

Supplementary Table 1. Brain samples used in this study

sample	age	sex	brain region	cause of death	PMI (hrs)
human brain					
S2	74	male	prefrontal cortex, cerebellum	lung cancer	3
S3	79	male	prefrontal cortex, cerebellum	pneumonia	3
S6	84	male	prefrontal cortex, cerebellum	stomach cancer	6
chimpanzee brain					
C1	27	male	prefrontal cortex	natural cause	< 48
C2	42	female	prefrontal cortex	natural cause	< 48

The frontal pole region was dissected. PMI, postmortem interval

Supplementary Table 2. Summary of the materials and experiments.

source of genomic DNA	number of samples	LUMA	LINE-1 methylation assay	Illumina bead-array assay ^a	Affymetrix tiling array ^b	Nimblegen tiling array ^c	bisulfite sequencing
bulk (unsorted) prefrontal cortices	3	yes	yes	yes	no	no	no
sorted prefrontal cortex nuclei (NeuN+ or NeuN-)	3	yes	yes	yes	yes	(yes) ^d	(yes) ^d
cerebellums	3	yes	yes	yes	no	no	no
chimpanzee prefrontal cortices	2	no	no	yes	no	no	no

^aGolden Gate Cancer Panel I

^bAffymetrix human promoter 1.0R

^cNimblegen HG18 CpG promoter

^dGenomic DNA of one subject (S6) was used as representative for validation purpose.

Supplementary Table 3. List of the CpG sites showing large methylation difference between human and chimpanzee cortex

probe ID	accession	symbol	product	location of the CpG site	average methylation level	
					human cortex	chimp cortex
ALOX12_P223_R	NM_000697.1	ALOX12	arachidonate 12-lipoxygenase	chr17:6839905	0.632	0.388
AXL_P223_R	NM_021913.2	AXL	AXL receptor tyrosine kinase isoform 1	chr19:46416440	0.217	0.489
BCR_P346_F	NM_021574.1	BCR	breakpoint cluster region isoform 2	chr22:21852206	0.242	0.490
BCR_P422_F	NM_021574.1	BCR	breakpoint cluster region isoform 2	chr22:21852130	0.543	0.753
BMPRI1A_E88_F	NM_004329.2	BMPRI1A	bone morphogenetic protein receptor, type IA precursor	chr10:88506464	0.692	0.040
BRCA1_P835_R	NM_007298.2	BRCA1	breast cancer 1, early onset isoform BRCA1-delta9-11	chr17:38531829	0.575	0.081
CFTR_P372_R	NM_000492.2	CFTR	cystic fibrosis transmembrane conductance regulator	chr7:116906881	0.117	0.331
EYA4_P794_F	NM_004100.2	EYA4	eyes absent 4 isoform a	chr6:133603412	0.685	0.906
GRB7_P160_R	NM_001030002.1	GRB7	growth factor receptor-bound protein 7	chr17:35147553	0.424	0.190
HDAC5_E298_F	NM_005474.4	HDAC5	histone deacetylase 5 isoform 1	chr17:39556242	0.283	0.535
HOXA9_P303_F	NM_002142.3	HOXA9	homeobox protein A9 isoform b	chr7:27171977	0.186	0.677
HOXB13_E21_F	NM_006361.4	HOXB13	homeo box B13	chr17:44161066	0.133	0.532
HOXB2_P488_R	NM_002145.2	HOXB2	homeo box B2	chr17:43977879	0.508	0.724
IL16_P226_F	NM_004513.3	IL16	interleukin 16 isoform 1 precursor	chr15:79262029	0.321	0.561
IL16_P93_R	NM_004513.3	IL16	interleukin 16 isoform 1 precursor	chr15:79262162	0.378	0.616
INHA_P1144_R	NM_002191.2	INHA	inhibin alpha subunit precursor	chr2:220144054	0.062	0.329
IRF7_E236_R	NM_004029.1	IRF7	interferon regulatory factor 7 isoform b	chr11:605691	0.167	0.451
ITGA2_P26_R	NM_002203.2	ITGA2	integrin alpha 2 precursor	chr5:52320988	0.069	0.439
JAK3_P156_R	NM_000215.2	JAK3	Janus kinase 3	chr19:17819956	0.513	0.809
KRAS_E82_F	NM_033360.2	KRAS	c-K-ras2 protein isoform a	chr12:25295039	0.532	0.317
MATK_P190_R	NM_139355.1	MATK	megakaryocyte-associated tyrosine kinase isoform a	chr19:3753000	0.610	0.335
MBD2_P233_F	NM_003927.3	MBD2	methyl-CpG binding domain protein 2 isoform 1	chr18:50005389	0.495	0.280
MEST_P4_F	NM_002402.2	MEST	mesoderm specific transcript isoform a	chr7:129913278	0.412	0.714
MEST_P62_R	NM_002402.2	MEST	mesoderm specific transcript isoform a	chr7:129913220	0.509	0.744
MSH3_E3_F	NM_002439.2	MSH3	mutS homolog 3	chr5:79986053	0.886	0.045
MSH3_P13_R	NM_002439.2	MSH3	mutS homolog 3	chr5:79986037	0.743	0.056
POMC_P400_R	NM_000939.1	POMC	proopiomelanocortin	chr2:25245356	0.619	0.267
PPAT_E170_R	NM_002703.3	PPAT	phosphoribosyl pyrophosphate amidotransferase proprotein	chr4:56996432	0.307	0.033
PRKCDBP_E206_F	NM_145040.2	PRKCDBP	protein kinase C, delta binding protein	chr11:6298110	0.294	0.564
RAB32_P493_R	NM_006834.2	RAB32	RAB32, member RAS oncogene family	chr6:146906028	0.345	0.148
RUNX1T1_P103_F	NM_175635.1	RUNX1T1	acute myelogenous leukemia 1 translocation 1 protein isoform MTG8c	chr8:93176722	0.362	0.080
SCGB3A1_E55_R	NM_052863.2	SCGB3A1	secretoglobin, family 3A, member 1	chr5:179951038	0.110	0.488
SPP1_E140_R	NM_000582.2	SPP1	secreted phosphoprotein 1	chr4:89115966	0.445	0.154
TIMP2_P267_F	XM_941104.1	TIMP2	tissue inhibitor of metalloproteinases-2	chr17:74433334	0.091	0.404
TNC_P198_F	NM_002160.1	TNC	tenascin C (hexabrachion)	chr9:116920458	0.241	0.484
TNF_P158_F	NM_000594.2	TNF	tumor necrosis factor alpha	chr6:31651171	0.430	0.229
TRIP6_P1090_F	NM_003302.1	TRIP6	thyroid hormone receptor interactor 6	chr7:100301891	0.595	0.804
TSP50_P137_F	NM_013270.2	TSP50	testes-specific protease 50	chr3:46734505	0.575	0.816
TUBB3_E91_F	NM_006086.2	TUBB3	tubulin, beta, 4	chr1:88517337	0.271	0.654

Supplementary Table 4. Chromosomal position of the neuronal MRs

chromosome	Start position	End position
chr1	798458	799082
chr1	1158395	1159019
chr1	1159020	1159408
chr1	15557887	15558584
chr1	16027016	16028065
chr1	16735265	16736422
chr1	16923732	16924759
chr1	17070060	17070771
chr1	35434760	35435641
chr1	38946992	38947687
chr1	42278871	42279819
chr1	53676237	53677334
chr1	53697306	53698090
chr1	53699127	53699938
chr1	81740040	81741011
chr1	102233213	102233903
chr1	111992767	111993847
chr1	142308548	142309683
chr1	147168653	147170618
chr1	147194682	147195479
chr1	150319324	150320452
chr1	150542240	150543522
chr1	150543523	150543607
chr1	150543608	150544546
chr1	150544547	150545428
chr1	150545960	150547454
chr1	150547455	150547491
chr1	150547543	150552956
chr1	150552957	150552993
chr1	152782957	152783581
chr1	153505797	153506528
chr1	156161925	156162549
chr1	159761754	159762702
chr1	159843428	159844371
chr1	181195110	181196284
chr1	188716401	188717098
chr1	210865851	210866984
chr1	212772269	212773353
chr1	222118287	222118911
chr1	226889551	226890448
chr1	236503409	236504080
chr1	236721465	236722125
chr1	241285018	241285642
chr1	246162393	246162981
chr1	246503173	246503797
chr2	1550265	1551683
chr2	1729393	1730615
chr2	3370019	3370869
chr2	11668004	11668740
chr2	23897331	23897955
chr2	27468956	27470025
chr2	31901365	31902241
chr2	33805505	33806706
chr2	44350915	44351579
chr2	68609501	68610543
chr2	73781352	73781976
chr2	84370888	84371683
chr2	91235987	91237877
chr2	91300271	91300895
chr2	91362046	91362670
chr2	91429090	91430270
chr2	95819039	95820220
chr2	96063285	96064503

chr2	97707285	97707955
chr2	105219452	105220295
chr2	105224903	105226019
chr2	110122535	110123159
chr2	113524413	113525037
chr2	114142795	114143581
chr2	130672148	130672606
chr2	130983273	130983341
chr2	131085488	131085587
chr2	131085588	131086112
chr2	131949819	131950873
chr2	132197401	132198489
chr2	163406650	163407381
chr2	172081621	172082534
chr2	181445690	181446419
chr2	182534345	182535614
chr2	189884626	189885498
chr2	192454652	192455312
chr2	193849479	193850282
chr2	201711014	201712212
chr2	203763400	203764187
chr2	204337633	204338406
chr2	234327886	234328510
chr2	240617375	240618570
chr2	240633068	240634213
chr2	241696683	241697351
chr2	242578137	242579859
chr2	242593489	242594614
chr2	242618676	242619582
chr3	2254985	2255142
chr3	8581856	8582676
chr3	12804157	12805279
chr3	14836378	14837258
chr3	15894239	15895454
chr3	16621619	16622205
chr3	27649313	27650451
chr3	44596678	44597795
chr3	46037271	46037895
chr3	61703162	61703465
chr3	69188240	69189043
chr3	73060747	73061484
chr3	75799400	75800730
chr3	101426779	101427840
chr3	112270299	112271000
chr3	121952964	121953588
chr3	129664127	129664788
chr3	129965924	129966993
chr3	140206782	140207878
chr3	144378000	144378919
chr3	151183128	151183960
chr3	156509825	156510854
chr3	159308071	159308580
chr3	168011098	168012329
chr3	171854120	171855165
chr3	190189919	190190686
chr3	196866898	196867645
chr3	196938248	196939373
chr3	197023317	197024321
chr3	199330736	199331811
chr4	606039	607283
chr4	1127728	1129409
chr4	1129426	1131383
chr4	1131426	1132191
chr4	1356290	1357188
chr4	1378022	1379842
chr4	1514292	1515120

chr4	4355876	4356500
chr4	8937534	8938439
chr4	8942280	8943295
chr4	8947027	8948042
chr4	8951772	8952677
chr4	8956517	8957422
chr4	8961262	8962277
chr4	8964127	8964827
chr4	8966007	8966912
chr4	8970752	8971657
chr4	8973657	8974281
chr4	8975498	8976513
chr4	9392495	9394278
chr4	11009873	11010497
chr4	56875336	56876660
chr4	88089671	88090572
chr4	93322453	93323259
chr4	113933648	113934272
chr4	117061109	117062487
chr4	117738580	117740256
chr4	123072662	123073937
chr4	139700922	139702706
chr4	146515708	146516738
chr4	156809683	156810346
chr4	163309096	163309820
chr4	164613731	164614855
chr4	184641357	184642816
chr4	186298410	186299034
chr4	187486924	187488109
chr4	189297547	189298206
chr4	191141097	191141920
chr4	191142000	191142844
chr4	191178100	191179059
chr4	191180830	191181930
chr5	135878	136879
chr5	138293	139252
chr5	217224	218441
chr5	899326	900108
chr5	905916	908180
chr5	908181	909481
chr5	1113870	1114497
chr5	1279310	1280392
chr5	1326670	1327647
chr5	1664536	1665411
chr5	2809843	2810493
chr5	16753847	16754903
chr5	17406675	17407923
chr5	17539119	17539958
chr5	17551117	17551855
chr5	31300166	31300876
chr5	53190847	53191471
chr5	79682857	79683834
chr5	84332618	84333242
chr5	84880766	84881798
chr5	92628429	92629612
chr5	98888299	98889000
chr5	108951919	108952911
chr5	122999467	123000961
chr5	127899651	127900310
chr5	130358579	130359271
chr5	135719840	135720976
chr5	140455079	140456419
chr5	140461537	140462342
chr5	140482917	140483662
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chr5	140512454	140512779
chr5	140516760	140517726
chr5	140533650	140534912
chr5	140539042	140539798
chr5	140542684	140544209
chr5	140547983	140549000
chr5	140553437	140554098
chr5	140560735	140561456
chr5	140569717	140570755
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chr5	140584455	140585186
chr5	140595539	140596200
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chr5	169500555	169501482
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chr6	26215628	26216792
chr6	26972017	26972962
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chr6	29875695	29876535
chr6	50988166	50989385
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chr6	116885508	116886383
chr6	122833310	122833934
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chr7	45818275	45819026
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chr7	55776755	55777577
chr7	55779131	55779791
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chr7	56404732	56404831
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chr7	65478445	65479204
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chr7	142208592	142209797
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chr7	143085204	143086105
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chr7	143646147	143646989
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chr7	152741377	152742441
chr7	156426111	156427763
chr8	976179	977150
chr8	1779743	1780433
chr8	6411035	6412708
chr8	6816698	6817523
chr8	6835821	6836788
chr8	6854961	6855856
chr8	7141620	7142823
chr8	7176723	7177993
chr8	7178932	7179637
chr8	7181451	7182721
chr8	7870436	7871406
chr8	7872288	7873314
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chr8	12033207	12033952
chr8	17056908	17057567
chr8	18284718	18285824
chr8	26925241	26926212
chr8	39814664	39815324
chr8	63219268	63220100
chr8	70204087	70205443
chr8	77780666	77781546
chr8	82596222	82597443
chr8	86741471	86744535
chr8	86753474	86756724
chr8	86760311	86763570
chr8	86859297	86862548
chr8	86871488	86874739
chr8	86883678	86886679
chr8	86895592	86898843

chr8	86907924	86910387
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chr8	114458193	114458877
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chr9	84237368	84238370
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chr9	93905733	93906883
chr9	97948476	97949255
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chr9	130710329	130711406
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chr9	138903915	138904539
chr9	139198042	139198980
chr9	139198981	139199486
chr9	139823975	139824670
chr9	140190226	140190257
chr9	140190258	140191342
chr10	83403	84352
chr10	682870	683956
chr10	684003	685227
chr10	1372975	1373599
chr10	5530052	5530745
chr10	9488686	9490026
chr10	31692384	31693334
chr10	38968440	38969298
chr10	42096986	42097905
chr10	46193359	46194695
chr10	46506327	46507348
chr10	46674159	46675457
chr10	47793844	47795141
chr10	48583094	48584430

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chr10	79210690	79212034
chr10	81624025	81624759
chr10	89140398	89141022
chr10	126905970	126906910
chr10	127573959	127574687
chr10	134579554	134580316
chr10	134726498	134727446
chr10	134818657	134819405
chr10	134946994	134947763
chr10	135285878	135286833
chr11	293440	294454
chr11	352847	353803
chr11	617447	618071
chr11	1220000	1220624
chr11	1979714	1980793
chr11	5112183	5112807
chr11	5972084	5972913
chr11	7775563	7776409
chr11	10256115	10256739
chr11	18151024	18152052
chr11	18166752	18167917
chr11	32557941	32558761
chr11	43500252	43501177
chr11	45627676	45628533
chr11	55814571	55815159
chr11	55971418	55972042
chr11	56066473	56067457
chr11	57751823	57752841
chr11	59332872	59333554
chr11	59422039	59423245
chr11	77123000	77123682
chr11	82078031	82078862
chr11	82194179	82195380
chr11	97942795	97943419
chr11	103412487	103413894
chr11	106552274	106553306
chr11	119512859	119513928
chr11	127316565	127317381
chr11	128286488	128287219
chr11	133314404	133315456
chr11	133315457	133316334
chr12	5473670	5474883
chr12	9283751	9284665
chr12	9337507	9338538
chr12	10455773	10456397
chr12	15264205	15264760
chr12	29545772	29546510
chr12	31835635	31836769
chr12	39369838	39370311
chr12	47207470	47208379
chr12	50580664	50581633
chr12	50970711	50971629
chr12	50981933	50982726
chr12	51000793	51001454
chr12	55675126	55675899
chr12	64098993	64100136
chr12	69039843	69040047
chr12	69040048	69040620
chr12	89872312	89873279
chr12	103894928	103896003
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chrY	25389122	25389746

Supplementary Table 5. Chromosomal position of the non-neuronal MRs

chromosome	Start position	End position
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chr1	1672498	1673192
chr1	2101612	2102272
chr1	2106063	2106370
chr1	2106371	2106884
chr1	3489037	3489875
chr1	5854981	5856020
chr1	8011194	8011818
chr1	8311846	8313005
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chr1	15557923	15558584
chr1	16027016	16028065
chr1	16735300	16735439
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chr1	150543523	150544431
chr1	150546311	150547121
chr1	150548113	150549237
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chr1	150550246	150551467
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chr2	88053037	88053979
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chrY	22862297	22862921
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Supplementary Table 6. Chromosomal position of the common MRs

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chr1	17070060	17070771
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chr1	53699127	53699938
chr1	81740040	81741011
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chr1	111992973	111993776
chr1	142308619	142309683
chr1	147168690	147170618
chr1	150319324	150320452
chr1	150542499	150543443
chr1	150543444	150543522
chr1	150543523	150543607
chr1	150543608	150544431
chr1	150546311	150547121
chr1	150548113	150549237
chr1	150549423	150550165
chr1	150550166	150550245
chr1	150550246	150551467
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chr1	159761962	159762702
chr1	159843632	159844256
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chr1	212772300	212773353
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chr1	241285018	241285642
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chr2	95819039	95820220
chr2	96063285	96064503
chr2	105219452	105220295
chr2	105224903	105226019
chr2	110122535	110123159
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chr17	78605952	78606807
chr18	37687	38701
chr18	570062	571375
chr18	9668479	9669392
chr18	14382009	14382821
chr18	14464162	14465772
chr18	20850509	20850565
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chr18	21967331	21968182
chr18	42796907	42796934
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chr18	42797086	42798720
chr18	42802798	42803012
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chr18	42808749	42808927
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chr18	42814901	42815908
chr18	56481203	56482228
chr18	66247939	66248940
chr18	70945715	70946487
chr18	75188165	75189624
chr18	75466247	75467264
chr18	75467283	75467943
chr19	473895	474622
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chr19	8713744	8714405
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chr19	8736155	8736779
chr19	8742453	8743077
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chr19	8793889	8794725
chr19	12613912	12614823
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chr19	58732949	58734314
chr19	58749522	58750857
chr19	58801082	58802132
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chr19	61867673	61868142
chr19	63270456	63271839
chr20	23915952	23916612
chr20	53123997	53125069
chr20	57200911	57201771

chr20	61136518	61136959
chr20	61145115	61146070
chr21	13973422	13975733
chr21	27437437	27438211
chr21	30795761	30796669
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chr21	44030544	44031995
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chr21	45601816	45602588
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chr21	46177185	46177950
chr22	15283778	15285082
chr22	17143416	17144076
chr22	19038366	19042016
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chr22	19045162	19046004
chr22	19867392	19868248
chr22	19894522	19895182
chr22	29269057	29269657
chr22	29281163	29282468
chr22	30916755	30917597
chr22	31085915	31086833
chr22	41418751	41420091
chr22	45073260	45074599
chr22	45105509	45106491
chr22	48410792	48411942
chr22	48945967	48946863
chrX	224506	225416
chrX	227187	228360
chrX	233068	233862
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chrX	3237977	3238987
chrX	6461465	6463072
chrX	7770616	7772357
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chrY	233068	233862
chrY	243155	244327
chrY	381217	382305
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chrY	6191927	6192730
chrY	6192799	6192849
chrY	6192850	6193904
chrY	9233356	9234388
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chrY	9253667	9253698
chrY	9253699	9253795
chrY	9253796	9254769
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chrY	9274049	9274073
chrY	9274074	9274111
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chrY	9293436	9294134
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chrY	9294291	9294322
chrY	9294323	9294419
chrY	9294420	9295345
chrY	9911905	9912708
chrY	9912807	9912826
chrY	9912827	9912955
chrY	9912956	9913929
chrY	9932214	9933017
chrY	9933086	9933168
chrY	9933169	9933265
chrY	9933266	9934191
chrY	9952500	9953301
chrY	9953334	9953357
chrY	9953358	9953420
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chrY	9953550	9954474
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chrY	9973750	9973781
chrY	9973782	9974804
chrY	9993122	9993821
chrY	9994046	9994670
chrY	12616364	12618264
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chrY	21327345	21328220
chrY	21975534	21976459
chrY	22082171	22083047
chrY	22105747	22106552
chrY	22449600	22450474
chrY	22451765	22452493
chrY	22473177	22474048
chrY	22475306	22476001
chrY	22738092	22738894
chrY	22740221	22740916

chrY	22863968	22864827
chrY	22956581	22957237
chrY	22958565	22959330

Supplementary Table 7. Genes associated with neuronal MRs

MR no	chromosome	MR_Start	MR_End	CpG island	location of MR	distance from gene (bp) ^a	symbol	accession no
1	chr1	1158395	1159019	+	upstream	1121	SDF4	NM_016547
1	chr1	1158395	1159019	+	intergenic	0	B3GALT6	NM_080605
1	chr1	1158395	1159019	+	downstream	8676	C1QDC2	NM_001014980
2	chr1	1159020	1159408	-	upstream	1746	SDF4	NM_016547
2	chr1	1159020	1159408	-	intergenic	0	B3GALT6	NM_080605
2	chr1	1159020	1159408	-	downstream	8287	C1QDC2	NM_001014980
3	chr1	35434760	35435641	-	upstream	3438	SFPQ	NM_005066
4	chr1	53697306	53698090	+	intergenic	0	DMRTB1	NM_033067
5	chr1	53699127	53699938	-	intergenic	0	DMRTB1	NM_033067
6	chr1	102233213	102233903	-	intergenic	0	OLFM3	NM_058170
7	chr1	111992767	111993847	-	intergenic	0	RAP1A	NM_001010935
8	chr1	150319324	150320452	-	downstream	2791	TCHHL1	NM_001008536
9	chr1	150542240	150543522	-	intergenic	0	FLG	NM_002016
10	chr1	150543523	150543607	-	intergenic	0	FLG	NM_002016
11	chr1	150543608	150544546	-	intergenic	0	FLG	NM_002016
12	chr1	150544547	150545428	-	intergenic	0	FLG	NM_002016
13	chr1	150545960	150547454	-	intergenic	0	FLG	NM_002016
14	chr1	150547455	150547491	-	intergenic	0	FLG	NM_002016
15	chr1	150547543	150552956	-	intergenic	0	FLG	NM_002016
16	chr1	150552957	150552993	-	intergenic	0	FLG	NM_002016
17	chr1	152782957	152783581	-	intergenic	0	TDRD10	NM_001098475
17	chr1	152782957	152783581	-	downstream	4093	UBE2Q1	NM_017582
18	chr1	153505797	153506528	+	upstream	6978	SCAMP3	NM_005698
18	chr1	153505797	153506528	+	upstream	7469	HCN3	NM_020897
18	chr1	153505797	153506528	+	intergenic	0	CLK2	NM_003993
19	chr1	159761754	159762702	+	intergenic	0	HSPA6	NM_002155
19	chr1	159761754	159762702	+	downstream	5771	FCGR2A	NM_021642
20	chr1	159843428	159844371	+	downstream	6772	FCGR2C	NM_201563
21	chr1	181195110	181196284	-	upstream	5934	C1orf14	NM_030933
22	chr1	188716401	188717098	-	upstream	3019	FAM5C	NM_199051
23	chr1	210865851	210866984	-	intergenic	0	FAM71A	NM_153606
23	chr1	210865851	210866984	-	downstream	5114	ATF3	NM_004024
23	chr1	210865851	210866984	-	downstream	5114	ATF3	NM_001040619
24	chr1	212772269	212773353	-	intergenic	0	PTPN14	NM_005401
25	chr1	246162393	246162981	-	upstream	4134	OR2L13	NM_175911
26	chr1	246503173	246503797	-	intergenic	0	OR2T33	NM_001004695
27	chr10	83403	84352	-	intergenic	0	TUBB8	NM_177987
28	chr10	682870	683956	-	intergenic	0	DIP2C	NM_014974

