




Original research

Novel germline variant in the histone demethylase and transcription regulator KDM4C induces a multi-cancer phenotype

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ABSTRACT

Background Genes involved in epigenetic regulation are central for chromatin structure and gene expression. Specific mutations in these might promote carcinogenesis in several tissue types.

Methods We used exome, whole-genome and Sanger sequencing to detect rare variants shared by seven affected individuals in a striking early-onset multi-cancer family. The only variant that segregated with malignancy resided in a histone demethylase KDM4C. Consequently, we went on to study the epigenetic landscape of the mutation carriers with ATAC, ChIP (chromatin immunoprecipitation) and RNA-sequencing from lymphoblastoid cell lines to identify possible pathogenic effects.

Results A novel variant in *KDM4C*, encoding a H3K9me3 histone demethylase and transcription regulator, was found to segregate with malignancy in the family. Based on Roadmap Epigenomics Project data, differentially accessible chromatin regions between the variant carriers and controls enrich to normally H3K9me3-marked chromatin. We could not detect a difference in global H3K9 trimethylation levels. However, carriers of the variant seemed to have more trimethylated H3K9 at transcription start sites. Pathway analyses of ChIP-seq and differential gene expression data suggested that genes regulated through KDM4C interaction partner EZH2 and its interaction partner PLZF are aberrantly expressed in mutation carriers.

Conclusions The apparent dysregulation of H3K9 trimethylation and KDM4C-associated genes in lymphoblastoid cells supports the hypothesis that the *KDM4C* variant is causative of the multi-cancer susceptibility in the family. As the variant is ultrarare, located in the conserved catalytic JmjC domain and predicted pathogenic by the majority of available in silico tools, further studies on the role of *KDM4C* in cancer predisposition are warranted.

INTRODUCTION

Cancers arise from the accumulation of both genetic and epigenetic alterations. Numerous inherited genetic changes have been shown to predispose to certain or multiple cancer types through, for instance, defective DNA repair or cell-cycle checkpoint mechanisms. Examples of this are damaging mutations in the tumour suppressor genes *TP53*, *BRCA1* and *BRCA2* that cause the well-known cancer syndromes Li-Fraumeni and hereditary

breast and ovarian cancer. Cancer predisposing variants in epigenetic modifiers, such as *TET2* and *LSD1/KDMA1*, have also been reported.^{1–3} Mutations in this type of genes can cause epigenetic dysregulation through, for example, aberrant DNA or histone methylation, which can subsequently alter the gene expression profiles of cells and thus promote carcinogenesis in several tissue types.^{4–6} Families with multiple early-onset cancers are instrumental when searching for novel susceptibility genes that can exert pathogenic effects in multiple tissue types.

To this end, we studied a striking early-onset multi-cancer family with six confirmed cases of papillary thyroid carcinoma (PTC), as well as cases of chondrosarcoma and myeloid leukaemia. Some of the PTC affected individuals had also been diagnosed with other cancers, such as melanoma, breast cancer and adenocarcinoma of the cervix. According to patient records of affected relatives, there had been an additional case of thyroid cancer and two cases of leukaemia of unknown type among deceased first-degree relatives.

We found a previously undescribed missense change (NP_055876.2:p.(His217Arg)) in the catalytic Jumonji C (JmjC) domain of histone demethylase KDM4C (hereafter referred to as KDM4C:p.H217R) to segregate with malignancy in the family. KDM4C has numerous roles in genetic and epigenetic regulation. The JmjC domain of KDM4C specifically demethylates trimethylated lysine-9 and lysine-36 residues of histone H3 (H3K9me3 and H3K36me3), thus affecting chromatin conformation and gene expression. In addition, amino acids 1–333, which include the JmjC domain, have been shown to regulate transcriptional repression by interacting with enhancer of zeste homolog 2 (EZH2).⁷ EZH2, a major regulator of gene expression, is frequently overexpressed and underexpressed in a wide variety of cancerous tissue types, including blood, prostate and breast.^{8,9} KDM4C also interacts with lysine-specific histone demethylase 1A (LSD1) and has a role in regulating the androgen receptor (AR).¹⁰ To determine the function of the novel KDM4C variant, differences in chromatin accessibility, H3K9me3 distribution and gene expression in lymphoblastoid cells between KDM4C:p.H217R carriers and healthy controls were evaluated. Our findings suggest that KDM4C:p.H217R is causative of the multi-cancer phenotype of the described

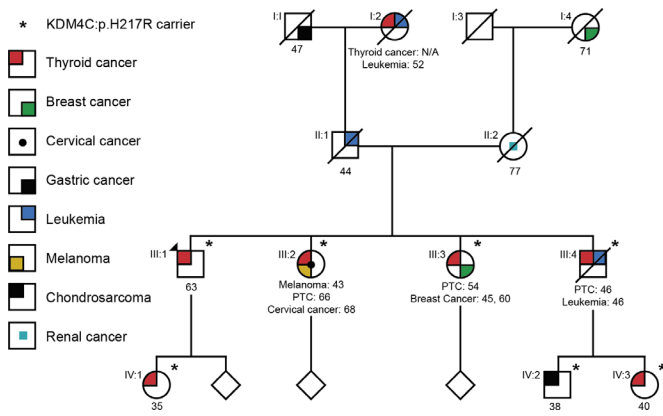


Figure 1 Finnish multi-cancer family. Cancer types and ages at diagnosis are listed beneath the individuals. Confirmed KDM4C mutation carriers are marked with an asterisk. PTC, papillary thyroid carcinoma.

family, and that the effect leads to changes in chromatin accessibility and histone epigenetics. Understanding the impact of demethylase activity is critical when targeting epigenetic modifiers in the development of future cancer therapeutics.

METHODS

Please see online supplemental file 1 (online supplemental methodology) for a complete listing and descriptions of used methods.

Patients and samples

A family with a striking history of cancer, PTC in particular, was forwarded to us by a clinical geneticist. In two generations, there were six cases of PTC, as well as cases of myeloid leukaemia, chondrosarcoma, ductal breast carcinoma, melanoma and adenocarcinoma of the cervix (figure 1). According to patient records, deceased family members had also been affected by at least thyroid cancer and leukaemia of unknown type (figure 1). Peripheral blood samples were collected from individuals III:1, III:2, III:3 and IV:1, whereas for patients III:4, IV:2 and IV:3, formalin-fixed paraffin-embedded (FFPE)-tissue samples were obtained. We also collected blood samples of 10 patients from four unrelated Finnish PTC families.

We used the Finnish Cancer Registry (FCR) to collect a validation set consisting of 59 probable familial cases of PTC. We had earlier performed systematic municipality at birth and family name at birth-based clustering of all cancer cases in the registry, which comprises all cancer diagnoses made in Finland after 1953. For a thorough description of the method, please refer to Kaasinen *et al.*¹¹ For the validation set, we collected FFPE-tissue

samples from high-scoring PTC clusters, which are likely to consist of true relatives.

DNA and cell lines

Genomic DNA for exome, whole-genome and Sanger sequencing was extracted from blood and FFPE-tissue samples with the phenol-chloroform method.

Peripheral blood lymphocytes from patients III:1, III:2, III:3 and IV:1 were infected with Epstein-Barr virus (EBV) to generate lymphoblastoid cell lines. However, we used only three cell lines in this study, since the cell line of patient III:2 failed to grow. As controls, we used in-house lymphoblastoid cell lines from four unrelated cancer-free individuals. All used cell lines had low and similar estimated passage numbers (online supplemental table 1 (online supplemental data 1)).

Variant calling and analysis

WES data were processed with GATK best practices variant calling pipeline (GRCh37). WGS raw data were processed (primary analyses, alignment and variant calling) by Complete Genomics (2011). Variant analyses, including quality filtering, visualisation, sample comparison, gene annotation (Ensembl genes v89) and control data filtering (gnomAD v2.1.1), were performed with BasePlayer.¹²

The following parameters were used in the variant analysis:

- ▶ gnomAD allele frequency: 0.
- ▶ Non-synonymous/indel/splice site variant shared by all three samples.
- ▶ Allelic fraction: >=20%.
- ▶ Variant and genotype quality: >=20.

The analysis resulted in four candidate variants in four genes (table 1).

ATAC-seq

ATAC-seq was performed for three KDM4C:p.H217R-carrier and four control lymphoblastoid cell lines as described in previous work.¹³ See online supplemental data 1, online supplemental table 2 and online supplemental figure 1 for a detailed description of the procedure.

ChIP-seq

Chromatin immunoprecipitation followed by sequencing (ChIP-seq) with an antibody against H3K9me3 was performed for three KDM4C:p.H217R-carrier and four control lymphoblastoid cell lines. See online supplemental data 1 and online supplemental figure 2 for a detailed description of the procedure. Briefly, 10 million cells were crosslinked with formaldehyde and sheared to fragment length of 200–500 bp by sonication.

Table 1 Ultrarare variants shared by the affected exome or genome-sequenced individuals

Genomic location	Effect in transcript 1	Protein effect	Gene/Protein name	Segregation	Protein effect prediction*
NC_000001.10:g.223983870C>G	NM_005426.2:c.1984G>C	NP_005417.1:p.(Val662Leu)	Tumour protein p53 binding protein 2 (TP53BP2)	No	Benign
NC_000005.9:g.170305249dup	NM_022897.4:c.165+2dup	NP_075048.1:p.?	RAN binding protein 17 (RANBP17)	No	Uncertain (splice site insertion)
NC_000009.11:g.6880032A>G	NM_015061.4:c.650A>G	NP_055876.2:p.(His217Arg)	lysine (K)-specific demethylase 4C (KDM4C)	Yes	Pathogenic
NC_000012.11:g.124915216C>T	NM_006312.5:c.1000G>A	NP_006303.4:p.(Glu334Lys)	Nuclear receptor corepressor 2 (NCOR2)	No	Pathogenic

*Protein effect prediction is based on multiple prediction tools used in VarSome search engine. Pathogenic=the majority of tools give damaging/pathogenic/deleterious prediction.

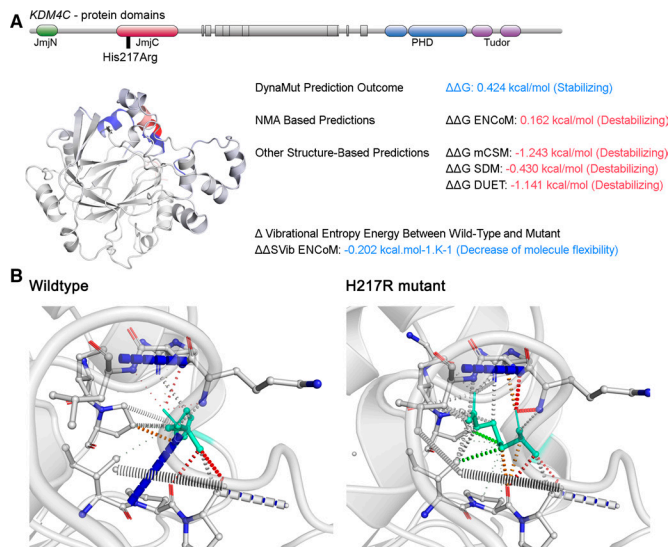


Figure 2 The location and predicted effect of p.H217R in the catalytic JmjC domain of *KDM4C*. (A) Location of the JmjC domain and p.H217R in *KDM4C*. (B) DynaMut prediction results for *KDM4C*:p.H217R.

Chromatin was immunoprecipitated with an antibody against H3K9me3 (Active Motif 39062, lot 09919003). Sequencing libraries were prepared and sequenced at Macrogen using the TruSeq DNA Sample prep Kit (Illumina, San Diego, California, USA), HiSeq 2500 system (Illumina, San Diego, California, USA) and 100 bp single-end sequencing. DiffBind V.2.14.0 in R V.3.6.3 was used to calculate the binding affinity of H3K9me3. Ggplot2 V.3.2.1 in R V.3.6.1 was used in visualisation. Mann-Whitney U test with alternative hypothesis 'greater' in R V.3.6.1 was used to compare RNA-seq log₂FCs of TSS peaks with less H3K9me3 and no change in H3K9me3 levels.

Ingenuity pathway analysis

In total, 136 significantly differentially expressed genes (DESeq2 adjusted p value ≤ 0.05) were analysed using Ingenuity pathway analysis (IPA; Qiagen, Redwood City, California, USA) version 52912811 core analysis feature.

We performed the same analysis (with and without expression scores separately) for genes with the top log₂FCs of H3K9me3 binding at their transcription start sites. Five hundred genes with the highest positive and 500 genes with the highest negative score were included.

RESULTS

A novel germline missense variant in *KDM4C* segregates in a multi-cancer family

Variant analysis of three affected siblings in the family revealed a novel variant (NM_015061.4:c.650A>G; Chr9(GRCh37):g.6880032A>G; NP_055876.2:p.(His217Arg)) in *KDM4C*. The heterozygous p.H217R variant is located in the JmjC (Jumonji) domain (figure 2A), which is responsible for the demethylation and protein interaction associated activity of *KDM4C*. The variant is not listed in the gnomAD (n=125 748), FinnGen (n=269 077) or UK Biobank (n=488 000) databases and it is predicted damaging and disease causing by the majority (18/21) of in silico prediction tools available through VarSome search engine.¹⁴ Also, the variant locus is highly conserved (GERP conservation score 5.1599). The variant domain did not harbour any somatic cancer mutation hotspots according to COSMIC and ICGC data. We analysed the putative effect of

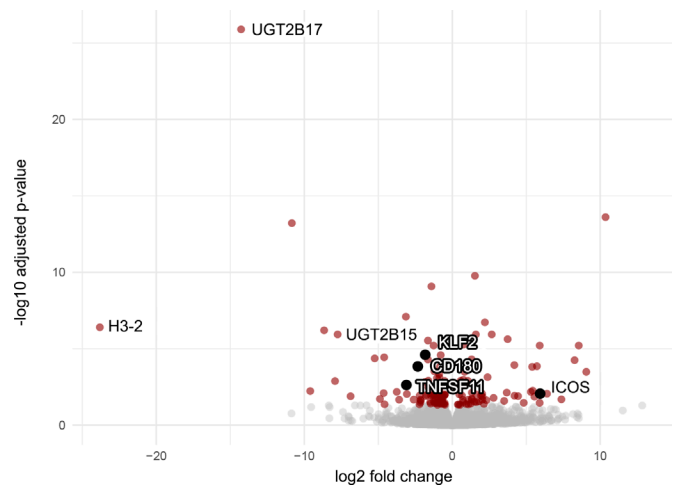


Figure 3 Changes in gene expression due to *KDM4C*:p.H217R. Significantly differentially expressed genes between *KDM4C*:p.H217R carriers and non-carriers (red and black dots). Differentially expressed genes associated with PLZF activation (black dots). PLZF, promyelocytic leukaemia zinc finger protein.

H217R on the structure of the *KDM4C* catalytic domain with DynaMut and MutPred2 tools.^{15 16} The DynaMut Outcome Score was 0.424 kcal/mol (Stabilising), suggesting a gain-of-function effect of the variant (figure 2B). MutPred2 predicted the variant as pathogenic with a score of 0.8. We used Sanger sequencing to analyse the presence of all found candidate variants (table 1) in the rest of the affected family members of whom we had DNA material available. The variant in *KDM4C* was the only one found in all seven patients. We screened the whole JmjC domain of *KDM4C* for additional variants in 63 Finnish families with possible susceptibility to PTC, as this was the dominant cancer type in the family. We found no p.H217R or other non-synonymous variants within this domain through the screening, nor did we detect loss of heterozygosity in available FFPE tumour samples.

Gene expression changes predict activation of PLZF in *KDM4C*:p.H217R carriers

We examined the effect of the discovered *KDM4C*:p.H217R variant on gene expression by RNA-seq. Using DESeq2, we identified 136 differentially expressed genes (adjusted p value ≤ 0.05) (figure 3 and online supplemental table 3 (online supplemental data 2)), of which 76 were downregulated (log₂FC < 0) and 60 upregulated (log₂FC > 0) in *KDM4C*:p.H217R carriers. No change was detected in the expression level of *KDM4C* (log₂FC = -0.12, adjusted p value = 0.93) between *KDM4C*:p.H217R carriers and non-carriers.

We analysed the differentially expressed genes and their fold changes with IPA. The results indicated an overall decrease in the activity of the xenobiotic metabolism CAR and PXR signalling pathways (online supplemental figure 3 (online supplemental data 3)). Changes in gene expression predicted the activation (activation z-score 2.000, p value of overlap 0.00497) of transcription factor, promyelocytic leukaemia zinc finger protein (PLZF) (encoded by *ZBTB16*; online supplemental table 4 (online supplemental data 4)), which is an interaction partner of EZH2.¹⁷ PLZF was the only upstream regulator predicted to be activated with a significant overlap p value.

ATAC-seq reveals differential DNA accessibility at H3K9me3 occupied regions

We examined the effect of KDM4C:p.H217R on chromatin accessibility in lymphoblastoid cell lines of variant carriers ($n=3$) and non-carriers ($n=4$) with ATAC-seq. Altogether, 214 762 reproducible open chromatin regions were identified in the seven samples. First, we examined if open chromatin profiles of KDM4C:p.H217R carriers differ from the non-carrier control lymphoblastoid cell lines more than randomly chosen combinations of these samples differ from each other. We divided six samples (three KDM4C:p.H217R carriers and three non-carriers) randomly into two groups and compared the numbers of differentially accessible regions (DARs, $FDR \leq 0.05$) and the enrichment of DARs at histone modifications from the Roadmap Epigenomics Project. The largest number of DARs (2141) was identified when carriers of KDM4C:p.H217R were compared against non-carriers, for which the enrichment to active chromatin marks and histone 3 lysine 9 trimethylation (H3K9me3) was the most significant (figure 4A). The next largest numbers of DARs were 1560, 1025, 741 and 558 in random groups. The rest had less than 300 DARs.

Next, we analysed differential accessibility between the three KDM4C:p.H217R carriers and four healthy non-carriers (the ones described previously and an additional sample), and identified 2225 more accessible ($\log_2FC > 0$ and $FDR \leq 0.05$) and 957 less accessible ($\log_2FC < 0$ and $FDR \leq 0.05$) regions (online supplemental table 5 (online supplemental data 5)). When compared with all regions of open chromatin, the more accessible regions in KDM4C:p.H217R carriers displayed enrichment at the H3K9me3 histone mark derived from Roadmap Epigenomics Project data on blood cells (figure 4B). The finding is compatible with the specific H3K9me3 demethylase activity of KDM4C.

The less accessible regions in KDM4C:p.H217R carriers also displayed enrichment at the H3K9me3 mark, pointing to a general dysregulation of H3K9 trimethylation (figure 4C). In addition, the less accessible regions showed an enrichment at the active chromatin marks H3K4me1 and H3K27ac, as well as at open chromatin regions defined by DNase hotspots. This suggests that these normally active sites are repressed in KDM4C:p.H217R carriers.

Next, we examined if the changes in chromatin accessibility observed in KDM4C:p.H217R carriers were connected to changes in gene expression. We annotated the closest gene to the more and less accessible regions, and compared the gene expression \log_2FC s of the genes in these groups. We found that genes in the proximity of more accessible regions, especially those with more accessible TSSs, tend to have higher \log_2FC s than genes in regions where no change in chromatin accessibility had been detected, which suggests that increased chromatin accessibility at these sites is enhancing nearby gene expression (figure 4D). The same phenomenon was observed at less accessible sites that showed decreased expression in carriers versus controls. This confirms the quality of the performed ATAC-seq experiments and provides evidence for the functional significance of the DARs discovered in KDM4C:p.H217R carriers.

Changes in H3K9me3 levels at transcription start sites point to aberrant interaction with EZH2

Next, we analysed the distribution of H3K9me3 in KDM4C:p.H217R carrier and non-carrier lymphoblastoid cells with ChIP-seq. We identified 174 611 H3K9me3 binding sites present in at least two samples. Genome-wide significant changes

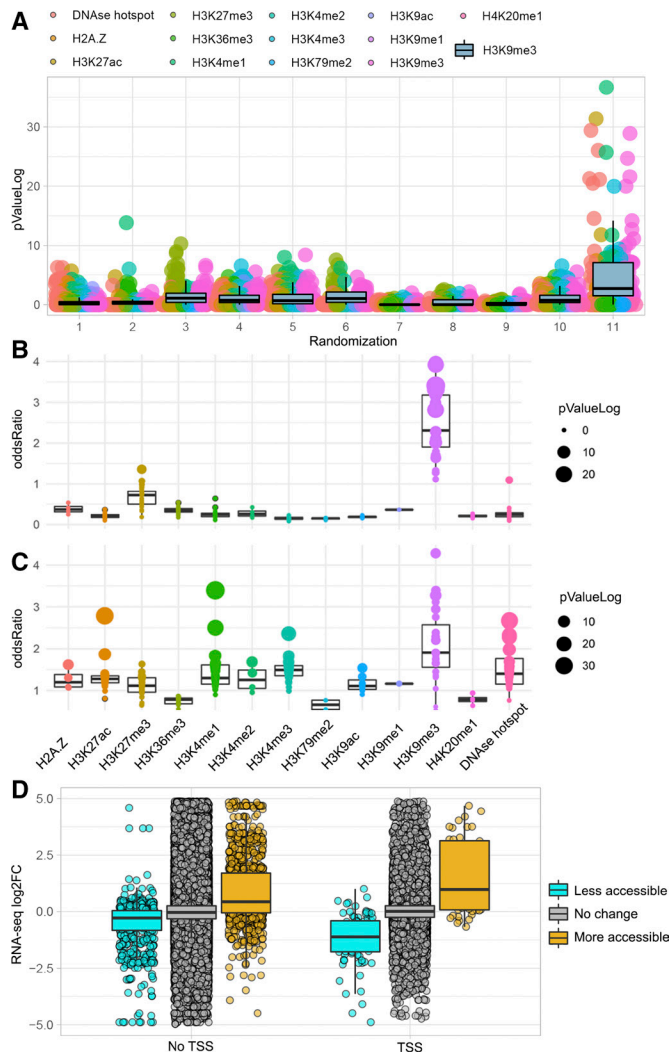


Figure 4 Changes in chromatin accessibility due to KDM4C:p.H217R. (A) Enrichment of DARs of randomly generated sample groups to chromatin marks. Group 11 (three cases vs three controls divided by the carrier status of KDM4C:p.H217R) shows the highest enrichment of DARs to chromatin marks. Dots represent the enrichment of a specific chromatin mark in a specific blood cell type, the boxplot shows the enrichment of H3K9me3 in all blood cell types in the specific randomisation setup. (B) More accessible regions in KDM4C:p.H217R carriers are enriched for the H3K9me3 mark. (C) Less accessible regions in KDM4C:p.H217R carriers enrich in activating chromatin marks (H3K4me1 and H3K27a (C) and the H3K9me3 mark. (D) Chromatin accessibility affects expression of proximal genes. More accessible regions in proximity enhance gene expression both at TSS ($p=7.989e-07$) and at non-TSS regions ($p<2.2e-16$). Similarly, less accessible regions in proximity decrease gene expression both at TSS ($p=4.398e-14$) and at non-TSS regions ($p<2.2e-16$). Statistical significance calculated with Welch Two Sample t-test.

($FDR \leq 0.05$) in H3K9me3 levels were not detected between KDM4C:p.H217R carriers and non-carriers. We examined the H3K9me3 levels at the H3K9me3 peaks overlapping with more and less accessible regions defined by ATAC-seq, as the previous analyses had revealed an enrichment of DARs at H3K9me3 occupied loci. At the H3K9me3 peaks overlapping the more accessible sites ($n=118$), H3K9me3 levels were higher in cases (figure 5A). At the less accessible sites ($n=37$), there was no such difference in H3K9me3 levels between KDM4C:p.H217R carriers and non-carriers. Next, we analysed H3K9me3 levels

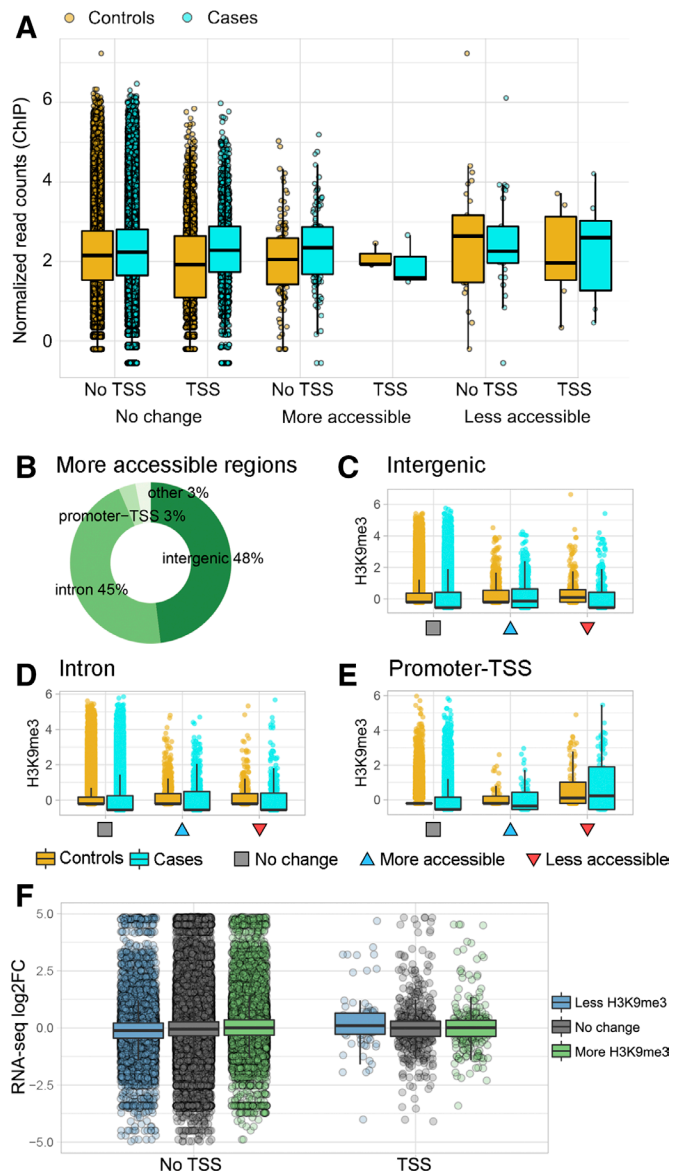


Figure 5 H3K9me3 levels are not equal between KDM4C:p.H217R carriers and non-carriers at transcription start sites and open chromatin regions. (A) H3K9me3 level (normalised read/fragment counts) comparisons between carriers and non-carriers of KDM4C:p.H217R at ChIP-peaks overlapping TSSs (± 1000 bp) and other sites grouped by chromatin accessibility change. (B) More accessible regions map to intergenic regions and introns. (C) H3K9me3 level (normalised read/fragment counts) comparisons between carriers and non-carriers of KDM4C:p.H217R at intergenic (D) at intronic (E) at promoter-TSS open chromatin peaks grouped by chromatin accessibility change. (F) Gene expression fold change between carriers and non-carriers of KDM4C:p.H217R stratified by H3K9me3 changes. Genes are grouped based on less H3K9me3 ($\log_2FC < -1$), more H3K9me3 ($\log_2FC > 1$) or no change in H3K9me3 level ($-1 < \log_2FC < 1$) at TSS (± 1000 bp) or outside TSS. Genes with less H3K9me3 at their TSS have higher expression. FC, fold change; TSS, transcription start site.

at TSSs (± 1000 bp) and outside TSS regions. TSSs displayed increased H3K9me3 levels in KDM4C:p.H217R carriers with no change in chromatin accessibility, and regions outside TSS displayed increased H3K9me3 levels in KDM4C:p.H217R carriers when accessibility was increased (figure 5A).

Due to the low number of obtained data points at more and less accessible sites (118 and 37, respectively), we performed H3K9me3 distribution analyses for all 214762 reproducible open chromatin regions, regardless of overlapping ChIP-seq peaks. We were interested in H3K9me3 levels at more accessible regions in particular, as in the previous analysis described above (figure 5A) we measured—counterintuitively—higher levels of H3K9me3 at the 118 sites included in the analysis. Most more accessible regions were located in intergenic and intronic regions (figure 5B). In this analysis, including all open chromatin regions, we detected reduced H3K9me3 levels in KDM4C:p.H217R carriers at intergenic and intronic regions, as well as more accessible TSSs (figure 5C–E). At less accessible TSSs, KDM4C:p.H217R carriers had more H3K9me3 than controls (figure 5E). These data are consistent with the ATAC-seq findings as well as the gain-of-function prediction of the mutation.

As H3K9me3 was differentially distributed at TSSs between KDM4C:p.H217R carriers and non-carriers, we examined if these differences contribute to changes in gene expression. We divided H3K9me3 peaks ($n=174611$) into groups based on \log_2FC in KDM4C:p.H217R carriers: less H3K9me3 ($\log_2FC < -1$), more H3K9me3 ($\log_2FC > 1$) and no change in H3K9me3 level ($-1 < \log_2FC < 1$). These peaks were further divided into TSS (± 1000 bp) and non-TSS regions, and expression \log_2FC of the nearest gene of each peak was examined. We detected slightly higher gene expression \log_2FC s, although not statistically significant (Mann-Whitney U test, $W=28884$, p value=0.06752), in genes with less H3K9me3 at their TSS compared with genes with no change in H3K9me3 at TSS (figure 5F). This is compatible with the role of H3K9me3 in gene repression.¹⁸

We performed IPA for genes with H3K9me3 ChIP-seq peaks at TSS showing the highest positive and negative \log_2FC . The analysis without gene expression \log_2FC information identified the transcription factor EZH2 as one of the most significant upstream regulators, with an overlap p value of 0.000624 based on 23 target molecules in the dataset (online supplemental table 6 (online supplemental data 6)). We also performed the analysis for the same gene set with expression \log_2FC scores. PLZF was predicted to be activated (z -score=2.646) based on changes in gene expression, although p value of overlap was not significant (0.0768) (online supplemental table 7 (online supplemental data 7)). This provides more evidence of the activation of PLZF in KDM4C:p.H217R carriers.

DISCUSSION

Here, we describe a novel germline variant in the highly conserved catalytic JmjC domain of the histone demethylase *KDM4C*. The missense variant was discovered by exome and whole-genome sequencing of selected multi-cancer family members and was confirmed to segregate with malignancy in the family. We did not detect the variant in our validation set consisting of 63 candidate Finnish PTC families or any major publicly available datasets. The consequent amino acid change (NP_055876.2:p.(His217Arg)) is predicted pathogenic by the majority of commonly used in silico variant prediction tools.

The KDM4 subfamily histone demethylases are epigenetic regulators that control chromatin structure and thus gene expression by demethylating histones H3K9, H3K36 and H1.4K26. The subfamily consists of five proteins (KDM4A–E), all of which harbour the catalytic Jumonji C domain (JmjC). The selectivity of the demethylases is determined by multiple interactions within the catalytic domain. KDM4C specifically catalyses

the demethylation of trimethylated lysine-9 and lysine-36 residues of histone H3. In addition, it has been shown to be involved in transcriptional regulation through interaction with EZH2.⁷ Both of these functions are carried out by the JmjC domain, in which KDM4C:p.H217R is located. Recently, rare variants in *KDM4C* were associated with schizophrenia and autism spectrum disorder,¹⁹ and the encoded protein was shown to control tumorigenesis by epigenetically regulating p53 and c-Myc.²⁰

To confirm that the variant indeed has biological consequences, we performed ATAC, ChIP and RNA-sequencing of EBV-transformed lymphoblastoid cell lines derived from three patients carrying the KDM4C:p.H217R mutation and four healthy controls. These results have limitations due to the small number of samples and characteristics of EBV-transformed cell lines as transformation is known to cause dysregulation of gene expression and cancer-related pathways.²¹ It should also be noted that all KDM4C:p.H217R carrier cell lines shared an additional possibly pathogenic variant in the *Nuclear receptor corepressor 2* (*NCOR2*). *NCOR2* has a role in AR signalling and acts as a transcriptional corepressor by promoting chromatin condensation.²²

RNA-seq analysis revealed 136 differentially expressed genes. The gene with the highest fold change with significant p value was *H3-2*, a member of the H3 family of histones (figure 3). Interestingly, according to the STRING protein-protein interaction network,²³ Histone cluster 2 H3 pseudogene 2 (*H3-2;HIST2H3PS2*) and *KDM4C* are interaction partners with an interaction and experiment scores of 0.718 and 0.336, respectively, making *H3-2* one of the highest scoring interaction partners of *KDM4C* in the database. The possible pathogenic significance of *H3-2*, if any, needs further work.

The most significantly differentially expressed gene, *UGT2B17*, has previously been associated with increased risk of prostate cancer.²⁴ Another gene coding a similar enzyme, *UGT2B15*, also had significantly lower expression in the KDM4C:p.H217R carriers as compared with controls (figure 3). *UGT2B15* and *UGT2B17* are regulated by the AR and are not expressed in AR negative prostate cancer cell lines.²⁵ We did not detect significant differences in AR expression between the mutation carriers and non-carriers, however, *KDM4C* has been shown to interact and co-localise with AR, and more importantly, to regulate its function.^{10 26} The *NCOR2* variant could also have contributed to this result, as the protein is known to regulate AR signalling.

Upstream regulator analysis revealed that the expression changes of *CD180*, *ICOS*, *KLF2* and *TNFSF11* are consistent with increased activity of the EZH2-associated protein PLZF. PLZF and EZH2 co-associate at the chromatin level, and EZH2 activity was recently shown to regulate PLZF transcriptional output.¹⁷ PLZF is an epigenetic regulator that balances self-renewal and differentiation of haematopoietic cells through binding of chromatin-modifying factors, and gene rearrangements at this locus have been associated with acute promyelocytic leukaemia, a subtype of acute myeloid leukaemia and the very disease the gene was named after.^{27 28} Since one member of the studied family suffered from myeloid leukaemia, and two others of leukaemia of unknown type, and as the measurements were performed with blood samples, this result is particularly interesting.

ATAC-seq revealed 2225 more and 957 less accessible sites between KDM4C:p.H217R carriers and controls. These DARs enrich at normally H3K9me3-marked chromatin, pointing to epigenetic plasticity at these sites in KDM4C:p.H217R carrier cells. When we examined levels of H3K9me3 at open chromatin regions, we found that intergenic and intronic regions have reduced H3K9me3 in KDM4C:p.H217R carriers. As *KDM4C*

specifically demethylates H3K9me3 and the variant is predicted to be gain-of-function (figure 2B), the changes in chromatin accessibility and H3K9me3 levels at these loci support the functional significance of KDM4C:p.H217R.

We examined the distribution of H3K9me3 in KDM4C:p.H217R carrier cells with ChIP-seq. We did not detect a global reduction or increase in H3K9me3 levels in KDM4C:p.H217R carriers compared with controls. However, we detected increased H3K9me3 levels between KDM4C:p.H217R carriers and non-carriers at transcription start sites with no change in chromatin accessibility. This result is of particular interest because transcription start sites are commonly occupied by *KDM4C*.²⁹ We examined how the changes in H3K9me3 levels at TSS contribute to gene expression changes in KDM4C:p.H217R carriers, and found that reduced H3K9me3 at TSSs weakly associates with increased gene expression. Interestingly, genes with increased H3K9me3 levels at their TSS did not have globally decreased expression compared with genes with no change in H3K9me3 levels. Thus, increased H3K9me3 at TSSs does not seem to globally repress gene expression in KDM4C:p.H217R carriers.

KDM4C associates with EZH2 and their binding sites overlap. Full EZH2-associated gene repression requires the co-occupation of *KDM4C* and EZH2 at gene promoters.⁷ When we analysed the genes with the highest positive and negative log₂FCs of H3K9me3 ChIP-seq peaks at their transcription start sites (ie, sites and genes that are likely to be occupied by dysfunctional *KDM4C* and dysregulated through aberrant H3K9 methylation), EZH2 was one of the most significant upstream regulators according to IPA. Thus, KDM4C:p.H217R may also affect the interaction between *KDM4C* and EZH2. We further examined expression changes of genes with differential H3K9me3 levels at their TSS with IPA, and identified predicted activation of upstream regulator PLZF. Our findings raise the possibility that TSSs with dysregulated H3K9me3 levels in KDM4C:p.H217R carriers are regulated by EZH2 and their expression changes, as predicted through IPA, point to activation of its interaction partner PLZF.

Our data suggest that KDM4C:p.H217R drives tumourigenesis in the studied family by perturbing the demethylase and transcriptional regulator functions of *KDM4C* carried out by the JmjC domain. Multiple layers of data support this conclusion, and genetic validation of the finding in other multi-cancer families is an important future goal. *KDM4C*:p.H217R causes chromatin accessibility changes at H3K9me3-marked loci as detected with ATAC-seq and increased H3K9me3 levels at TSSs. EZH2 was identified as an upstream regulator of genes with dysregulated H3K9me3 levels at TSS, and increased PLZF activity was detected by both differentially expressed genes and genes with changes in H3K9me3 levels at their TSS. ATAC, ChIP and RNA-seq were performed using EBV-transformed lymphoblastoid cells derived from normal blood rather than tumour tissue. Even so, the detected difference in chromatin accessibility between KDM4C:p.H217R carrier and control cells is striking. The fact that these changes in chromatin conformation are already present in normal lymphoblastoid cells from mutation carriers strongly supports a role for *KDM4C*:H217R in tumour susceptibility. *KDM4C* has been detected in all tissue types and has low tissue specificity. It is thus likely to play a central role in most tissues, which would explain the multi-cancer phenotype observed in the family.

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Contributors RK and ID designed the study and performed initial variant analyses and screenings. MR and DB performed ATAC and ChIP-seq experiments. MR and EK analysed ATAC and ChIP-seq data. MR and AK analysed RNA-seq data. ID and MR performed pathway analyses. RK performed structural dynamics predictions. MH provided the samples. LAA supervised the study. RK, ID and MR wrote the manuscript. All authors read and approved the final manuscript.

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Data availability statement Data are available on reasonable request. All data relevant to the study are included in the article or uploaded as supplementary information. Data that potentially allow identification of individuals must be protected and thus, sequencing data produced in this study cannot be deposited to public databases. Roadmap epigenomics ChIP-seq and DNase hotspot data provided in LOLA Core and Extended databases was downloaded from <http://cloud.databio.org/regiondb/>.

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Supplemental methodology

ATAC-seq procedure

ATAC-seq was performed with Omni-ATAC protocol for three KDM4C:p.H217R-carrier and four control lymphoblastoid cell lines. All used cell lines had low and similar estimated passage numbers (supplemental table 1). 50 000 nuclei were used in a transposition reaction, and ATAC was simultaneously performed in triplicate for each sample. DNA fragments were pooled together after transposition and purified with Zymo DNA clean and Concentrator-5 kit (Nordic BioSite, Cat. No. D4014). Libraries were amplified by PCR and quantified by qPCR (KAPA library quant. kit, Illumina, Cat. No. KK4824). Quality was measured with TapeStation 2200 (Agilent Technologies). ATAC libraries were sequenced at Macrogen with the HiSeq 4000 system (Illumina, San Diego, CA) and 100 bp paired-end sequencing. 80 million paired-end reads were achieved for each sample.

Supplemental Table 1. Estimated passage numbers of used cell lines.

Cell line	Estimated passage
Case III:1 - H217R carrier	8
Case III:3 - H217R carrier	6
Case IV:1 - H217R carrier	5
Control1 - non-carrier	8
Control2 - non-carrier	8
Control3 - non-carrier	10
Control4 - non-carrier	10

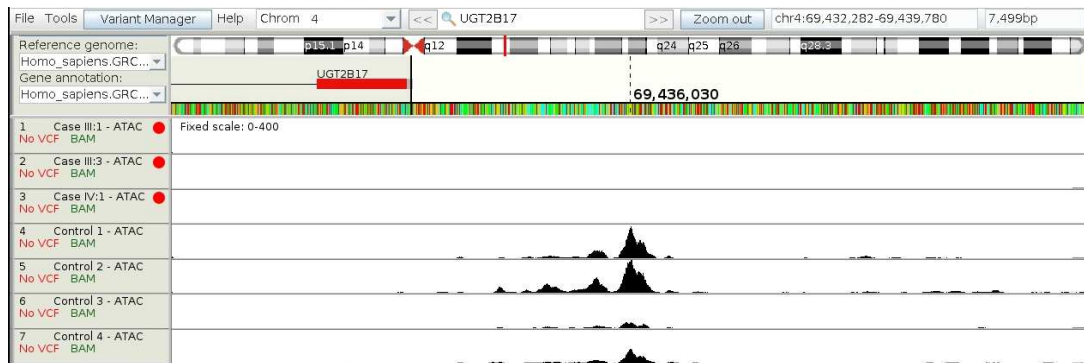
Raw sequencing reads were trimmed of sequencing adapters and bad quality bases with cutadapt version 1.16 of Trim Galore version 0.4.5. We used default parameters except for -q,

which was 30. Bowtie 2 version 2.1.0 was used to map trimmed reads to the reference genome hs37d5 (see supplemental figure 1 below for representative locus of the ATAC-seq data tracks). Samtools version 1.8 was used to remove PCR duplicates and reads with mapping quality below 20, and to count reads mapping to the mitochondrial genome. Fixed-width peaks were called from reads mapping to autosomes and the X chromosome with macs2 version 2.1.2 callpeaks command and parameters “--shift 75 --extsize 150 --nomodel --call-summits --nolambda --keep-dup all -p 0.01”. Peak summits were extended 250 bp in both directions, and ENCODE blacklisted genomic regions [1] were removed.

Merged reproducible peak sets for samples were generated as described in [2], resulting in non-overlapping peaks present in at least two samples with peak scores ≥ 5 . To calculate Tn5 insertions indicating chromatin accessibility, Tn5 insertion sites in paired-end read alignments in all samples were corrected to Tn5 offset (“+” stranded +4 bp, “-” stranded -5 bp) [3], and insertion sites in merged reproducible peaks were counted.

Differential accessibility between KDM4C:p.H217R carriers and controls was calculated with DESeq2 version 1.26.0 in R version 3.6.1 with default settings and Wald statistics. Differentially accessible regions (DARs) were required to have a false discovery rate (FDR) ≤ 0.05 . Annotation of DARs was performed with HOMER annotatePeaks.pl against hg19 v6.4 RefSeq database [4]. The Locus Overlap Analysis (LOLA) R package [5] version 1.16.0 was used to detect enrichment of histone modification loci separately for more and less accessible regions over the merged reproducible peak set that was used as the background set of regions. More specifically, the Roadmap Epigenomics Project [6] histone modification data of cells with anatomy=blood (supplemental table 2) were used as a reference Database,

more or less accessible regions as UserSet, and all merged reproducible peaks as UserUniverse. Results were visualized with ggplot2 version 3.2.1 in R version 3.6.1.



Supplemental Figure 1. Representative locus of ATAC-seq raw read data tracks.

Supplemental Table 2

E029	Primary monocytes from primary blood
E030	Primary neutrophils from primary blood
E031	Primary B cells from cord blood
E032	Primary B cells from primary blood
E033	Primary T cells from cord blood
E034	Primary T cells from primary blood
E035	Primary haematopoietic stem cells (HSCs)
E036	Primary HSCs short term culture
E037	Primary T helper memory cells from primary blood
E038	Primary T helper naive cells from primary blood
E039	Primary T helper naive cells from primary blood
E040	Primary T helper memory cells from primary blood

E041	Primary T helper cells PMA-I stimulated
E042	Primary T helper 17 cells PMA-I stimulated
E043	Primary T helper cells from primary blood
E044	Primary T regulatory cells from primary blood
E045	Primary T cells effector/memory enriched (primary blood)
E046	Primary natural killer cells from primary blood
E047	Primary T CD8+ naive cells from primary blood
E048	Primary T CD8+ memory cells from primary blood
E050	Primary HSCs G-CSF-mobilized female
E051	Primary HSCs G-CSF-mobilized male
E062	Primary mononuclear cells from primary blood
E115	Dnd41 T cell leukaemia
E116	GM12878 lymphoblastoid
E123	K562 leukaemia
E124	Monocytes-CD14+ RO01746

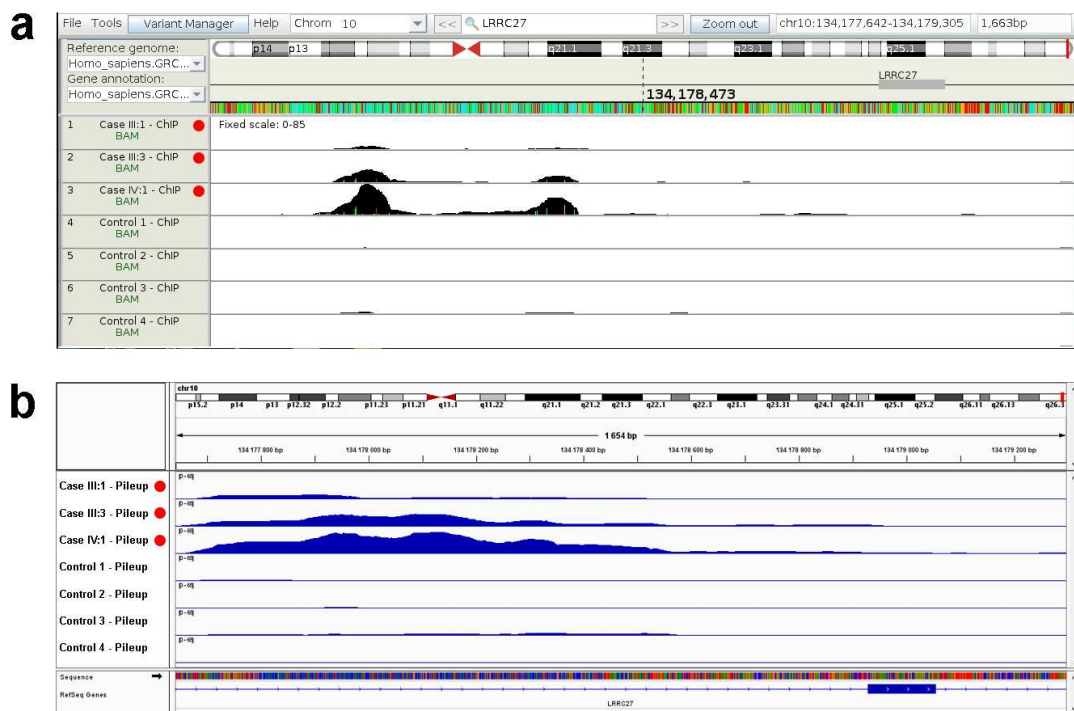
ChIP-seq procedure

10 million cells were crosslinked with 1% formaldehyde for 10 minutes at room temperature, and the reaction stopped by adding 0.125 M glycine. Crosslinked cells were washed three times with ice-cold PBS, and then resuspended in ice-cold lysis buffer (5 mM PIPES pH 8.0, 85 mM KCl, 0.5% NP-40, 1X protease inhibitor cOmplete). The cells were transferred into Dounce tissue grinder and thoroughly homogenized with pestle B, and then resuspended in 800 μ l RIPA buffer (1% NP-40, 0.5% sodium deoxycholate, 0.1% SDS, 1mM EDTA,

140mM NaCl, 10mM Tris-HCl pH 8, 1X protease inhibitor cOmplete). The DNA was sonicated to an average fragment length of 200-500 bp using Sonicator Misonix S-4000 with the following parameters: amplitude 33%, pulse-on time 30", pulse-off time 60", and total sonication time 10 minutes. The samples were then centrifuged 18 000 g for 20 minutes at 4°C, and the supernatants collected. 50 µl of Dynabeads protein-G (Thermo Fisher Scientific, cat 10003D) were washed with 0.05% Tween-20 in PBS, and 7 µg of antibody against H3K9me3 (Active Motif 39062, lot 09919003) was incubated with the beads for 10 minutes at room temperature with rotation. 50 µl of chromatin was removed for input control, and 50 µl for fragmentation control and quantification. 25 µg of chromatin was incubated with antibody-coated beads overnight at 4°C with rotation. Samples were washed twice with low salt washing buffer (0.1% SDS, 1% Triton X 100, 2 mM EDTA, 20 mM Tris-HCl pH 8.0, 150 mM NaCl), twice with high salt washing buffer (0.1% SDS, 1% Triton X 100, 2 mM EDTA, 20 mM Tris-HCl pH 8.0, 500 mM NaCl), once with LiCl washing buffer (20 mM Tris-HCl pH 8.0, 500 mM LiCl, 1 mM EDTA, 1% NP-40, 1% Sodium deoxycholate) and twice with 1X TE, and eluted from antibody-coated beads by incubating for one hour in 200 µl of IP elution buffer (1x TE (pH 7.5), 1% SDS, 0.1 M NaHCO₃) at 65°C with 1300 rpm shaking. Chromatin crosslinks were reversed by incubating overnight at 65°C, and the DNA fragments were purified with the phenol-chloroform purification method. Samples were prepared and sequenced at Macrogen using the TruSeq DNA Sample prep Kit (Illumina, San Diego, CA), HiSeq 2500 system (Illumina, San Diego, CA), and 100 bp single-end sequencing. Approximately 23 million single-end reads were obtained for each sample.

Raw sequencing reads were adapter and quality trimmed with cutadapt version 1.16 in Trim Galore version 0.5.0 using default parameters. Bowtie2 version 2.3.4.1 was used to align trimmed reads to reference genome hs37d5 and reads with a mapping quality below 20 were

filtered out with samtools version 1.7. Macs2 version 2.1.2 was used to call broadPeaks (see supplemental figure 2 below for representative locus of the ChIP-seq data tracks). We used default parameters with the exception of the FDR cutoff, which was set to 0.01 for narrowPeak regions. Peaks in other chromosomes than autosomes, and ENCODE blacklisted genomic regions [1] were removed.



Supplemental Figure 2. Representative locus of ChIP-seq data tracks. a) Raw ChIP-seq reads. b) ChIP-seq fragment pileup data.

DiffBind version 2.14.0 in R version 3.6.3 was used to calculate the binding affinity of H3K9me3. Read counts in broadPeaks peaks were calculated with the dba.count -function with parameters minOverlap=2 and summits=250, to include peaks present in at least two samples in the analysis. The concentration of H3K9me3 binding in peaks in both cases and controls was calculated with the dba.analyze -function and extracted with the dba.report -function with parameter th=1. Bedtools intersect with parameter -f 0.2 was used to retrieve

H3K9me3 peaks overlapping more accessible and less accessible regions. The nearest transcription start site (TSS) was annotated with HOMER `annotatePeaks.pl` against hg19 v6.4 RefSeq database [4]. Ggplot2 version 3.2.1 in R version 3.6.1 was used in visualization. Of the peaks that were located at transcription start sites (TSS +/-1 kbp), 500 peaks with the most positive log2 fold changes (log2FCs) and 500 peaks with the most negative log2FCs were annotated, and genes were submitted to IPA pathway analysis. Mann-Whitney U test with alternative hypothesis “greater” in R version 3.6.1 was used to compare RNA-seq log2FCs of TSS peaks with less H3K9me3 and no change in H3K9me3 levels.

H3K9me3 concentration for all reproducible open chromatin regions (n=214,762) was calculated with the `dba.count` -function as described above, but without `minOverlap` and `summits` -parameters. Open chromatin regions were annotated with HOMER `annotatePeaks.pl` against hg19 v6.4 RefSeq database and visualized with ggplot version 3.2.1 (in R version 3.6.1). We defined TSSs based on HOMER annotation +/- 1 kbp.

Exome and whole-genome sequencing

Samples from patients III:1 and III:3 were prepared for exome sequencing with the NEBNext DNA sample Prep Reagent Set 1 (New England Biolabs, Ipswich, MA) and SureSelect Human All Exon Kit V1 (Agilent, Santa Clara, CA) capture kit. We used the SureSelect^{XT} Target Enrichment System for Illumina Paired-End Sequencing Library v1.2 protocol and modified multiplex primers. The ten samples from the separate PTC affected families were prepared for exome-sequencing using the KAPA Hyper Prep Kit (Kapa Biosystems, Wilmington, MA) and SeqCap EZ Exome + UTR (Roche Nimblegen) target enrichment. We used 500-1000 ng of DNA sheared with Covaris S220 Focused-ultrasonicator (Covaris, Woburn, MA) to an average size of 350 bp. Paired-end sequencing (size) was carried out

with Illumina HiSeq 2000 or 4000 (Illumina, San Diego, CA) at Karolinska High Throughput Center.

Whole-genome sample preparation and sequencing was performed by Complete Genomics (CG; Mountain View, CA) using the company's proprietary "DNA nanoball" sequencing technology [7].

