

**Supplementary Data 1. Differential expression analysis of RefSeq genes.**

WY, WY-14643; Resp, Response; WT, *Ppara*<sup>+/+</sup>; KO, *Ppara*<sup>-/-</sup>

	WY Resp. WT liver	WY Resp. KO liver		WY Resp. WT liver	WY Resp. KO liver		WY Resp. WT liver	WY Resp. KO liver
Gene ID	Exp. No. 332	Exp. No. 334	Gene ID	Exp. No. 332	Exp. No. 334	Gene ID	Exp. No. 332	Exp. No. 334
FAM47E	Down	Down	SULT1A1	Down	0	PSMA5	Up	0
XAF1	Down	Down	TMEM19	Down	0	SLC27A 1	Up	0
GM3776	Down	Down	ANTXR2	Down	0	SLC27A 2	Up	0
SYTL1	Down	Down	ASL	Down	0	VNN3	Up	0
SUCNR1	Down	Down	GPR110	Down	0	SLC27A 4	Up	0
CLIC5	Down		FGG	Down	0	ABCD2	Up	0
HAMP2	Down	Down	IFI44	Down	0	COPS6	Up	0
MEG3	Down	Down	ZBTB48	Down	0	ACOT1	Up	0
RAD51B	Up	Down	C8B	Down	0	EXO1	Up	0
HSPA1A	Up	Down	CES2A	Down	0	CFD	Up	0
SERPINA7	Up	Down	TRF	Down	0	ADRA1 A	Up	0
XLR4A	0	Down	RDH5	Down	0	ADRB3	Up	0
PIK3C2B	0	Down	AKR1C14	Down	0	HPRT	Up	0
4833420G1								
7RIK	0	Down	PLA1A	Down	0	HSPA1L	Up	0
MUP19	0	Down	IL1RAP	Down	0	HSPH1	Up	0
MUP12	0	Down	CYP2C50	Down	0	HSPB1	Up	0
GSTA1	0	Down	FUT10	Down	0	NR4A2	Up	0
MME	0	Down	RGS3	Down	0	SEMA5 B	Up	0
CYP46A1	0	Down	BMF	Down	0	VLDLR	Up	0
IHH	0	Down	PRAF2	Down	0	SGK2	Up	0
REC114	0	Down	SARDH	Down	0	CHAF1A	Up	0
MTUS2	0	Down	TNIP2	Down	0	PDK4	Up	0
SLC8A3	0	Down	UGP2	Down	0	PMM1	Up	0
SUGCT	0	Down	VASN	Down	0	PDE7B	Up	0
FMR1NB	0	Down	SUSD4	Down	0	MFI2	Up	0
ACPP	0	Down	CBX7	Down	0	PTPLA	Up	0
MALAT1	0	Down	PPP1R1B	Down	0	ACOX1	Up	0
A630020A0								
6	0	Down	SLC7A4	Down	0	HUNK	Up	0
3010033K0								
7RIK	0	Down	CBS	Down	0	NAP1L1	Up	0

MYOM3	Down	Up	SLC22A7	Down	0	AQP3	Up	0
SAA1	Down	Up	BC021614	Down	0	MAP3K6	Up	0
GBP2B	Down	Up	HHAT	Down	0	UCHL3	Up	0
			6330416G13R					
CDKN1A	Up	Up	IK	Down	0	CTPS	Up	0
						RUNDC		
LCN2	Up	Up	GCKR	Down	0	3A	Up	0
						HSD17B		
MT2	Up	Up	C1S1	Down	0	10	Up	0
DUSP8	Up	Up	FRS3	Down	0	ECH1	Up	0
MYC	Up	Up	CD207	Down	0	ATXN10	Up	0
MT1	Up	Up	TIFA	Down	0	GALK1	Up	0
PLIN5	Up	Up	FRMD4B	Down	0	PLA2G6	Up	0
LAD1	Up	Up	LRRC3	Down	0	NUDT5	Up	0
						GAL3ST		
INSIG2	Up	Up	OASL1	Down	0	1	Up	0
ZFP455	0	Up	AKR1D1	Down	0	FANCA	Up	0
MUP13	0	Up	BC089597	Down	0	PKD2L2	Up	0
SCARA5	0	Up	GPX6	Down	0	TLR5	Up	0
						ACADV		
GM1966	0	Up	CYP2C70	Down	0	L	Up	0
ARNTL	0	Up	CCM2L	Down	0	TUBA8	Up	0
DIO1	0	Up	GBP7	Down	0	FABP1	Up	0
SERPINA3								
C	0	Up	DKK4	Down	0	SPAG5	Up	0
GEM	0	Up	PPP1R42	Down	0	CTPS2	Up	0
MARCO	0	Up	VEPH1	Down	0	TRPM1	Up	0
RNASEL	0	Up	PITPNC1	Down	0	SLC4A4	Up	0
						ST3GAL		
DLGAP1	0	Up	GLYAT	Down	0	6	Up	0
LYVE1	0	Up	CTH	Down	0	ABHD2	Up	0
						SLC23A		
CES4A	0	Up	TIFAB	Down	0	2	Up	0
						PNLIPR		
CD300E	0	Up	ARID5A	Down	0	P1	Up	0
TTLL8	0	Up	ANK3	Down	0	PDZRN3	Up	0
FAM107A	0	Up	ARHGAP9	Down	0	TYRO3	Up	0
MIR8108	0	Up	MGAT2	Down	0	NCAPG	Up	0
9030619P08								
RIK	0	Up	ZDHHC14	Down	0	ACSL4	Up	0
CYP2C44	Down	0	FAM129B	Down	0	HEBP2	Up	0
						MAD2L		
ADAMTS7	Down	0	ITPKA	Down	0	1	Up	0
ZC4H2	Down	0	C8A	Down	0	PDSS1	Up	0
SLC13A5	Down	0	LRRK1	Down	0	HAO2	Up	0
MAML3	Down	0	UGT2B1	Down	0	PTBP2	Up	0
PIK3R6	Down	0	OSBP2	Down	0	PLCE1	Up	0