29	chr10	684003	685227	-	intergenic	0	DIP2C	NM_014974
30	chr10	1372975	1373599	+	intergenic	0	ADARB2	NM_018702
31	chr10	5530052	5530745	-	intergenic	0	CALML5	NM_017422
32	chr10	31692384	31693334	-	intergenic	0	ZEB1	NM_030751
33	chr10	46506327	46507348	-	intergenic	0	PPYR1	NM_005972
34	chr10	79210690	79212034	-	downstream	8522	DLG5	NM_004747
35	chr10	127573959	127574687	+	upstream	410	FANK1	NM_145235
36	chr10	134818657	134819405	-	upstream	4555	KNDC1	NM_152643
37	chr10	134946994	134947763	+	upstream	6632	ADAM8	NM_001109
37	chr10	134946994	134947763	+	intergenic	0	TUBGCP2	NM_006659
38	chr10	135285878	135286833	+	downstream	1759	LOC441581	NM_001080998
39	chr11	293440	294454	+	upstream	9536	IFITM1	NM_003641
39	chr11	293440	294454	+	upstream	3914	IFITM5	NM_001025295
39	chr11	293440	294454	+	upstream	3652	IFITM2	NM_006435
39	chr11	293440	294454	+	downstream	8028	ATHL1	NM_025092
40	chr11	352847	353803	-	upstream	6000	B4GALNT4	NM_178537
41	chr11	617447	618071	+	upstream	274	SCT	NM_021920
41	chr11	617447	618071	+	upstream	9233	DRD4	NM_000797
41	chr11	617447	618071	+	upstream	2440	MUCDHL	NM_021924
42	chr11	1220000	1220624	-	intergenic	0	MUC5B	NM_002458
43	chr11	5112183	5112807	-	upstream	1735	OR52A5	NM_001005160
44	chr11	5972084	5972913	-	upstream	7348	OR52L1	NM_001005173
44	chr11	5972084	5972913	-	downstream	6945	OR56A4	NM_001005179
45	chr11	7775563	7776409	-	upstream	498	OR5P2	NM_153444
46	chr11	10256115	10256739	-	intergenic	0	SBF2	NM_030962
47	chr11	18151024	18152052	-	intergenic	0	MRGPRX4	NM_054032
48	chr11	32557941	32558761	-	upstream	3205	hfl-B5	NM_006360
49	chr11	45627676	45628533	+	intergenic	0	CHST1	NM_003654
50	chr11	55814571	55815159	-	intergenic	0	OR8H1	NM_001005199
51	chr11	56066473	56067457	-	intergenic	0	OR5M11	NM_001005245
52	chr11	57751823	57752841	-	intergenic	0	OR10Q1	NM_001004471
53	chr11	59332872	59333554	-	intergenic	0	MRPL16	NM_017840
53	chr11	59332872	59333554	-	downstream	6120	STX3A	NM_004177
54	chr11	77123000	77123682	-	intergenic	0	HBXAP	NM_016578
55	chr11	103412487	103413894	+	intergenic	0	DDI1	NM_001001711
55	chr11	103412487	103413894	+	intergenic	0	PDGFD	NM_025208
56	chr11	119512859	119513928	+	intergenic	0	TRIM29	NM_012101
57	chr11	128286488	128287219	-	upstream	5686	C11orf45	NM_145013
57	chr11	128286488	128287219	-	intergenic	0	KCNJ5	NM_000890
58	chr11	133314404	133315456	-	intergenic	0	IGSF9B	NM_014987
59	chr11	133315457	133316334	-	intergenic	0	IGSF9B	NM_014987
60	chr12	5473670	5474883	+	intergenic	0	NTF3	NM_001102654

61	chr12	10455773	10456397	-	upstream	4141	KLRK1	NM_007360
61	chr12	10455773	10456397	-	upstream	2150	KLRC4	NM_013431
61	chr12	10455773	10456397	-	intergenic	0	KLRC3	NM_002261
62	chr12	15264205	15264760	-	intergenic	0	RERG	NM_032918
63	chr12	29545772	29546510	-	upstream	3886	OVCH1	NM_183378
63	chr12	29545772	29546510	-	intergenic	0	TMTC1	NM_175861
64	chr12	31835635	31836769	+	intergenic	0	LOC440093	NM_001013699
65	chr12	39369838	39370311	-	upstream	2313	CNTN1	NM_001843
66	chr12	47207470	47208379	+	intergenic	0	OR8S1	NM_001005203
67	chr12	50580664	50581633	+	upstream	5835	ACVRL1	NM_000020
67	chr12	50580664	50581633	+	downstream	8959	ANKRD33	NM_182608
68	chr12	50970711	50971629	+	intergenic	0	KRTHB1	NM_002281
69	chr12	50981933	50982726	+	intergenic	0	KRTHB6	NM_002284
70	chr12	51000793	51001454	+	intergenic	0	KRTHB3	NM_002282
71	chr12	55675126	55675899	-	intergenic	0	ADMR	NM_007264
71	chr12	55675126	55675899	-	downstream	2985	ZBTB39	NM_014830
72	chr12	64098993	64100136	-	intergenic	0	MSRB3	NM_001031679
73	chr12	69039843	69040047	-	upstream	6281	KCNMB4	NM_014505
73	chr12	69039843	69040047	-	downstream	4804	CNOT2	NM_014515
74	chr12	69040048	69040620	-	upstream	5708	KCNMB4	NM_014505
74	chr12	69040048	69040620	-	downstream	5009	CNOT2	NM_014515
75	chr12	89872312	89873279	-	intergenic	0	C12orf12	NM_152638
75	chr12	89872312	89873279	-	downstream	8312	DSPG3	NM_004950
76	chr12	103894928	103896003	-	upstream	8224	C12orf45	NM_152318
77	chr13	18653331	18654774	-	intergenic	0	TUBA2	NM_006001
78	chr13	24567886	24568582	+	intergenic	0	PABPC3	NM_030979
79	chr13	28195741	28196400	-	upstream	4779	SLC46A3	NM_181785
80	chr13	56612160	56613039	+	upstream	13	FLJ40296	NM_198441
81	chr13	56614290	56615384	+	intergenic	0	FLJ40296	NM_198441
82	chr13	56618265	56619239	-	upstream	383	FLJ40296	NM_198441
83	chr13	56620860	56621954	+	intergenic	0	FLJ40296	NM_198441
84	chr13	56624838	56625812	-	upstream	383	FLJ40296	NM_198441
85	chr13	56627433	56628527	+	intergenic	0	FLJ40296	NM_198441
86	chr13	56631409	56632383	-	upstream	383	FLJ40296	NM_198441
87	chr13	56634004	56635062	+	intergenic	0	FLJ40296	NM_198441
88	chr13	56637974	56638948	-	upstream	383	FLJ40296	NM_198441
89	chr13	56640569	56641663	+	intergenic	0	FLJ40296	NM_198441
90	chr13	56644545	56645519	-	downstream	2192	FLJ40296	NM_198441
91	chr13	112347637	112348261	-	upstream	1097	FLJ26443	NM_207440
92	chr13	112487771	112488687	+	intergenic	0	ATP11A	NM_032189
93	chr13	112917256	112918382	+	upstream	6272	FLJ11305	NM_018386
93	chr13	112917256	112918382	+	intergenic	0	CUL4A	NM_003589

94	chr13	113114577	113115409	+	downstream	8851	ADPRHL1	NM_199162
95	chr13	113149331	113150384	-	intergenic	0	ADPRHL1	NM_199162
95	chr13	113149331	113150384	-	downstream	7750	DCUN1D2	NM_001014283
96	chr13	113261930	113263266	+	downstream	9423	TMCO3	NM_017905
97	chr13	113654311	113655008	+	upstream	2438	FAM70B	NM_182614
98	chr14	22586146	22587275	+	intergenic	0	CDH24	NM_022478
98	chr14	22586146	22587275	+	downstream	3037	FLJ16369	NM_001099780
99	chr14	70130875	70131947	-	intergenic	0	MED6	NM_005466
100	chr14	92455571	92456773	-	upstream	2424	CHGA	NM_001275
101	chr14	104482690	104483679	-	intergenic	0	AHNAK2	NM_138420
102	chr15	19336311	19336639	-	intergenic	0	POTE15	NM_207355
103	chr15	19336640	19336671	-	intergenic	0	POTE15	NM_207355
104	chr15	19336672	19337403	-	upstream	5	POTE15	NM_207355
105	chr15	22472254	22473207	+	intergenic	0	C15orf2	NM_018958
106	chr15	22751473	22752534	+	intergenic	0	SNRPN	NM_022806
106	chr15	22751473	22752534	+	intergenic	0	SNURF	NM_005678
107	chr15	54768405	54768781	-	intergenic	0	SUHW4	NM_001002843
108	chr15	54768782	54769439	-	intergenic	0	SUHW4	NM_001002843
109	chr15	70458754	70459421	-	upstream	3297	HEXA	NM_000520
110	chr15	71521795	71522846	+	intergenic	0	LOC283677	NM_001042367
111	chr15	88031308	88031932	-	upstream	7713	PLIN	NM_002666
111	chr15	88031308	88031932	-	upstream	3099	LOC56964	NM_020212
111	chr15	88031308	88031932	-	intergenic	0	PEX11A	NM_003847
112	chr15	89370712	89371336	-	upstream	3875	VPS33B	NM_018668
113	chr16	945265	946435	+	intergenic	0	TMEM112	NM_022773
114	chr16	1250586	1251210	+	downstream	2091	TPSD1	NM_012217
115	chr16	1344602	1345561	+	upstream	2728	MGC24381	NM_001001410
115	chr16	1344602	1345561	+	intergenic	0	GNPTG	NM_032520
115	chr16	1344602	1345561	+	downstream	7645	C16orf28	NM_023076
115	chr16	1344602	1345561	+	downstream	5159	BAIAP3	NM_003933
116	chr16	3346014	3347185	-	intergenic	0	OR2C1	NM_012368
117	chr16	10112890	10113619	-	intergenic	0	GRIN2A	NM_000833
118	chr16	10698678	10700246	-	upstream	2375	FLJ32871	NM_144674
119	chr16	27321723	27322407	-	intergenic	0	IL21R	NM_181078
120	chr16	30474473	30475589	+	intergenic	0	MGC13138	NM_033410
121	chr16	45217864	45218653	-	upstream	5079	SHCBP1	NM_024745
122	chr16	70127992	70129201	-	intergenic	0	CHST4	NM_005769
123	chr16	70687836	70688926	-	upstream	2821	TXNL4B	NM_017853
123	chr16	70687836	70688926	-	intergenic	0	DHX38	NM_014003
124	chr16	71548782	71549908	-	intergenic	0	ATBF1	NM_006885
125	chr16	74070501	74071431	+	intergenic	0	CHST6	NM_021615
126	chr16	85112108	85112805	-	downstream	6538	FOXF1	NM_001451

126	chr16	85112108	85112805	-	downstream	8478	MTHFSD	NM_022764
127	chr16	85113564	85114588	-	downstream	7994	FOXF1	NM_001451
127	chr16	85113564	85114588	-	downstream	6695	MTHFSD	NM_022764
128	chr16	87523317	87524086	-	intergenic	0	CBFA2T3	NM_005187
129	chr16	88241077	88241854	+	upstream	9856	C16orf55	NM_153025
129	chr16	88241077	88241854	+	intergenic	0	PCOLN3	NM_002768
129	chr16	88241077	88241854	+	intergenic	0	CHMP1A	NM_001083314
129	chr16	88241077	88241854	+	downstream	8739	DPEP1	NM_004413
130	chr16	88279141	88280243	-	upstream	333	CDK10	NM_052988
131	chr17	206061	207466	+	upstream	3485	RPH3AL	NM_006987
132	chr17	254235	255281	+	upstream	5152	LOC400566	NM_001013672
133	chr17	617044	618220	-	intergenic	0	C17orf25	NM_016080
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135	chr17	2982400	2983202	-	upstream	4805	OR1G1	NM_003555
136	chr17	16225897	16226521	-	intergenic	0	UBB	NM_018955
137	chr17	19563433	19564479	-	upstream	2798	SLC47A2	NM_001099646
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139	chr17	21259061	21260237	+	intergenic	0	KCNJ12	NM_021012
140	chr17	31527537	31528527	-	intergenic	0	TBC1D3B	NM_001001417
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142	chr17	31830628	31831618	-	intergenic	0	TBC1D3C	NM_001001418
143	chr17	31881645	31882671	-	intergenic	0	TBC1D3C	NM_001001418
143	chr17	31881645	31882671	-	intergenic	0	LOC654341	NM_001040282
144	chr17	33357851	33358887	-	intergenic	0	TBC1D3	NM_032258
145	chr17	33551712	33552702	-	intergenic	0	TBC1D3	NM_032258
146	chr17	33601884	33602995	-	intergenic	0	TBC1D3	NM_032258
147	chr17	36464543	36465531	-	downstream	9363	KRTAP2-4	NM_033184
148	chr17	49255195	49256637	-	intergenic	0	KIF2B	NM_032559
149	chr17	71286016	71287119	+	upstream	5156	ZC3H5	NM_001080419
149	chr17	71286016	71287119	+	intergenic	0	H3F3B	NM_005324
150	chr17	75935855	75936840	+	intergenic	0	C17orf27	NM_020914
151	chr17	77244785	77245456	-	upstream	762	LOC339229	NM_001039842
151	chr17	77244785	77245456	-	intergenic	0	CCDC137	NM_199287
152	chr17	77870187	77871434	+	upstream	1418	CD7	NM_006137
152	chr17	77870187	77871434	+	downstream	755	SECTM1	NM_003004
153	chr17	78605952	78606807	+	upstream	2977	B3GNTL1	NM_001009905
154	chr18	570062	571447	+	intergenic	0	CETN1	NM_004066
155	chr18	16946898	16947815	-	upstream	1088	ROCK1	NM_005406
156	chr18	21967295	21968182	+	intergenic	0	PSMA8	NM_001025096
157	chr18	42796907	42797085	+	intergenic	0	KATNAL2	NM_031303
157	chr18	42796907	42797085	+	intergenic	0	TCEB3CL	NM_001100817
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158	chr18	42797086	42798797	+	intergenic	0	TCEB3CL	NM_001100817
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159	chr18	42802798	42803012	+	intergenic	0	KATNAL2	NM_031303
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165	chr18	75188165	75189681	+	intergenic	0	ATP9B	NM_198531
166	chr19	473895	474622	+	upstream	8110	CDC34	NM_004359
166	chr19	473895	474622	+	downstream	3241	C19orf20	NM_033513
167	chr19	618008	618690	+	upstream	3781	RNF126	NM_194460
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168	chr19	1390849	1391645	+	upstream	9502	APC2	NM_005883
168	chr19	1390849	1391645	+	intergenic	0	RPS15	NM_001018
168	chr19	1390849	1391645	+	downstream	4169	DAZAP1	NM_170711
169	chr19	3787946	3789530	+	intergenic	0	KIAA1086	NM_015174
170	chr19	5794895	5795959	+	upstream	4153	FUT6	NM_000150
170	chr19	5794895	5795959	+	intergenic	0	FUT3	NM_001097639
171	chr19	8793826	8794725	-	intergenic	0	ZNF558	NM_144693
172	chr19	12613912	12614823	+	downstream	3498	MAN2B1	NM_000528
173	chr19	15766052	15767102	-	intergenic	0	OR10H5	NM_001004466
174	chr19	15778564	15779890	+	intergenic	0	OR10H1	NM_013940

175	chr19	15906023	15906683	-	intergenic	0	CYP4F11	NM_021187
176	chr19	40541896	40542820	-	intergenic	0	FFAR3	NM_005304
176	chr19	40541896	40542820	-	downstream	6701	FFAR1	NM_005303
177	chr19	41545195	41545819	-	intergenic	0	KIAA1559	NM_020917
178	chr19	43263371	43264270	-	intergenic	0	SIPA1L3	NM_015073
179	chr19	46224068	46224204	-	downstream	7927	CYP2B6	NM_000767
180	chr19	52515269	52516216	-	intergenic	0	C5AR1	NM_001736
181	chr19	56021768	56022787	+	upstream	2913	KLK1	NM_002257
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182	chr19	56540255	56541799	-	intergenic	0	ETFB	NM_001014763
183	chr19	58732883	58734385	+	intergenic	0	ZNF331	NM_001079906
184	chr19	59317514	59318581	-	upstream	6666	TFPT	NM_013342
184	chr19	59317514	59318581	-	intergenic	0	PRPF31	NM_015629
185	chr19	60019172	60019939	-	intergenic	0	KIR3DL1	NM_013289
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186	chr19	60035517	60036141	-	intergenic	0	KIR2DS4	NM_012314
186	chr19	60035517	60036141	-	downstream	1472	KIR3DL1	NM_013289
187	chr19	60053121	60053957	-	intergenic	0	KIR3DL2	NM_006737
187	chr19	60053121	60053957	-	downstream	1286	KIR2DS4	NM_012314
188	chr19	60142373	60143173	+	intergenic	0	NALP7	NM_139176
188	chr19	60142373	60143173	+	intergenic	0	NALP7	NM_206828
189	chr19	60185783	60186407	+	intergenic	0	NLRP2	NM_017852
190	chr19	61052680	61053304	+	upstream	1894	NALP4	NM_134444
191	chr19	61054582	61055522	+	intergenic	0	NALP4	NM_134444
192	chr19	61430989	61431714	+	intergenic	0	ZSCAN5	NM_024303
193	chr19	61866503	61868142	+	intergenic	0	BC37295_3	NM_001005850
194	chr19	63270421	63271839	-	intergenic	0	ZNF135	NM_003436
195	chr2	1729393	1730615	-	upstream	2095	PXDN	NM_012293
196	chr2	3370019	3370869	+	upstream	9414	TSSC1	NM_003310
196	chr2	3370019	3370869	+	intergenic	0	TTC15	NM_016030
197	chr2	11668004	11668740	+	intergenic	0	GREB1	NM_014668
198	chr2	23897331	23897955	-	intergenic	0	ATAD2B	NM_017552
199	chr2	27468956	27470025	+	intergenic	0	PPM1G	NM_177983
200	chr2	44350915	44351579	-	upstream	4523	SLC3A1	NM_000341
201	chr2	68609501	68610543	-	intergenic	0	C2orf13	NM_173545
202	chr2	73781352	73781976	-	intergenic	0	NAT8B	NM_016347
203	chr2	96063285	96064503	+	intergenic	0	LOC150763	NM_207328
204	chr2	97707285	97707955	+	intergenic	0	ZAP70	NM_001079
205	chr2	105219452	105220295	+	upstream	4336	GPR45	NM_007227
206	chr2	105224903	105226019	+	intergenic	0	GPR45	NM_007227

207	chr2	113524413	113525037	+	upstream	7648	IL1F5	NM_173170
207	chr2	113524413	113525037	+	intergenic	0	IL1F8	NM_173178
208	chr2	130672148	130672606	+	intergenic	0	TUBA3E	NM_207312
208	chr2	130672148	130672606	+	downstream	7379	FLJ14346	NM_025029
209	chr2	131949819	131950873	+	intergenic	0	TUBA3D	NM_080386
209	chr2	131949819	131950873	+	downstream	7129	FAM128A	NM_001085365
210	chr2	132197401	132198489	-	intergenic	0	C2orf27	NM_013310
211	chr2	163406650	163407381	-	upstream	3164	KCNH7	NM_033272
212	chr2	172081621	172082534	+	upstream	4698	CYBRD1	NM_024843
213	chr2	201711014	201712212	-	intergenic	0	CFLAR	NM_003879
214	chr2	203763400	203764187	-	intergenic	0	NBEAL1	NM_198945
215	chr2	234327886	234328510	+	upstream	5147	UGT1A1	NM_000463
215	chr2	234327886	234328510	+	intergenic	0	UGT1A8	NM_019076
215	chr2	234327886	234328510	+	intergenic	0	UGT1A10	NM_019075
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215	chr2	234327886	234328510	+	intergenic	0	UGT1A4	NM_007120
215	chr2	234327886	234328510	+	intergenic	0	UGT1A3	NM_019093
216	chr2	240617375	240618570	-	upstream	3904	NDUFA10	NM_004544
216	chr2	240617375	240618570	-	intergenic	0	OR6B2	NM_001005853
217	chr2	240633068	240634213	-	upstream	1996	LOC643905	NM_001080835
217	chr2	240633068	240634213	-	intergenic	0	OR6B3	NM_173351
218	chr2	241696683	241697351	-	upstream	6286	MTERFD2	NM_182501
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219	chr20	14012906	14013589	-	intergenic	0	C20orf133	NM_080676
220	chr20	23915952	23916612	-	intergenic	0	GGTLA4	NM_178311
221	chr20	56849028	56849755	+	intergenic	0	GNAS	NM_016592
222	chr20	57200769	57202028	+	intergenic	0	C20orf174	NM_178457
223	chr20	61358525	61359225	-	upstream	2190	C20orf58	NM_152864
224	chr21	13903300	13904040	-	upstream	328	ANKRD21	NM_174981
225	chr21	13973280	13976113	+	intergenic	0	LOC441956	NM_001013729
226	chr21	30795761	30796669	-	upstream	9615	KRTAP19-3	NM_181609
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226	chr21	30795761	30796669	-	intergenic	0	KRTAP19-5	NM_181611
227	chr21	32594164	32595441	+	intergenic	0	MRAP	NM_178817
228	chr21	44030465	44031995	+	upstream	9778	CSTB	NM_000100
228	chr21	44030465	44031995	+	upstream	1850	RRP1	NM_003683
229	chr21	44205262	44206546	-	intergenic	0	AGPAT3	NM_020132
230	chr21	45153655	45154422	-	intergenic	0	ITGB2	NM_000211
231	chr21	46175611	46177184	-	intergenic	0	PCBP3	NM_020528