Sanger sequencing

Segregation of chosen variants was studied by Sanger sequencing. In addition, the full *KDM4C* JmjC domain of all cases in the validation set was Sanger sequenced. Primers were designed using Primer3web version 4.0.0 (<http://primer3.ut.ee/>), and capillary sequencing was performed at the Institute for Molecular Medicine Finland (FIMM) using the BigDye v.3.1 sequencing reaction and ABI3730xl DNA Analyzer electrophoresis (Applied Biosystems, Foster City, CA). Sequences were analyzed using MutationSurveyor and FinchTV 1.5.

RNA-seq

RNA was extracted from cells using Trizol. Residual DNA was removed with DNase and the samples were cleaned with Qiagen RNeasy MinElute cleanup kit (Qiagen, Hilden, Germany). Sample quality was evaluated with the Agilent 2200 TapeStation system (Agilent Technologies, Santa Clara, CA). Total RNA libraries were prepared and sequenced at Macrogen Europe using TruSeq Stranded Total RNA LT Sample Prep Kit Human/Mouse/Rat (Illumina, San Diego, CA), the Novaseq 6000 platform (Illumina, San Diego, CA), and paired-end sequencing with 100 bp read length. Sequencing was carried out in a single batch. TrimGalore (v0.5.0) was used for quality and adapter trimming of sequenced reads. Reads

were aligned to reference genome (GRCh37) with HISAT2 (v2.1.0). The aligned reads were assembled to transcripts with StringTie (v1.3.4) and reads in each gene were counted with StringTie's prepDE.py [8]. Differential expression was analyzed with DESeq2 [9] version 1.28.0 in R version 4.0.0 for genes that have at least 10 reads in at least 2 samples (n=20413). Visualizations were made with ggplot2 version 3.3.0 in R version 4.0.0.

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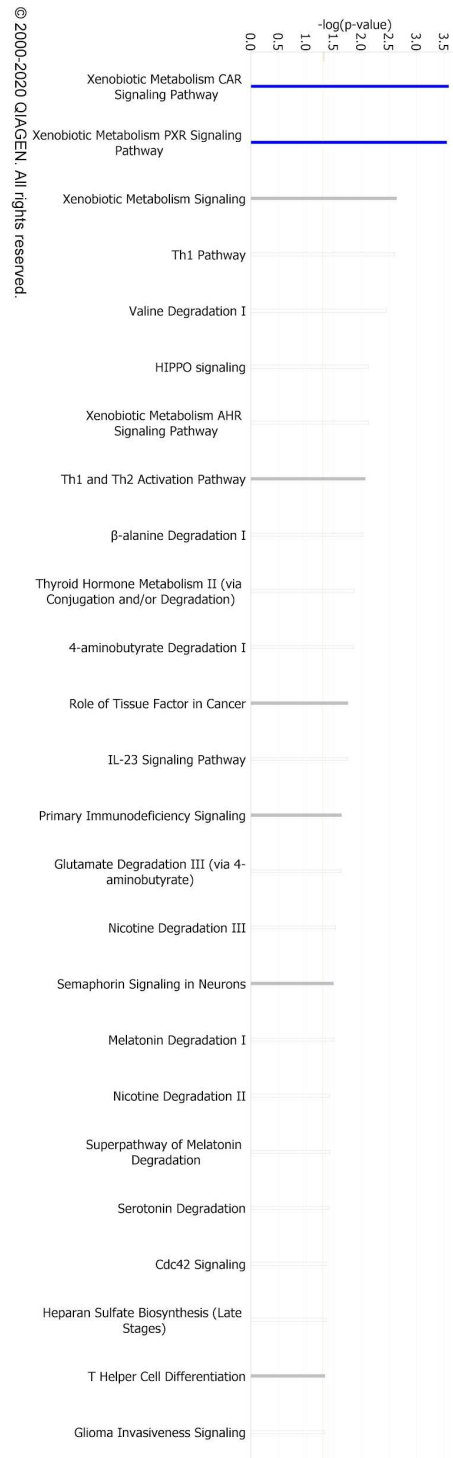
Supplemental Table 3

Ensembl ID	log2FoldChange	padj	id
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ENSG00000229212	2.20288697029167	1.88991800486822e-07	AC044860.1
ENSG00000137766	2.66434884162355	1.16662506853464e-06	UNC13C
ENSG00000130684	1.59184880966292	1.16662506853464e-06	ZNF337
ENSG00000117791	3.74056301206662	2.39386460419312e-06	MTARC2
ENSG0000004478	0.749571410723528	5.44925233947564e-06	FKBP4
ENSG00000144908	5.90704697881703	6.26525750635082e-06	ALDH1L1
ENSG00000272741	8.54393226252667	6.26525750635082e-06	AC069257.3
ENSG00000182742	1.18027319314658	4.36767132032906e-05	HOXB4
ENSG00000272787	8.26330434654867	5.71525707729047e-05	AC253536.6
ENSG00000118407	4.19205869980811	0.000119262469837647	FILIP1
ENSG00000115963	5.71820217117582	0.000141233759147227	RND3
ENSG00000162817	5.39961728560502	0.000154833957024194	C1orf115
ENSG00000225210	9.05390813051622	0.000328756961806509	DUXAP9
ENSG00000141698	0.83422778259281	0.000328756961806509	NT5C3B
ENSG00000144712	2.38366831220109	0.000728494474335354	CAND2
ENSG00000186073	0.745713782076132	0.00107415479101408	C15orf41
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ENSG00000155307	0.793760804355827	0.00223452728513582	SAMSN1
ENSG00000244306	5.43402570742492	0.00559669130324909	DUXAP10
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ENSG00000152229	1.32283871393996	0.00748919164338249	PSTPIP2
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ENSG00000231671	2.02961447815055	0.0218457466191894	LINC01307
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ENSG00000171421	1.08732471500962	0.0218457466191894	MRPL36
ENSG00000116771	0.712968605902296	0.0225687874301031	AGMAT
ENSG00000188933	2.30751957208437	0.0237203784997744	USP32P1
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ENSG00000174837	1.62409471677911	0.0315045882666771	ADGRE1
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ENSG00000226278	-10.8414323986668	6.12275016609213e-14	PSPHP1
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ENSG00000155792	-3.13473263562643	8.02932047225024e-08	DEPTOR
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ENSG00000107864	-1.17856732431726	0.0362895943323533	CPEB3
ENSG00000185278	-0.513351747033674	0.0363341777278497	ZBTB37
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ENSG00000108091	-0.742748518065348	0.0424235423001958	CCDC6
ENSG00000196177	-0.566970733366917	0.0424235423001958	ACADSB
ENSG00000259634	-4.57675210725702	0.04388680603295	NA
ENSG00000100290	-2.21656711844967	0.0442848775354141	BIK
ENSG00000221978	-0.497132887087282	0.0467040860928671	CCNL2
ENSG00000128016	-0.999482413306492	0.0476023043028477	ZFP36

Supplemental Figure 3



Supplemental Table 4

Upstream Regulator	Expr Log Ratio	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules in Dataset	Mechanistic Network
Upstream Regulator							© 2000-2020 QIAGEN. All rights reserved.
TBX21		transcription regulator		0.205555556	3.37E-04	HAVCR2,ICOS,IL12RB2,TNFSF11	
IL7		cytokine		0.273611111	7.11E-04	DARS2,HAVCR2,ICOS,KLF2,TNFSF11	
IL15		cytokine		0.533333333	1.31E-03	DARS2,HAVCR2,ICOS,IL12RB2,ITGB5,KLF2,TNFSF11,ZFP36	
methylselenic acid		chemical reagent			1.35E-03	ITGB5,NCOA1,RND3,SH3BP5,UGT2B15,UGT2B17	
CD24		other			1.81E-03	BIK,HS2ST1,NRIP1,ZNF302	
CD3 group		group			2.10E-03	HAVCR2,KLF2,PLA2G4C	
NCOR2		transcription regulator			2.58E-03	KLF2,UGT2B15,UGT2B17	
OSMR		transmembrane receptor			3.43E-03	ADGRE1,TNFSF11,ZFP36	
NEUROG1		transcription regulator			3.75E-03	C1orf115,MTARC2,RIPOR2	
DMD		other			3.92E-03	CENPM,CFL2,PSTPIP2,RAP1GAP2,RIPOR2	
CSNK2A1		kinase			4.07E-03	KLF2,ZFP36	
U0126		chemical - kinase inhibitor		-0.692	4.38E-03	ADGRE1,ALDH1L1,ICOS,ITGB5,RND3,SIRPA,TNFSF11,ZFP36	
FANCC		other			4.44E-03	ANKRD6,FHL2,RND3	
diacyl lipopeptide		chemical - other			4.78E-03	TNFSF11	
UBAP1		other			4.78E-03	DEPTOR	
USP49		peptidase			4.78E-03	FKBP4	
ASB11		transcription regulator			4.78E-03	BIK	
CHMP4C		other			4.78E-03	DEPTOR	
CXCR5		G-protein coupled receptor			4.78E-03	TNFSF11	
mir-219		microRNA			4.78E-03	ICOS	
CUL5		ion channel			4.78E-03	BIK	
Cr3+		chemical reagent			4.78E-03	TNFSF11	
ZBTB16 (PLZF)		transcription regulator	Activated	2.000	4.97E-03	CD180,ICOS,KLF2,TNFSF11	
IL27		cytokine		0.502083333	5.35E-03	ADGRE1,ICOS,IL12RB2,TNFSF11	
SFTPA1		transporter			6.47E-03	AMOT,KLF2,ST3GAL1	
arotinoid acid		chemical toxicant			6.84E-03	FOLR2,TNFSF11	
ESR1		ligand-dependent nuclear receptor		-1.320	7.11E-03	CENPM,CFL2,FKBP4,HNRNPDI,ICA1,KLHL13,LATS2,NCOA1,PLA2G4C,RND3	
MAP2K2		kinase			7.36E-03	ALDH1L1,ICOS	
LTF		peptidase			7.36E-03	SKP1,TNFSF11	
CD47		transmembrane receptor			7.90E-03	IL12RB2,TNFSF11	
vismodegib		chemical drug			8.46E-03	ADGRE1,TNFSF11	
PRKDC		kinase			9.04E-03	UGT2B15,UGT2B17	
TCF3		transcription regulator		-1.342	9.12E-03	ARHGEF18,BIK,ICOS,INTS13,KLF2,RIPOR2	
ipilimumab		biologic drug			9.55E-03	ICOS	
FBLIM1		other			9.55E-03	TNFSF11	
STAM		other			9.55E-03	DEPTOR	
BAZ1A		other			9.55E-03	TNFSF11	
UBE2M		enzyme			9.55E-03	ETFA	
TRIM54		other			9.55E-03	FHL2	
potassium superoxide		chemical toxicant			9.55E-03	IL12RB2	
ADAM10		peptidase			1.04E-02	ABAT,ICOS,TSPAN15	
PDPK1		kinase			1.09E-02	KLF2,TNFSF11	
PD 0325901		chemical drug			1.15E-02	DEPTOR,KLF2	
HDL-cholesterol		complex			1.35E-02	DEPTOR,HNRNPDI	
CSF2		cytokine		-0.563	1.38E-02	CD180,FOLR2,HOXB4,ICOS,ITGB5,RIPOR2,ZFP36	
TCF12		transcription regulator			1.40E-02	ICOS,INTS13,KLF2	
des-Arg(10)-kallidin		chemical reagent			1.43E-02	TNFSF11	
ITGBL1		other			1.43E-02	TNFSF11	
YY1AP1		other			1.43E-02	LATS2	
methylprednisolone		chemical drug		0.295833333	1.44E-02	ABAT,FKBP4,ITGB5,RND3,SIRPA,UGT2B17,ZFP36	
F7		peptidase			1.65E-02	RND3,ZFP36	
IL12 (complex)		complex		0.680555556	1.78E-02	ADGRE1,HAVCR2,ICOS,IL12RB2	
KDM1A		enzyme			1.78E-02	IQGAP2,KLF2,LATS2,ZBTB20	
LRP4		other			1.90E-02	TNFSF11	
LBX1		transcription regulator			1.90E-02	FHL2	
SIRT4		enzyme			1.90E-02	ADGRE1	
AKR1C3		enzyme			1.90E-02	FKBP4	
nintedanib		chemical drug			1.90E-02	RND3	
NEDD8		enzyme			1.90E-02	ETFA	
CHRM4		G-protein coupled receptor			1.90E-02	ITGB5	
GGT1		enzyme			1.90E-02	TNFSF11	
PHC1		transcription regulator			1.90E-02	HOXB4	
SIX4		transcription regulator			1.90E-02	DEPTOR	
selinexor		chemical drug			1.90E-02	HOXB4	
elcatonin		biologic drug			1.90E-02	TNFSF11	
vitamin K		chemical - endogenous mammalian			1.90E-02	TNFSF11	
DP-001		chemical drug			1.90E-02	TNFSF11	
paraquat		chemical toxicant			1.95E-02	ADGRE1,KLF2,UNC13C	
IL12A		cytokine			2.05E-02	ICOS,IL12RB2	
ICOS	0.857638889	transmembrane receptor			2.05E-02	ICOS,KLF2	

cyclosporin A	biologic drug	0.092	2.12E-02	HS2T1,ICOS,IL12RB2,IQGAP2,MARF1,TNFSF11
IL23	complex		2.13E-02	ICOS,TNFSF11
IgG	complex	0.000	2.17E-02	FOLR2,IL12RB2,RND3,ZFP36
MIR17HG	other		2.22E-02	HEG1,HOXB4,KLF2
IL4	cytokine	0.6201388889	2.23E-02	ADGRE1,CPFB3,DARS2,ICOS,IL12RB2,PLA2G4C,SAMSN1,SIRPA,TNFSF11,ZFP36
FGF1	growth factor		2.27E-02	ADGRE1,UGT2B15,UGT2B17
13,14-dihydro-15-ketoprostaglandin D2	chemical - endogenous mammalian		2.37E-02	TNFSF11
olmesartan	chemical drug		2.37E-02	TNFSF11
FAF1	other		2.37E-02	TNFSF11
PPP1R13B	phosphatase		2.37E-02	LATS2
N-lauroyl-L-phenylalanine	chemical reagent		2.37E-02	KLF2
UBA3	enzyme		2.37E-02	ETFA
perfluorodecanoic acid	chemical toxicant		2.37E-02	TSPO
fish oils	chemical drug		2.39E-02	NCOA1,NRIP1
galactosylceramide-alpha	chemical reagent		2.57E-02	ICOS,IL12RB2
FHL2	transcription regulator	0.2604166667	2.57E-02	ADGRE1,FHL2
WBP2	transcription regulator		2.76E-02	ALPK2,SLC10A3,TEF
Am 580	chemical toxicant		2.76E-02	FOLR2,TNFSF11
CD28	transmembrane receptor	0.26875	2.83E-02	HAVCR2,ICOS,IL12RB2,KLF2,TNFSF11
SERCA	group		2.84E-02	ZFP36
MN1	other		2.84E-02	TNFSF11
SNHG15	other		2.84E-02	KLF2
CD27	transmembrane receptor		2.84E-02	BIK
HOXB1	transcription regulator		2.84E-02	HOXB4
CXCL5	cytokine		2.84E-02	TNFSF11
mir-28	microRNA		2.84E-02	HAVCR2
F13A1	enzyme		2.84E-02	TNFSF11
leukotriene D4	chemical - endogenous mammalian		2.86E-02	KLF2,ZFP36
pyridaben	chemical toxicant		2.86E-02	KLF2,UNC13C
FOSL2	transcription regulator		2.86E-02	FOLR2,UGT2B15
IFNA2	cytokine		2.94E-02	ADGRE1,IL12RB2,RIPOR2,SAMSN1
EBI3	cytokine		2.95E-02	HAVCR2,IL12RB2
di(2-ethylhexyl) phthalate	chemical toxicant		2.95E-02	TSPO,ZFP36
MSC	transcription regulator		3.05E-02	FCRL5,HAVCR2
HNF1A	transcription regulator		3.07E-02	FRK,TEF,TSC22D2,UGT2B15,UGT2B17,ZBTB20
RARA	ligand-dependent nuclear receptor	0.000	3.07E-02	CENPM,FOLR2,HNRNPD,HOXB4,IL12RB2
TICAM1	other		3.19E-02	CCNL2,PSTPIP2,TNFSF11
ZAP70	kinase		3.25E-02	ETFA,HS2T1
triamcinolone hexacetonide	chemical drug		3.30E-02	TNFSF11
PRCP	peptidase		3.30E-02	KLF2
PDCD10	other		3.30E-02	KLF2
ZNF521	transcription regulator		3.30E-02	TNFSF11
SDC4	other		3.30E-02	KLF2
SF3B2	other		3.30E-02	HOXB4
HIVEP3	transcription regulator		3.30E-02	TNFSF11
ITGB8	other		3.30E-02	ITGB5
PHC2	other		3.30E-02	HOXB4
MFAP2	other		3.30E-02	TNFSF11
SLC19A1	transporter		3.30E-02	SKP1
CB-5083	chemical drug		3.30E-02	BIK
diazepam	chemical drug		3.30E-02	TSPO
ASARM-PO4	chemical reagent		3.30E-02	TNFSF11
phosphatidic acid	chemical - endogenous mammalian		3.30E-02	TNFSF11
TCR	complex	0.19375	3.39E-02	ICOS,IL12RB2,KLF2,MARF1,TNFSF11
PTF1A	transcription regulator		3.46E-02	ABAT,LAMP5
CSF1	cytokine		3.47E-02	FHL2,FOLR2,ITGB5,KLF2
KITLG	growth factor		3.47E-02	BIK,FRK,HOXB4,SAMSN1
IL6ST	transmembrane receptor		3.67E-02	ICOS,TNFSF11
ATP5IF1	other		3.67E-02	ACADSB,ETFA
maneb	chemical toxicant		3.67E-02	KLF2,UNC13C
Calcineurin B	group		3.76E-02	ICOS
RC3H2	enzyme		3.76E-02	ICOS
parathyroid hormone-related protein	biologic drug		3.76E-02	TNFSF11
TTN	kinase		3.76E-02	FHL2
APCS	other		3.76E-02	SIRPA
FBXO2	enzyme		3.76E-02	SKP1
LY86	other		3.76E-02	CD180
PIWIL2	enzyme		3.76E-02	LATS2
filgotinib	chemical drug		3.76E-02	TNFSF11
TNRC6A	other		3.76E-02	LATS2
PBX2	transcription regulator		3.76E-02	UGT2B17
PCBP1	translation regulator		3.76E-02	HNRNPD

MM-401	chemical reagent		3.76E-02	DEPTOR
RABL6	other		3.99E-02	ABAT,BIK
CD3E	transmembrane receptor		3.99E-02	ICOS,TNFSF11
TRIM28	transcription regulator		4.10E-02	KLF2,ZNF302
Igm	complex		4.21E-02	BIK,SAMSN1
MYD88	other		4.23E-02	CCNL2,PSTPIP2,SH3BP5,TNFSF11
abatacept	biologic drug		4.23E-02	ICOS
TGFBR	group		4.23E-02	TNFSF11
CK2	complex		4.23E-02	ZFP36
TFCP2L1	transcription regulator		4.23E-02	SIRPA
CPEB4	other		4.23E-02	ZBTB20
GUSB	enzyme		4.23E-02	EXOC4
PANDAR	other		4.23E-02	BIK
cyclopentenone	chemical reagent		4.23E-02	TNFSF11
CTLA4	transmembrane receptor		4.32E-02	ICOS,IL12RB2
PRKAG3	other		4.55E-02	KLF2,NRIP1,ZFP36
FOXA1	transcription regulator		4.55E-02	FKBP4,NRIP1,UGT2B17
ZFPM1	transcription regulator		4.67E-02	IL12RB2,RGS13
MEF2D	transcription regulator		4.67E-02	KLF2,ZFP36
ZFAS1	other		4.68E-02	KLF2
IL20	cytokine		4.68E-02	TNFSF11
miR-346 (and other miRNAs w/seed GUCUGCC)	mature microRNA		4.68E-02	NRIP1
NCF4	enzyme		4.68E-02	ST3GAL1
HOXB3	transcription regulator		4.68E-02	HOXB4
PHEX	peptidase		4.68E-02	TNFSF11
PIM3	kinase		4.68E-02	IL12RB2
CXCL13	cytokine		4.68E-02	TNFSF11
PCBP2	other		4.68E-02	HNRNPD
gossypol	chemical drug		4.68E-02	NCOA1
KDM8	enzyme		4.78E-02	UGT2B15,UGT2B17
PAX7	transcription regulator		4.78E-02	DEPTOR,FRK
E. coli B4 lipopolysaccharide	chemical toxicant	1.000	4.81E-02	BIK,SAMSN1,ST3GAL1,TSPO
raloxifene	chemical drug		4.90E-02	BIK,NCOA1,TNFSF11
NOD2	other		4.90E-02	KLF2,TNFSF11

Supplemental Table 5

Chr	Start	End	Annotation	Distance to TSS (bp)	Nearest Ensembl	Gene Name	Accessibility	Gene Type
chr8	65175164	65175664	intron (NR_038901, intron 2 of 3)	4926	ENSG00000280725	LINC00251	More	ncRNA
chr15	65588969	65589469	intron (NR_045106, intron 9 of 11)	21912	ENSG00000138614	INTS14	More	protein-coding
chr4	124268010	124268510	Intergenic	290174	ENSG00000261083	LINC02516	More	ncRNA
chr11	16772065	16772565	Intergenic	33668	ENSG00000110696	C11orf58	More	protein-coding
chr7	46979753	46980253	Intergenic	-282881	ENSG00000233539	LOC730338	More	ncRNA
chr2	8486298	8486798	Intergenic	97244	ENSG00000236008	LINC01814	More	ncRNA
chr3	95106328	95106828	Intergenic	168315	ENSG00000239589	LINC00879	More	ncRNA
chr12	98812013	98812513	intron (NM_001352203, intron 3 of 10)	82511	ENSG00000185046	ANKS1B	More	protein-coding
chr5	153693007	153693507	intron (NM_000827, intron 8 of 15)	201085	ENSG00000155511	GRIA1	More	protein-coding
chr13	68600062	68600562	Intergenic	285013	ENSG00000281778	LINC00550	More	ncRNA
chrX	19531074	19531574	Intergenic	-16063	ENSG00000180815	MAP3K15	More	protein-coding
chr9	33164685	33165185	intron (NM_001497, intron 1 of 5)	-2013	ENSG00000233554	B4GALT1-AS1	More	ncRNA
chr1	82627245	82627745	Intergenic	-275688	ENSG00000230817	LINC01362	More	ncRNA
chr9	16030428	16030928	Intergenic	222429	ENSG00000205549	C9orf92	More	protein-coding
chr4	14728395	14728895	intron (NR_126435, intron 2 of 6)	159524	ENSG00000248360	LINC00504	More	ncRNA
chr7	32088519	32089019	intron (NM_001322059, intron 3 of 17)	-17333	ENSG00000154678	PDE1C	More	protein-coding
chr4	69917663	69918163	Intergenic	-13155	ENSG00000126545	CSN1S1	More	protein-coding
chr9	38379189	38379689	Intergenic	-13263	ENSG00000137124	ALDH1B1	More	protein-coding
chr11	55339967	55340467	Intergenic	-2984	ENSG00000181961	OR4A16	More	protein-coding
chr1	152595139	152595639	Intergenic	-5273	ENSG00000244057	LCE3C	More	protein-coding
chr3	124307489	124307989	intron (NM_001024660, intron 6 of 59)	-66593	ENSG00000276656	MIR6083	More	ncRNA
chr2	209502730	209503230	intron (NM_001039538, intron 1 of 14)	-76356	ENSG00000078018	MAP2	More	protein-coding
chr19	38704582	38705082	intron (NM_001322033, intron 3 of 20).2	39642	ENSG00000182472	CAPN12	More	protein-coding
chr1	193210165	193210665	intron (NM_024529, intron 11 of 16)	-23802	ENSG00000162630	B3GALT2	More	protein-coding
chr11	11272887	11273387	intron (NM_001363464, intron 9 of 9)	80113	ENSG00000254598	CSNK2A3	More	protein-coding
chr5	6408926	6409426	Intergenic	-30629	ENSG00000133398	MED10	More	protein-coding
chr6	137354922	137355422	Intergenic	-135742	ENSG00000027697	IFNGR1	More	protein-coding
chr17	53737497	53737997	Intergenic	-85180	ENSG00000141200	KIF2B	More	protein-coding
chrX	68139535	68140035	intron (NM_002547, intron 15 of 24)	293710	ENSG00000079482	OPHN1	More	protein-coding
chr5	167578022	167578522	intron (NM_001368145, intron 1 of 26)	4613	ENSG00000145934	TENM2	More	protein-coding
chr16	12707347	12707847	intron (NM_018340, intron 2 of 3)	-12724	ENSG00000264733	MIR4718	More	ncRNA
chr9	113856665	113857165	Intergenic	-19367	ENSG00000157657	ZNF618	More	protein-coding
chr9	110474657	110475157	intron (NM_153366, intron 14 of 47)	104834	ENSG00000165124	SVEP1	More	protein-coding
chr9	129946419	129946919	intron (NM_001363755, intron 6 of 15)	77064	ENSG00000276124	MIR6855	More	ncRNA
chrX	108332566	108333066	intron (NM_001287758, intron 2 of 45)	105606	ENSG00000197565	COL4A6	More	protein-coding
chr3	139899070	139899570	Intergenic	-35865	ENSG00000158258	CLSTN2	More	protein-coding
chr1	168481717	168482217	intron (NR_125956, intron 4 of 4)	13677	ENSG00000228697	LOC101928565	More	ncRNA
chr1	42166493	42166993	Intergenic	-1998	ENSG00000197273	GUCA2A	More	protein-coding
chr22	28393465	28393965	intron (NM_001145418, intron 2 of 22)	-66154	ENSG00000276162	MIR5739	More	ncRNA
chr11	31944033	31944533	Intergenic	97035	ENSG00000254584	LOC100506675	More	ncRNA
chrX	47608960	47608960	intron (NM_006950, intron 1 of 12)	11147	ENSG00000008056	SYN1	More	protein-coding
chr17	21003246	21003746	intron (NM_015276, intron 12 of 12)	39515	ENSG00000124422	USP22	More	protein-coding
chr6	85257175	85257675	Intergenic	132761	ENSG00000234155	LINC02535	More	ncRNA
chr15	57646154	57646654	intron (NR_104370, intron 10 of 11)	54000	ENSG00000263155	MYZAP	More	protein-coding
chr5	117283518	117284018	Intergenic	-131744		LINC00992	More	ncRNA
chr7	95496550	95497050	intron (NM_145872, intron 2 of 2)	10857	ENSG00000005981	ASB4	More	protein-coding
chr14	106626898	106627398	Intergenic	144709	ENSG00000270816	LINC00221	More	ncRNA
chr2	155412620	155413120	Intergenic	714175	ENSG00000162989	KCNJ3	More	protein-coding
chr5	176718050	176718550	Intergenic	-24905	ENSG00000248859	LINC01574	More	ncRNA
chr13	64038493	64038993	intron (NR_145420, intron 1 of 5)	37268	ENSG00000227674	LINC00355	More	ncRNA
chr7	21452081	21452581	intron (NM_003112, intron 3 of 5)	-18727	ENSG00000221783	MIR1183	More	ncRNA
chr14	88631419	88631919	intron (NM_183387, intron 32 of 42)	37249	ENSG00000100722	ZC3H14	More	protein-coding
chr5	1518766	1519266	intron (NM_024830, intron 1 of 13)	4944	ENSG00000153395	LPCAT1	More	protein-coding
chr10	34061472	34061972	Intergenic	-289042	ENSG00000261683	LINC00838	More	ncRNA
chr20	34770211	34770711	intron (NM_001242539, intron 2 of 11)	11943	ENSG00000198646	NCOA6	More	protein-coding
chr9	110521385	110521885	intron (NM_153366, intron 3 of 47)	58106	ENSG00000165124	SVEP1	More	protein-coding
chr14	104230047	104230547	intron (NR_146612, intron 1 of 2)	6713	ENSG00000258913	LINC02691	More	ncRNA
chr12	125996994	125997494	Intergenic	-13870	ENSG00000249267	LINC00939	More	ncRNA
chr10	60828715	60829215	Intergenic	50487	ENSG00000170312	CDK1	More	protein-coding
chr18	61527029	61527529	intron (NM_031891, intron 6 of 11)	193849	ENSG00000101542	CDH20	More	protein-coding
chr6	25744141	25744641	Intergenic	-10308	ENSG00000146039	SLC17A4	More	protein-coding
chr3	8566637	8567137	intron (NM_014583, intron 5 of 5)	-4895		LINC00312	More	ncRNA
chr3	115510999	115511499	Intergenic	-112261	ENSG00000172020	GAP43	More	protein-coding
chr16	14109787	14110287	intron (NM_001365418, intron 3 of 5)	38718	ENSG00000186260	MRTFB	More	protein-coding
chr7	21384905	21385405	Intergenic	-42928	ENSG00000105866	SP4	More	protein-coding
chr9	113681082	113681582	Intergenic	87203	ENSG00000138835	RGS3	More	protein-coding
chr14	89863766	89864266	intron (NM_001284269, intron 5 of 5)	90520	ENSG00000140025	EFCAB11	More	protein-coding
chr6	143620479	143620979	intron (NM_014721, intron 1 of 12)	12549	ENSG00000112419	PHACTR2	More	protein-coding
chr1	179768130	179768630	intron (NM_001329719, intron 1 of 4)	25089	ENSG00000143340	FAM163A	More	protein-coding
chr9	113826518	113827018	Intergenic	-49514	ENSG00000157657	ZNF618	More	protein-coding
chr3	99137461	99137961	Intergenic	-236016	ENSG00000057019	DCBLD2	More	protein-coding
chr5	172957476	172957976	intron (NM_026682, intron 2 of 3)	-1003	ENSG00000037241	RPL26L1	More	protein-coding
chr3	176304864	176305364	Intergenic	60563	ENSG00000221737	MIR5481	More	ncRNA
chr18	4252448	4252948	intron (NM_001242761, intron 1 of 11)	-11904	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chrX	13284792	13285292	intron (NR_146309, intron 1 of 1)	18410		LINC02154	More	ncRNA
chr17	69917905	69918405	Intergenic	-43552	ENSG00000237560	LINC01497	More	ncRNA
chr10	82216625	82217125	intron (NM_001165973, intron 2 of 10)	16045	ENSG00000225738	NRG3-AS1	More	ncRNA
chr12	328971	329471	intron (NM_001042603, intron 13 of 27)	60099	ENSG00000073614	KDM5A	More	protein-coding
chr4	190935776	190936276	Intergenic	762252	ENSG00000260596	DUX4	More	protein-coding
chr13	81714509	81715009	Intergenic	-487776	ENSG00000260094	LINC00564	More	ncRNA
chr21	37117876	37118376	intron (NM_003316, intron 11 of 45)	35179	ENSG00000182670	TTC3	More	protein-coding
chr15	49189073	49189573	intron (NM_002044, intron 1 of 9)	19076	ENSG00000156958	GALK2	More	protein-coding

chr3	172227737	172228237	intron (NM_001135095, intron 4 of 25)	187456	ENSG00000075420	FNDC3B	More	protein-coding
chr10	10726860	10727360	intron (NM_001326317, intron 2 of 14)	67804	ENSG00000225383	SFTA1P	More	pseudo
chr6	22955005	22955505	Intergenic	-237331		LOC105374972	More	ncRNA
chr16	66780546	66781046	intron (NM_001136505, intron 9 of 18)	20824	ENSG00000249961	TERB1	More	protein-coding
chr3	155754285	155754785	Intergenic	-9464	ENSG00000114805	PLCH1	More	protein-coding
chr15	74504777	74505277	Intergenic	-36150	ENSG00000179361	ARID3B	More	protein-coding
chr6	71089965	71090465	Intergenic	-133155	ENSG00000112309	B3GAT2	More	protein-coding
chrX	132487196	132487696	intron (NM_001170704, intron 1 of 8)	2589	ENSG00000076770	MBNL3	More	protein-coding
chr7	46729032	46729532	Intergenic	-32160	ENSG00000233539	LOC730338	More	ncRNA
chr12	28210768	28211268	5' UTR (NM_001352080, exon 2 of 14)	-20280		LOC729291	More	ncRNA
chr1	67801704	67802204	intron (NM_018841, intron 1 of 3)	-30334	ENSG00000232284	GNGL2-AS1	More	ncRNA
chr14	75801558	75802058	intron (NM_015072, intron 27 of 31)	140562	ENSG00000119685	TTL5	More	protein-coding
chr7	7857336	7857836	intron (NM_001302350, intron 4 of 4)	111166		LOC100505921	More	ncRNA
chr14	39920241	39920741	Intergenic	-487991	ENSG00000165355	FBXO33	More	protein-coding
chr10	60796393	60796893	Intergenic	18165	ENSG00000170312	CDK1	More	protein-coding
chr18	76951936	76952436	intron (NM_001306089, intron 27 of 30)	64869	ENSG00000197971	MBP	More	protein-coding
chr4	156571937	156572437	Intergenic	399612	ENSG00000145431	PDGFC	More	protein-coding
chr7	21410938	21411438	Intergenic	-16895	ENSG00000105866	SP4	More	protein-coding
chr3	175012556	175013056	intron (NM_207015, intron 1 of 13)	102436	ENSG00000230292	NAALADL2-AS3	More	ncRNA
chr4	148499064	148499564	Intergenic	-54616	ENSG00000151623	NR3C2	More	protein-coding
chr6	30809484	30809984	Intergenic	20925	ENSG00000214894	LINC00243	More	ncRNA
chr7	32299533	32300033	promoter-TSS (NM_001322058)	-455	ENSG00000154678	PDE1C	More	protein-coding
chr10	97200907	97201407	intron (NR_037909, intron 11 of 14)	-15198	ENSG00000187122	SLIT1	More	protein-coding
chr1	156786392	156786892	exon (NM_005973, exon 3 of 7)	19107	ENSG00000143294	PRCC	More	protein-coding
chr1	91328257	91328757	intron (NM_001017975, intron 20 of 38)	76330	ENSG00000162669	HFM1	More	protein-coding
chr7	31851406	31851906	intron (NM_001191059, intron 8 of 18)	164441	ENSG00000106341	PPP1R17	More	protein-coding
chr13	88189154	88189654	intron (NR_131919, intron 1 of 4)	46537	ENSG00000231019	LINC00373	More	ncRNA
chr11	15662885	15663385	intron (NM_001293172, intron 1 of 2)	19250		LOC102724957	More	protein-coding
chr1	94841137	94841637	intron (NM_001258340, intron 7 of 14)	16894	ENSG00000143036	SLC44A3	More	protein-coding
chr3	171494965	171495465	Intergenic	-34807	ENSG00000154310	TNFK	More	protein-coding
chr3	171594406	171594906	Intergenic	-134248	ENSG00000154310	TNFK	More	protein-coding
chr6	43900328	43900828	intron (NR_024478, intron 1 of 1)	9550		LINC01512	More	ncRNA
chr3	156300532	156301032	intron (NM_172159, intron 1 of 13)	9745	ENSG00000169282	KCNAB1	More	protein-coding
chr8	59197546	59198046	Intergenic	78586		LOC100505501	More	ncRNA
chr5	171804654	171805154	Intergenic	19032	ENSG00000185662	SMIM23	More	protein-coding
chr10	2121711	2122211	Intergenic	-45872	ENSG00000278069	MIR6072	More	ncRNA
chr3	4976989	4977489	intron (NR_125915, intron 1 of 3)	-2198	ENSG00000134107	BHLHE40	More	protein-coding
chr19	14675081	14675581	promoter-TSS (NM_001289159)	-413	ENSG00000131355	ADGRE3	More	protein-coding
chr6	6643504	6644004	intron (NM_004271, intron 3 of 4)	-20928	ENSG00000216863	LY86-AS1	More	ncRNA
chr14	73111727	73112227	intron (NM_021239, intron 16 of 18)	-24530	ENSG00000080815	PSEN1	More	protein-coding
chr14	76968843	76969343	Intergenic	9455	ENSG00000258602	LINC01629	More	ncRNA
chr7	129838071	129838571	intron (NM_001202498, intron 6 of 6)	-63307	ENSG00000207691	MIR183	More	ncRNA
chr2	75621809	75622309	Intergenic	-24724	ENSG00000115364	MRPL19	More	protein-coding
chr1	67197122	67197622	intron (NM_144701, intron 4 of 10)	30918	ENSG00000162594	IL23R	More	protein-coding
chr1	162657577	162658077	intron (NM_006182, intron 2 of 17)	25363	ENSG00000162733	DDR2	More	protein-coding
chr8	79299261	79299761	Intergenic	-32677		MIR12123	More	ncRNA
chr20	11492448	11492948	Intergenic	-219315		LOC339593	More	ncRNA
chr11	33692032	33692532	Intergenic	8458	ENSG00000205177	C11orf91	More	protein-coding
chr5	156273930	156274430	Intergenic	-52577	ENSG00000170624	SGCD	More	protein-coding
chr1	222793902	222794402	Intergenic	-20887	ENSG00000154309	DISP1	More	protein-coding
chr5	106364509	106365009	Intergenic	646255	ENSG00000251027	LINC01950	More	ncRNA
chr3	192593515	192594015	intron (NM_004113, intron 2 of 5)	78743	ENSG00000230126	FGF12-AS2	More	ncRNA
chr8	112248404	112248904	intron (NM_001363185, intron 59 of 66)	-394839	ENSG00000238399	MIR2053	More	ncRNA
chrX	132348940	132349440	intron (NR_110410, intron 2 of 2)	64385	ENSG00000076770	MBNL3	More	protein-coding
chr21	38952890	38953390	Intergenic	-14711		LOC400867	More	ncRNA
chr12	84902160	84902660	intron (NM_182767, intron 1 of 11)	10389	ENSG00000072041	SLC6A15	More	protein-coding
chr4	6901021	6901521	Intergenic	-8173	ENSG00000132405	TBC1D14	More	protein-coding
chr1	220891330	220891830	Intergenic	-11440	ENSG00000257551	HLX-AS1	More	ncRNA
chr10	78923543	78924043	Intergenic	143655	ENSG00000224596	ZMI21-AS1	More	ncRNA
chrX	132479340	132479840	intron (NM_001170704, intron 1 of 8)	10445	ENSG00000076770	MBNL3	More	protein-coding
chr4	24383922	24384422	intron (NM_001330752, intron 1 of 13)	88733	ENSG00000109819	PPARGC1A	More	protein-coding
chr1	18804371	18804871	Intergenic	55040	ENSG00000179002	TAS1R2	More	protein-coding
chr6	29521776	29522276	Intergenic	-7380	ENSG00000224582	LINC01015	More	ncRNA
chr4	185194794	185195294	intron (NM_020827, intron 1 of 4)	8956	ENSG00000164323	CFAP97	More	protein-coding
chr2	11013805	11014305	Intergenic	102121	ENSG00000162975	KCNF1	More	protein-coding
chr1	25193122	25193622	Intergenic	39130	ENSG00000117614	SYF2	More	protein-coding
chr18	4353963	4354463	intron (NM_001242761, intron 1 of 11)	89611	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr16	68810675	68811175	intron (NM_001317185, intron 6 of 15)	-32606	ENSG00000103047	TANGO6	More	protein-coding
chr2	13700423	13700923	Intergenic	-693660	ENSG00000225649	LOC100506474	More	ncRNA
chr15	63232714	63233214	intron (NM_016530, intron 1 of 7)	43358	ENSG00000166128	RAB8B	More	protein-coding
chr5	58012471	58012971	Intergenic	109620		LINC02101	More	ncRNA
chr5	121029510	121030010	Intergenic	-292790		LOC102467226	More	ncRNA
chr1	99198920	99199420	Intergenic	-65122	ENSG00000117600	PLPPR4	More	protein-coding
chr19	5563892	5564392	intron (NR_027064, intron 1 of 2)	3892	ENSG00000223573	TINCR	More	ncRNA
chr12	83268734	83269234	Intergenic	581829	ENSG00000179104	TMTC2	More	protein-coding
chr3	171372353	171372853	intron (NM_001161563, intron 1 of 31)	87802	ENSG00000154310	TNFK	More	protein-coding
chr18	28813668	28814168	Intergenic	-636788	ENSG00000170558	CDH2	More	protein-coding
chr5	1491379	1491879	intron (NM_024830, intron 3 of 13)	19227	ENSG00000273742	MIR6075	More	ncRNA
chr18	4203506	4204006	intron (NM_001242761, intron 1 of 11)	-60846	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr8	128639169	128639669	Intergenic	-74740		LINC00824	More	ncRNA
chr18	4157283	4157783	intron (NM_001242761, intron 1 of 11)	-107069	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr17	42483645	42484145	intron (NM_005177, intron 9 of 20)	-10878	ENSG00000264314	MIR548AT	More	ncRNA
chr6	153622603	153623103	Intergenic	-387643	ENSG00000112038	OPRM1	More	protein-coding

chr20	19328692	19329192	intron (NM_020689, intron 2 of 16)	-44346	ENSG00000179447	LOC100130264	More	ncRNA
chr8	58678855	58679355	Intergenic	-19252	ENSG00000035681	NSMAF	More	protein-coding
chr2	159783058	159783558	intron (NM_001198764, intron 1 of 4)	14900	ENSG00000241399	CD302	More	protein-coding
chr7	137441702	137442202	intron (NM_001321710, intron 28 of 32)	-98219	ENSG00000105894	PTN	More	protein-coding
chr6	88448439	88448939	Intergenic	90680	ENSG00000165487	LOC101928936	More	ncRNA
chr8	76476878	76477378	intron (NR_105006, intron 3 of 5)	70474	ENSG00000254300	LINC01111	More	ncRNA
chr7	46691323	46691823	intron (NR_134575, intron 2 of 2)	5549	ENSG00000233539	LOC730338	More	ncRNA
chr13	21591467	21591967	intron (NM_152726, intron 1 of 11)	12453	ENSG00000165487	MICU2	More	protein-coding
chr12	79005293	79005793	intron (NM_001291901, intron 2 of 9)	-40149	ENSG00000067715	SVT1	More	protein-coding
chr7	80400080	80400580	Intergenic	-25891	ENSG00000192769	LOC101927269	More	ncRNA
chr13	86570018	86570518	Intergenic	-341652	ENSG00000164543	LINC00430	More	ncRNA
chr1	182161333	182161833	Intergenic	-99871	ENSG00000179930	ZNF648	More	protein-coding
chr7	142579453	142579953	intron (NM_001363538, intron 11 of 11)	-86596	ENSG00000270672	MTRNR2L6	More	protein-coding
chr12	96771569	96772069	intron (NM_001306084, intron 60 of 67)	-135438	ENSG00000139350	NEDD1	More	protein-coding
chr5	122567361	122567861	Intergenic	16989	ENSG000001927357	LOC101927357	More	ncRNA
chr20	47491738	47492238	Intergenic	-9899	ENSG00000124151	NCOA3	More	protein-coding
chr7	43556453	43556953	intron (NM_001287059, intron 27 of 27)	-26405	ENSG00000164543	STK17A	More	protein-coding
chr2	213825907	213826407	intron (NR_047660, intron 9 of 14)	68090	ENSG00000265734	MIR4438	More	ncRNA
chr18	31787335	31787835	Intergenic	-26705	ENSG00000141437	SLC25A52	More	protein-coding
chr4	148761958	148762458	Intergenic	180170	ENSG00000249317	LOC105377480	More	ncRNA
chr5	139587072	139587572	intron (NM_181838, intron 2 of 7)	25983	ENSG00000131508	UBE2D2	More	protein-coding
chr6	125579769	125580269	Intergenic	-94334	ENSG00000224506	LINC02523	More	ncRNA
chr14	102345056	102345556	Intergenic	17584	ENSG00000100865	CINP	More	protein-coding
chr8	95232641	95233141	Intergenic	-16517	ENSG00000253351	LINC01298	More	ncRNA
chr3	173650302	173650802	intron (NM_001365928, intron 3 of 6)	66118	ENSG00000169760	NLGN1	More	protein-coding
chr15	58778226	58778726	intron (NM_001040450, intron 1 of 8)	7174	ENSG00000128923	MINDY2	More	protein-coding
chr2	188561251	188561751	intron (NM_016315, intron 7 of 11)	228622	ENSG00000174325	DIRC1	More	ncRNA
chr10	60866114	60866614	Intergenic	77821	ENSG00000072422	RHOBTB1	More	protein-coding
chrX	67979123	67979623	Intergenic	434750	ENSG00000169083	AR	More	protein-coding
chr1	117313210	117313710	intron (NR_126408, intron 2 of 2)	17994	ENSG00000235202	LINC01525	More	ncRNA
chr1	159808443	159808943	intron (NM_001004310, intron 3 of 9)	6333	ENSG00000181036	FCRL6	More	protein-coding
chr4	163483629	163484129	Intergenic	-10125	ENSG00000151005	TKTL2	More	protein-coding
chr5	83387219	83387719	Intergenic	-84205	ENSG00000038427	VCAN	More	protein-coding
chr4	106542047	106542547	Intergenic	108673	ENSG00000249613	LINC02173	More	ncRNA
chr8	64671626	64672126	intron (NM_004820, intron 1 of 5)	-89984	ENSG00000254102	LOC401463	More	ncRNA
chr4	127663154	127663654	exon (NM_015693, exon 4 of 16)	30447	ENSG00000164066	INTU	More	protein-coding
chr18	60244280	60244780	Intergenic	128245	ENSG00000166603	MC4R	More	protein-coding
chr11	6217614	6218114	exon (NM_001098794, exon 9 of 12)	12307	ENSG00000180878	C11orf42	More	protein-coding
chr22	23478419	23478919	intron (NR_110539, intron 4 of 11)	8311	ENSG00000178248	FAM2301	More	ncRNA
chr7	18281038	18281538	intron (NM_001321872, intron 2 of 11)	-8804	ENSG00000048052	HDAC9	More	protein-coding
chr13	21605820	21606320	Intergenic	-1900	ENSG00000165487	MICU2	More	protein-coding
chr2	25545957	25546457	intron (NM_033147, intron 8 of 19)	104015	ENSG00000138101	DTNB	More	protein-coding
chr4	156625977	156626477	Intergenic	345572	ENSG00000145431	PDGFC	More	protein-coding
chr15	48584675	48585175	intron (NM_000138, intron 6 of 65)	60863	ENSG00000166147	FBN1	More	protein-coding
chr3	99254163	99254663	Intergenic	-352718	ENSG00000057019	DCBLD2	More	protein-coding
chr5	83554228	83554728	intron (NM_001164098, intron 10 of 13)	7836	ENSG00000249835	VCAN-AS1	More	ncRNA
chr15	63575325	63575825	intron (NM_001256702, intron 10 of 13)	-21812	ENSG00000197361	FBXL22	More	protein-coding
chr8	82281843	82282343	Intergenic	-439807	ENSG00000104497	SNX16	More	protein-coding
chr2	140958193	140958693	intron (NM_018557, intron 18 of 90)	-371758	ENSG00000283506	MIR7157	More	ncRNA
chr6	77386683	77387183	Intergenic	77089	ENSG00000135312	HTR1B	More	protein-coding
chr17	31141817	31142317	intron (NM_001042492, intron 1 of 57)	47090	ENSG00000196712	NF1	More	protein-coding
chr10	85749796	85750296	intron (NM_017551, intron 8 of 15)	172315	ENSG00000234942	GRID1-AS1	More	ncRNA
chr11	99303325	99303825	intron (NM_001243270, intron 1 of 23)	-252570	ENSG00000149972	CNTN5	More	protein-coding
chr2	113674028	113674528	Intergenic	47012	ENSG00000144134	RABL2A	More	protein-coding
chr12	108682505	108683005	intron (NM_001105237, intron 2 of 10)	20243	ENSG00000110880	CORO1C	More	protein-coding
chr4	153566203	153566703	intron (NM_001131007, intron 7 of 34)	-73715	ENSG00000250771	LOC100419170	More	pseudo
chr11	18792003	18792503	promoter-TSS (NM_032781)	-455	ENSG00000110786	PTPN5	More	protein-coding
chr18	4273181	4273681	intron (NR_036489, intron 1 of 2)	8829	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr12	125957194	125957694	Intergenic	25930	ENSG00000249267	LINC00939	More	ncRNA
chr9	38338986	38339486	Intergenic	-53466	ENSG00000137124	ALDH1B1	More	protein-coding
chr10	60766216	60766716	Intergenic	-11865	ENSG00000170312	CDK1	More	protein-coding
chrX	123476095	123476595	intron (NM_000828, intron 14 of 15)	256707	ENSG00000125676	THOC2	More	protein-coding
chr7	31913728	31914228	intron (NM_001322059, intron 3 of 17)	156429	ENSG00000154678	PDE1C	More	protein-coding
chr12	99377563	99378063	intron (NM_152788, intron 12 of 25)	-222723	ENSG00000185046	ANKS1B	More	protein-coding
chr6	123251746	123252246	intron (NM_006073, intron 38 of 40)	-187608	ENSG00000163806	TRDN-AS1	More	ncRNA
chr2	28806894	28807394	Intergenic	-3690	ENSG00000163806	SPDYA	More	protein-coding
chr1	227354971	227355471	Intergenic	-36729	ENSG00000143776	CDC42BPA	More	protein-coding
chr2	76990399	76990899	intron (NR_110284, intron 3 of 3)	4684	ENSG00000234653	LOC101927907	More	ncRNA
chr12	97204839	97205339	Intergenic	-257687	ENSG00000255794	RMST	More	ncRNA
chr18	60046193	60046693	Intergenic	146447	ENSG00000141682	PMAIP1	More	protein-coding
chr3	171540511	171541011	Intergenic	-80353	ENSG00000154310	TNIK	More	protein-coding
chr9	20289871	20290371	Intergenic	121117	ENSG00000263790	MIR4473	More	ncRNA
chr1	17601304	17601804	intron (NR_137287, intron 4 of 29)	-16759	ENSG00000074964	ARHGEF10L	More	protein-coding
chr3	11337495	11337995	intron (NM_001136031, intron 9 of 17)	65348	ENSG00000197548	ATG7	More	protein-coding
chr1	188239511	188240011	Intergenic	796133	ENSG00000197548	LINC01037	More	ncRNA
chr17	31319321	31319821	intron (NM_014210, intron 1 of 1)	2051	ENSG00000126860	EV12A	More	protein-coding
chr4	45124271	45124771	Intergenic	-397887	ENSG00000163281	GNPDA2	More	protein-coding
chr9	111980409	111980909	Intergenic	48559	ENSG00000266315	MIR4668	More	ncRNA
chr12	65221047	65221547	intron (NM_014319, intron 4 of 12)	51714	ENSG00000174106	LEMD3	More	protein-coding
chr10	21738173	21738673	intron (NM_004641, intron 22 of 23)	204251	ENSG00000078403	MLLT10	More	protein-coding
chr12	108699944	108700444	intron (NM_001105237, intron 2 of 10)	2804	ENSG00000110880	CORO1C	More	protein-coding
chr13	110682650	110683150	intron (NM_024537, intron 6 of 14)	23216	ENSG00000134905	CARS2	More	protein-coding
chr15	46156108	46156608	Intergenic	451163	ENSG00000259200	LOC105370802	More	ncRNA
chr3	32139174	32139674	intron (NM_015141, intron 3 of 7)	32913	ENSG00000152642	GPD1L	More	protein-coding

