1.215	0.88782
STK38L	6	146724929	146778808	6	-1.2478	0.89395
PTPRO	6	137252298	137464633	7	-1.2699	0.89793
SIS	3	72888559	72966866	5	-1.2953	0.9024
NAA16	14	79334506	79390668	3	-1.3173	0.90613
SH3BP1	15	78899767	78912052	5	-1.3195	0.90649
CHL1	6	103510875	103733035	4	-1.3446	0.91062
TMBIM6	15	99392946	99410049	2	-1.3966	0.91873
APOBEC3	15	79892407	79908429	7	-1.3993	0.91913
PARP8	13	116854823	117025516	4	-1.4004	0.9193
ISL1	13	116298269	116309688	3	-1.4039	0.91982
PPFIBP1	6	146888493	147032023	8	-1.4097	0.92068
EDIL3	13	88821471	89323225	3	-1.4454	0.92582
INTS13	6	146549631	146577835	4	-1.4643	0.92845
CERK	15	86139100	86186141	6	-1.4797	0.93052
NNT	13	119334316	119409011	10	-1.4968	0.93278
GRIA2	3	80684935	80802791	3	-1.508	0.93422
VAV2	2	27262103	27427608	7	-1.5147	0.93508
TMEM108	9	103482935	103761837	3	-1.5383	0.93801
PAPD4	13	93147399	93192283	2	-1.5529	0.93978
COL5A1	2	27886424	28039510	12	-1.5613	0.94078
DDX4	13	112598332	112652310	3	-1.5632	0.94099
TMEM144	3	79813152	79842662	3	-1.6147	0.94682
RPL3	15	80077780	80083406	5	-1.6201	0.9474
TMEM161B	13	84222295	84295966	3	-1.6471	0.95023
TRMU	15	85879326	85897393	2	-1.6655	0.95209
PJA2	17	64281005	64331883	2	-1.6758	0.95312
COL22A1	15	71798475	72034227	5	-1.6975	0.9552

ITPR2	6	146108298	146502223	3	-1.729	0.95809
ZFP985	4	147553276	147585201	2	-1.7695	0.96159
PCBP2	15	102470631	102500059	3	-1.8122	0.96502
ADAMTSL2	2	27079380	27108613	4	-1.8319	0.96652
DGKH	14	78569608	78644451	3	-1.8642	0.96885
SMC1B	15	85064688	85131957	7	-2.0871	0.98156
RXFP1	3	79644715	79737794	4	-2.2173	0.9867
PAIP1	13	119428599	119460323	5	-4.1463	0.99998
RRS1	1	9545407	9547455	1	-4.2649	0.99999
PNPLA7	2	24976032	25054072	1	-4.2649	0.99999
SARDH	2	27188392	27247303	1	-4.2649	0.99999
GOLGA2	2	32288252	32307921	1	-4.2649	0.99999
GARNL3	2	32986365	33087204	1	-4.2649	0.99999
MME	3	63295434	63383713	3	-4.2649	0.99999
SMC4	3	69004971	69034623	1	-4.2649	0.99999
PPID	3	79591388	79603650	1	-4.2649	0.99999
ASIC5	3	81996921	82021233	1	-4.2649	0.99999
NPY2R	3	82538382	82548085	1	-4.2649	0.99999
UCHL1	5	66676120	66687234	1	-4.2649	0.99999
GABRA2	5	70961056	71095849	1	-4.2649	0.99999
CYP3A44	5	145773982	145805874	1	-4.2649	0.99999
CNTN3	6	102163305	102464667	1	-4.2649	0.99999
4930587E11RIK	6	102266099	102306804	1	-4.2649	0.99999
MARCH8	6	116338021	116409541	1	-4.2649	0.99999
DCP1B	6	119175252	119221614	1	-4.2649	0.99999
ERC1	6	119570795	119848150	1	-4.2649	0.99999
LOC215458	6	120958843	120997498	1	-4.2649	0.99999
A2M	6	121636172	121679238	1	-4.2649	0.99999
APOLD1	6	134982000	134986836	2	-4.2649	0.99999
DDX47	6	135011611	135023776	1	-4.2649	0.99999
GPRC5A	6	135065661	135084708	1	-4.2649	0.99999
GPRC5D	6	135105990	135118283	1	-4.2649	0.99999
FAM234B	6	135197986	135236240	2	-4.2649	0.99999
EMP1	6	135362930	135383173	2	-4.2649	0.99999
PLBD1	6	136612070	136661893	1	-4.2649	0.99999
WBP11	6	136813653	136828216	3	-4.2649	0.99999
BC049715	6	136828842	136840557	1	-4.2649	0.99999
ART4	6	136848450	136857600	2	-4.2649	0.99999
MGP	6	136872434	136875823	1	-4.2649	0.99999
ARHGDIB	6	136923660	136939527	1	-4.2649	0.99999
PDE6H	6	136954522	136963483	1	-4.2649	0.99999
EPS8	6	137477244	137519895	2	-4.2649	0.99999
MGST1	6	138140536	138156752	1	-4.2649	0.99999
PLCZ1	6	139989721	140041417	2	-4.2649	0.99999
BCAT1	6	144993834	145048812	1	-4.2649	0.99999
LRMP	6	145115635	145174928	2	-4.2649	0.99999
ETFRF1	6	145211133	145216542	1	-4.2649	0.99999
FGFR1OP2	6	146577902	146599198	1	-4.2649	0.99999