232	chr21	46177185	46178028	-	intergenic	0	PCBP3	NM_020528
233	chr22	17048758	17049700	+	downstream	8596	USP18	NM_017414
234	chr22	23353898	23354637	-	intergenic	0	GGT1	NM_013430
235	chr22	29281096	29282503	+	intergenic	0	GAL3ST1	NM_004861
236	chr22	30916755	30917597	-	intergenic	0	RFPL2	NM_001098527
237	chr22	31085915	31086833	-	intergenic	0	RFPL3	NM_001098535
238	chr22	41418708	41420091	+	intergenic	0	A4GALT	NM_017436
239	chr22	43341588	43342421	-	upstream	1461	LOC388910	NM_001012986
240	chr22	45073260	45074599	-	intergenic	0	GTSE1	NM_016426
240	chr22	45073260	45074599	-	downstream	4693	FLJ20699	NM_017931
241	chr22	45105509	45106491	+	upstream	3470	TRMU	NM_018006
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242	chr22	48945967	48946863	+	upstream	4453	PANX2	NM_052839
242	chr22	48945967	48946863	+	downstream	3725	MOV10L1	NM_018995
243	chr3	2254985	2255142	-	intergenic	0	CNTN4	NM_175607
244	chr3	8581856	8582676	-	intergenic	0	LMCD1	NM_014583
245	chr3	12804157	12805279	-	upstream	7891	CAND2	NM_012298
246	chr3	14836378	14837258	-	intergenic	0	FGD5	NM_152536
247	chr3	16621619	16622205	+	intergenic	0	DAZL	NM_001351
248	chr3	44596678	44597795	+	upstream	3664	ZNF660	NM_173658
248	chr3	44596678	44597795	+	intergenic	0	ZNF167	NM_025169
249	chr3	46037271	46037895	-	intergenic	0	XCR1	NM_005283
250	chr3	61703162	61703465	-	intergenic	0	PTPRG	NM_002841
251	chr3	69188240	69189043	-	upstream	4066	TMF1	NM_007114
251	chr3	69188240	69189043	-	intergenic	0	UBE1C	NM_198197
252	chr3	73060747	73061484	+	intergenic	0	LOC727936	NM_001080393
253	chr3	112270299	112271000	-	upstream	2554	PVRL3	NM_015480
254	chr3	121952964	121953588	-	upstream	8890	RABL3	NM_173825
254	chr3	121952964	121953588	-	intergenic	0	GTF2E1	NM_005513
255	chr3	129664127	129664788	+	intergenic	0	DNAJB8	NM_153330
256	chr3	129965924	129966993	+	intergenic	0	RAB7	NM_004637
257	chr3	159308071	159308580	-	upstream	1441	SHOX2	NM_006884
257	chr3	159308071	159308580	-	upstream	2005	RSRC1	NM_016625
258	chr3	196938248	196939373	+	intergenic	0	MUC20	NM_152673
259	chr3	197023317	197024321	-	intergenic	0	MUC4	NM_004532
260	chr4	606039	607283	-	upstream	2089	PDE6B	NM_000283
261	chr4	1356290	1357188	+	intergenic	0	KIAA1530	NM_020894
262	chr4	1378022	1379842	+	intergenic	0	CRIPAK	NM_175918
262	chr4	1378022	1379842	+	downstream	6290	KIAA1530	NM_020894
263	chr4	4355876	4356500	-	intergenic	0	ZNF509	NM_145291
264	chr4	9392495	9394278	+	intergenic	0	DRD5	NM_000798
265	chr4	11009873	11010497	+	intergenic	0	HS3ST1	NM_005114

266	chr4	56875336	56876660	+	intergenic	0	KIAA1211	NM_020722
267	chr4	123072662	123073937	+	intergenic	0	TRPC3	NM_003305
268	chr4	156809683	156810346	-	intergenic	0	GUCY1A3	NM_000856
269	chr4	163309096	163309820	-	upstream	4460	FSTL5	NM_020116
270	chr4	164613731	164614855	+	intergenic	0	TKTL2	NM_032136
271	chr4	186298410	186299034	-	upstream	2357	SLC25A4	NM_001151
272	chr4	189297547	189298206	-	intergenic	0	FLJ36180	NM_178556
273	chr4	191141097	191141920	+	intergenic	0	TUBB4Q	NM_020040
274	chr4	191142000	191142844	+	intergenic	0	TUBB4Q	NM_020040
275	chr4	191178100	191179059	-	downstream	3459	FRG2	NM_001005217
276	chr4	191180830	191181930	+	downstream	588	FRG2	NM_001005217
277	chr5	135878	136879	+	downstream	5437	TAF9	NM_016283
278	chr5	138293	139252	+	downstream	3064	TAF9	NM_016283
279	chr5	217224	218441	+	intergenic	0	KIAA1909	NM_052909
279	chr5	217224	218441	+	intergenic	0	MARVELD2	NM_144724
280	chr5	899326	900108	-	intergenic	0	ZDHHC11	NM_024786
281	chr5	905916	908180	-	upstream	1815	ZDHHC11	NM_024786
281	chr5	905916	908180	-	downstream	8675	BRD9	NM_023924
282	chr5	908181	909481	-	upstream	4080	ZDHHC11	NM_024786
282	chr5	908181	909481	-	downstream	7374	BRD9	NM_023924
283	chr5	1113870	1114497	+	intergenic	0	SLC12A7	NM_006598
284	chr5	1279310	1280392	+	intergenic	0	SLC6A18	NM_182632
284	chr5	1279310	1280392	+	downstream	4292	SLC6A19	NM_001003841
285	chr5	1326670	1327647	-	intergenic	0	TERT	NM_198255
286	chr5	2809843	2810493	-	upstream	5074	IRX2	NM_033267
286	chr5	2809843	2810493	-	downstream	1331	CEI	NM_178569
287	chr5	16753847	16754903	+	intergenic	0	MYO10	NM_012334
288	chr5	31300166	31300876	-	intergenic	0	CDH6	NM_004932
289	chr5	127899651	127900310	+	intergenic	0	FBN2	NM_001999
290	chr5	135719840	135720976	+	intergenic	0	TRPC7	NM_020389
291	chr5	140455079	140456419	+	upstream	3998	PCDHB3	NM_018937
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292	chr5	140461537	140462342	+	intergenic	0	PCDHB3	NM_018937
292	chr5	140461537	140462342	+	downstream	4391	PCDHB2	NM_018936
293	chr5	140482917	140483662	+	intergenic	0	PCDHB4	NM_018938
294	chr5	140496154	140497213	+	intergenic	0	PCDHB5	NM_015669
295	chr5	140511244	140511941	+	intergenic	0	PCDHB6	NM_018939
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297	chr5	140516760	140517726	+	downstream	3710	PCDHB6	NM_018939
298	chr5	140533650	140534912	+	upstream	2701	PCDHB8	NM_019120
298	chr5	140533650	140534912	+	upstream	6251	PCDHB16	NM_020957
298	chr5	140533650	140534912	+	intergenic	0	PCDHB7	NM_018940

299	chr5	140539042	140539798	+	upstream	1365	PCDHB16	NM_020957
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299	chr5	140539042	140539798	+	intergenic	0	PCDHB8	NM_019120
299	chr5	140539042	140539798	+	downstream	2902	PCDHB7	NM_018940
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335	chr7	1495952	1496967	-	intergenic	0	INTS1	NM_001080453
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338	chr7	123907575	123908580	-	downstream	3330	LOC392982	NM_001085395
339	chr7	142978557	142979459	-	intergenic	0	LOC441294	NM_001008747
340	chr7	143085204	143086105	-	intergenic	0	CTAGE6	NM_178561
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342	chr7	143511054	143512044	-	downstream	2565	FLJ43692	NM_001003702
343	chr7	143559948	143560933	-	intergenic	0	OR2A42	NM_001001802
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355	chr8	17056908	17057567	-	upstream	834	ZDHHC2	NM_016353
356	chr8	18284718	18285824	-	upstream	7210	NAT2	NM_000015
357	chr8	39814664	39815324	-	intergenic	0	ADAM2	NM_001464
358	chr8	77780666	77781546	-	intergenic	0	ZFX4	NM_024721
359	chr8	86753474	86756724	+	intergenic	0	REXO1L1	NM_172239
360	chr8	86760311	86763570	+	intergenic	0	REXO1L1	NM_172239
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367	chr8	142435756	142436380	+	intergenic	0	GPR20	NM_005293
368	chr8	143779551	143780175	+	intergenic	0	LY6K	NM_017527
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376	chr9	39358382	39359139	-	downstream	6425	LOC642265	NM_001040065
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378	chr9	40703092	40703716	-	upstream	1945	FAM74A3	NM_001098718
378	chr9	40703092	40703716	-	downstream	6555	LOC727830	NM_001083124
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389	chr9	130710329	130711406	+	intergenic	0	LRRC8A	NM_019594
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407	chrX	34871032	34872615	+	intergenic	0	FAM47B	NM_152631
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409	chrX	52128480	52129709	-	upstream	163	LOC653216	NM_001079538
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413	chrX	55131784	55132658	-	intergenic	0	PAGE2	NM_207339
413	chrX	55131784	55132658	-	downstream	9725	PAGE2B	NM_001015038
414	chrX	55263216	55264285	-	intergenic	0	PAGE5	NM_130467
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415	chrX	63534577	63535343	-	upstream	2541	MTMR8	NM_017677
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417	chrX	87896775	87897473	-	downstream	334	CPXCR1	NM_033048
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424	chrX	119177018	119177787	+	intergenic	0	PEPP-2	NM_032498
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433	chrX	153449661	153450421	-	downstream	3206	IKBKG	NM_003639
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437	chrY	230786	231703	+	upstream	8196	PPP2R3B	NM_199326
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442	chrY	9294291	9294322	+	upstream	1726	LOC728137	NM_001077697
443	chrY	9294323	9294419	+	upstream	1629	LOC728137	NM_001077697
444	chrY	9294420	9295470	+	upstream	578	LOC728137	NM_001077697
445	chrY	9911846	9912763	+	upstream	1800	TSPY1	NM_003308
446	chrY	9912764	9912826	+	upstream	1737	TSPY1	NM_003308
447	chrY	9912827	9912955	+	upstream	1608	TSPY1	NM_003308
448	chrY	9912956	9914201	+	upstream	362	TSPY1	NM_003308
449	chrY	9932155	9933168	+	upstream	1726	LOC728137	NM_001077697
450	chrY	9933169	9933265	+	upstream	1629	LOC728137	NM_001077697
451	chrY	9933266	9934446	+	upstream	448	LOC728137	NM_001077697
452	chrY	9972769	9973749	+	upstream	1758	LOC728137	NM_001077697
453	chrY	9973750	9973781	+	upstream	1726	LOC728137	NM_001077697
454	chrY	9973782	9974929	+	upstream	578	LOC728137	NM_001077697

455	chrY	14606755	14608289	-	intergenic	0	VCY1B	NM_181880
455	chrY	14606755	14608289	-	intergenic	0	VCY	NM_004679
456	chrY	14677097	14678465	-	intergenic	0	VCY	NM_004679
456	chrY	14677097	14678465	-	intergenic	0	VCY1B	NM_181880
457	chrY	21327233	21328363	-	intergenic	0	RPS4Y2	NM_001039567
458	chrY	22082103	22083156	+	intergenic	0	RBMY1A1	NM_001007526
458	chrY	22082103	22083156	+	intergenic	0	RBMY1B	NM_001006121
458	chrY	22082103	22083156	+	intergenic	0	RBMY1A1	NM_005058
458	chrY	22082103	22083156	+	intergenic	0	RBMY1E	NM_001006118
458	chrY	22082103	22083156	+	intergenic	0	RBMY1D	NM_001006120
459	chrY	22105681	22106697	+	intergenic	0	RBMY1A1	NM_001007526
459	chrY	22105681	22106697	+	intergenic	0	RBMY1B	NM_001006121
459	chrY	22105681	22106697	+	intergenic	0	RBMY1A1	NM_005058
459	chrY	22105681	22106697	+	intergenic	0	RBMY1D	NM_001006120
459	chrY	22105681	22106697	+	downstream	8623	RBMY1A1	NM_001007526
459	chrY	22105681	22106697	+	downstream	8623	RBMY1B	NM_001006121
459	chrY	22105681	22106697	+	downstream	8623	RBMY1A1	NM_005058
459	chrY	22105681	22106697	+	downstream	8623	RBMY1E	NM_001006118
459	chrY	22105681	22106697	+	downstream	8623	RBMY1D	NM_001006120
460	chrY	22449564	22450507	+	intergenic	0	RBMY1E	NM_001006118
460	chrY	22449564	22450507	+	intergenic	0	RBMY1D	NM_001006120
460	chrY	22449564	22450507	+	intergenic	0	RBMY1B	NM_001006121
460	chrY	22449564	22450507	+	intergenic	0	RBMY1A1	NM_005058
460	chrY	22449564	22450507	+	intergenic	0	RBMY1A1	NM_001007526
460	chrY	22449564	22450507	+	downstream	8647	RBMY1E	NM_001006118
460	chrY	22449564	22450507	+	downstream	8647	RBMY1D	NM_001006120
460	chrY	22449564	22450507	+	downstream	8647	RBMY1B	NM_001006121
460	chrY	22449564	22450507	+	downstream	8647	RBMY1A1	NM_001007526
461	chrY	22451765	22452539	-	upstream	1744	RBMY1E	NM_001006118
461	chrY	22451765	22452539	-	upstream	1744	RBMY1D	NM_001006120
461	chrY	22451765	22452539	-	upstream	1738	RBMY1B	NM_001006121
461	chrY	22451765	22452539	-	upstream	1738	RBMY1A1	NM_005058
461	chrY	22451765	22452539	-	upstream	1729	RBMY1A1	NM_001007526
461	chrY	22451765	22452539	-	downstream	6615	RBMY1E	NM_001006118
461	chrY	22451765	22452539	-	downstream	6615	RBMY1D	NM_001006120
461	chrY	22451765	22452539	-	downstream	6615	RBMY1B	NM_001006121
461	chrY	22451765	22452539	-	downstream	6615	RBMY1A1	NM_001007526
462	chrY	22473105	22474080	+	intergenic	0	RBMY1E	NM_001006118
462	chrY	22473105	22474080	+	intergenic	0	RBMY1D	NM_001006120
462	chrY	22473105	22474080	+	intergenic	0	RBMY1B	NM_001006121
462	chrY	22473105	22474080	+	intergenic	0	RBMY1A1	NM_001007526
463	chrY	22475306	22476001	-	upstream	1744	RBMY1E	NM_001006118

463	chrY	22475306	22476001	-	upstream	1744	RBMY1D	NM_001006120
463	chrY	22475306	22476001	-	upstream	1738	RBMY1B	NM_001006121
463	chrY	22475306	22476001	-	upstream	1729	RBMY1A1	NM_001007526
464	chrY	22738020	22738930	+	intergenic	0	RBMY1J	NM_001006117
464	chrY	22738020	22738930	+	intergenic	0	RBMY1F	NM_152585
465	chrY	22740174	22740916	-	upstream	1697	RBMY1J	NM_001006117
465	chrY	22740174	22740916	-	upstream	1697	RBMY1F	NM_152585
466	chrY	22863890	22864902	+	intergenic	0	RBMY1F	NM_152585
467	chrY	22956581	22957237	-	upstream	1773	RBMY1J	NM_001006117
467	chrY	22956581	22957237	-	intergenic	0	RBMY1F	NM_152585
468	chrY	22958462	22959514	+	intergenic	0	RBMY1J	NM_001006117
468	chrY	22958462	22959514	+	intergenic	0	RBMY1F	NM_152585
469	chrY	23754221	23754880	+	intergenic	0	DAZ4	NM_001005375
469	chrY	23754221	23754880	+	intergenic	0	DAZ1	NM_004081
469	chrY	23754221	23754880	+	intergenic	0	DAZ4	NM_020420
470	chrY	23774662	23775439	+	intergenic	0	DAZ2	NM_001005785
470	chrY	23774662	23775439	+	intergenic	0	DAZ4	NM_020420
470	chrY	23774662	23775439	+	intergenic	0	DAZ2	NM_001005786
470	chrY	23774662	23775439	+	intergenic	0	DAZ2	NM_020363
470	chrY	23774662	23775439	+	intergenic	0	DAZ3	NM_020364
471	chrY	25368514	25369265	+	intergenic	0	DAZ3	NM_020364
472	chrY	25389122	25389746	+	intergenic	0	DAZ2	NM_001005785
472	chrY	25389122	25389746	+	intergenic	0	DAZ1	NM_004081
472	chrY	25389122	25389746	+	intergenic	0	DAZ4	NM_020420
472	chrY	25389122	25389746	+	intergenic	0	DAZ2	NM_001005786
472	chrY	25389122	25389746	+	intergenic	0	DAZ4	NM_001005375
472	chrY	25389122	25389746	+	intergenic	0	DAZ3	NM_020364

^aIn case that one MR was overlapped to multiple accession numbers with same gene symbol, only the gene with the closest distance to the nearest exon was shown

Supplementary Table 8. Genes associated with non-neuronal MRs

MR no	chromosome	MR_Start	MR_End	CpG island	location of MR	distance from gene (bp) ^a	symbol	accession no
1	chr1	1158365	1159408	+	upstream	1121	SDF4	NM_016176
1	chr1	1158365	1159408	+	intergenic	0	B3GALT6	NM_080605
1	chr1	1158365	1159408	+	downstream	8287	C1QDC2	NM_001014980
2	chr1	1251602	1252671	+	upstream	3917	TAS1R3	NM_152228
2	chr1	1251602	1252671	+	upstream	1693	CPSF3L	NM_017871
2	chr1	1251602	1252671	+	intergenic	0	MGC10334	NM_001029885
2	chr1	1251602	1252671	+	downstream	7850	DVL1	NM_004421
3	chr1	1403771	1404492	+	intergenic	0	ATAD3B	NM_031921
3	chr1	1403771	1404492	+	downstream	8370	ATAD3C	NM_001039211
4	chr1	1442438	1443159	+	intergenic	0	ATAD3A	NM_018188
5	chr1	1596299	1597458	-	intergenic	0	CDC2L1	NM_033486
6	chr1	1620185	1620582	-	intergenic	0	CDC2L1	NM_033486
6	chr1	1620185	1620582	-	downstream	3447	CDC2L2	NM_033529
7	chr1	1659227	1660313	-	intergenic	0	SLC35E2	NM_182838
8	chr1	1672498	1673192	-	upstream	5207	SLC35E2	NM_182838
8	chr1	1672498	1673192	-	intergenic	0	NADK	NM_023018
9	chr1	2101612	2102272	-	intergenic	0	PRKCZ	NM_002744
9	chr1	2101612	2102272	-	downstream	8575	C1orf86	NM_182533
10	chr1	2106063	2106370	+	intergenic	0	PRKCZ	NM_002744
10	chr1	2106063	2106370	+	downstream	4477	C1orf86	NM_182533
11	chr1	2106371	2106884	+	intergenic	0	PRKCZ	NM_002744
11	chr1	2106371	2106884	+	downstream	3963	C1orf86	NM_182533
12	chr1	3489037	3489875	+	intergenic	0	MEGF6	NM_001409
13	chr1	5854981	5856020	-	intergenic	0	NPHP4	NM_015102
14	chr1	8011194	8011818	-	upstream	2251	ERRFI1	NM_018948
15	chr1	8311846	8313005	+	intergenic	0	SLC45A1	NM_001080397
16	chr1	10680341	10680965	+	intergenic	0	CASZ1	NM_001079843
17	chr1	23392102	23392957	-	intergenic	0	HTR1D	NM_000864
18	chr1	27746944	27748024	+	intergenic	0	AHDC1	NM_001029882
19	chr1	32512364	32512988	-	intergenic	0	LCK	NM_005356
20	chr1	35434760	35435641	-	upstream	3438	SFPQ	NM_005066
21	chr1	39754114	39754845	-	intergenic	0	BMP8A	NM_181809
22	chr1	39758773	39759834	-	intergenic	0	BMP8A	NM_181809
23	chr1	40002851	40003912	-	intergenic	0	BMP8B	NM_001720
23	chr1	40002851	40003912	-	downstream	679	PPIE	NM_203456
23	chr1	40002851	40003912	-	downstream	3872	OXCT2	NM_022120
24	chr1	42783559	42784078	-	intergenic	0	LOC728621	NM_001080850
25	chr1	53699127	53699938	-	intergenic	0	DMRTB1	NM_033067
26	chr1	58769265	58769923	-	intergenic	0	OMA1	NM_145243

27	chr1	94781532	94782156	-	upstream	1629	F3	NM_001993
28	chr1	102233213	102233866	-	intergenic	0	OLFM3	NM_058170
29	chr1	103353236	103353860	-	upstream	6596	COL11A1	NM_001854
30	chr1	111992973	111993776	-	intergenic	0	RAP1A	NM_001010935
31	chr1	114158878	114159605	-	upstream	2285	RSBN1	NM_018364
31	chr1	114158878	114159605	-	intergenic	0	PTPN22	NM_015967
32	chr1	150319324	150320452	-	downstream	2791	TCHHL1	NM_001008536
33	chr1	150542499	150543443	-	intergenic	0	FLG	NM_002016
34	chr1	150543444	150543522	-	intergenic	0	FLG	NM_002016
35	chr1	150543523	150544431	-	intergenic	0	FLG	NM_002016
36	chr1	150546311	150547121	-	intergenic	0	FLG	NM_002016
37	chr1	150548113	150549237	-	intergenic	0	FLG	NM_002016
38	chr1	150549423	150550165	-	intergenic	0	FLG	NM_002016
39	chr1	150550166	150550245	-	intergenic	0	FLG	NM_002016
40	chr1	150550246	150551467	-	intergenic	0	FLG	NM_002016
41	chr1	153505869	153506562	+	upstream	7050	SCAMP3	NM_005698
41	chr1	153505869	153506562	+	upstream	7435	HCN3	NM_020897
41	chr1	153505869	153506562	+	intergenic	0	CLK2	NM_003993
42	chr1	159761962	159762804	+	intergenic	0	HSPA6	NM_002155
42	chr1	159761962	159762804	+	downstream	5979	FCGR2A	NM_021642
43	chr1	159843632	159844256	-	downstream	6976	FCGR2C	NM_001005410
44	chr1	160127276	160127900	-	intergenic	0	ATF6	NM_007348
45	chr1	166167183	166167893	-	upstream	4638	IQWD1	NM_001017977
45	chr1	166167183	166167893	-	intergenic	0	BRP44	NM_015415
46	chr1	178429034	178429423	-	intergenic	0	QSCN6	NM_001004128
47	chr1	181195224	181196241	-	upstream	6048	C1orf14	NM_030933
48	chr1	202854251	202854948	-	intergenic	0	LRRN5	NM_006338
49	chr1	203504644	203505548	+	intergenic	0	TMCC2	NM_014858
50	chr1	210865888	210866912	-	intergenic	0	FAM71A	NM_153606
50	chr1	210865888	210866912	-	downstream	5151	ATF3	NM_001674
51	chr1	212772300	212773353	-	intergenic	0	PTPN14	NM_005401
52	chr1	230715947	230716840	-	intergenic	0	SIPA1L2	NM_020808
53	chr1	238374554	238375598	-	intergenic	0	FMN2	NM_020066
54	chr1	243916408	243917064	-	intergenic	0	KIF26B	NM_018012
55	chr10	83237	84308	-	intergenic	0	TUBB8	NM_177987
56	chr10	682827	683956	-	intergenic	0	DIP2C	NM_014974
57	chr10	683957	685482	-	intergenic	0	DIP2C	NM_014974
58	chr10	850375	851146	-	intergenic	0	LARP5	NM_015155
59	chr10	5556883	5558559	+	intergenic	0	CALML3	NM_005185
60	chr10	31692384	31693334	-	intergenic	0	ZEB1	NM_030751
61	chr10	46506327	46507311	-	intergenic	0	PPYR1	NM_005972
62	chr10	49280139	49280877	-	intergenic	0	MAPK8	NM_002750