chr2	175643100	175643600	Intergenic	358917	ENSG00000144320	LNPK	More	protein-coding
chr11	43158183	43158683	Intergenic	110936	ENSG00000251557	HNRNP KP3	More	pseudo
chr15	45848401	45848901	non-coding (NR_135680, exon 2 of 5)	143456	ENSG00000259200	LOC105370802	More	ncRNA
chr3	95440760	95441260	Intergenic	242183	ENSG00000244681	MTHFD2P1	More	pseudo
chr17	69929371	69929871	Intergenic	-32086	ENSG00000237560	LINC01497	More	ncRNA
chr1	111875309	111875809	intron (NM_172198, intron 2 of 6)	-18654	ENSG00000232558	KCND3-IT1	More	ncRNA
chr2	223940570	223941070	intron (NM_020830, intron 1 of 11)	4515	ENSG00000085449	WDFY1	More	protein-coding
chr3	110287094	110287594	Intergenic	684516	ENSG00000265956	MIR4445	More	ncRNA
chr2	153672232	153672732	Intergenic	-193720	ENSG00000177519	RPRM	More	protein-coding
chr18	61869431	61869931	intron (NM_173557, intron 1 of 1)	23326	ENSG00000176641	RNF152	More	protein-coding
chr3	161888310	161888810	Intergenic	391752	ENSG00000182447	OTOL1	More	protein-coding
chr8	126787858	126788358	Intergenic	-225046	ENSG00000253438	PCAT1	More	ncRNA
chr11	12048261	12048761	intron (NR_135109, intron 1 of 1)	17636	ENSG00000254486	LINC02547	More	ncRNA
chr15	51171251	51171751	intron (NR_146310, intron 1 of 2)	-66225	ENSG00000183578	TNFAIP8L3	More	protein-coding
chr15	78502674	78503174	Intergenic	-4640	ENSG00000188266	HYKK	More	protein-coding
chr9	46843997	46844497	Intergenic	3718081		LOC102724904	More	pseudo
chr1	233777680	233778180	Intergenic	-126746	ENSG00000183780	SLC35F3	More	protein-coding
chr4	18040700	18041200	Intergenic	-19075	ENSG00000178177	LCORL	More	protein-coding
chr3	124531586	124532086	intron (NM_001024660, intron 33 of 59)	-52822	ENSG00000160145	KALRN	More	protein-coding
chrX	40158908	40159408	intron (NM_001123384, intron 1 of 13)	18119	ENSG00000183337	BCOR	More	protein-coding
chr3	15679059	15679559	non-coding (NR_146112, exon 23 of 29)	18062	ENSG00000264354	MIR3134	More	ncRNA
chr2	126210955	126211455	Intergenic	-93220	ENSG00000226813	LINC01941	More	ncRNA
chr7	23934113	23934613	Intergenic	224144	ENSG00000196335	STK31	More	protein-coding
chr20	23136810	23137310	Intergenic	-4424	ENSG00000233746	LINC00656	More	ncRNA
chr1	88615963	88616463	intron (NR_110682, intron 1 of 3)	-67931	ENSG00000065243	PKN2	More	protein-coding
chr13	33724540	33725040	Intergenic	-47996	ENSG00000133121	STARD13	More	protein-coding
chr12	131112609	131113109	intron (NM_198827, intron 18 of 24)	-52152	ENSG00000204603	LINC01257	More	ncRNA
chr4	137571990	137572490	intron (NR_146553, intron 1 of 1)	26509	ENSG00000251632	LINC02172	More	ncRNA
chr11	75872344	75872844	intron (NM_003369, intron 3 of 14)	57384	ENSG00000198382	UVRAG	More	protein-coding
chr10	106652554	106653054	intron (NM_001206569, intron 17 of 25)	511902	ENSG00000108018	SORCS1	More	protein-coding
chr1	47627730	47627730	Intergenic	-190163		LINC01389	More	ncRNA
chr10	35013349	35013849	intron (NM_003591, intron 19 of 20)	60684	ENSG00000108094	CUL2	More	protein-coding
chr17	26302005	26302505	Intergenic	786986		LOC105371703	More	ncRNA
chr18	60066853	60067353	Intergenic	167107	ENSG00000141682	PMAIP1	More	protein-coding
chr7	55253109	55253609	intron (NR_110426, intron 2 of 3)	2276		ELDR	More	ncRNA
chr11	57031157	57031657	Intergenic	-6127	ENSG00000283307	OR5AK4P	More	pseudo
chr1	224997217	224997717	intron (NM_001349911, intron 8 of 10)	67792	ENSG00000185842	DNAH14	More	protein-coding
chr13	62105741	62106241	Intergenic	-76443	ENSG00000229578	LINC00358	More	ncRNA
chr1	200858578	200859078	3' UTR (NM_203459, exon 17 of 17)	-14153	ENSG00000170128	GPR25	More	protein-coding
chr1	233775264	233775764	Intergenic	-129162	ENSG00000183780	SLC35F3	More	protein-coding
chr14	59199140	59199640	intron (NM_001270520, intron 1 of 24)	10723	ENSG00000100592	DAAM1	More	protein-coding
chr4	83208811	83209311	Intergenic	75734	ENSG00000173085	COQ2	More	protein-coding
chr13	65728736	65729236	Intergenic	-137061		LINC01052	More	ncRNA
chr4	134999346	134999846	Intergenic	123963		LINC02485	More	ncRNA
chr3	24262236	24262736	intron (NM_001354708, intron 2 of 9)	111162		LOC101927854	More	ncRNA
chr3	99202645	99203145	Intergenic	-301200	ENSG00000057019	DCBLD2	More	protein-coding
chr5	94328053	94328553	intron (NM_001145678, intron 20 of 20)	-216604	ENSG00000113391	FAM172A	More	protein-coding
chr7	55377860	55378360	intron (NM_018697, intron 1 of 8)	12662	ENSG00000132434	LANCL2	More	protein-coding
chr16	30471379	30471879	Intergenic	-1113	ENSG00000058844	ITGAL	More	protein-coding
chr22	30038678	30039178	intron (NR_110541, intron 3 of 4)	31879	ENSG00000275818	MIR6818	More	ncRNA
chr3	46036225	46036725	Intergenic	-8992	ENSG00000173578	XCR1	More	protein-coding
chr1	32356919	32357419	Intergenic	5074	ENSG00000225828	FAM229A	More	protein-coding
chr2	225841712	225842212	Intergenic	-300832		LOC646736	More	ncRNA
chr11	15961979	15962479	Intergenic	7392	ENSG00000284094	MIR6073	More	ncRNA
chr20	42453565	42454065	intron (NM_133170, intron 8 of 31)	-231668	ENSG00000229042	LOC101927159	More	ncRNA
chr10	123438250	123438750	Intergenic	-227855	ENSG00000154478	GPR26	More	protein-coding
chr5	145928534	145929034	Intergenic	-7794	ENSG00000156463	SH3RF2	More	protein-coding
chr20	4264861	42648661	intron (NM_133170, intron 7 of 31)	-37072	ENSG00000229042	LOC101927159	More	ncRNA
chr13	43385774	43386274	intron (NM_001347966, intron 6 of 17)	-62828		ENOX1-AS2	More	ncRNA
chr15	58584925	58585425	Intergenic	-86440	ENSG00000259293	LIPC-AS1	More	ncRNA
chr4	6905974	6906474	Intergenic	-3220	ENSG00000132405	TBC1D14	More	protein-coding
chr14	106206120	106206620	Intergenic	-81304		LINC00226	More	ncRNA
chr15	61686156	61686656	Intergenic	-43512	ENSG00000259284	LINC02349	More	ncRNA
chr5	71704340	71704840	Intergenic	-14685	ENSG00000164326	CARTPT	More	protein-coding
chr2	75553652	75554152	intron (NM_001369524, intron 2 of 5)	7037	ENSG00000115363	EVA1A	More	protein-coding
chr1	233804473	233804973	Intergenic	-99953	ENSG00000183780	SLC35F3	More	protein-coding
chr4	162504503	162505003	Intergenic	-340719	ENSG00000168843	FSTL5	More	protein-coding
chr1	196692379	196692879	intron (NM_000186, intron 9 of 21)	40751	ENSG00000000971	CFH	More	protein-coding
chr3	117208445	117208945	Intergenic	287264	ENSG00000242385	LINC00901	More	ncRNA
chr9	112145594	112146094	intron (NM_022486, intron 3 of 16)	29453	ENSG00000106868	SUSD1	More	protein-coding
chr1	153332381	153332881	intron (NM_020393, intron 8 of 8)	16210	ENSG00000163218	PGLYRP4	More	protein-coding
chr2	51393286	51393386	intron (NR_135237, intron 4 of 10)	360535	ENSG00000231918	LOC730100	More	ncRNA
chr4	47393277	47393777	intron (NM_000812, intron 5 of 8)	70175	ENSG00000169019	COMMD8	More	protein-coding
chr4	70927712	70928212	intron (NM_173468, intron 1 of 5)	25593	ENSG00000173542	MOB1B	More	protein-coding
chr5	156432156	156432656	intron (NM_001128209, intron 2 of 7)	105242	ENSG00000170624	SGCD	More	protein-coding
chr20	47492387	47492887	Intergenic	-9250	ENSG00000124151	NCOA3	More	protein-coding
chr6	39182121	39182621	Intergenic	47104	ENSG00000164626	CKNK5	More	protein-coding
chr16	30137911	30138411	Intergenic	-14852	ENSG00000102882	MAPK3	More	protein-coding
chr18	28935937	28936437	Intergenic	-759057	ENSG00000170558	CDH2	More	protein-coding
chr13	106196062	106196562	Intergenic	-180252		LINC00460	More	ncRNA
chr6	76073004	76073504	promoter-TSS (NM_001282368)	-576	ENSG00000112706	IMPG1	More	protein-coding
chrX	132518362	132518862	Intergenic	-28577	ENSG00000076770	MBNL3	More	protein-coding
chr4	137608005	137608505	Intergenic	62524	ENSG00000251632	LINC02172	More	ncRNA

chr1	233831558	233832058	Intergenic	-72868	ENSG00000183780	SLC35F3	More	protein-coding
chr18	3223269	3223269	Intergenic	-3411	ENSG00000101605	MYOM1	More	protein-coding
chr18	4270937	4271437	intron (NR_036489, intron 1 of 2)	6585	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr13	68090957	68091457	Intergenic	718820	ENSG00000230040	LINC00364	More	ncRNA
chr11	90455862	90456362	intron (NR_104190, intron 1 of 6)	99745	ENSG00000266703	MIR4490	More	ncRNA
chr6	24845106	24845606	intron (NM_001286445, intron 12 of 21)	31914	ENSG00000111913	RIPOR2	More	protein-coding
chr11	95913120	95913620	intron (NM_016156, intron 1 of 14)	10737	ENSG00000087053	MTMR2	More	protein-coding
chr10	34994485	34994985	Intergenic	79548	ENSG00000108094	CUL2	More	protein-coding
chr21	47119405	47119905	Intergenic	483981	ENSG00000160310	PRMT2	More	protein-coding
chr14	31596853	31597353	intron (NM_001201573, intron 1 of 8)	19187	ENSG00000151413	NUBPL	More	protein-coding
chr9	124504054	124504554	intron (NM_004959, intron 1 of 6)	3095	ENSG00000136931	NR5A1	More	protein-coding
chr15	58666465	58666965	intron (NM_001320570, intron 4 of 14)	26892		HSP90AB4P	More	pseudo
chr8	144627819	144628319	intron (NM_001308208, intron 1 of 10)	-14566	ENSG00000147799	ARHGAP39	More	protein-coding
chr19	5292909	5293409	intron (NM_002850, intron 1 of 37)	47653	ENSG00000105426	PTPRS	More	protein-coding
chr12	83638832	83639332	Intergenic	951927	ENSG00000179104	TMT2C	More	protein-coding
chr11	15778798	15779298	Intergenic	135163		LOC102724957	More	protein-coding
chr7	43500465	43500965	exon (NM_015052, exon 20 of 30)	21827	ENSG00000231638	LUARIS	More	ncRNA
chr4	183468475	183468975	Intergenic	24089	ENSG00000168564	CDKN2AIP	More	protein-coding
chr5	58152009	58152509	Intergenic	-29918		LINC02101	More	ncRNA
chr10	108336258	108336758	Intergenic	-267215	ENSG00000229981	LINC01435	More	ncRNA
chr15	78150395	78150895	intron (NM_005530, intron 1 of 10)	1283	ENSG00000166411	IDH3A	More	protein-coding
chr6	42259620	42260120	intron (NM_033502, intron 8 of 17)	-42009	ENSG00000048544	MRPS10	More	protein-coding
chr14	59485782	59486282	intron (NM_001284202, intron 2 of 7)	1515	ENSG00000050130	JKAMP	More	protein-coding
chr13	91708945	91709445	intron (NM_004466, intron 3 of 7)	310574	ENSG00000179399	GPC5	More	protein-coding
chr10	44531086	44531586	Intergenic	-146239	ENSG00000107562	CXCL12	More	protein-coding
chr7	82013179	82013679	intron (NM_000722, intron 14 of 38)	4252	ENSG00000223770	LOC101927356	More	ncRNA
chr6	103343496	103343996	Intergenic	1515800	ENSG00000085382	HACE1	More	protein-coding
chr11	129309869	129310369	Intergenic	-26955		LOC399975	More	ncRNA
chr1	168489535	168490035	intron (NR_125956, intron 2 of 4)	5859	ENSG00000228697	LOC101928565	More	ncRNA
chr19	7755533	7756033	Intergenic	-7460	ENSG00000104938	CLEC4M	More	protein-coding
chr1	119106875	119107375	intron (NM_015836, intron 1 of 5)	-33271	ENSG00000231365	WARS2-AS1	More	ncRNA
chr10	24396131	24396631	intron (NM_019590, intron 3 of 20)	-53033	ENSG00000120549	KIAA1217	More	protein-coding
chr1	234129397	234129897	intron (NM_173508, intron 2 of 7)	-84564	ENSG00000183780	SLC35F3	More	protein-coding
chr10	60727263	60727763	intron (NM_001204403, intron 1 of 43)	6015	ENSG00000151150	ANK3	More	protein-coding
chr2	228682465	228682965	Intergenic	-71320	ENSG00000232023	LINC01807	More	ncRNA
chr1	94557982	94558482	Intergenic	14530		MIR12133	More	ncRNA
chr16	24442203	24442703	Intergenic	-97113	ENSG00000122257	RBBP6	More	protein-coding
chr2	46545508	46546008	intron (NM_012249, intron 2 of 4)	-3181			More	
chr18	6270822	6271322	intron (NM_001365769, intron 4 of 16)	14328		L3MBTL4-AS1	More	ncRNA
chr11	18791268	18791768	intron (NM_006906, intron 1 of 14)	280	ENSG00000110786	PTPN5	More	protein-coding
chr8	90415900	90416400	Intergenic	189913	ENSG00000253799	LINC01030	More	ncRNA
chr6	82642782	82643282	Intergenic	278788	ENSG00000146242	TPBG	More	protein-coding
chr6	146744553	146745053	intron (NM_024694, intron 25 of 35)	59021		KATNBL1P6	More	pseudo
chr6	86775507	86776007	Intergenic	-161771	ENSG00000168830	HTR1E	More	protein-coding
chr13	29148682	29149182	intron (NM_001033602, intron 3 of 13)	124475	ENSG00000132938	MTUS2	More	protein-coding
chr1	230631741	230632241	Intergenic	-10490	ENSG00000135775	COG2	More	protein-coding
chr3	192676280	192676780	intron (NM_004113, intron 2 of 5)	51011	ENSG00000114279	FGF12	More	protein-coding
chr17	70386665	70387165	Intergenic	217380	ENSG00000123700	KCNJ2	More	protein-coding
chr2	155389237	155389737	Intergenic	690792	ENSG00000162989	KCNJ3	More	protein-coding
chr3	141080175	141080675	intron (NM_080862, intron 2 of 2)	29078	ENSG00000175093	SPSB4	More	protein-coding
chr20	47493781	47494281	Intergenic	-7856	ENSG00000124151	NCOA3	More	protein-coding
chr14	25409426	25409926	Intergenic	-359379	ENSG00000168952	STXBP6	More	protein-coding
chr7	83425227	83425727	intron (NM_001178129, intron 4 of 16)	215954	ENSG00000170381	SEMA3E	More	protein-coding
chr7	27135414	27135914	Intergenic	-4700	ENSG00000254369	HOXA-AS3	More	ncRNA
chr1	55327025	55327525	Intergenic	101634	ENSG00000265822	MIR4422	More	ncRNA
chr2	13447557	13448057	Intergenic	-440794	ENSG00000225649	LOC100506474	More	ncRNA
chr17	62985099	62985599	intron (NM_025185, intron 1 of 25)	19114	ENSG00000170921	TANC2	More	protein-coding
chr9	3032850	3033350	Intergenic	-148489		LINC01231	More	ncRNA
chr3	36749053	36749553	Intergenic	-9442	ENSG00000163673	DCLK3	More	protein-coding
chr2	137931028	137931528	Intergenic	-3346		LOC101928273	More	ncRNA
chr10	29194833	29195333	Intergenic	-93987	ENSG00000120563	LYZL1	More	protein-coding
chr7	49055670	49056170	Intergenic	131373	ENSG00000218305	CDC14C	More	protein-coding
chr11	16930970	16931470	intron (NM_001329630, intron 3 of 26)	-5198		SNORD147	More	snoRNA
chr4	63167149	63167649	Intergenic	-1005634		ADGRL3-AS1	More	ncRNA
chr6	34553858	34554358	intron (NM_012391, intron 1 of 5)	2221	ENSG00000124664	SPDEF	More	protein-coding
chr18	4256796	4257296	intron (NM_001242761, intron 1 of 11)	-7556	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr1	195465212	195465712	Intergenic	623253		LINC01724	More	ncRNA
chr17	31850647	31851147	TTS (NM_001330176)	8065	ENSG00000172301	COPRS	More	protein-coding
chr8	29498550	29499050	Intergenic	-148116	ENSG00000120875	DUSP4	More	protein-coding
chr3	8543195	8543695	intron (NM_014583, intron 3 of 5)	-28337		LINC00312	More	ncRNA
chr19	16245305	16245805	3' UTR (NM_001130524, exon 13 of 13)	47644	ENSG00000072958	AP1M1	More	protein-coding
chr4	181558739	181559239	Intergenic	270984	ENSG00000251336	TEMN3-AS1	More	ncRNA
chr8	22602632	22603132	TTS (NR_160769)	-1875	ENSG00000158941	CCAR2	More	protein-coding
chr15	39916833	39917333	intron (NM_001271854, intron 1 of 3)	3809	ENSG00000166073	GPR176	More	protein-coding
chr18	59431594	59432094	3' UTR (NM_133459, exon 11 of 11)	-72579	ENSG00000074695	LMAN1	More	protein-coding
chr15	93187063	93187563	Intergenic	-18753		LOC105370980	More	protein-coding
chr2	55181907	55182407	intron (NR_148539, intron 1 of 3)	-44326	ENSG00000115310	RTN4	More	protein-coding
chr17	73531153	73531653	intron (NM_001144952, intron 1 of 44)	17720	ENSG00000264985	LOC101928251	More	ncRNA
chr1	168526816	168527316	Intergenic	16931	ENSG00000143185	XCL2	More	protein-coding
chr15	78653508	78654008	Intergenic	-12548	ENSG00000117971	CHRN4	More	protein-coding
chr16	21958374	21958874	intron (NM_003366, intron 4 of 13)	5263	ENSG00000140740	UQCRC2	More	protein-coding
chr3	184178071	184178571	intron (NM_001311198, intron 3 of 12)	3466	ENSG00000161203	AP2M1	More	protein-coding
chr1	152549580	152550080	Intergenic	16950	ENSG00000185966	LCE3E	More	protein-coding
chr9	87877167	87877667	intron (NR_149022, intron 3 of 3)	-5460	ENSG00000177992	SPATA31E1	More	protein-coding

chr4	171588110	171588610	Intergenic	50403	ENSG00000249297	LINC02174	More	ncRNA
chr11	46231622	46232122	Intergenic	-45790	ENSG00000157613	CREB3L1	More	protein-coding
chr17	41116950	41117450	TTS (NM_033059)	1173	ENSG00000212721	KRTAP4-11	More	protein-coding
chr1	11028452	11028952	intron (NM_006610, intron 10 of 10)	16080	ENSG00000120948	TARDBP	More	protein-coding
chr2	75280520	75281020	Intergenic	-81250	ENSG00000115353	TACR1	More	protein-coding
chr7	151424695	151425195	Intergenic	8694	ENSG00000265810	MIR3907	More	ncRNA
chr10	33772307	33772807	non-coding (NR_038932, exon 1 of 3)	123	ENSG00000261683	LINC00838	More	ncRNA
chr10	79321514	79322014	Intergenic	-25705	ENSG00000108179	PPIF	More	protein-coding
chr4	146641769	146642269	3' UTR (NM_004575, exon 2 of 2)	3126	ENSG00000151615	POU4F2	More	protein-coding
chr8	101917398	101917898	intron (NM_001040624, intron 3 of 7)	-66784		LOC104054148	More	ncRNA
chr12	108714203	108714703	intron (NM_014325, intron 1 of 10)	-11455	ENSG00000110880	CORO1C	More	protein-coding
chr6	170796890	170797390	Intergenic	-212448	ENSG00000071994	PDCD2	More	protein-coding
chr13	88172491	88172991	intron (NR_131919, intron 1 of 4)	29874	ENSG00000231019	LINC00373	More	ncRNA
chr2	61670682	61671182	Intergenic	-132576	ENSG00000082898	XPO1	More	protein-coding
chr17	14652746	14653246	Intergenic	349256	ENSG00000266709	MGC12916	More	ncRNA
chr18	43635880	43636380	Intergenic	-358640	ENSG00000132872	SYT4	More	protein-coding
chr11	126570645	126571145	intron (NM_001301097, intron 1 of 15)	-81883	ENSG00000254607	LOC101929427	More	ncRNA
chr6	145669884	145670384	intron (NM_001368131, intron 2 of 3)	16743	ENSG00000112425	EPM2A	More	protein-coding
chr18	4391709	4392209	intron (NM_001242761, intron 1 of 11)	63307	ENSG00000170579	DLGAP1	More	protein-coding
chr11	80060035	80060535	Intergenic	-619255	ENSG00000149256	TENM4	More	protein-coding
chr7	46686825	46687325	TTS (NR_134575)	10047	ENSG00000233539	LOC730338	More	ncRNA
chr10	34032350	34032850	Intergenic	-259920	ENSG00000261683	LINC00838	More	ncRNA
chr1	18609622	18610122	Intergenic	-20974	ENSG00000009709	PAX7	More	protein-coding
chr12	83390109	83390609	Intergenic	703204	ENSG00000179104	TMTC2	More	protein-coding
chr18	45471847	45472347	intron (NR_110899, intron 6 of 7)	34939		SLC14A2-AS1	More	ncRNA
chr2	19247117	19247617	Intergenic	-101062	ENSG00000266738	MIR4757	More	ncRNA
chr1	182162166	182162666	Intergenic	-100704	ENSG00000179930	ZNF648	More	protein-coding
chr18	20887794	20888294	Intergenic	223769	ENSG00000067900	ROCK1	More	protein-coding
chr3	62551741	62552241	intron (NM_003716, intron 10 of 29)	-178441	ENSG00000153266	FEZF2	More	protein-coding
chr11	112027979	112028479	intron (NM_001931, intron 2 of 13)	3415	ENSG00000150768	DLAT	More	protein-coding
chr5	5364937	5365437	Intergenic	-57490	ENSG00000164151	ICE1	More	protein-coding
chr10	50666852	50667352	Intergenic	42151		SGMS1-AS1	More	ncRNA
chr2	114598066	114598566	intron (NM_001321908, intron 2 of 25)	136739	ENSG00000175497	DPP10	More	protein-coding
chr5	60496289	60496789	promoter-TSS (NM_001364599)	-253	ENSG00000113448	PDE4D	More	protein-coding
chr13	61821672	61822172	Intergenic	207626	ENSG00000229578	LINC00358	More	ncRNA
chr2	7988008	7988058	Intergenic	-11444	ENSG00000235665	LINC00298	More	ncRNA
chr8	76473627	76474127	intron (NR_105006, intron 2 of 5)	67223	ENSG00000254300	LINC01111	More	ncRNA
chr4	14876556	14877056	intron (NR_126435, intron 1 of 6)	11363	ENSG00000248360	LINC00504	More	ncRNA
chr13	46339619	46340119	Intergenic	-42025	ENSG00000261097	LINC00563	More	ncRNA
chr1	187996675	187997175	Intergenic	553297		LINC01037	More	ncRNA
chr10	33992570	33993070	Intergenic	-220140	ENSG00000261683	LINC00838	More	ncRNA
chr6	135651459	135651959	intron (NR_152842, intron 3 of 5)	153908	ENSG00000231028	LINC00271	More	ncRNA
chr17	72608696	72609196	intron (NR_033876, intron 3 of 4)	-16142	ENSG00000227036	LINC00673	More	ncRNA
chr8	112399226	112399726	intron (NM_001363185, intron 31 of 66)	-244017	ENSG00000238399	MIR2053	More	ncRNA
chr1	209784982	209785482	promoter-TSS (NM_152485)	-673	ENSG00000162757	C1orf74	More	protein-coding
chr7	24064414	24064914	Intergenic	-219526	ENSG00000122585	NPY	More	protein-coding
chr12	94622713	94623213	intron (NM_020698, intron 1 of 3)	-6962	ENSG00000057704	TMCC3	More	protein-coding
chr6	123193517	123194017	Intergenic	197532	ENSG00000146352	CLVS2	More	protein-coding
chr3	171496160	171496660	Intergenic	-36002	ENSG00000154310	TNIK	More	protein-coding
chr16	89086709	89087209	Intergenic	-6850	ENSG00000176715	ACSF3	More	protein-coding
chr11	18672513	18673013	Intergenic	-26016	ENSG00000151117	TMEM86A	More	protein-coding
chr8	25056399	25056899	Intergenic	-99780	ENSG00000277586	NEFL	More	protein-coding
chr16	47895886	47896386	intron (NM_110650, intron 4 of 5)	-9006	ENSG00000261325	LINC02192	More	ncRNA
chr11	102804300	102804800	intron (NR_038390, intron 4 of 7)	-6390	ENSG00000196611	MMP1	More	protein-coding
chr7	140890069	140890569	intron (NR_148928, intron 1 of 17)	34610	ENSG00000157764	BRAF	More	protein-coding
chr8	18055959	18056459	3' UTR (NM_001363743, exon 14 of 14)	26987	ENSG00000104763	ASAH1	More	protein-coding
chr9	92710145	92710645	TTS (NM_015250)	-40264	ENSG00000127080	IPPK	More	protein-coding
chr5	176839618	176840118	intron (NM_133369, intron 1 of 14)	29309	ENSG00000113763	UNC5A	More	protein-coding
chr4	156680987	156681487	Intergenic	290562	ENSG00000145431	PDGFC	More	protein-coding
chr1	233774759	233775259	Intergenic	-129667	ENSG00000183780	SLC35F3	More	protein-coding
chr15	99888594	99889094	Intergenic	81821	ENSG00000259363	LOC400464	More	pseudo
chr2	123837845	123838345	Intergenic	187079		LOC107985820	More	ncRNA
chr2	111629152	111629652	Intergenic	-134241	ENSG00000172965	MIR4435-2HG	More	ncRNA
chr18	33907450	33907950	intron (NM_001198548, intron 7 of 8)	140912	ENSG00000101746	NOLA4	More	protein-coding
chr10	60767278	60767778	Intergenic	-10803	ENSG00000170312	CDK1	More	protein-coding
chr5	176706389	176706889	Intergenic	-36566	ENSG00000248859	LINC01574	More	ncRNA
chr2	118646369	118646869	Intergenic	-43653		LOC101927709	More	ncRNA
chr13	111264011	111264511	intron (NM_001354061, intron 4 of 14)	23087	ENSG00000102606	ARHGEF7	More	protein-coding
chr9	90220606	90221106	Intergenic	-179357	ENSG00000227555	MIR4290HG	More	ncRNA
chr3	133710572	133711072	intron (NM_001354703, intron 5 of 22)	-35571	ENSG00000091513	TF	More	protein-coding
chr18	28809849	28810349	Intergenic	-632969	ENSG00000170558	CDH2	More	protein-coding
chr13	66082639	66083139	Intergenic	-116460	ENSG00000263581	MIR548X2	More	ncRNA
chrX	15061612	15062112	Intergenic	176571	ENSG00000130150	MOSP2	More	protein-coding
chr4	11044373	11044873	Intergenic	-324204	ENSG00000207716	MIR572	More	ncRNA
chr3	58595542	58596042	intron (NM_001282714, intron 1 of 4)	-8778	ENSG00000168309	FAM107A	More	protein-coding
chr18	31804714	31805214	Intergenic	-44084	ENSG00000141437	SLC25A52	More	protein-coding
chr16	10060563	10061063	intron (NM_001134408, intron 2 of 13)	121254	ENSG00000183454	GRIN2A	More	protein-coding
chr3	43078236	43078736	TTS (NM_032806)	27593	ENSG00000144647	POMGNT2	More	protein-coding
chr1	67705305	67705805	exon (NM_018841, exon 4 of 4)	20354	ENSG00000116717	GADD45A	More	protein-coding
chr16	12740270	12740770	intron (NM_018340, intron 2 of 3)	20199	ENSG00000264733	MIR4718	More	ncRNA
chr13	73797516	73798016	intron (NM_007249, intron 5 of 7)	233522		LINC00392	More	ncRNA
chr10	5895343	58953943	intron (NM_032807, intron 2 of 21)	1207	ENSG00000134452	FBH1	More	protein-coding
chr11	88619932	88620432	intron (NM_001143831, intron 3 of 8)	115606	ENSG00000255082	GRM5-AS1	More	ncRNA

chrX	39026990	39027490	Intergenic	-223357	MID1IP1-AS1	More	ncRNA
chr9	14213377	14213877	intron (NR_161383, intron 1 of 7)	-32823	ENSG00000147862	More	protein-coding
chr7	135365483	135365983	intron (NM_001190849, intron 10 of 11)	133754	ENSG00000146857	More	protein-coding
chr4	69923484	69923984	Intergenic	-7334	ENSG00000126545	More	protein-coding
chr7	21644021	21644521	intron (NM_001277115, intron 28 of 81)	101232	ENSG00000105877	More	protein-coding
chr17	68205395	68205895	promoter-TSS (NM_001346481)	-484	ENSG00000196704	More	protein-coding
chr1	233791962	233792462	Intergenic	-112464	ENSG00000183780	More	protein-coding
chr3	175804950	175805450	3' UTR (NM_207015, exon 14 of 14)	-28867	NAALADL2-AS1	More	ncRNA
chr15	99523941	99524441	Intergenic	-41226	ENSG00000068305	More	protein-coding
chr1	167878889	167879389	intron (NM_018417, intron 11 of 32)	34995	ENSG00000143199	More	protein-coding
chr2	175482460	175482960	Intergenic	-301000	ENSG00000154518	More	protein-coding
chr4	4691349	4691849	intron (NR_037888, intron 4 of 5)	27273	SNORD162	More	snoRNA
chr18	4224108	4224608	intron (NM_001242761, intron 1 of 11)	-40244	ENSG00000261520	More	ncRNA
chr19	5322054	5322554	intron (NM_002850, intron 1 of 37)	18508	ENSG00000105426	More	protein-coding
chr1	168688917	168689417	Intergenic	40039	ENSG00000143196	More	protein-coding
chr10	67460829	67461329	intron (NM_001127384, intron 5 of 17)	-57669	ENSG00000276866	More	ncRNA
chr5	125439433	125439933	Intergenic	-53578	ENSG00000260192	More	ncRNA
chr2	137068013	137068513	intron (NM_001316349, intron 3 of 27)	302718	ENSG00000144229	More	protein-coding
chr2	151440537	151441037	intron (NM_001177665, intron 14 of 33)	30885	ENSG00000080345	More	protein-coding
chr21	37064716	37065216	promoter-TSS (NR_131189)	-900	LOC105372795	More	ncRNA
chr10	73143995	73144495	intron (NM_001135752, intron 9 of 14)	-18038	ENSG00000221164	More	snoRNA
chr2	73151291	73151791	Intergenic	-38593	ENSG00000135631	More	protein-coding
chr5	92678316	92678816	Intergenic	892777	ENSG00000237187	More	ncRNA
chr6	13513807	13514307	Intergenic	-26420	ENSG00000145990	More	protein-coding
chr1	90066191	90066691	Intergenic	71331	ENSG00000162664	More	protein-coding
chr10	60772523	60773023	Intergenic	-5558	ENSG00000170312	More	protein-coding
chr10	34846878	34847378	Intergenic	31360	ENSG00000226386	More	ncRNA
chr2	37701396	37701896	Intergenic	-29111	ENSG00000163171	More	protein-coding
chr3	31030869	31031369	Intergenic	130668	ENSG00000265376	More	ncRNA
chr17	46620521	46621021	intron (NR_040116, intron 1 of 19).2	30037	NSFP1	More	pseudo
chr13	38463401	38463901	Intergenic	-104073	LINC00366	More	ncRNA
chr18	75421059	75421559	intron (NM_001037331, intron 1 of 2)	6394	ENSG00000206026	More	protein-coding
chr5	97367051	97367551	Intergenic	-137395	ENSG00000250331	More	ncRNA
chr12	121696190	121696690	Intergenic	-16312	ENSG00000188735	More	protein-coding
chr9	99003502	99004002	intron (NM_001855, intron 8 of 41)	59845	ENSG00000204291	More	protein-coding
chr2	55172494	55172994	non-coding (NR_148538, exon 6 of 6)	-34913	ENSG00000115310	More	protein-coding
chr20	11374881	11375381	Intergenic	-101748	LOC339593	More	ncRNA
chr14	71861708	71862208	Intergenic	-70213	ENSG00000182732	More	protein-coding
chr6	76194198	76194698	Intergenic	-121770	ENSG00000112706	More	protein-coding
chr6	20287208	20287708	Intergenic	-74989	ENSG00000172197	More	protein-coding
chr18	43518351	43518851	Intergenic	-241111	ENSG00000132872	More	protein-coding
chr1	15516486	15516986	intron (NR_102733, intron 2 of 8)	7479	ENSG00000132906	More	protein-coding
chr2	47427990	47428490	intron (NM_000251, intron 6 of 15)	25173	ENSG00000095002	More	protein-coding
chr2	75743422	75743922	Intergenic	-32757	ENSG00000005436	More	protein-coding
chr13	59566622	59567122	Intergenic	-445846	ENSG00000227528	More	ncRNA
chr22	42269348	42269848	promoter-TSS (NR_036498)	-155	OGFRP1	More	pseudo
chr7	81421173	81421673	Intergenic	140396	LOC105369146	More	ncRNA
chr18	47216554	47217054	intron (NM_001278063, intron 7 of 8)	34856	ENSG00000215474	More	protein-coding
chr18	48755701	48756201	intron (NM_014772, intron 7 of 11)	85351	ENSG00000266276	More	ncRNA
chr17	34216071	34216571	Intergenic	-32689	ENSG00000261156	More	ncRNA
chr18	33791445	33791945	Intergenic	213476	ENSG00000141431	More	protein-coding
chr6	16218939	16219439	Intergenic	-19398	ENSG00000137198	More	protein-coding
chr8	104196793	104197293	intron (NM_001348498, intron 20 of 24)	-26292	ENSG00000176406	More	protein-coding
chr5	106763865	106764365	Intergenic	246899	ENSG00000251027	More	ncRNA
chr7	624886	625386	intron (NM_001164760, intron 4 of 10)	21738	LOC101926963	More	ncRNA
chr18	54729176	54729676	Intergenic	-99051	ENSG00000041353	More	protein-coding
chrX	122390182	122390682	Intergenic	-793811	ENSG00000125675	More	protein-coding
chr16	10071980	10072480	intron (NM_001134408, intron 2 of 13)	109837	ENSG00000183454	More	protein-coding
chr2	127764432	127764932	exon (NM_001006622, exon 6 of 6)	46489	ENSG00000136709	More	protein-coding
chr5	133024121	133024621	intron (NM_001300816, intron 1 of 4)	2178	ENSG00000155329	More	protein-coding
chr2	109177414	109177914	intron (NM_001099289, intron 1 of 9)	-36076	ENSG00000264934	More	ncRNA
chr17	69773262	69773762	intron (NR_109972, intron 3 of 4)	179525	ENSG00000227517	More	ncRNA
chr8	48514951	48515451	Intergenic	-36366	ENSG00000253608	More	ncRNA
chr7	113269301	113269801	Intergenic	-150969	ENSG00000214194	More	protein-coding
chr12	118212787	118213287	intron (NM_001346490, intron 11 of 21)	-22502	ENSG00000135090	More	protein-coding
chr5	73012220	73012720	intron (NM_001146032, intron 6 of 24)	56429	ENSG00000157107	More	protein-coding
chr9	90407700	90408200	intron (NR_109795, intron 1 of 2)	25539	ENSG00000231107	More	ncRNA
chr18	3914830	3915330	intron (NM_001242761, intron 3 of 11)	29727	ENSG00000275518	More	ncRNA
chr1	105570529	105571029	Intergenic	48156	ENSG00000230768	More	ncRNA
chr1	111874767	111875267	intron (NM_172198, intron 2 of 6)	-18112	ENSG00000232558	More	ncRNA
chr11	99552932	99553432	intron (NM_001243271, intron 2 of 20)	-2963	ENSG00000149972	More	protein-coding
chr2	229477784	229478284	intron (NM_139072, intron 6 of 12)	-206747	ENSG00000153823	More	protein-coding
chr2	95538827	95539327	Intergenic	-52924	ENSG00000144015	More	protein-coding
chr3	65840256	65840756	intron (NM_001365904, intron 1 of 24)	-53310	ENSG00000240175	More	ncRNA
chr3	175066911	175067411	intron (NM_207015, intron 1 of 13)	48081	ENSG00000230292	More	ncRNA
chr2	9215163	9215663	intron (NM_003887, intron 1 of 27)	8601	ENSG00000151693	More	protein-coding
chr13	114912062	114912562	Intergenic	-578364	LINC01054	More	ncRNA
chr4	146630929	146631429	Intergenic	-7714	ENSG00000151615	More	protein-coding
chr13	93458438	93458938	intron (NM_005708, intron 1 of 8)	231881	ENSG00000183098	More	protein-coding
chr17	65047886	65048386	intron (NM_006572, intron 2 of 3)	7638	ENSG00000120063	More	protein-coding
chr2	126316666	126317166	Intergenic	-198931	ENSG00000226813	More	ncRNA
chr4	143495377	143495877	Intergenic	-18075	ENSG00000153147	More	protein-coding

chr12	108706418	108706918	intron (NM_014325, intron 1 of 10)	-3670	ENSG00000110880	CORO1C	More	protein-coding
chr2	13826405	13826905	Intergenic	574303	ENSG00000230448	LINC00276	More	ncRNA
chr12	125903371	125903871	Intergenic	79753	ENSG00000249267	LINC00939	More	ncRNA
chr17	77725978	77726478	intron (NR_104134, intron 1 of 1)	2331	ENSG00000267790	LINC01987	More	ncRNA
chr5	60497967	60498467	intron (NR_024617, intron 1 of 3)	-1931	ENSG00000113448	PDE4D	More	protein-coding
chr8	141457543	141458043	intron (NR_102364, intron 18 of 26)	36405	ENSG00000184489	PTP4A3	More	protein-coding
chr6	115800400	115800900	Intergenic	-156815		LINC02534	More	ncRNA
chr4	69920386	69920886	Intergenic	-10432	ENSG00000126545	CSN1S1	More	protein-coding
chr9	87115100	87115600	Intergenic	-30125		LOC494127	More	pseudo
chr8	56116083	56116583	Intergenic	-2351	ENSG00000172680	MOS	More	protein-coding
chr1	192561647	192562147	Intergenic	-13876	ENSG00000090104	RGS1	More	protein-coding
chr1	41788537	41789037	intron (NM_024503, intron 1 of 8)	130135	ENSG00000127124	HIVEP3	More	protein-coding
chr10	34955293	34955793	Intergenic	118740	ENSG00000108094	CUL2	More	protein-coding
chr4	173998265	173998765	Intergenic	101242	ENSG00000250708	LINC02269	More	ncRNA
chr9	113599728	113600228	Intergenic	5849	ENSG00000138835	RGS3	More	protein-coding
chr7	20956897	20957397	intron (NR_126381, intron 2 of 5)	121716	ENSG00000232790	LINC01162	More	ncRNA
chr13	65567827	65568327	Intergenic	-297970		LINC01052	More	ncRNA
chr6	115795654	115796154	Intergenic	-152069		LINC02534	More	ncRNA
chr3	123199239	123199739	Intergenic	-2454	ENSG00000121542	SEC22A	More	protein-coding
chr11	88539479	88539979	intron (NM_001143831, intron 7 of 8)	35153	ENSG00000255082	GRM5-AS1	More	ncRNA
chr20	30650565	30651065	Intergenic	-247353		MLLT10P1	More	pseudo
chr9	4686091	4686591	intron (NM_017913, intron 2 of 6)	6772	ENSG00000106993	CDC37L1	More	protein-coding
chr5	100818204	100818704	intron (NM_005668, intron 4 of 4)	-1889	ENSG00000221263	MIR548P	More	ncRNA
chr18	43362576	43363076	Intergenic	-85336	ENSG00000132872	SYT4	More	protein-coding
chr9	75318439	75318939	Intergenic	230175	ENSG00000134996	OSTF1	More	protein-coding
chr10	31039766	31040266	Intergenic	-8079	ENSG00000183621	ZNF438	More	protein-coding
chr6	55578140	55578640	intron (NM_019036, intron 1 of 9)	824	ENSG00000146151	HMGCLL1	More	protein-coding
chr10	32702402	32702902	intron (NM_001321115, intron 25 of 43)	198820		SNORA86	More	snoRNA
chr9	9585818	9586318	intron (NM_002839, intron 7 of 45)	-213324	ENSG00000230920	LOC105375972	More	ncRNA
chr10	74813982	74814482	Intergenic	-11023	ENSG00000156650	KAT6B	More	protein-coding
chrX	106817393	106817893	intron (NM_198881, intron 1 of 11)	14970	ENSG00000133138	TBC1D8B	More	protein-coding
chr16	15248449	15248949	Intergenic	-90178	ENSG00000265776	MIR3670-3	More	ncRNA
chr10	122919124	122919624	Intergenic	8764	ENSG00000203795	FAM24A	More	protein-coding
chr3	149812208	149812708	promoter-TSS (NM_183381)	-230	ENSG00000082996	RNF13	More	protein-coding
chr7	8166203	8166703	intron (NM_001350836, intron 7 of 14)	95599	ENSG00000003147	ICA1	More	protein-coding
chr11	75444722	75445222	intron (NM_030792, intron 9 of 16)	7355	ENSG00000158555	GDPPD5	More	protein-coding
chr11	32175236	32175736	Intergenic	-31574		SNORA88	More	snoRNA
chr1	214577452	214577952	Intergenic	-25493	ENSG00000117724	CENPF	More	protein-coding
chr1	157137874	157138374	intron (NM_005240, intron 1 of 3)	271	ENSG00000117036	ETV3	More	protein-coding
chr7	31990987	31991487	intron (NM_001322059, intron 3 of 17)	79170	ENSG00000154678	PDE1C	More	protein-coding
chr1	187955277	187955777	Intergenic	511899		LINC01037	More	ncRNA
chrX	15585967	15586467	intron (NM_021804, intron 7 of 18)	14743			More	
chr1	233800662	233801162	Intergenic	-103764	ENSG00000183780	SLC35F3	More	protein-coding
chr11	121034425	121034925	intron (NM_152715, intron 1 of 7)	10603	ENSG00000154114	TBCEL	More	protein-coding
chr6	154298410	154298910	intron (NM_015553, intron 1 of 11)	31421	ENSG00000074706	IPCEF1	More	protein-coding
chr19	5330218	5330718	intron (NM_002850, intron 1 of 37)	10344	ENSG00000105426	PTPRS	More	protein-coding
chr1	159928522	159929022	exon (NM_001135050, exon 19 of 21)	-3265	ENSG00000158710	TAGLN2	More	protein-coding
chr4	162749078	162749578	Intergenic	344300	ENSG00000283468	MIR4454	More	ncRNA
chr5	37799914	37800414	Intergenic	34658	ENSG00000168621	GDNF	More	protein-coding
chr11	995080	995580	intron (NR_144509, intron 14 of 20)	41388	ENSG00000184956	MUC6	More	protein-coding
chr17	70001420	70001920	Intergenic	39963	ENSG00000237560	LINC01497	More	ncRNA
chr10	85299565	85300065	Intergenic	-100877	ENSG00000237267	LINC01519	More	ncRNA
chr3	116018414	116018914	intron (NM_001318915, intron 3 of 8)	-113538		SNORD155	More	snoRNA
chr16	85234422	85234922	Intergenic	26876		MIR12128	More	ncRNA
chr3	55194146	55194646	Intergenic	16224	ENSG00000243572	LINC02017	More	ncRNA
chr18	68703902	68704402	intron (NM_019022, intron 4 of 15)	10956	ENSG00000166479	TMX3	More	protein-coding
chr6	137910550	137911050	Intergenic	35000	ENSG00000226004	LINC02528	More	ncRNA
chr17	69760660	69761160	intron (NR_109972, intron 3 of 4)	166923	ENSG00000227517	LINC01483	More	ncRNA
chr5	159964873	159965373	intron (NM_000679, intron 1 of 1)	-43977	ENSG00000113312	TTC1	More	protein-coding
chr20	11376086	11376586	Intergenic	-102953		LOC339593	More	ncRNA
chr14	40237701	40238201	Intergenic	-716760		LINC02315	More	ncRNA
chr22	35342635	35343135	intron (NR_156428, intron 11 of 13)	-6086	ENSG00000274280	MIR6069	More	ncRNA
chr21	47061023	47061523	Intergenic	425599	ENSG00000160310	PRMT2	More	protein-coding
chr13	64037984	64038484	intron (NR_145420, intron 1 of 5)	37777	ENSG00000227674	LINC00355	More	ncRNA
chr4	162224627	162225127	Intergenic	-60843	ENSG00000168843	FSTL5	More	protein-coding
chr1	35166410	35166910	Intergenic	26485	ENSG00000116560	SFPQ	More	protein-coding
chr6	49947299	49947799	intron (NR_163261, intron 1 of 1)	1895	ENSG00000214643	DEFB133	More	pseudo
chr5	10069966	10070466	Intergenic	-166392	ENSG00000249781	LINC02112	More	ncRNA
chr5	83555810	83556310	intron (NM_001164098, intron 11 of 13)	6254	ENSG00000249835	VCAN-AS1	More	ncRNA
chr20	38710262	38710762	Intergenic	-13974	ENSG00000101438	SLC32A1	More	protein-coding
chr15	49190373	49190873	intron (NM_002044, intron 1 of 9)	20376	ENSG00000156958	GALK2	More	protein-coding
chr3	175213063	175213563	intron (NM_207015, intron 2 of 13)	57783		NAALADL2-AS2	More	ncRNA
chr4	107629325	107629825	intron (NM_005443, intron 11 of 11)	90659	ENSG00000138801	PAPSS1	More	protein-coding
chr6	51794086	51794586	intron (NM_138694, intron 52 of 66)	172466		LOC101927082	More	ncRNA
chr8	110799704	110800204	Intergenic	227479	ENSG00000253877	LINC01608	More	ncRNA
chr3	178568239	178568739	intron (NM_001278911, intron 1 of 4)	9639	ENSG00000197584	KCNMB2	More	protein-coding
chr1	214728983	214729483	Intergenic	126038	ENSG00000117724	CENPF	More	protein-coding
chr7	7870051	7870551	intron (NM_001302350, intron 4 of 4)	98451		LOC100505921	More	ncRNA
chr20	14725312	14725812	intron (NM_001351663, intron 5 of 17)	171178	ENSG00000227927	MACROD2-IT1	More	ncRNA
chr18	41613117	41613617	Intergenic	-92690	ENSG00000267313	KC6	More	ncRNA
chr20	43360902	43361402	Intergenic	-96744	ENSG00000124193	SRSF6	More	protein-coding
chr10	21695600	21696100	intron (NM_004641, intron 14 of 23)	161678	ENSG00000078403	MLLT10	More	protein-coding
chr15	96233821	96234321	intron (NR_125738, intron 2 of 4)	-91975	ENSG00000185551	NR2F2	More	protein-coding
chr8	73899053	73899553	Intergenic	20321		LINC01617	More	ncRNA