AMICA1	Down	0	IGJ	Down	0	PKP1	Up	0
I830012O16						HSD17B		
RIK	Down	0	SLC37A1	Down	0	12	Up	0
ARMCX6	Down	0	CADM4	Down	0	DYNLL1	Up	0
ZFP658	Down	0	RDH9	Down	0	FADS2	Up	0
MUP21	Down	0	ABCA8A	Down	0	ARL2	Up	0
MUP20	Down	0	ACAT3	Down	0	PDCD5	Up	0
ECM2	Down	0	HSD3B2	Down	0	MTCH2	Up	0
ANKRD6	Down	0	NEURL3	Down	0	RAB9	Up	0
SLC22A28	Down	0	OLFM3	Down	0	ABCB9	Up	0
SHF	Down	0	NRN1	Down	0	COPZ2	Up	0
FAM189B	Down	0	BC029214	Down	0	PTPN4	Up	0
G2E3	Down	0	OBP2A	Down	0	UBE2L6	Up	0
CYP2C67	Down	0	SYNE4	Down	0	HACL1	Up	0
C330021F2								
3RIK	Down	0	DPYD	Down	0	MTOR	Up	0
NTRK2	Down	0	DYNC2LI1	Down	0	FGF21	Up	0
CFHR2	Down	0	LIMD2	Down	0	RAET1D	Up	0
						ANKRD		
UGT2B36	Down	0	ITIH5	Down	0	2	Up	0
GM4788	Down	0	TMEM71	Down	0	TRPM5	Up	0
						SLC25A		
ACMSD	Down	0	TXNDC16	Down	0	20	Up	0
BBS1	Down	0	ADAMTS10	Down	0	PLIN4	Up	0
LIN7A	Down	0	DDX58	Down	0	XRCC2	Up	0
AGAP2	Down	0	PLXNB1	Down	0	ABHD1	Up	0
						SEC61A		
GLS2	Down	0	GBP9	Down	0	2	Up	0
						PTPLAD		
TMEM231	Down	0	ZFP454	Down	0	1	Up	0
GUCY1A2	Down	0	PODN	Down	0	CALN1	Up	0
DNAAF3	Down	0	OLFML1	Down	0	ZBTB32	Up	0
ACSL6	Down	0	AI118078	Down	0	USH2A	Up	0
9130409I23						CDC42E		
RIK	Down	0	DCLK3	Down	0	P5	Up	0
						HNRNP		
CCDC160	Down	0	SNTG2	Down	0	H1	Up	0
TNFSFM13	Down	0	OLFM2	Down	0	PXMP4	Up	0
FAM134B	Down	0	APOL9A	Down	0	ARPP19	Up	0
GM4841	Down	0	PYHIN1	Down	0	ACKR2	Up	0
			1110051M20R					
PNPLA1	Down	0	IK	Down	0	HR	Up	0
RIPPLY1	Down	0	DNAIC1	Down	0	FIGNL1	Up	0
GM11437	Down	0	ARHGAP26	Down	0	GPRC5B	Up	0
KCNJ10	Down	0	MMD2	Down	0	SCUBE1	Up	0
			2810007J24RI					
PARP14	Down	0	K	Down	0	LPAR3	Up	0

MUP3	Down	0	MYH10	Down	0	PEX19	Up	0
CYP2C68	Down	0	CATSPERD	Down	0	PKMYT		
GBP10	Down	0	SP110	Down	0	1	Up	0
GBP11	Down	0	ATP6V0D2	Down	0	ASPA	Up	0
URAD	Down	0	GSAP	Down	0	TOR3A	Up	0
ARRDC3	Down	0	FAM26F	Down	0	PALMD	Up	0
HSD11B1	Down	0	OSBPL8	Down	0	NDC80	Up	0
SCIMP	Down	0	MRGPRE	Down	0	CML5	Up	0
SLC1A2	Down	0	SNHG11	Down	0	HILPDA	Up	0
BRDT	Down	0	ARHGAP18	Down	0	ISYNA1	Up	0
CPS1	Down	0	LRTM1	Down	0	CROT	Up	0
ATP8B4	Down	0	SLC22A30	Down	0	EHHAD		
SETDB2	Down	0	SLC17A4	Down	0	H	Up	0
KCNT2	Down	0	CAMK1D	Down	0	PANK1	Up	0
CCNO	Down	0	KALRN	Down	0	ALG14	Up	0
GPAT2	Down	0	SLC41A2	Down	0	ASF1B	Up	0
DHTKD1	Down	0	EIF5A2	Down	0	RTN4	Up	0
HTRA4	Down	0	MKX	Down	0	GINS4	Up	0
CCDC88B	Down	0	D630003M21			HSDL2	Up	0
CES1B	Down	0	RIK	Down	0	TNFRSF		
METTL7A3	Down	0	VGLL4	Down	0	23	Up	0
SRPX2	Down	0	E2F2	Down	0	FABP4	Up	0
FETUB	Down	0	FAM198A	Down	0	MTAP	Up	0
NDUFA4L2	Down	0	COLGALT2	Down	0	EVPL	Up	0
F830016B0			PREX1	Down	0	MRPL17	Up	0
8RIK	Down	0	KLHL23	Down	0	ABHD6	Up	0
CYP2C69	Down	0	TMEM67	Down	0	NDUFA		
CYP2D11	Down	0	ZFP334	Down	0	3	Up	0
CYP3A59	Down	0	VTCN1	Down	0	CHCHD		
GAS7	Down	0	NECAB1	Down	0	6	Up	0
NOS1AP	Down	0	FAM65B	Down	0	DNAJC1		
FGA	Down	0	CREB3L2	Down	0	5	Up	0
CMAH	Down	0	DPY19L3	Down	0	AIG1	Up	0
NCAM2	Down	0	ZFP385B	Down	0	CENPP	Up	0
CEACAM2	Down	0	LRRC4C	Down	0	APTX	Up	0
SHANK2	Down	0	GULO	Down	0	SPC25	Up	0
LAIR1	Down	0	EGFLAM	Down	0	PNKD	Up	0
FCGBP	Down	0	SCAI	Down	0	NDUFB3	Up	0
WISP3	Down	0	TMEM241	Down	0	ZWINT	Up	0
						GEMIN2	Up	0
						MAP1L		
						C3A	Up	0
						ASB17	Up	0
						RNF186	Up	0
						ETFDH	Up	0