63	chr10	76828336	76828960	+	intergenic	0	ZNF503	NM_032772
64	chr10	76835936	76836743	+	upstream	4505	ZNF503	NM_032772
65	chr10	79210579	79212082	-	downstream	8474	DLG5	NM_004747
66	chr10	85987079	85988033	+	upstream	6755	RGR	NM_001012720
66	chr10	85987079	85988033	+	intergenic	0	LRRC21	NM_015613
67	chr10	134455347	134456009	+	upstream	5820	NKX6-2	NM_177400
67	chr10	134455347	134456009	+	downstream	8374	INPP5A	NM_005539
68	chr10	134818540	134819405	-	upstream	4555	KNDC1	NM_152643
69	chr10	134866350	134867407	+	intergenic	0	KNDC1	NM_152643
70	chr10	134889658	134890796	+	upstream	2971	UTF1	NM_003577
70	chr10	134889658	134890796	+	intergenic	0	KNDC1	NM_152643
71	chr10	134946039	134947070	-	upstream	5677	ADAM8	NM_001109
71	chr10	134946039	134947070	-	intergenic	0	TUBGCP2	NM_006659
72	chr10	134947071	134947132	-	upstream	6709	ADAM8	NM_001109
72	chr10	134947071	134947132	-	intergenic	0	TUBGCP2	NM_006659
73	chr10	134947133	134948063	+	upstream	6771	ADAM8	NM_001109
73	chr10	134947133	134948063	+	intergenic	0	TUBGCP2	NM_006659
74	chr10	135285878	135286760	+	downstream	1832	LOC441581	NM_001080998
75	chr11	281359	282150	-	intergenic	0	ATHL1	NM_025092
75	chr11	281359	282150	-	downstream	6056	NALP6	NM_138329
75	chr11	281359	282150	-	downstream	6052	IFITM5	NM_001025295
76	chr11	293440	294420	+	upstream	9570	IFITM1	NM_003641
76	chr11	293440	294420	+	upstream	3914	IFITM5	NM_001025295
76	chr11	293440	294420	+	upstream	3686	IFITM2	NM_006435
76	chr11	293440	294420	+	downstream	8028	ATHL1	NM_025092
77	chr11	352744	354039	-	upstream	5764	B4GALNT4	NM_178537
78	chr11	400396	401075	-	intergenic	0	SIGIRR	NM_021805
78	chr11	400396	401075	-	downstream	5489	PKP3	NM_007183
78	chr11	400396	401075	-	downstream	6854	TMEM16J	NM_001012302
79	chr11	617264	618071	+	upstream	9233	DRD4	NM_000797
79	chr11	617264	618071	+	upstream	91	SCT	NM_021920
79	chr11	617264	618071	+	upstream	2257	MUCDHL	NM_021924
80	chr11	1219687	1220695	-	intergenic	0	MUC5B	NM_002458
81	chr11	1221437	1222437	-	intergenic	0	MUC5B	NM_002458
82	chr11	1223188	1224174	-	intergenic	0	MUC5B	NM_002458
83	chr11	1225167	1226322	-	intergenic	0	MUC5B	NM_002458
84	chr11	1226879	1227945	-	intergenic	0	MUC5B	NM_002458
85	chr11	10256008	10256761	-	intergenic	0	SBF2	NM_030962
86	chr11	18151097	18152015	-	intergenic	0	MRGPRX4	NM_054032
87	chr11	32557941	32558761	-	upstream	3205	hfl-B5	NM_006360
88	chr11	45627835	45628459	+	intergenic	0	CHST1	NM_003654
89	chr11	46683525	46684149	+	upstream	4829	ARHGAP1	NM_004308

89	chr11	46683525	46684149	+	intergenic	0	ZNF408	NM_024741
90	chr11	47238090	47239111	-	upstream	8423	MADD	NM_130470
90	chr11	47238090	47239111	-	intergenic	0	NR1H3	NM_005693
91	chr11	60866233	60867051	-	upstream	8991	DDB1	NM_001923
91	chr11	60866233	60867051	-	intergenic	0	DAK	NM_015533
91	chr11	60866233	60867051	-	downstream	5804	CYBASC3	NM_153611
92	chr11	61653508	61654496	-	intergenic	0	INCENP	NM_001040694
92	chr11	61653508	61654496	-	intergenic	0	INCENP	NM_020238
93	chr11	64079766	64080596	-	intergenic	0	SLC22A11	NM_018484
94	chr11	66393769	66394545	-	intergenic	0	PC	NM_001040716
94	chr11	66393769	66394545	-	downstream	9248	LRFN4	NM_024036
95	chr11	77123058	77123682	-	intergenic	0	HBXAP	NM_016578
96	chr11	93940145	93940804	-	intergenic	0	PIWIL4	NM_152431
97	chr11	103412487	103413858	+	intergenic	0	DDI1	NM_001001711
97	chr11	103412487	103413858	+	intergenic	0	PDGFD	NM_025208
98	chr11	107664970	107665664	-	intergenic	0	ATM	NM_000051
99	chr11	119512966	119513928	+	intergenic	0	TRIM29	NM_012101
100	chr11	124113867	124114526	-	upstream	425	NRGN	NM_006176
100	chr11	124113867	124114526	-	downstream	8054	VSIG2	NM_014312
101	chr11	128286347	128287441	-	upstream	5545	C11orf45	NM_145013
101	chr11	128286347	128287441	-	intergenic	0	KCNJ5	NM_000890
102	chr11	133314337	133315352	-	intergenic	0	IGSF9B	NM_014987
103	chr11	133315385	133315420	-	intergenic	0	IGSF9B	NM_014987
104	chr11	133315421	133315456	-	intergenic	0	IGSF9B	NM_014987
105	chr11	133315457	133316447	-	intergenic	0	IGSF9B	NM_014987
106	chr12	5473707	5474883	+	intergenic	0	NTF3	NM_001102654
107	chr12	8278057	8278713	-	upstream	6576	FAM90A1	NM_018088
108	chr12	11080326	11080969	-	upstream	5053	TAS2R44	NM_176885
108	chr12	11080326	11080969	-	intergenic	0	PRH1	NM_006250
108	chr12	11080326	11080969	-	intergenic	0	PRR4	NM_001098538
109	chr12	15264136	15264829	-	intergenic	0	RERG	NM_032918
110	chr12	29545772	29546510	-	upstream	3886	OVCH1	NM_183378
110	chr12	29545772	29546510	-	intergenic	0	TMTC1	NM_175861
111	chr12	31835705	31836769	+	intergenic	0	LOC440093	NM_001013699
112	chr12	37399398	37400169	-	intergenic	0	CPNE8	NM_153634
113	chr12	47207719	47208343	+	intergenic	0	OR8S1	NM_001005203
114	chr12	49804393	49805339	-	intergenic	0	TFCP2	NM_005653
115	chr12	50580664	50581633	+	upstream	5835	ACVRL1	NM_000020
115	chr12	50580664	50581633	+	downstream	8959	ANKRD33	NM_182608
116	chr12	50970587	50971629	+	intergenic	0	KRTHB1	NM_002281
117	chr12	50981792	50982826	+	intergenic	0	KRTHB6	NM_002284
118	chr12	51046864	51047662	+	intergenic	0	KRT85	NM_002283

119	chr12	55675060	55675822	-	intergenic	0	ADMR	NM_007264
119	chr12	55675060	55675822	-	downstream	3062	ZBTB39	NM_014830
120	chr12	64099248	64099984	-	intergenic	0	MSRB3	NM_001031679
120	chr12	64099248	64099984	-	intergenic	0	MSRB3	NM_198080
121	chr12	67484600	67485224	-	upstream	3022	MDM2	NM_002392
122	chr12	69048209	69048869	-	intergenic	0	KCNMB4	NM_014505
123	chr12	73999702	74000359	-	intergenic	0	CAPS2	NM_032606
124	chr12	89872220	89873203	+	intergenic	0	C12orf12	NM_152638
124	chr12	89872220	89873203	+	downstream	8388	DSPG3	NM_004950
125	chr12	103895099	103895869	-	upstream	8358	C12orf45	NM_152318
126	chr12	130082613	130083560	+	intergenic	0	GPR133	NM_198827
127	chr12	130995034	130995767	+	upstream	4693	EP400	NM_015409
127	chr12	130995034	130995767	+	downstream	679	PUS1	NM_001002019
128	chr12	131011757	131012886	-	intergenic	0	EP400	NM_015409
129	chr12	131127626	131128385	-	intergenic	0	EP400	NM_015409
130	chr12	131262064	131262725	+	upstream	5538	GALNT9	NM_021808
131	chr13	18653816	18654774	-	intergenic	0	TUBA2	NM_006001
132	chr13	26230921	26231545	-	intergenic	0	GPR12	NM_005288
133	chr13	56612334	56612922	-	upstream	130	FLJ40296	NM_198441
134	chr13	56614290	56615348	+	upstream	4274	FLJ40296	NM_198441
134	chr13	56614290	56615348	+	intergenic	0	FLJ40296	NM_198441
135	chr13	56618265	56619174	-	downstream	2191	FLJ40296	NM_198441
136	chr13	56620860	56621918	+	intergenic	0	FLJ40296	NM_198441
137	chr13	56624838	56625747	-	upstream	448	FLJ40296	NM_198441
138	chr13	56627433	56628527	+	intergenic	0	FLJ40296	NM_198441
139	chr13	56631409	56632318	-	upstream	448	FLJ40296	NM_198441
140	chr13	56634004	56635062	+	intergenic	0	FLJ40296	NM_198441
141	chr13	56637974	56638883	-	upstream	448	FLJ40296	NM_198441
142	chr13	56640569	56641627	+	intergenic	0	FLJ40296	NM_198441
143	chr13	56644545	56645454	-	downstream	2192	FLJ40296	NM_198441
144	chr13	97627002	97627878	+	intergenic	0	RNF113B	NM_178861
144	chr13	97627002	97627878	+	intergenic	0	FARP1	NM_001001715
145	chr13	107721529	107722153	-	intergenic	0	TNFSF13B	NM_006573
146	chr13	112487421	112488687	+	intergenic	0	ATP11A	NM_015205
147	chr13	112575816	112576592	-	intergenic	0	ATP11A	NM_015205
148	chr13	112696299	112697440	+	upstream	6628	MCF2L	NM_024979
149	chr13	112916663	112917649	-	upstream	5679	FLJ11305	NM_018386
149	chr13	112916663	112917649	-	intergenic	0	CUL4A	NM_003589
150	chr13	113114577	113115409	+	downstream	8851	ADPRHL1	NM_199162
151	chr13	113149331	113150348	-	intergenic	0	ADPRHL1	NM_199162
151	chr13	113149331	113150348	-	downstream	7786	DCUN1D2	NM_001014283
152	chr13	113154177	113154834	-	intergenic	0	ADPRHL1	NM_138430

152	chr13	113154177	113154834	-	downstream	3300	DCUN1D2	NM_001014283
153	chr13	113261930	113263111	+	downstream	9423	TMCO3	NM_017905
154	chr13	113288677	113289447	-	intergenic	0	TFDP1	NM_007111
155	chr13	113654020	113655189	+	upstream	2147	FAM70B	NM_182614
156	chr14	22586228	22587153	+	intergenic	0	CDH24	NM_022478
156	chr14	22586228	22587153	+	downstream	3119	FLJ16369	NM_001099780
157	chr14	70131126	70131750	-	intergenic	0	MED6	NM_005466
158	chr14	90770239	90770902	+	intergenic	0	GPR68	NM_003485
158	chr14	90770239	90770902	+	downstream	8783	C14orf159	NM_024952
159	chr14	90849234	90849897	-	intergenic	0	CCDC88C	NM_001080414
160	chr14	90849898	90850466	-	intergenic	0	CCDC88C	NM_001080414
161	chr14	92455571	92456773	-	upstream	2424	CHGA	NM_001275
162	chr14	104479831	104480980	-	intergenic	0	AHNAK2	NM_138420
162	chr14	104479831	104480980	-	downstream	9213	PLD4	NM_138790
163	chr14	104480981	104481821	-	intergenic	0	AHNAK2	NM_138420
164	chr14	104482103	104484402	-	intergenic	0	AHNAK2	NM_138420
165	chr14	104485122	104485746	-	intergenic	0	AHNAK2	NM_138420
166	chr14	104488750	104490871	-	intergenic	0	AHNAK2	NM_138420
167	chr15	22472372	22472996	-	intergenic	0	C15orf2	NM_018958
168	chr15	32468456	32469236	-	intergenic	0	GOLGA8A	NM_181077
169	chr15	32614677	32615457	-	upstream	1474	GOLGA8B	NM_001023567
170	chr15	54768405	54769536	-	intergenic	0	SUHW4	NM_001002843
170	chr15	54768405	54769536	-	downstream	9315	SUHW4	NM_001002844
171	chr15	71521830	71522671	+	intergenic	0	LOC283677	NM_001042367
172	chr15	72623183	72623973	-	intergenic	0	ARID3B	NM_006465
173	chr15	81176683	81177478	-	upstream	994	AP3B2	NM_004644
174	chr16	677478	678102	-	upstream	3038	LOC339123	NM_001005920
174	chr16	677478	678102	-	intergenic	0	WDR24	NM_032259
174	chr16	677478	678102	-	downstream	9210	RHBDL1	NM_003961
174	chr16	677478	678102	-	downstream	4710	STUB1	NM_005861
174	chr16	677478	678102	-	downstream	4404	FBXL16	NM_153350
175	chr16	945229	946435	+	intergenic	0	TMEM112	NM_022773
176	chr16	1250523	1251210	+	downstream	2028	TPSD1	NM_012217
177	chr16	1344351	1345732	+	upstream	2477	MGC24381	NM_001001410
177	chr16	1344351	1345732	+	intergenic	0	GNPTG	NM_032520
177	chr16	1344351	1345732	+	downstream	7474	C16orf28	NM_023076
177	chr16	1344351	1345732	+	downstream	4908	BAIAP3	NM_003933
178	chr16	1660846	1661506	-	upstream	6772	C16orf34	NM_144570
178	chr16	1660846	1661506	-	intergenic	0	CRAMP1L	NM_020825
179	chr16	1662768	1663715	-	upstream	4563	C16orf34	NM_144570
179	chr16	1662768	1663715	-	intergenic	0	CRAMP1L	NM_020825
180	chr16	1909752	1910746	-	upstream	1520	HS3ST6	NM_001009606

181	chr16	3055572	3056196	-	intergenic	0	IL32	NM_001012631
181	chr16	3055572	3056196	-	downstream	4849	MMP25	NM_022468
182	chr16	3346121	3346959	-	intergenic	0	OR2C1	NM_012368
183	chr16	3664175	3665060	+	intergenic	0	TRAP1	NM_016292
184	chr16	10112420	10113831	-	intergenic	0	GRIN2A	NM_000833
185	chr16	10698458	10700445	-	upstream	2155	FLJ32871	NM_144674
186	chr16	14930391	14931420	-	upstream	7380	NPIP	NM_006985
187	chr16	27321552	27322407	-	intergenic	0	IL21R	NM_181078
188	chr16	29717574	29718269	-	upstream	7086	MAZ	NM_001042539
189	chr16	30316301	30317245	-	upstream	9732	ZNF771	NM_016643
189	chr16	30316301	30317245	-	intergenic	0	ZNF553	NM_152652
190	chr16	30443434	30444457	+	intergenic	0	ZNF768	NM_024671
190	chr16	30443434	30444457	+	downstream	1428	ITGAL	NM_002209
190	chr16	30443434	30444457	+	downstream	5823	MGC2474	NM_023931
191	chr16	30474473	30475553	+	intergenic	0	MGC13138	NM_033410
192	chr16	45217625	45218653	-	upstream	4840	SHCBP1	NM_024745
193	chr16	56589175	56590367	-	upstream	2438	C16orf57	NM_024598
193	chr16	56589175	56590367	-	intergenic	0	ZNF319	NM_020807
193	chr16	56589175	56590367	-	downstream	9657	TEPP	NM_199046
194	chr16	70127992	70129201	-	intergenic	0	CHST4	NM_005769
195	chr16	70688090	70688822	-	upstream	3075	TXNL4B	NM_017853
195	chr16	70688090	70688822	-	intergenic	0	DHX38	NM_014003
196	chr16	71548855	71549479	-	intergenic	0	ATBF1	NM_006885
197	chr16	82537502	82538158	-	upstream	2014	OSGIN1	NM_013370
198	chr16	85112108	85113027	-	downstream	6538	FOXF1	NM_001451
198	chr16	85112108	85113027	-	downstream	8256	MTHFSD	NM_022764
199	chr16	85113674	85114588	-	downstream	8104	FOXF1	NM_001451
199	chr16	85113674	85114588	-	downstream	6695	MTHFSD	NM_022764
200	chr16	87040071	87041278	+	upstream	6236	ZFPM1	NM_153813
201	chr16	87252675	87253538	+	upstream	7717	CYBA	NM_000101
201	chr16	87252675	87253538	+	intergenic	0	MVD	NM_002461
202	chr16	87412265	87413098	-	upstream	6422	APRT	NM_001030018
202	chr16	87412265	87413098	-	intergenic	0	GALNS	NM_000512
202	chr16	87412265	87413098	-	downstream	9099	CDT1	NM_030928
203	chr16	87523317	87524086	-	intergenic	0	CBFA2T3	NM_175931
204	chr16	87751076	87752866	-	downstream	1406	LOC197322	NM_174917
205	chr16	88240911	88241854	+	upstream	9856	C16orf55	NM_153025
205	chr16	88240911	88241854	+	intergenic	0	PCOLN3	NM_002768
205	chr16	88240911	88241854	+	intergenic	0	CHMP1A	NM_001083314
205	chr16	88240911	88241854	+	downstream	8573	DPEP1	NM_004413
206	chr16	88279141	88280318	-	upstream	258	CDK10	NM_052988
206	chr16	88279141	88280318	-	downstream	9947	MGC26885	NM_152339

207	chr17	204108	205286	-	upstream	1532	RPH3AL	NM_006987
208	chr17	206167	207427	-	upstream	3591	RPH3AL	NM_006987
209	chr17	208073	208697	-	upstream	5497	RPH3AL	NM_006987
210	chr17	254235	255182	+	upstream	5251	LOC400566	NM_001013672
211	chr17	596398	597404	-	intergenic	0	GEMIN4	NM_015721
211	chr17	596398	597404	-	downstream	3574	FAM57A	NM_024792
212	chr17	617149	618220	-	intergenic	0	C17orf25	NM_016080
213	chr17	618221	619330	-	intergenic	0	C17orf25	NM_016080
214	chr17	2149718	2150526	-	upstream	3471	SRR	NM_021947
214	chr17	2149718	2150526	-	intergenic	0	SMG6	NM_017575
215	chr17	3718030	3718925	+	intergenic	0	CAMKK1	NM_172206
216	chr17	5288089	5289084	+	upstream	4894	C1QBP	NM_001212
216	chr17	5288089	5289084	+	intergenic	0	DHX33	NM_020162
217	chr17	6957624	6958401	-	intergenic	0	ASGR2	NM_001181
218	chr17	8155459	8156239	-	intergenic	0	ARHGEF15	NM_173728
219	chr17	19563399	19564479	-	upstream	2764	SLC47A2	NM_001099646
220	chr17	20739556	20740180	+	intergenic	0	MGC87631	NM_001004306
221	chr17	21259061	21260016	+	intergenic	0	KCNJ12	NM_021012
222	chr17	31527537	31527643	-	intergenic	0	TBC1D3B	NM_001001417
223	chr17	31527644	31528527	-	intergenic	0	TBC1D3B	NM_001001417
224	chr17	31530869	31531788	+	upstream	2768	TBC1D3B	NM_001001417
225	chr17	31615581	31615687	-	intergenic	0	TBC1D3C	NM_001001418
226	chr17	31615688	31616607	-	intergenic	0	TBC1D3C	NM_001001418
227	chr17	31619099	31619754	-	upstream	2959	TBC1D3C	NM_001001418
228	chr17	31830628	31830698	-	intergenic	0	TBC1D3C	NM_001001418
229	chr17	31830699	31831618	-	intergenic	0	TBC1D3C	NM_001001418
230	chr17	31834099	31834837	-	intergenic	0	TBC1D3C	NM_001001418
231	chr17	31881645	31881751	-	intergenic	0	TBC1D3C	NM_001001418
231	chr17	31881645	31881751	-	intergenic	0	LOC654341	NM_001040282
232	chr17	31881752	31882671	-	intergenic	0	TBC1D3C	NM_001001418
232	chr17	31881752	31882671	-	intergenic	0	LOC654341	NM_001040282
233	chr17	31885155	31885888	+	upstream	2951	TBC1D3C	NM_001001418
233	chr17	31885155	31885888	+	upstream	2950	LOC654341	NM_001040282
234	chr17	33357851	33358887	-	intergenic	0	TBC1D3	NM_032258
235	chr17	33551712	33551746	-	intergenic	0	TBC1D3	NM_032258
236	chr17	33551747	33552702	-	intergenic	0	TBC1D3	NM_032258
237	chr17	33555185	33556097	+	upstream	2997	TBC1D3	NM_032258
238	chr17	33601884	33602008	-	intergenic	0	TBC1D3	NM_032258
239	chr17	33602009	33602995	-	intergenic	0	TBC1D3	NM_032258
240	chr17	36724794	36725706	-	intergenic	0	KRTAP17-1	NM_031964
241	chr17	36760282	36760906	-	intergenic	0	KRTHA3A	NM_004138
242	chr17	36804692	36805845	-	intergenic	0	KRTHA1	NM_002277