chr9	75319686	75320186	Intergenic	231422	ENSG00000134996	OSTF1	More	protein-coding
chr1	12065915	12066415	intron (NM_001281430, intron 1 of 13)	2788	ENSG00000120949	TNFRSF8	More	protein-coding
chr14	22804521	22805021	intron (NM_001126105, intron 3 of 10)	10664	ENSG00000155465	SLC7A7	More	protein-coding
chr5	135430297	135430797	Intergenic	16801	ENSG00000251380	DCANP1	More	protein-coding
chr8	107936175	107936675	intron (NM_001282863, intron 4 of 4)	145514	ENSG00000147655	RSPO2	More	protein-coding
chr7	38357111	38357611	intron (NR_040085, intron 3 of 3)	15784	ENSG00000281103	TRG-AS1	More	ncRNA
chr4	111193169	111193669	Intergenic	-332772	ENSG00000215961	MIR297	More	ncRNA
chr20	52523499	52523999	Intergenic	-97089	ENSG00000234948	LINC01524	More	ncRNA
chr11	12739336	12739836	intron (NM_021961, intron 2 of 12)	65165	ENSG00000187079	TEAD1	More	protein-coding
chr12	108920514	108921014	intron (NM_018711, intron 12 of 15)	40672	ENSG00000110887	DAO	More	protein-coding
chr13	106426329	106426829	Intergenic	50015		LINC00460	More	ncRNA
chr1	220946171	220946671	Intergenic	-66281	ENSG00000257551	HLX-AS1	More	ncRNA
chr4	14770046	14770546	intron (NR_126435, intron 2 of 6)	117873	ENSG00000248360	LINC00504	More	ncRNA
chr7	122350099	122350599	intron (NM_001167940, intron 27 of 29)	-45599	ENSG00000128610	FEZF1	More	protein-coding
chr20	13193379	13193879	Intergenic	-27645	ENSG00000101230	ISM1	More	protein-coding
chr16	73332421	73332921	Intergenic	-54134	ENSG00000258779	LINC01568	More	ncRNA
chr22	30035077	30035577	intron (NR_110541, intron 3 of 4)	28278	ENSG00000275818	MIR6818	More	ncRNA
chr13	45389673	45390173	intron (NR_024458, intron 10 of 10)	-28239	ENSG00000251015	SLC25A30-AS1	More	ncRNA
chr18	14337281	14337781	non-coding (NR_026756, exon 1 of 4)	108	ENSG00000265787	CYP4F35P	More	pseudo
chr21	26823847	26824347	Intergenic	21312	ENSG00000154734	ADAMTS1	More	protein-coding
chr16	24439100	24439600	Intergenic	-100216	ENSG00000122257	RBBP6	More	protein-coding
chr4	185955033	185955533	intron (NM_001270771, intron 1 of 23)	1089	ENSG00000154556	SORBS2	More	protein-coding
chr4	138560069	138560569	Intergenic	250608	ENSG00000251372	LINC00499	More	ncRNA
chr3	117023475	117023975	Intergenic	102294	ENSG00000242385	LINC00901	More	ncRNA
chr3	76614680	76615180	Intergenic	-425169	ENSG00000185008	ROBO2	More	protein-coding
chr3	62135563	62136063	intron (NM_002841, intron 6 of 29)	183134	ENSG00000241472	PTPRG-AS1	More	ncRNA
chr1	187956262	187956762	Intergenic	512884		LINC01037	More	ncRNA
chr2	138584279	138584779	Intergenic	82759	ENSG00000144228	SPOPL	More	protein-coding
chr1	222507399	222507899	Intergenic	40455	ENSG00000143512	HHIPL2	More	protein-coding
chr8	76374461	76374961	Intergenic	-31943	ENSG00000254300	LINC01111	More	ncRNA
chr5	172974426	172974926	Intergenic	-9095	ENSG00000113732	ATP6VOE1	More	protein-coding
chr1	81886307	81886807	intron (NM_001366002, intron 3 of 20)	84104	ENSG00000117114	ADGRL2	More	protein-coding
chr2	27108780	27109280	intron (NM_006569, intron 1 of 5)	10097	ENSG00000138028	CGREF1	More	protein-coding
chr1	179767305	179767805	intron (NM_001329719, intron 1 of 4)	24264	ENSG00000143340	FAM163A	More	protein-coding
chr7	47377080	47377580	intron (NM_022748, intron 16 of 30)	87473		SNORD151	More	snoRNA
chr22	45836882	45837382	intron (NM_013236, intron 10 of 11)	76608	ENSG00000264160	MIR4762	More	ncRNA
chr11	13682630	13683130	intron (NM_032228, intron 1 of 11)	14212	ENSG00000197601	FAR1	More	protein-coding
chr5	37658442	37658942	intron (NM_001345998, intron 10 of 17)	176130	ENSG00000168621	GDNF	More	protein-coding
chr14	59996365	59996865	intron (NR_075071, intron 17 of 32)	76402	ENSG00000131951	LRRC9	More	protein-coding
chr18	33940287	33940787	intron (NM_001198548, intron 7 of 8)	108075	ENSG00000101746	NOLA	More	protein-coding
chr6	162899129	162899629	intron (NM_001080379, intron 2 of 4)	154782	ENSG00000225437	PACRG-AS2	More	ncRNA
chr6	76573519	76574019	intron (NR_149101, intron 2 of 2)	19854	ENSG00000236635	LINC02540	More	ncRNA
chr2	133737283	133737783	Intergenic	-169070	ENSG00000176771	NCKAP5	More	protein-coding
chr8	65413377	65413877	Intergenic	149039	ENSG00000254081	LINC01299	More	ncRNA
chr1	46987784	46988284	intron (NM_001320289, intron 1 of 11)	-16152	ENSG00000186377	CYP4X1	More	protein-coding
chr16	84047472	84047972	Intergenic	-5565	ENSG00000166558	SLC38A8	More	protein-coding
chr20	52811183	52811683	Intergenic	-160925	ENSG00000182463	TSHZ2	More	protein-coding
chr3	98829961	98830461	intron (NM_080927, intron 3 of 15)	66904	ENSG00000064225	ST3GAL6	More	protein-coding
chr3	36823585	36824085	Intergenic	-1335	ENSG00000279727	LINC02033	More	ncRNA
chr21	30518113	30518613	Intergenic	-16222	ENSG00000186977	KRTAP19-5	More	protein-coding
chr12	121547919	121548419	intron (NM_001005366, intron 6 of 22)	32077	ENSG00000089094	KDM2B	More	protein-coding
chr1	168761386	168761886	Intergenic	-25305	ENSG00000225826	LINC00626	More	ncRNA
chr2	151344526	151345026	intron (NR_110248, intron 2 of 2)	-12816	ENSG00000123610	TNFAIP6	More	protein-coding
chrX	132500681	132501181	Intergenic	-10896	ENSG00000076770	MBNL3	More	protein-coding
chr4	17093504	17094004	Intergenic	92303	ENSG00000250819	LINC02493	More	ncRNA
chr1	236036277	236036777	intron (NM_002508, intron 5 of 19)	28563	ENSG00000116962	NID1	More	protein-coding
chr5	44183760	44184260	Intergenic	-204722	ENSG00000248464	FGF10-AS1	More	ncRNA
chr2	13806976	13807476	Intergenic	593732	ENSG00000230448	LINC00276	More	ncRNA
chr3	78371844	78372344	Intergenic	-323131		LINC02077	More	ncRNA
chr18	76928972	76929472	intron (NM_001306089, intron 25 of 30)	87833	ENSG00000197971	MBP	More	protein-coding
chr22	45259182	45259682	Intergenic	-18663	ENSG00000100364	KIAA0930	More	protein-coding
chr18	4248709	4249209	intron (NM_001242761, intron 1 of 11)	-15643	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr15	99525523	99526023	Intergenic	-39644	ENSG00000068305	MEF2A	More	protein-coding
chr1	72051572	72052072	intron (NM_173808, intron 1 of 6)	-214810	ENSG00000228853	NEGR1-IT1	More	ncRNA
chr2	132273271	132273771	Intergenic	-15488	ENSG00000163046	ANKRD30BL	More	protein-coding
chr4	17094588	17095088	Intergenic	91219	ENSG00000250819	LINC02493	More	ncRNA
chr1	168479666	168480166	intron (NR_125956, intron 4 of 4)	15728	ENSG00000228697	LOC101928565	More	ncRNA
chr10	34538601	34539101	intron (NM_001184789, intron 2 of 22)	276445	ENSG00000148498	PARD3	More	protein-coding
chr18	67968811	67969311	Intergenic	-154239	ENSG00000265555	LINC01903	More	ncRNA
chr7	12684715	12685215	Intergenic	-1862	ENSG00000122644	ARL4A	More	protein-coding
chr2	13685380	13685880	Intergenic	-678617	ENSG00000225649	LOC100506474	More	ncRNA
chr14	49670312	49670812	intron (NM_001348385, intron 5 of 18)	17652	ENSG00000100479	POLE2	More	protein-coding
chr14	66523790	66524290	intron (NM_001024218, intron 1 of 21)	16633	ENSG00000171723	GPHN	More	protein-coding
chr2	30083364	30083864	Intergenic	-63393	ENSG00000119801	YPEL5	More	protein-coding
chr3	76918921	76919421	Intergenic	-120928	ENSG00000185008	ROBO2	More	protein-coding
chr18	23542146	23542646	intron (NM_000271, intron 14 of 24)	38885	ENSG00000141452	RMC1	More	protein-coding
chr17	65482995	65483495	Intergenic	25704	ENSG00000263520	LINC02563	More	ncRNA
chr20	13210116	13210616	Intergenic	-10908	ENSG00000101230	ISM1	More	protein-coding
chr18	33982793	33983293	intron (NM_001353232, intron 6 of 9)	65569	ENSG00000101746	NOLA	More	protein-coding
chr7	31932370	31932870	intron (NM_001322059, intron 3 of 17)	138287	ENSG00000154678	PDE1C	More	protein-coding
chr3	113155532	113156032	intron (NR_110823, intron 2 of 3)	11949	ENSG00000243795	LINC02044	More	ncRNA
chr1	116775561	116776061	Intergenic	21381	ENSG00000116824	CD2	More	protein-coding
chr6	155569416	155569916	Intergenic	54822		LOC105378068	More	ncRNA
chr15	86033021	86033521	Intergenic	-46349	ENSG00000273540	AGBL1	More	protein-coding

chr1	68920236	68920736	Intergenic	-135412	ENSG00000223883	LINC01707	More	ncRNA
chr3	78683280	78683280	intron (NM_002941, intron 10 of 30)	336429	ENSG00000169855	ROBO1	More	protein-coding
chr2	151385329	151385829	Intergenic	-6208		LOC101929319	More	ncRNA
chr10	60755803	60756303	Intergenic	-22278	ENSG00000170312	CDK1	More	protein-coding
chr1	226039462	226039962	Intergenic	-23004	ENSG00000163041	H3F3A	More	protein-coding
chr2	151441570	151442070	intron (NM_001177665, intron 14 of 33)	31918	ENSG00000080345	RIF1	More	protein-coding
chr4	128697841	128698341	Intergenic	-111609	ENSG00000077684	JADE1	More	protein-coding
chrX	37976675	37977175	Intergenic	-13854	ENSG00000187516	HYPM	More	protein-coding
chr6	76155916	76156416	Intergenic	-83488	ENSG00000112706	IMP1	More	protein-coding
chr4	156802662	156803162	intron (NM_016205, intron 3 of 5)	168887	ENSG00000145431	PDGFC	More	protein-coding
chr3	175064617	175065117	intron (NM_207015, intron 1 of 13)	50375	ENSG00000230292	NAALADL2-AS3	More	ncRNA
chr9	129769856	129770356	Intergenic	-17064	ENSG00000148344	PTGES	More	protein-coding
chr5	116926653	116927153	Intergenic	-164694		LINC02214	More	ncRNA
chr3	141127915	141128415	intron (NM_080862, intron 2 of 2)	76818	ENSG00000175093	SPSB4	More	protein-coding
chr9	92452286	92452786	intron (NM_001286969, intron 4 of 6)	-27982	ENSG00000127083	OMD	More	protein-coding
chr2	120220685	120221185	3' UTR (NM_024121, exon 1 of 1)	2465	ENSG00000226479	TMEM185B	More	protein-coding
chr4	2413717	2414217	intron (NM_020972, intron 1 of 12)	4678	ENSG00000159733	ZFYVE28	More	protein-coding
chr4	184668015	184668515	intron (NR_144313, intron 6 of 12)	18527	ENSG00000164306	PRIMPOL	More	protein-coding
chr13	42952459	42952959	intron (NM_033255, intron 6 of 10)	39532	ENSG00000133106	EPST11	More	protein-coding
chr10	87431145	87431645	Intergenic	-23695		FAM245A	More	ncRNA
chr7	46722695	46723195	Intergenic	-25823	ENSG00000233539	LOC730338	More	ncRNA
chr2	151332995	151333495	Intergenic	-24347	ENSG00000123610	TNFAIP6	More	protein-coding
chr18	4230489	4230989	intron (NM_001242761, intron 1 of 11)	-33863	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr7	31872607	31873107	intron (NM_001191059, intron 7 of 18)	185642	ENSG00000106341	PPP1R17	More	protein-coding
chr4	69985035	69985535	Intergenic	-10681	ENSG00000126549	STATH	More	protein-coding
chr19	56368455	56368955	promoter-TSS (NM_001322072)	-322	ENSG00000131848	ZSCAN5A	More	protein-coding
chr1	17572688	17573188	intron (NR_137287, intron 1 of 29)	-7615	ENSG00000074964	ARHGEF10L	More	protein-coding
chr3	170902089	170902589	intron (NM_020390, intron 3 of 4)	6298	ENSG00000163577	EIF5A2	More	protein-coding
chr1	220828847	220829347	promoter-TSS (NR_110797)	-158	ENSG00000238078	LINC01352	More	ncRNA
chr18	4147826	4148326	intron (NM_001242761, intron 2 of 11)	-116526	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr1	233807440	233807940	Intergenic	-96986	ENSG00000183780	SLC35F3	More	protein-coding
chr4	157720129	157720629	Intergenic	147889	ENSG00000234111	LINC02433	More	ncRNA
chr4	76013010	76013510	intron (NM_001130017, intron 1 of 9)	2080	ENSG00000156219	ART3	More	protein-coding
chr11	68791889	68792389	intron (NM_001031847, intron 9 of 18)	-40619	ENSG00000132749	TESMIN	More	protein-coding
chr13	59930671	59931171	intron (NM_001258369, intron 17 of 26)	-81797	ENSG00000227528	DIAPH3-AS1	More	ncRNA
chrX	20972059	20972559	Intergenic	-402109	ENSG00000149970	CNKSR2	More	protein-coding
chr4	138561296	138561796	Intergenic	251835	ENSG00000251372	LINC00499	More	ncRNA
chr7	87172903	87173403	intron (NR_024550, intron 5 of 17)	20599	ENSG00000135164	DMTF1	More	protein-coding
chr19	16190862	16191362	3' UTR (NM_014077, exon 4 of 4)	5702	ENSG00000105058	FAM32A	More	protein-coding
chr12	30345115	30345615	Intergenic	331879	ENSG00000133704	IPO8	More	protein-coding
chr5	169265633	169266133	intron (NM_003062, intron 1 of 35)	-2189	ENSG00000207619	MIR585	More	ncRNA
chr11	67135939	67136439	intron (NR_027473, intron 2 of 20)	16926	ENSG00000173120	KDM2A	More	protein-coding
chr9	76156897	76157397	exon (NM_001190482, exon 11 of 37)	237279	ENSG00000135002	RFK	More	protein-coding
chr9	20558587	20559087	intron (NM_001286691, intron 2 of 10)	-56495	ENSG00000264941	MIR4474	More	ncRNA
chr7	46719612	46720112	Intergenic	-22740	ENSG00000233539	LOC730338	More	ncRNA
chr14	69524433	69524933	intron (NM_001161498, intron 8 of 12)	39955	ENSG00000175985	PLEKHD1	More	protein-coding
chr8	76690742	76691242	intron (NM_024721, intron 1 of 10)	-7717	ENSG00000253661	ZFH4-AS1	More	ncRNA
chr5	61883441	61883941	Intergenic	-147993		Csorf64-AS1	More	ncRNA
chr7	50654908	50655408	intron (NM_001350816, intron 6 of 17)	50143	ENSG00000106070	GRB10	More	protein-coding
chr20	21599520	21600020	intron (NR_109880, intron 1 of 3)	29746		LINC01727	More	ncRNA
chr10	106651850	106652350	intron (NM_001206569, intron 18 of 25)	511935	ENSG00000229775	LINC02624	More	ncRNA
chr7	34789728	34790228	intron (NM_207172, intron 3 of 8)	-31706	ENSG00000197085	NPSR1-AS1	More	ncRNA
chr6	133539962	133540462	intron (NR_109982, intron 5 of 8)	-280935		LINC01312	More	ncRNA
chr21	26670933	26671433	Intergenic	-97897	ENSG00000166265	CYR1	More	protein-coding
chr2	37801148	37801648	Intergenic	28313	ENSG00000237803	LINC00211	More	ncRNA
chr8	27471641	27472141	intron (NM_001347705, intron 1 of 6)	7370	ENSG00000120903	CHRNA2	More	protein-coding
chr1	17426464	17426964	intron (NM_001136204, intron 2 of 11).2	11822	ENSG00000179051	RCC2	More	protein-coding
chr3	171515647	171516147	Intergenic	-55489	ENSG00000154310	TNIK	More	protein-coding
chr3	13502990	13503490	intron (NM_001136041, intron 8 of 9)	22934	ENSG00000163517	HDAC11	More	protein-coding
chr20	49103916	49104416	Intergenic	57854	ENSG00000124207	CSE1L	More	protein-coding
chr7	120159166	120159666	Intergenic	-113759	ENSG00000184408	KCND2	More	protein-coding
chr22	23623797	23624297	intron (NM_016449, intron 3 of 11)	8274	ENSG00000189269	DRICH1	More	protein-coding
chr11	112029715	112030215	intron (NM_001931, intron 4 of 13)	5151	ENSG00000150768	DLAT	More	protein-coding
chr8	76497189	76497689	intron (NR_105006, intron 3 of 5)	90785	ENSG00000254300	LINC01111	More	ncRNA
chr3	148941665	148942165	Intergenic	-49493	ENSG00000163754	GYG1	More	protein-coding
chr14	74296090	74296590	exon (NM_020325, exon 5 of 18)	6594	ENSG00000119688	ABCD4	More	protein-coding
chr20	6818808	6819308	Intergenic	51372	ENSG00000125845	BMP2	More	protein-coding
chr8	53883359	53883859	intron (NR_104579, intron 1 of 3)	2737	ENSG00000147509	RGS20	More	protein-coding
chr3	59221243	59221743	Intergenic	-171461	ENSG00000163689	C3orf67	More	protein-coding
chr3	171488929	171489429	Intergenic	-28771	ENSG00000154310	TNIK	More	protein-coding
chr10	73092996	73093496	intron (NM_001142595, intron 1 of 15)	3728	ENSG00000122884	P4HA1	More	protein-coding
chr1	111052772	111053272	Intergenic	-86361	ENSG00000134255	CEPT1	More	protein-coding
chr5	135356040	135356540	intron (NM_138610, intron 5 of 8)	42948	ENSG00000113648	H2AFY	More	protein-coding
chr10	73103107	73103607	Intergenic	-6383	ENSG00000122884	P4HA1	More	protein-coding
chr17	46639295	46639795	intron (NR_040116, intron 4 of 19).2	48811		NSFP1	More	pseudo
chr4	116405592	116406092	Intergenic	106117	ENSG00000284253	MIR1973	More	ncRNA
chr5	134936509	134937009	intron (NM_032151, intron 2 of 3)	-31148	ENSG00000152705	CATSPER3	More	protein-coding
chr20	44788158	44788658	intron (NM_001205317, intron 1 of 5)	22138	ENSG00000101098	RIMS4	More	protein-coding
chr18	33940848	33941348	intron (NM_001198548, intron 7 of 8)	107514	ENSG00000101746	NOL4	More	protein-coding
chr6	124623147	124623647	intron (NM_001300738, intron 4 of 7)	-339148	ENSG00000146373	RNF217	More	protein-coding
chr10	35063916	35064416	intron (NM_003591, intron 2 of 20)	10117	ENSG00000108094	CUL2	More	protein-coding
chr18	4024739	4025239	intron (NM_001242761, intron 2 of 11)	62636	ENSG00000263878	DLGAP1-AS4	More	ncRNA
chr12	108713376	108713876	intron (NM_014325, intron 1 of 10)	-10628	ENSG00000110880	CORO1C	More	protein-coding

chr5	172940057	172940557	intron (NM_001031711, intron 9 of 9)	-18422	ENSG000000037241	RPL26L1	More	protein-coding
chr2	19321996	19322496	Intergenic	-26183	ENSG00000266738	MIR4757	More	ncRNA
chr2	30887820	30888320	Intergenic	-80624	ENSG00000162949	CAPN13	More	protein-coding
chr8	48510542	48511042	Intergenic	-40775	ENSG00000253608	LOC101929268	More	ncRNA
chrX	74448619	74449119	intron (NM_006517, intron 1 of 5)	27376	ENSG00000147100	SLC16A2	More	protein-coding
chr8	105678478	105678978	intron (NM_001362837, intron 5 of 7)	359185	ENSG00000169946	ZFPM2	More	protein-coding
chr4	168009241	168009741	Intergenic	-83046	ENSG00000109511	ANXA10	More	protein-coding
chr10	124055835	124056335	intron (NM_001270765, intron 1 of 5)	36321	ENSG00000182022	CHST15	More	protein-coding
chr10	24683633	24684133	intron (NM_001367447, intron 2 of 24)	38865	ENSG00000107863	ARHGAP21	More	protein-coding
chr4	5714230	5714730	intron (NM_001306090, intron 1 of 20)	3279	ENSG00000072840	EVC	More	protein-coding
chr2	197345706	197346206	Intergenic	-35176	ENSG00000065413	ANKRD44	More	protein-coding
chr20	44574959	44575459	intron (NM_007066, intron 1 of 3)	-7370	ENSG00000168734	PKIG	More	protein-coding
chr8	57015420	57015920	Intergenic	-21803	ENSG00000104331	IMPAD1	More	protein-coding
chr11	26799879	26800379	Intergenic	-78069	ENSG00000148942	SLCSA12	More	protein-coding
chr15	86746553	86747053	intron (NM_152336, intron 23 of 24)	-186077	ENSG00000259636	LOC105370954	More	ncRNA
chr1	41049616	41050116	intron (NM_001172218, intron 11 of 15)	-28111	ENSG00000171790	SLFN11	More	protein-coding
chr7	31828014	31828514	intron (NM_001191059, intron 13 of 18)	141049	ENSG00000106341	PPP1R17	More	protein-coding
chr1	77408172	77408672	intron (NM_012093, intron 6 of 13)	125335	ENSG00000154027	AK5	More	protein-coding
chr10	33950608	33951108	Intergenic	-178178	ENSG00000261683	LINC00838	More	ncRNA
chr1	49857859	49858359	intron (NM_001323575, intron 1 of 12)	165845	ENSG00000186094	AGBL4	More	protein-coding
chr20	46309866	46310366	Intergenic	-1618	ENSG00000149654	CDH22	More	protein-coding
chr4	167261471	167261971	Intergenic	-27131	ENSG00000196104	SPOCK3	More	protein-coding
chr6	11598883	11599383	Intergenic	61384	ENSG00000205269	TMEM170B	More	protein-coding
chr1	117305944	117306444	intron (NR_126408, intron 2 of 2)	10728	ENSG00000235202	LINC01525	More	ncRNA
chr18	4241085	4241585	intron (NM_001242761, intron 1 of 11)	-23267	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr18	4040664	4041164	intron (NM_001242761, intron 2 of 11)	78561	ENSG00000263878	DLGAP1-AS4	More	ncRNA
chr9	32339411	32339911	Intergenic	-44942	ENSG00000122729	ACO1	More	protein-coding
chr20	34733798	34734298	intron (NM_001242539, intron 9 of 11)	29329	ENSG00000078804	TP53INP2	More	protein-coding
chr4	27863389	27863889	Intergenic	646160	ENSG00000249699	LINC02261	More	ncRNA
chr20	42296340	42296840	intron (NM_133170, intron 12 of 31)	-388893	ENSG00000229042	LOC101927159	More	ncRNA
chr12	1387008	1387508	intron (NR_027948, intron 16 of 19)	-113233	ENSG00000249628	LINC00942	More	ncRNA
chr7	7856754	7857254	intron (NM_001302350, intron 4 of 4)	111748	ENSG000001055921	LOC100505921	More	ncRNA
chr19	18496693	18497193	intron (NM_006532, intron 1 of 11)	25127	ENSG00000105656	ELL	More	protein-coding
chr14	65146851	65147351	Intergenic	-44406	ENSG00000125952	MAX	More	protein-coding
chr10	31106877	31107377	Intergenic	-75190	ENSG00000183621	ZNF438	More	protein-coding
chr13	114633971	114634471	Intergenic	-300273	ENSG000001046151	LINC01054	More	ncRNA
chr4	68387162	68387662	Intergenic	-37322	ENSG00000083896	YTHDC1	More	protein-coding
chr18	61870551	61871051	intron (NM_173557, intron 1 of 1)	22206	ENSG00000176641	RNF152	More	protein-coding
chr12	131055600	131056100	intron (NM_198827, intron 13 of 24)	-61874	ENSG00000146151	ADGRD1-AS1	More	ncRNA
chr6	55692781	55693281	Intergenic	-113817	ENSG00000135631	HMGCLL1	More	protein-coding
chr2	73149006	73149506	Intergenic	-36308	ENSG00000144339	RAB11FIP5	More	protein-coding
chr2	192087187	192087687	intron (NM_001305134, intron 4 of 9)	107496	ENSG00000144339	TMEFF2	More	protein-coding
chr22	43318939	43319439	intron (NM_173050, intron 3 of 21)	24183	ENSG00000159307	SCUBE1	More	protein-coding
chr13	66080043	66080543	Intergenic	-113864	ENSG00000263581	MIR548X2	More	ncRNA
chr8	102074231	102074731	intron (NM_001040624, intron 1 of 7)	49853	ENSG00000104490	NCALD	More	protein-coding
chr4	152350985	152351485	intron (NM_033632, intron 2 of 11)	1591	ENSG00000109670	FBXW7	More	protein-coding
chr3	149815247	149815747	intron (NM_007282, intron 2 of 10)	2809	ENSG00000082996	RNF13	More	protein-coding
chr13	68604131	68604631	Intergenic	280944	ENSG00000281778	LINC00550	More	ncRNA
chr14	72243195	72243695	intron (NM_001370288, intron 2 of 16)	-273375	ENSG00000273830	MIR7843	More	ncRNA
chr1	9263587	9264087	exon (NM_004285, exon 5 of 5)	23990	ENSG00000049239	H6PD	More	protein-coding
chr20	13319646	13320146	Intergenic	-80209	ENSG00000176771	ISM1-AS1	More	ncRNA
chr2	133736376	133736876	Intergenic	-168163	ENSG00000154678	NCKAP5	More	protein-coding
chr7	32082307	32082807	intron (NM_001322059, intron 3 of 17)	-11211	ENSG00000105352	PDE1C	More	protein-coding
chr19	41641498	41641998	Intergenic	-14674	ENSG00000105352	CEACAM4	More	protein-coding
chr1	191839479	191839979	Intergenic	-318733	ENSG00000150681	RGS18	More	protein-coding
chr6	110736576	110737076	intron (NM_001300963, intron 3 of 13)	-77795	ENSG00000123505	AMD1	More	protein-coding
chr2	33843063	33843563	intron (NR_126403, intron 1 of 5)	-115096	ENSG00000239649	MYADML	More	pseudo
chr3	137732154	137732654	Intergenic	-31911	ENSG00000168875	SOX14	More	protein-coding
chrX	133819599	133820099	intron (NM_001164619, intron 1 of 6)	-77594	ENSG00000286096	GPC3-AS1	More	ncRNA
chr7	31987594	31988094	intron (NM_001322059, intron 3 of 17)	82563	ENSG00000154678	PDE1C	More	protein-coding
chr2	155384364	155384864	Intergenic	685919	ENSG00000162989	KCNJ3	More	protein-coding
chr4	150901437	150901937	intron (NM_001367550, intron 13 of 56)	113580	ENSG00000198589	LRBA	More	protein-coding
chr3	7174649	7175149	intron (NM_000844, intron 2 of 9)	-280882	ENSG00000237665	GRM7-AS2	More	ncRNA
chr7	128423268	128423768	Intergenic	-13536	ENSG00000106348	IMPDH1	More	protein-coding
chr3	52278808	52279308	promoter-TSS (NM_025222)	-409	ENSG00000164091	WDR82	More	protein-coding
chr14	94031182	94031682	intron (NM_023112, intron 1 of 5)	5092	ENSG00000089723	OTUB2	More	protein-coding
chr1	82618294	82618794	Intergenic	-284639	ENSG00000230817	LINC01362	More	ncRNA
chr12	101055192	101055692	intron (NM_001286616, intron 13 of 26)	-83116	ENSG00000265470	MIR548AQ	More	ncRNA
chr10	79180427	79180927	intron (NM_020338, intron 4 of 24)	111711	ENSG00000108175	ZMIZ1	More	protein-coding
chr17	31827149	31827649	Intergenic	31563	ENSG00000172301	COPRS	More	protein-coding
chr12	38786316	38786816	intron (NM_153634, intron 6 of 19)	119025	ENSG00000139117	CPNE8	More	protein-coding
chr1	156931405	156931905	intron (NM_144702, intron 12 of 14)	4589	ENSG00000211581	MIR765	More	ncRNA
chr1	160508592	160509092	intron (NM_001184714, intron 1 of 7)	14413	ENSG00000162739	SLAMF6	More	protein-coding
chr17	10090113	10090613	intron (NM_201433, intron 1 of 13)	-53706	ENSG00000007237	GA57	More	protein-coding
chr2	44824064	44824564	Intergenic	114574	ENSG00000259439	LINC01833	More	ncRNA
chr18	28786706	28787206	Intergenic	-609826	ENSG00000170558	CDH2	More	protein-coding
chr10	24544772	24545272	exon (NM_001282767, exon 18 of 19)	77821	ENSG00000107863	ARHGAP21	More	protein-coding
chr1	236046862	236047362	intron (NM_002508, intron 2 of 19)	17978	ENSG00000116962	NID1	More	protein-coding
chr3	28882490	28882990	Intergenic	307462	ENSG00000116962	LINC00693	More	ncRNA
chr12	22981002	22981502	Intergenic	-194384	ENSG00000256321	LOC101928441	More	ncRNA
chr1	81691982	81692482	intron (NM_001366008, intron 3 of 26)	-7538	ENSG00000117114	ADGRL2	More	protein-coding
chr8	76480101	76480601	intron (NR_105006, intron 3 of 5)	73697	ENSG00000254300	LINC01111	More	ncRNA
chrX	27902807	27903307	Intergenic	78392	ENSG00000226372	DCAF8L1	More	protein-coding

chr4	72696484	72696984	Intergenic	-127513	ENSG00000156140	ADAMTS3	More	protein-coding
chr1	244502440	244502940	intron (NM_001130957, intron 7 of 21)	41319	ENSG00000179397	CATSPERE	More	protein-coding
chrX	133852854	133853354	intron (NM_001164619, intron 1 of 6)	-44339	ENSG00000286096	GPC3-AS1	More	ncRNA
chr5	43363562	43364062	Intergenic	33325	ENSG00000151882	CCL28	More	protein-coding
chr4	116435668	116436168	Intergenic	136193	ENSG00000284253	MIR1973	More	ncRNA
chr14	91524289	91524789	Intergenic	-14059	ENSG00000100796	PPP4R3A	More	protein-coding
chr5	68187464	68187964	Intergenic	-2162	ENSG00000253787	LINC02219	More	ncRNA
chr18	29090233	29090733	Intergenic	-913353	ENSG00000170558	CDH2	More	protein-coding
chr7	72011464	72011964	intron (NM_001363460, intron 4 of 5)	325677	ENSG00000183166	CALN1	More	protein-coding
chr8	76282580	76283080	Intergenic	-123824	ENSG00000254300	LINC01111	More	ncRNA
chrX	123622220	123622720	intron (NM_001081550, intron 30 of 38)	110582	ENSG00000125676	THOC2	More	protein-coding
chr5	145326059	145326559	Intergenic	509033	ENSG00000186314	PRELID2	More	protein-coding
chr15	99496132	99496632	Intergenic	-69035	ENSG00000068305	MEF2A	More	protein-coding
chr4	153886706	153887206	Intergenic	-97873	ENSG00000145423	SFRP2	More	protein-coding
chr9	76255737	76256237	intron (NM_001190482, intron 24 of 36)	138439	ENSG00000135002	RFK	More	protein-coding
chr3	81402001	81402501	Intergenic	359394	ENSG00000114480	GBE1	More	protein-coding
chr10	18790059	18790559	Intergenic	130878	ENSG00000165997	ARLSB	More	protein-coding
chr12	64322095	64322595	intron (NM_001170633, intron 3 of 12)	68413	ENSG00000185306	C12orf56	More	protein-coding
chr17	48258879	48259379	intron (NM_001075099, intron 4 of 12)	-35218	ENSG00000235300	THRA1/BTR	More	ncRNA
chr12	104092428	104092928	intron (NM_0013320, intron 9 of 14)	28147	ENSG00000111727	HCFC2	More	protein-coding
chr22	41900273	41900773	promoter-TSS (NR_029507)	-421	ENSG00000207932	MIR33A	More	ncRNA
chr8	76476054	76476554	intron (NR_105006, intron 3 of 5)	69650	ENSG00000254300	LINC01111	More	ncRNA
chr8	107506509	107506559	Intergenic	-8391	ENSG00000154188	ANGPT1	More	protein-coding
chr5	94346445	94346945	intron (NM_001145678, intron 20 of 20)	-234996	ENSG00000113391	FAM172A	More	protein-coding
chr16	55867975	55868475	intron (NM_145024, intron 4 of 11).2	7148	ENSG00000159398	CESSA	More	protein-coding
chr2	133507242	133507742	intron (NM_207481, intron 3 of 17)	60971	ENSG00000176771	NCKAP5	More	protein-coding
chr19	39003747	39004247	Intergenic	-28255	ENSG00000269190	FBXO17	More	protein-coding
chr22	25529008	25529508	Intergenic	-35417	ENSG00000100077	GRK3	More	protein-coding
chr11	110397043	110397543	intron (NR_135100, intron 3 of 3)	-32655	ENSG00000137714	FDX1	More	protein-coding
chr6	49948539	49949039	intron (NR_163261, intron 1 of 1)	655	ENSG00000214643	DEFB133	More	pseudo
chr1	52426254	52426754	intron (NM_001009881, intron 28 of 29)	21902	ENSG00000134748	PRPF38A	More	protein-coding
chr2	189099829	189100329	intron (NM_000393, intron 4 of 53)	33032	ENSG00000264725	MIR3129	More	ncRNA
chr1	168523245	168523745	Intergenic	20502	ENSG00000143185	XCL2	More	protein-coding
chr10	79107840	79108340	intron (NM_020338, intron 1 of 24)	39124	ENSG00000108175	ZMI21	More	protein-coding
chr7	48658120	48658620	Intergenic	-266177	ENSG00000218305	CDC14C	More	protein-coding
chr3	45008378	45008878	intron (NR_023353, intron 5 of 6)	-17675	ENSG00000163815	CLEC3B	More	protein-coding
chr13	88096306	88096806	Intergenic	-46311	ENSG00000231019	LINC00373	More	ncRNA
chr7	21400924	21401424	Intergenic	-26909	ENSG00000105866	SP4	More	protein-coding
chr1	220853312	220853812	intron (NR_046901, intron 1 of 2)	24307	ENSG00000238078	LINC01352	More	ncRNA
chr7	1781801	1782301	Intergenic	-39741	ENSG00000236081	ELFN1-AS1	More	ncRNA
chr1	235160780	235161280	exon (NM_015014, exon 2 of 11)	220	ENSG00000188739	RBM34	More	protein-coding
chr9	31556969	31557469	Intergenic	-175729	ENSG00000260720	LINC01243	More	ncRNA
chr13	65727978	65728478	Intergenic	-137819	ENSG000001052	LINC01052	More	ncRNA
chr2	189734968	189735468	intron (NM_144708, intron 17 of 22)	-27562	ENSG000001052	OSGEPL1-AS1	More	ncRNA
chr2	64698636	64699136	Intergenic	-44973	ENSG00000179833	SERTAD2	More	protein-coding
chr6	15301364	15301864	intron (NM_001267040, intron 1 of 17)	52759	ENSG00000080803	JARID2	More	protein-coding
chr20	20188505	20189005	intron (NM_015585, intron 14 of 26)	132109	ENSG00000089101	CFAP61	More	protein-coding
chr3	123063351	123063851	Intergenic	-3424	ENSG00000065485	PDIAS5	More	protein-coding
chr1	233809298	233809798	Intergenic	-95128	ENSG00000183780	SLC35F3	More	protein-coding
chr7	31413491	31413991	Intergenic	-73015	ENSG00000164600	NEUROD6	More	protein-coding
chr3	141103242	141103742	intron (NM_080862, intron 2 of 2)	52145	ENSG00000175093	SPSB4	More	protein-coding
chr2	42410798	42411298	Intergenic	-42091	ENSG00000115944	COX7A2L	More	protein-coding
chr7	46684965	46685465	Intergenic	11907	ENSG00000233539	LOC730338	More	ncRNA
chr11	108828164	108828664	intron (NM_004398, intron 13 of 17)	163345	ENSG00000178105	DDX10	More	protein-coding
chr9	73137001	73137501	Intergenic	-14614	ENSG00000135046	ANXA1	More	protein-coding
chr1	209578548	209579048	Intergenic	-4916	ENSG00000008118	CAMK1G	More	protein-coding
chr6	92146984	92147484	Intergenic	-456806	ENSG00000109511	CASC6	More	ncRNA
chr4	167944654	167945154	Intergenic	-147633	ENSG00000109511	ANXA10	More	protein-coding
chr22	18921362	18921862	intron (NM_001368249, intron 8 of 14).2	14681	ENSG00000277196	LOC102724788	More	protein-coding
chr6	77129780	77130280	Intergenic	333992	ENSG00000135312	HTR1B	More	protein-coding
chr1	152939613	152940113	Intergenic	-30785	ENSG00000184148	SPRR4	More	protein-coding
chr2	13684183	13684683	Intergenic	-677420	ENSG00000225649	LOC100506474	More	ncRNA
chr6	52437610	52438110	intron (NR_033327, intron 2 of 9)	16852	ENSG00000096093	EFHC1	More	protein-coding
chr6	121287887	121288387	intron (NR_104452, intron 12 of 35)	46843	ENSG00000146350	TBC1D32	More	protein-coding
chr2	151259978	151260478	intron (NM_198557, intron 1 of 3)	1635	ENSG00000184898	RBM43	More	protein-coding
chr17	68204095	68204595	Intergenic	-1784	ENSG00000196704	AMZ2	More	protein-coding
chr1	169060564	169061064	intron (NR_104091, intron 1 of 4)	26191	ENSG00000203601	LINC00970	More	ncRNA
chr3	173818935	173819435	intron (NM_001365928, intron 4 of 6)	101611	ENSG00000228213	NLGN1-AS1	More	ncRNA
chr15	48389036	48389536	Intergenic	57089	ENSG00000128951	DUT	More	protein-coding
chr5	177382291	177382791	Intergenic	-1893	ENSG00000131183	SLC34A1	More	protein-coding
chr7	150481142	150481642	Intergenic	30762	ENSG00000171115	GIMAP8	More	protein-coding
chr12	108710257	108710757	intron (NM_014325, intron 1 of 10)	-7509	ENSG00000110880	CORO1C	More	protein-coding
chr16	11076630	11077130	intron (NM_015226, intron 18 of 22)	132316	ENSG00000038532	CLEC16A	More	protein-coding
chr7	34826977	34827477	intron (NM_207172, intron 4 of 8)	7104	ENSG00000197085	NPSR1-AS1	More	ncRNA
chr21	30520783	30521283	Intergenic	-18892	ENSG00000186977	KRTAP19-5	More	protein-coding
chr8	61403379	61403879	intron (NM_173519, intron 3 of 5)	115659	ENSG00000177182	CLVS1	More	protein-coding
chr7	46665912	46666412	Intergenic	30960	ENSG00000233539	LOC730338	More	ncRNA
chr4	167263110	167263610	Intergenic	-28770	ENSG00000196104	SPOCK3	More	protein-coding
chr8	63554412	63554912	Intergenic	88813	ENSG00000253894	LOC102724612	More	ncRNA
chr2	151328978	151329478	Intergenic	-28364	ENSG00000123610	TNFAIP6	More	protein-coding
chr7	140850152	140850652	intron (NR_148928, intron 1 of 17)	74527	ENSG00000157764	BRAF	More	protein-coding
chr4	18699652	18700152	Intergenic	-678027	ENSG00000178177	LCORL	More	protein-coding
chr13	65740853	65741353	Intergenic	-124944	ENSG000001052	LINC01052	More	ncRNA

chr20	991267	991767	intron (NM_001029871, intron 1 of 4)	10794	ENSG00000101282	RSPO4	More	protein-coding
chr18	29074149	29074649	Intergenic	-897269	ENSG00000170558	CDH2	More	protein-coding
chr9	20280312	20280812	Intergenic	130676	ENSG00000263790	MIR4473	More	ncRNA
chr4	77680111	77680611	Intergenic	138703	ENSG00000138767	CNOT6L	More	protein-coding
chr22	30036672	30036672	intron (NR_110541, intron 3 of 4)	29373	ENSG00000275818	MIR6818	More	ncRNA
chr2	64555418	64555918	intron (NM_001002243, intron 2 of 8)	30155	ENSG00000283204	MIR4434	More	ncRNA
chr19	7670428	7670928	TTS (NM_001193374)	1629	ENSG00000104918	RETN	More	protein-coding
chr12	108709241	108709741	intron (NM_014325, intron 1 of 10)	-6493	ENSG00000110880	CORO1C	More	protein-coding
chr5	44402077	44402577	intron (NR_108034, intron 2 of 2)	-12907	ENSG00000070193	FGF10	More	protein-coding
chr2	237864789	237865289	intron (NM_005855, intron 1 of 2)	5416	ENSG00000132329	RAMP1	More	protein-coding
chr20	38573422	38573922	intron (NM_001282917, intron 28 of 29)	-7525	ENSG00000182035	ADIG	More	protein-coding
chr9	1273798	1274298	Intergenic	222561	ENSG00000173253	DMRT2	More	protein-coding
chr14	25476311	25476811	Intergenic	-426264	ENSG00000168952	STXBP6	More	protein-coding
chr1	183220820	183221320	intron (NM_005562, intron 5 of 22)	34806	ENSG00000058085	LAMC2	More	protein-coding
chr3	194854202	194854702	Intergenic	-85743	ENSG00000230401	LINC01972	More	ncRNA
chr1	47854397	47854897	intron (NM_001194986, intron 2 of 6)	142738	ENSG00000269113	TRABD2B	More	protein-coding
chr1	233810004	233810504	Intergenic	-94422	ENSG00000183780	SLC35F3	More	protein-coding
chr16	1495091	1495091	intron (NM_001351846, intron 2 of 20)	1981	ENSG00000100726	TELO2	More	protein-coding
chr18	4100967	4101467	intron (NM_001242761, intron 2 of 11)	138864	ENSG00000263878	DLGAP1-AS4	More	ncRNA
chr20	6720830	6721330	Intergenic	15056		LINC01713	More	ncRNA
chr13	39092390	39092890	Intergenic	54184	ENSG00000188811	NHLRC3	More	protein-coding
chr7	48338200	48338700	exon (NM_152701, exon 29 of 62)	166992	ENSG00000179869	ABCA13	More	protein-coding
chr4	132269374	132269874	Intergenic	-321465	ENSG00000251398	LINC01256	More	ncRNA
chr17	53729462	53729962	Intergenic	-93215	ENSG00000141200	KIF2B	More	protein-coding
chr3	166828575	166829075	Intergenic	-69858		LOC105374194	More	ncRNA
chr9	94560504	94561004	intron (NR_121569, intron 2 of 2)	5709		PCAT7	More	ncRNA
chr3	25502176	25502676	intron (NR_110892, intron 3 of 6)	44116	ENSG00000077092	RARB	More	protein-coding
chrX	38783179	38783679	Intergenic	-18003	ENSG00000165175	MID1IP1	More	protein-coding
chr4	143486943	143487443	Intergenic	-26509	ENSG00000153147	SMARCA5	More	protein-coding
chr14	74412927	74413427	intron (NM_001105579, intron 1 of 3)	13033	ENSG00000183379	SYNDIG1L	More	protein-coding
chr3	7435725	7436225	intron (NM_000844, intron 5 of 9)	99309	ENSG00000236202	GRM7-AS1	More	ncRNA
chr7	125863623	125864123	Intergenic	-599582	ENSG00000219445	LOC101928254	More	ncRNA
chr2	208898381	208898881	Intergenic	355989		LOC101927960	More	ncRNA
chr2	109760227	109760727	Intergenic	-32281	ENSG00000015568	RGPD5	More	protein-coding
chr5	153696055	153696555	intron (NM_000827, intron 8 of 15)	202682	ENSG00000251183	LINC01861	More	ncRNA
chr10	24582197	24582697	Intergenic	40396	ENSG00000107863	ARHGAP21	More	protein-coding
chr13	68012490	68012990	Intergenic	640353	ENSG00000230040	LINC00364	More	ncRNA
chr8	128744772	128745272	Intergenic	-180343		LINC00824	More	ncRNA
chr13	31444478	31444978	Intergenic	244753	ENSG00000187676	B3GLCT	More	protein-coding
chr3	149732498	149732998	Intergenic	-7960	ENSG00000018408	WWTR1	More	protein-coding
chr12	18599082	18599582	intron (NM_001288774, intron 30 of 32)	138177	ENSG00000139151	PLCZ1	More	protein-coding
chr1	78154592	78155092	Intergenic	-74757	ENSG00000237413	MGC27382	More	ncRNA
chr18	43987533	43988033	Intergenic	543914	ENSG00000267337	LINC01478	More	ncRNA
chr5	161616943	161617443	Intergenic	-68528	ENSG00000145863	GABRA6	More	protein-coding
chr2	109024703	109025203	Intergenic	-35733	ENSG00000135960	EDAR	More	protein-coding
chr11	78792641	78793141	intron (NM_001098816, intron 15 of 33)	-218027	ENSG00000137513	NARS2	More	protein-coding
chr7	46702586	46703086	Intergenic	-5714	ENSG00000233539	LOC730338	More	ncRNA
chr8	119578261	119578761	intron (NM_001330600, intron 19 of 25)	14497	ENSG00000136960	ENPP2	More	protein-coding
chr11	27303408	27303908	Intergenic	59557	ENSG00000109881	CCDC34	More	protein-coding
chr10	24567468	24567968	Intergenic	55125	ENSG00000107863	ARHGAP21	More	protein-coding
chr1	233768209	233768709	Intergenic	-136217	ENSG00000183780	SLC35F3	More	protein-coding
chr14	73267882	73268382	intron (NM_001365907, intron 24 of 25)	-22131		LOC101928123	More	ncRNA
chr1	56493737	56494237	TTS (NM_003713)	79024	ENSG00000223956	LINC01767	More	ncRNA
chr1	168378117	168378617	Intergenic	2843	ENSG00000207974	MIR557	More	ncRNA
chr18	28824539	28825039	Intergenic	-647659	ENSG00000170558	CDH2	More	protein-coding
chr11	107641215	107641715	intron (NM_001308018, intron 7 of 12)	50318	ENSG00000110675	ELMOD1	More	protein-coding
chr2	156702645	156703145	Intergenic	266516	ENSG00000115159	GPD2	More	protein-coding
chr12	108734456	108734956	Intergenic	-3156	ENSG00000110880	CORO1C	More	protein-coding
chr18	43631716	43632216	Intergenic	-354476	ENSG00000132872	SYT4	More	protein-coding
chr11	15986980	15987480	intron (NM_033326, intron 14 of 15)	-17609	ENSG00000284094	MIR6073	More	ncRNA
chr10	34736510	34737010	intron (NM_001184789, intron 1 of 22)	78536	ENSG00000148498	PARD3	More	protein-coding
chr7	125208810	125209310	intron (NR_110188, intron 3 of 8)	24491	ENSG00000224897	LOC101928283	More	ncRNA
chr11	88074944	88075444	Intergenic	100249	ENSG00000123892	RAB38	More	protein-coding
chr7	154180507	154181007	intron (NM_130797, intron 1 of 25)	-120187		LOC101929998	More	ncRNA
chrX	7363015	7363515	Intergenic	110792	ENSG00000101846	STS	More	protein-coding
chr1	55428356	55428856	Intergenic	202965	ENSG00000265822	MIR4422	More	ncRNA
chr1	101215880	101216380	Intergenic	20398		LOC101928370	More	ncRNA
chr6	107542703	107543203	intron (NM_018013, intron 4 of 6)	52836	ENSG00000112320	SOBP	More	protein-coding
chr5	172768045	172768545	3' UTR (NM_004417, exon 4 of 4)	2900	ENSG00000120129	DUSP1	More	protein-coding
chr1	10982275	10982775	promoter-TSS (NM_001170754)	-488	ENSG00000175262	C1orf127	More	protein-coding
chr10	91701874	91702374	Intergenic	-69053	ENSG00000119938	PPP1R3C	More	protein-coding
chr2	10232380	10232880	Intergenic	-39959	ENSG00000265418	MIR4261	More	ncRNA
chr4	71264933	71265433	intron (NM_001098484, intron 3 of 25)	-73870	ENSG00000080493	SLC4A4	More	protein-coding
chr1	159796109	159796609	Intergenic	-4153	ENSG00000181036	FCRL6	More	protein-coding
chr18	47204274	47204774	Intergenic	-28160	ENSG00000134049	IER3IP1	More	protein-coding
chr11	29278018	29278518	Intergenic	-316145	ENSG00000255117	LINC02546	More	ncRNA
chr3	94124005	94124505	intron (NM_022072, intron 5 of 5)	61194	ENSG00000178694	NSUN3	More	protein-coding
chr12	64925371	64925871	intron (NR_146276, intron 3 of 3)	41847	ENSG00000255693	LINC02389	More	ncRNA
chr15	31548944	31549444	intron (NM_130901, intron 6 of 13)	222359	ENSG00000169926	KLF13	More	protein-coding
chr15	93165278	93165778	Intergenic	-40538		LOC105370980	More	protein-coding
chr13	46262811	46263311	intron (NM_001282460, intron 8 of 9)	34783	ENSG00000261097	LINC00563	More	ncRNA
chr7	108263644	108264144	intron (NM_001371133, intron 3 of 28)	-20509			More	
chr6	27838965	27839465	promoter-TSS (NM_003510)	553	ENSG00000233822	HIST1H2BN	More	protein-coding

chr11	107352887	107353387	intron (NM_152434, intron 13 of 17)	104709	ENSG00000152404	CWF19L2	More	protein-coding
chr6	150595105	150595605	Intergenic	-4530	ENSG00000120278	PLEKHG1	More	protein-coding
chr8	10748988	10749488	intron (NR_146188, intron 1 of 2)	-18727	ENSG00000171056	SOX7	More	protein-coding
chr2	13683637	13684137	Intergenic	-676874	ENSG00000225649	LOC100506474	More	ncRNA
chr8	12445257	12445757	intron (NR_040092, intron 4 of 5)	8494	LOC100506990	More	ncRNA	
chr10	109799491	109799991	Intergenic	123505	ENSG00000108039	XPNPEP1	More	protein-coding
chr4	70929039	70929539	intron (NM_173468, intron 1 of 5)	26920	ENSG00000173542	MOB1B	More	protein-coding
chr4	17092455	17092955	Intergenic	93352	ENSG00000250819	LINC02493	More	ncRNA
chr3	78097710	78098210	Intergenic	-48997	LINC02077	More	ncRNA	
chr7	126358451	126358951	Intergenic	699483	ENSG00000207692	MIRS92	More	ncRNA
chr18	4267662	4268162	intron (NR_036489, intron 1 of 2)	3310	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr14	75677660	75678160	intron (NM_015072, intron 3 of 31)	16664	ENSG00000119685	TTL5	More	protein-coding
chr6	29522335	29522835	Intergenic	-6821	ENSG00000224582	LINC01015	More	ncRNA
chr4	69988117	69988617	Intergenic	-7599	ENSG00000126549	STATH	More	protein-coding
chr5	152998478	152998978	Intergenic	-26379	ENSG00000249484	LINC01470	More	ncRNA
chr2	151378880	151379380	intron (NM_007115, intron 5 of 5)	241	LOC101929319	More	ncRNA	
chr2	13791862	13792362	Intergenic	608846	ENSG00000230448	LINC00276	More	ncRNA
chr18	60121071	60121571	Intergenic	221325	ENSG00000141682	PMAIP1	More	protein-coding
chr6	80324360	80324860	intron (NR_134945, intron 10 of 10)	217939	ENSG00000083123	BCKDHB	More	protein-coding
chr6	51790946	51791446	intron (NM_138694, intron 53 of 66)	169326	LOC101927082	More	ncRNA	
chr5	14177076	14177576	intron (NM_007118, intron 1 of 56)	33984	ENSG00000038382	TRIO	More	protein-coding
chr3	11673234	11673734	intron (NM_001284390, intron 2 of 6)	-29569	ENSG00000144560	VGLL4	More	protein-coding
chr7	46978596	46979096	Intergenic	-281724	ENSG00000233539	LOC730338	More	ncRNA
chr5	172965496	172965996	intron (NM_001317982, intron 2 of 3)	6286	ENSG00000037241	RPL26L1	More	protein-coding
chr13	33927386	33927886	intron (NM_181558, intron 8 of 8)	109487	ENSG00000133119	RFC3	More	protein-coding
chr15	29434145	29434645	intron (NM_015307, intron 1 of 10).2	136328	ENSG00000104059	FAM189A1	More	protein-coding
chr6	123987267	123987767	intron (NM_001040214, intron 1 of 6)	183652	ENSG00000188580	NKAIN2	More	protein-coding
chr6	123074682	123075182	Intergenic	78697	ENSG00000146352	CLV52	More	protein-coding
chr16	53559935	53560435	Intergenic	-56881	ENSG00000166971	AKTIP	More	protein-coding
chr1	206916586	206917086	intron (NM_005449, intron 1 of 7)	5105	ENSG00000162894	FCMR	More	protein-coding
chr10	33770219	33770719	intron (NR_038932, intron 1 of 2)	2211	ENSG00000261683	LINC00838	More	ncRNA
chr3	185679506	185680006	intron (NR_138486, intron 7 of 15)	-33496	ENSG00000163915	IGF2BP2-AS1	More	ncRNA
chr9	113663173	113663673	Intergenic	69294	ENSG00000138835	RGS3	More	protein-coding
chr2	54613929	54614429	intron (NM_178313, intron 3 of 30)	55785	ENSG00000115306	SPTBN1	More	protein-coding
chr2	145417179	145417679	Intergenic	749462	ENSG00000226674	TEX41	More	ncRNA
chr5	133830460	133830960	Intergenic	-82967	ENSG00000249073	WSPAR	More	ncRNA
chr6	15683627	15684127	Intergenic	-20819	ENSG00000047579	DTNBP1	More	protein-coding
chr5	173727416	173727916	intron (NR_108027, intron 1 of 2)	18543	ENSG00000253686	LINC01484	More	ncRNA
chr18	4384834	4385334	intron (NM_001242761, intron 1 of 11)	70182	ENSG00000170579	DLGAP1	More	protein-coding
chr10	79256856	79257356	intron (NM_020338, intron 7 of 24)	-90363	ENSG00000108179	PIIF	More	protein-coding
chr16	82817470	82817970	intron (NR_110938, intron 1 of 2)	44401	ENSG00000260862	LOC101928446	More	ncRNA
chr1	68300152	68300652	Intergenic	-67856	ENSG00000116729	WLS	More	protein-coding
chr1	233752766	233753266	Intergenic	128864	ENSG00000265744	MIR4427	More	ncRNA
chr4	97914642	97915142	intron (NM_174952, intron 8 of 10)	228584	ENSG00000163116	STP2G	More	protein-coding
chr3	124319589	124320089	intron (NM_001024660, intron 6 of 59)	-54493	ENSG00000276656	MIR6083	More	ncRNA
chr5	88052738	88053238	Intergenic	215857	ENSG00000164180	TMEM161B	More	protein-coding
chr11	17427090	17427590	intron (NR_147094, intron 15 of 37)	-37994	ENSG00000187486	KCNJ11	More	protein-coding
chrX	63389857	63390357	Intergenic	-38775	ENSG00000186767	SPIN4	More	protein-coding
chr4	110197513	110198013	intron (NM_001130721, intron 2 of 4)	852	ENSG00000170522	ELOVL6	More	protein-coding
chr1	187845834	187846334	Intergenic	402456	LINC01037	More	ncRNA	
chr1	28840008	28840508	intron (NM_000911, intron 1 of 2)	28088	ENSG00000116329	OPRD1	More	protein-coding
chr2	127754616	127755116	intron (NM_001006623, intron 7 of 7)	53369	ENSG00000173349	SFT2D3	More	protein-coding
chr7	156267814	156268314	Intergenic	177524	ENSG00000182648	LOC285889	More	ncRNA
chr14	49045094	49045594	Intergenic	541036	ENSG00000213741	RPS29	More	protein-coding
chr14	100907791	100908291	intron (NR_146000, intron 7 of 50)	-3098	ENSG00000199005	MIR370	More	ncRNA
chr12	23771581	23772081	intron (NM_152989, intron 6 of 17)	177839	ENSG00000134532	SOX5	More	protein-coding
chr5	83514254	83514754	intron (NM_001126336, intron 6 of 12)	42760	ENSG00000038427	VCAN	More	protein-coding
chr3	175005136	175005636	intron (NM_207015, intron 1 of 13)	109856	ENSG00000230292	NAALADL2-AS3	More	ncRNA
chr9	105673405	105673905	Intergenic	11198	ENSG00000186051	TAL2	More	protein-coding
chr7	41970677	41971177	intron (NM_000168, intron 13 of 14)	266282	ENSG00000106571	GLI3	More	protein-coding
chr2	238809752	238810252	Intergenic	37905	LOC100287387	More	ncRNA	
chr11	115651734	115652234	Intergenic	82778	LOC101928985	More	ncRNA	
chr6	125193393	125193893	intron (NR_149043, intron 1 of 3)	4174	LOC100126584	More	ncRNA	
chr22	39695887	39696387	Intergenic	125384	ENSG00000100346	CACNA1I	More	protein-coding
chr4	181573689	181574189	Intergenic	256034	ENSG00000251336	TMN3-AS1	More	ncRNA
chr10	24634723	24635223	intron (NM_001367447, intron 5 of 24)	-12130	ENSG00000107863	ARHGAP21	More	protein-coding
chr6	37257917	37258417	promoter-TSS (NM_001286401)	-12	ENSG00000172738	TMEM217	More	protein-coding
chr1	149294365	149294865	Intergenic	-43668	SEC22B2	More	pseudo	
chr16	12843963	12844463	Intergenic	-40326	ENSG00000103381	CPPED1	More	protein-coding
chr1	232835567	232836067	Intergenic	30925	ENSG00000212916	MAP10	More	protein-coding
chr2	37813207	37813707	Intergenic	16254	ENSG00000237803	LINC00211	More	ncRNA
chr12	131111799	131112299	intron (NM_198827, intron 18 of 24)	-52962	ENSG00000204603	LINC01257	More	ncRNA
chr17	31303532	31304032	TTS (NM_006495)	-6543	ENSG00000126861	OMG	More	protein-coding
chr14	73255624	73256124	intron (NM_001365907, intron 13 of 25)	-9873	LOC101928123	More	ncRNA	
chr17	27543303	27543803	intron (NM_014238, intron 2 of 20)	71589	ENSG00000141068	KSR1	More	protein-coding
chr10	106569486	106569986	Intergenic	429571	ENSG00000229775	LINC02624	More	ncRNA
chr3	149865091	149865591	intron (NM_183383, intron 2 of 8)	52653	ENSG00000082996	RNF13	More	protein-coding
chrX	132537920	132538420	Intergenic	-48135	ENSG00000076770	MBNL3	More	protein-coding
chr6	33720018	33720518	Intergenic	-8568	ENSG00000137288	UOCC2	More	protein-coding
chr6	43945154	43945654	Intergenic	54376	LINC01512	More	ncRNA	
chr2	45060270	45060770	Intergenic	-51068	ENSG00000170577	SIX2	More	protein-coding
chr8	39916870	39917370	intron (NM_002164, intron 1 of 9)	3229	ENSG00000131203	IDO1	More	protein-coding
chr10	101315704	101316204	Intergenic	-38079	ENSG00000166167	BTRC	More	protein-coding
chr9	94949582	94950082	intron (NM_001193329, intron 6 of 15)	-4278	LOC101928119	More	ncRNA	