NUCB2	Down	0	AI182371	Down	0	LONP2	Up	0
GM12250	Down	0	PLD4	Down	0	BAIAP2		
HSBP1L1	Down	0	TNFRSF14	Down	0	L1	Up	0
BC024139	Down	0	CAR5B	Down	0	DSN1	Up	0
PPFIA4	Down	0	NOSTRIN	Down	0	SH3D21	Up	0
TGTP2	Down	0	PIK3R3	Down	0	CAND2	Up	0
CES3B	Down	0	DSG1C	Down	0	MASTL	Up	0
MYO1B	Down	0	GSTP2	Down	0	ACBD4	Up	0
TTBK1	Down	0	NFASC	Down	0	NKAIN1	Up	0
ITPRIPL1	Down	0	FAM19A2	Down	0	ARL8B	Up	0
PLXDC1	Down	0	SPRN	Down	0	CDT1	Up	0
MSL3L2	Down	0	PLK5	Down	0	ZC3H13	Up	0
LY6E	Down	0	FAT4	Down	0	RETSAT	Up	0
PHF11C	Down	0	WFDC21	Down	0	DECR1	Up	0
IGLON5	Down	0	FAM229B	Down	0	MMD	Up	0
3110052M0						AGPAT2	Up	0
2RIK	Down	0	FAM25C	Down	0	SLC25A		
KLHL33	Down	0	GBP6	Down	0	30	Up	0
APOL9B	Down	0	LZTS3	Down	0	LSM3	Up	0
						PLL	Up	0
						PPP2R2		
BDH2	Down	0	RANBP3L	Down	0	D	Up	0
LRRC56	Down	0	ELMO1	Down	0	CELA3B	Up	0
LOC100038								
947	Down	0	CES2B	Down	0	SUMF2	Up	0
			4430402118RI					
CCDC162	Down	0	K	Down	0	TUBB6	Up	0
GPR155	Down	0	B4GALNT3	Down	0	PPCS	Up	0
GM7694	Down	0	HCRTR2	Down	0	ZWILCH	Up	0
LOC100048						3010026		
884	Down	0	SERPINA11	Down	0	O09RIK	Up	0
MUP16	Down	0	CYP2D12	Down	0	DCAKD	Up	0
MUP17	Down	0	KNG2	Down	0	CDCA8	Up	0
H2-Q9	Down	0	CYP2C54	Down	0	NHP2	Up	0
						FAM195		
AI607873	Down	0	H2-AB1	Down	0	A	Up	0
SMIM22	Down	0	TES	Down	0	GGCT	Up	0
BIN2	Down	0	ACE	Down	0	ETFB	Up	0
C920025E0						MOGAT		
4RIK	Down	0	H2-Q6	Down	0	1	Up	0
AFF3	Down	0	EGFR	Down	0	CGREF1	Up	0
DDX60	Down	0	H19	Down	0	FITM1	Up	0
						COMTD		
PZP	Down	0	GM5424	Down	0	1	Up	0
AATK	Down	0	GM4956	Down	0	GINS1	Up	0
			SERPINA4-			1700030J		
ADRA1B	Down	0	PS1	Down	0	22RIK	Up	0

ADRB1	Down	0	CYP2D13	Down	0	TEN1	Up	0
AMD2	Down	0	GM10319	Down	0	HFE2	Up	0
ANG	Down	0	BC029722	Down	0	TRIP13	Up	0
BIRC3	Down	0	MIR99AHG 2610035D17R	Down	0	ZSWIM7	Up	0
ASS1	Down	0	IK	Down	0	ANXA13	Up	0
CIITA	Down	0	BC024386	Down	0	TMEM1 47	Up	0
CAR8	Down	0	RIAN	Down	0	KRTCA P3	Up	0
CAR3	Down	0	MIRG 1700018L02RI	Down	0	2010003 K11RIK	Up	0
SERPINA6	Down	0	K MARCKSL1- PS4	Down	0	APITD1	Up	0
CD37	Down	0	SNHG12	Down	0	NT5DC2	Up	0
CD48	Down	0	4930581F22RI	Down	0	GOLM1	Up	0
CFI	Down	0	K	Down	0	LYSMD 2	Up	0
CHRM1	Down	0	MIR24-1	Down	0	GPATC H2L	Up	0
DMBT1	Down	0	MIR22	Down	0	ATAD2	Up	0
CYBA	Down	0	MIR568	Down	0	QPCT	Up	0
CYP26A1	Down	0	MIR22HG 1500017E21RI	Down	0	SLC25A 33	Up	0
CYP2A5	Down	0	K	Down	0	FAM213 A	Up	0
CYP2C29	Down	0	ADH6-PS1	Down	0	GFOD2	Up	0
CYP2F2	Down	0	CYP2C53-PS 5430416N02R	Down	0	KDSR	Up	0
CYP3A11	Down	0	IK A730020M07	Down	0	4921507 P07RIK	Up	0
CYP7B1	Down	0	RIK	Down	0	MICALC L	Up	0
DACH1	Down	0	GM16548 C730036E19R	Down	0	GPR39	Up	0
GADD45A	Down	0	IK 0610005C13R	Down	0	RFX4	Up	0
EEF2K	Down	0	IK 2310001H17R	Down	0	PEX1	Up	0
CELA2A	Down	0	IK	Down	0	FAM110 C	Up	0
ENPEP	Down	0	KANTR 2310040G24R	Down	0	METTTL7 B	Up	0
CES1C	Down	0	IK	Down	0	SLC41A 3	Up	0
ESR1	Down	0	GM16793	Down	0	ARHGE F3	Up	0
FGFR3	Down	0	GM19522 3110045C21R	Down	0	VWA8	Up	0
FGFR4	Down	0	IK	Down	0	SYCE2	Up	0