243	chr17	37022060	37022830	-	intergenic	0	KRT16	NM_005557
243	chr17	37022060	37022830	-	downstream	6390	KRT17	NM_000422
244	chr17	38090428	38091120	+	upstream	7933	PLEKHH3	NM_024927
244	chr17	38090428	38091120	+	upstream	3057	CCR10	NM_016602
244	chr17	38090428	38091120	+	intergenic	0	CNTNAP1	NM_003632
245	chr17	40688143	40689056	-	intergenic	0	C17orf46	NM_152343
245	chr17	40688143	40689056	-	downstream	7679	FMNL1	NM_005892
245	chr17	40688143	40689056	-	downstream	7214	MAP3K14	NM_003954
246	chr17	41774568	41775490	-	intergenic	0	ARL17	NM_001039083
246	chr17	41774568	41775490	-	downstream	3652	LRRC37A	NM_014834
247	chr17	41992063	41992985	-	intergenic	0	ARL17	NM_001039083
247	chr17	41992063	41992985	-	downstream	3733	LOC474170	NM_001006607
248	chr17	49255127	49256534	-	intergenic	0	KIF2B	NM_032559
249	chr17	71286246	71287083	+	upstream	5192	ZC3H5	NM_001080419
249	chr17	71286246	71287083	+	intergenic	0	H3F3B	NM_005324
250	chr17	75373131	75373946	+	intergenic	0	CBX2	NM_005189
250	chr17	75373131	75373946	+	downstream	8824	CBX8	NM_020649
251	chr17	75935883	75936690	+	intergenic	0	C17orf27	NM_020914
252	chr17	77244785	77245671	-	upstream	762	LOC339229	NM_001039842
252	chr17	77244785	77245671	-	intergenic	0	CCDC137	NM_199287
253	chr17	77870187	77871292	+	upstream	1418	CD7	NM_006137
253	chr17	77870187	77871292	+	downstream	897	SECTM1	NM_003004
254	chr17	77962653	77963383	-	upstream	6157	HEXDC	NM_173620
254	chr17	77962653	77963383	-	intergenic	0	FLJ22222	NM_024648
255	chr17	78280885	78281618	+	upstream	5178	FN3K	NM_022158
255	chr17	78280885	78281618	+	downstream	1741	FN3KRP	NM_024619
256	chr17	78473892	78475020	-	intergenic	0	TBCD	NM_005993
257	chr17	78605952	78606807	+	upstream	2977	B3GNTL1	NM_001009905
258	chr18	570062	571375	+	intergenic	0	CETN1	NM_004066
259	chr18	3869463	3870211	+	intergenic	0	DLGAP1	NM_004746
260	chr18	11740687	11741311	+	intergenic	0	GNAL	NM_182978
261	chr18	12422386	12423424	+	downstream	152	C18orf43	NM_006553
262	chr18	21967331	21968253	+	intergenic	0	PSMA8	NM_001025096
263	chr18	42796091	42796934	-	intergenic	0	KATNAL2	NM_031303
263	chr18	42796091	42796934	-	intergenic	0	TCEB3CL	NM_001100817
263	chr18	42796091	42796934	-	downstream	5721	TCEB3C	NM_145653
264	chr18	42796935	42797085	+	intergenic	0	KATNAL2	NM_031303
264	chr18	42796935	42797085	+	intergenic	0	TCEB3CL	NM_001100817
264	chr18	42796935	42797085	+	downstream	5570	TCEB3C	NM_145653
265	chr18	42797086	42798720	+	intergenic	0	TCEB3CL	NM_001100817
265	chr18	42797086	42798720	+	intergenic	0	KATNAL2	NM_031303
265	chr18	42797086	42798720	+	downstream	3935	TCEB3C	NM_145653

266	chr18	42802018	42803012	+	intergenic	0	KATNAL2	NM_031303
266	chr18	42802018	42803012	+	intergenic	0	TCEB3CL	NM_001100817
266	chr18	42802018	42803012	+	intergenic	0	TCEB3C	NM_145653
266	chr18	42802018	42803012	+	downstream	9928	TCEB3B	NM_016427
267	chr18	42803013	42804647	+	intergenic	0	TCEB3CL	NM_001100817
267	chr18	42803013	42804647	+	intergenic	0	TCEB3C	NM_145653
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267	chr18	42803013	42804647	+	downstream	8293	TCEB3B	NM_016427
268	chr18	42807966	42808927	+	intergenic	0	KATNAL2	NM_031303
268	chr18	42807966	42808927	+	intergenic	0	TCEB3CL	NM_001100817
268	chr18	42807966	42808927	+	intergenic	0	TCEB3C	NM_145653
268	chr18	42807966	42808927	+	downstream	4013	TCEB3B	NM_016427
269	chr18	42809082	42810562	+	intergenic	0	TCEB3CL	NM_001100817
269	chr18	42809082	42810562	+	intergenic	0	TCEB3C	NM_145653
269	chr18	42809082	42810562	+	intergenic	0	KATNAL2	NM_031303
269	chr18	42809082	42810562	+	downstream	2378	TCEB3B	NM_016427
270	chr18	42814901	42815908	+	upstream	4690	TCEB3CL	NM_001100817
270	chr18	42814901	42815908	+	upstream	4454	TCEB3C	NM_145653
270	chr18	42814901	42815908	+	intergenic	0	KATNAL2	NM_031303
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271	chr18	71127800	71127862	-	intergenic	0	TSHZ1	NM_005786
272	chr18	71127937	71128074	-	intergenic	0	TSHZ1	NM_005786
273	chr18	71128075	71129000	+	intergenic	0	TSHZ1	NM_005786
274	chr18	74837923	74838513	+	upstream	2749	SALL3	NM_171999
275	chr18	75188165	75189624	+	intergenic	0	ATP9B	NM_198531
276	chr18	75547427	75548051	-	intergenic	0	CTDP1	NM_004715
277	chr18	75556569	75557708	-	intergenic	0	CTDP1	NM_004715
278	chr19	401525	402448	+	intergenic	0	SHC2	NM_012435
279	chr19	473755	474622	+	upstream	8110	CDC34	NM_004359
279	chr19	473755	474622	+	downstream	3101	C19orf20	NM_033513
280	chr19	601852	602667	+	intergenic	0	RNF126	NM_194460
280	chr19	601852	602667	+	downstream	7249	FGF22	NM_020637
281	chr19	617967	618690	+	upstream	3740	RNF126	NM_194460
281	chr19	617967	618690	+	upstream	8698	FSTL3	NM_005860
282	chr19	703715	704375	-	intergenic	0	C19orf21	NM_173481
282	chr19	703715	704375	-	downstream	4385	PALM	NM_002579
283	chr19	1391021	1391645	+	upstream	9502	APC2	NM_005883
283	chr19	1391021	1391645	+	intergenic	0	RPS15	NM_001018
283	chr19	1391021	1391645	+	downstream	4341	DAZAP1	NM_018959
284	chr19	1447242	1448384	+	upstream	5835	PCSK4	NM_017573
284	chr19	1447242	1448384	+	intergenic	0	REEP6	NM_138393
284	chr19	1447242	1448384	+	downstream	7638	ADAMTSL5	NM_213604

285	chr19	1766956	1767580	+	upstream	3686	ATP8B3	NM_138813
285	chr19	1766956	1767580	+	intergenic	0	REXO1	NM_020695
286	chr19	3759033	3759767	-	upstream	6223	MATK	NM_002378
286	chr19	3759033	3759767	-	intergenic	0	KIAA1086	NM_015174
287	chr19	3787946	3789567	+	intergenic	0	KIAA1086	NM_015174
288	chr19	3878471	3879247	-	upstream	4853	ITGB1BP3	NM_170678
288	chr19	3878471	3879247	-	intergenic	0	ATCAY	NM_033064
289	chr19	5794928	5795848	+	upstream	4186	FUT6	NM_000150
289	chr19	5794928	5795848	+	intergenic	0	FUT3	NM_001097640
290	chr19	8793889	8795001	-	intergenic	0	ZNF558	NM_144693
291	chr19	10081899	10082845	+	upstream	7474	ANGPTL6	NM_031917
291	chr19	10081899	10082845	+	upstream	351	P2RY11	NM_002566
291	chr19	10081899	10082845	+	intergenic	0	PPAN	NM_020230
291	chr19	10081899	10082845	+	intergenic	0	PAN-P2RY1	NM_001040664
291	chr19	10081899	10082845	+	downstream	3845	EIF3S4	NM_003755
292	chr19	11186745	11187680	-	intergenic	0	DOCK6	NM_020812
293	chr19	12613912	12614957	+	downstream	3364	MAN2B1	NM_000528
294	chr19	12829870	12830891	+	intergenic	0	MAST1	NM_014975
295	chr19	14804354	14804978	-	upstream	4078	OR7A5	NM_017506
295	chr19	14804354	14804978	-	downstream	7781	OR7A10	NM_001005190
296	chr19	15765966	15767102	-	intergenic	0	OR10H5	NM_001004466
297	chr19	15778564	15779890	+	intergenic	0	OR10H1	NM_013940
298	chr19	15906023	15906647	-	intergenic	0	CYP4F11	NM_021187
299	chr19	16039168	16040115	+	upstream	8209	TPM4	NM_003290
300	chr19	16298094	16298837	+	intergenic	0	KLF2	NM_016270
301	chr19	16720625	16721522	-	intergenic	0	LOC284434	NM_001007525
302	chr19	17304751	17305619	+	upstream	3744	GTPBP3	NM_133644
302	chr19	17304751	17305619	+	intergenic	0	TMEM16H	NM_020959
303	chr19	19606219	19607031	+	upstream	6202	EDG4	NM_004720
303	chr19	19606219	19607031	+	intergenic	0	GMIP	NM_016573
303	chr19	19606219	19607031	+	downstream	9980	ATP13A1	NM_020410
304	chr19	36459447	36460594	-	intergenic	0	TSHZ3	NM_020856
305	chr19	39942098	39943116	-	intergenic	0	ZNF599	NM_001007248
306	chr19	41296256	41296963	+	upstream	764	CKAP1	NM_001281
306	chr19	41296256	41296963	+	intergenic	0	POLR2I	NM_006233
306	chr19	41296256	41296963	+	downstream	8404	WDR62	NM_173636
307	chr19	42731664	42732419	+	upstream	1728	ZNF540	NM_152606
307	chr19	42731664	42732419	+	downstream	5585	ZNF793	NM_001013659
308	chr19	43263371	43264379	-	intergenic	0	SIPA1L3	NM_015073
309	chr19	45593645	45594764	-	upstream	5711	HIPK4	NM_144685
309	chr19	45593645	45594764	-	intergenic	0	PRX	NM_020956
310	chr19	46224068	46225113	-	downstream	7927	CYP2B6	NM_000767

311	chr19	47040312	47040977	+	intergenic	0	DMRTC2	NM_001040283
311	chr19	47040312	47040977	+	intergenic	0	LYPD4	NM_173506
312	chr19	47040978	47041050	-	upstream	630	LYPD4	NM_173506
312	chr19	47040978	47041050	-	intergenic	0	DMRTC2	NM_001040283
313	chr19	52515234	52516321	-	intergenic	0	C5AR1	NM_001736
314	chr19	52660436	52661381	+	intergenic	0	SLC8A2	NM_015063
314	chr19	52660436	52661381	+	downstream	8830	KPTN	NM_007059
315	chr19	53945091	53946112	+	upstream	9309	RASIP1	NM_017805
315	chr19	53945091	53946112	+	upstream	3113	IZUMO1	NM_182575
315	chr19	53945091	53946112	+	upstream	5043	FGF21	NM_019113
315	chr19	53945091	53946112	+	intergenic	0	FUT1	NM_000148
316	chr19	54217511	54218417	-	upstream	5352	LHB	NM_000894
316	chr19	54217511	54218417	-	upstream	8524	CGB2	NM_033378
316	chr19	54217511	54218417	-	intergenic	0	CGB	NM_000737
316	chr19	54217511	54218417	-	downstream	6517	RUVBL2	NM_006666
317	chr19	54230287	54231156	-	upstream	7757	CGB5	NM_033043
317	chr19	54230287	54231156	-	intergenic	0	CGB1	NM_033377
317	chr19	54230287	54231156	-	downstream	1981	CGB2	NM_033378
318	chr19	54240070	54240694	-	upstream	8067	CGB1	NM_033377
318	chr19	54240070	54240694	-	intergenic	0	CGB5	NM_033043
318	chr19	54240070	54240694	-	downstream	8649	CGB7	NM_033142
318	chr19	54240070	54240694	-	downstream	2012	CGB8	NM_033183
319	chr19	54242356	54243267	-	intergenic	0	CGB8	NM_033183
319	chr19	54242356	54243267	-	downstream	1977	CGB5	NM_033043
319	chr19	54242356	54243267	-	downstream	6076	CGB7	NM_033142
320	chr19	54248956	54249861	-	upstream	4776	CGB8	NM_033183
320	chr19	54248956	54249861	-	intergenic	0	CGB7	NM_033142
320	chr19	54248956	54249861	-	downstream	8577	CGB5	NM_033043
320	chr19	54248956	54249861	-	downstream	6349	NTF5	NM_006179
321	chr19	54265298	54266138	-	upstream	6361	NTF5	NM_006179
321	chr19	54265298	54266138	-	intergenic	0	KCNA7	NM_031886
322	chr19	54583649	54584810	-	intergenic	0	FLJ32658	NM_144688
323	chr19	54983401	54984228	+	intergenic	0	AP2A1	NM_014203
323	chr19	54983401	54984228	+	intergenic	0	AP2A1	NM_130787
324	chr19	55713537	55714888	+	upstream	7380	JOSD2	NM_138334
324	chr19	55713537	55714888	+	upstream	3778	LOC554235	NM_001024656
324	chr19	55713537	55714888	+	intergenic	0	LRRC4B	NM_001080457
325	chr19	56540292	56541799	-	intergenic	0	ETFB	NM_001014763
326	chr19	57201761	57202356	-	intergenic	0	ZNF615	NM_198480
326	chr19	57201761	57202356	-	downstream	6033	ZNF614	NM_025040
327	chr19	58732949	58734314	+	intergenic	0	ZNF331	NM_001079906
328	chr19	58749522	58750857	+	intergenic	0	ZNF331	NM_001079906

329	chr19	59317514	59318581	-	upstream	6666	TFPT	NM_013342
329	chr19	59317514	59318581	-	intergenic	0	PRPF31	NM_015629
330	chr19	60142549	60143417	+	intergenic	0	NALP7	NM_139176
331	chr19	60872890	60873514	-	upstream	4889	EPN1	NM_013333
331	chr19	60872890	60873514	-	intergenic	0	U2AF2	NM_001012478
332	chr19	61430989	61431908	+	intergenic	0	ZSCAN5	NM_024303
333	chr19	61866503	61867672	+	intergenic	0	BC37295_3	NM_001005850
334	chr19	61867673	61868142	+	intergenic	0	BC37295_3	NM_001005850
335	chr19	63270456	63271839	-	intergenic	0	ZNF135	NM_003436
336	chr19	63570697	63571321	+	upstream	4765	ZNF497	NM_198458
337	chr2	1729238	1730809	-	upstream	1940	PXDN	NM_012293
338	chr2	23897331	23898030	-	intergenic	0	ATAD2B	NM_017552
339	chr2	27468956	27470025	+	intergenic	0	PPM1G	NM_002707
340	chr2	51107431	51108519	+	intergenic	0	NRXN1	NM_004801
341	chr2	54336372	54337182	+	intergenic	0	TSPYL6	NM_001003937
341	chr2	54336372	54337182	+	intergenic	0	ACYP2	NM_138448
342	chr2	68609501	68610599	-	intergenic	0	C2orf13	NM_173545
343	chr2	87010776	87011682	+	intergenic	0	RGPD1	NM_001024457
344	chr2	96063285	96064607	+	intergenic	0	LOC150763	NM_207328
345	chr2	105219343	105220477	+	upstream	4154	GPR45	NM_007227
346	chr2	105224903	105226054	+	intergenic	0	GPR45	NM_007227
347	chr2	131949819	131950873	+	intergenic	0	TUBA3D	NM_080386
347	chr2	131949819	131950873	+	downstream	7129	FAM128A	NM_001085365
348	chr2	132197474	132198346	-	intergenic	0	C2orf27	NM_013310
349	chr2	133145818	133146442	-	upstream	867	LYPD1	NM_144586
349	chr2	133145818	133146442	-	upstream	278	LYPD1	NM_001077427
349	chr2	133145818	133146442	-	intergenic	0	NAP5	NM_207481
349	chr2	133145818	133146442	-	intergenic	0	NAP5	NM_207363
350	chr2	163406650	163407381	-	upstream	3164	KCNH7	NM_033272
351	chr2	172081621	172082496	+	upstream	4736	CYBRD1	NM_024843
352	chr2	176573266	176574065	-	intergenic	0	KIAA1715	NM_030650
353	chr2	201711014	201712170	-	intergenic	0	CFLAR	NM_003879
354	chr2	203763400	203764187	-	intergenic	0	NBEAL1	NM_198945
355	chr2	214984457	214985226	-	intergenic	0	LOC402117	NM_001080500
355	chr2	214984457	214985226	-	downstream	988	SPAG16	NM_024532
356	chr2	220120817	220121809	+	upstream	4135	CHPF	NM_024536
356	chr2	220120817	220121809	+	intergenic	0	MGC99813	NM_001005209
356	chr2	220120817	220121809	+	downstream	1899	OBSL1	NM_015311
356	chr2	220120817	220121809	+	downstream	9085	ACCN4	NM_018674
357	chr2	233606406	233607519	-	intergenic	0	NEU2	NM_005383
358	chr2	240617522	240618458	-	upstream	4051	NDUFA10	NM_004544
358	chr2	240617522	240618458	-	intergenic	0	OR6B2	NM_001005853

359	chr2	240633138	240634137	-	upstream	2066	LOC643905	NM_001080835
359	chr2	240633138	240634137	-	intergenic	0	OR6B3	NM_173351
360	chr2	240726762	240727386	-	upstream	2325	MYEOV2	NM_138336
360	chr2	240726762	240727386	-	intergenic	0	OTOS	NM_148961
361	chr2	241269643	241270480	-	upstream	9454	AQP12A	NM_198998
361	chr2	241269643	241270480	-	intergenic	0	AQP12B	NM_001102467
362	chr2	241280345	241281335	-	upstream	9355	AQP12B	NM_001102467
362	chr2	241280345	241281335	-	intergenic	0	AQP12A	NM_198998
363	chr2	241459765	241460622	-	intergenic	0	AGXT	NM_000030
364	chr2	241482967	241483591	-	intergenic	0	FLJ22671	NM_001085437
365	chr2	241696437	241697351	-	upstream	6040	MTERFD2	NM_182501
365	chr2	241696437	241697351	-	intergenic	0	PASK	NM_015148
366	chr20	5969989	5970819	+	intergenic	0	C20orf75	NM_152611
366	chr20	5969989	5970819	+	downstream	3952	C20orf155	NM_019095
367	chr20	17489938	17490758	-	upstream	7840	DSTN	NM_001011546
368	chr20	22964466	22965578	+	intergenic	0	SSTR4	NM_001052
368	chr20	22964466	22965578	+	downstream	8692	THBD	NM_000361
369	chr20	23915838	23916612	-	intergenic	0	GGTLA4	NM_178311
370	chr20	23922201	23923275	-	upstream	4785	GGTLA4	NM_178311
371	chr20	30047696	30048837	+	intergenic	0	XKR7	NM_001011718
372	chr20	54257419	54258432	+	intergenic	0	MC3R	NM_019888
373	chr20	54635884	54636834	+	upstream	930	TFAP2C	NM_003222
374	chr20	55570916	55571824	-	intergenic	0	PCK1	NM_002591
375	chr20	57200911	57201771	+	intergenic	0	C20orf174	NM_178457
376	chr20	60322093	60323071	+	intergenic	0	LAMA5	NM_005560
376	chr20	60322093	60323071	+	downstream	4782	ADRM1	NM_007002
377	chr20	60425585	60426591	+	upstream	9851	CABLES2	NM_031215
377	chr20	60425585	60426591	+	intergenic	0	C20orf151	NM_080833
378	chr20	60983381	60984584	+	intergenic	0	DIDO1	NM_033081
379	chr20	61952783	61953442	-	upstream	9567	C20orf135	NM_080622
380	chr20	61978979	61979955	+	intergenic	0	TPD52L2	NM_003288
381	chr20	62031234	62031968	+	intergenic	0	DNAJC5	NM_025219
381	chr20	62031234	62031968	+	downstream	9663	UCKL1	NM_017859
382	chr20	62033586	62034826	-	intergenic	0	DNAJC5	NM_025219
382	chr20	62033586	62034826	-	downstream	6805	UCKL1	NM_017859
383	chr21	13973422	13975733	+	intergenic	0	LOC441956	NM_001013729
384	chr21	30795761	30796669	-	upstream	9615	KRTAP19-3	NM_181609
384	chr21	30795761	30796669	-	upstream	4462	KRTAP19-4	NM_181610
384	chr21	30795761	30796669	-	intergenic	0	KRTAP19-5	NM_181611
385	chr21	32594164	32595441	+	intergenic	0	MRAP	NM_178817
386	chr21	41671495	41672371	-	intergenic	0	MX2	NM_002463
387	chr21	42875916	42876612	-	downstream	1298	SLC37A1	NM_018964

388	chr21	43999862	44000805	-	intergenic	0	PDXK	NM_003681
389	chr21	44030544	44031995	+	upstream	9857	CSTB	NM_000100
389	chr21	44030544	44031995	+	upstream	1850	RRP1	NM_003683
390	chr21	44205262	44206546	-	intergenic	0	AGPAT3	NM_020132
391	chr21	44813200	44813860	-	upstream	4173	KRTAP10-4	NM_198687
391	chr21	44813200	44813860	-	intergenic	0	C21orf29	NM_144991
392	chr21	45153655	45154458	-	intergenic	0	ITGB2	NM_000211
393	chr21	45538725	45539743	+	upstream	6486	POFUT2	NM_015227
394	chr21	46175611	46177184	-	intergenic	0	PCBP3	NM_020528
395	chr21	46177185	46177950	-	intergenic	0	PCBP3	NM_020528
396	chr22	17498513	17499541	+	upstream	8546	DGCR2	NM_005137
396	chr22	17498513	17499541	+	intergenic	0	TSSK2	NM_053006
396	chr22	17498513	17499541	+	intergenic	0	DGCR14	NM_022719
397	chr22	18092040	18092829	+	intergenic	0	SEPT5	NM_002688
397	chr22	18092040	18092829	+	intergenic	0	GP1BB	NM_000407
398	chr22	18837821	18839157	-	intergenic	0	KIAA1666	NM_015672
399	chr22	19714852	19715959	-	intergenic	0	SLC7A4	NM_004173
399	chr22	19714852	19715959	-	downstream	1736	P2RXL1	NM_005446
400	chr22	19800826	19801871	-	intergenic	0	FLJ42953	NM_207474
401	chr22	19806398	19807813	-	downstream	325	FLJ42953	NM_207474
402	chr22	19811725	19812643	+	downstream	5652	FLJ42953	NM_207474
403	chr22	21311011	21312063	-	upstream	6716	GGTL4	NM_199127
404	chr22	21312064	21312465	-	upstream	6314	GGTL4	NM_199127
405	chr22	21316650	21317274	+	upstream	1505	GGTL4	NM_199127
406	chr22	21984754	21985496	-	intergenic	0	BCR	NM_004327
407	chr22	21990083	21991492	-	intergenic	0	BCR	NM_004327
408	chr22	22976065	22976840	-	upstream	4955	GGTLA1	NM_001099781
409	chr22	27774818	27775815	+	intergenic	0	ZNRF3	NM_032173
409	chr22	27774818	27775815	+	downstream	8844	HS747E2A	NM_015370
410	chr22	29281163	29282468	+	intergenic	0	GAL3ST1	NM_004861
411	chr22	30916755	30917706	-	intergenic	0	RFPL2	NM_001098527
412	chr22	31085878	31086833	-	intergenic	0	RFPL3	NM_001098535
413	chr22	36100687	36100803	+	intergenic	0	LRRC62	NM_052906
414	chr22	36100804	36101468	+	intergenic	0	LRRC62	NM_052906
415	chr22	40407639	40408596	+	intergenic	0	NHP2L1	NM_005008
416	chr22	41418751	41420378	+	intergenic	0	A4GALT	NM_017436
417	chr22	44187067	44187918	+	upstream	325	RIBC2	NM_015653
417	chr22	44187067	44187918	+	intergenic	0	SMC1L2	NM_148674
418	chr22	45073052	45074599	-	intergenic	0	GTSE1	NM_016426
418	chr22	45073052	45074599	-	downstream	4485	FLJ20699	NM_017931
419	chr22	45105315	45106639	+	upstream	3322	TRMU	NM_018006