chr20	19802243	19802743	Intergenic	-84028	ENSG00000132669	RIN2	More	protein-coding
chr3	99129503	99130003	Intergenic	-228058	ENSG00000057019	DCBLD2	More	protein-coding
chr2	202842976	202843476	intron (NM_001288622, intron 1 of 12)	-13992	ENSG00000163596	ICA1L	More	protein-coding
chr14	59264300	59264800	intron (NM_001270520, intron 2 of 24)	1109	ENSG00000100592	DAAM1	More	protein-coding
chr3	16419228	16419728	intron (NM_015150, intron 3 of 9)	94221	ENSG00000131378	RFTN1	More	protein-coding
chr15	83318365	83318865	Intergenic	-33951	ENSG00000169594	BNC1	More	protein-coding
chr1	89334081	89334581	Intergenic	-29546	ENSG00000183347	GBP6	More	protein-coding
chr3	111972104	111972604	intron (NM_001134437, intron 16 of 17)	-6672	ENSG00000144827	ABHD10	More	protein-coding
chr17	70686383	70686883	Intergenic	515546	ENSG00000260785	CASC17	More	ncRNA
chr3	141122477	141122977	intron (NM_080862, intron 2 of 2)	71380	ENSG00000175093	SPSB4	More	protein-coding
chr7	32244005	32244505	intron (NM_001322059, intron 1 of 17)	55073	ENSG00000154678	PDE1C	More	protein-coding
chr2	102724059	102724559	intron (NM_032718, intron 4 of 5)	12579	ENSG00000135953	MFS9	More	protein-coding
chr2	189340572	189341072	Intergenic	-100611	ENSG00000115368	WDR75	More	protein-coding
chr18	33962793	33963293	intron (NM_001353232, intron 6 of 9)	85569	ENSG00000101746	NOLA	More	protein-coding
chr12	24064448	24064948	intron (NM_152989, intron 4 of 17)	-113666	ENSG00000134532	SOX5	More	protein-coding
chr18	28835950	28836450	Intergenic	-659070	ENSG00000170558	CDH2	More	protein-coding
chr12	125229232	125229732	intron (NM_001366854, intron 1 of 8)	43096	ENSG00000139364	TMEM132B	More	protein-coding
chr10	101666051	101666551	intron (NR_136613, intron 4 of 7)	28869	ENSG00000107829	FBXW4	More	protein-coding
chr3	100256927	100257427	Intergenic	-3815	ENSG00000036054	TBC1D23	More	protein-coding
chr8	61404395	61404895	intron (NM_173519, intron 3 of 5)	116675	ENSG00000177182	CLV51	More	protein-coding
chr1	78836037	78836537	Intergenic	170443	ENSG00000162618	ADGRL4	More	protein-coding
chr7	76816677	76817177	Intergenic	-163895	ENSG00000265479	DTX2P1-UPK3BP1	More	pseudo
chr22	30037784	30038284	intron (NR_110541, intron 3 of 4)	30985	ENSG00000275818	MIR6818	More	ncRNA
chr8	102171049	102171549	Intergenic	45867	ENSG00000266756	MIR5680	More	ncRNA
chr2	106028248	106028748	Intergenic	-37190	ENSG00000119147	ECRG4	More	protein-coding
chr3	147590282	147590782	Intergenic	169205	ENSG00000119147	LOC440982	More	ncRNA
chr17	72270188	72270688	Intergenic	-72373	ENSG00000264026	LINC02003	More	ncRNA
chr5	68512609	68513109	Intergenic	220282	ENSG00000145675	PIK3R1	More	protein-coding
chr16	77770661	77771161	Intergenic	-17653	ENSG00000171724	VAT1L	More	protein-coding
chrX	118770341	118770841	intron (NM_001560, intron 8 of 10)	42985	ENSG00000131724	IL13RA1	More	protein-coding
chr1	76890835	76891335	intron (NM_001320274, intron 2 of 2)	23605	ENSG00000117069	ST6GALNAC5	More	protein-coding
chr10	69372827	69373327	intron (NM_033496, intron 7 of 17)	43841	ENSG00000075073	TACR2	More	protein-coding
chr10	34525819	34526319	intron (NM_001184789, intron 2 of 22)	289227	ENSG00000148498	PARD3	More	protein-coding
chr7	64760162	64760662	Intergenic	-34016	ENSG00000197008	ZNF138	More	protein-coding
chr6	29521210	29521710	Intergenic	-7946	ENSG00000224582	LINC01015	More	ncRNA
chr10	31105717	31106217	Intergenic	-74030	ENSG00000183621	ZNF438	More	protein-coding
chr17	69918502	69919002	Intergenic	-42955	ENSG00000237560	LINC01497	More	ncRNA
chr19	50410538	50411038	intron (NR_046402, intron 17 of 25)	-8150	ENSG00000269404	SPIB	More	protein-coding
chr3	161883199	161883699	Intergenic	386641	ENSG00000182447	OTOL1	More	protein-coding
chr18	23475396	23475896	intron (NM_003831, intron 9 of 12)	22359	ENSG00000101782	RIOK3	More	protein-coding
chr5	169137582	169138082	intron (NM_003062, intron 4 of 35)	124605	ENSG00000101782	LOC728095	More	ncRNA
chr16	84927374	84927874	Intergenic	83911	ENSG00000153786	ZDHHC7	More	protein-coding
chr2	177534065	177534565	intron (NM_003659, intron 19 of 19)	18481	ENSG00000196659	TTC30B	More	protein-coding
chr1	195939278	195939778	Intergenic	149187	ENSG00000196659	LINC01724	More	ncRNA
chr12	80551772	80551772	intron (NM_001145026, intron 25 of 44)	107287	ENSG00000139304	PTPRQ	More	protein-coding
chr13	49079108	49079608	intron (NM_001079673, intron 3 of 25)	-30959	ENSG00000102531	FNDC3A	More	protein-coding
chr22	31237173	31237673	intron (NM_005569, intron 2 of 15)	-10961	ENSG00000182541	LIMK2	More	protein-coding
chr14	50325039	50325539	TTS (NM_001367064)	12965	ENSG00000125375	DMAC2L	More	protein-coding
chr8	81947563	81948063	Intergenic	-105527	ENSG00000104497	SNX16	More	protein-coding
chr14	93024644	93025144	intron (NM_001142594, intron 3 of 10).2	12080	ENSG00000100605	ITPK1	More	protein-coding
chr1	25732240	25732740	intron (NM_020379, intron 2 of 11)	-67703	ENSG00000162430	SELENON	More	protein-coding
chr7	140965429	140965929	Intergenic	-40750	ENSG00000157764	BRAF	More	protein-coding
chr3	37940757	37941257	intron (NM_001008392, intron 1 of 7)	-28397	ENSG00000199075	MIR26A1	More	ncRNA
chr2	15012841	15013341	Intergenic	380374	ENSG00000162981	LRATD1	More	protein-coding
chr3	49003838	49004338	intron (NM_177939, intron 4 of 8)	-3303	ENSG00000178252	WDR6	More	protein-coding
chr2	134362919	134363419	intron (NM_001371457, intron 11 of 16)	109097	ENSG00000152127	MGAT5	More	protein-coding
chr11	99554604	99555104	intron (NM_001243271, intron 2 of 20)	-1291	ENSG00000149972	CNTN5	More	protein-coding
chr4	137572531	137573031	intron (NR_146553, intron 1 of 1)	27050	ENSG00000251632	LINC02172	More	ncRNA
chr12	108692689	108693189	intron (NM_001105237, intron 2 of 10)	10059	ENSG00000110880	CORO1C	More	protein-coding
chr6	39990586	39991086	Intergenic	-56374	ENSG00000124615	MOC51	More	protein-coding
chr20	9899000	98990500	Intergenic	-60174	ENSG00000101349	PAK5	More	protein-coding
chr18	4211013	4211513	intron (NM_001242761, intron 1 of 11)	-53339	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr7	48676899	48677399	Intergenic	-247398	ENSG00000218305	CDC14C	More	protein-coding
chr12	131058822	131059322	intron (NM_198827, intron 13 of 24)	-65096	ENSG00000218305	ADGRD1-AS1	More	ncRNA
chr19	34732323	34732823	Intergenic	-1670	ENSG00000197841	ZNF181	More	protein-coding
chr2	37773498	37773998	Intergenic	55963	ENSG00000237803	LINC00211	More	ncRNA
chr13	109421707	109422207	Intergenic	21261	ENSG00000229792	LINC00399	More	ncRNA
chr18	48737855	48738355	intron (NM_014772, intron 7 of 11)	67505	ENSG00000266276	MIR4743	More	ncRNA
chr7	12683199	12683699	Intergenic	-3378	ENSG00000122644	ARL4A	More	protein-coding
chr8	99922798	99923298	Intergenic	-29341	ENSG00000164919	COX6C	More	protein-coding
chr20	49113468	49113968	3' UTR (NM_017454, exon 12 of 12)	67406	ENSG00000124207	CSE1L	More	protein-coding
chr6	164928557	164929057	Intergenic	-106744	ENSG00000124207	MEAT6	More	ncRNA
chr7	39781741	39782241	intron (NR_026999, intron 7 of 11)	48423	ENSG00000124207	LINC00265	More	ncRNA
chr1	233811618	233812118	Intergenic	-92808	ENSG00000183780	SLC35F3	More	protein-coding
chr21	45471433	45471933	intron (NM_130445, intron 3 of 42)	-6583	ENSG00000275167	MIR6815	More	ncRNA
chr15	58591746	58592246	3' UTR (NM_001110, exon 16 of 16)	-93261	ENSG00000259293	LIPC-AS1	More	ncRNA
chr2	13655342	13655842	Intergenic	-648579	ENSG00000225649	LOC100506474	More	ncRNA
chr10	46157422	46157922	Intergenic	48177	ENSG00000225649	AGAP7P	More	pseudo
chr17	2353025	2353525	intron (NM_001346700, intron 2 of 22)	15774	ENSG00000141258	SGSM2	More	protein-coding
chr8	119500965	119501465	Intergenic	84769	ENSG00000136999	CCN3	More	protein-coding
chr1	201480967	201481467	Intergenic	-12029	ENSG00000174307	PHLDA3	More	protein-coding
chr6	135483007	135483507	intron (NM_017651, intron 4 of 27)	14483	ENSG00000135541	AHI1	More	protein-coding
chr1	180355935	180356435	intron (NM_032360, intron 6 of 7)	-81504	ENSG00000230124	LHX4-AS1	More	ncRNA

chr19	47931316	47931816	Intergenic	-2615		SNAR-A2	More	snRNA
chr1	192796257	192796757	Intergenic	-12532	ENSG00000116741	RGS2	More	protein-coding
chr15	85573456	85573956	intron (NM_007200, intron 5 of 36)	-46244	ENSG00000170776	AKAP13	More	protein-coding
chr13	44126007	44126507	intron (NR_104065, intron 1 of 4)	15708	ENSG00000227258	SMIM2-AS1	More	ncRNA
chr17	6013934	6014434	Intergenic	-56430	ENSG00000179314	WSCD1	More	protein-coding
chr9	126959955	126960455	intron (NM_001366400, intron 1 of 18)	-2020	ENSG00000136828	RALGPS1	More	protein-coding
chr13	68310888	68311388	Intergenic	574187	ENSG00000281778	LINC00550	More	ncRNA
chr1	152940686	152941186	Intergenic	-29712	ENSG00000184148	SPRR4	More	protein-coding
chr13	68089956	68090456	Intergenic	717819	ENSG00000230040	LINC00364	More	ncRNA
chr2	150042366	150042866	Intergenic	-183425	ENSG00000162947	LINC01931	More	ncRNA
chr5	163429639	163430139	Intergenic	-7682	ENSG00000113328	CCNG1	More	protein-coding
chr5	81218526	81219026	intron (NM_006909, intron 25 of 26)	-14544	ENSG00000131730	CKMT2	More	protein-coding
chr16	79673630	79674130	Intergenic	-73143	ENSG00000178573	MAF	More	protein-coding
chr3	146456868	146457368	intron (NM_001199978, intron 5 of 9)	12183	ENSG00000163746	PLSCR2	More	protein-coding
chr6	8337354	8337854	Intergenic	97941	ENSG00000124786	SLC35B3	More	protein-coding
chr18	34234338	34234838	Intergenic	-11037	ENSG00000101746	NOL4	More	protein-coding
chr7	46731008	46731508	Intergenic	-34136	ENSG00000233539	LOC730338	More	ncRNA
chr7	118476923	118477423	Intergenic	252469	ENSG00000106013	ANKRD7	More	protein-coding
chr2	13816312	13816812	Intergenic	584396	ENSG00000230448	LINC00276	More	ncRNA
chr17	48899248	48899248	intron (NR_135674, intron 1 of 3)	6211	ENSG00000159199	ATP5MC1	More	protein-coding
chr1	233755774	233756274	Intergenic	131872	ENSG00000265744	MIR4427	More	ncRNA
chr2	9068726	9069226	Intergenic	-65292	ENSG00000143797	MBOAT2	More	protein-coding
chr4	105673478	105673978	intron (NM_001242729, intron 13 of 13)	34961	ENSG00000138785	INTS12	More	protein-coding
chr3	124653387	124653887	intron (NM_007064, intron 5 of 26)	68978	ENSG00000160145	KALRN	More	protein-coding
chr14	103397623	103398123	intron (NM_001128920, intron 1 of 15)	12458	ENSG00000075413	MARK3	More	protein-coding
chr12	108681354	108681854	intron (NM_001105237, intron 2 of 10)	21394	ENSG00000110880	CORO1C	More	protein-coding
chr18	28810413	28810913	Intergenic	-633533	ENSG00000170558	CDH2	More	protein-coding
chr17	31888794	31889294	intron (NM_018428, intron 7 of 18)	12664	ENSG00000108651	UTP6	More	protein-coding
chr17	31994601	31995101	intron (NM_001321207, intron 12 of 14)	-12532	ENSG00000185158	LRRC37B	More	protein-coding
chr7	55377349	55377849	intron (NM_018697, intron 1 of 8)	12151	ENSG00000132434	LANCL2	More	protein-coding
chr7	46691912	46692412	intron (NR_134575, intron 2 of 2)	4960	ENSG00000233539	LOC730338	More	ncRNA
chr5	72558415	72558915	intron (NR_105008, intron 1 of 3)	1588		LOC102503427	More	ncRNA
chr16	19567427	19567927	intron (NM_001300743, intron 2 of 27)	11974	ENSG00000103544	VPS35L	More	protein-coding
chr17	27512752	27512752	intron (NM_014238, intron 2 of 20)	40538	ENSG00000141068	KSR1	More	protein-coding
chr12	64293101	64293601	intron (NM_001099676, intron 4 of 10)	-71055	ENSG00000174206	C12orf66	More	protein-coding
chr5	171742873	171743373	Intergenic	-42749	ENSG00000185662	SMIM23	More	protein-coding
chr7	21385819	21386319	Intergenic	-42014	ENSG00000105866	SP4	More	protein-coding
chr20	23118502	23119002	Intergenic	13884	ENSG00000233746	LINC00656	More	ncRNA
chr15	40166129	40166629	intron (NM_0010211, intron 2 of 22)	5370	ENSG00000156970	BUB1B	More	protein-coding
chr1	99315658	99316158	Intergenic	51616	ENSG00000117600	PLPPR4	More	protein-coding
chr5	122485691	122486191	Intergenic	-6854	ENSG00000250328	MGC32805	More	ncRNA
chr6	42283776	42284276	intron (NM_001297573, intron 4 of 17)	-66165	ENSG00000048544	MRPS10	More	protein-coding
chr4	132237146	132237646	Intergenic	-353693	ENSG00000251398	LINC01256	More	ncRNA
chr12	130965930	130966430	intron (NM_198827, intron 2 of 24)	12273	ENSG00000111452	ADGRD1	More	protein-coding
chr3	124847609	124848109	intron (NM_001354766, intron 4 of 13)	39506	ENSG000000082781	ITGB5	More	protein-coding
chr9	102040773	102041273	Intergenic	-302443	ENSG00000198785	GRIN3A	More	protein-coding
chr15	93173469	93173969	Intergenic	-32347		LOC105370980	More	protein-coding
chr16	89092458	89092958	Intergenic	-1101	ENSG00000176715	ACSF3	More	protein-coding
chr2	56102858	56103358	Intergenic	-12726		LINC01813	More	ncRNA
chr3	124170497	124170997	intron (NM_001024660, intron 1 of 59)	37818	ENSG00000266383	MIR5002	More	ncRNA
chr9	123346145	123346645	Intergenic	-9802	ENSG00000148204	CRB2	More	protein-coding
chr7	125322779	125322779	intron (NR_110188, intron 3 of 8)	-58238	ENSG00000219445	LOC101928254	More	ncRNA
chr10	102270700	102271200	intron (NM_001199378, intron 3 of 39)	25418	ENSG00000107862	GBF1	More	protein-coding
chrX	104969118	104969618	intron (NM_017416, intron 2 of 10)	251325	ENSG00000268629	TEX13A	More	protein-coding
chr10	28967934	28968434	Intergenic	121776		C10orf126	More	protein-coding
chr12	83409417	83409917	Intergenic	722512	ENSG00000179104	TMT2C	More	protein-coding
chr18	4433446	4433946	intron (NM_001242761, intron 1 of 11)	21570	ENSG00000170579	DLGAP1	More	protein-coding
chr15	93130234	93130734	Intergenic	-41273	ENSG00000182175	RGMA	More	protein-coding
chr5	167579636	167580136	intron (NM_001368145, intron 1 of 26)	6227	ENSG00000145934	TENM2	More	protein-coding
chr3	189914937	189915437	Intergenic	85265	ENSG00000216058	MIR944	More	ncRNA
chr13	41627400	41627900	intron (NM_015058, intron 37 of 44)	-59255	ENSG00000284584	MIR5006	More	ncRNA
chr11	26783520	26784020	Intergenic	-61710	ENSG00000148942	SLCSA12	More	protein-coding
chr6	39183295	39183795	Intergenic	45930	ENSG00000164626	KCNK5	More	protein-coding
chr6	166501840	166502340	intron (NM_001006932, intron 7 of 21)	7343	ENSG00000222958	MIR1913	More	ncRNA
chr2	106888678	106889178	Intergenic	-1819	ENSG00000144057	ST6GAL2	More	protein-coding
chr2	37772450	37772950	Intergenic	57011	ENSG00000237803	LINC00211	More	ncRNA
chr3	30780132	30780632	intron (NM_207359, intron 13 of 14)	114279	ENSG00000144644	GADL1	More	protein-coding
chr17	31991158	31991658	intron (NM_001321207, intron 9 of 14)	-15975	ENSG00000185158	LRRC37B	More	protein-coding
chr22	20273144	20273644	Intergenic	-5076	ENSG00000040608	RTN4R	More	protein-coding
chr17	72278990	72279490	Intergenic	-63571	ENSG00000264026	LINC02003	More	ncRNA
chr2	151385906	151386406	Intergenic	-6785		LOC101929319	More	ncRNA
chr4	170215205	170215705	Intergenic	-11136		LINC01612	More	ncRNA
chr10	60886059	60886559	intron (NM_001350906, intron 8 of 12)	57876	ENSG00000072422	RHOBTB1	More	protein-coding
chr3	161111533	161112033	Intergenic	-6411	ENSG00000169255	B3GALNT1	More	protein-coding
chr1	119916030	119916530	exon (NM_024408, exon 34 of 34)	-19765	ENSG00000134249	ADAM30	More	protein-coding
chr13	59928733	59929233	intron (NM_001258369, intron 17 of 26)	-83735	ENSG00000227528	DIAPH3-AS1	More	ncRNA
chr2	51937314	51937814	intron (NR_135237, intron 7 of 10)	-433084	ENSG00000225444	LINC01867	More	ncRNA
chr6	102327591	102328091	Intergenic	928856	ENSG00000164418	GRIK2	More	protein-coding
chr8	42442925	42443425	intron (NM_006749, intron 6 of 10)	51295	ENSG00000078668	VDAC3	More	protein-coding
chr15	68647241	68647741	intron (NM_006091, intron 2 of 11)	5988	ENSG00000103647	CORO2B	More	protein-coding
chr6	431979	432479	Intergenic	40477	ENSG00000137265	IRF4	More	protein-coding
chr9	76146514	76147014	intron (NM_006200, intron 10 of 20)	247662	ENSG00000135002	RFK	More	protein-coding
chr16	53946014	53946514	intron (NM_001363894, intron 9 of 9)	-93129		FTO-IT1	More	ncRNA

chr2	37781841	37782341	Intergenic	47620	ENSG00000237803	LINC00211	More	ncRNA
chr18	56337284	56337784	Intergenic	-146272	ENSG00000206129	LOC642484	More	ncRNA
chr1	117390511	117391011	intron (NM_006699, intron 1 of 12)	23312	ENSG00000198162	MAN1A2	More	protein-coding
chr10	1639468	1639968	intron (NM_018702, intron 1 of 9)	92958	ENSG00000205696	ADARB2-AS1	More	ncRNA
chr10	60828209	60828709	Intergenic	49981	ENSG00000170312	CDK1	More	protein-coding
chr1	15781956	15782456	intron (NM_001024216, intron 6 of 6)	17707	ENSG00000162458	FBLN1	More	protein-coding
chr7	110126500	110127000	Intergenic	-166537	ENSG00000237064	EIF3IP1	More	pseudo
chr1	78742929	78743429	Intergenic	93348	ENSG00000137965	IFI44	More	protein-coding
chr3	133707256	133707756	5' UTR (NM_001354703, exon 4 of 23)	-38887	ENSG00000091513	TF	More	protein-coding
chr4	77579823	77580323	intron (NM_006419, intron 1 of 4)	68320	ENSG00000156234	CXCL13	More	protein-coding
chr17	46723899	46724399	intron (NR_040116, intron 14 of 19).2	94543	ENSG00000108379	WNT3	More	protein-coding
chr7	27135932	27136432	Intergenic	-4182	ENSG00000254369	HOXA-AS3	More	ncRNA
chr19	7881347	7881847	Intergenic	-1365		LYPLA2P2	More	pseudo
chr14	65541376	65541876	intron (NM_004480, intron 2 of 9)	70524	ENSG00000207781	MIR625	More	ncRNA
chr10	112609766	112610266	intron (NM_001365712, intron 6 of 8)	-24154	ENSG00000264763	MIR4295	More	ncRNA
chr16	24478016	24478516	Intergenic	-61300	ENSG00000122257	RBBP6	More	protein-coding
chr14	59412050	59412550	Intergenic	53080	ENSG00000181619	GPR135	More	protein-coding
chr18	43635253	43635753	Intergenic	-358013	ENSG00000132872	SYT4	More	protein-coding
chr8	63648863	63649363	Intergenic	-120317	ENSG00000253734	LINC01289	More	ncRNA
chr6	39183850	39184350	Intergenic	45375	ENSG00000164626	KCNK5	More	protein-coding
chr16	10051196	10051696	intron (NM_001134408, intron 2 of 13)	130621	ENSG00000183454	GRIN2A	More	protein-coding
chr10	24748673	24749173	Intergenic	-25036	ENSG00000107863	ARHGAP21	More	protein-coding
chr14	33175788	33176288	intron (NM_001164749, intron 2 of 11)	237159	ENSG00000151322	NPAS3	More	protein-coding
chr1	242152337	242152837	intron (NM_001320272, intron 6 of 10)	-153489	ENSG00000197769	MAP1LC3C	More	protein-coding
chr3	99298707	99299207	Intergenic	-339637	ENSG00000144810	COL8A1	More	protein-coding
chr7	32131184	32131684	intron (NM_001322059, intron 3 of 17)	-59998	ENSG00000154678	PDE1C	More	protein-coding
chr17	45887514	45888014	intron (NR_024559, intron 1 of 1)	-6618	ENSG00000186868	MAPT	More	protein-coding
chr20	19808827	19809327	Intergenic	-77444	ENSG00000132669	RIN2	More	protein-coding
chr1	157146494	157146994	Intergenic	-8153	ENSG00000117036	ETV3	More	protein-coding
chr18	20886751	20887251	Intergenic	224812	ENSG00000067900	ROCK1	More	protein-coding
chr3	38008651	38009151	intron (NM_006225, intron 11 of 14)	14763	ENSG00000136059	VILL	More	protein-coding
chr19	38803378	38803878	intron (NM_006149, intron 6 of 9)	9317	ENSG00000171747	LGALS4	More	protein-coding
chr6	1578524	1579024	Intergenic	-26757		FOXCU1	More	ncRNA
chr8	62588290	62588790	intron (NM_001304533, intron 2 of 6)	339686	ENSG00000185942	NKAIN3	More	protein-coding
chrX	40173279	40173779	intron (NM_001123384, intron 1 of 13)	3748	ENSG00000183337	BCOR	More	protein-coding
chr1	46885661	46886161	intron (NR_002788, intron 3 of 11)	14564	ENSG00000154198	CYP4Z2P	More	pseudo
chr6	49945353	49945853	TTS (NR_163261)	3841	ENSG00000214643	DFEB133	More	pseudo
chr10	33243571	33244071	intron (NM_001244973, intron 6 of 16)	90846	ENSG00000099250	NRP1	More	protein-coding
chr9	73134859	73135359	Intergenic	-16756	ENSG00000135046	ANXA1	More	protein-coding
chr13	96261074	96261574	intron (NM_153456, intron 1 of 1)	-165905	ENSG00000283487	MIR4501	More	ncRNA
chr14	106539371	106539871	Intergenic	57182	ENSG00000270816	LINC00221	More	ncRNA
chr21	25311827	25312327	Intergenic	119624	ENSG00000185433	LINC00158	More	ncRNA
chr17	55236036	55236536	Intergenic	-28674	ENSG00000108924	HLF	More	protein-coding
chr22	18919703	18920203	intron (NM_001368249, intron 9 of 14).2	13633	ENSG00000278817	LOC102724770	More	protein-coding
chr4	114877075	114877575	intron (NM_022569, intron 6 of 13)	220566	ENSG00000207931	MIR577	More	ncRNA
chr1	244513851	244514351	intron (NM_001130957, intron 7 of 21)	52730	ENSG00000179397	CATSPERE	More	protein-coding
chr4	78273233	78273733	intron (NM_001166133, intron 9 of 41)	-15502		SNORD161	More	snoRNA
chr5	146786555	146787055	intron (NM_001271899, intron 2 of 9)	91980	ENSG00000156475	PPP2R2B	More	protein-coding
chr4	6324424	6324924	intron (NM_001206994, intron 9 of 9)	54824	ENSG00000109501	WFS1	More	protein-coding
chr8	65877193	65877693	Intergenic	-35379	ENSG00000205268	PDE7A	More	protein-coding
chr10	115426488	115426988	intron (NM_207303, intron 21 of 28)	333373	ENSG00000107518	ATRN1	More	protein-coding
chr18	34065289	34065789	intron (NM_001353233, intron 5 of 11)	-16927	ENSG00000101746	NOL4	More	protein-coding
chr2	137120215	137120715	intron (NM_001316349, intron 5 of 27)	354920	ENSG00000144229	THSD7B	More	protein-coding
chr7	31844914	31845414	intron (NM_001191059, intron 10 of 18)	157949	ENSG00000106341	PPP1R17	More	protein-coding
chrX	13777747	13778247	intron (NM_001001995, intron 5 of 7)	39096	ENSG00000046653	GPM6B	More	protein-coding
chr15	51362045	51362545	intron (NM_181789, intron 1 of 9)	-14951	ENSG00000186417	GLDN	More	protein-coding
chr12	131053949	131054449	intron (NM_198827, intron 13 of 24)	-60223		ADGRD1-AS1	More	ncRNA
chr1	77133615	77134115	intron (NM_005482, intron 9 of 10)	73722	ENSG00000276081	MIR7156	More	ncRNA
chrX	132507346	132507846	Intergenic	-17561	ENSG00000076770	MBNL3	More	protein-coding
chr15	89644370	89644870	intron (NM_198525, intron 10 of 18)	10847	ENSG00000166813	KIF7	More	protein-coding
chr9	139459023	139459523	Intergenic	1242417		FAM157B	More	ncRNA
chr9	87622507	87623007	intron (NM_004938, intron 3 of 25)	69303	ENSG00000236709	DAPK1-IT1	More	ncRNA
chr2	97413452	97413952	Intergenic	10325		LOC100506123	More	ncRNA
chr10	60765410	60765910	Intergenic	-12671	ENSG00000170312	CDK1	More	protein-coding
chr10	8458229	8458729	Intergenic	135912		LOC105376398	More	ncRNA
chr10	133976904	133977404	Intergenic	-350359	ENSG00000225899	FRG2B	More	protein-coding
chr16	76209995	76210495	Intergenic	-67156	ENSG00000152910	CNTNAP4	More	protein-coding
chr5	161675183	161675683	Intergenic	-10288	ENSG00000145863	GABRA6	More	protein-coding
chr7	31868116	31868616	intron (NM_001191059, intron 7 of 18)	181151	ENSG00000106341	PPP1R17	More	protein-coding
chr4	54510780	54511280	Intergenic	96101	ENSG00000250456	LINC02260	More	ncRNA
chr3	167834030	167834530	Intergenic	-61668	ENSG00000244227	LRRC77P	More	pseudo
chr8	22661921	22662421	intron (NM_018688, intron 1 of 8)	6950	ENSG00000147439	BIN3	More	protein-coding
chr16	68786448	68786948	intron (NM_001317185, intron 2 of 15)	49406	ENSG00000039068	CDH1	More	protein-coding
chrX	148037854	148038354	Intergenic	56767	ENSG00000176988	FMR1NB	More	protein-coding
chr4	112558083	112558583	intron (NM_018392, intron 19 of 27)	-42153	ENSG00000178403	NEUROG2	More	protein-coding
chr20	954345	954845	Intergenic	-38261	ENSG00000101280	ANGPT4	More	protein-coding
chr14	71678718	71679218	intron (NM_001354286, intron 13 of 24)	92670	ENSG00000197555	SIPA1L1	More	protein-coding
chr10	68386793	68387293	intron (NR_103476, intron 7 of 18)	20146	ENSG00000204130	RUFY2	More	protein-coding
chr11	61671986	61672486	Intergenic	-8155	ENSG00000134780	DAGLA	More	protein-coding
chr6	141130760	141131260	Intergenic	447196	ENSG00000264390	MIR4465	More	ncRNA
chr17	70024709	70025209	Intergenic	-26312	ENSG00000267603	LINC01028	More	ncRNA
chr1	175412385	175412885	intron (NM_003285, intron 2 of 22)	-219648	ENSG00000235750	KIAA0040	More	protein-coding
chr15	58672280	58672780	intron (NM_001320570, intron 4 of 14)	21077		HSP90AB4P	More	pseudo
chr22	43315146	43315646	intron (NM_173050, intron 3 of 21)	27976	ENSG00000159307	SCUBE1	More	protein-coding

chr2	133582226	133582726	Intergenic	-14013	ENSG00000176771	NCKAP5	More	protein-coding
chr10	35047210	35047710	intron (NM_001324375, intron 4 of 18)	26823	ENSG00000108094	CUL2	More	protein-coding
chr14	33123213	33123713	intron (NM_001164749, intron 2 of 11)	184584	ENSG00000151322	NPAS3	More	protein-coding
chr7	130523463	130523963	intron (NM_012133, intron 20 of 23)	-19740		COPG2IT1	More	ncRNA
chr16	5436996	5437496	Intergenic	179004	ENSG00000260338	LINC01570	More	ncRNA
chr1	94577406	94577906	Intergenic	33954		MIR12133	More	ncRNA
chr4	139250480	139250980	Intergenic	29495	ENSG00000137463	MGARP	More	protein-coding
chr10	125202383	125202883	Intergenic	-41603	ENSG00000175029	CTBP2	More	protein-coding
chr16	29040532	29041032	Intergenic	-34060	ENSG00000103472	RRN3P2	More	pseudo
chr12	108691875	108692375	intron (NM_001105237, intron 2 of 10)	10873	ENSG00000110880	CORO1C	More	protein-coding
chr16	68709805	68710305	Intergenic	-27237	ENSG00000039068	CDH1	More	protein-coding
chr3	124581948	124582448	intron (NM_001024660, intron 34 of 59)	-2460	ENSG00000160145	KALRN	More	protein-coding
chr6	76111940	76112440	Intergenic	-39512	ENSG00000112706	IMPG1	More	protein-coding
chr9	94950270	94950770	intron (NM_001193329, intron 6 of 15)	-4966		LOC101928119	More	ncRNA
chr4	27815624	27816124	Intergenic	598395	ENSG00000249699	LINC02261	More	ncRNA
chr1	101843806	101844306	intron (NM_058170, intron 1 of 5)	3024	ENSG00000118733	OLFM3	More	protein-coding
chr4	24770143	24770643	Intergenic	-25180	ENSG00000109610	SOD3	More	protein-coding
chr19	35686717	35687217	Intergenic	-13676	ENSG00000226510	UPK1A-AS1	More	ncRNA
chr12	131598049	131598549	Intergenic	49822		LINC02414	More	ncRNA
chr11	86399330	86399830	intron (NM_001156474, intron 6 of 14)	24693	ENSG00000149201	CCDC81	More	protein-coding
chr10	34024159	34024659	Intergenic	-251729	ENSG00000261683	LINC00838	More	ncRNA
chr10	90022501	90023001	Intergenic	-65378	ENSG00000226159	LINC01375	More	ncRNA
chr18	67565668	67566168	intron (NR_033921, intron 1 of 4)	-49198	ENSG00000171451	DSEL	More	protein-coding
chr6	36482676	36483176	intron (NR_104480, intron 4 of 5)	39926	ENSG00000112078	KCTD20	More	protein-coding
chr3	99450334	99450834	Intergenic	-188010	ENSG00000144810	COL8A1	More	protein-coding
chr11	108831782	108832282	intron (NM_004398, intron 13 of 17)	166963	ENSG00000178105	DDX10	More	protein-coding
chr17	70030026	70030526	Intergenic	-20995	ENSG00000267603	LINC01028	More	ncRNA
chr16	85562484	85562984	Intergenic	-48675	ENSG00000131149	GSE1	More	protein-coding
chr18	46608078	46608578	intron (NM_144612, intron 6 of 39)	48705	ENSG00000167210	LOXHD1	More	protein-coding
chr15	33636801	33637301	intron (NM_001243996, intron 27 of 102)	326084	ENSG00000198838	RYR3	More	protein-coding
chr21	37834101	37834601	intron (NM_002240, intron 2 of 3)	82106	ENSG00000157542	KCNJ6	More	protein-coding
chr17	12977288	12977788	intron (NM_001321164, intron 17 of 20)	40489	ENSG00000006744	ELAC2	More	protein-coding
chr13	64631404	64631904	Intergenic	-555643	ENSG00000227674	LINC00355	More	ncRNA
chr22	25471137	25471637	Intergenic	15741	ENSG00000277872	MIR6817	More	ncRNA
chr18	33930746	33931246	intron (NM_001198548, intron 7 of 8)	117616	ENSG00000101746	NOL4	More	protein-coding
chr4	14568105	14568605	intron (NR_126435, intron 5 of 6)	319814	ENSG00000248360	LINC00504	More	ncRNA
chr1	168468875	168469375	intron (NR_125956, intron 4 of 4)	26519	ENSG00000228697	LOC101928565	More	ncRNA
chr1	160837818	160838318	intron (NM_001166664, intron 4 of 7)	24819	ENSG00000122223	CD244	More	protein-coding
chr13	70217846	70218346	Intergenic	-109603	ENSG00000150361	KLHL1	More	protein-coding
chr4	45128426	45128926	Intergenic	-402042	ENSG00000163281	GNPDA2	More	protein-coding
chr5	1002176	1002676	Intergenic	-5086	ENSG00000215246	LOC100506688	More	ncRNA
chr18	4232582	4233082	intron (NM_001242761, intron 1 of 11)	-31770	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr6	32409801	32410301	Intergenic	-2921	ENSG00000204290	BTNL2	More	protein-coding
chr13	79051063	79051563	Intergenic	-211263		LINC00331	More	ncRNA
chr3	170997818	170998318	exon (NM_000340, exon 11 of 11)	28652	ENSG00000163581	SLC2A2	More	protein-coding
chr1	233931818	233932318	intron (NM_173508, intron 2 of 7)	27392	ENSG00000183780	SLC35F3	More	protein-coding
chr18	46251195	46251695	intron (NM_145055, intron 3 of 4)	77411	ENSG00000152242	C18orf25	More	protein-coding
chr9	33617544	33618044	Intergenic	-6431		ANXA2P2	More	pseudo
chr2	37733517	37734017	Intergenic	-61232	ENSG00000163171	CDC42EP3	More	protein-coding
chr2	124670816	124671316	intron (NM_130773, intron 13 of 23)	645779	ENSG00000155052	CNTNAP5	More	protein-coding
chr4	178001442	178001942	Intergenic	-93756	ENSG00000251504	LINC01099	More	ncRNA
chr7	32090467	32090967	intron (NM_001322059, intron 3 of 17)	-19281	ENSG00000154678	PDE1C	More	protein-coding
chr13	45343215	45343715	non-coding (NR_024458, exon 2 of 11)	2120		TPT1-AS1	More	ncRNA
chr8	120084203	120084703	Intergenic	-40649	ENSG00000187955	COL14A1	More	protein-coding
chr5	153746627	153747127	intron (NM_000827, intron 11 of 15)	152110	ENSG00000251183	LINC01861	More	ncRNA
chr19	48774885	48775385	Intergenic	19611	ENSG00000105550	FGF21	More	protein-coding
chr10	35230450	35230950	Intergenic	-16325	ENSG00000108100	CCNY	More	protein-coding
chr5	117282792	117283292	Intergenic	-132470		LINC00992	More	ncRNA
chr19	41481974	41482474	intron (NR_136334, intron 1 of 2)	18425	ENSG00000267107	PCAT19	More	ncRNA
chr2	111953969	111954469	intron (NM_006343, intron 4 of 18)	55612	ENSG00000153208	MERTK	More	protein-coding
chr2	222611885	222612385	intron (NR_130154, intron 16 of 17)	43957	ENSG00000116120	FARSB	More	protein-coding
chr3	99176693	99177193	Intergenic	-275248	ENSG00000057019	DCBLD2	More	protein-coding
chr22	45740216	45740716	exon (NM_001167621, exon 8 of 11)	-20058	ENSG00000264160	MIR4762	More	ncRNA
chr10	35161540	35162040	intron (NM_001352467, intron 2 of 3)	-5749	ENSG00000095794	CREM	More	protein-coding
chr10	89382004	89382504	intron (NM_001010987, intron 1 of 1)	4198	ENSG00000204010	IFIT1B	More	protein-coding
chr2	26011217	26011717	Intergenic	-22617	ENSG00000084733	RAB10	More	protein-coding
chr7	154653282	154653782	intron (NR_157196, intron 6 of 25)	-274985	ENSG00000214106	PAXIP1-AS2	More	ncRNA
chr13	88206181	88206681	intron (NR_131919, intron 1 of 4)	63564	ENSG00000231019	LINC00373	More	ncRNA
chr3	161488268	161488768	Intergenic	-8290	ENSG00000182447	OTOL1	More	protein-coding
chr4	7794974	7795474	intron (NM_198595, intron 10 of 16)	41134	ENSG00000272620	AFAP1-AS1	More	ncRNA
chr4	6322282	6322782	3' UTR (NM_020416, exon 9 of 9)	52682	ENSG00000109501	WFS1	More	protein-coding
chr1	162666917	162667417	intron (NM_006182, intron 2 of 17)	34703	ENSG00000162733	DDR2	More	protein-coding
chr17	318887866	318888366	intron (NM_018428, intron 7 of 18)	13592	ENSG00000108651	UTP6	More	protein-coding
chr15	93209937	93210437	Intergenic	4121		LOC105370980	More	protein-coding
chr13	65557124	65557624	Intergenic	-308673		LINC01052	More	ncRNA
chr3	151878598	151879098	intron (NM_033050, intron 1 of 2)	5205	ENSG00000198829	SUCNR1	More	protein-coding
chr8	141118654	141119154	Intergenic	-9685	ENSG00000105339	DENND3	More	protein-coding
chr10	34004170	34004670	Intergenic	-231740	ENSG00000261683	LINC00838	More	ncRNA
chr4	36447068	36447568	Intergenic	-20890	ENSG00000283207	MIR125581	More	ncRNA
chr2	197347423	197347923	Intergenic	-36893	ENSG00000065413	ANKRD44	More	protein-coding
chr3	121442942	121443442	intron (NM_199420, intron 26 of 29)	102796	ENSG00000051341	POLQ	More	protein-coding
chr9	14251282	14251782	intron (NR_161383, intron 1 of 7)	48732	ENSG00000147862	NFIB	More	protein-coding
chr4	27095255	27095755	Intergenic	-121974	ENSG00000249699	LINC02261	More	ncRNA

chr8	102018381	102018881	intron (NM_001040624, intron 3 of 7)	34199	LOC104054148	More	ncRNA
chr5	11031204	11031704	intron (NM_001288715, intron 15 of 20)	-270220	ENSG00000112977	More	protein-coding
chr1	77402341	77402841	intron (NM_012093, intron 6 of 13)	119504	ENSG00000154027	More	protein-coding
chr9	109935956	109936456	intron (NM_147150, intron 6 of 9)	-112392	ENSG00000157654	More	protein-coding
chr1	234908811	234909311	Intergenic	54938	ENSG00000238005	More	ncRNA
chr12	99726920	99727420	intron (NM_152788, intron 8 of 25)	79417	ENSG00000180219	More	protein-coding
chr6	27123159	27123659	Intergenic	9387	ENSG00000124635	More	protein-coding
chr11	32024490	32024990	Intergenic	16578	ENSG00000254584	More	ncRNA
chr7	125321480	125321980	intron (NR_110188, intron 3 of 8)	-57439	ENSG00000219445	More	ncRNA
chr11	12833313	12833813	intron (NM_021961, intron 3 of 12)	155985	ENSG00000251381	More	ncRNA
chr3	105787513	105788013	intron (NR_135809, intron 3 of 18)	79828	ENSG00000114423	More	protein-coding
chr15	40165335	40165835	intron (NM_001211, intron 2 of 22)	4576	ENSG00000156970	More	protein-coding
chr13	61827286	61827786	Intergenic	202012	ENSG00000229578	More	ncRNA
chr4	24858037	24858537	intron (NM_001130726, intron 3 of 11)	54691	ENSG00000181982	More	protein-coding
chr1	38992933	38993433	intron (NM_024595, intron 1 of 4)	1907	ENSG00000174574	More	protein-coding
chr17	39560278	39560778	Intergenic	47392	ENSG00000171532	More	protein-coding
chr3	149816381	149816881	intron (NM_007282, intron 2 of 10)	3943	ENSG00000082996	More	protein-coding
chr6	51793050	51793550	intron (NM_138694, intron 52 of 66)	171430		More	ncRNA
chr2	202907126	202907626	intron (NM_018256, intron 2 of 12)	-4842	ENSG00000138380	More	protein-coding
chr12	108703407	108703907	promoter-TSS (NM_001105237)	-659	ENSG00000110880	More	protein-coding
chr18	33908250	33908750	intron (NM_001198548, intron 7 of 8)	140112	ENSG00000101746	More	protein-coding
chr6	11412223	11412723	Intergenic	-30125	ENSG0000011859	More	protein-coding
chr5	58083723	58084223	Intergenic	38368	LINC02101	More	ncRNA
chr19	5271165	5271665	intron (NM_002850, intron 4 of 37)	69397	ENSG00000105426	More	protein-coding
chr2	138681438	138681938	intron (NM_007226, intron 1 of 1)	98702	ENSG00000144227	More	protein-coding
chr8	12444670	12445170	intron (NR_040092, intron 4 of 5)	7907		More	ncRNA
chr11	120644247	120644747	intron (NM_001282470, intron 1 of 19)	80061	ENSG00000149403	More	protein-coding
chr3	81444895	81445395	Intergenic	316500	ENSG00000114480	More	protein-coding
chr4	143484853	143485353	Intergenic	-28599	ENSG00000153147	More	protein-coding
chr9	18692126	18692626	intron (NM_001040272, intron 13 of 28)	119070	ENSG00000264638	More	ncRNA
chr11	2774115	2774615	intron (NM_181798, intron 12 of 15)	-74367	ENSG00000269821	More	ncRNA
chr4	162576187	162576687	Intergenic	-412403	ENSG00000168843	More	protein-coding
chr13	69853289	69853789	intron (NM_001286725, intron 4 of 9)	-253674		More	ncRNA
chr6	1575438	1575938	Intergenic	-29843	FOXCUT	More	ncRNA
chr7	100825658	100826158	promoter-TSS (NM_001363494)	-961	ENSG00000146828	More	protein-coding
chr4	145997171	145997671	Intergenic	-58598	ENSG00000151612	More	protein-coding
chr5	83588586	83589086	Intergenic	-26522	ENSG00000249835	More	ncRNA
chr5	83552779	83553279	intron (NM_001164098, intron 9 of 13)	9285	ENSG00000249835	More	ncRNA
chr13	35416501	35417001	intron (NM_015678, intron 38 of 57)	59938	ENSG00000180660	More	protein-coding
chr17	45817891	45818391	intron (NM_001303020, intron 3 of 11)	-26740	ENSG00000185294	More	protein-coding
chr8	96715815	96716315	intron (NM_016134, intron 1 of 7)	70823	ENSG00000104324	More	protein-coding
chr11	12793457	12793957	intron (NM_021961, intron 3 of 12)	119286	ENSG00000187079	More	protein-coding
chr18	33946851	33947351	intron (NM_001198546, intron 7 of 9)	101511	ENSG00000101746	More	protein-coding
chrX	106814854	106815354	intron (NM_198881, intron 1 of 11)	12431	ENSG00000133138	More	protein-coding
chr13	43616424	43616924	intron (NM_001127615, intron 1 of 16)	12803	ENSG00000120658	More	protein-coding
chr14	70467318	70467818	Intergenic	15394	ENSG00000139985	More	protein-coding
chr3	109786304	109786804	Intergenic	183726	ENSG00000265956	More	ncRNA
chr17	76447720	76448220	intron (NM_022066, intron 1 of 17)	5182	ENSG00000175931	More	protein-coding
chr1	242350315	242350815	intron (NM_001320272, intron 2 of 10)	98903	ENSG00000180287	More	protein-coding
chr1	219445438	219445938	intron (NR_135822, intron 2 of 3)	111636	LYPLAL1-AS1	More	ncRNA
chr21	43801451	43801951	intron (NM_003683, intron 11 of 12)	10866	ENSG00000215458	More	ncRNA
chr8	133993194	133993694	Intergenic	106948	ENSG00000253593	More	ncRNA
chr4	109751570	109752070	intron (NM_001331035, intron 7 of 11)	-21750	ENSG00000123739	More	protein-coding
chr6	55698031	55698531	Intergenic	-119067	ENSG00000146151	More	protein-coding
chr10	46157924	46158424	Intergenic	48679	AGAP7P	More	pseudo
chr11	81662201	81662701	Intergenic	228385	ENSG00000264110	More	ncRNA
chr22	23479129	23479629	intron (NR_110539, intron 4 of 11)	7601	ENSG00000178248	More	ncRNA
chr12	108700788	108701288	intron (NM_001105237, intron 2 of 10)	1960	ENSG00000110880	More	protein-coding
chr14	98693630	98694130	Intergenic	-17733	ENSG00000176605	More	ncRNA
chr10	34956014	34956514	Intergenic	118019	ENSG00000108094	More	protein-coding
chr20	6035731	6036231	intron (NR_136617, intron 5 of 5)	18079	ENSG00000125872	More	protein-coding
chr4	175459262	175459762	Intergenic	328164	ENSG00000150625	More	protein-coding
chr20	6905755	6906255	Intergenic	138319	ENSG00000125845	More	protein-coding
chr12	108699209	108699709	intron (NM_001105237, intron 2 of 10)	3539	ENSG00000110880	More	protein-coding
chr9	98143480	98143980	intron (NM_003389, intron 2 of 11)	-24508	ENSG00000106785	More	protein-coding
chr4	14884485	14884985	intron (NR_126435, intron 1 of 6)	3434	ENSG00000248360	More	ncRNA
chr3	81963267	81963767	Intergenic	-22625	ENSG00000239440	More	ncRNA
chr1	181511437	181511937	intron (NM_001205293, intron 3 of 47)	28170	ENSG00000198216	More	protein-coding
chr9	100925977	100926477	Intergenic	-102500	ENSG00000148123	More	protein-coding
chr7	36085369	36085869	Intergenic	-9691	ENSG00000261184	More	ncRNA
chr10	60833073	60833573	Intergenic	54845	ENSG00000170312	More	protein-coding
chr2	95512038	95512538	Intergenic	-27557	ENSG00000144010	More	protein-coding
chr5	175944138	175944638	Intergenic	23927	ENSG00000051596	More	protein-coding
chr21	39699831	39700331	Intergenic	42748	ENSG00000183778	More	protein-coding
chr1	195489921	195490421	Intergenic	598544		More	ncRNA
chr17	48177341	48177841	intron (NM_001075099, intron 9 of 12)	-21080	ENSG00000221739	More	ncRNA
chr2	189100440	189100940	intron (NM_000393, intron 3 of 53)	32421	ENSG00000264725	More	ncRNA
chr8	22977455	22977955	Intergenic	-9546	ENSG00000008853	More	protein-coding
chr3	37943990	37944490	intron (NM_001008392, intron 1 of 7)	-25164	ENSG00000199075	More	ncRNA
chr9	99428885	99429385	Intergenic	-53878	ENSG00000271086	More	ncRNA
chr3	45083041	45083541	3' UTR (NM_022842, exon 9 of 9)	53148	ENSG00000163815	More	protein-coding
chr2	106034205	106034705	Intergenic	-31233	ENSG00000119147	More	protein-coding
chr18	39794987	39795487	Intergenic	-43242	ENSG00000267374	More	ncRNA
chr1	187954562	187955062	Intergenic	511184	LINC01037	More	ncRNA