FMO3	Down	0	GM10804	Down	0	CENPU	Up	0
FST	Down	0	GM12718	Down	0	ACSL5	Up	0
FZD8	Down	0	4930480G23R					
GNA14	Down	0	IK	Down	0	APMAP	Up	0
GNAT1	Down	0	GDAP10	Down	0	EPN3	Up	0
GNAT2	Down	0	1700012D01R					
GPLD1	Down	0	IK	Down	0	PAQR7	Up	0
GRM8	Down	0	GM17644	Down	0	ENDOD		
CXCL1	Down	0	2900009J06RI			1	Up	0
GSTA2	Down	0	K	Down	0	WDR73	Up	0
GSTM2	Down	0	2900076A07R			ZDHHC		
GSTM6	Down	0	IK	Down	0	13	Up	0
GUCA1A	Down	0	5730435O14R					
H2-BL	Down	0	IK	Down	0	DDX28	Up	0
H2-T24	Down	0	4933438K21R			1600014		
MR1	Down	0	IK	Down	0	K23RIK	Up	0
FOXQ1	Down	0	1700028E10RI			SLC39A		
HSD3B5	Down	0	K	Down	0	5	Up	0
SDC2	Down	0	0610031O16R					
HTR1D	Down	0	IK	Down	0	SLC35F2	Up	0
IFI47	Down	0	4930470H14R					
IFIT1	Down	0	IK	Down	0	SULF2	Up	0
IL12RB1	Down	0	1700092C10R					
IL15	Down	0	IK	Down	0	CHAF1B	Up	0
IL18	Down	0	GM16063	Down	0	DDHD2	Up	0
IL1B	Down	0	AW112010	Down	0	PYGO1	Up	0
INHBA	Down	0	GM20319	Down	0	2610020		
LAG3	Down	0	MIR7219	Down	0	H08RIK	Up	0
BLNK	Down	0	4930459C07R			CENPN	Up	0
MASP1	Down	0	IK	Down	0	CDA	Up	0
MUG1	Down	0	ZFP941	Up	0	ORAOV		
MUG2	Down	0	PLEKHA8	Up	0	1	Up	0
			UTP14B	Up	0	WDR89	Up	0
			NAT8L	Up	0	PRCP	Up	0
			RAB44	Up	0	ANGPT		
			TACC2	Up	0	L1	Up	0
			SLC25A42	Up	0	TMEM1		
			RNASE13	Up	0	35	Up	0
			HSPB6	Up	0	SASS6	Up	0
			HS3ST6	Up	0	BMPER	Up	0
			WFDC16	Up	0	1700056		
			E2F8	Up	0	E22RIK	Up	0
			NRP	Up	0	FCF1	Up	0
						PHF19	Up	0
						RIN2	Up	0
						GRIP1	Up	0
						CEP55	Up	0

NAB2	Down	0	LMAN2L	Up	0	ACOT12	Up	0
NFKBIE	Down	0	RSAD1	Up	0	CCDC3	Up	0
MYCN	Down	0	SCN4B	Up	0	XRCC3	Up	0
NPTX1	Down	0	TRIM6	Up	0	TMED5	Up	0
ORM1	Down	0	GM4952	Up	0	ELOVL7	Up	0
OTC	Down	0	SLC25A34	Up	0	LRRC48	Up	0
PAH	Down	0	4930404N11R IK	Up	0	SPATA1 7	Up	0
PDE9A	Down	0	ZMYND12	Up	0	KBTBD1 1	Up	0
TULP2	Down	0	ANKS6	Up	0	CCDC14 6	Up	0
SERPINF2	Down	0	ADAMTS15	Up	0	FAM183 B	Up	0
PLSCR2	Down	0	PLA2G4F	Up	0	ACYP2	Up	0
PRKG2	Down	0	ZBTB45	Up	0	MORC4	Up	0
PIPOX	Down	0	ZFP667	Up	0	4930402 H24RIK	Up	0
PTGDS	Down	0	SERINC4	Up	0	NLN 4930579	Up	0
RAC2	Down	0	SNX22	Up	0	G24RIK	Up	0
RASA3	Down	0	CDC6	Up	0	RAB30	Up	0
RGS4	Down	0	ENTPD5	Up	0	PREX2	Up	0
SCN7A	Down	0	PKNOX2	Up	0	TMEM9 8	Up	0
CX3CL1	Down	0	SPECC1	Up	0	GSTK1	Up	0
ST3GAL1	Down	0	SYBU	Up	0	DET1	Up	0
SLC17A1	Down	0	KLHDC9	Up	0	PPP1R3 G	Up	0
SLC3A1	Down	0	LRRC14B	Up	0	SLC52A 2	Up	0
SERPINA1 A	Down	0	NTRK1	Up	0	STYXL1	Up	0
SERPINA1 B	Down	0	1700039E15RI K	Up	0	SPATC1 L	Up	0
SERPINA1 C	Down	0	YEATS2	Up	0	SRXN1	Up	0
SERPINA1 E	Down	0	FANCD2	Up	0	DTL	Up	0
SERPINA3 N	Down	0	8-Mar 5031439G07R	Up	0	UNC5B	Up	0
SERPINA3 M	Down	0	IK	Up	0	TTL11	Up	0
SERPINB9	Down	0	UAP1L1	Up	0	CALR3	Up	0
SLC6A6	Down	0	FHDC1	Up	0	ST5 2700049	Up	0
TBXA2R	Down	0	ABCC4	Up	0	A03RIK	Up	0
PHLDA1	Down	0	NLRP12	Up	0	TICRR	Up	0



TERT	Down	0	BC048644	Up	0	MRAP	Up	0
THRSP	Down	0	LRRC8B	Up	0	KCNK10	Up	0
TNNC1	Down	0	ZCCHC16	Up	0	POLQ	Up	0
TNFSF10	Down	0	ZFP872	Up	0	SLA2	Up	0
UOX	Down	0	THNSL2	Up	0	LBH	Up	0
WAS	Down	0	RUFY4	Up	0	PLB1	Up	0
ZAP70	Down	0	TMEM136	Up	0	HTRA3	Up	0
CHRNB1	Down	0	PNLDC1	Up	0	ZFP449	Up	0
ADCY9	Down	0	ST3GAL5	Up	0	NOL3	Up	0
						EFCAB1		
AVIL	Down	0	CACNB4	Up	0	1	Up	0
ALAS2	Down	0	TOMM40L	Up	0	ARMC9	Up	0
ALDOC	Down	0	COL28A1	Up	0	STPG1	Up	0
AMD1	Down	0	WDR93	Up	0	WRNIP1	Up	0
AKR1B7	Down	0	GM11992	Up	0	DLST	Up	0
C3AR1	Down	0	DHRS4	Up	0	ZFP202	Up	0
C4B	Down	0	LIPE	Up	0	CNNM1	Up	0
CAR1	Down	0	RAD54B	Up	0	NRG4	Up	0
CAR11	Down	0	IL1RN	Up	0	DMPK	Up	0
CASP3	Down	0	KNTC1	Up	0	ZFP423	Up	0
CCRN4L	Down	0	OIP5	Up	0	KRT23	Up	0
CD83	Down	0	PROCA1	Up	0	RAB34	Up	0
CDH1	Down	0	MUP2	Up	0	NPNT	Up	0
CFH	Down	0	CERKL	Up	0	CNNM4	Up	0
CHRD	Down	0	BSG	Up	0	AMN	Up	0
CISH	Down	0	NRP2	Up	0	OPHN1	Up	0
						FAM126		
CLCN2	Down	0	PTPN6	Up	0	A	Up	0
CCR3	Down	0	SLC16A5	Up	0	TAC4	Up	0
CCR5	Down	0	THG1L	Up	0	IMPA2	Up	0
						HSD17B		
CNP	Down	0	DDIAS	Up	0	11	Up	0
CYP1A1	Down	0	UNC79	Up	0	RAD51C	Up	0
CYP1A2	Down	0	EFCAB3	Up	0	RIMS2	Up	0
						HIST2H		
CYP2C37	Down	0	ADAMTS14	Up	0	3C2	Up	0
CYP2C40	Down	0	OXTR	Up	0	DEF8	Up	0
DBT	Down	0	RAP1GAP	Up	0	PAWR	Up	0
LEFTY1	Down	0	NIPAL1	Up	0	GRHPR	Up	0
						RNF144		
SAMD9L	Down	0	ZFP174	Up	0	A	Up	0
F7	Down	0	TLN2	Up	0	ACO2	Up	0
FCGR1	Down	0	UGGT2	Up	0	PASK	Up	0
						ACAA1		
FES	Down	0	MFSD7B	Up	0	A	Up	0
FOS	Down	0	MUP6	Up	0	KIRREL	Up	0