419	chr22	45105315	45106639	+	intergenic	0	GTSE1	NM_016426
420	chr22	45309028	45310278	+	intergenic	0	CELSR1	NM_014246
421	chr22	48602799	48603791	+	intergenic	0	BRD1	NM_014577
422	chr22	48830197	48831041	-	intergenic	0	LOC164714	NM_001080447
422	chr22	48830197	48831041	-	downstream	8905	MLC1	NM_015166
423	chr22	48945704	48946863	+	upstream	4453	PANX2	NM_052839
423	chr22	48945704	48946863	+	downstream	3462	MOV10L1	NM_018995
424	chr3	2254916	2255678	-	intergenic	0	CNTN4	NM_175607
425	chr3	4732612	4733236	-	intergenic	0	ITPR1	NM_002222
426	chr3	8581856	8582676	-	intergenic	0	LMCD1	NM_014583
427	chr3	12804206	12805218	-	upstream	7952	CAND2	NM_012298
428	chr3	14836123	14837187	-	intergenic	0	FGD5	NM_152536
429	chr3	44595483	44596674	+	upstream	4785	ZNF660	NM_173658
429	chr3	44595483	44596674	+	intergenic	0	ZNF167	NM_025169
430	chr3	44596675	44596710	-	upstream	4749	ZNF660	NM_173658
430	chr3	44596675	44596710	-	intergenic	0	ZNF167	NM_025169
431	chr3	44596711	44597795	+	upstream	3664	ZNF660	NM_173658
431	chr3	44596711	44597795	+	intergenic	0	ZNF167	NM_025169
432	chr3	52231551	52232462	-	intergenic	0	TLR9	NM_017442
432	chr3	52231551	52232462	-	downstream	8168	ALAS1	NM_199166
432	chr3	52231551	52232462	-	downstream	5204	PTK9L	NM_007284
433	chr3	52496640	52497713	+	upstream	6682	STAB1	NM_015136
433	chr3	52496640	52497713	+	intergenic	0	NISCH	NM_007184
434	chr3	73060747	73061484	+	intergenic	0	LOC727936	NM_001080393
435	chr3	87411452	87412114	-	upstream	3025	POU1F1	NM_000306
436	chr3	99286015	99286925	-	upstream	1781	OR5AC2	NM_054106
437	chr3	112269888	112271000	-	upstream	2554	PVRL3	NM_015480
438	chr3	121952930	121953706	-	upstream	8856	RABL3	NM_173825
438	chr3	121952930	121953706	-	intergenic	0	GTF2E1	NM_005513
439	chr3	129664004	129665046	+	intergenic	0	DNAJB8	NM_153330
440	chr3	129965823	129966993	+	intergenic	0	RAB7	NM_004637
441	chr3	144163729	144164527	+	intergenic	0	PAQR9	NM_198504
442	chr3	150186108	150186965	-	upstream	5099	GYG1	NM_004130
443	chr3	171022567	171023604	-	upstream	9561	LRRC34	NM_153353
443	chr3	171022567	171023604	-	intergenic	0	LOC344657	NM_001080460
444	chr3	195824602	195825362	-	intergenic	0	TMEM44	NM_001011655
445	chr3	195832697	195833430	+	intergenic	0	TMEM44	NM_001011655
445	chr3	195832697	195833430	+	downstream	9378	LSG1	NM_018385
446	chr3	196937160	196937963	+	intergenic	0	MUC20	NM_152673
447	chr3	196938143	196939408	+	intergenic	0	MUC20	NM_152673
448	chr3	197023351	197024471	-	intergenic	0	MUC4	NM_004532
449	chr3	197549218	197550116	-	intergenic	0	TM4SF19	NM_138461

450	chr4	606039	607283	-	upstream	2089	PDE6B	NM_000283
451	chr4	1378169	1379365	+	intergenic	0	CRIPAK	NM_175918
451	chr4	1378169	1379365	+	downstream	6437	KIAA1530	NM_020894
452	chr4	1919208	1919975	-	intergenic	0	WHSC1	NM_001042424
453	chr4	8523197	8524130	-	intergenic	0	FLJ35725	NM_152544
454	chr4	9392541	9394396	+	intergenic	0	DRD5	NM_000798
455	chr4	11009637	11010771	+	intergenic	0	HS3ST1	NM_005114
456	chr4	30326192	30326816	-	upstream	4318	PCDH7	NM_032457
457	chr4	56875336	56876843	+	intergenic	0	KIAA1211	NM_020722
458	chr4	56876946	56877147	-	intergenic	0	KIAA1211	NM_020722
459	chr4	88361434	88362366	-	upstream	736	KLHL8	NM_020803
460	chr4	123072702	123073937	+	intergenic	0	TRPC3	NM_003305
461	chr4	163308824	163309820	-	upstream	4188	FSTL5	NM_020116
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463	chr4	189297363	189298486	-	intergenic	0	FLJ36180	NM_178556
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465	chr4	191142075	191142808	+	intergenic	0	TUBB4Q	NM_020040
466	chr4	191178238	191178795	-	downstream	3723	FRG2	NM_001005217
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468	chr5	135878	136879	+	downstream	5437	TAF9	NM_016283
469	chr5	138293	139290	+	downstream	3026	TAF9	NM_016283
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475	chr5	1169513	1170308	-	upstream	4341	SLC12A7	NM_006598
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551	chr7	143596796	143597697	-	upstream	9142	OR2A7	NM_001005328
552	chr7	143646042	143647069	-	intergenic	0	OR2A1	NM_001005287
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553	chr7	151456703	151457629	+	downstream	5315	MLL3	NM_170606
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591	chr9	28137587	28138564	-	intergenic	0	LRRN6C	NM_152570
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610	chr9	138468693	138469565	+	intergenic	0	KIAA0310	NM_014866
611	chr9	138475357	138476277	-	intergenic	0	KIAA0310	NM_014866

612	chr9	138476973	138477707	-	intergenic	0	KIAA0310	NM_014866
613	chr9	138903915	138904802	+	intergenic	0	TRAF2	NM_021138
614	chr9	139198008	139198980	-	upstream	3973	SSNA1	NM_003731
614	chr9	139198008	139198980	-	intergenic	0	ANAPC2	NM_013366
614	chr9	139198008	139198980	-	downstream	6909	C9orf75	NM_173691
615	chr9	139198981	139199518	+	upstream	3435	SSNA1	NM_003731
615	chr9	139198981	139199518	+	intergenic	0	ANAPC2	NM_013366
615	chr9	139198981	139199518	+	downstream	6371	C9orf75	NM_173691
616	chr9	139822947	139823868	+	intergenic	0	EHMT1	NM_024757
617	chr9	139823869	139823977	+	intergenic	0	EHMT1	NM_024757
618	chr9	139823978	139824670	+	intergenic	0	EHMT1	NM_024757
619	chrX	214888	215512	+	intergenic	0	PPP2R3B	NM_013239
620	chrX	224506	225416	+	intergenic	0	PPP2R3B	NM_013239
621	chrX	227187	228360	+	intergenic	0	PPP2R3B	NM_013239
622	chrX	233068	233862	+	intergenic	0	PPP2R3B	NM_013239
623	chrX	243155	244327	+	intergenic	0	PPP2R3B	NM_013239
624	chrX	1675570	1677037	+	intergenic	0	ASMT	NM_004043
624	chrX	1675570	1677037	+	intergenic	0	DXYS155E	NM_005088
624	chrX	1675570	1677037	+	intergenic	0	CRLF2	NM_001012288
625	chrX	3237977	3238987	+	intergenic	0	MXRA5	NM_015419
626	chrX	6461465	6463072	-	intergenic	0	VCX3A	NM_016379
627	chrX	7770616	7772357	-	intergenic	0	VCX	NM_013452
628	chrX	8097753	8099256	-	intergenic	0	VCX2	NM_016378
629	chrX	8392897	8394599	-	intergenic	0	VCX3B	NM_001001888
630	chrX	18147159	18147852	-	intergenic	0	CXorf20	NM_153346
631	chrX	21583890	21584582	+	intergenic	0	:P11-450P7.	NM_153270
631	chrX	21583890	21584582	+	downstream	3190	CNKSR2	NM_014927
632	chrX	27908610	27909707	-	intergenic	0	WDR42B	NM_001017930
633	chrX	32949222	32950142	-	intergenic	0	DMD	NM_004009
634	chrX	34058909	34059892	+	intergenic	0	FAM47A	NM_203408
635	chrX	34871161	34872546	+	intergenic	0	FAM47B	NM_152631
636	chrX	37427400	37428171	-	upstream	1880	XK	NM_021083
636	chrX	37427400	37428171	-	downstream	5732	LANCL3	NM_198511
637	chrX	51167489	51168310	+	intergenic	0	LOC340602	NM_203407
638	chrX	52128406	52129640	-	upstream	232	LOC653216	NM_001079538
638	chrX	52128406	52129640	-	intergenic	0	XAGE2	NM_130777
639	chrX	52402916	52404212	-	upstream	175	LOC653216	NM_001079538
639	chrX	52402916	52404212	-	intergenic	0	XAGE2	NM_130777
640	chrX	55131926	55132581	-	intergenic	0	PAGE2	NM_207339
640	chrX	55131926	55132581	-	downstream	9867	PAGE2B	NM_001015038
641	chrX	55263661	55263977	-	intergenic	0	PAGE5	NM_001013435
642	chrX	63534540	63535343	-	upstream	2504	MTMR8	NM_017677

643	chrX	69395204	69396356	-	upstream	8553	ARR3	NM_004312
643	chrX	69395204	69396356	-	intergenic	0	P2RY4	NM_002565
644	chrX	87896704	87897586	-	downstream	263	CPXCR1	NM_033048
645	chrX	89063148	89063989	-	intergenic	0	TGIF2LX	NM_138960
646	chrX	101052894	101053643	-	intergenic	0	ZMAT1	NM_001011657
647	chrX	114697374	114698425	-	upstream	3339	PLS3	NM_005032
648	chrX	119094530	119095222	+	intergenic	0	PEPP-2	NM_032498
648	chrX	119094530	119095222	+	intergenic	0	LOC727940	NM_001099685
649	chrX	119132920	119133832	+	intergenic	0	OTEX	NM_139282
650	chrX	119176982	119177712	+	intergenic	0	PEPP-2	NM_032498
650	chrX	119176982	119177712	+	intergenic	0	LOC727940	NM_001099685
651	chrX	134680880	134681538	-	intergenic	0	CT45-1	NM_001017417
652	chrX	134693965	134694589	-	intergenic	0	CT45-4	NM_001017436
652	chrX	134693965	134694589	-	intergenic	0	CT45-2	NM_152582
652	chrX	134693965	134694589	-	downstream	9312	CT45-1	NM_001017417
653	chrX	134698146	134698770	-	intergenic	0	CT45-4	NM_001017436
653	chrX	134698146	134698770	-	intergenic	0	CT45-2	NM_152582
654	chrX	134711239	134711863	-	intergenic	0	CT45-4	NM_001017436
654	chrX	134711239	134711863	-	intergenic	0	CT45-3	NM_001017435
654	chrX	134711239	134711863	-	downstream	9325	CT45-2	NM_152582
655	chrX	134715411	134716105	-	intergenic	0	CT45-4	NM_001017436
655	chrX	134715411	134716105	-	intergenic	0	CT45-3	NM_001017435
656	chrX	134763531	134764288	-	intergenic	0	CT45-4	NM_001017436
656	chrX	134763531	134764288	-	downstream	9342	CT45-5	NM_001007551
657	chrX	134780751	134781547	-	intergenic	0	CT45-5	NM_001007551
657	chrX	134780751	134781547	-	downstream	9334	CT45-6	NM_001017438
658	chrX	134798040	134798797	-	upstream	4653	SAGE1	NM_018666
658	chrX	134798040	134798797	-	intergenic	0	CT45-6	NM_001017438
659	chrX	146870067	146870965	+	intergenic	0	FMR1NB	NM_152578
660	chrX	148664030	148665051	-	upstream	6350	MAGEA9	NM_005365
660	chrX	148664030	148665051	-	upstream	6343	LOC728269	NM_001080790
660	chrX	148664030	148665051	-	intergenic	0	LW-1	NM_016153
661	chrX	151833509	151834404	-	intergenic	0	ZNF185	NM_007150
662	chrX	153176900	153177740	+	upstream	268	CXorf2	NM_001586
662	chrX	153176900	153177740	+	intergenic	0	TKTL1	NM_012253
663	chrX	153449275	153450457	-	downstream	2820	IKBKG	NM_003639
664	chrY	214888	215512	+	intergenic	0	PPP2R3B	NM_013239
665	chrY	224506	225416	+	intergenic	0	PPP2R3B	NM_013239
666	chrY	227187	228360	+	intergenic	0	PPP2R3B	NM_013239
667	chrY	233068	233862	+	intergenic	0	PPP2R3B	NM_013239
668	chrY	243155	244327	+	intergenic	0	PPP2R3B	NM_013239
669	chrY	1675570	1677037	+	intergenic	0	ASMT	NM_004043

669	chrY	1675570	1677037	+	intergenic	0	DXYS155E	NM_005088
670	chrY	3506764	3507534	-	intergenic	0	TGIF2LY	NM_139214
671	chrY	9293436	9294134	-	upstream	1914	LOC728137	NM_001077697
672	chrY	9294271	9295345	+	upstream	703	LOC728137	NM_001077697
673	chrY	9911905	9912708	-	upstream	1855	TSPY1	NM_003308
674	chrY	9912807	9913929	+	upstream	634	TSPY1	NM_003308
675	chrY	9932214	9933017	-	upstream	1877	LOC728137	NM_001077697
676	chrY	9933086	9934191	+	upstream	703	LOC728137	NM_001077697
677	chrY	9972862	9973594	-	upstream	1913	LOC728137	NM_001077697
678	chrY	9973699	9974804	+	upstream	703	LOC728137	NM_001077697
679	chrY	14606755	14608191	-	intergenic	0	VCY1B	NM_181880
679	chrY	14606755	14608191	-	intergenic	0	VCY	NM_004679
680	chrY	14677097	14678465	-	intergenic	0	VCY	NM_004679
680	chrY	14677097	14678465	-	intergenic	0	VCY1B	NM_181880
681	chrY	21327345	21328220	-	intergenic	0	RPS4Y2	NM_001039567
682	chrY	22080222	22080878	-	upstream	1758	RBMY1A1	NM_001007526
682	chrY	22080222	22080878	-	upstream	1767	RBMY1B	NM_001006121
682	chrY	22080222	22080878	-	upstream	1773	RBMY1E	NM_001006118
682	chrY	22080222	22080878	-	upstream	1773	RBMY1D	NM_001006120
683	chrY	22082171	22083047	+	intergenic	0	RBMY1A1	NM_001007526
683	chrY	22082171	22083047	+	intergenic	0	RBMY1B	NM_001006121
683	chrY	22082171	22083047	+	intergenic	0	RBMY1E	NM_001006118
683	chrY	22082171	22083047	+	intergenic	0	RBMY1D	NM_001006120
684	chrY	22103706	22104418	-	upstream	1759	RBMY1A1	NM_001007526
684	chrY	22103706	22104418	-	upstream	1768	RBMY1B	NM_001006121
684	chrY	22103706	22104418	-	upstream	1774	RBMY1D	NM_001006120
684	chrY	22103706	22104418	-	downstream	6648	RBMY1E	NM_001006118
685	chrY	22105747	22106552	+	intergenic	0	RBMY1B	NM_001006121
685	chrY	22105747	22106552	+	intergenic	0	RBMY1A1	NM_005058
685	chrY	22105747	22106552	+	intergenic	0	RBMY1D	NM_001006120
685	chrY	22105747	22106552	+	downstream	8689	RBMY1E	NM_001006118
686	chrY	22449600	22450474	+	intergenic	0	RBMY1E	NM_001006118
686	chrY	22449600	22450474	+	intergenic	0	RBMY1D	NM_001006120
686	chrY	22449600	22450474	+	intergenic	0	RBMY1B	NM_001006121
686	chrY	22449600	22450474	+	intergenic	0	RBMY1A1	NM_005058
687	chrY	22451765	22452493	-	upstream	1744	RBMY1E	NM_001006118
687	chrY	22451765	22452493	-	upstream	1744	RBMY1D	NM_001006120
687	chrY	22451765	22452493	-	upstream	1738	RBMY1B	NM_001006121
687	chrY	22451765	22452493	-	upstream	1738	RBMY1A1	NM_005058
688	chrY	22473177	22474048	+	intergenic	0	RBMY1E	NM_001006118
688	chrY	22473177	22474048	+	intergenic	0	RBMY1D	NM_001006120
688	chrY	22473177	22474048	+	intergenic	0	RBMY1B	NM_001006121

688	chrY	22473177	22474048	+	intergenic	0	RBMY1A1	NM_001007526
689	chrY	22475306	22476034	-	upstream	1744	RBMY1E	NM_001006118
689	chrY	22475306	22476034	-	upstream	1744	RBMY1D	NM_001006120
689	chrY	22475306	22476034	-	upstream	1738	RBMY1B	NM_001006121
689	chrY	22475306	22476034	-	upstream	1729	RBMY1A1	NM_001007526
690	chrY	22738092	22738894	+	intergenic	0	RBMY1J	NM_001006117
690	chrY	22738092	22738894	+	intergenic	0	RBMY1F	NM_152585
691	chrY	22740221	22740949	-	upstream	1744	RBMY1J	NM_001006117
691	chrY	22740221	22740949	-	upstream	1744	RBMY1F	NM_152585
692	chrY	22862297	22862921	-	upstream	1476	RBMY1F	NM_152585
693	chrY	22863968	22864827	+	intergenic	0	RBMY1F	NM_152585
694	chrY	22956581	22957274	-	upstream	1736	RBMY1J	NM_001006117
694	chrY	22956581	22957274	-	intergenic	0	RBMY1F	NM_152585
695	chrY	22958565	22959330	+	intergenic	0	RBMY1J	NM_001006117
695	chrY	22958565	22959330	+	intergenic	0	RBMY1F	NM_152585

^aIn case that one MR was overlapped to multiple accession numbers with same gene symbol, only the gene with the closest distance to the nearest exon was shown.

Supplementary Table 9. Genes associated with common MRs

MR no	chromosome	MR_Start	MR_End	CpG island	location of MR	distance from gene (bp) ^a	symbol	accession no
1	chr1	1158395	1159019	+	upstream	1121	SDF4	NM_016547
1	chr1	1158395	1159019	+	intergenic	0	B3GALT6	NM_080605
1	chr1	1158395	1159019	+	downstream	8676	C1QDC2	NM_001014980
2	chr1	1159020	1159408	-	upstream	1746	SDF4	NM_016547
2	chr1	1159020	1159408	-	intergenic	0	B3GALT6	NM_080605
2	chr1	1159020	1159408	-	downstream	8287	C1QDC2	NM_001014980
3	chr1	35434760	35435641	-	upstream	3438	SFPQ	NM_005066
4	chr1	53699127	53699938	-	intergenic	0	DMRTB1	NM_033067
5	chr1	102233213	102233866	-	intergenic	0	OLFM3	NM_058170
6	chr1	111992973	111993776	-	intergenic	0	RAP1A	NM_001010935
7	chr1	150319324	150320452	-	downstream	2791	TCHHL1	NM_001008536
8	chr1	150542499	150543443	-	intergenic	0	FLG	NM_002016
9	chr1	150543444	150543522	-	intergenic	0	FLG	NM_002016
10	chr1	150543523	150543607	-	intergenic	0	FLG	NM_002016
11	chr1	150543608	150544431	-	intergenic	0	FLG	NM_002016
12	chr1	150546311	150547121	-	intergenic	0	FLG	NM_002016
13	chr1	150548113	150549237	-	intergenic	0	FLG	NM_002016
14	chr1	150549423	150550165	-	intergenic	0	FLG	NM_002016
15	chr1	150550166	150550245	-	intergenic	0	FLG	NM_002016
16	chr1	150550246	150551467	-	intergenic	0	FLG	NM_002016
17	chr1	153505869	153506528	+	upstream	7050	SCAMP3	NM_005698
17	chr1	153505869	153506528	+	upstream	7469	HCN3	NM_020897
17	chr1	153505869	153506528	+	intergenic	0	CLK2	NM_003993
18	chr1	159761962	159762702	+	intergenic	0	HSPA6	NM_002155
18	chr1	159761962	159762702	+	downstream	5979	FCGR2A	NM_021642
19	chr1	159843632	159844256	-	downstream	6976	FCGR2C	NM_001005410
20	chr1	181195224	181196241	-	upstream	6048	C1orf14	NM_030933
21	chr1	210865888	210866912	-	intergenic	0	FAM71A	NM_153606
21	chr1	210865888	210866912	-	downstream	5151	ATF3	NM_001674
22	chr1	212772300	212773353	-	intergenic	0	PTPN14	NM_005401
23	chr10	83403	84308	-	intergenic	0	TUBB8	NM_177987
24	chr10	682870	683956	-	intergenic	0	DIP2C	NM_014974
25	chr10	684003	685227	-	intergenic	0	DIP2C	NM_014974
26	chr10	31692384	31693334	-	intergenic	0	ZEB1	NM_030751
27	chr10	46506327	46507311	-	intergenic	0	PPYR1	NM_005972
28	chr10	79210690	79212034	-	downstream	8522	DLG5	NM_004747
29	chr10	134818657	134819405	-	upstream	4555	KNDC1	NM_152643
30	chr10	134946994	134947070	-	upstream	6632	ADAM8	NM_001109
30	chr10	134946994	134947070	-	intergenic	0	TUBGCP2	NM_006659