TM7SF3	6	146602275	146634592	1	-4.2649	0.99999
REP15	6	147032536	147033518	1	-4.2649	0.99999
MRPS35	6	147042769	147070902	1	-4.2649	0.99999
NSD3	8	25640576	25719667	1	-4.2649	0.99999
NEO1	9	58874679	59036441	1	-4.2649	0.99999
DIS3L	9	64306755	64340457	1	-4.2649	0.99999
FAM96A	9	66126610	66138968	1	-4.2649	0.99999
MEI4	9	81863743	82027491	1	-4.2649	0.99999
UBE2CBP	9	86307233	86464916	1	-4.2649	0.99999
RASA1	13	85214698	85289486	1	-4.2649	0.99999
XRCC4	13	89848913	90089608	1	-4.2649	0.99999
MSH3	13	92211877	92355003	2	-4.2649	0.99999
THBS4	13	92751585	92794818	1	-4.2649	0.99999
CMYA5	13	93040714	93144724	4	-4.2649	0.99999
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A630019I02RIK	13	93094832	93098968	2	-4.2649	0.99999
HCN1	13	117602319	117981028	1	-4.2649	0.99999
RGCC	14	79288749	79301635	1	-4.2649	0.99999
PCDH17	14	84443562	84537060	1	-4.2649	0.99999
9630013A20RIK	14	84458837	84476424	1	-4.2649	0.99999
TRAPPC9	15	72589619	73055812	1	-4.2649	0.99999
DENND3	15	73512559	73572242	1	-4.2649	0.99999
MROH5	15	73786935	73839671	2	-4.2649	0.99999
ADGRB1	15	74516195	74589464	1	-4.2649	0.99999
CYP11B2	15	74851009	74856318	1	-4.2649	0.99999
LY6C1	15	75044017	75048837	2	-4.2649	0.99999
ZC3H3	15	75754446	75841908	1	-4.2649	0.99999
TIGD5	15	75909734	75914535	1	-4.2649	0.99999
IFT27	15	78159462	78174108	2	-4.2649	0.99999
CSF2RB	15	78325989	78351001	1	-4.2649	0.99999
CYTH4	15	78597046	78622019	1	-4.2649	0.99999
LGALS2	15	78850859	78855529	1	-4.2649	0.99999
PICK1	15	79229172	79249466	1	-4.2649	0.99999
FAM227A	15	79609575	79658956	1	-4.2649	0.99999
JOSD1	15	79674249	79687872	1	-4.2649	0.99999
D730005E14RIK	15	79889531	79893138	1	-4.2649	0.99999
CBX7	15	79915806	79932646	1	-4.2649	0.99999
PDGFB	15	79995875	80014808	1	-4.2649	0.99999
MIEF1	15	80234079	80253371	1	-4.2649	0.99999
RPS19BP1	15	80260613	80264306	1	-4.2649	0.99999
PHF5A	15	81864515	81871892	2	-4.2649	0.99999
CSDC2	15	81936758	81950941	1	-4.2649	0.99999
PMM1	15	81951105	81960930	1	-4.2649	0.99999
FAM109B	15	82341178	82345710	2	-4.2649	0.99999
CYP2D13	15	82636749	82642045	1	-4.2649	0.99999
FAM118A	15	85037061	85062830	1	-4.2649	0.99999
PKDREJ	15	85814675	85821733	1	-4.2649	0.99999
GTSE1	15	85859706	85876573	5	-4.2867	0.99999

AQP2	15	99579055	99584545	1	-4.2649	0.99999
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CHUK	19	44073333	44107477	1	-4.2649	0.99999
NSUN7	5	66259897	66297062	3	-4.4759	1
IL5RA	6	106710378	106749037	2	-6.2424	1
HEBP1	6	135137518	135168215	2	-5.2455	1
GRIN2B	6	135729804	136173511	3	-6.2233	1
4833420G17RIK	13	119462758	119486117	5	-4.7838	1
CSF2RB2	15	78282507	78305721	2	-5.2314	1