GAMT	Down	0	DGKH	Up	0	PAPLN	Up	0
GHR	Down	0	MYH7B	Up	0	ROGDI	Up	0
GM2A	Down	0	CISD3	Up	0	P2RY14	Up	0
GNMT	Down	0	FAM131C	Up	0	ACOT8	Up	0
GOT1	Down	0	CYP4A32	Up	0	SLC5A2	Up	0
GSTA4	Down	0	WFIKKN1	Up	0	MEF2D	Up	0
GSTM1	Down	0	CYP4F17	Up	0	CHRD2L2	Up	0
						ARHGA		
GSTM3	Down	0	CYP2A22	Up	0	P27	Up	0
						4931406		
H2-Q7	Down	0	COL6A6	Up	0	C07RIK	Up	0
H2-T10	Down	0	CENPW	Up	0	NCAPG2	Up	0
H2-T23	Down	0	CBFA2T3	Up	0	STK17B	Up	0
HAL	Down	0	CELF2	Up	0	EHD4	Up	0
						MMAD		
HC	Down	0	UHRF1	Up	0	HC	Up	0
HEXB	Down	0	BC048609	Up	0	SPON2	Up	0
IER2	Down	0	PLIN1	Up	0	ACACB	Up	0
IFIT3	Down	0	8-Sep	Up	0	RHOA	Up	0
			4930506M07R					
IGF1	Down	0	IK	Up	0	CDCP1	Up	0
						AKR1C1		
IL18BP	Down	0	CORIN	Up	0	8	Up	0
IRX1	Down	0	RAD54L	Up	0	NCALD	Up	0
KIF9	Down	0	FAM178B	Up	0	LARS	Up	0
KLF12	Down	0	MUP8	Up	0	SYT12	Up	0
MAFB	Down	0	GM9992	Up	0	ACOT2	Up	0
LAMA3	Down	0	ACSS3	Up	0	ACOT3	Up	0
LECT1	Down	0	ADTRP	Up	0	ACOT4	Up	0
LECT2	Down	0	ALS2CL	Up	0	ELOVL5	Up	0
						SLC22A		
PSMB8	Down	0	SSC4D	Up	0	27	Up	0
LST1	Down	0	TMEM184A	Up	0	TYMP	Up	0
MXD1	Down	0	KIF26B	Up	0	PPP2R4	Up	0
						PLA2G1		
MBL2	Down	0	MDM1	Up	0	6	Up	0
MPEG1	Down	0	PKP3	Up	0	GALNT2	Up	0
MX1	Down	0	RMI2	Up	0	DLGAP5	Up	0
NEB	Down	0	LRRC51	Up	0	ACAT1	Up	0
						CHRNA		
NNMT	Down	0	MINOS1	Up	0	2	Up	0
ORM2	Down	0	EME2	Up	0	CHPT1	Up	0
						KLHDC		
PIGR	Down	0	PCSK5	Up	0	8A	Up	0
						SLC24A		
PPIB	Down	0	MTTP	Up	0	1	Up	0
PRLR	Down	0	MAP3K12	Up	0	NCAPH	Up	0

PRODH	Down	0	OSBPL3	Up	0	ELMOD		
RGS16	Down	0	TRIM13	Up	0	3	Up	0
SAA2	Down	0	CHADL	Up	0	CSAD	Up	0
SAA3	Down	0	DNAH6	Up	0	HIP1R	Up	0
SAA4	Down	0	RAD18	Up	0	PEX16	Up	0
APCS	Down	0	PPP1R3E	Up	0	LPCAT3	Up	0
SCNN1A	Down	0	EDA	Up	0	PRC1	Up	0
CCL9	Down	0	RPGR	Up	0	AY0748		
SELP	Down	0	KCNMB3	Up	0	87	Up	0
SEMA3E	Down	0	GM3336	Up	0	ACNAT		
SLC25A14	Down	0	KIFC1	Up	0	2	Up	0
SNAI2	Down	0	DCDC2B	Up	0	BAG2	Up	0
SORL1	Down	0	A630076J17RI			SLC44A		
SERPINA3			K	Up	0	3	Up	0
K	Down	0	FER1L5	Up	0	DUOXA		
SERPINB8	Down	0	GM867	Up	0	1	Up	0
TFF3	Down	0	KBTBD12	Up	0	CHTF18	Up	0
TGTP1	Down	0	COL12A1	Up	0	DHRS7B	Up	0
TNFSF12	Down	0	ITGA10	Up	0	ACOT5	Up	0
XIRP1	Down	0	ACADL	Up	0	MFSD7C	Up	0
GREM2	Down	0	ACADM	Up	0	IF127L2		
MMP17	Down	0	PLIN2	Up	0	B	Up	0
SPRY4	Down	0	ADRA2A	Up	0	HAUS4	Up	0
WIF1	Down	0	ALPL	Up	0	SMOX	Up	0
MAP2K6	Down	0	ALDH3A2	Up	0	SDCBP2	Up	0
HOMER2	Down	0	ALDOA	Up	0	HADHB	Up	0
OMD	Down	0	AQP7	Up	0	NXNL1	Up	0
AOAH	Down	0	RHOC	Up	0	TOX	Up	0
IRF5	Down	0	ATF3	Up	0	GRHL1	Up	0
AHSG	Down	0	PHB2	Up	0	CENPI	Up	0
C2	Down	0	HRK	Up	0	FANCI	Up	0
C9	Down	0	BLM	Up	0	RHBDD		
CD4	Down	0	ANXA2	Up	0	2	Up	0
HAPLN1	Down	0	CALCR	Up	0	KRT79	Up	0
FLT3L	Down	0	CCNG2	Up	0	ACAA1		
GSTP1	Down	0	CD36	Up	0	B	Up	0
						ERCC6L	Up	0
						HPDL	Up	0
						OLFR20	Up	0
						SLCO4A		
						1	Up	0
						STX3	Up	0
						SLC18A		
						1	Up	0
						SLC16A		
						11	Up	0