31	chr10	134947071	134947132	-	upstream	6709	ADAM8	NM_001109
31	chr10	134947071	134947132	-	intergenic	0	TUBGCP2	NM_006659
32	chr10	134947133	134947763	+	upstream	6771	ADAM8	NM_001109
32	chr10	134947133	134947763	+	intergenic	0	TUBGCP2	NM_006659
33	chr10	135285878	135286760	+	downstream	1832	LOC441581	NM_001080998
34	chr11	293440	294420	+	upstream	9570	IFITM1	NM_003641
34	chr11	293440	294420	+	upstream	3914	IFITM5	NM_001025295
34	chr11	293440	294420	+	upstream	3686	IFITM2	NM_006435
34	chr11	293440	294420	+	downstream	8028	ATHL1	NM_025092
35	chr11	352847	353803	-	upstream	6000	B4GALNT4	NM_178537
36	chr11	617447	618071	+	upstream	274	SCT	NM_021920
36	chr11	617447	618071	+	upstream	9233	DRD4	NM_000797
36	chr11	617447	618071	+	upstream	2440	MUCDHL	NM_021924
37	chr11	1220000	1220624	-	intergenic	0	MUC5B	NM_002458
38	chr11	10256115	10256739	-	intergenic	0	SBF2	NM_030962
39	chr11	18151097	18152015	-	intergenic	0	MRGPRX4	NM_054032
40	chr11	32557941	32558761	-	upstream	3205	hfl-B5	NM_006360
41	chr11	45627835	45628459	+	intergenic	0	CHST1	NM_003654
42	chr11	77123058	77123682	-	intergenic	0	HBXAP	NM_016578
43	chr11	103412487	103413858	+	intergenic	0	DDI1	NM_001001711
43	chr11	103412487	103413858	+	intergenic	0	PDGFD	NM_025208
44	chr11	119512966	119513928	+	intergenic	0	TRIM29	NM_012101
45	chr11	128286488	128287219	-	upstream	5686	C11orf45	NM_145013
45	chr11	128286488	128287219	-	intergenic	0	KCNJ5	NM_000890
46	chr11	133314404	133315352	-	intergenic	0	IGSF9B	NM_014987
47	chr11	133315385	133315420	-	intergenic	0	IGSF9B	NM_014987
48	chr11	133315421	133315456	-	intergenic	0	IGSF9B	NM_014987
49	chr11	133315457	133316334	-	intergenic	0	IGSF9B	NM_014987
50	chr12	5473707	5474883	+	intergenic	0	NTF3	NM_001102654
51	chr12	15264205	15264760	-	intergenic	0	RERG	NM_032918
52	chr12	29545772	29546510	-	upstream	3886	OVCH1	NM_183378
52	chr12	29545772	29546510	-	intergenic	0	TMTC1	NM_175861
53	chr12	31835705	31836769	+	intergenic	0	LOC440093	NM_001013699
54	chr12	47207719	47208343	+	intergenic	0	OR8S1	NM_001005203
55	chr12	50580664	50581633	+	upstream	5835	ACVRL1	NM_000020
55	chr12	50580664	50581633	+	downstream	8959	ANKRD33	NM_182608
56	chr12	50970711	50971629	+	intergenic	0	KRTHB1	NM_002281
57	chr12	50981933	50982726	+	intergenic	0	KRTHB6	NM_002284
58	chr12	55675126	55675822	-	intergenic	0	ADMR	NM_007264
58	chr12	55675126	55675822	-	downstream	3062	ZBTB39	NM_014830
59	chr12	64099248	64099984	-	intergenic	0	MSRB3	NM_001031679
60	chr12	89872312	89873203	-	intergenic	0	C12orf12	NM_152638

60	chr12	89872312	89873203	-	downstream	8388	DSPG3	NM_004950
61	chr12	103895099	103895869	-	upstream	8358	C12orf45	NM_152318
62	chr13	18653816	18654774	-	intergenic	0	TUBA2	NM_006001
63	chr13	56612334	56612922	-	upstream	130	FLJ40296	NM_198441
64	chr13	56614290	56615348	+	intergenic	0	FLJ40296	NM_198441
65	chr13	56618265	56619174	-	upstream	448	FLJ40296	NM_198441
66	chr13	56620860	56621918	+	intergenic	0	FLJ40296	NM_198441
67	chr13	56624838	56625747	-	upstream	448	FLJ40296	NM_198441
68	chr13	56627433	56628527	+	intergenic	0	FLJ40296	NM_198441
69	chr13	56631409	56632318	-	upstream	448	FLJ40296	NM_198441
70	chr13	56634004	56635062	+	intergenic	0	FLJ40296	NM_198441
71	chr13	56637974	56638883	-	upstream	448	FLJ40296	NM_198441
72	chr13	56640569	56641627	+	intergenic	0	FLJ40296	NM_198441
73	chr13	56644545	56645454	-	downstream	2192	FLJ40296	NM_198441
74	chr13	112487771	112488687	+	intergenic	0	ATP11A	NM_032189
75	chr13	112917256	112917649	-	upstream	6272	FLJ11305	NM_018386
75	chr13	112917256	112917649	-	intergenic	0	CUL4A	NM_001008895
76	chr13	113114577	113115409	+	downstream	8851	ADPRHL1	NM_199162
77	chr13	113149331	113150348	-	intergenic	0	ADPRHL1	NM_199162
77	chr13	113149331	113150348	-	downstream	7786	DCUN1D2	NM_001014283
78	chr13	113261930	113263111	+	downstream	9423	TMCO3	NM_017905
79	chr13	113654311	113655008	+	upstream	2438	FAM70B	NM_182614
80	chr14	22586228	22587153	+	intergenic	0	CDH24	NM_022478
80	chr14	22586228	22587153	+	downstream	3119	FLJ16369	NM_001099780
81	chr14	70131126	70131750	-	intergenic	0	MED6	NM_005466
82	chr14	92455571	92456773	-	upstream	2424	CHGA	NM_001275
83	chr14	104482690	104483679	-	intergenic	0	AHNAK2	NM_138420
84	chr15	22472372	22472996	-	intergenic	0	C15orf2	NM_018958
85	chr15	54768405	54768781	-	intergenic	0	SUHW4	NM_001002843
86	chr15	54768782	54769439	-	intergenic	0	SUHW4	NM_001002843
87	chr15	71521830	71522671	+	intergenic	0	LOC283677	NM_001042367
88	chr16	945265	946435	+	intergenic	0	TMEM112	NM_022773
89	chr16	1250586	1251210	+	downstream	2091	TPSD1	NM_012217
90	chr16	1344602	1345561	+	upstream	2728	MGC24381	NM_001001410
90	chr16	1344602	1345561	+	intergenic	0	GNPTG	NM_032520
90	chr16	1344602	1345561	+	downstream	7645	C16orf28	NM_023076
90	chr16	1344602	1345561	+	downstream	5159	BAIAP3	NM_003933
91	chr16	3346121	3346959	-	intergenic	0	OR2C1	NM_012368
92	chr16	10112890	10113619	-	intergenic	0	GRIN2A	NM_000833
93	chr16	10698678	10700246	-	upstream	2375	FLJ32871	NM_144674
94	chr16	27321723	27322407	-	intergenic	0	IL21R	NM_181078
95	chr16	30474473	30475553	+	intergenic	0	MGC13138	NM_033410

96	chr16	45217864	45218653	-	upstream	5079	SHCBP1	NM_024745
97	chr16	70127992	70129201	-	intergenic	0	CHST4	NM_005769
98	chr16	70688090	70688822	-	upstream	3075	TXNL4B	NM_017853
98	chr16	70688090	70688822	-	intergenic	0	DHX38	NM_014003
99	chr16	71548855	71549479	-	intergenic	0	ATBF1	NM_006885
100	chr16	85112108	85112805	-	downstream	6538	FOXF1	NM_001451
100	chr16	85112108	85112805	-	downstream	8478	MTHFSD	NM_022764
101	chr16	85113674	85114588	-	downstream	8104	FOXF1	NM_001451
101	chr16	85113674	85114588	-	downstream	6695	MTHFSD	NM_022764
102	chr16	87523317	87524086	-	intergenic	0	CBFA2T3	NM_175931
103	chr16	88241077	88241854	+	upstream	9856	C16orf55	NM_153025
103	chr16	88241077	88241854	+	intergenic	0	PCOLN3	NM_002768
103	chr16	88241077	88241854	+	intergenic	0	CHMP1A	NM_001083314
103	chr16	88241077	88241854	+	downstream	8739	DPEP1	NM_004413
104	chr16	88279141	88280243	-	upstream	333	CDK10	NM_052988
105	chr17	206167	207427	+	upstream	3591	RPH3AL	NM_006987
106	chr17	254235	255182	+	upstream	5251	LOC400566	NM_001013672
107	chr17	617149	618220	-	intergenic	0	C17orf25	NM_016080
108	chr17	618221	619330	-	intergenic	0	C17orf25	NM_016080
109	chr17	19563433	19564479	-	upstream	2798	SLC47A2	NM_001099646
110	chr17	20739556	20740180	+	intergenic	0	MGC87631	NM_001004306
111	chr17	21259061	21260016	+	intergenic	0	KCNJ12	NM_021012
112	chr17	31527537	31527643	-	intergenic	0	TBC1D3B	NM_001001417
113	chr17	31527644	31528527	-	intergenic	0	TBC1D3B	NM_001001417
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115	chr17	31615688	31616571	-	intergenic	0	TBC1D3C	NM_001001418
116	chr17	31830628	31830698	-	intergenic	0	TBC1D3C	NM_001001418
117	chr17	31830699	31831618	-	intergenic	0	TBC1D3C	NM_001001418
118	chr17	31881645	31881751	-	intergenic	0	TBC1D3C	NM_001001418
118	chr17	31881645	31881751	-	intergenic	0	LOC654341	NM_001040282
119	chr17	31881752	31882671	-	intergenic	0	TBC1D3C	NM_001001418
119	chr17	31881752	31882671	-	intergenic	0	LOC654341	NM_001040282
120	chr17	33357851	33358887	-	intergenic	0	TBC1D3	NM_032258
121	chr17	33551712	33551746	-	intergenic	0	TBC1D3	NM_032258
122	chr17	33551747	33552702	-	intergenic	0	TBC1D3	NM_032258
123	chr17	33601884	33602008	-	intergenic	0	TBC1D3	NM_032258
124	chr17	33602009	33602995	-	intergenic	0	TBC1D3	NM_032258
125	chr17	49255195	49256534	-	intergenic	0	KIF2B	NM_032559
126	chr17	71286246	71287083	+	upstream	5192	ZC3H5	NM_001080419
126	chr17	71286246	71287083	+	intergenic	0	H3F3B	NM_005324
127	chr17	75935883	75936690	+	intergenic	0	C17orf27	NM_020914
128	chr17	77244785	77245456	-	upstream	762	LOC339229	NM_001039842

128	chr17	77244785	77245456	-	intergenic	0	CCDC137	NM_199287
129	chr17	77870187	77871292	+	upstream	1418	CD7	NM_006137
129	chr17	77870187	77871292	+	downstream	897	SECTM1	NM_003004
130	chr17	78605952	78606807	+	upstream	2977	B3GNTL1	NM_001009905
131	chr18	570062	571375	+	intergenic	0	CETN1	NM_004066
132	chr18	21967331	21968182	+	intergenic	0	PSMA8	NM_001025096
133	chr18	42796907	42796934	-	intergenic	0	KATNAL2	NM_031303
133	chr18	42796907	42796934	-	intergenic	0	TCEB3CL	NM_001100817
133	chr18	42796907	42796934	-	downstream	5721	TCEB3C	NM_145653
134	chr18	42796935	42797085	+	intergenic	0	KATNAL2	NM_031303
134	chr18	42796935	42797085	+	intergenic	0	TCEB3CL	NM_001100817
134	chr18	42796935	42797085	+	downstream	5570	TCEB3C	NM_145653
135	chr18	42797086	42798720	+	intergenic	0	TCEB3CL	NM_001100817
135	chr18	42797086	42798720	+	intergenic	0	KATNAL2	NM_031303
135	chr18	42797086	42798720	+	downstream	3935	TCEB3C	NM_145653
136	chr18	42802798	42803012	+	intergenic	0	KATNAL2	NM_031303
136	chr18	42802798	42803012	+	intergenic	0	TCEB3CL	NM_001100817
136	chr18	42802798	42803012	+	intergenic	0	TCEB3C	NM_145653
136	chr18	42802798	42803012	+	downstream	9928	TCEB3B	NM_016427
137	chr18	42803013	42804647	+	intergenic	0	TCEB3CL	NM_001100817
137	chr18	42803013	42804647	+	intergenic	0	TCEB3C	NM_145653
137	chr18	42803013	42804647	+	intergenic	0	KATNAL2	NM_031303
137	chr18	42803013	42804647	+	downstream	8293	TCEB3B	NM_016427
138	chr18	42808749	42808927	+	intergenic	0	KATNAL2	NM_031303
138	chr18	42808749	42808927	+	intergenic	0	TCEB3CL	NM_001100817
138	chr18	42808749	42808927	+	intergenic	0	TCEB3C	NM_145653
138	chr18	42808749	42808927	+	downstream	4013	TCEB3B	NM_016427
139	chr18	42809082	42810562	+	intergenic	0	TCEB3CL	NM_001100817
139	chr18	42809082	42810562	+	intergenic	0	TCEB3C	NM_145653
139	chr18	42809082	42810562	+	intergenic	0	KATNAL2	NM_031303
139	chr18	42809082	42810562	+	downstream	2378	TCEB3B	NM_016427
140	chr18	42814901	42815908	+	upstream	4690	TCEB3CL	NM_001100817
140	chr18	42814901	42815908	+	upstream	4454	TCEB3C	NM_145653
140	chr18	42814901	42815908	+	intergenic	0	KATNAL2	NM_031303
140	chr18	42814901	42815908	+	intergenic	0	TCEB3B	NM_016427
141	chr18	75188165	75189624	+	intergenic	0	ATP9B	NM_198531
142	chr19	473895	474622	+	upstream	8110	CDC34	NM_004359
142	chr19	473895	474622	+	downstream	3241	C19orf20	NM_033513
143	chr19	618008	618690	+	upstream	3781	RNF126	NM_194460
143	chr19	618008	618690	+	upstream	8698	FSTL3	NM_005860
144	chr19	1391021	1391645	+	upstream	9502	APC2	NM_005883
144	chr19	1391021	1391645	+	intergenic	0	RPS15	NM_001018

144	chr19	1391021	1391645	+	downstream	4341	DAZAP1	NM_018959
145	chr19	3787946	3789530	+	intergenic	0	KIAA1086	NM_015174
146	chr19	5794928	5795848	+	upstream	4186	FUT6	NM_000150
146	chr19	5794928	5795848	+	intergenic	0	FUT3	NM_001097640
147	chr19	8793889	8794725	-	intergenic	0	ZNF558	NM_144693
148	chr19	12613912	12614823	+	downstream	3498	MAN2B1	NM_000528
149	chr19	15766052	15767102	-	intergenic	0	OR10H5	NM_001004466
150	chr19	15778564	15779890	+	intergenic	0	OR10H1	NM_013940
151	chr19	15906023	15906647	-	intergenic	0	CYP4F11	NM_021187
152	chr19	43263371	43264270	-	intergenic	0	SIPA1L3	NM_015073
153	chr19	46224068	46224204	-	downstream	7927	CYP2B6	NM_000767
154	chr19	46224205	46225113	-	downstream	8064	CYP2B6	NM_000767
155	chr19	52515269	52516216	-	intergenic	0	C5AR1	NM_001736
156	chr19	56540292	56541799	-	intergenic	0	ETFB	NM_001014763
156	chr19	56540292	56541799	-	intergenic	0	ETFB	NM_001985
157	chr19	58732949	58734314	+	intergenic	0	ZNF331	NM_001079906
158	chr19	59317514	59318581	-	upstream	6666	TFPT	NM_013342
158	chr19	59317514	59318581	-	intergenic	0	PRPF31	NM_015629
159	chr19	60142549	60143173	+	intergenic	0	NALP7	NM_139176
160	chr19	61430989	61431714	+	intergenic	0	ZSCAN5	NM_024303
161	chr19	61866503	61867672	+	intergenic	0	BC37295_3	NM_001005850
162	chr19	61867673	61868142	+	intergenic	0	BC37295_3	NM_001005850
163	chr19	63270456	63271839	-	intergenic	0	ZNF135	NM_003436
164	chr2	1729393	1730615	-	upstream	2095	PXDN	NM_012293
165	chr2	23897331	23897955	-	intergenic	0	ATAD2B	NM_017552
166	chr2	27468956	27470025	+	intergenic	0	PPM1G	NM_002707
167	chr2	68609501	68610543	-	intergenic	0	C2orf13	NM_173545
168	chr2	96063285	96064503	+	intergenic	0	LOC150763	NM_207328
169	chr2	105219452	105220295	+	upstream	4336	GPR45	NM_007227
170	chr2	105224903	105226019	+	intergenic	0	GPR45	NM_007227
171	chr2	131949819	131950873	+	intergenic	0	TUBA3D	NM_080386
171	chr2	131949819	131950873	+	downstream	7129	FAM128A	NM_001085365
172	chr2	132197474	132198346	-	intergenic	0	C2orf27	NM_013310
173	chr2	163406650	163407381	-	upstream	3164	KCNH7	NM_033272
174	chr2	172081621	172082496	+	upstream	4736	CYBRD1	NM_024843
175	chr2	201711014	201712170	-	intergenic	0	CFLAR	NM_003879
176	chr2	203763400	203764187	-	intergenic	0	NBEAL1	NM_198945
177	chr2	240617522	240618458	-	upstream	4051	NDUFA10	NM_004544
177	chr2	240617522	240618458	-	intergenic	0	OR6B2	NM_001005853
178	chr2	240633138	240634137	-	upstream	2066	LOC643905	NM_001080835
178	chr2	240633138	240634137	-	intergenic	0	OR6B3	NM_173351
179	chr2	241696683	241697351	-	upstream	6286	MTERFD2	NM_182501

179	chr2	241696683	241697351	-	intergenic	0	PASK	NM_015148
180	chr20	23915952	23916612	-	intergenic	0	GGTLA4	NM_178311
181	chr20	57200911	57201771	+	intergenic	0	C20orf174	NM_178457
182	chr21	13973422	13975733	+	intergenic	0	LOC441956	NM_001013729
183	chr21	30795761	30796669	-	upstream	9615	KRTAP19-3	NM_181609
183	chr21	30795761	30796669	-	upstream	4462	KRTAP19-4	NM_181610
183	chr21	30795761	30796669	-	intergenic	0	KRTAP19-5	NM_181611
184	chr21	32594164	32595441	+	intergenic	0	MRAP	NM_178817
185	chr21	44030544	44031995	+	upstream	9857	CSTB	NM_000100
185	chr21	44030544	44031995	+	upstream	1850	RRP1	NM_003683
186	chr21	44205262	44206546	-	intergenic	0	AGPAT3	NM_001037553
187	chr21	45153655	45154422	-	intergenic	0	ITGB2	NM_000211
188	chr21	46175611	46177184	-	intergenic	0	PCBP3	NM_020528
189	chr21	46177185	46177950	-	intergenic	0	PCBP3	NM_020528
190	chr22	29281163	29282468	+	intergenic	0	GAL3ST1	NM_004861
191	chr22	30916755	30917597	-	intergenic	0	RFPL2	NM_001098527
192	chr22	31085915	31086833	-	intergenic	0	RFPL3	NM_001098535
193	chr22	41418751	41420091	+	intergenic	0	A4GALT	NM_017436
194	chr22	45073260	45074599	-	intergenic	0	GTSE1	NM_016426
194	chr22	45073260	45074599	-	downstream	4693	FLJ20699	NM_017931
195	chr22	45105509	45106491	+	upstream	3470	TRMU	NM_018006
196	chr22	48945967	48946863	+	upstream	4453	PANX2	NM_052839
196	chr22	48945967	48946863	+	downstream	3725	MOV10L1	NM_018995
197	chr3	2254985	2255142	-	intergenic	0	CNTN4	NM_175607
198	chr3	8581856	8582676	-	intergenic	0	LMCD1	NM_014583
199	chr3	12804206	12805218	-	upstream	7952	CAND2	NM_012298
200	chr3	14836378	14837187	-	intergenic	0	FGD5	NM_152536
201	chr3	44596678	44596710	-	upstream	4749	ZNF660	NM_173658
201	chr3	44596678	44596710	-	intergenic	0	ZNF167	NM_025169
202	chr3	44596711	44597795	+	upstream	3664	ZNF660	NM_173658
202	chr3	44596711	44597795	+	intergenic	0	ZNF167	NM_025169
203	chr3	73060747	73061484	+	intergenic	0	LOC727936	NM_001080393
204	chr3	112270299	112271000	-	upstream	2554	PVRL3	NM_015480
205	chr3	121952964	121953588	-	upstream	8890	RABL3	NM_173825
205	chr3	121952964	121953588	-	intergenic	0	GTF2E1	NM_005513
206	chr3	129664127	129664788	-	intergenic	0	DNAJB8	NM_153330
207	chr3	129965924	129966993	+	intergenic	0	RAB7	NM_004637
208	chr3	196938248	196939373	+	intergenic	0	MUC20	NM_001098516
209	chr3	197023351	197024321	-	intergenic	0	MUC4	NM_018406
210	chr4	606039	607283	-	upstream	2089	PDE6B	NM_000283
211	chr4	1378169	1379365	+	intergenic	0	CRIPAK	NM_175918
211	chr4	1378169	1379365	+	downstream	6437	KIAA1530	NM_020894

212	chr4	9392541	9394278	+	intergenic	0	DRD5	NM_000798
213	chr4	11009873	11010497	+	intergenic	0	HS3ST1	NM_005114
214	chr4	56875336	56876660	+	intergenic	0	KIAA1211	NM_020722
215	chr4	123072702	123073937	+	intergenic	0	TRPC3	NM_003305
216	chr4	163309096	163309820	-	upstream	4460	FSTL5	NM_020116
217	chr4	164613731	164614855	+	intergenic	0	TKTL2	NM_032136
218	chr4	189297547	189298206	-	intergenic	0	FLJ36180	NM_178556
219	chr4	191141097	191141864	-	intergenic	0	TUBB4Q	NM_020040
220	chr4	191178238	191178795	-	downstream	3723	FRG2	NM_001005217
221	chr4	191181046	191181820	+	downstream	698	FRG2	NM_001005217
222	chr5	135878	136879	+	downstream	5437	TAF9	NM_001015891
223	chr5	138293	139252	+	downstream	3064	TAF9	NM_001015891
224	chr5	217224	218441	+	intergenic	0	KIAA1909	NM_052909
224	chr5	217224	218441	+	intergenic	0	MARVELD2	NM_001038603
225	chr5	899326	900108	-	intergenic	0	ZDHHC11	NM_024786
226	chr5	907067	907906	-	upstream	2966	ZDHHC11	NM_024786
226	chr5	907067	907906	-	downstream	8949	BRD9	NM_023924
226	chr5	907067	907906	-	downstream	8949	BRD9	NM_001009877
227	chr5	1279310	1280392	+	intergenic	0	SLC6A18	NM_182632
227	chr5	1279310	1280392	+	downstream	4292	SLC6A19	NM_001003841
228	chr5	1326670	1327647	-	intergenic	0	TERT	NM_198253
229	chr5	31300166	31300876	-	intergenic	0	CDH6	NM_004932
230	chr5	135719840	135720976	+	intergenic	0	TRPC7	NM_020389
231	chr5	140455115	140456419	+	upstream	3998	PCDHB3	NM_018937
231	chr5	140455115	140456419	+	intergenic	0	PCDHB2	NM_018936
232	chr5	140461537	140462342	+	intergenic	0	PCDHB3	NM_018937
232	chr5	140461537	140462342	+	downstream	4391	PCDHB2	NM_018936
233	chr5	140482956	140483625	+	intergenic	0	PCDHB4	NM_018938
234	chr5	140496354	140497193	+	intergenic	0	PCDHB5	NM_015669
235	chr5	140511244	140511941	+	intergenic	0	PCDHB6	NM_018939
236	chr5	140516760	140517726	+	downstream	3710	PCDHB6	NM_018939
237	chr5	140533650	140534527	+	upstream	3086	PCDHB8	NM_019120
237	chr5	140533650	140534527	+	upstream	6636	PCDHB16	NM_020957
237	chr5	140533650	140534527	+	intergenic	0	PCDHB7	NM_018940
238	chr5	140539042	140539704	+	upstream	1459	PCDHB16	NM_020957
238	chr5	140539042	140539704	+	upstream	7372	PCDHB9	NM_019119
238	chr5	140539042	140539704	+	intergenic	0	PCDHB8	NM_019120
238	chr5	140539042	140539704	+	downstream	2902	PCDHB7	NM_018940
239	chr5	140542721	140544209	+	upstream	2867	PCDHB9	NM_019119
239	chr5	140542721	140544209	+	upstream	7926	PCDHB10	NM_018930
239	chr5	140542721	140544209	+	intergenic	0	PCDHB16	NM_020957
239	chr5	140542721	140544209	+	downstream	6581	PCDHB7	NM_018940