chr20	38380966	38381466	Intergenic	34734	ENSG00000129988	LBP	More	protein-coding
chr1	65210365	65210865	intron (NM_001005353, intron 3 of 5)	-54079	ENSG00000116675	DNAJC6	More	protein-coding
chr8	108395245	108395745	Intergenic	-48088	ENSG00000104412	EMC2	More	protein-coding
chr5	42467673	42468173	intron (NM_001242401, intron 1 of 10)	42942	ENSG00000112964	GHR	More	protein-coding
chr9	15357028	15357528	Intergenic	-49918	ENSG00000155158	TTC39B	More	protein-coding
chr3	192548793	192549293	intron (NM_0041113, intron 2 of 5)	34021	ENSG00000230126	FGF12-AS2	More	ncRNA
chr7	31932926	31933426	intron (NM_001322059, intron 3 of 17)	137231	ENSG00000154678	PDE1C	More	protein-coding
chr3	174992570	174993070	intron (NM_207015, intron 1 of 13)	122422	ENSG00000230292	NAALADL2-AS3	More	ncRNA
chr1	69848305	69848805	intron (NM_001370785, intron 7 of 26)	-70767	ENSG00000229359	PIN1P1	More	pseudo
chr3	89228601	89229101	intron (NM_182644, intron 3 of 6)	121230	ENSG00000044524	EPHA3	More	protein-coding
chr11	133044967	133045467	intron (NM_001012393, intron 1 of 7)	-101449	ENSG00000183715	OPCML	More	protein-coding
chr1	31202071	31202571	intron (NM_024522, intron 1 of 6)	37566	ENSG00000084628	NKAIN1	More	protein-coding
chr9	122862844	122863344	intron (NM_001100588, intron 10 of 20)	17225	ENSG00000212447	SNORD90	More	snoRNA
chr3	193015197	193015697	Intergenic	-97591	ENSG00000180611	MB21D2	More	protein-coding
chr9	113564700	113565200	promoter-TSS (NM_134427)	-4	ENSG00000138835	RGS3	More	protein-coding
chr6	162453479	162453979	intron (NM_004562, intron 1 of 11)	-273403	ENSG00000112530	PACRG	More	protein-coding
chr11	4725250	47252750	Intergenic	-27647	ENSG00000167332	OR51E2	More	protein-coding
chr11	19960944	19961444	intron (NM_182964, intron 10 of 37)	-61362	ENSG00000166833	NAV2	More	protein-coding
chr14	106208016	106208516	Intergenic	-79408		LINC00226	More	ncRNA
chr16	76030310	76030810	Intergenic	-246841	ENSG00000152910	CNTNAP4	More	protein-coding
chr3	165538564	165539064	Intergenic	298609	ENSG00000114200	BCHE	More	protein-coding
chr20	21483989	21484489	Intergenic	29825	ENSG00000125820	NKX2-2	More	protein-coding
chr4	55575599	55576099	intron (NM_152401, intron 3 of 5)	16396	ENSG00000163440	PDCL2	More	protein-coding
chr2	46466920	46467420	Intergenic	-12395	ENSG00000284701	TMEM247	More	protein-coding
chr18	28829000	28829500	Intergenic	-652120	ENSG00000170558	CDH2	More	protein-coding
chr10	54624297	54624797	intron (NR_134503, intron 4 of 5)	-16590	ENSG00000221594	MIR548F1	More	ncRNA
chr13	65504833	65505333	Intergenic	-360964		LINC01052	More	ncRNA
chr8	70625950	70626450	intron (NR_038881, intron 1 of 3)	17623	ENSG00000246366	LACTB2-AS1	More	ncRNA
chr4	129567946	129568446	Intergenic	203282	ENSG00000246876	LINC02466	More	ncRNA
chr1	158096146	158096646	3' UTR (NM_001286349, exon 13 of 13)	44244	ENSG00000231666	LINC01704	More	ncRNA
chr13	65502941	65503441	Intergenic	-362856		LINC01052	More	ncRNA
chr7	82200270	82200770	intron (NM_000722, intron 3 of 38)	191343	ENSG00000223770	LOC101927356	More	ncRNA
chr9	8136436	8136936	Intergenic	-336908	ENSG00000137038	DMAC1	More	protein-coding
chr7	93661099	93661599	Intergenic	-55579	ENSG00000265423	MIR4652	More	ncRNA
chr5	147470314	147470814	intron (NM_001197294, intron 1 of 13)	-16872	ENSG00000113657	DPYSL3	More	protein-coding
chr12	108726802	108727302	intron (NM_014325, intron 1 of 10)	3791	ENSG00000110880	CORO1C	More	protein-coding
chr1	118766174	118766674	Intergenic	221919	ENSG00000092607	TBX15	More	protein-coding
chr2	80753427	80753927	Intergenic	440298	ENSG00000060632	CTNNA2	More	protein-coding
chr6	126080126	126080626	TTS (NR_146804)	93836	ENSG00000066651	TRMT11	More	protein-coding
chr11	75248064	75248564	Intergenic	7540	ENSG00000261594	TPBGL	More	protein-coding
chr15	39915676	39916176	intron (NM_001271854, intron 1 of 3)	4966	ENSG00000166073	GPR176	More	protein-coding
chr13	29149288	29149788	intron (NM_001033602, intron 3 of 13)	125081	ENSG00000132938	MTUS2	More	protein-coding
chr6	131831196	131831696	intron (NM_006208, intron 1 of 24)	23426	ENSG00000197594	ENPP1	More	protein-coding
chr6	4518680	4519180	Intergenic	30132		LINC02533	More	ncRNA
chr18	4251817	4252317	intron (NM_001242761, intron 1 of 11)	-12535	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr1	242349036	242349536	intron (NM_001320272, intron 2 of 10)	100182	ENSG00000180287	PLD5	More	protein-coding
chr7	625422	625922	intron (NM_001164760, intron 4 of 10)	22274		LOC101926963	More	ncRNA
chr3	69289905	69290405	intron (NM_015123, intron 4 of 22)	95933	ENSG00000114541	FRMD4B	More	protein-coding
chr7	47223515	47224015	Intergenic	241038		SNORD151	More	snoRNA
chr2	111613018	111613518	Intergenic	-118107	ENSG00000172965	MIR4435-2HG	More	ncRNA
chr2	170618141	170618641	intron (NM_001083615, intron 31 of 33)	96176	ENSG00000222033	LINC01124	More	ncRNA
chr12	16380900	16381400	Intergenic	27733	ENSG00000008394	MGST1	More	protein-coding
chr20	7118276	7118776	Intergenic	135676	ENSG00000228888	LINC01428	More	ncRNA
chr9	15191300	15191800	intron (NM_001168342, intron 7 of 17)	58668	ENSG00000155158	TTC39B	More	protein-coding
chr10	70354173	70354673	intron (NR_103468, intron 1 of 2)	22356	ENSG00000172731	LIRC20	More	protein-coding
chr6	25842751	25843251	Intergenic	-10949	ENSG00000124568	SLC17A1	More	protein-coding
chr18	4750732	4751232	Intergenic	-295675	ENSG00000170579	DLGAP1	More	protein-coding
chr17	29379086	29379586	Intergenic	-11326	ENSG00000284162	MIR4523	More	ncRNA
chr11	32365067	32365567	Intergenic	35083	ENSG00000184937	WT1	More	protein-coding
chr19	50411141	50411641	intron (NR_046402, intron 17 of 25)	-7547	ENSG00000269404	SPIB	More	protein-coding
chr13	93491019	93491519	intron (NM_005708, intron 1 of 8)	264462	ENSG00000183098	GPC6	More	protein-coding
chr10	34861369	34861869	Intergenic	45851	ENSG00000226386	PARD3-AS1	More	ncRNA
chr17	3377489	3377989	Intergenic	20671	ENSG00000180016	OR1E1	More	protein-coding
chr9	14207403	14207903	intron (NR_161383, intron 1 of 7)	-26849	ENSG00000147862	NFIB	More	protein-coding
chr1	162235699	162236199	intron (NM_014697, intron 2 of 9)	78842	ENSG00000266144	MIR4654	More	ncRNA
chr7	101975757	101976257	intron (NM_001202544, intron 2 of 21)	158381	ENSG00000257923	CUX1	More	protein-coding
chr8	65955279	65955779	Intergenic	-59449	ENSG00000147570	DNAJC5B	More	protein-coding
chr4	14773907	14774407	intron (NR_126435, intron 2 of 6)	114012	ENSG00000248360	LINC00504	More	ncRNA
chr14	88461302	88461802	Intergenic	75895	ENSG00000042317	SPATA7	More	protein-coding
chr19	51728097	51728597	Intergenic	-4356	ENSG00000105509	HAS1	More	protein-coding
chr1	247134490	247134990	intron (NM_001243740, intron 3 of 3)	-22323		C1orf229	More	protein-coding
chr10	72717476	72717976	intron (NR_073062, intron 3 of 9)	-3303	ENSG00000266719	MIR4676	More	ncRNA
chr6	79325086	79325586	Intergenic	-11952	ENSG00000286042	LCAL1	More	ncRNA
chr1	12064821	12065321	intron (NM_001281430, intron 1 of 13)	1694	ENSG00000120949	TNFRSF8	More	protein-coding
chr6	13043024	13043524	intron (NM_001322314, intron 1 of 12)	29720	ENSG00000112137	PHACTR1	More	protein-coding
chr10	67562078	67562578	intron (NM_001127384, intron 3 of 17)	103332	ENSG00000183230	CTNNA3	More	protein-coding
chr17	31994954	31994454	intron (NM_001321207, intron 11 of 14)	-13179	ENSG00000185158	LIRC37B	More	protein-coding
chr17	63175393	63175893	intron (NM_025185, intron 4 of 25)	209408	ENSG00000170921	TANC2	More	protein-coding
chr5	153698238	153698738	intron (NM_000827, intron 9 of 15)	200499	ENSG00000251183	LINC01861	More	ncRNA
chr20	48484799	48485299	Intergenic	125138	ENSG00000235621	LINC00494	More	ncRNA
chr18	33945711	33946211	intron (NM_001198546, intron 7 of 9)	102651	ENSG00000101746	NOL4	More	protein-coding
chr3	160190126	160190626	intron (NR_108088, intron 1 of 9)	16716	ENSG00000244040	IL12A-AS1	More	ncRNA
chr7	136953970	136954470	intron (NM_001006626, intron 3 of 4)	51053	ENSG00000207597	MIR490	More	ncRNA
chr11	65262435	65262935	intron (NM_002689, intron 1 of 17)	723	ENSG00000014138	POLA2	More	protein-coding

chr10	33705084	33705584	Intergenic	67346	ENSG00000261683	LINC00838	More	ncRNA
chr8	68652921	68653421	intron (NR_146187, intron 8 of 13)	-321680	ENSG00000248801	C8orf34-AS1	More	ncRNA
chr12	12537830	12538330	intron (NM_030640, intron 1 of 6).2	24783	ENSG00000111266	DUSP16	More	protein-coding
chr9	29322183	29322683	Intergenic	-108832	ENSG00000174482	LINGO2	More	protein-coding
chr9	36639791	36640291	intron (NM_001256691, intron 8 of 15)	67146	ENSG00000165304	MELK	More	protein-coding
chr10	79119041	79119541	intron (NM_020338, intron 2 of 24)	50325	ENSG00000108175	ZMIZ1	More	protein-coding
chr12	104920965	104921465	intron (NM_032148, intron 3 of 11)	37075	ENSG00000136052	SLC41A2	More	protein-coding
chrX	109986890	109987390	Intergenic	-15495	ENSG00000157600	TMEM164	More	protein-coding
chr12	15886183	15886683	intron (NM_007178, intron 2 of 9)	4046	ENSG0000023734	STRAP	More	protein-coding
chr10	58355985	58356485	intron (NM_003338, intron 1 of 6)	21229	ENSG00000072401	UBE2D1	More	protein-coding
chr17	31786401	31786901	Intergenic	72311	ENSG00000172301	COPRS	More	protein-coding
chr7	38596732	38597232	intron (NM_001635, intron 1 of 20)	34391	ENSG00000078053	AMPH	More	protein-coding
chr7	31735422	31735922	Intergenic	48457	ENSG00000106341	PPP1R17	More	protein-coding
chr15	58809437	58809937	intron (NM_001040450, intron 3 of 8)	38385	ENSG00000128923	MINDY2	More	protein-coding
chr4	47289665	47290165	intron (NM_000812, intron 4 of 8)	173787	ENSG00000169019	COMMD8	More	protein-coding
chr2	37784426	37784926	Intergenic	45035	ENSG00000237803	LINC00211	More	ncRNA
chr7	15479467	15479967	intron (NM_001004320, intron 3 of 12)	82298	ENSG00000187546	AGMO	More	protein-coding
chr21	38835447	38835947	Intergenic	-21842		LOC101928398	More	ncRNA
chr10	126664676	126665176	intron (NM_001350922, intron 1 of 8)	5584	ENSG00000154493	C10orf90	More	protein-coding
chr12	29194396	29194896	intron (NM_001271783, intron 1 of 11)	-29020	ENSG00000064763	FAR2	More	protein-coding
chr1	202516426	202516926	intron (NM_002481, intron 18 of 23)	-23438	ENSG00000077157	PPP1R12B	More	protein-coding
chr12	108718848	108719348	intron (NM_014325, intron 1 of 10)	11745	ENSG00000110880	CORO1C	More	protein-coding
chr2	155410576	155411076	Intergenic	712131	ENSG00000162989	KCNJ3	More	protein-coding
chr18	43365062	43365562	Intergenic	-87822	ENSG00000132872	SVT4	More	protein-coding
chr10	34065283	34065783	Intergenic	-292853	ENSG00000261683	LINC00838	More	ncRNA
chr13	66042640	66043140	Intergenic	-76461	ENSG00000263581	MIR548X2	More	ncRNA
chr2	214616096	214616596	Intergenic	106164	ENSG00000224257	VWC2L-IT1	More	ncRNA
chr20	49951871	49952371	exon (NM_018683, exon 6 of 6)	15724	ENSG00000124226	RNF114	More	protein-coding
chrX	123492692	123493192	Intergenic	240110	ENSG00000125676	THOC2	More	protein-coding
chr14	64461877	64462377	intron (NM_001304508, intron 2 of 2)	-3372	ENSG00000179841	AKAP5	More	protein-coding
chr1	116800041	116800541	Intergenic	45861	ENSG00000116824	CD2	More	protein-coding
chr9	133424460	133424960	intron (NM_139027, intron 3 of 28).2	2343	ENSG00000160323	ADAMTS13	More	protein-coding
chr6	97381906	97382406	intron (NR_110757, intron 1 of 4)	76570	ENSG00000271860	LOC101927314	More	ncRNA
chr9	7121060	7121560	intron (NR_148679, intron 19 of 22)	363960	ENSG00000107077	KDM4C	More	protein-coding
chr3	148870159	148870659	intron (NM_001870, intron 3 of 10)	5113	ENSG00000163751	CPA3	More	protein-coding
chr4	173995693	173996193	Intergenic	98670	ENSG00000250708	LINC02269	More	ncRNA
chrX	40280518	40281018	intron (NR_110386, intron 1 of 2)	17851	ENSG00000236393	LOC101927476	More	ncRNA
chr7	27123213	27123713	non-coding (NR_122069, exon 3 of 4)	1544		HOXA-AS2	More	ncRNA
chr2	197121311	197121811	intron (NM_153697, intron 7 of 9)	-76430	ENSG00000231621	LOC101927596	More	ncRNA
chr5	110688657	110689157	intron (NM_001039763, intron 1 of 13)	37764	ENSG00000186952	TMEM232	More	protein-coding
chr7	46693015	46693515	intron (NR_134575, intron 1 of 2)	3857	ENSG00000233539	LOC730338	More	ncRNA
chr3	76586942	76587442	Intergenic	-452907	ENSG00000185008	ROBO2	More	protein-coding
chr12	53229740	53230240	intron (NM_000966, intron 2 of 9)	2219	ENSG00000172819	RARG	More	protein-coding
chr5	152869759	152870259	intron (NR_109877, intron 2 of 4)	102340	ENSG00000249484	LINC01470	More	ncRNA
chr7	31923345	31923845	intron (NM_001322059, intron 3 of 17)	146812	ENSG00000154678	PDE1C	More	protein-coding
chr10	134177625	134178125	Intergenic	-551080	ENSG00000225899	FRG2B	More	protein-coding
chr10	83017294	83017794	Intergenic	659545		LINC02650	More	ncRNA
chr1	159177634	159178134	intron (NM_001127173, intron 1 of 8)	6269	ENSG00000162706	CADM3	More	protein-coding
chr14	75698004	75698504	intron (NM_015072, intron 6 of 31)	37008	ENSG00000119685	TTL5	More	protein-coding
chr10	77686399	77686899	Intergenic	-48841	ENSG00000156113	KCNMA1	More	protein-coding
chr1	192567705	192568205	Intergenic	-7818	ENSG00000090104	RG51	More	protein-coding
chr7	46688828	46689328	non-coding (NR_134575, exon 3 of 3)	8044	ENSG00000233539	LOC730338	More	ncRNA
chr2	37797878	37798378	Intergenic	31583	ENSG00000237803	LINC00211	More	ncRNA
chr3	197185172	197185672	intron (NM_001290983, intron 5 of 25)	-1291	ENSG00000075711	DLG1	More	protein-coding
chr12	15240937	15241437	Intergenic	-19770	ENSG00000134533	RERG	More	protein-coding
chr1	66740291	66740791	intron (NM_001350218, intron 20 of 22)	-11918	ENSG00000152760	CTEX1D1	More	protein-coding
chr6	28770408	28770908	Intergenic	93019	ENSG00000225595	LINC01623	More	ncRNA
chr2	60906345	60906845	intron (NM_002908, intron 4 of 10)	25021	ENSG00000162924	REL	More	protein-coding
chr12	131104393	131104893	intron (NM_198827, intron 15 of 24)	-60868	ENSG00000204603	LINC01257	More	ncRNA
chr2	86536022	86536522	intron (NM_001005753, intron 1 of 4)	27171	ENSG00000115561	CHMP3	More	protein-coding
chr10	49489855	49490355	intron (NM_001346440, intron 8 of 20)	34176	ENSG00000225830	PGBD3	More	protein-coding
chr14	44786079	44786579	intron (NR_146457, intron 2 of 4)	12797		LINC02302	More	ncRNA
chr14	59106618	59107118	Intergenic	-81799	ENSG00000100592	DAAM1	More	protein-coding
chr4	77686891	77687391	Intergenic	131923	ENSG00000138767	CNOT6L	More	protein-coding
chr2	86477068	86477568	intron (NM_018433, intron 12 of 25)	35857	ENSG00000115548	KDM3A	More	protein-coding
chr4	150914136	150914636	intron (NM_001367550, intron 8 of 56)	100881	ENSG00000198589	LRBA	More	protein-coding
chr3	45151663	45152163	Intergenic	-5491	ENSG00000163814	CDCP1	More	protein-coding
chr16	19447995	19448495	intron (NM_001261841, intron 4 of 21)	-8216	ENSG00000103534	TMCS	More	protein-coding
chr2	201621675	201622175	3' UTR (NM_152388, exon 12 of 12)	-2747	ENSG00000155754	C2CD6	More	protein-coding
chr13	45338015	45338515	promoter-TSS (NR_002967)	-656	ENSG00000199477	SNORA31	More	snoRNA
chrX	72978026	72978526	Intergenic	24580	ENSG00000226725	PABPC1L2B-AS1	More	ncRNA
chr7	20777556	20778056	Intergenic	9080	ENSG00000164651	SP8	More	protein-coding
chr10	85576701	85577201	promoter-TSS (NR_038986)	-780	ENSG00000234942	GRID1-AS1	More	ncRNA
chr8	87273083	87273583	intron (NM_173538, intron 6 of 10)	406918	ENSG00000176571	CNBD1	More	protein-coding
chr2	13429419	13429919	Intergenic	-422656	ENSG00000225649	LOC100506474	More	ncRNA
chr2	139473644	139474144	Intergenic	576570		YY1P2	More	pseudo
chr11	15991411	15991911	intron (NM_017508, intron 12 of 14)	-22040	ENSG00000284094	MIR6073	More	ncRNA
chr11	120764442	120769442	intron (NM_001282470, intron 2 of 19)	54423		LOC105369532	More	ncRNA
chr2	234170417	234170917	Intergenic	119965	ENSG00000072080	SP2	More	protein-coding
chr20	36356190	36356690	intron (NM_001365621, intron 1 of 12)	50101	ENSG00000080845	DLGAP4	More	protein-coding
chr5	101443514	101444014	Intergenic	-540482	ENSG00000113532	ST8SIA4	More	protein-coding
chr15	64311940	64312440	intron (NM_001329606, intron 1 of 11)	43983	ENSG00000169118	C5SNK1G1	More	protein-coding
chr14	54489651	54490151	promoter-TSS (NM_004124)	-921	ENSG00000197045	GMFB	More	protein-coding
chr3	161488791	161489291	Intergenic	-7767	ENSG00000182447	OTOL1	More	protein-coding

chr15	57687425	57687925	intron (NR_104371, intron 12 of 16)	-18846	ENSG00000255529	POLR2M	More	protein-coding
chr2	13793007	13793507	Intergenic	607701	ENSG00000230448	LINC00276	More	ncRNA
chr10	72412524	72413024	intron (NM_001195519, intron 4 of 6)	-57855	ENSG00000148719	DNAJB12	More	protein-coding
chr2	201630200	201630700	intron (NM_001044385, intron 6 of 11)	-11272	ENSG00000155754	C2CD6	More	protein-coding
chr2	152053798	152054298	intron (NM_000726, intron 2 of 13)	44715	ENSG00000182389	CACNB4	More	protein-coding
chr3	33072234	33072734	intron (NM_001079811, intron 2 of 15)	24348	ENSG00000170266	GLB1	More	protein-coding
chr20	30652437	30652937	Intergenic	-249225		MLLT10P1	More	pseudo
chr8	82276650	82277150	Intergenic	-434614	ENSG00000104497	SNX16	More	protein-coding
chr6	125193939	125194439	intron (NR_149043, intron 1 of 3)	3628		LOC100126584	More	ncRNA
chr13	43962758	43963258	Intergenic	-59327		LINC00284	More	ncRNA
chr4	181370533	181371033	Intergenic	-105754		LINC02500	More	ncRNA
chr1	184463984	184464484	intron (NM_030806, intron 1 of 5)	77205	ENSG00000116667	C1orf21	More	protein-coding
chr2	136913873	136914373	intron (NM_001316349, intron 2 of 27)	148578	ENSG00000144229	THSD7B	More	protein-coding
chr2	111639420	111639920	Intergenic	131464	ENSG00000266063	MIR4771-2	More	ncRNA
chr7	23281898	23282398	Intergenic	-17191	ENSG00000156928	MALSU1	More	protein-coding
chr8	7606409	7606909	Intergenic	-74588	ENSG00000091656	ZFHX4	More	protein-coding
chr22	43286903	43287403	intron (NM_173050, intron 4 of 21)	11211	ENSG00000203527	LOC101927447	More	ncRNA
chr17	9962176	9962676	intron (NM_201432, intron 4 of 13)	-2931	ENSG00000007237	GAS7	More	protein-coding
chr5	115607030	115607530	intron (NR_109875, intron 2 of 2)	-4801	ENSG00000243414	TICAM2	More	protein-coding
chr5	35203385	35203885	intron (NM_000949, intron 1 of 9)	26852	ENSG00000113494	PRLR	More	protein-coding
chr10	34005583	34006083	Intergenic	-233153	ENSG00000261683	LINC00838	More	ncRNA
chr20	52522960	52523460	Intergenic	-97628	ENSG00000234948	LINC01524	More	ncRNA
chr1	220921445	220921945	Intergenic	-41555	ENSG00000257551	HLX-AS1	More	ncRNA
chr3	116859	117359	Intergenic	-79487	ENSG00000134121	CHL1	More	protein-coding
chr7	93762709	93763209	Intergenic	46031	ENSG00000265423	MIR4652	More	ncRNA
chr2	133899570	133900070	Intergenic	-220115			More	
chr1	244509745	244510245	intron (NM_001130957, intron 7 of 21)	48624	ENSG00000179397	CATSPERE	More	protein-coding
chr2	217790645	217791145	Intergenic	-34302		DIRC3	More	ncRNA
chr5	55125773	55126273	intron (NM_001145734, intron 8 of 10)	23377	ENSG00000145649	GZMA	More	protein-coding
chr17	33847018	33847518	intron (NM_001094, intron 1 of 9)	309538	ENSG00000108684	ASIC2	More	protein-coding
chr15	93171388	93171888	Intergenic	-34428		LOC105370980	More	protein-coding
chr2	242068770	242069270	intron (NR_146651, intron 1 of 3)	15118	ENSG00000232002	LINC01880	More	ncRNA
chr1	183217925	183218425	intron (NM_005562, intron 3 of 22)	31911	ENSG00000058085	LAMC2	More	protein-coding
chr8	76466998	76467498	intron (NR_105006, intron 2 of 5)	60594	ENSG00000254300	LINC01111	More	ncRNA
chr5	9659306	9659806	non-coding (NR_027112, exon 11 of 13)	-29205	ENSG00000169777	TAS2R1	More	protein-coding
chr1	233778461	233778961	Intergenic	-125965	ENSG00000183780	SLC35F3	More	protein-coding
chr1	162266946	162267446	intron (NM_014697, intron 2 of 9)	-75350	ENSG00000207729	MIR556	More	ncRNA
chr5	161636038	161636538	Intergenic	-49433	ENSG00000145863	GABRA6	More	protein-coding
chr10	81086747	81087247	Intergenic	437200		LINC02655	More	ncRNA
chr13	84561381	84561881	intron (NR_046871, intron 3 of 6)	-222023		SNORA107	More	snoRNA
chrX	39636880	39637380	Intergenic	-24086	ENSG00000263730	MIR3937	More	ncRNA
chr4	36673759	36674259	Intergenic	-32109	ENSG00000248215	LINC02505	More	ncRNA
chr18	34000134	34000634	intron (NM_001353232, intron 6 of 9)	48228	ENSG00000101746	NOL4	More	protein-coding
chr7	48673702	48674202	Intergenic	-250595	ENSG00000218305	CDC14C	More	protein-coding
chr1	89929423	89929923	intron (NM_001134479, intron 2 of 2)	65293		GEMIN8P4	More	pseudo
chr7	76981883	76982383	intron (NR_023383, intron 1 of 10)	1311	ENSG00000265479	DTX2P1-UPK3BP1	More	pseudo
chr7	120400626	120401126	intron (NM_012281, intron 1 of 5)	127701	ENSG00000184408	KCND2	More	protein-coding
chr13	46400744	46401244	Intergenic	-10952	ENSG00000102445	RUBCNL	More	protein-coding
chr18	57749989	57750489	intron (NM_005603, intron 1 of 27)	53076	ENSG00000081923	ATP8B1	More	protein-coding
chr18	3656344	3656844	intron (NM_001308390, intron 4 of 10)	52857		DLGAP1-AS2	More	ncRNA
chr3	149365046	149365546	Intergenic	12353	ENSG00000169908	TM4SF1	More	protein-coding
chr6	79627454	79627954	Intergenic	-3625	ENSG00000198478	SH3BGRL2	More	protein-coding
chr3	76582810	76583310	Intergenic	-457039	ENSG00000185008	ROBO2	More	protein-coding
chr3	99126013	99126513	Intergenic	-224568	ENSG00000057019	DCBLD2	More	protein-coding
chr18	4264182	4264682	promoter-TSS (NR_036489)	-170	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr11	117171057	117171557	TTS (NM_002572)	-7436	ENSG00000149577	SIDT2	More	protein-coding
chr1	168454328	168454828	Intergenic	-31922		LOC100505918	More	ncRNA
chr17	69879967	69880467	intron (NR_109971, intron 5 of 5)	-81490	ENSG00000237560	LINC01497	More	ncRNA
chr3	193762987	193763487	Intergenic	80772		LINC02038	More	ncRNA
chr8	62746459	62746959	intron (NM_001304533, intron 3 of 6)	-231152	ENSG00000274956	NKAIN3-IT1	More	ncRNA
chr1	119908963	119909463	Intergenic	-12698	ENSG00000134249	ADAM30	More	protein-coding
chr10	85293041	85293541	Intergenic	-94353	ENSG00000237267	LINC01519	More	ncRNA
chrX	130350767	130351267	intron (NM_001282196, intron 6 of 10)	11098	ENSG00000102078	SLC25A14	More	protein-coding
chr10	113042966	113043466	intron (NM_001198528, intron 4 of 14)	-2139		SNORA87	More	snoRNA
chr13	63098181	63098681	Intergenic	229663	ENSG00000227564	LINC00376	More	ncRNA
chr2	132272725	132273225	Intergenic	-14942	ENSG00000163046	ANKRD30BL	More	protein-coding
chr11	108829512	108830012	intron (NM_004398, intron 13 of 17)	164693	ENSG00000178105	DDX10	More	protein-coding
chr3	14306997	14307497	Intergenic	45321	ENSG00000251576	LINC01267	More	ncRNA
chr18	19974410	19974910	Intergenic	1137153	ENSG00000067900	ROCK1	More	protein-coding
chr3	58593505	58594005	intron (NM_001282714, intron 1 of 4)	-6741	ENSG00000168309	FAM107A	More	protein-coding
chr17	32831719	32832219	intron (NM_015194, intron 1 of 21)	45155	ENSG00000176658	MYO1D	More	protein-coding
chr3	171531740	171532240	Intergenic	-71582	ENSG00000154310	TNIK	More	protein-coding
chr4	9814578	9815078	Intergenic	33194	ENSG00000169676	DRD5	More	protein-coding
chr11	75235011	75235511	Intergenic	-5513	ENSG00000261594	TPBGL	More	protein-coding
chr15	33967283	33967783	promoter-TSS (NM_001320917)	-964	ENSG00000184984	CHRM5	More	protein-coding
chr6	115801788	115802288	Intergenic	-158203		LINC02534	More	ncRNA
chr17	16689535	16690035	promoter-TSS (NR_130142)	-456	ENSG00000170160	CCDC144A	More	protein-coding
chr1	82618931	82619431	Intergenic	-284002	ENSG00000230817	LINC01362	More	ncRNA
chr4	132269893	132270393	Intergenic	-320946	ENSG00000251398	LINC01256	More	ncRNA
chr9	38107355	38107855	Intergenic	-38378	ENSG00000107338	SHB	More	protein-coding
chr1	25913794	25914294	Intergenic	-7167	ENSG00000117632	STMN1	More	protein-coding
chr14	101106648	101107148	Intergenic	-13958	ENSG00000259004	LINC02285	More	ncRNA

chr1	78836711	78837211	Intergenic	169769	ENSG00000162618	ADGRL4	More	protein-coding
chr11	17265486	17265986	Intergenic	-10978	ENSG00000070081	NUCB2	More	protein-coding
chr15	32949423	32949923	intron (NM_001277313, intron 9 of 20)	118501	ENSG00000248905	FMN1	More	protein-coding
chr8	65481459	65481959	Intergenic	80957	ENSG00000254081	LINC01299	More	ncRNA
chr4	87442557	87443057	intron (NM_024047, intron 4 of 7)	20210	ENSG00000170502	NUDT9	More	protein-coding
chr3	189027144	189027644	Intergenic	-79755	ENSG00000234076	TPRG1-AS1	More	ncRNA
chr14	59436876	59437376	Intergenic	28254	ENSG00000181619	GPR135	More	protein-coding
chr4	118246222	118246722	intron (NM_004784, intron 12 of 13)	-32290	ENSG00000269893	SNHG8	More	ncRNA
chr13	89959463	89959963	Intergenic	160004	ENSG00000261446	LINC00559	More	ncRNA
chr13	65735362	65735862	Intergenic	-130435		LINC01052	More	ncRNA
chr14	73248408	73248908	intron (NM_001365907, intron 4 of 25)	-2657		LOC101928123	More	ncRNA
chr17	42486168	42486668	intron (NM_005177, intron 9 of 20)	-8355	ENSG00000264314	MIR548AT	More	ncRNA
chr4	76474120	76474620	intron (NM_020859, intron 1 of 10)	39141	ENSG00000138771	SHROOM3	More	protein-coding
chr6	111397714	111397714	intron (NM_001286431, intron 7 of 34)	-86008	ENSG00000231889	TRAF3IP2-AS1	More	ncRNA
chr11	125243592	125244092	intron (NM_022062, intron 2 of 12)	79091	ENSG00000165495	PKNOX2	More	protein-coding
chr6	44300243	44300743	3' UTR (NM_020745, exon 22 of 22)	-2795	ENSG00000146221	TCTE1	More	protein-coding
chr17	72292647	72293147	Intergenic	-49914	ENSG00000264026	LINC02003	More	ncRNA
chr20	22666700	22667200	TTS (NR_146527)	18394		LINC01747	More	ncRNA
chr17	4280525	4281025	intron (NM_003342, intron 5 of 5)	-8881		LOC103021295	More	ncRNA
chr2	232163977	232164477	intron (NR_046477, intron 8 of 18)	-8426	ENSG00000207626	MIR562	More	ncRNA
chr8	22210077	22210577	intron (NR_033403, intron 19 of 19)	21772	ENSG00000168490	PHYHIP	More	protein-coding
chr8	65879136	65879636	Intergenic	-37322	ENSG00000205268	PDE7A	More	protein-coding
chr18	3526819	3527319	intron (NM_001242762, intron 7 of 9)	60819	ENSG00000266835	GAPLINC	More	ncRNA
chr12	105751055	105751555	Intergenic	44531	ENSG00000257859	CASC18	More	ncRNA
chr17	46521915	46522415	intron (NM_001006607, intron 3 of 13).3	9455	ENSG00000238083	LRRC37A2	More	protein-coding
chr7	23483363	23483863	Intergenic	-6775	ENSG00000232818	RPS2P32	More	pseudo
chr2	16107053	161071253	Intergenic	-65952	ENSG00000136560	TANK	More	protein-coding
chr1	233769421	233769921	Intergenic	-135005	ENSG00000183780	SLC35F3	More	protein-coding
chrX	38609800	38610300	intron (NM_004615, intron 1 of 7)	48572	ENSG00000156298	TSPAN7	More	protein-coding
chr2	13333180	13333680	Intergenic	-326417	ENSG00000225649	LOC100506474	More	ncRNA
chr16	86698477	86698977	Intergenic	23232	ENSG00000260026	LINC02189	More	ncRNA
chr3	73548882	73549382	intron (NR_121660, intron 1 of 1)	12448	ENSG00000121440	PDZRN3	More	protein-coding
chr11	20081063	20081563	intron (NM_182964, intron 25 of 37)	-32010	ENSG00000254453	NAV2-AS2	More	ncRNA
chr16	58919554	58920054	Intergenic	-185488	ENSG00000125166	GOT2	More	protein-coding
chr11	35736416	35736916	intron (NM_017583, intron 4 of 4)	73891	ENSG00000166326	TRIM44	More	protein-coding
chr6	81098090	81098590	Intergenic	654341	ENSG00000112773	TENT5A	More	protein-coding
chr3	152858505	152859005	Intergenic	23624	ENSG00000169860	P2RY1	More	protein-coding
chr5	143483595	143484095	Intergenic	-48333	ENSG00000113580	NR3C1	More	protein-coding
chr1	67706961	67707461	intron (NM_018841, intron 3 of 3)	22010	ENSG00000116717	GADD45A	More	protein-coding
chr5	169081009	169081509	intron (NM_003062, intron 4 of 35)	68032		LOC728095	More	ncRNA
chr18	4004322	4004822	intron (NR_102696, intron 4 of 4)	42219	ENSG00000263878	DLGAP1-AS4	More	ncRNA
chrX	50366565	50366165	3' UTR (NM_001013742, exon 28 of 28)	81373	ENSG00000147082	CNNB3	More	protein-coding
chr3	149701374	149701874	intron (NM_001348362, intron 3 of 9)	1649	ENSG00000018408	WWTR1	More	protein-coding
chr7	120480910	120481410	intron (NM_012281, intron 1 of 5)	207985	ENSG00000184408	KCND2	More	protein-coding
chr8	76264588	76265088	Intergenic	-141816	ENSG00000254300	LINC01111	More	ncRNA
chr15	48652465	48652965	Intergenic	-6927	ENSG00000166147	FBN1	More	protein-coding
chr12	108701834	108702334	intron (NM_014325, intron 1 of 10)	914	ENSG00000110880	CORO1C	More	protein-coding
chr15	86253661	86254161	intron (NM_152336, intron 7 of 24)	63057	ENSG00000260125	AGBL1-AS1	More	ncRNA
chr7	46700012	46700512	Intergenic	-3140	ENSG00000233539	LOC730338	More	ncRNA
chr2	128501213	128501713	Intergenic	-182595	ENSG00000136720	HS6ST1	More	protein-coding
chr7	46987399	46987899	Intergenic	-290527	ENSG00000233539	LOC730338	More	ncRNA
chr14	72816846	72817346	intron (NM_001280542, intron 1 of 10)	75553	ENSG00000205683	DPF3	More	protein-coding
chr7	7262841	7263341	intron (NR_108073, intron 2 of 3)	7937		LOC101927354	More	ncRNA
chr6	130850750	130851250	intron (NM_001350320, intron 15 of 15)	23595	ENSG00000256162	SMLR1	More	protein-coding
chr15	38996754	38997254	Intergenic	-253665	ENSG00000175746	C15orf54	More	ncRNA
chr1	160162843	160163343	intron (NM_144699, intron 6 of 21)	11531	ENSG00000132681	ATP1A4	More	protein-coding
chr1	151653279	151653779	intron (NM_030918, intron 2 of 11)	41479	ENSG00000143376	SNX27	More	protein-coding
chr6	22322286	22322786	Intergenic	-19701	ENSG00000172179	PRL	More	protein-coding
chr12	83028544	83029044	intron (NM_152588, intron 8 of 11)	341639	ENSG00000179104	TMTCC2	More	protein-coding
chr1	233723722	233724222	Intergenic	99820	ENSG00000265744	MIR4427	More	ncRNA
chr18	34000652	34001152	intron (NM_001353232, intron 6 of 9)	47710	ENSG00000101746	NOL4	More	protein-coding
chr12	25103300	25103800	intron (NR_159367, intron 16 of 19)	50844	ENSG00000118308	LRMP	More	protein-coding
chr1	233798140	233798640	Intergenic	-106286	ENSG00000183780	SLC35F3	More	protein-coding
chr10	24735597	24736097	Intergenic	-11960	ENSG00000107863	ARHGAP21	More	protein-coding
chr2	52636851	52637351	Intergenic	65514	ENSG00000264975	MIR4431	More	ncRNA
chr6	5280197	5280697	intron (NM_006567, intron 1 of 6)	18934	ENSG00000145982	FARS2	More	protein-coding
chr12	120687083	120687583	promoter-TSS (NM_001303627)	184	ENSG00000110917	MLEC	More	protein-coding
chr4	36763152	36763652	Intergenic	-121502	ENSG00000248215	LINC02505	More	ncRNA
chr13	65776871	65777371	Intergenic	-88926		LINC01052	More	ncRNA
chr17	14651663	14652163	Intergenic	348173	ENSG00000266709	MGC12916	More	ncRNA
chr6	11414757	11415257	Intergenic	-32659	ENSG00000111859	NEDD9	More	protein-coding
chr5	74165158	74165658	Intergenic	142917	ENSG00000248942	LINC01335	More	ncRNA
chr15	85777703	85778203	intron (NM_022480, intron 1 of 2)	-7375	ENSG00000221634	MIR1276	More	ncRNA
chr15	79268990	79269490	intron (NR_038997, intron 1 of 1)	-13482	ENSG00000235711	ANKRD34C	More	protein-coding
chr13	68128247	68128747	Intergenic	756110	ENSG00000230040	LINC00364	More	ncRNA
chr14	73127847	73128347	Intergenic	-8410	ENSG00000080815	PSEN1	More	protein-coding
chr20	23606756	23607256	Intergenic	-1033	ENSG00000173335	CST9	More	protein-coding
chr12	32945222	32945722	Intergenic	-48626	ENSG00000057294	PKP2	More	protein-coding
chr1	2319377	2319877	Intergenic	33034	ENSG00000269896	LOC100129534	More	pseudo
chr9	124156569	124157069	Intergenic	-100787	ENSG00000119408	NEK6	More	protein-coding
chr4	64866957	64867457	Intergenic	137293	ENSG00000250125	LINC02232	More	ncRNA
chr3	170974986	170975486	Intergenic	51484	ENSG00000163581	SLC2A2	More	protein-coding
chr14	94786619	94787119	Intergenic	16227		GSC-DT	More	ncRNA

chr12	31092125	31092625	intron (NM_001257145, intron 10 of 26)	18515	ENSG00000013573	DDX11	More	protein-coding
chr2	106602876	106603376	Intergenic	115762	ENSG00000232001	CD8B2	More	protein-coding
chr1	152141906	152142406	Intergenic	17072	ENSG00000215853	RPTN	More	protein-coding
chr12	104438915	104439415	Intergenic	-17783	ENSG00000171310	CHST11	More	protein-coding
chr7	31988228	31988728	intron (NM_001322059, intron 3 of 17)	81929	ENSG00000154678	PDE1C	More	protein-coding
chr15	61147278	61147778	intron (NM_134261, intron 1 of 10)	81774	ENSG00000069667	RORA	More	protein-coding
chr16	17228444	17228944	intron (NM_022166, intron 3 of 11)	94190	ENSG00000261448	LOC102723692	More	ncRNA
chrX	40363925	40364425	Intergenic	101258	ENSG00000236393	LOC101927476	More	ncRNA
chr4	60684423	60684923	Intergenic	-237946	ENSG00000265829	MIRS48AG1	More	ncRNA
chr16	82818009	82818509	intron (NR_110938, intron 1 of 2)	44940	ENSG00000260862	LOC101928446	More	ncRNA
chr18	48887780	48888280	Intergenic	54777	ENSG00000101665	SMAD7	More	protein-coding
chr7	109432685	109433185	Intergenic	527278	ENSG00000237064	EIF3IP1	More	pseudo
chr5	9062999	9063499	intron (NM_003966, intron 17 of 22)	-9354	ENSG00000266415	MIR4636	More	ncRNA
chr20	45826892	45827392	intron (NM_003279, intron 1 of 5)	170	ENSG00000101470	TNNC2	More	protein-coding
chr2	122717710	122718210	Intergenic	355521	ENSG00000232740	LINC01826	More	ncRNA
chr12	113830980	113831480	intron (NM_001146698, intron 23 of 24)	-57547	ENSG00000249550	LINC01234	More	ncRNA
chr4	143488240	143488740	Intergenic	-25212	ENSG00000153147	SMARCA5	More	protein-coding
chr11	1750299	1750799	promoter-TSS (NM_001170820)	46	ENSG00000244242	IFITM10	More	protein-coding
chr18	44210092	44210592	Intergenic	321355	ENSG00000267337	LINC01478	More	ncRNA
chr2	75555089	75555589	intron (NM_001369524, intron 2 of 5)	5600	ENSG00000115363	EVA1A	More	protein-coding
chr1	15438617	15439117	intron (NM_007272, intron 1 of 7)	424	ENSG00000162438	CTRC	More	protein-coding
chr6	76182613	76183113	Intergenic	-110185	ENSG00000112706	IMP61	More	protein-coding
chr19	7881874	7882374	Intergenic	-1892		LYPLA2P2	More	pseudo
chr18	4251214	4251714	intron (NM_001242761, intron 1 of 11)	-13138	ENSG00000261520	DLGAP1-ASS	More	ncRNA
chr11	71241432	71241932	Intergenic	-16886	ENSG00000162105	SHANK2	More	protein-coding
chr10	66972815	66973315	intron (NM_178011, intron 2 of 2)	39088		LOC101928961	More	ncRNA
chr13	84561914	84562414	intron (NR_046871, intron 3 of 6)	-221490		SNORA107	More	snoRNA
chr10	44210092	44210592	Intergenic	380282	ENSG00000230417	LINC00595	More	ncRNA
chr22	44851071	44851571	intron (NM_001198726, intron 10 of 10)	98763	ENSG00000241484	ARHGAP8	More	protein-coding
chr5	147038113	147038613	intron (NM_181677, intron 2 of 10)	17774	ENSG00000156475	PPP2R2B	More	protein-coding
chrX	38191740	38192240	intron (NM_006307, intron 1 of 9)	28881	ENSG00000101955	SRPX	More	protein-coding
chr5	150967683	150968183	Intergenic	-21349		ZNF300P1	More	pseudo
chr14	52447902	52448402	intron (NM_001160047, intron 18 of 20)	104353	ENSG00000087301	TXNDC16	More	protein-coding
chr10	30815460	30815960	Intergenic	92491	ENSG00000230720	LINC02644	More	ncRNA
chr1	191838966	191839466	Intergenic	-319246	ENSG00000150681	RGS18	More	protein-coding
chr3	101334284	101334784	intron (NM_020654, intron 17 of 23)	-13959	ENSG00000081148	IMP62	More	protein-coding
chr15	29255625	29256125	intron (NM_015307, intron 2 of 10).2	13947	ENSG00000185115	NSMCE3	More	protein-coding
chr5	125694172	125694672	Intergenic	201161	ENSG00000260192	LINC02240	More	ncRNA
chr2	111955278	111955778	intron (NM_006343, intron 4 of 18)	56921	ENSG00000153208	MERTK	More	protein-coding
chr15	86251619	86252119	intron (NM_152336, intron 7 of 24)	65099	ENSG00000260125	AGBL1-AS1	More	ncRNA
chr22	25472241	25472741	Intergenic	16845	ENSG00000277872	MIR6817	More	ncRNA
chr3	109788486	109788986	Intergenic	185908	ENSG00000265956	MIR4445	More	ncRNA
chr7	120505320	120505820	intron (NM_012281, intron 1 of 5)	232395	ENSG00000184408	KCND2	More	protein-coding
chr2	198962362	198962862	Intergenic	495327	ENSG00000119042	SATB2	More	protein-coding
chr10	60753181	60753681	Intergenic	-19903	ENSG00000151150	ANK3	More	protein-coding
chr11	29301968	29302468	Intergenic	-292195	ENSG00000255117	LINC02546	More	ncRNA
chr6	55643548	55644048	Intergenic	-64584	ENSG00000146151	HMGCLL1	More	protein-coding
chr1	31914248	31914748	intron (NM_001195101, intron 2 of 4)	23320	ENSG00000184007	PTP4A2	More	protein-coding
chr9	124102857	124103357	Intergenic	91339	ENSG00000106689	LHX2	More	protein-coding
chr5	99202419	99202919	Intergenic	-272955	ENSG00000153922	CHD1	More	protein-coding
chr1	233856887	233857387	Intergenic	-47539	ENSG00000183780	SLC35F3	More	protein-coding
chr3	69228317	69228817	intron (NM_015123, intron 7 of 22)	-105972	ENSG00000163380	LMOD3	More	protein-coding
chr12	12856823	12857323	Intergenic	-18404	ENSG00000234498	RPL13AP20	More	pseudo
chr14	88511057	88511557	intron (NM_007039, intron 3 of 18)	43700	ENSG00000070778	PTPN21	More	protein-coding
chr16	5202786	5203286	Intergenic	-105216	ENSG00000118894	EEF2KMT	More	protein-coding
chr5	180611732	180612232	intron (NM_002020, intron 26 of 29)	-20483	ENSG00000161055	SCGB3A1	More	protein-coding
chr4	15834512	15835012	intron (NR_132660, intron 3 of 6)	56434	ENSG00000004468	CD38	More	protein-coding
chr10	34307079	34307579	intron (NM_001184790, intron 18 of 22)	507967	ENSG00000148498	PARD3	More	protein-coding
chr6	63933294	63933794	intron (NR_026970, intron 4 of 7)	-72853	ENSG00000124491	F13A1	More	protein-coding
chr8	123277221	123277721	Intergenic	-1930	ENSG00000165156	ZHX1	More	protein-coding
chr7	24007518	24008018	Intergenic	-276422	ENSG00000122585	NPY	More	protein-coding
chr7	25948135	25948635	Intergenic	1601	ENSG00000199085	MIR148A	More	ncRNA
chr2	10418643	10419143	intron (NM_134421, intron 3 of 5)	27956	ENSG00000206633	SNORA80B	More	snoRNA
chr12	125955626	125956126	Intergenic	27498	ENSG00000249267	LINC00939	More	ncRNA
chr18	4205450	4205450	intron (NM_001242761, intron 1 of 11)	-59402	ENSG00000261520	DLGAP1-ASS	More	ncRNA
chr1	36608958	36609458	Intergenic	-125894	ENSG00000119535	CSF3R	More	protein-coding
chr1	233830540	233831040	Intergenic	-73886	ENSG00000183780	SLC35F3	More	protein-coding
chr8	76472581	76473081	intron (NR_105006, intron 2 of 5)	66177	ENSG00000254300	LINC01111	More	ncRNA
chr16	74896702	74897202	intron (NM_030581, intron 18 of 25)	88171	ENSG00000103091	WDR59	More	protein-coding
chr9	5768323	5768823	intron (NM_001206557, intron 20 of 24)	64544	ENSG00000099219	ERMP1	More	protein-coding
chr9	126188610	126189110	Intergenic	87055	ENSG00000228392	LOC101929116	More	ncRNA
chr7	117228337	117228837	intron (NR_161419, intron 15 of 15)	45906	ENSG00000004866	ST7-OT3	More	ncRNA
chr18	47525295	47525795	intron (NR_147192, intron 1 of 2)	145049	ENSG00000266582	MIR4527	More	ncRNA
chr5	8879309	8879809	intron (NR_109932, intron 1 of 2)	39827		LINC02199	More	ncRNA
chr17	52431428	52431928	intron (NR_146898, intron 1 of 3)	41156	ENSG00000263317	LINC01982	More	ncRNA
chr9	15222195	15222695	intron (NM_001168342, intron 1 of 17)	27773	ENSG00000155158	TTC39B	More	protein-coding
chr3	192651659	192652159	intron (NM_004113, intron 2 of 5)	75632	ENSG00000114279	FGF12	More	protein-coding
chr9	109977703	109978203	intron (NM_147150, intron 6 of 9)	-70645	ENSG00000157654	PALM2-AKAP2	More	protein-coding
chr8	56035941	56036441	Intergenic	37710	ENSG00000238650	SNORD54	More	snoRNA
chr15	33636219	33636719	exon (NM_001036, exon 27 of 104)	325502	ENSG00000198838	RYR3	More	protein-coding
chr4	69991726	69992226	Intergenic	-3990	ENSG00000126549	STATH	More	protein-coding
chr16	1670300	1670800	intron (NM_020825, intron 18 of 19)	-7729	ENSG00000206053	JPT2	More	protein-coding
chr4	14785099	14785599	intron (NR_126435, intron 2 of 6)	102820	ENSG00000248360	LINC00504	More	ncRNA
chr3	47720007	47720507	intron (NM_003074, intron 7 of 27)	-58563		SNORD146	More	snoRNA