LIFR	Down	0	SCARB2	Up	0	PHOSPH		
PSMB9	Down	0	CD9	Up	0	O1	Up	0
MX2	Down	0	CDK1	Up	0	OPLAH	Up	0
ORM3	Down	0	CHEK1	Up	0	CPNE5	Up	0
PKLR	Down	0	CHKB	Up	0	SLC36A		
PSMB10	Down	0	CHIL1	Up	0	2	Up	0
TTR	Down	0	CIDEA	Up	0	ADAM3		
FGD2	Down	0	ELOVL3	Up	0	2	Up	0
NAGLU	Down	0	COL11A1	Up	0	GRWD1	Up	0
SLCO1A1	Down	0	CPOX	Up	0	CLSTN3	Up	0
CYP2G1	Down	0	CRAT	Up	0	BC03086		
LY75	Down	0	CSF2RB	Up	0	7	Up	0
GCAT	Down	0	CTSE	Up	0	FAM102		
TNFRSF19	Down	0	CYCS	Up	0	A	Up	0
HEYL	Down	0	CYP17A1	Up	0	CMTM4	Up	0
ZFP354C	Down	0	CYP4A14	Up	0	ACSF2	Up	0
ENPP2	Down	0	DBI	Up	0	IGSF11	Up	0
NOX4	Down	0	DEFB1	Up	0	SPIRE2	Up	0
CFHR1	Down	0	ECT2	Up	0	MAB21L		
ISG15	Down	0	ENC1	Up	0	3	Up	0
FBXO17	Down	0	EPHX2	Up	0	CYP4A1		
NT5C	Down	0	EPS8	Up	0	2B	Up	0
SYT3	Down	0	FABP2	Up	0	SLC16A		
C6	Down	0	ACSL1	Up	0	13	Up	0
BOK	Down	0	FAS	Up	0	TMPRSS		
BNIP2	Down	0	FBP2	Up	0	7	Up	0
IRF7	Down	0	SMC2	Up	0	ZC3HA		
PPP1R3C	Down	0	FRAT1	Up	0	V1L	Up	0
VAMP5	Down	0	FUT1	Up	0	TBC1D2		
RAB25	Down	0	FZD6	Up	0	5	Up	0
TCIRG1	Down	0	G0S2	Up	0	MEGF11	Up	0
HPX	Down	0	GABRB2	Up	0	TMEM1		
						20A	Up	0
						ACOT6	Up	0
						C330027		
						C09RIK	Up	0
						SERINC		
						2	Up	0
						OTOP1	Up	0
						SEL1L3	Up	0
						AGPAT9	Up	0
						ADPRH		
						L1	Up	0
						CCDC14	Up	0
						SERPIN		
						B1C	Up	0
						PRUNE	Up	0
						RBMX2	Up	0

GBP3	Down	0	SLC6A9	Up	0	FITM2	Up	0
ITIH4	Down	0	GRN	Up	0	DCUN1	Up	0
ABCC6	Down	0	GYK	Up	0	D3	Up	0
LGALS8	Down	0	HADH	Up	0	RCCD1	Up	0
SELENBP2	Down	0	HCN2	Up	0	TDRP	Up	0
FMN2	Down	0	HELLS	Up	0	UBTD2	Up	0
HGFAC	Down	0	HMGB3	Up	0	IBA57	Up	0
HES6	Down	0	HMGCL	Up	0	FAM73A	Up	0
GRASP	Down	0	HMGCS2	Up	0	IMPG2	Up	0
CXCL14	Down	0	HSD17B4	Up	0	CDH22	Up	0
EXTL1	Down	0	HSPA2	Up	0	PTRH2	Up	0
WSB1	Down	0	HSPE1	Up	0	FANCB	Up	0
SLC22A4	Down	0	HYAL1	Up	0	MDFIC	Up	0
TLE2	Down	0	IDUA	Up	0	TRPM4	Up	0
NUPR1	Down	0	IMPACT	Up	0	TMEM6	Up	0
SLC2A5	Down	0	INHBE	Up	0	5	Up	0
IKBKE	Down	0	INPP1	Up	0	NAV2	Up	0
DUSP14	Down	0	ITGA2	Up	0	ACAD11	Up	0
CYP2D22	Down	0	ITGA6	Up	0	D330045	Up	0
PDE4B	Down	0	JRK	Up	0	A20RIK	Up	0
SULT1B1	Down	0	LAMB3	Up	0	CHCHD	Up	0
B3GALNT1	Down	0	ANPEP	Up	0	10	Up	0
B3GALT1	Down	0	LPL	Up	0	ALS2CR	Up	0
SLCO1B2	Down	0	MCM3	Up	0	12	Up	0
SULT5A1	Down	0	MCM2	Up	0	FAM73B	Up	0
SRSF4	Down	0	MCM4	Up	0	TMEM1	Up	0
ABCB11	Down	0	MCM5	Up	0	39	Up	0
FABP7	Down	0	MCM6	Up	0	LRRC39	Up	0
CXCL10	Down	0	MCM7	Up	0	SPTLC3	Up	0
EVC	Down	0	SMCP	Up	0	LRFN3	Up	0
PIWIL2	Down	0	MEIG1	Up	0	SLC35G	Up	0
SH2D2A	Down	0	ME1	Up	0	1	Up	0
TTYH1	Down	0	MDH2	Up	0	TMEM2	Up	0
CRYBB3	Down	0	MPP1	Up	0	45	Up	0
RSAD2	Down	0	MTNR1A	Up	0	CLSPN	Up	0
HYOU1	Down	0	GADD45B	Up	0	OSCAR	Up	0
						RAPGEF	Up	0
						5	Up	0
						P3H4	Up	0
						6430573	Up	0
						F11RIK	Up	0
						FSD1L	Up	0
						TOPBP1	Up	0
						TMCC3	Up	0
						A530016	Up	0
						L24RIK	Up	0
						EXOC6B	Up	0