239	chr5	140542721	140544209	+	downstream	2518	PCDHB8	NM_019120
240	chr5	140548269	140549000	+	upstream	3135	PCDHB10	NM_018930
240	chr5	140548269	140549000	+	intergenic	0	PCDHB9	NM_019119
240	chr5	140548269	140549000	+	downstream	8066	PCDHB8	NM_019120
240	chr5	140548269	140549000	+	downstream	2290	PCDHB16	NM_020957
241	chr5	140553437	140554098	+	upstream	5433	PCDHB11	NM_018931
241	chr5	140553437	140554098	+	intergenic	0	PCDHB10	NM_018930
241	chr5	140553437	140554098	+	downstream	7458	PCDHB16	NM_020957
241	chr5	140553437	140554098	+	downstream	2142	PCDHB9	NM_019119
242	chr5	140560771	140561456	+	upstream	7018	PCDHB12	NM_018932
242	chr5	140560771	140561456	+	intergenic	0	PCDHB11	NM_018931
242	chr5	140560771	140561456	+	downstream	5374	PCDHB10	NM_018930
242	chr5	140560771	140561456	+	downstream	9476	PCDHB9	NM_019119
243	chr5	140569791	140570686	+	upstream	3006	PCDHB13	NM_018933
243	chr5	140569791	140570686	+	intergenic	0	PCDHB12	NM_018932
243	chr5	140569791	140570686	+	downstream	6990	PCDHB11	NM_018931
244	chr5	140584489	140585186	+	intergenic	0	PCDHB14	NM_018934
244	chr5	140584489	140585186	+	downstream	7312	PCDHB13	NM_018933
245	chr5	140595539	140596163	+	upstream	9167	PCDHB15	NM_018935
245	chr5	140595539	140596163	+	downstream	9497	PCDHB14	NM_018934
246	chr5	140748761	140749487	+	upstream	2179	PCDHGA8	NM_014004
246	chr5	140748761	140749487	+	upstream	8391	PCDHGB5	NM_032099
246	chr5	140748761	140749487	+	intergenic	0	PCDHGA1	NM_018912
246	chr5	140748761	140749487	+	intergenic	0	PCDHGA2	NM_018915
246	chr5	140748761	140749487	+	intergenic	0	PCDHGA3	NM_018916
246	chr5	140748761	140749487	+	intergenic	0	PCDHGB1	NM_018922
246	chr5	140748761	140749487	+	intergenic	0	PCDHGA4	NM_018917
246	chr5	140748761	140749487	+	intergenic	0	PCDHGB2	NM_018923
246	chr5	140748761	140749487	+	intergenic	0	PCDHGA5	NM_018918
246	chr5	140748761	140749487	+	intergenic	0	PCDHGB3	NM_018924
246	chr5	140748761	140749487	+	intergenic	0	PCDHGA6	NM_018919
246	chr5	140748761	140749487	+	intergenic	0	PCDHGA7	NM_018920
246	chr5	140748761	140749487	+	intergenic	0	PCDHGB4	NM_003736
247	chr5	140752054	140752898	+	upstream	9805	PCDHGA9	NM_032089
247	chr5	140752054	140752898	+	upstream	4980	PCDHGB5	NM_032099
247	chr5	140752054	140752898	+	intergenic	0	PCDHGA1	NM_018912
247	chr5	140752054	140752898	+	intergenic	0	PCDHGA2	NM_018915
247	chr5	140752054	140752898	+	intergenic	0	PCDHGA3	NM_018916
247	chr5	140752054	140752898	+	intergenic	0	PCDHGB1	NM_018922
247	chr5	140752054	140752898	+	intergenic	0	PCDHGA4	NM_018917
247	chr5	140752054	140752898	+	intergenic	0	PCDHGB2	NM_018923
247	chr5	140752054	140752898	+	intergenic	0	PCDHGA5	NM_018918

247	chr5	140752054	140752898	+	intergenic	0	PCDHGB3	NM_018924
247	chr5	140752054	140752898	+	intergenic	0	PCDHGA6	NM_018919
247	chr5	140752054	140752898	+	intergenic	0	PCDHGA7	NM_018920
247	chr5	140752054	140752898	+	intergenic	0	PCDHGB4	NM_003736
247	chr5	140752054	140752898	+	intergenic	0	PCDHGA8	NM_014004
248	chr5	169592287	169592983	+	intergenic	0	LOC133874	NM_001102609
249	chr6	285785	286715	-	intergenic	0	DUSP22	NM_020185
250	chr6	545564	546416	-	intergenic	0	EXOC2	NM_018303
250	chr6	545564	546416	-	downstream	9578	OR2J3	NM_001005216
251	chr6	7175102	7175762	+	intergenic	0	RREB1	NM_001003698
252	chr6	7176053	7176953	-	intergenic	0	RREB1	NM_001003698
253	chr6	7931049	7932030	-	intergenic	0	TXNDC5	NM_022085
254	chr6	26215705	26216737	-	intergenic	0	HIST1H1T	NM_005323
254	chr6	26215705	26216737	-	downstream	3162	HIST1H4C	NM_003542
255	chr6	122833457	122833934	-	upstream	826	PKIB	NM_181794
255	chr6	122833457	122833934	-	intergenic	0	SERINC1	NM_020755
256	chr6	132073370	132074308	-	upstream	9136	OR2A4	NM_030908
256	chr6	132073370	132074308	-	intergenic	0	ENPP3	NM_005021
257	chr6	132736652	132737570	-	intergenic	0	MOXD1	NM_015529
258	chr6	138697127	138697811	-	intergenic	0	KIAA1244	NM_020340
259	chr6	159572516	159573557	+	intergenic	0	FNDC1	NM_032532
260	chr6	159573558	159573629	+	intergenic	0	FNDC1	NM_032532
261	chr6	159573630	159573654	+	intergenic	0	FNDC1	NM_032532
262	chr6	159573655	159574424	+	intergenic	0	FNDC1	NM_032532
263	chr7	759262	760462	+	intergenic	0	FLJ20397	NM_017802
264	chr7	1495952	1496967	-	intergenic	0	INTS1	NM_001080453
265	chr7	65478445	65479171	+	intergenic	0	LOC285908	NM_181722
266	chr7	94130706	94131696	+	upstream	7249	SGCE	NM_001099400
266	chr7	94130706	94131696	+	intergenic	0	PEG10	NM_001040152
267	chr7	123907881	123908544	-	downstream	3636	LOC392982	NM_001085395
268	chr7	142978557	142979459	-	intergenic	0	LOC441294	NM_001008747
269	chr7	143085204	143086105	-	intergenic	0	CTAGE6	NM_178561
270	chr7	143457242	143458011	-	intergenic	0	OR2A14	NM_001001659
271	chr7	143511054	143511956	-	downstream	2653	FLJ43692	NM_001003702
272	chr7	143559948	143560866	-	intergenic	0	OR2A42	NM_001001802
272	chr7	143559948	143560866	-	intergenic	0	OR2A1	NM_001005287
273	chr7	143596796	143597697	-	upstream	9142	OR2A7	NM_001005328
274	chr7	143646147	143646989	-	intergenic	0	OR2A1	NM_001005287
274	chr7	143646147	143646989	-	intergenic	0	OR2A42	NM_001001802
275	chr8	6411142	6412671	-	upstream	2970	ANGPT2	NM_001147
275	chr8	6411142	6412671	-	intergenic	0	MCPH1	NM_024596
276	chr8	12031280	12032234	-	intergenic	0	DUB3	NM_201402

277	chr8	12033207	12033952	-	intergenic	0	DUB3	NM_201402
278	chr8	18284718	18285824	-	upstream	7210	NAT2	NM_000015
279	chr8	39814664	39815324	-	intergenic	0	ADAM2	NM_001464
280	chr8	86753506	86756724	+	intergenic	0	REXO1L1	NM_172239
281	chr8	86760343	86761923	+	intergenic	0	REXO1L1	NM_172239
282	chr8	86761924	86763570	+	intergenic	0	REXO1L1	NM_172239
283	chr8	88955315	88955939	+	intergenic	0	WDR21C	NM_152418
284	chr8	114458253	114458877	-	intergenic	0	CSMD3	NM_198124
285	chr8	124481694	124482978	-	upstream	3826	ATAD2	NM_014109
286	chr8	141530085	141531162	-	intergenic	0	NIBP	NM_031466
287	chr8	142297463	142298162	+	intergenic	0	SLC45A4	NM_001080431
288	chr8	142435756	142436380	+	intergenic	0	GPR20	NM_005293
289	chr8	143779551	143780175	+	intergenic	0	LY6K	NM_017527
290	chr8	144495160	144495856	-	upstream	6735	TOP1MT	NM_052963
291	chr8	145016731	145017715	+	intergenic	0	EPPK1	NM_031308
292	chr9	28137638	28138564	-	intergenic	0	LRRN6C	NM_152570
293	chr9	34123534	34124843	+	upstream	6798	WDR40A	NM_015397
294	chr9	34360697	34361686	+	intergenic	0	KIAA1161	NM_020702
294	chr9	34360697	34361686	+	downstream	7330	C9orf24	NM_147168
295	chr9	39358418	39359139	-	downstream	6461	LOC642265	NM_001040065
295	chr9	39358418	39359139	-	downstream	6462	C9orf36	NM_001085452
296	chr9	39887768	39888458	-	downstream	6560	LOC642265	NM_001040065
296	chr9	39887768	39888458	-	downstream	6561	C9orf36	NM_001085452
297	chr9	40703092	40703716	-	upstream	1945	FAM74A3	NM_001098718
297	chr9	40703092	40703716	-	downstream	6555	LOC727830	NM_001083124
298	chr9	41303846	41304536	-	downstream	6573	FAM75A7	NM_015667
299	chr9	41503477	41504167	-	downstream	6555	FAM75A7	NM_015667
300	chr9	65235921	65236611	-	downstream	6574	FAM75A7	NM_015667
301	chr9	93905806	93906883	-	intergenic	0	SPTLC1	NM_006415
302	chr9	99501085	99501890	-	upstream	1573	XPA	NM_000380
303	chr9	130710329	130711406	+	intergenic	0	LRRC8A	NM_019594
304	chr9	138903915	138904539	+	intergenic	0	TRAF2	NM_021138
305	chr9	139198042	139198980	+	upstream	3973	SSNA1	NM_003731
305	chr9	139198042	139198980	+	intergenic	0	ANAPC2	NM_013366
305	chr9	139198042	139198980	+	downstream	6909	C9orf75	NM_173691
306	chr9	139198981	139199486	+	upstream	3467	SSNA1	NM_003731
306	chr9	139198981	139199486	+	intergenic	0	ANAPC2	NM_013366
306	chr9	139198981	139199486	+	downstream	6403	C9orf75	NM_173691
307	chr9	139823975	139823977	+	intergenic	0	EHMT1	NM_024757
308	chr9	139823978	139824670	+	intergenic	0	EHMT1	NM_024757
309	chrX	224506	225416	+	upstream	1916	PPP2R3B	NM_199326
309	chrX	224506	225416	+	intergenic	0	PPP2R3B	NM_013239

310	chrX	227187	228360	+	intergenic	0	PPP2R3B	NM_013239
311	chrX	233068	233862	+	intergenic	0	PPP2R3B	NM_013239
312	chrX	243155	244327	+	intergenic	0	PPP2R3B	NM_013239
313	chrX	3237977	3238987	+	intergenic	0	MXRA5	NM_015419
314	chrX	6461465	6463072	-	intergenic	0	VCX3A	NM_016379
315	chrX	7770616	7772357	-	intergenic	0	VCX	NM_013452
316	chrX	8097753	8099256	-	intergenic	0	VCX2	NM_016378
317	chrX	8392897	8394599	-	intergenic	0	VCX3B	NM_001001888
318	chrX	27908610	27909707	-	intergenic	0	WDR42B	NM_001017930
319	chrX	34058909	34059892	+	intergenic	0	FAM47A	NM_203408
320	chrX	34871161	34872546	+	intergenic	0	FAM47B	NM_152631
321	chrX	51167489	51168275	+	intergenic	0	LOC340602	NM_203407
322	chrX	52128480	52129640	-	upstream	232	LOC653216	NM_001079538
322	chrX	52128480	52129640	-	intergenic	0	XAGE2	NM_130777
323	chrX	52402916	52404166	-	upstream	175	LOC653216	NM_001079538
323	chrX	52402916	52404166	-	intergenic	0	XAGE2	NM_130777
324	chrX	55131926	55132581	-	intergenic	0	PAGE2	NM_207339
324	chrX	55131926	55132581	-	downstream	9867	PAGE2B	NM_001015038
325	chrX	55263661	55263977	-	intergenic	0	PAGE5	NM_001013435
326	chrX	63534577	63535343	-	upstream	2541	MTMR8	NM_017677
327	chrX	69395275	69396176	-	upstream	8733	ARR3	NM_004312
327	chrX	69395275	69396176	-	intergenic	0	P2RY4	NM_002565
328	chrX	87896775	87897473	-	downstream	334	CPXCR1	NM_033048
329	chrX	89063148	89063989	-	intergenic	0	TGIF2LX	NM_138960
330	chrX	101052894	101053643	-	intergenic	0	ZMAT1	NM_001011657
331	chrX	119094530	119095222	+	intergenic	0	PEPP-2	NM_032498
331	chrX	119094530	119095222	+	intergenic	0	LOC727940	NM_001099685
332	chrX	119132920	119133832	+	intergenic	0	OTEX	NM_139282
333	chrX	119177018	119177712	+	intergenic	0	PEPP-2	NM_032498
333	chrX	119177018	119177712	+	intergenic	0	LOC727940	NM_001099685
334	chrX	134680880	134681538	-	intergenic	0	CT45-1	NM_001017417
335	chrX	134698146	134698770	-	intergenic	0	CT45-4	NM_001017436
335	chrX	134698146	134698770	-	intergenic	0	CT45-2	NM_152582
336	chrX	134715411	134716105	-	intergenic	0	CT45-4	NM_001017436
336	chrX	134715411	134716105	-	intergenic	0	CT45-3	NM_001017435
337	chrX	148664030	148665051	-	upstream	6350	MAGEA9	NM_005365
337	chrX	148664030	148665051	-	upstream	6343	LOC728269	NM_001080790
337	chrX	148664030	148665051	-	intergenic	0	LW-1	NM_016153
338	chrX	153449661	153450421	-	downstream	3206	IKBKKG	NM_003639
339	chrY	224506	225416	+	intergenic	0	PPP2R3B	NM_013239
340	chrY	227187	228360	+	intergenic	0	PPP2R3B	NM_013239
341	chrY	233068	233862	+	intergenic	0	PPP2R3B	NM_013239

342	chrY	243155	244327	+	intergenic	0	PPP2R3B	NM_013239
343	chrY	3506764	3507534	-	intergenic	0	TGIF2LY	NM_139214
344	chrY	9293436	9294134	-	upstream	1914	LOC728137	NM_001077697
345	chrY	9294271	9294290	+	upstream	1758	LOC728137	NM_001077697
346	chrY	9294291	9294322	+	upstream	1726	LOC728137	NM_001077697
347	chrY	9294323	9294419	+	upstream	1629	LOC728137	NM_001077697
348	chrY	9294420	9295345	+	upstream	703	LOC728137	NM_001077697
349	chrY	9911905	9912708	-	upstream	1855	TSPY1	NM_003308
350	chrY	9912807	9912826	+	upstream	1737	TSPY1	NM_003308
351	chrY	9912827	9912955	+	upstream	1608	TSPY1	NM_003308
352	chrY	9912956	9913929	+	upstream	634	TSPY1	NM_003308
353	chrY	9932214	9933017	-	upstream	1877	LOC728137	NM_001077697
354	chrY	9933086	9933168	+	upstream	1726	LOC728137	NM_001077697
355	chrY	9933169	9933265	+	upstream	1629	LOC728137	NM_001077697
356	chrY	9933266	9934191	+	upstream	703	LOC728137	NM_001077697
357	chrY	9972862	9973594	-	upstream	1913	LOC728137	NM_001077697
358	chrY	9973699	9973749	+	upstream	1758	LOC728137	NM_001077697
359	chrY	9973750	9973781	+	upstream	1726	LOC728137	NM_001077697
360	chrY	9973782	9974804	+	upstream	703	LOC728137	NM_001077697
361	chrY	14606755	14608191	-	intergenic	0	VCY1B	NM_181880
361	chrY	14606755	14608191	-	intergenic	0	VCY	NM_004679
362	chrY	14677097	14678465	-	intergenic	0	VCY	NM_004679
362	chrY	14677097	14678465	-	intergenic	0	VCY1B	NM_181880
363	chrY	21327345	21328220	-	intergenic	0	RPS4Y2	NM_001039567
364	chrY	22082171	22083047	+	intergenic	0	RBMY1A1	NM_001007526
364	chrY	22082171	22083047	+	intergenic	0	RBMY1B	NM_001006121
364	chrY	22082171	22083047	+	intergenic	0	RBMY1E	NM_001006118
364	chrY	22082171	22083047	+	intergenic	0	RBMY1D	NM_001006120
365	chrY	22105747	22106552	+	intergenic	0	RBMY1A1	NM_001007526
365	chrY	22105747	22106552	+	intergenic	0	RBMY1B	NM_001006121
365	chrY	22105747	22106552	+	intergenic	0	RBMY1D	NM_001006120
365	chrY	22105747	22106552	+	downstream	8689	RBMY1E	NM_001006118
366	chrY	22449600	22450474	+	intergenic	0	RBMY1E	NM_001006118
366	chrY	22449600	22450474	+	intergenic	0	RBMY1D	NM_001006120
366	chrY	22449600	22450474	+	intergenic	0	RBMY1B	NM_001006121
366	chrY	22449600	22450474	+	intergenic	0	RBMY1A1	NM_001007526
367	chrY	22451765	22452493	-	upstream	1744	RBMY1E	NM_001006118
367	chrY	22451765	22452493	-	upstream	1744	RBMY1D	NM_001006120
367	chrY	22451765	22452493	-	upstream	1738	RBMY1B	NM_001006121
367	chrY	22451765	22452493	-	upstream	1729	RBMY1A1	NM_001007526
368	chrY	22473177	22474048	+	intergenic	0	RBMY1E	NM_001006118
368	chrY	22473177	22474048	+	intergenic	0	RBMY1D	NM_001006120

368	chrY	22473177	22474048	+	intergenic	0	RBM1B	NM_001006121
368	chrY	22473177	22474048	+	intergenic	0	RBM1A1	NM_001007526
369	chrY	22475306	22476001	-	upstream	1744	RBM1E	NM_001006118
369	chrY	22475306	22476001	-	upstream	1744	RBM1D	NM_001006120
369	chrY	22475306	22476001	-	upstream	1738	RBM1B	NM_001006121
369	chrY	22475306	22476001	-	upstream	1729	RBM1A1	NM_001007526
370	chrY	22738092	22738894	+	intergenic	0	RBM1J	NM_001006117
370	chrY	22738092	22738894	+	intergenic	0	RBM1F	NM_152585
371	chrY	22740221	22740916	-	upstream	1744	RBM1J	NM_001006117
371	chrY	22740221	22740916	-	upstream	1744	RBM1F	NM_152585
372	chrY	22863968	22864827	+	intergenic	0	RBM1F	NM_152585
373	chrY	22956581	22957237	-	upstream	1773	RBM1J	NM_001006117
373	chrY	22956581	22957237	-	intergenic	0	RBM1F	NM_152585
374	chrY	22958565	22959330	+	intergenic	0	RBM1J	NM_001006117
374	chrY	22958565	22959330	+	intergenic	0	RBM1F	NM_152585

^aIn case that one MR was overlapped to multiple accession numbers with same gene symbol, only the gene with the closest distance to the nearest exon was shown.

Supplementary Table 10. Primer pairs used for this study

gene symbol	forward	reverse	amplicon size (bp)
<i>DRD5</i>	AGAGAATTGTGATTTTAGTTTGAAT	ATCTTAAAAACCTTAATCTCCTTCTTAATA	249
<i>NRGN</i>	GATAGTTTGAGTTGGGTGATTGTT	TATCCACATATAATTTTCCCAAACC	166
<i>CNTNAP1</i>	GGGTTTGGGAGATAGTTTTTTTAGT	CACCCAAACTCATATAACAACA	261
<i>TIAM2</i>	GTGTTTTTGATTATTTTAGTTGTTTATTTA	AAAAACCCAATTCTTACAACCTTC	125
<i>CAMKK1</i>	GGGGAGATATAGGTGTTGTTTAATT	TTCTCAAACACTACACAAAATACC	158
<i>NRXN1</i>	AAAAAGTTTTTTGTTAATGAAGAAA	AATAAAACACAAAAAAAATATACCAC	201
<i>DUX4</i>	CGCAACCTCTCCTAGAAACG	GTCCTAAAGCTCCTCCAGCA	119
<i>DUSP5P</i>	GTAAAGCAGCCCATGCGTTC	GGCGATTCAATTCACCCATC	128
<i>intergenic</i>	TAGCCGTTCTCCTTGAGCTG	ACCTGAACGTGGTCCTGAAC	139

Supplementary Table 11. Demographic variables of subjects

region	Sex	Age	PMI	BrainPH	CauseOfDeath
BA10	male	57	26	6.4	CANCER
BA10	male	31	11	6.13	PULM EMBOL
BA10	male	51	22	6.71	CARDIAC
BA10	male	34	22	6.48	CARDIAC
BA10	male	46	31	6.67	CARDIAC
BA10	male	53	28	6	CARDIAC
BA10	male	55	31	6.7	CARDIAC
BA10	male	49	46	6.5	CARDIAC
BA10	male	60	47	6.8	CARDIAC
BA10	male	40	38	6.67	CARDIAC
BA10	male	35	24	7.03	CARDIAC
BA10	male	51	31	6.7	CARDIAC
BA10	male	53	9	6.4	CARDIAC
BA10	male	48	24	6.91	CARDIAC
BA10	male	37	13	6.5	CARDIAC
BA10	male	49	23	6.93	CARDIAC
BA10	male	42	37	6.91	CARDIAC
BA10	male	35	52	6.7	MYOCARDITIS
BA10	male	47	11	6.6	CARDIAC
BA10	male	45	29	6.94	CARDIAC
BA10	male	47	36	6.57	CARDIAC
BA10	male	48	31	6.86	CARDIAC
BA10	male	50	49	6.75	CARDIAC
BA10	male	45	18	6.81	CARDIAC
	Ave	46.2	28.7	6.7	