chr8	62333890	62334390	intron (NM_001304533, intron 1 of 6)	85286	ENSG00000185942	NKAIN3	More	protein-coding
chr21	43084142	43084642	Intergenic	-7449	ENSG00000274276	CBSL	More	protein-coding
chr5	14281746	14282246	intron (NM_007118, intron 3 of 56)	138654	ENSG00000038382	TRIO	More	protein-coding
chr2	171034494	171034994	intron (NM_001136555, intron 9 of 18)	32229	ENSG00000198586	TLK1	More	protein-coding
chr1	196712432	196712932	intron (NM_000186, intron 9 of 21)	60804	ENSG00000000971	CFH	More	protein-coding
chr10	85302430	85302930	Intergenic	-103742	ENSG00000237267	LINC01519	More	ncRNA
chr1	90265389	90265889	Intergenic	270529	ENSG00000162664	ZNF326	More	protein-coding
chr2	112445526	112446026	Intergenic	-12131	ENSG00000169629	RGPD8	More	protein-coding
chr7	46667960	46668460	Intergenic	28912	ENSG00000233539	LOC730338	More	ncRNA
chr1	235060410	235060910	Intergenic	9158		LINC01348	More	ncRNA
chr13	86564442	86564942	Intergenic	-347228		LINC00430	More	ncRNA
chr5	161696013	161696513	intron (NM_000811, intron 8 of 8)	10542	ENSG00000145863	GABRA6	More	protein-coding
chr14	97908659	97909159	Intergenic	69215	ENSG00000246223	LINC01550	More	ncRNA
chr17	38128461	38128961	5' UTR (NM_001369499, exon 1 of 13).5	741	ENSG00000278599	TBC1D3E	More	protein-coding
chr12	117652485	117652985	intron (NM_173598, intron 5 of 19)	-290933	ENSG00000089250	NOS1	More	protein-coding
chr2	13615138	13615638	Intergenic	-608375	ENSG00000225649	LOC100506474	More	ncRNA
chr22	43291025	43291525	intron (NM_173050, intron 3 of 21)	15333	ENSG00000203527	LOC101927447	More	ncRNA
chr1	202515907	202516407	intron (NM_002481, intron 18 of 23)	-23957	ENSG00000077157	PPP1R12B	More	protein-coding
chr18	4428434	4428934	intron (NM_001242761, intron 1 of 11)	26582	ENSG00000170579	DLGAP1	More	protein-coding
chr20	15040967	15041467	intron (NM_001351663, intron 5 of 17)	-111699	ENSG00000235914	MACROD2-AS1	More	ncRNA
chr5	110168245	110168745	Intergenic	285313		LINC01848	More	ncRNA
chr18	33947617	33948117	intron (NM_001198546, intron 7 of 9)	100745	ENSG00000101746	NOLA	More	protein-coding
chr20	13292776	13293276	intron (NM_080826, intron 5 of 5)	-53339		ISM1-AS1	More	ncRNA
chr8	70556160	70556660	Intergenic	51259	ENSG00000067167	TRAM1	More	protein-coding
chr11	78904791	78905291	intron (NM_001098816, intron 6 of 33)	-330177	ENSG00000137513	NARS2	More	protein-coding
chr18	59997239	59997739	Intergenic	97493	ENSG00000141682	PMAIP1	More	protein-coding
chr8	76645282	76645782	intron (NM_024360, intron 2 of 3)	-35715	ENSG00000091656	ZFXH4	More	protein-coding
chr7	158905835	158906335	exon (NM_001350917, exon 12 of 26)	49527	ENSG00000126870	WDR60	More	protein-coding
chr7	140925703	140926203	Intergenic	-1024	ENSG00000157764	BRAF	More	protein-coding
chr4	36575962	36576462	intron (NR_149124, intron 3 of 4)	65688	ENSG00000248215	LINC02505	More	ncRNA
chr9	110346532	110347032	Intergenic	-8898	ENSG00000204193	TXNDC8	More	protein-coding
chr5	135558556	135559056	Intergenic	-20359	ENSG00000145832	SLC25A48	More	protein-coding
chr9	16039440	16039940	Intergenic	213417	ENSG00000205549	C9orf92	More	protein-coding
chr9	16053578	16054078	Intergenic	199279	ENSG00000205549	C9orf92	More	protein-coding
chr10	12454990	12455490	intron (NM_001351032, intron 3 of 11)	66258	ENSG00000183049	CAMK1D	More	protein-coding
chr15	40089600	40090100	3' UTR (NM_001003942, exon 3 of 3)	16236	ENSG00000104081	BMF	More	protein-coding
chr3	124548541	124549041	intron (NM_001024660, intron 33 of 59)	-35867	ENSG00000160145	KALRN	More	protein-coding
chr19	36087368	36087868	intron (NM_001083961, intron 13 of 31)	-23585	ENSG00000105261	OVOL3	More	protein-coding
chr9	90199511	90200011	Intergenic	-158262	ENSG00000227555	MIR4290HG	More	ncRNA
chr6	104342948	104343448	Intergenic	516348	ENSG00000085382	HACE1	More	protein-coding
chr3	145617822	145618322	Intergenic	451113	ENSG00000240032	LNC5R1	More	ncRNA
chr19	511862	512362	intron (NM_033513, intron 1 of 1)	4615	ENSG00000141933	TPGS1	More	protein-coding
chr9	109936741	109937241	intron (NM_147150, intron 6 of 9)	-111607	ENSG00000157654	PALM2-AKAP2	More	protein-coding
chr10	35005886	35006386	Intergenic	68147	ENSG00000108094	CUL2	More	protein-coding
chr9	3842962	3843462	intron (NM_001042413, intron 9 of 10)	-55434	ENSG00000237009	GLIS3-AS1	More	ncRNA
chr9	1266997	1267497	Intergenic	215760	ENSG00000173253	DMRT2	More	protein-coding
chr2	158794537	158795037	promoter-TSS (NM_001017920)	-530	ENSG00000163331	DAPL1	More	protein-coding
chr20	7117412	7117912	Intergenic	136540	ENSG00000228888	LINC01428	More	ncRNA
chr5	172964289	172964789	intron (NM_001317982, intron 2 of 3)	5079	ENSG00000037241	RPL26L1	More	protein-coding
chr8	116990507	116991007	intron (NM_001172811, intron 2 of 9)	39782	ENSG00000164756	SLC30A8	More	protein-coding
chr9	79502175	79502675	Intergenic	-69348	ENSG00000106829	TLF4	More	protein-coding
chr9	96907833	96908333	promoter-TSS (NR_028350)	-992		PTMAP11	More	pseudo
chr12	22059683	22060183	intron (NR_135117, intron 4 of 6)	13715	ENSG00000111726	CMAS	More	protein-coding
chr3	149841806	149842306	intron (NM_007282, intron 2 of 10)	29368	ENSG00000082996	RNF13	More	protein-coding
chr18	28825618	28826118	Intergenic	-648738	ENSG00000170558	CDH2	More	protein-coding
chr2	234171049	234171549	Intergenic	120597	ENSG00000072080	SPP2	More	protein-coding
chr20	21543221	21543721	Intergenic	-26553		LINC01727	More	ncRNA
chr12	88777112	88777612	Intergenic	-196889	ENSG00000049130	KITLG	More	protein-coding
chr21	37492682	37493182	intron (NM_001347721, intron 7 of 11)	72633	ENSG00000157540	DYRK1A	More	protein-coding
chr5	164078455	164078955	Intergenic	388697	ENSG00000253236	LINC02143	More	ncRNA
chr2	219572730	219573230	intron (NM_002191, intron 1 of 1)	670	ENSG00000123999	INHA	More	protein-coding
chr2	49356113	49356613	Intergenic	-201836	ENSG00000170820	FSHR	More	protein-coding
chr5	95242992	95243492	intron (NM_024717, intron 1 of 22)	41333	ENSG00000175471	MCTP1	More	protein-coding
chr1	55272842	55273342	Intergenic	47451	ENSG00000265822	MIR4422	More	ncRNA
chr4	173734447	173734947	Intergenic	-162576	ENSG00000250708	LINC02269	More	ncRNA
chr10	34023329	34023829	Intergenic	-250899	ENSG00000261683	LINC00838	More	ncRNA
chr8	43132157	43132657	Intergenic	-8057	ENSG00000165102	HGSNAT	More	protein-coding
chr18	43641661	43642161	Intergenic	-364421	ENSG00000132872	SYT4	More	protein-coding
chr15	92614289	92614789	Intergenic	41236	ENSG00000185442	FAM174B	More	protein-coding
chr4	190910040	190910540	Intergenic	736516	ENSG00000260596	DUX4	More	protein-coding
chr6	54148922	54149422	intron (NM_001281746, intron 5 of 11)	37729	ENSG00000146147	MLIP	More	protein-coding
chr14	100824589	100825089	Intergenic	-1269	ENSG00000214548	MEG3	More	ncRNA
chr18	43644054	43644554	Intergenic	-366814	ENSG00000132872	SYT4	More	protein-coding
chr7	23484845	23485345	Intergenic	-5293	ENSG00000232818	RPS2P32	More	pseudo
chr6	20708542	20709042	intron (NM_017774, intron 5 of 15)	174335	ENSG00000145996	CDKAL1	More	protein-coding
chr6	104773845	104774345	intron (NR_146792, intron 18 of 24)	85451	ENSG00000085382	HACE1	More	protein-coding
chr2	10273356	10273856	Intergenic	-29298	ENSG00000115756	HPCAL1	More	protein-coding
chr22	29479941	29480441	promoter-TSS (NM_021076)	-27	ENSG00000100285	NEFH	More	protein-coding
chr4	157549955	157550455	Intergenic	-22285	ENSG00000234111	LINC02433	More	ncRNA
chr2	155393472	155393972	Intergenic	695027	ENSG00000162989	KCNJ3	More	protein-coding
chr16	50022296	50022796	Intergenic	-2660	ENSG00000205423	CNEP1R1	More	protein-coding
chr2	150983344	150983844	Intergenic	278269	ENSG00000184898	RBM43	More	protein-coding
chr3	73638117	73638617	Intergenic	-13426	ENSG00000121440	PDRN3	More	protein-coding

chr4	80320174	80320674	Intergenic	-15296	ENSG00000197826	CFAP299	More	protein-coding
chr17	818883	819383	intron (NM_001205319, intron 5 of 7)	36780	ENSG00000171861	MRM3	More	protein-coding
chr12	58570064	58570564	intron (NR_120452, intron 5 of 7)	-21388	ENSG00000258231	LOC100506869	More	ncRNA
chr14	71816199	71816699	Intergenic	-115722	ENSG00000182732	RG56	More	protein-coding
chr5	92679205	92679705	Intergenic	891888	ENSG00000237187	NR2F1-AS1	More	ncRNA
chr4	14768788	14769288	intron (NR_126435, intron 2 of 6)	119131	ENSG00000248360	LINC00504	More	ncRNA
chr10	24738252	24738752	Intergenic	-14615	ENSG00000107863	ARHGAP21	More	protein-coding
chr17	12843008	12843508	intron (NM_001321164, intron 1 of 20)	-52974	ENSG00000265489	LOC100128006	More	ncRNA
chr16	57910058	57910558	intron (NM_001297, intron 25 of 32)	60820	ENSG00000070729	CNGB1	More	protein-coding
chr3	148707951	148708451	intron (NM_000685, intron 2 of 2)	10330	ENSG00000144891	AGTR1	More	protein-coding
chr10	33797949	33798449	Intergenic	-25519	ENSG00000261683	LINC00838	More	ncRNA
chr17	75202296	75202796	Intergenic	-2890	ENSG00000125450	NUP85	More	protein-coding
chr5	34034719	34035219	intron (NR_037951, intron 2 of 8)	8244	ENSG00000082196	C1QTNF3	More	protein-coding
chr6	103641204	103641704	Intergenic	1218092	ENSG00000085382	HACE1	More	protein-coding
chr16	69554793	69555293	Intergenic	10825	ENSG00000223109	MIR1538	More	ncRNA
chr17	26271796	26272296	Intergenic	817195	ENSG00000223109	LOC105371703	More	ncRNA
chr8	56032862	56033362	Intergenic	40789	ENSG00000238650	SNORD54	More	snoRNA
chr10	32456319	32456819	intron (NR_109827, intron 4 of 8)	10429	ENSG00000216937	CCDC7	More	protein-coding
chr9	21741443	21741943	Intergenic	-60943	ENSG00000099810	MTAP	More	protein-coding
chr4	24755115	24755615	Intergenic	-40208	ENSG00000109610	SOD3	More	protein-coding
chr5	8517532	8518032	Intergenic	56857	ENSG00000284000	MIR4458	More	ncRNA
chr2	224512179	224512679	intron (NM_001257197, intron 4 of 14)	57526	ENSG00000036257	CUL3	More	protein-coding
chr10	24588377	24588877	intron (NM_001367447, intron 24 of 24)	34216	ENSG00000107863	ARHGAP21	More	protein-coding
chr6	44492504	44493004	Intergenic	57113	ENSG00000266619	MIR4642	More	ncRNA
chr4	182885796	182886296	Intergenic	31207	ENSG00000129187	DCTD	More	protein-coding
chr2	214605126	214605626	Intergenic	95194	ENSG00000224257	VWC2L-IT1	More	ncRNA
chr11	116944233	116944733	intron (NM_001366687, intron 3 of 4)	-106533	ENSG00000118137	APOA1	More	protein-coding
chr3	66126349	66126849	Intergenic	-7011	ENSG00000144741	SLC25A26	More	protein-coding
chr10	60724331	60724831	intron (NM_001204403, intron 1 of 43)	8947	ENSG00000151150	ANK3	More	protein-coding
chr8	130483001	130483501	Intergenic	-39577	ENSG00000153317	ASAP1	More	protein-coding
chr16	814043611	814044111	Intergenic	18843	ENSG00000284473	MIR4720	More	ncRNA
chr4	40734707	40735207	Intergenic	-14998	ENSG00000179299	NSUN7	More	protein-coding
chr12	117543638	117544138	intron (NM_173598, intron 9 of 19)	-182086	ENSG00000089250	NOS1	More	protein-coding
chr7	84654765	84655265	Intergenic	122539	ENSG00000235139	LOC101927378	More	ncRNA
chr3	189025704	189026204	Intergenic	-78315	ENSG00000234076	TPRG1-AS1	More	ncRNA
chr14	89096811	89097311	Intergenic	272410	ENSG00000165533	TTC8	More	protein-coding
chr16	84299925	84300425	intron (NM_001282467, intron 1 of 6)	5297	ENSG00000103175	WFDC1	More	protein-coding
chr21	10163572	10164072	Intergenic	-249698	ENSG00000174498	BAGE	More	protein-coding
chr15	65349450	65349950	intron (NM_004884, intron 2 of 13)	28302	ENSG00000174498	IGDCC3	More	protein-coding
chr2	13662154	13662654	Intergenic	-655391	ENSG00000225649	LOC100506474	More	ncRNA
chrX	122357647	122358147	Intergenic	-826346	ENSG00000125675	GRIA3	More	protein-coding
chr5	117112555	117113055	Intergenic	-302707	ENSG00000125675	LINC00992	More	ncRNA
chr5	102357015	102357515	Intergenic	-60981	ENSG00000173930	SLC04C1	More	protein-coding
chr13	68094979	68095479	Intergenic	722842	ENSG00000230040	LINC00364	More	ncRNA
chr5	172902774	172903274	intron (NM_001031711, intron 3 of 9)	-12059	ENSG00000230040	MIR10523	More	ncRNA
chr9	119737254	119737754	Intergenic	-197556	ENSG00000261432	LINC01613	More	ncRNA
chr20	45180304	45180804	Intergenic	5652	ENSG00000124102	PI3	More	protein-coding
chr10	31054482	31054982	Intergenic	-22795	ENSG00000183621	ZNF438	More	protein-coding
chr12	108708025	108708525	intron (NM_014325, intron 1 of 10)	-5277	ENSG00000110880	CORO1C	More	protein-coding
chr10	106688502	106689002	intron (NM_001206569, intron 9 of 25)	475954	ENSG00000108018	SORCS1	More	protein-coding
chr20	30653561	30654061	Intergenic	-250349	ENSG00000108018	MLLT10P1	More	pseudo
chr7	21378336	21378836	Intergenic	-49497	ENSG00000105866	SP4	More	protein-coding
chr13	88174265	88174765	intron (NR_131919, intron 1 of 4)	31648	ENSG00000231019	LINC00373	More	ncRNA
chr11	79189095	79189595	intron (NM_001098816, intron 3 of 33)	212764	ENSG00000211997	MIR708	More	ncRNA
chr11	96146057	96146557	intron (NM_032427, intron 1 of 4)	-195131	ENSG00000266192	MIR1260B	More	ncRNA
chr15	100047804	100048304	intron (NM_139057, intron 18 of 21)	241031	ENSG00000259363	LOC400464	More	pseudo
chr6	76289563	76290063	Intergenic	-217135	ENSG00000112706	IMPG1	More	protein-coding
chr17	39205343	39205843	TTS (NM_000981)	5270	ENSG00000108298	RPL19	More	protein-coding
chr15	48590989	48591489	intron (NM_000138, intron 6 of 65)	54549	ENSG00000166147	FBN1	More	protein-coding
chr5	164199435	164199935	Intergenic	268217	ENSG00000253236	LINC02143	More	ncRNA
chr10	77169129	77169629	intron (NM_001271519, intron 5 of 28)	28548	ENSG00000225497	KCNMA1-AS2	More	ncRNA
chr6	82161460	82161960	Intergenic	-59945	ENSG00000225497	LINC02542	More	ncRNA
chr14	71597367	71597867	intron (NM_001354286, intron 6 of 24)	11319	ENSG00000197555	SIPA1L1	More	protein-coding
chr16	87441153	87441653	intron (NM_015144, intron 2 of 12)	49067	ENSG00000140941	MAP1LC3B	More	protein-coding
chr1	82626475	82626975	Intergenic	-276458	ENSG00000230817	LINC01362	More	ncRNA
chr7	119122252	119122752	Intergenic	784873	ENSG00000225546	LINC02476	More	ncRNA
chr8	71777779	71778279	Intergenic	-65094	ENSG00000235531	MSC-AS1	More	ncRNA
chr18	22537483	22537983	Intergenic	-119818	ENSG00000212710	CTAGE1	More	protein-coding
chr14	98664684	98665184	Intergenic	-46679	ENSG00000176605	C14orf177	More	ncRNA
chr14	91075187	91075687	intron (NM_001358312, intron 1 of 13)	-14788	ENSG00000100784	RPS6KA5	More	protein-coding
chr2	204667378	204667878	intron (NM_205863, intron 1 of 21)	122153	ENSG00000116117	PARDB3	More	protein-coding
chr18	4236896	4237396	intron (NM_001242761, intron 1 of 11)	-27456	ENSG00000261520	DLGAP1-AS5	More	ncRNA
chr4	69916539	69917039	Intergenic	-14279	ENSG00000126545	CSN1S1	More	protein-coding
chr1	77404820	77405320	intron (NM_012093, intron 6 of 13)	121983	ENSG00000154027	AK5	More	protein-coding
chr2	45052786	45053286	Intergenic	-43584	ENSG00000170577	SIX2	More	protein-coding
chr18	4284329	4284379	intron (NR_036489, intron 2 of 2)	19977	ENSG00000261520	DLGAP1-ASS	More	ncRNA
chr2	20365900	20366400	Intergenic	-13897	ENSG00000055917	PUM2	More	protein-coding
chr11	90459344	90459844	intron (NR_104190, intron 1 of 6)	96263	ENSG00000266703	MIR4490	More	ncRNA
chr1	153095464	153095964	Intergenic	-1188	ENSG00000203785	SPRR2E	More	protein-coding
chr9	89136175	89136675	intron (NM_016848, intron 1 of 11)	42393	ENSG00000148082	SHC3	More	protein-coding
chr18	34099196	34099696	intron (NM_001353232, intron 4 of 9)	-50834	ENSG00000101746	NOL4	More	protein-coding
chr1	146788703	146789203	intron (NR_103556, intron 47 of 55)	-149592	ENSG00000268043	NBPF12	More	protein-coding
chr2	150986364	150986864	Intergenic	275249	ENSG00000184898	RBM43	More	protein-coding

chr8	20131268	20131768	Intergenic	51618	ENSG000000036565	SLC18A1	More	protein-coding
chr3	173638128	173638628	intron (NM_001365928, intron 3 of 6)	53944	ENSG00000169760	NLGN1	More	protein-coding
chr1	182162940	182163440	Intergenic	-101478	ENSG00000179930	ZNF648	More	protein-coding
chr3	173230877	173231377	Intergenic	-89892	ENSG00000144962	SPATA16	More	protein-coding
chr4	27721503	27722003	Intergenic	504274	ENSG00000249699	LINC02261	More	ncRNA
chr3	193549166	193549666	intron (NM_032279, intron 1 of 29)	-3797		ATP13A4-AS1	More	ncRNA
chr3	42057433	42057933	Intergenic	-29517	ENSG00000182606	TRAK1	More	protein-coding
chr10	18653860	18654360	intron (NM_001351116, intron 2 of 11)	-2523	ENSG00000241058	NSUN6	More	protein-coding
chr6	37255440	37255940	intron (NM_145316, intron 1 of 3)	1909	ENSG00000172738	TMEM217	More	protein-coding
chr5	103697485	103697985	Intergenic	-134946	ENSG00000112874	NUDT12	More	protein-coding
chr9	34451476	34451976	intron (NM_001184942, intron 1 of 5)	6844	ENSG00000164970	FAM219A	More	protein-coding
chr15	46087088	46087588	Intergenic	382143	ENSG00000259200	LOC105370802	More	ncRNA
chr10	100238557	100239057	intron (NM_001303404, intron 10 of 12)	-1505	ENSG00000212464	SNORA12	More	snoRNA
chr10	32019638	32020138	exon (NM_004521, exon 20 of 26)	36537	ENSG00000170759	KIF5B	More	protein-coding
chr16	5255436	5255936	Intergenic	-157866	ENSG00000118894	EEF2KMT	More	protein-coding
chr6	33872201	33872701	Intergenic	24456	ENSG00000249346	LINC01016	More	ncRNA
chr3	37934321	37934821	intron (NM_001008392, intron 1 of 7)	-34833	ENSG00000199075	MIR26A1	More	ncRNA
chr12	25288653	25289153	Intergenic	-37974	ENSG00000133703	KRAS	More	protein-coding
chrX	130423110	130423610	Intergenic	21373	ENSG00000134597	RBMX2	More	protein-coding
chr2	9211083	9211583	intron (NM_003887, intron 1 of 27)	4521	ENSG00000151693	ASAP2	More	protein-coding
chr14	92175163	92175663	Intergenic	53444	ENSG00000165934	CPSF2	More	protein-coding
chr8	57013976	57014476	Intergenic	-20359	ENSG00000104331	IMPAD1	More	protein-coding
chr3	171534984	171535484	Intergenic	-74826	ENSG00000154310	TNIK	More	protein-coding
chr12	120605352	120605852	Intergenic	-24200	ENSG00000167272	POP5	More	protein-coding
chr10	68589607	68590107	intron (NM_030625, intron 2 of 11)	29520	ENSG00000138336	TET1	More	protein-coding
chr7	98330536	98331036	intron (NM_018842, intron 3 of 13)	49100	ENSG00000164713	BRI3	More	protein-coding
chr3	192554813	192555313	intron (NM_004113, intron 2 of 5)	40041	ENSG00000230126	FGF12-AS2	More	ncRNA
chr6	82647996	82648496	Intergenic	284002	ENSG00000146242	TPBG	More	protein-coding
chr8	119577435	119577935	intron (NM_001330600, intron 19 of 25)	15323	ENSG00000136960	ENPP2	More	protein-coding
chr8	122360999	122361499	Intergenic	207395		SMILR	More	ncRNA
chr5	81896863	81897363	Intergenic	-74910	ENSG00000152348	ATG10	More	protein-coding
chr20	20213637	20214137	intron (NM_015585, intron 17 of 26)	-154217	ENSG00000173404	INSM1	More	protein-coding
chr16	12711248	12711748	intron (NM_018340, intron 2 of 3)	-8823	ENSG00000264733	MIR4718	More	ncRNA
chr4	7784557	7785057	intron (NM_001134647, intron 12 of 17)	30717	ENSG00000272620	AFAP1-AS1	More	ncRNA
chr17	10075336	10075836	intron (NM_201433, intron 1 of 13)	-38929	ENSG00000007237	GAS7	More	protein-coding
chrX	100249315	100249815	Intergenic	160708	ENSG00000165194	PCDH19	More	protein-coding
chr8	135023242	135023742	Intergenic	173557	ENSG00000251218	LOC101927845	More	ncRNA
chr9	109939615	109940115	intron (NM_147150, intron 6 of 9)	-108733	ENSG00000157654	PALM2-AKAP2	More	protein-coding
chr10	24611389	24611889	intron (NM_001367447, intron 8 of 24)	11204	ENSG00000107863	ARHGAP21	More	protein-coding
chr3	164178464	164178964	Intergenic	-7158	ENSG00000221251	MIR1263	More	ncRNA
chr2	106215256	106215756	Intergenic	-21167	ENSG00000115652	UXS1	More	protein-coding
chr5	132137798	132138298	Intergenic	-46828	ENSG00000237714	P4HA2-AS1	More	ncRNA
chr4	132380575	132381075	Intergenic	-210264	ENSG00000251398	LINC01256	More	ncRNA
chr1	196856918	196857418	Intergenic	-30884	ENSG00000134365	CFHR4	More	protein-coding
chr18	56206753	56207253	Intergenic	-15741	ENSG00000206129	LOC642484	More	ncRNA
chr4	168978507	168979007	Intergenic	31498	ENSG00000145439	CBR4	More	protein-coding
chr7	92293543	92294043	intron (NM_019004, intron 1 of 19)	-47693	ENSG00000001631	KRIT1	More	protein-coding
chr4	78265878	78266378	intron (NM_001166133, intron 7 of 41)	-22857		SNORD161	More	snoRNA
chr8	56024721	56025221	Intergenic	48930	ENSG00000238650	SNORD54	More	snoRNA
chr18	60039256	60039756	Intergenic	139510	ENSG00000141682	PMAIP1	More	protein-coding
chr17	3460055	3460555	intron (NM_001321336, intron 5 of 8)	11442	ENSG00000141255	SPATA22	More	protein-coding
chr15	48388451	48388951	Intergenic	56504	ENSG00000128951	DUT	More	protein-coding
chr3	151105363	151105863	intron (NM_053002, intron 1 of 42)	18815	ENSG00000144893	MED12L	More	protein-coding
chr4	162525639	162526139	Intergenic	-361855	ENSG00000168843	FSTL5	More	protein-coding
chr18	42502869	42503369	intron (NR_046174, intron 6 of 9)	316451	ENSG00000267586	LINC00907	More	ncRNA
chr9	76651769	76652269	intron (NM_001308051, intron 3 of 8)	40396	ENSG00000106772	PRUNE2	More	protein-coding
chr1	165957982	165958482	Intergenic	50311	ENSG00000283936	MIR3658	More	ncRNA
chr16	50758209	50758709	intron (NM_015247, intron 7 of 19)	16154	ENSG00000264947	MIR3181	More	ncRNA
chr5	116925691	116926191	Intergenic	-163732		LINC02214	More	ncRNA
chr4	94013793	94014293	Intergenic	185290	ENSG00000172238	ATOH1	More	protein-coding
chr8	125613018	125613518	intron (NM_001363301, intron 3 of 12)	61904	ENSG00000147684	NDUF89	Less	protein-coding
chr1	17248021	17248521	promoter-TSS (NM_014675)	-155	ENSG00000058453	CROCC	Less	protein-coding
chr7	2878471	2878971	intron (NM_007353, intron 1 of 3)	5221	ENSG00000146535	GNA12	Less	protein-coding
chr6	34618719	34619219	intron (NM_024294, intron 2 of 4)	-44962	ENSG00000272288	LOC101929243	Less	ncRNA
chr16	31271052	31271552	promoter-TSS (NM_000632)	6	ENSG00000169896	ITGAM	Less	protein-coding
chr19	30158801	30159301	intron (NM_024310, intron 1 of 1)	2683	ENSG00000166289	PLEKHF1	Less	protein-coding
chr12	25310694	25311194	intron (NM_001352067, intron 1 of 10)	37150	ENSG00000118307	CASC1	Less	protein-coding
chrX	13588204	13588704	intron (NM_015507, intron 1 of 11)	734	ENSG00000198759	EGFL6	Less	protein-coding
chr18	30471108	30471608	Intergenic	-118372	ENSG00000197705	KLHL14	Less	protein-coding
chr7	36718116	36718616	intron (NM_001177507, intron 1 of 19)	45733	ENSG00000136250	AOAH	Less	protein-coding
chr17	38487083	38487583	5' UTR (NM_000964, exon 2 of 9)	-11085	ENSG00000131759	RARA	Less	protein-coding
chr7	135562374	135562874	Intergenic	99483	ENSG00000267697	LUZP6	Less	protein-coding
chr2	65065201	65065701	Intergenic	25314	ENSG00000234572	LINC01800	Less	ncRNA
chr2	227772901	227777901	intron (NM_001349071, intron 4 of 6)	72381	ENSG00000144468	RHBD1	Less	protein-coding
chr16	88077822	88078322	intron (NM_001173539, intron 11 of 12)	56519	ENSG00000205037	LOC400553	Less	ncRNA
chr21	34736503	34737003	Intergenic	-38449	ENSG00000159128	IFNGR2	Less	protein-coding
chr3	188156886	188157386	intron (NM_005578, intron 3 of 10)	129318	ENSG00000224563	LPP-AS1	Less	ncRNA
chr20	25359853	25360353	intron (NM_001042472, intron 1 of 12)	11368	ENSG00000100997	ABHD12	Less	protein-coding
chr2	60637883	60638383	Intergenic	-19623	ENSG00000228590	MIR4432HG	Less	ncRNA
chr6	149004131	149004631	Intergenic	-63785	ENSG00000111962	UST	Less	protein-coding
chr6	15433580	15434080	intron (NM_004973, intron 3 of 17)	184744	ENSG00000008083	JARID2	Less	protein-coding
chr6	154627721	154628221	intron (NM_001130699, intron 1 of 12)	23244	ENSG000000074706	IPCEF1	Less	protein-coding
chr9	82495584	82496084	intron (NR_121213, intron 1 of 2)	56389		LINC01507	Less	ncRNA
chr2	90248616	90249116	Intergenic	1136982	ENSG00000265510	MIR4436A	Less	ncRNA

chr19	17480627	17481127	intron (NM_031310, intron 1 of 5)	7274	ENSG00000130300	PLVAP	Less	protein-coding
chr18	2979748	2980248	intron (NM_014646, intron 1 of 19)	31947	ENSG00000101577	LPIN2	Less	protein-coding
chr1	222061639	222062139	Intergenic	-47881	ENSG00000227925	LINC01655	Less	ncRNA
chr5	55775663	55776063	intron (NR_104664, intron 1 of 4)	1783	ENSG00000248727	LINC01948	Less	ncRNA
chr21	16430879	16431379	intron (NM_003489, intron 1 of 3)	6192	ENSG00000180530	NRIP1	Less	protein-coding
chr19	3366302	3366802	promoter-TSS (NM_001245004)	-29	ENSG00000141905	NFIC	Less	protein-coding
chr18	55598340	55598840	Intergenic	-112868	ENSG00000049759	NEDD4L	Less	protein-coding
chr2	54327713	54328213	intron (NM_001320587, intron 3 of 5)	-14789	ENSG00000170634	ACYP2	Less	protein-coding
chr17	28071635	28072135	intron (NM_001282129, intron 3 of 15)	16565	ENSG00000141298	SSH2	Less	protein-coding
chr14	69149532	69150032	TTS (NM_001321818)	-54278		LOC100996664	Less	ncRNA
chr6	32592725	32593225	Intergenic	-12208	ENSG00000196735	HLA-DQA1	Less	protein-coding
chr4	141640779	141641279	intron (NM_015130, intron 1 of 20)	36510	ENSG00000109436	TBC1D9	Less	protein-coding
chr4	146954269	146954769	Intergenic	88546	ENSG00000248809	LINC01095	Less	ncRNA
chr8	86425633	86426133	Intergenic	-48739	ENSG00000253549	CA3-AS1	Less	ncRNA
chr19	18063813	18064313	intron (NM_002248, intron 1 of 10)	1952	ENSG00000105642	KCN11	Less	protein-coding
chrX	55814039	55814539	Intergenic	70107	ENSG00000083750	RRAGB	Less	protein-coding
chr6	35527857	35528357	Intergenic	-47434	ENSG00000112041	TULP1	Less	protein-coding
chr2	74253569	74254069	intron (NM_001287491, intron 3 of 11)	24000	ENSG00000187605	TET3	Less	protein-coding
chr4	99210489	99210989	intron (NM_001100427, intron 1 of 14)	28204	ENSG00000138698	RAP1GDS1	Less	protein-coding
chr7	28220080	28220580	promoter-TSS (NM_175061)	84	ENSG00000153814	JAZF1	Less	protein-coding
chr8	124446871	124447371	intron (NM_018024, intron 3 of 5)	18107	ENSG00000156795	WDYHV1	Less	protein-coding
chr1	44497271	44497771	promoter-TSS (NM_001024845)	-387	ENSG00000196517	SLC6A9	Less	protein-coding
chr10	11715349	11715849	Intergenic	-61811	ENSG00000148429	USP6N1	Less	protein-coding
chr2	68630282	68630782	Intergenic	38118	ENSG00000115956	PLEK	Less	protein-coding
chr1	32104708	32105208	intron (NM_012392, intron 1 of 4)	5260	ENSG00000162517	PEF1	Less	protein-coding
chr19	1859428	1859478	intron (NM_031918, intron 1 of 1)	3900	ENSG00000129911	KLF16	Less	protein-coding
chr6	149152122	149152622	intron (NM_005715, intron 1 of 7)	84206	ENSG00000111962	UST	Less	protein-coding
chr2	231472575	231473075	Intergenic	92419	ENSG00000226125	LINC01907	Less	ncRNA
chr19	12305545	12306045	promoter-TSS (NR_104179)	-35		LOC100289333	Less	ncRNA
chr11	35202289	35202789	intron (NM_001001389, intron 3 of 16)	18042		SNORD164	Less	snoRNA
chr5	66491335	66491835	intron (NM_005582, intron 1 of 2)	1042	ENSG00000134061	CD180	Less	protein-coding
chr2	39696960	39697460	intron (NR_037875, intron 3 of 5)	32653	ENSG00000231312	MAP4K3-DT	Less	ncRNA
chr15	90012415	90012915	Intergenic	27149	ENSG00000140519	RHCG	Less	protein-coding
chr9	32604314	32604814	Intergenic	31103	ENSG00000122728	TAF1L	Less	protein-coding
chr18	13539095	13539595	intron (NM_181482, intron 4 of 5)	-71768	ENSG00000263527	MIR4526	Less	ncRNA
chr12	132626495	132626995	intron (NM_175066, intron 4 of 14)	2119	ENSG00000185163	DDX51	Less	protein-coding
chr15	31656609	31657109	intron (NM_001302461, intron 1 of 1)	37821	ENSG00000169926	KLF13	Less	protein-coding
chr20	9492180	9492680	intron (NR_109957, intron 1 of 4)	-2575	ENSG00000125869	LAMP5	Less	protein-coding
chr2	8388499	8388999	intron (NR_152741, intron 8 of 9)	79800	ENSG00000236790	LINC00299	Less	ncRNA
chr19	38527395	38527895	intron (NM_015073, intron 2 of 21)	-126091		SNORD152	Less	snoRNA
chr1	243646302	243646802	intron (NM_001350249, intron 16 of 17)	137074	ENSG00000265201	MIR4677	Less	ncRNA
chr5	54040197	54040697	promoter-TSS (NR_104658)	-361		LOC102467080	Less	ncRNA
chr18	53041910	53042410	intron (NM_001369572, intron 6 of 19)	26759	ENSG00000196628	TCF4	Less	protein-coding
chr19	20349059	20349559	Intergenic	71286	ENSG00000256229	ZNF486	Less	protein-coding
chr1	243432535	243433035	intron (NM_001350248, intron 1 of 18)	13442	ENSG00000054282	SDCCAG8	Less	protein-coding
chr17	67066978	67067478	Intergenic	-10160	ENSG00000154258	ABCA9	Less	protein-coding
chrX	40005495	40005995	intron (NM_001123384, intron 1 of 13)	30785	ENSG00000183337	BCOR	Less	protein-coding
chr5	74348549	74349049	promoter-TSS (NM_001366737)	-416	ENSG00000176928	CNTN4	Less	protein-coding
chr16	75519132	75519632	intron (NR_163481, intron 1 of 2)	9957	ENSG00000183196	CHST6	Less	protein-coding
chr12	739692	740192	promoter-TSS (NR_122124)	-115	ENSG00000177406	LOC100049716	Less	ncRNA
chr12	57918441	57918941	intron (NM_052897, intron 4 of 12)	2084	ENSG00000166987	MBD6	Less	protein-coding
chr20	62668938	62669438	intron (NM_001348090, intron 4 of 6)	4108	ENSG00000196421	C20orf204	Less	protein-coding
chr19	42613179	42613679	intron (NM_002698, intron 5 of 13)	23169	ENSG00000202877	POU2F2	Less	protein-coding
chr18	55984148	55984648	intron (NM_001144971, intron 7 of 30)	95595	ENSG00000049759	NEDD4L	Less	protein-coding
chr16	68407707	68408207	intron (NM_018667, intron 2 of 8)	62940	ENSG00000132600	PRMT7	Less	protein-coding
chr10	134000121	134000621	promoter-TSS (NM_006426)	-81	ENSG00000151640	DPYSL4	Less	protein-coding
chr4	124225304	124225804	intron (NM_001345856, intron 15 of 15)	-92396	ENSG00000164056	SPRY1	Less	protein-coding
chr6	149068781	149069281	intron (NM_005715, intron 1 of 7)	865	ENSG00000111962	UST	Less	protein-coding
chr6	1856554	1857054	intron (NM_001253846, intron 7 of 10)	246654	ENSG00000054598	FOXC1	Less	protein-coding
chr8	145650638	145651138	intron (NM_016208, intron 5 of 9)	3043	ENSG00000160948	VPS28	Less	protein-coding
chr2	15451375	15451875	intron (NR_052013, intron 38 of 50)	249833	ENSG00000151779	NBAS	Less	protein-coding
chr9	120698883	120699383	Intergenic	231952	ENSG00000136869	TLR4	Less	protein-coding
chr6	149187937	149188437	intron (NM_005715, intron 1 of 7)	97633		UST-AS1	Less	ncRNA
chr12	106115214	106115714	intron (NR_110109, intron 2 of 4)	14912	ENSG00000257859	CASC18	Less	ncRNA
chr5	110091602	110092102	intron (NR_138151, intron 7 of 8)	17144	ENSG00000164209	SLC25A46	Less	protein-coding
chr3	58387408	58387908	intron (NM_001349498, intron 12 of 17)	31901	ENSG00000168291	PDHB	Less	protein-coding
chr13	113237814	113238314	intron (NM_006322, intron 1 of 21)	4403	ENSG00000126216	TUBGCP3	Less	protein-coding
chr19	20188482	20188982	promoter-TSS (NM_007138)	-77	ENSG00000213988	ZNF90	Less	protein-coding
chr13	48894053	48894553	intron (NM_000321, intron 2 of 26)	16420	ENSG00000139687	RB1	Less	protein-coding
chr3	187693269	187693769	intron (NR_135537, intron 1 of 1)	676		LINC01991	Less	ncRNA
chr9	117375312	117375812	intron (NM_153045, intron 1 of 8)	1991	ENSG00000157693	TMEM268	Less	protein-coding
chr11	36399564	36400064	intron (NM_024841, intron 2 of 9)	2279	ENSG00000135362	PRR5L	Less	protein-coding
chr5	90577340	90577840	Intergenic	32629	ENSG00000248323	LUCAT1	Less	ncRNA
chr8	2691659	2691709	Intergenic	-105918	ENSG00000254319	LOC101927815	Less	ncRNA
chr1	36552299	36552799	exon (NM_014466, exon 6 of 10)	-1944	ENSG00000116863	ADPRHL2	Less	protein-coding
chr5	65919886	65920386	intron (NM_001164664, intron 1 of 28)	27915	ENSG00000069020	MAST4	Less	protein-coding
chr12	106643451	106643951	Intergenic	-1903	ENSG00000136026	CKAP4	Less	protein-coding
chr14	54011865	54012365	Intergenic	392043	ENSG00000258731	LOC101927620	Less	ncRNA
chr11	82864715	82865215	Intergenic	-3208	ENSG00000165494	PCF11	Less	protein-coding
chr4	69435834	69436334	Intergenic	-1839	ENSG00000197888	UGT2B17	Less	protein-coding
chr5	860675	861175	Intergenic	-9824	ENSG00000188818	ZDHC11	Less	protein-coding
chr7	2848819	2848869	intron (NM_007353, intron 1 of 3)	6295	ENSG00000146535	GNA12	Less	protein-coding
chr22	46829127	46829627	exon (NM_014246, exon 5 of 35)	97766	ENSG00000100416	TRMU	Less	protein-coding
chr11	302659	303159	Intergenic	-3383	ENSG00000206013	IFITM5	Less	protein-coding

chr6	111204467	111204967	intron (NM_001287216, intron 1 of 4)	8730	ENSG00000123505	AMD1	Less	protein-coding
chr1	70743599	70744099	intron (NM_030816, intron 9 of 12)	56786	ENSG00000116754	SRSF11	Less	protein-coding
chr4	164531809	164532309	intron (NM_017923, intron 1 of 3)	2627	ENSG00000145416	marrask.-01	Less	protein-coding
chr15	70174874	70175374	Intergenic	47551	ENSG00000245750	LINC00593	Less	ncRNA
chr8	23282741	23283241	Intergenic	-21358	ENSG00000134013	LOXL2	Less	protein-coding
chr3	196346966	196347466	Intergenic	12242	ENSG00000232065	LINC01063	Less	ncRNA
chrX	21990756	21991256	intron (NM_004595, intron 4 of 10)	32179	ENSG00000102172	SMS	Less	protein-coding
chr6	137493519	137494019	intron (NM_181310, intron 1 of 4)	1012	ENSG00000164485	IL22RA2	Less	protein-coding
chr7	74595573	74596073	Intergenic	-8021	ENSG00000165178	NCF1C	Less	pseudo
chr19	10404936	10405436	exon (NM_003259, exon 9 of 11)	4558	ENSG00000105376	ICAM5	Less	protein-coding
chrX	149743850	149744350	intron (NM_000252, intron 1 of 14)	7053	ENSG00000171100	MTM1	Less	protein-coding
chr7	155077547	155078047	Intergenic	-11685	ENSG00000186480	INSIG1	Less	protein-coding
chr19	30325785	30326285	Intergenic	23137	ENSG00000105173	CCNE1	Less	protein-coding
chr7	44648705	44649205	intron (NM_001165036, intron 1 of 22)	2729	ENSG00000105953	OGDH	Less	protein-coding
chr2	44271274	44271774	Intergenic	-48396	ENSG00000138095	LRPPRC	Less	protein-coding
chr2	161245096	161245596	intron (NM_002897, intron 1 of 13)	19047	ENSG00000283734	MIR4785	Less	ncRNA
chr12	10024745	10025245	Intergenic	-2537	ENSG00000110852	CLEC2B	Less	protein-coding
chr16	79312335	79312835	Intergenic	322049	ENSG00000178573	MAF	Less	protein-coding
chr1	24217156	24217656	intron (NM_001841, intron 1 of 1)	22446	ENSG00000188822	CNR2	Less	protein-coding
chr3	67067631	67068131	Intergenic	19150	ENSG00000163376	KBTBD8	Less	protein-coding
chr1	207082618	207083118	intron (NM_005449, intron 6 of 7)	12080	ENSG00000162892	IL24	Less	protein-coding
chr3	38191246	38191746	Intergenic	11344	ENSG00000172936	MYD88	Less	protein-coding
chr19	2446403	2446903	intron (NM_032737, intron 1 of 11)	10304	ENSG00000176619	LMNB2	Less	protein-coding
chr17	1930857	1931357	Intergenic	-2299	ENSG00000108963	DPH1	Less	protein-coding
chr14	6915626	69156126	Intergenic	-60372	ENSG0000010096664	LOC100996664	Less	ncRNA
chr11	100580233	100580733	intron (NM_152432, intron 1 of 23)	-21797	ENSG00000248027	LOC100128386	Less	ncRNA
chr5	55982425	55982925	Intergenic	-80592	ENSG00000225940	C5orf67	Less	ncRNA
chr7	129222654	129223154	Intergenic	-28657	ENSG00000106459	NRF1	Less	protein-coding
chr6	37071022	37071522	Intergenic	-66656	ENSG00000137193	PIM1	Less	protein-coding
chr17	72830074	72830574	intron (NM_001321264, intron 9 of 9)	25683	ENSG00000161509	GRIN2C	Less	protein-coding
chr17	72858151	72858651	TTS (NM_004110)	-1435	ENSG00000161509	GRIN2C	Less	protein-coding
chr16	68501329	68501829	Intergenic	-19168	ENSG00000103056	SMPD3	Less	protein-coding
chr17	2392569	2393069	intron (NM_024086, intron 2 of 9)	22363	ENSG00000127804	METTL16	Less	protein-coding
chr16	56457356	56457856	intron (NM_001144, intron 1 of 13)	1295	ENSG00000159461	AMFR	Less	protein-coding
chr11	64550166	64550666	Intergenic	-4100	ENSG00000168066	SF1	Less	protein-coding
chr16	10835169	10835669	Intergenic	-2224	ENSG00000103274	NUBP1	Less	protein-coding
chr6	6659170	6659670	Intergenic	-36361	ENSG00000216863	LY86-AS1	Less	ncRNA
chr8	86376680	86377180	promoter-TSS (NR_121631)	214	ENSG00000253549	CA3-AS1	Less	ncRNA
chr21	44074462	44074962	intron (NM_001001575, intron 1 of 14)	850	ENSG00000160191	PDE9A	Less	protein-coding
chr7	95811615	95812115	intron (NM_001160210, intron 11 of 17)	37203	ENSG00000208025	MIR591	Less	ncRNA
chr3	13045593	13046093	intron (NM_001134382, intron 1 of 14)	-17242	ENSG00000144711	IQSEC1	Less	protein-coding
chr2	12317725	12318225	intron (NR_110196, intron 3 of 5)	-21281	ENSG00000264089	MIR3681	Less	ncRNA
chr14	68955951	68956451	intron (NM_001321818, intron 10 of 10)	139303	ENSG0000010096664	LOC100996664	Less	ncRNA
chr20	56284892	56285392	promoter-TSS (NM_020182)	-71	ENSG00000124225	PMEPA1	Less	protein-coding
chr21	37654317	37654817	intron (NM_005128, intron 32 of 36)	-37920	ENSG00000159256	MORC3	Less	protein-coding
chr11	397001	397501	exon (NM_007183, exon 3 of 13)	3042	ENSG00000184363	PKP3	Less	protein-coding
chr7	107925078	107925578	intron (NM_001371171, intron 3 of 28)	-41499	ENSG00000175895	PLEKHF2	Less	protein-coding
chr8	96177716	96178216	Intergenic	31953	ENSG00000101596	SMCHD1	Less	protein-coding
chr18	2658046	2658546	intron (NM_015295, intron 1 of 47)	-7811	ENSG00000196735	HLA-DQA1	Less	protein-coding
chr6	32597122	32597622	Intergenic	-679871	ENSG00000229981	LINC01435	Less	ncRNA
chr10	110508672	110509172	Intergenic	81271	ENSG00000138639	ARHGAP24	Less	protein-coding
chr4	86477324	86477824	intron (NM_001025616, intron 1 of 9)	10398	ENSG00000169252	ADR2B	Less	protein-coding
chr5	148216304	148216804	Intergenic	44238	ENSG00000091436	MAP3K20	Less	protein-coding
chr2	173984562	173985062	intron (NM_133646, intron 2 of 11)	4902	ENSG00000168792	ABHD15	Less	protein-coding
chr17	27888903	27889403	3' UTR (NM_198147, exon 2 of 2)	-14137	ENSG00000125869	LAMP5	Less	protein-coding
chr20	9480618	9481118	Intergenic	46612	ENSG00000134313	KIDINS220	Less	protein-coding
chr2	8930881	8931381	intron (NM_001348739, intron 13 of 28)	-3911	ENSG00000283051	LINC01668	Less	ncRNA
chr21	44203765	44204265	Intergenic	-123091	ENSG00000182378	PLCXD1	Less	protein-coding
chrX	69682	70182	Intergenic	-20745	ENSG00000196421	C20orf204	Less	protein-coding
chr20	62644085	62644585	intron (NM_012469, intron 11 of 20)	4727	ENSG00000141905	NFIC	Less	protein-coding
chr19	3371058	3371558	intron (NM_001245002, intron 1 of 10)	-47355	ENSG00000136156	ITM2B	Less	protein-coding
chr13	48759737	48760237	Intergenic	96701	ENSG00000148153	INIP	Less	protein-coding
chr9	115383446	115383946	intron (NM_001287036, intron 3 of 4)	-26623	ENSG00000197892	KIF13B	Less	protein-coding
chr8	29146960	29147460	Intergenic	-123933	ENSG00000226856	THORLNC	Less	ncRNA
chr2	119067645	119068145	Intergenic	128366	ENSG00000015171	ZMYND11	Less	protein-coding
chr10	354050	354550	intron (NM_014974, intron 32 of 36)	-843322	ENSG00000229981	LINC01435	Less	ncRNA
chr10	110672123	110672623	Intergenic	723	ENSG00000283734	MIR4785	Less	ncRNA
chr2	161263420	161263920	TTS (NR_039946)	-8	ENSG00000148153	MAST4-AS1	Less	ncRNA
chr5	66299740	66300240	promoter-TSS (NM_001290227)	63858	ENSG00000232077	LINC01031	Less	ncRNA
chr1	193337483	193337983	Intergenic	-31527	ENSG000001039	LINC01039	Less	ncRNA
chr13	100197589	100198089	intron (NM_004800, intron 10 of 16)	41691	ENSG00000160199	PKNOX1	Less	protein-coding
chr21	44436113	44436613	intron (NM_001320694, intron 5 of 10)	91204	ENSG00000101665	SMAD7	Less	protein-coding
chr18	46377723	46378223	intron (NM_014772, intron 10 of 11)	7046	ENSG00000132286	TIMM10B	Less	protein-coding
chr11	6509527	6510027	Intergenic	-66	ENSG0000011991	LINC01991	Less	ncRNA
chr3	187694011	187694511	promoter-TSS (NR_135538)	1872	ENSG00000168297	PXK	Less	protein-coding
chr3	58320655	58321155	intron (NM_001349498, intron 1 of 17)	7953	ENSG00000056972	TRAF3IP2	Less	protein-coding
chr6	111880279	111880779	3' UTR (NM_001164283, exon 4 of 4)	29903	ENSG00000038274	MAT2B	Less	protein-coding
chr5	162962278	162962778	Intergenic	37986	ENSG00000109436	TBC1D9	Less	protein-coding
chr4	141639303	141639803	intron (NM_015130, intron 1 of 20)	53889	ENSG00000196776	CD47	Less	protein-coding
chr3	107755796	107756296	Intergenic	92	ENSG00000197124	ZNF682	Less	protein-coding
chr19	20149972	20150472	promoter-TSS (NM_033196)	-13516	ENSG00000201654	RNU6-7	Less	snRNA
chr15	68145649	68146149	Intergenic	47852	ENSG00000072786	STK10	Less	protein-coding
chr5	171567126	171567626	intron (NM_005990, intron 2 of 18)	800	ENSG00000154102	C16orf74	Less	protein-coding
chr16	85783652	85784152	intron (NR_161454, intron 1 of 3)					