PRG4	Down	0	MYO1C	Up	0	GNAL	Up	0
DEXI	Down	0	NFE2L1	Up	0	CENPT	Up	0
CES1G	Down	0	MAP4K4	Up	0	ATP8B5	Up	0
RNASE4	Down	0	NMT2	Up	0	STRIP2	Up	0
BCO1	Down	0	NXPH1	Up	0	DAB1	Up	0
						TMEM1		
SMPD3	Down	0	P2RY1	Up	0	54	Up	0
SQRDL	Down	0	PCTP	Up	0	LRRN4	Up	0
						CYP4F3		
MOXD1	Down	0	PDE1B	Up	0	9	Up	0
DACT1	Down	0	PEG3	Up	0	SYNPO	Up	0
SYT9	Down	0	PFKFB1	Up	0	SLC9A7	Up	0
FN3K	Down	0	ABCB4	Up	0	TMTC2	Up	0
FNDC4	Down	0	PITX3	Up	0	PSAT1	Up	0
CYP4F14	Down	0	SERPINE1	Up	0	ACAA2	Up	0
SLC15A3	Down	0	PRIM1	Up	0	ZFP3	Up	0
APOC3	Down	0	PSMB4	Up	0	SUN3	Up	0
GPM6B	Down	0	PSMC3IP	Up	0	CCDC73	Up	0
H2-Q8	Down	0	PSMD4	Up	0	TUSC5	Up	0
KNG1	Down	0	PTGFR	Up	0	EME1	Up	0
C1RA	Down	0	PVRL2	Up	0	ESYT3	Up	0
ETHE1	Down	0	ABCD3	Up	0	MED12L	Up	0
CML1	Down	0	RAD51AP1	Up	0	TGM4	Up	0
BMYC	Down	0	RAET1A	Up	0	AIFM2	Up	0
RTP4	Down	0	RAET1B	Up	0	FA2H	Up	0
TMEM86B	Down	0	RAET1C	Up	0	AMIGO2	Up	0
						HIST2H		
CTNNBIP1	Down	0	RDH16	Up	0	3C1	Up	0
AOX3	Down	0	RPIA	Up	0	CXCR1	Up	0
CYP2D40	Down	0	RRM1	Up	0	CIDEC	Up	0
UBA7	Down	0	RRM2	Up	0	ZSWIM3	Up	0
ICAM4	Down	0	S100A10	Up	0	GALE	Up	0
						ZDHHC		
PDE6H	Down	0	SCD1	Up	0	2	Up	0
						NANOS		
HDAC9	Down	0	ST3GAL2	Up	0	1	Up	0
			ST6GALNAC					
CYP27A1	Down	0	2	Up	0	NRG1	Up	0
CYP4F16	Down	0	ST8SIA3	Up	0	RNF24	Up	0
NUDT7	Down	0	STIL	Up	0	THEMIS	Up	0
HAAO	Down	0	SLC16A1	Up	0	SLC35F1	Up	0
TCTEX1D2	Down	0	SPRR1A	Up	0	COQ4	Up	0
IFITM3	Down	0	TEAD1	Up	0	PRRG4	Up	0
FBXO36	Down	0	TCTB	Up	0	NCEH1	Up	0
ARL4D	Down	0	TGM2	Up	0	DCTD	Up	0
THEM5	Down	0	TGM3	Up	0	FAR2	Up	0

TMEM218	Down	0	RAN	Up	0	ACAD12	Up	0
ACOT11	Down	0	TPM2	Up	0	GINS2	Up	0
RDM1	Down	0	TGOLN1	Up	0	ADCK2	Up	0
COL27A1	Down	0	TGOLN2	Up	0	HADHA	Up	0
ACADSB	Down	0	TUBB2A	Up	0	TMEM5		
PROZ	Down	0	UCP3	Up	0	6	Up	0
HMG3	Down	0	UPP1	Up	0	ARHGA		
LRP2BP	Down	0	WNT11	Up	0	P11A	Up	0
DYX1C1	Down	0	WNT5A	Up	0	FFAR4	Up	0
ALDH3B1	Down	0	ADIPOQ	Up	0	GPR135	Up	0
IAH1	Down	0	ADAM11	Up	0	TMEM5		
TCTN2	Down	0	ADH7	Up	0	9L	Up	0
SERPINA1						A430033		
2	Down	0	ANXA5	Up	0	K04RIK	Up	0
PPP1R14A	Down	0	BRCA2	Up	0	KIF20B	Up	0
ZFP579	Down	0	CAPN2	Up	0	DSCC1	Up	0
LRRC16A	Down	0	CAR2	Up	0	TONSL	Up	0
PDGFRL	Down	0	CASP8	Up	0	PLD6	Up	0
HAGHL	Down	0	CCNA2	Up	0	COX6B2	Up	0
CHAC1	Down	0	CCT3	Up	0	COX19	Up	0
SULT1C2	Down	0	CD24A	Up	0	SCYL2	Up	0
GSDMD	Down	0	CDC45	Up	0	FERMT1	Up	0
C1QTNF2	Down	0	CPT1B	Up	0	BHLHB9	Up	0
ERP27	Down	0	CPT2	Up	0	RAET1E	Up	0
SAT2	Down	0	CYP4A10	Up	0	PAQR9	Up	0
ENHO	Down	0	DAPK2	Up	0	IGSF21	Up	0
RPAIN	Down	0	ECI1	Up	0	C2CD4C	Up	0
1810046K0						CASC4	Up	0
7RIK	Down	0	DNASE1	Up	0	IFNK	Up	0
MCM10	Down	0	RHBDF1	Up	0	UNC93A	Up	0
SDR9C7	Down	0	KHDRBS3	Up	0	DOT1L	Up	0
METTL7A1	Down	0	FABP3	Up	0	MMS22		
CD209G	Down	0	FCGRT	Up	0	L	Up	0
AFAP1	Down	0	FPGS	Up	0	CTIF	Up	0
IYD	Down	0	GPD1	Up	0	NEIL2	Up	0
ALDH1L1	Down	0	GPD2	Up	0	CYP4A3		
DCLK2	Down	0	GNGT1	Up	0	1	Up	0
ARRDC2	Down	0	GSTT2	Up	0	UGT1A1	Up	0
LDHD	Down	0	HSPD1	Up	0	CHRM2	Up	0
						CCDC12		
						0	Up	0
						UGT3A1	Up	0
						RCAN2	Up	0
						MARVE		
						LD3	Up	0

SNTG1	Down	0	HSPA1B	Up	0	Sept5	Up	0
CYP2U1	Down	0	HSP90AA1	Up	0	XIST	Up	0
IZUMO4	Down	0	SLC6A4	Up	0	GM5088	Up	0
IFIH1	Down	0	ID1	Up	0	DIO3OS	Up	0
RARRES2	Down	0	ITGA4	Up	0	NEAT1	Up	0
SLC46A3	Down	0	KCNAB1	Up	0	ATP10D	Up	0
SELO	Down	0	KCNK3	Up	0	CHKBC		
ETNPPL	Down	0	FABP5	Up	0	PT1B	Up	0
1300017J02						CDK3-		
RIK	Down	0	LAMC1	Up	0	PS	Up	0
SERPINA9	Down	0	LEPR	Up	0	B430010		
F11	Down	0	LGALS4	Up	0	I23RIK	Up	0
CYP2C55	Down	0	LGALS6	Up	0	A330069		
UGT2A3	Down	0	LIG1	Up	0	E16RIK	Up	0
ALDH1B1	Down	0	LMO4	Up	0	C230091		
TTC39C	Down	0	LY6D	Up	0	D08RIK	Up	0
3110082I17						A330040		
RIK	Down	0	MID1	Up	0	F15RIK	Up	0
1700049G1						1700008J		
7RIK	Down	0	MTHFR	Up	0	07RIK	Up	0
STRA6L	Down	0	MYOM1	Up	0	GM1063		
PAQR8	Down	0	NCK2	Up	0	8	Up	0
IQCE	Down	0	NEK2	Up	0	1700020		
TMC5	Down	0	ORC1	Up	0	N01RIK	Up	0
SNX29	Down	0	HSPA4L	Up	0	GM1001		
PPP4R4	Down	0	PDE4D	Up	0	2	Up	0
PYROXD2	Down	0	PEX11A	Up	0	2310068J		
RSPH9	Down	0	ABCB1B	Up	0	16RIK	Up	0
TMEM14A	Down	0	PLTP	Up	0	PNPLA2	Up	0
APOL7A	Down	0	POLD1	Up	0	D430020		
AP3M2	Down	0	POLE	Up	0	J02RIK	Up	0
						GM1006		
						9	Up	0
						GM1576		
						0	Up	0
						3930402		
						G23RIK	Up	0
						B430212		
						C06RIK	Up	0
						BC03136		
						1	Up	0
						E030024		
						N20RIK	Up	0
						GM1079		
						0	Up	0
						1700048		
						O20RIK	Up	0
						D330041		
						H03RIK	Up	0



GBP8	Down	0	POLE2	Up	0	AI50759 7	Up	0
ZFP773	Down	0	POU4F1	Up	0	4632428 C04RIK	Up	0
ABHD14B	Down	0	PRKDC	Up	0	MIR3091 1300002	Up	0
UPP2	Down	0	PRTN3	Up	0	E11RIK 9330159	Up	0
FAM81A	Down	0	PSAP	Up	0	M07RIK GM1566	Up	0
IFI27L2A 2310014L1	Down	0	PTGFRN	Up	0	3 1700023	Up	0
7RIK	Down	0	RAD51	Up	0	L04RIK CTCFLO	Up	0
CNRIP1	Down	0	RAD51D	Up	0	S 9430091	Up	0
CCDC151	Down	0	SCNN1G	Up	0	E24RIK B130034	Up	0
CRYL1	Down	0	SHCBP1	Up	0	C11RIK GM1544	Up	0
AK7	Down	0	SLC16A7	Up	0	1 GM1540	Up	0
ABCG3	Down	0	SLC22A3	Up	0	1 GM1961	Up	0
AKR1C6	Down	0	SLC22A5	Up	0	9 AV0511	Up	0
SLCO1A4	Down	0	SOX9	Up	0	73 1700027J	Up	0
F13B	Down	0	SYCP3	Up	0	07RIK 4931402	Up	0
MUP1	Down	0	TIMELESS	Up	0	G19RIK C130083	Up	0
REN1	Down	0	TOP2A	Up	0	M11RIK 9430037	Up	0
REN2	Down	0	TRAIP	Up	0	G07RIK 4930556	Up	0
CDO1	Down	0	UCP2	Up	0	M19RIK 2310039	Up	0
NGFR	Down	0	UCK1	Up	0	L15RIK 2410003	Up	0
OAS1C	Down	0	UNC119	Up	0	L11RIK 4930413	Up	0
MPV17L	Down	0	VNN1	Up	0	G21RIK C330022	Up	0
DQX1	Down	0	TRPV2	Up	0	C24RIK FAM219	Up	0
CELA1	Down	0	BACE1	Up	0	AOS GM1086	Up	0
PDE6C	Down	0	XCR1	Up	0	5 9530080	Up	0
NREP	Down	0	IMPDH1	Up	0	O11RIK	Up	0

CLEC2H	Down	0	MAB21L2	Up	0	GM4890	Up	0
HRG	Down	0	MGLL	Up	0	GM5420	Up	0
S1PR5	Down	0	TENM3	Up	0	GM1976	Up	0
GPR98	Down	0	ECI2	Up	0	GM1067		
SLC13A3	Down	0	SGCB	Up	0	7	Up	0
ACSM1	Down	0	SGCG	Up	0	4930506		
STEAP4	Down	0	SRP54A	Up	0	C21RIK	Up	0
HNMT	Down	0	ABCG2	Up	0	STXBP3		
BAIAP2	Down	0	DECR2	Up	0	B	Up	0
DNAH5	Down	0	MAPK13	Up	0	MIR7676		
						-1	Up	0
						MIR7676		
						-2	Up	0
						MIR8093	Up	0
						RPL14-		
						PS1	Up	0
						GM1600	Up	0