chr12	106423932	106424432	Intergenic	109629	ENSG00000074590	NUAK1	Less	protein-coding
chr1	24222891	24223391	intron (NM_001841, intron 1 of 1)	16711	ENSG00000188822	CNR2	Less	protein-coding
chr18	29600042	29600542	intron (NM_017831, intron 1 of 5)	1504	ENSG00000101695	RNF125	Less	protein-coding
chr16	1819119	1819619	TTS (NM_002513)	2341	ENSG00000103024	NME3	Less	protein-coding
chr4	16448962	164490462	intron (NM_017923, intron 2 of 3)	44474	ENSG00000145416	marrask-01	Less	protein-coding
chr4	109036917	109037417	intron (NM_001166119, intron 3 of 10)	50786	ENSG00000138795	LEF1	Less	protein-coding
chr10	45871331	45871831	intron (NM_001320862, intron 1 of 13)	1917	ENSG00000012779	ALOX5	Less	protein-coding
chr3	193822930	193823430	Intergenic	-30757	ENSG00000114315	HES1	Less	protein-coding
chr8	41506914	41507414	intron (NM_001364841, intron 1 of 2)	1172	ENSG00000165066	NKX6-3	Less	protein-coding
chr3	187696341	187696841	Intergenic	-2396		LINC01991	Less	ncRNA
chr22	23197884	23198384	Intergenic	-30313	ENSG00000264824	MIR5571	Less	ncRNA
chr2	3584315	3584815	intron (NR_148534, intron 8 of 11)	21358	ENSG00000171865	RNASEH1	Less	protein-coding
chr22	17278870	17279370	intron (NM_175878, intron 3 of 3)	23469	ENSG00000172967	XKR3	Less	protein-coding
chr12	123568829	123569329	non-coding (NR_038290, exon 3 of 3)	3148	ENSG00000251497	PITPNM2-AS1	Less	ncRNA
chr9	139597750	139598250	Intergenic	-9024	ENSG00000165716	DIPK1B	Less	protein-coding
chrX	122782241	122782741	intron (NM_001081550, intron 12 of 38)	84411	ENSG00000125676	THOC2	Less	protein-coding
chr19	16508266	16508766	intron (NM_021235, intron 16 of 22)	72879	ENSG00000127528	KLF2	Less	protein-coding
chr21	40758207	40758707	intron (NM_001350296, intron 1 of 4)	-1232	ENSG00000182093	GET1	Less	protein-coding
chr4	53470	53970	intron (NM_001286053, intron 1 of 7)	494	ENSG00000250312	ZNF718	Less	protein-coding
chr20	9497107	9497607	intron (NM_012261, intron 4 of 5)	-1712	ENSG00000225988	LAMP5-AS1	Less	ncRNA
chr7	148216415	148216915	Intergenic	-71193	ENSG00000170279	C7orf33	Less	protein-coding
chr13	50701427	50701927	intron (NR_109974, intron 2 of 6)	-2000	ENSG00000231607	DLEU2	Less	ncRNA
chr4	102204625	102205125	intron (NM_001130691, intron 1 of 12)	-42846	ENSG00000273882	MIR8066	Less	ncRNA
chr1	165605060	165605560	intron (NM_004528, intron 1 of 5)	4839	ENSG00000143198	MGST3	Less	protein-coding
chr10	112219344	112219844	Intergenic	-38071	ENSG00000138166	DUSP5	Less	protein-coding
chr1	155685265	155685765	intron (NM_001199851, intron 2 of 11)	26630	ENSG00000132676	DAP3	Less	protein-coding
chr7	25536007	25536507	Intergenic	166503	ENSG00000223561	LOC646588	Less	ncRNA
chr6	32597888	32598388	Intergenic	-7045	ENSG00000196735	HLA-DQA1	Less	protein-coding
chr2	145237105	145237605	intron (NM_001171653, intron 2 of 8)	-39826	ENSG00000238057	ZEB2-AS1	Less	ncRNA
chr6	137494099	137494599	intron (NM_181310, intron 1 of 4)	432	ENSG00000164485	IL22RA2	Less	protein-coding
chr17	44135276	44135776	intron (NM_001193465, intron 7 of 15)	58910	ENSG00000256762	STH	Less	protein-coding
chr3	19637891	19638391	Intergenic	-281718	ENSG00000271898	MIR4791	Less	ncRNA
chr15	93465637	93466137	intron (NM_001042572, intron 2 of 12)	18258	ENSG00000284324	MIR3175	Less	ncRNA
chr2	3583488	3583988	intron (NR_148532, intron 9 of 10)	22185	ENSG00000171865	RNASEH1	Less	protein-coding
chr10	133774868	133775368	Intergenic	20399	ENSG00000176171	BNIP3	Less	protein-coding
chr17	75662895	75663395	Intergenic	61496	ENSG00000267790	LINC01987	Less	ncRNA
chr3	15370484	15370984	intron (NM_001018009, intron 2 of 8)	3359	ENSG00000131370	SH3BP5	Less	protein-coding
chr8	2690350	2690850	Intergenic	-104609	ENSG00000254319	LOC101927815	Less	ncRNA
chr5	148213424	148213924	Intergenic	7518	ENSG00000169252	ADRB2	Less	protein-coding
chr6	149293563	149294063	intron (NM_005715, intron 5 of 7)	-7993		UST-AS1	Less	ncRNA
chr13	48761228	48761728	Intergenic	-45864	ENSG00000136156	ITM2B	Less	protein-coding
chr1	196796901	196797401	intron (NM_002113, intron 3 of 5)	8290	ENSG00000244414	CFHR1	Less	protein-coding
chr5	169312939	169313439	intron (NM_001346304, intron 1 of 3)	94310	ENSG00000204767	INSYN2B	Less	protein-coding
chr5	149539728	149540228	Intergenic	-4570	ENSG00000113721	PDGFRB	Less	protein-coding
chr5	132732320	132732820	intron (NM_015082, intron 4 of 15)	30828	ENSG00000221287	MIR1289-2	Less	ncRNA
chr13	99582315	99582815	intron (NM_015296, intron 2 of 55)	47753	ENSG00000088387	DOCK9	Less	protein-coding
chrX	12727207	12727707	intron (NM_001368400, intron 12 of 15)	-82017	ENSG00000101911	PRPS2	Less	protein-coding
chr15	82944626	82945126	non-coding (NR_026811, exon 1 of 8).2	126		LOC727751	Less	pseudo
chr6	3228357	3228857	promoter-TSS (NM_178012)	-720	ENSG00000137285	TUBB2B	Less	protein-coding
chr6	15263115	15263615	intron (NM_001267040, intron 1 of 17)	14279	ENSG00000008083	JARID2	Less	protein-coding
chrX	96090868	96091368	intron (NM_007309, intron 4 of 26)	-47789	ENSG00000204086	RPA4	Less	protein-coding
chr1	100617713	100618213	exon (NM_001256385, exon 9 of 11)	19257	ENSG00000122435	TRMT13	Less	protein-coding
chr18	60743619	60744119	Intergenic	242744	ENSG00000171791	BCL2	Less	protein-coding
chr7	158642303	158642803	intron (NM_001350914, intron 1 of 24)	-6696	ENSG00000126870	WDR60	Less	protein-coding
chrX	115084779	115085279	intron (NR_130730, intron 1 of 2)	415	ENSG00000235244	DANT2	Less	ncRNA
chr19	34885044	34885544	intron (NM_001329909, intron 13 of 18)	-10009	ENSG00000126249	PDCD2L	Less	protein-coding
chr2	134918721	134919221	intron (NM_001371457, intron 1 of 16)	34275	ENSG00000263813	MIR3679	Less	ncRNA
chr5	123370632	123371132	Intergenic	403331		LINC01170	Less	ncRNA
chr1	194258644	194259144	Intergenic	985019	ENSG00000232077	LINC01031	Less	ncRNA
chr12	51792267	51792767	intron (NM_001258401, intron 1 of 24)	-7327	ENSG00000139629	GALNT6	Less	protein-coding
chr7	30336007	30336507	intron (NM_147128, intron 1 of 4)	-6751	ENSG00000283237	MIR550B1	Less	ncRNA
chr20	9499262	9499762	intron (NM_012261, intron 5 of 5)	-3867	ENSG00000225988	LAMP5-AS1	Less	ncRNA
chrX	1923489	1923989	Intergenic	189713	ENSG00000196433	ASMT	Less	protein-coding
chr17	14204056	14204556	promoter-TSS (NR_130138)	-92	ENSG00000125430	HS3ST3B1	Less	protein-coding
chr9	117979132	117979632	intron (NM_163556, intron 1 of 7)	75285	ENSG00000173077	Dec-01	Less	ncRNA
chr16	31475652	31476152	exon (NM_001288767, exon 6 of 8)	5585	ENSG00000140691	ARMCS	Less	protein-coding
chr14	69254087	69254587	TTS (NM_004926)	6294	ENSG00000185650	ZFP361I	Less	protein-coding
chr5	54068443	54068943	Intergenic	-28607		LOC102467080	Less	ncRNA
chr5	178450533	178451033	promoter-TSS (NM_001136116)	-22	ENSG00000234284	ZNF879	Less	protein-coding
chr15	95174819	95175319	Intergenic	-223523	ENSG00000277654	LOC440311	Less	pseudo
chr4	110223709	110224209	promoter-TSS (NM_001256074)	-145	ENSG00000188517	COL25A1	Less	protein-coding
chr8	2198587	2199087	Intergenic	174168	ENSG00000273593	MIR7160	Less	ncRNA
chr12	740241	740741	intron (NR_122124, intron 1 of 4)	434	ENSG00000177406	LOC100049716	Less	ncRNA
chr1	240656064	240656564	exon (NM_022469, exon 2 of 2)	119141	ENSG00000180875	GREM2	Less	protein-coding
chr11	45960106	45960606	intron (NR_147890, intron 14 of 18)	16149	ENSG00000165905	LARGE2	Less	protein-coding
chr19	21657445	21657945	Intergenic	-8822	ENSG00000268658	LINC00664	Less	ncRNA
chr22	48383699	48384199	Intergenic	-286227	ENSG00000266508	MIR3201	Less	ncRNA
chr19	48842032	48842532	intron (NM_001303539, intron 5 of 6)	13026	ENSG00000142227	EMP3	Less	protein-coding
chr15	70174101	70174601	Intergenic	46778	ENSG00000245750	LINC00593	Less	ncRNA
chr14	92339779	92340279	intron (NM_006329, intron 10 of 10)	-6149	ENSG00000165929	TC2N	Less	protein-coding
chr13	49116005	49116505	Intergenic	-6224	ENSG00000136161	RCBTB2	Less	protein-coding
chr20	62603535	62604035	Intergenic	-2502	ENSG00000196700	ZNF512B	Less	protein-coding
chr5	175958238	175958738	exon (NM_014901, exon 4 of 11)	5915	ENSG00000146083	RNF44	Less	protein-coding
chr2	90252870	90253370	Intergenic	1141236	ENSG00000265510	MIR4436A	Less	ncRNA

chr17	77707317	77707817	intron (NM_178543, intron 2 of 5)	2862	ENSG00000182156	ENPP7	Less	protein-coding
chr20	62670778	62671278	TTS (NM_001348090)	5948	ENSG00000196421	C20orf204	Less	protein-coding
chr12	90215613	90216113	Intergenic	-112720	ENSG00000070961	ATP2B1	Less	protein-coding
chr9	97094534	97095034	promoter-TSS (NR_033937)	26	ENSG00000232063	LOC100132077	Less	ncRNA
chr9	82771575	82772075	Intergenic	181887		LINC01507	Less	ncRNA
chr7	107968487	107968987	intron (NM_001371131, intron 2 of 33)	233			Less	
chr15	82657914	82658414	intron (NR_004847, intron 1 of 4)	10810		UBE2Q2P2	Less	pseudo
chr17	80608093	80608593	Intergenic	-2023	ENSG00000141580	WDR45B	Less	protein-coding
chr2	185461434	185461934	Intergenic	-1572	ENSG00000170396	ZNF804A	Less	protein-coding
chr19	19934656	19935156	intron (NM_001355194, intron 1 of 2)	-2347	ENSG00000081665	ZNF506	Less	protein-coding
chr20	62669657	62670157	intron (NM_001348090, intron 6 of 6)	4827	ENSG00000196421	C20orf204	Less	protein-coding
chr6	143828457	143828957	intron (NM_032020, intron 1 of 6)	4150	ENSG00000001036	FUCA2	Less	protein-coding
chr6	7307699	7308199	intron (NR_120448, intron 2 of 6)	5483	ENSG00000124783	SSR1	Less	protein-coding
chr2	60597847	60598347	intron (NR_132991, intron 2 of 3)	12074	ENSG00000228590	MIR4432HG	Less	ncRNA
chr6	106957260	106957760	intron (NM_001371242, intron 2 of 21)	-2220	ENSG00000112297	CRYBG1	Less	protein-coding
chr11	92356175	92356675	intron (NM_001008781, intron 2 of 24)	271163	ENSG00000165323	FAT3	Less	protein-coding
chr2	157185715	157186215	exon (NM_006186, exon 3 of 8)	3268	ENSG00000153234	NR4A2	Less	protein-coding
chr7	107951161	107951661	intron (NM_001371168, intron 3 of 31)	17559			Less	
chr3	101797573	101798073	Intergenic	-84726		LOC101929411	Less	ncRNA
chr2	65604638	65605138	intron (NM_181784, intron 1 of 5)	-10976	ENSG00000198369	SPRED2	Less	protein-coding
chr9	81310376	81310876	Intergenic	398585	ENSG00000135069	PSAT1	Less	protein-coding
chr1	231093338	231093838	intron (NM_024525, intron 3 of 22)	21019	ENSG00000143643	TTC13	Less	protein-coding
chr19	21751886	21752386	Intergenic	63732	ENSG00000197013	ZNF429	Less	protein-coding
chr6	167053773	167054273	intron (NM_001006932, intron 2 of 21)	-13284	ENSG00000071242	RPS6KA2	Less	protein-coding
chr5	5613404	5613904	Intergenic	190864	ENSG00000164151	ICE1	Less	protein-coding
chr8	32785231	32785731	Intergenic	206128	ENSG00000157168	NRG1	Less	protein-coding
chr8	125606586	125607086	intron (NM_001363301, intron 3 of 12)	55472	ENSG00000147684	NDUFB9	Less	protein-coding
chr9	97878499	97878999	intron (NM_001243743, intron 11 of 14)	-30373	ENSG00000207617	MIR3074	Less	ncRNA
chr3	71178967	71179467	intron (NR_146142, intron 6 of 19)	520	ENSG00000114861	FOX P1	Less	protein-coding
chr9	32602794	32603294	Intergenic	-29862	ENSG00000165264	NDUFB6	Less	protein-coding
chr12	106641584	106642084	promoter-TSS (NM_006825)	-36	ENSG00000136026	CKAP4	Less	protein-coding
chr19	11998395	11998895	promoter-TSS (NM_001321163)	48	ENSG00000198429	ZNF69	Less	protein-coding
chr17	43388130	43388630	intron (NM_003954, intron 1 of 15)	6006	ENSG00000006062	MAP3K14	Less	protein-coding
chr8	27296951	27297451	intron (NM_004103, intron 21 of 31)	6314	ENSG00000273836	MIR6842	Less	ncRNA
chr19	49969135	49969635	exon (NM_153329, exon 14 of 17)	-8087	ENSG00000090554	FLT3LG	Less	protein-coding
chr6	3610692	3611192	Intergenic	-30810	ENSG00000137265	IRF4	Less	protein-coding
chr7	155149732	155150232	non-coding (NR_103545, exon 6 of 6)	10646	ENSG00000204960	BLACE	Less	ncRNA
chr9	35598709	35599209	Intergenic	-6300	ENSG00000107140	TESK1	Less	protein-coding
chr5	82045307	82045807	Intergenic	-90417	ENSG00000283359	MIR3977	Less	ncRNA
chr6	150944696	150945196	intron (NM_001329799, intron 1 of 15)	-9154	ENSG00000120278	PLEKHG1	Less	protein-coding
chr1	16866945	16867445	Intergenic	-3712		LOC440570	Less	ncRNA
chr5	66492584	66493084	promoter-TSS (NM_005582)	-207	ENSG00000134061	CD180	Less	protein-coding
chr16	67784367	67784867	intron (NM_001320238, intron 2 of 12)	-31398	ENSG00000141098	GFO D2	Less	protein-coding
chr10	126372362	126372862	intron (NM_014661, intron 3 of 4)	-19985		FAM53B-AS1	Less	ncRNA
chr4	69437631	69438131	Intergenic	-3636	ENSG00000197888	UGT2B17	Less	protein-coding
chr17	21904020	21904520	intron (NR_027084, intron 1 of 1)	208	ENSG00000276399	FLJ36000	Less	ncRNA
chr12	92550974	92551474	intron (NR_135037, intron 3 of 3)	11363		LOC101928617	Less	ncRNA
chr11	117056375	117056875	intron (NM_001040455, intron 8 of 25)	7166	ENSG00000149577	SIDT2	Less	protein-coding
chr19	42753540	42754040	exon (NM_001308402, exon 4 of 4)	4261	ENSG00000105722	ERF	Less	protein-coding
chr14	52781982	52782482	intron (NM_000956, intron 1 of 1)	1202	ENSG00000125384	PTGER2	Less	protein-coding
chr10	7455013	7455113	Intergenic	-1815	ENSG00000198879	SFMBT2	Less	protein-coding
chr20	56254097	56254597	intron (NM_199171, intron 1 of 3)	11395	ENSG00000124225	PMEPA1	Less	protein-coding
chr5	148215700	148216200	Intergenic	9794	ENSG00000169252	ADR B2	Less	protein-coding
chr2	9550256	9550756	intron (NM_001319070, intron 2 of 4)	12214	ENSG00000119185	ITGB1BP1	Less	protein-coding
chr17	74787397	74787897	Intergenic	-7479	ENSG00000267065	LINC02080	Less	ncRNA
chr1	31189448	31189948	exon (NM_002379, exon 4 of 8)	-1921	ENSG00000186056	MATN1-AS1	Less	ncRNA
chr8	11352848	11353348	intron (NM_001330465, intron 1 of 11)	1202	ENSG00000136573	BLK	Less	protein-coding
chr6	13767637	13768137	Intergenic	46905	ENSG00000050393	MCUR1	Less	protein-coding
chr2	12317108	12317608	intron (NR_110196, intron 3 of 5)	-21898	ENSG00000264089	MIR3681	Less	ncRNA
chr8	53208013	53208513	intron (NM_001352827, intron 2 of 26)	-41211	ENSG00000147488	ST18	Less	protein-coding
chr5	54048733	54049233	Intergenic	-8897		LOC102467080	Less	ncRNA
chr21	43315835	43316335	intron (NM_199050, intron 12 of 12)	-16494	ENSG00000141956	PRDM15	Less	protein-coding
chr3	195916305	195916805	Intergenic	21716	ENSG00000163958	ZDHHC19	Less	protein-coding
chr7	148768830	148769330	exon (NM_152411, exon 4 of 4)	18730	ENSG00000197362	ZNF786	Less	protein-coding
chr17	27899689	27900189	TTS (NM_001085454)	4220	ENSG00000167543	TP53I13	Less	protein-coding
chr17	80873333	80873833	intron (NM_005993, intron 23 of 38)	-75685	ENSG00000141579	ZNF750	Less	protein-coding
chr13	99172280	99172780	intron (NM_001032296, intron 1 of 10)	1849	ENSG00000102572	STK24	Less	protein-coding
chr20	62642156	62642656	intron (NM_012469, intron 10 of 20)	-22674	ENSG00000196421	C20orf204	Less	protein-coding
chr1	157750781	157751281	Intergenic	-4109	ENSG00000132704	FCRL2	Less	protein-coding
chr19	20844207	20844707	promoter-TSS (NM_145297)	-55	ENSG00000188171	ZNF626	Less	protein-coding
chr17	27838923	27839423	intron (NM_025142, intron 15 of 17)	54882	ENSG00000168792	ABHD15	Less	protein-coding
chr14	105964003	105964503	exon (NM_001367178, exon 8 of 9)	6667	ENSG00000185347	TEDC1	Less	protein-coding
chr17	2756800	2757300	intron (NM_001100398, intron 2 of 23)	57318	ENSG00000132359	RAP1GAP2	Less	protein-coding
chr3	155968435	155968935	intron (NM_003471, intron 1 of 13)	-23013	ENSG00000240596	KCNAB1-AS2	Less	ncRNA
chr22	23165014	23165514	promoter-TSS (NR_030755)	-6	ENSG00000284049	MIR650	Less	ncRNA
chr6	149091436	149091936	intron (NM_005715, intron 1 of 7)	23520	ENSG00000111962	UST	Less	protein-coding
chr8	145640431	145640931	exon (NM_017767, exon 2 of 11)	1152	ENSG00000147804	SLC39A4	Less	protein-coding
chr5	10762933	10763433	Intergenic	-1837	ENSG00000112977	DAP	Less	protein-coding
chr3	188301524	188302024	intron (NM_005578, intron 5 of 10)	-15320	ENSG00000224563	LPP-AS1	Less	ncRNA
chr20	8508602	8509102	intron (NM_182734, intron 3 of 32)	279501	ENSG00000225479	PLCB1-IT1	Less	ncRNA
chr3	81827940	81828440	Intergenic	-17394	ENSG00000114480	GBE1	Less	protein-coding
chr19	48076278	48076778	promoter-TSS (NM_001277075)	-123	ENSG00000118156	ZNF541	Less	protein-coding
chr1	211506193	211506693	intron (NM_001033910, intron 1 of 10)	6268	ENSG00000082512	TRAF5	Less	protein-coding

chr5	150677593	150678093	intron (NM_001145017, intron 2 of 10)	5484	ENSG00000186334	SLC36A3	Less	protein-coding
chr19	20277715	20278215	promoter-TSS (NM_052852)	-58	ENSG00000256229	ZNF486	Less	protein-coding
chr3	193922164	193922264	intron (NR_125403, intron 2 of 2)	2082	ENSG00000225742	LINC02036	Less	ncRNA
chr18	72024150	72024650	3' UTR (NM_001174123, exon 14 of 14)	41326	ENSG00000206043	C18orf63	Less	protein-coding
chr1	1848835	1849335	TTS (NM_178545)	1633	ENSG00000178821	TMEM52	Less	protein-coding
chr20	9484465	9484965	Intergenic	-10290	ENSG00000125869	LAMP5	Less	protein-coding
chr2	102332676	102333176	intron (NM_145686, intron 2 of 30)	18757	ENSG00000071054	MAP4K4	Less	protein-coding
chr6	8017442	8017942	intron (NM_201280, intron 4 of 4)	31357	ENSG00000116453	PIP5K1P1	Less	pseudo
chr10	8097493	8097993	exon (NM_002051, exon 2 of 6)	1092	ENSG00000107485	GATA3	Less	protein-coding
chr22	30688296	30688796	exon (NM_001204240, exon 9 of 9)	-2930	ENSG00000239282	CASTOR1	Less	protein-coding
chr8	134583184	134583684	intron (NM_173344, intron 1 of 9)	696	ENSG00000008513	ST3GAL1	Less	protein-coding
chr6	36908525	36909025	Intergenic	-7264	ENSG00000164530	PI16	Less	protein-coding
chr12	117112424	117112924	Intergenic	63200	ENSG00000111412	C12orf49	Less	protein-coding
chr13	49116717	49117217	Intergenic	-6936	ENSG00000136161	RCBTB2	Less	protein-coding
chr9	81373230	81373730	Intergenic	387101	ENSG00000260995	LOC101927450	Less	ncRNA
chr9	7982802	7983302	Intergenic	-183274	ENSG00000137038	DMAC1	Less	protein-coding
chr4	141677582	141678082	promoter-TSS (NM_015130)	-293	ENSG00000109436	TBC1D9	Less	protein-coding
chr17	73685548	73686048	intron (NM_013260, intron 3 of 10)	22380	ENSG00000161526	SAP30BP	Less	protein-coding
chr6	149309141	149309641	intron (NM_005715, intron 5 of 7)	-23571	ENSG00000116908	UST-AS1	Less	ncRNA
chr8	67399766	67400266	Intergenic	-5785	ENSG00000169085	VXN	Less	protein-coding
chr7	157011869	157012369	intron (NM_014671, intron 14 of 22)	80499	ENSG00000009335	UBE3C	Less	protein-coding
chr17	14249956	14250456	3' UTR (NM_006041, exon 2 of 2)	43149	ENSG00000266709	MGC12916	Less	ncRNA
chr6	155699360	155699860	Intergenic	-63992	ENSG00000029639	TFB1M	Less	protein-coding
chr6	149082597	149083097	intron (NM_005715, intron 1 of 7)	14681	ENSG00000111962	UST	Less	protein-coding
chr22	23229601	23230101	promoter-TSS (NM_001256296)	-145	ENSG00000254709	IGLL5	Less	protein-coding
chr2	60564236	60564736	Intergenic	45685	ENSG00000228590	MIR4432HG	Less	ncRNA
chr11	47883283	47883783	Intergenic	-13437	ENSG00000030066	NUP160	Less	protein-coding
chr2	216771833	216772333	Intergenic	-63824	ENSG00000235770	LINC00607	Less	ncRNA
chr7	22749355	22749855	Intergenic	-17214	ENSG00000125637	PSD4	Less	protein-coding
chr2	113933560	113934060	intron (NM_012455, intron 1 of 16)	2262	ENSG00000125637	PSD4	Less	protein-coding
chr19	48984020	48984520	3' UTR (NM_004228, exon 12 of 12)	11644	ENSG00000105443	CYTH2	Less	protein-coding
chr16	48465921	48466421	Intergenic	-46847	ENSG00000196470	SIAH1	Less	protein-coding
chr9	45734057	45734557	Intergenic	292422	ENSG00000199500	LOC107984035	Less	ncRNA
chr10	111969547	111970047	promoter-TSS (NM_001008541)	-192	ENSG00000119950	MXI1	Less	protein-coding
chr9	82696938	82697438	Intergenic	107250	ENSG00000119950	LINC01507	Less	ncRNA
chr9	45729397	45729897	Intergenic	287762	ENSG00000119950	LOC107984035	Less	ncRNA
chr2	43334202	43334702	Intergenic	-4869	ENSG00000119950	LINC02580	Less	ncRNA
chr11	111918902	111919402	intron (NM_001931, intron 10 of 13)	23614	ENSG00000150768	DLAT	Less	protein-coding
chr19	50934029	50934529	TTS (NM_001243998)	-1870	ENSG00000086967	MYBP2C	Less	protein-coding
chr19	20162833	20163333	Intergenic	-12769	ENSG00000197124	ZNF682	Less	protein-coding
chr16	31342593	31343093	intron (NM_001145808, intron 29 of 29)	-23654	ENSG00000140678	ITGAX	Less	protein-coding
chr9	82499987	82500487	intron (NR_121213, intron 1 of 2)	60792	ENSG00000140678	LINC01507	Less	ncRNA
chr18	30447328	30447828	Intergenic	-94592	ENSG00000197705	KLHL14	Less	protein-coding
chr13	40782594	40783094	intron (NR_033877, intron 1 of 5)	11795	ENSG00000215483	LINC00548	Less	ncRNA
chr8	86376161	86376661	intron (NM_001293675, intron 1 of 5)	151	ENSG00000253549	CA3-AS1	Less	ncRNA
chr3	124867563	124868063	intron (NM_024628, intron 5 of 13)	2583	ENSG00000264986	MIR5092	Less	ncRNA
chr21	44081757	44082257	intron (NM_001001575, intron 1 of 14)	8145	ENSG00000160191	PDE9A	Less	protein-coding
chr4	69418942	69419442	intron (NM_001077, intron 3 of 5)	15053	ENSG00000197888	UGT2B17	Less	protein-coding
chr9	117367225	117367725	Intergenic	-6096	ENSG00000157693	TMEM268	Less	protein-coding
chr2	60727831	60728331	intron (NM_022893, intron 2 of 3)	52552	ENSG00000198666	BCL11A	Less	protein-coding
chr11	28245035	28245535	intron (NM_001113528, intron 4 of 6)	115350	ENSG00000169519	METTL15	Less	protein-coding
chr19	42582920	42583420	exon (NM_022752, exon 2 of 2)	2852	ENSG00000105732	ZNF574	Less	protein-coding
chr2	130941861	130942361	intron (NM_001330282, intron 3 of 3)	2276	ENSG00000152082	MZT2B	Less	protein-coding
chr7	100845409	100845909	promoter-TSS (NM_178176)	-842	ENSG00000106384	MOGAT3	Less	protein-coding
chr20	16371628	16372128	intron (NM_024704, intron 17 of 25)	182215	ENSG00000089177	KIF16B	Less	protein-coding
chr19	3428426	3428926	intron (NM_001245005, intron 3 of 9)	51847	ENSG00000095932	SMIM24	Less	protein-coding
chr15	63890372	63890872	intron (NM_203373, intron 1 of 1)	1036	ENSG00000197361	FBXL22	Less	protein-coding
chr20	25372269	25372769	Intergenic	-1048	ENSG00000100997	ABHD12	Less	protein-coding
chr2	90259987	90260487	Intergenic	1148353	ENSG00000265510	MIR4436A	Less	ncRNA
chr6	139551625	139552125	Intergenic	61260	ENSG00000164440	TXLNB	Less	protein-coding
chr2	62407952	62408452	Intergenic	-15048	ENSG00000170340	B3GNT2	Less	protein-coding
chr19	10403450	10403950	exon (NM_003259, exon 6 of 11)	3072	ENSG00000105376	ICAM5	Less	protein-coding
chr19	58520905	58521405	Intergenic	-6441	ENSG00000166704	ZNF606	Less	protein-coding
chr1	1168523	1169023	3' UTR (NM_080605, exon 1 of 1)	1156	ENSG00000176022	B3GALT6	Less	protein-coding
chr5	67547208	67547708	intron (NM_181523, intron 2 of 15)	35874	ENSG00000145675	PIK3R1	Less	protein-coding
chr2	202144254	202144754	intron (NR_111983, intron 7 of 8)	19245	ENSG00000064012	CASP8	Less	protein-coding
chr11	123175607	123176107	Intergenic	-53273	ENSG00000023171	GRAMD1B	Less	protein-coding
chr20	62676529	62677029	Intergenic	4213	ENSG00000203883	SOX18	Less	protein-coding
chr9	43397986	43398486	Intergenic	217291	ENSG00000196421	FAM74A7	Less	ncRNA
chr20	62667859	62668359	intron (NM_001348090, intron 4 of 6)	3029	ENSG00000196421	C20orf204	Less	protein-coding
chr17	59236796	59237296	intron (NM_001353146, intron 23 of 25)	208019	ENSG00000267131	LOC101927855	Less	ncRNA
chr20	48628627	48629127	Intergenic	29289	ENSG00000196421	TRERNA1	Less	ncRNA
chr15	59815086	59815586	3' UTR (NM_152450, exon 9 of 9)	84951	ENSG00000157470	FAM81A	Less	protein-coding
chr4	122194227	122194727	Intergenic	-45839	ENSG00000050730	TNIP3	Less	protein-coding
chr1	16958219	16958719	Intergenic	-1068	ENSG00000215908	CROCCP2	Less	pseudo
chr6	7052085	7052585	Intergenic	-55641	ENSG00000124782	RREB1	Less	protein-coding
chr22	30784323	30784823	Intergenic	-1173	ENSG00000099999	RNF215	Less	protein-coding
chr2	185462301	185462801	promoter-TSS (NM_194250)	-705	ENSG00000170396	ZNF804A	Less	protein-coding
chr1	211502099	211502599	intron (NM_001033910, intron 1 of 10)	2174	ENSG00000082512	TRAF5	Less	protein-coding
chr19	20189048	20189548	intron (NM_007138, intron 1 of 3)	489	ENSG00000213988	ZNF90	Less	protein-coding
chr17	72848536	72849036	intron (NM_000835, intron 2 of 12)	7221	ENSG00000161509	GRIN2C	Less	protein-coding
chr20	60488863	60489363	intron (NM_001252339, intron 8 of 14)	39605	ENSG00000284193	MIR1257	Less	ncRNA
chr6	149067700	149068200	promoter-TSS (NM_005715)	-216	ENSG00000111962	UST	Less	protein-coding
chr5	86399469	86399969	Intergenic	11052	ENSG00000265919	MIR4280	Less	ncRNA

chr11	102347426	102347926	intron (NR_135076, intron 1 of 2)	9690	ENSG00000255482	LOC102723838	Less	ncRNA
chr3	57774145	57774645	intron (NM_007159, intron 1 of 20)	31412	ENSG00000163681	SLMAP	Less	protein-coding
chrX	45540109	45540609	Intergenic	-50218		LOC392452	Less	pseudo
chr6	107114521	107115021	3' UTR (NM_018292, exon 11 of 11)	-28589	ENSG00000229654	LINC02526	Less	ncRNA
chr4	141664546	141665046	intron (NM_015130, intron 1 of 20)	12743	ENSG00000109436	TBC1D9	Less	protein-coding
chr2	60759038	60759538	intron (NM_022893, intron 2 of 3)	21345	ENSG00000119866	BCL11A	Less	protein-coding
chr17	34965161	34965661	TTS (NM_024864)	7399	ENSG00000278619	MRM1	Less	protein-coding
chr13	40781213	40781713	intron (NR_033877, intron 1 of 5)	13176	ENSG00000215483	LINC00548	Less	ncRNA
chr1	226884803	226885303	intron (NM_002221, intron 2 of 7)	-22284		ITPKB-IT1	Less	ncRNA
chr1	199458801	199459301	Intergenic	341325	ENSG00000231718	LINC02789	Less	ncRNA
chr16	67877346	67877846	3' UTR (NM_020457, exon 1 of 1)	1373	ENSG00000168286	THAP11	Less	protein-coding
chr5	65913155	65913655	intron (NM_001164664, intron 1 of 28)	21184	ENSG00000069020	MAST4	Less	protein-coding
chr6	134550554	134551054	intron (NM_001143676, intron 2 of 13)	-51805	ENSG00000118515	SGK1	Less	protein-coding
chr3	58321234	58321734	intron (NM_001349498, intron 1 of 17)	2451	ENSG00000168297	PXK	Less	protein-coding
chr1	17238639	17239139	Intergenic	-9537	ENSG00000058453	CROCC	Less	protein-coding
chr21	36714666	36715166	Intergenic	238146	ENSG00000159216	LOC100506403	Less	ncRNA
chr5	54081940	54082440	Intergenic	-42104		LOC102467080	Less	ncRNA
chr11	287938	288438	promoter-TSS (NM_025092)	-938	ENSG00000142102	PGGHG	Less	protein-coding
chr10	57390827	57391327	Intergenic	-3375	ENSG00000150275	PCDH15	Less	protein-coding
chr1	2177950	2178450	intron (NM_003036, intron 1 of 6)	18442	ENSG00000157933	SKI	Less	protein-coding
chr19	57988772	57989272	promoter-TSS (NM_001330613)	-8	ENSG00000197128	ZNF772	Less	protein-coding
chr20	20712537	20713037	Intergenic	-19500	ENSG00000188559	RALGAPA2	Less	protein-coding
chr4	164532996	164533496	intron (NM_017923, intron 1 of 3)	1440	ENSG00000145416	marrask.-01	Less	protein-coding
chr6	149205538	149206038	intron (NM_005715, intron 1 of 7)	80032		UST-AS1	Less	ncRNA
chr1	153868228	153868728	intron (NM_020699, intron 1 of 10)	26970	ENSG00000143614	GATAD2B	Less	protein-coding
chr17	14202806	14203306	Intergenic	-1342	ENSG00000125430	HS3ST3B1	Less	protein-coding
chr19	9394092	9394592	Intergenic	26172	ENSG00000196110	ZNF699	Less	protein-coding
chr6	116711639	116712139	intron (NM_013352, intron 1 of 5)	-19007		LOC100287467	Less	ncRNA
chr9	98620150	98620650	intron (NR_023390, intron 1 of 2)	-17573	ENSG00000182150	ERCC6L2	Less	protein-coding
chr2	217471297	217471797	intron (NR_110392, intron 1 of 3)	114		LINC01280	Less	ncRNA
chr6	149152713	149153213	intron (NM_005715, intron 1 of 7)	84797	ENSG00000111962	UST	Less	protein-coding
chr19	20163480	20163980	Intergenic	-13416	ENSG00000197124	ZNF682	Less	protein-coding
chr8	2966749	2967249	intron (NM_033225, intron 43 of 69)	-381008	ENSG00000254319	LOC101927815	Less	ncRNA
chr20	9487898	9488398	intron (NR_109957, intron 2 of 4)	-6857	ENSG00000125869	LAMP5	Less	protein-coding
chr2	221996771	221997271	Intergenic	440003	ENSG00000116106	EPHA4	Less	protein-coding
chr13	50217025	50217525	Intergenic	14632	ENSG00000152213	ARL11	Less	protein-coding
chr20	56274488	56274988	intron (NM_199171, intron 1 of 3)	-8996	ENSG00000124225	PMEPA1	Less	protein-coding
chr20	56278063	56278563	intron (NM_199171, intron 1 of 3)	6758	ENSG00000124225	PMEPA1	Less	protein-coding
chr19	53757967	53758467	promoter-TSS (NM_182609)	-61	ENSG00000197928	ZNF677	Less	protein-coding
chr7	106371519	106372019	Intergenic	-70165	ENSG00000253276	CDC7L1	Less	protein-coding
chr1	228342391	228342891	intron (NM_020435, intron 1 of 1)	5010	ENSG00000198835	GJC2	Less	protein-coding
chr8	86371458	86371958	intron (NR_121633, intron 2 of 2)	3575	ENSG00000253549	CA3-AS1	Less	ncRNA
chr12	67876984	67877484	Intergenic	-36628	ENSG00000203585	LINC02408	Less	ncRNA
chr6	140592852	140593352	Intergenic	66713	ENSG00000263514	MIR3668	Less	ncRNA
chr17	53656451	53656951	Intergenic	143524	ENSG00000166292	TMEM100	Less	protein-coding
chr6	149069539	149070039	intron (NM_005715, intron 1 of 7)	1623	ENSG00000111962	UST	Less	protein-coding
chr3	4559263	4559763	intron (NM_001099952, intron 3 of 58)	24481	ENSG00000150995	ITPR1	Less	protein-coding
chr3	33700888	33701388	promoter-TSS (NM_001207044)	33	ENSG00000163539	CLASP2	Less	protein-coding
chr20	9392916	9393416	intron (NM_001172646, intron 24 of 37)	-101839	ENSG00000125869	LAMP5	Less	protein-coding
chr20	1875709	1876209	promoter-TSS (NM_001040023)	-94	ENSG00000198053	SIRPA	Less	protein-coding
chr2	89327049	89327549	Intergenic	215415	ENSG00000265510	MIR4436A	Less	ncRNA
chr3	119999289	119999789	Intergenic	-36397	ENSG00000175697	GPR156	Less	protein-coding
chr7	23245518	23246018	Intergenic	24101	ENSG00000136243	NUP42	Less	protein-coding
chr15	47476179	47476679	5' UTR (NM_001198999, exon 1 of 20)	143	ENSG00000137872	SEMA6D	Less	protein-coding
chr1	38171217	38171717	intron (NM_018101, intron 9 of 10)	13279	ENSG00000134690	CDCA8	Less	protein-coding
chr4	183747470	183747970	Intergenic	90686	ENSG00000129187	DCTD	Less	protein-coding
chr2	69832171	69832671	intron (NM_014911, intron 2 of 21)	38750	ENSG00000115977	AAK1	Less	protein-coding
chr7	76018081	76018581	TTS (NM_080744)	-8508	ENSG00000188372	ZP3	Less	protein-coding
chr3	194800707	194801207	intron (NM_152531, intron 3 of 3)	-14360	ENSG00000233303	XXYLT1-AS1	Less	ncRNA
chr5	53906259	53906759	Intergenic	92643		LOC102467080	Less	ncRNA
chr20	62642755	62643255	intron (NM_012469, intron 11 of 20)	-22075	ENSG00000196421	C20orf204	Less	protein-coding
chr1	101728142	101728642	Intergenic	26087	ENSG00000170989	S1PR1	Less	protein-coding
chr4	164583907	164584407	intron (NM_001166373, intron 4 of 7)	-49471	ENSG00000145416	marrask.-01	Less	protein-coding
chr6	142351278	142351778	Intergenic	58408	ENSG00000135577	NMBR	Less	protein-coding
chr9	44998608	44999108	promoter-TSS (NR_144466)	-91		LOC105379807	Less	ncRNA
chr17	6656178	6656678	Intergenic	-2338	ENSG00000132530	XAF1	Less	protein-coding
chr5	148214220	148214720	Intergenic	8314	ENSG00000169252	ADR2	Less	protein-coding
chr13	99140886	99141386	intron (NM_001032296, intron 2 of 10)	33243	ENSG00000102572	STK24	Less	protein-coding
chr3	101942912	101943412	Intergenic	60613		LOC101929411	Less	ncRNA
chr3	193857047	193857547	TTS (NM_005524)	3360	ENSG00000114315	HES1	Less	protein-coding
chr8	56776167	56776667	Intergenic	-15977	ENSG00000254087	LYN	Less	protein-coding
chr15	53001883	53002383	Intergenic	-31302	ENSG00000047346	FAM214A	Less	protein-coding
chr4	69482996	69483496	Intergenic	-49001	ENSG00000197888	UGT2B17	Less	protein-coding
chr17	6323582	6324082	Intergenic	14609	ENSG00000129221	AIPL1	Less	protein-coding
chr19	22816784	22817284	promoter-TSS (NM_020855)	-92	ENSG00000229676	ZNF492	Less	protein-coding
chr20	56283962	56284462	intron (NM_199171, intron 1 of 3)	859	ENSG00000124225	PMEPA1	Less	protein-coding
chr3	101565598	101566098	intron (NM_001005474, intron 2 of 12)	-2510	ENSG00000144802	NFKBIZ	Less	protein-coding
chr9	82709111	82709611	Intergenic	119423		LINC01507	Less	ncRNA
chr3	71139368	71139868	intron (NR_146142, intron 7 of 19)	-25543	ENSG00000114861	FOXP1	Less	protein-coding
chr12	31671462	31671962	intron (NM_001308339, intron 1 of 22)	-71145	ENSG00000255867	DENND5B-AS1	Less	ncRNA
chr22	24105630	24106130	intron (NM_182520, intron 1 of 5)	672	ENSG00000169314	C22orf15	Less	protein-coding
chr9	97096841	97097341	intron (NR_033937, intron 1 of 2)	2333	ENSG00000232063	LOC100132077	Less	ncRNA
chr15	70727729	70728229	Intergenic	70288	ENSG00000259473	LINC02205	Less	ncRNA

chr17	74784012	74784512	Intergenic	-10864	ENSG00000267065	LINC02080	Less	ncRNA
chr20	9496362	9496862	promoter-TSS (NR_109957)	-967	ENSG00000225988	LAMP5-AS1	Less	ncRNA
chr4	141721846	141722346	Intergenic	-44557	ENSG00000109436	TBC1D9	Less	protein-coding
chr20	33002200	33002700	intron (NM_031483, intron 6 of 24)	51371	ENSG00000078747	ITCH	Less	protein-coding
chr9	82483446	82483946	intron (NR_121213, intron 1 of 2)	44251	ENSG00000118882	LINC01507	Less	ncRNA
chr5	153601060	153601560	intron (NM_198321, intron 1 of 11)	31017	ENSG00000164574	GALNT10	Less	protein-coding
chr12	109548816	109549316	TTS (NM_080911)	-5326	ENSG00000076555	ACACB	Less	protein-coding
chr1	24223544	24224044	intron (NM_001841, intron 1 of 1)	16058	ENSG00000118882	CNR2	Less	protein-coding
chr20	33584986	33585486	exon (NM_020884, exon 32 of 45)	-6961	ENSG00000283441	MIR499B	Less	ncRNA
chr19	18417853	18418353	3' UTR (NM_001252129, exon 4 of 4)	15783	ENSG00000130520	LSM4	Less	protein-coding
chr9	21412087	21412587	Intergenic	3221	ENSG00000120242	IFNA8	Less	protein-coding
chr6	157274579	157275079	intron (NM_001346813, intron 4 of 19)	-82732	ENSG00000049618	ARID1B	Less	protein-coding
chr16	89396832	89397332	intron (NR_045839, intron 2 of 9)	9541	ENSG000000287036	LOC100287036	Less	protein-coding
chr1	34883678	34884178	Intergenic	241420	ENSG00000142698	C1orf94	Less	protein-coding
chr7	17192325	17192825	Intergenic	-145701	ENSG00000106546	AHR	Less	protein-coding
chr6	134551331	134551831	intron (NM_001143676, intron 2 of 13)	-52582	ENSG00000118515	SGK1	Less	protein-coding
chr11	81585623	81586123	Intergenic	16005	ENSG00000264110	MIR4300	Less	ncRNA
chr12	101639138	101639638	Intergenic	-34495	ENSG00000120800	UTP20	Less	protein-coding
chr6	89153175	89153675	Intergenic	95663	ENSG00000128936	LOC101928936	Less	ncRNA
chr15	29092289	29092789	intron (NM_001365371, intron 1 of 8)	1292	ENSG00000261649	GOLGA6L7	Less	protein-coding
chr16	3911823	3912323	intron (NM_004380, intron 1 of 30)	18048	ENSG00000005339	CREBBP	Less	protein-coding
chr9	468884	469384	Intergenic	-1157	ENSG00000107104	KANK1	Less	protein-coding
chr6	32632519	32633019	exon (NM_001243961, exon 2 of 6)	1665	ENSG00000179344	HLA-DQB1	Less	protein-coding
chr6	14639420	14639920	Intergenic	-353985	ENSG00000226673	LINC01108	Less	ncRNA
chr22	19879722	19880222	intron (NR_147957, intron 10 of 16)	-37575	ENSG00000185838	GNB1L	Less	protein-coding
chr3	187676301	187676801	TTS (NR_135538)	17644	ENSG00000119911	LINC01991	Less	ncRNA
chr2	227707742	227708242	intron (NM_001167608, intron 3 of 8)	7222	ENSG00000144468	RHBD1	Less	protein-coding
chr17	41400799	41401299	Intergenic	-19987	ENSG00000236383	CCDC200	Less	protein-coding
chr15	41804035	41804535	intron (NM_206961, intron 4 of 18)	1740	ENSG00000062524	LTK	Less	protein-coding
chr18	52788891	52789391	intron (NR_110743, intron 1 of 2)	2396	ENSG00000267013	LINC01929	Less	ncRNA
chr1	101593015	101593515	Intergenic	101863	ENSG000002606465	LOC102606465	Less	ncRNA
chr8	144686879	144687379	non-coding (NR_138144, exon 7 of 7)	4616	ENSG00000104524	PYCR3	Less	protein-coding
chr19	23941515	23942015	promoter-TSS (NM_138286)	-72	ENSG00000196172	ZNF681	Less	protein-coding
chr7	108086608	108087108	intron (NM_001371166, intron 1 of 28)	9983	ENSG00000091129	NRCAM	Less	protein-coding
chr10	3710621	3711121	intron (NR_131187, intron 1 of 1)	116530	ENSG00000067082	KLIF6	Less	protein-coding
chr7	30342900	30343400	intron (NM_147128, intron 1 of 4)	-13644	ENSG00000283237	MIR550B1	Less	ncRNA
chr2	37381801	37382301	intron (NM_002759, intron 1 of 16)	2072	ENSG00000055332	EIF2AK2	Less	protein-coding
chr19	31841624	31842124	Intergenic	-1532	ENSG00000121297	TSHZ3	Less	protein-coding
chr22	46728002	46728502	Intergenic	-3046	ENSG00000100416	TRMU	Less	protein-coding
chr2	192435731	192436231	Intergenic	-106817	ENSG00000173559	NABP1	Less	protein-coding
chr10	100174683	100175183	promoter-TSS (NM_032709)	6	ENSG00000119943	PYROXD2	Less	protein-coding
chr4	69441957	69442457	Intergenic	-7962	ENSG00000197888	UGT2B17	Less	protein-coding
chr18	30340307	30340807	intron (NM_020805, intron 2 of 8)	12429	ENSG00000197705	KLHL14	Less	protein-coding
chr21	36254986	36255486	intron (NM_001754, intron 4 of 8)	5760	ENSG00000159216	RUNX1	Less	protein-coding
chr8	141608635	141609135	intron (NM_012154, intron 1 of 18)	36847	ENSG00000123908	AGO2	Less	protein-coding
chr5	157621434	157621934	Intergenic	215097	ENSG00000276778	LINC02227	Less	ncRNA
chr17	9129980	9130480	intron (NM_004822, intron 6 of 6)	-47795	ENSG00000262966	LOC101928266	Less	ncRNA
chr4	178366482	178366982	Intergenic	-3075	ENSG00000038002	AGA	Less	protein-coding
chr1	107790453	107790953	intron (NM_001113226, intron 1 of 6)	100012	ENSG00000162631	NTNG1	Less	protein-coding
chr2	27665072	27665572	promoter-TSS (NM_001321325)	74	ENSG00000157992	KRTCAP3	Less	protein-coding
chr5	53502486	53502986	intron (NM_019087, intron 1 of 4)	103667	ENSG00000185305	ARL15	Less	protein-coding
chr2	42826636	42827136	intron (NM_001282756, intron 3 of 16)	31114	ENSG00000057935	MTA3	Less	protein-coding
chr19	45575197	45575697	exon (NM_145288, exon 3 of 3)	-3438	ENSG00000142252	GEMIN7	Less	protein-coding
chr19	58570559	58571059	intron (NM_007134, intron 1 of 3)	159	ENSG00000176293	ZNF135	Less	protein-coding
chr19	58609433	58609933	promoter-TSS (NM_001145543)	47	ENSG00000121413	ZSCAN18	Less	protein-coding
chr6	32491544	32492044	intron (NM_002125, intron 1 of 5)	6270	ENSG00000198502	HLA-DRB5	Less	protein-coding
chr1	118510573	118511073	intron (NM_206996, intron 46 of 48)	38461	ENSG00000065183	WDR3	Less	protein-coding
chr19	22235016	22235516	promoter-TSS (NM_033468)	-20	ENSG00000197134	ZNF257	Less	protein-coding
chr1	908854	909354	intron (NM_032129, intron 13 of 15)	7242	ENSG00000187583	PLEKHN1	Less	protein-coding
chr16	79303302	79303802	Intergenic	331082	ENSG00000178573	MAF	Less	protein-coding
chr8	23312454	23312954	intron (NM_001128930, intron 1 of 12)	2456	ENSG00000197217	ENTPD4	Less	protein-coding
chr18	30337809	30338309	intron (NM_020805, intron 2 of 8)	14927	ENSG00000197705	KLHL14	Less	protein-coding
chr19	7764184	7764684	promoter-TSS (NM_001207019)	-69	ENSG00000104921	FCER2	Less	protein-coding
chr16	28615207	28615707	Intergenic	5192	ENSG00000196502	SULT1A1	Less	protein-coding
chr22	43514887	43515387	intron (NM_001197, intron 1 of 4)	8381	ENSG00000100290	BIK	Less	protein-coding
chr20	62673679	62674179	Intergenic	7063	ENSG00000203883	SOX18	Less	protein-coding
chr4	185330862	185331362	intron (NM_002199, intron 5 of 8)	-27652	ENSG00000249096	LINC02362	Less	ncRNA
chr3	71179719	71180219	promoter-TSS (NM_001244815)	-232	ENSG00000114861	FOXP1	Less	protein-coding
chr13	48892295	48892795	intron (NM_000321, intron 2 of 26)	14662	ENSG00000139687	RB1	Less	protein-coding
chr22	29216796	29217296	Intergenic	-20486	ENSG00000100219	XBP1	Less	protein-coding
chr12	57628655	57629155	TTS (NR_029415)	4756	ENSG00000182199	SHMT2	Less	protein-coding
chr7	1066286	1066786	non-coding (NR_134538, exon 2 of 2)	1469	ENSG00000146540	C7orf50	Less	protein-coding
chr13	108872387	108872887	intron (NM_032859, intron 1 of 1)	1897	ENSG00000139826	ABHD13	Less	protein-coding
chr10	64671714	64672214	Intergenic	-93037	ENSG00000122877	EGR2	Less	protein-coding
chr20	62674379	62674879	Intergenic	6363	ENSG00000203883	SOX18	Less	protein-coding
chr8	39815852	39816352	intron (NM_194294, intron 2 of 10)	23628	ENSG00000188676	IDO2	Less	protein-coding
chr20	62673152	62673652	Intergenic	7590	ENSG00000203883	SOX18	Less	protein-coding
chr2	135052181	135052681	intron (NM_001371457, intron 3 of 16)	40788	ENSG00000152127	MGAT5	Less	protein-coding
chr1	87527485	87527985	intron (NM_012262, intron 1 of 6)	-67713	ENSG00000267272	LINC01140	Less	ncRNA
chr19	2668262	2668762	intron (NM_052847, intron 1 of 4)	34180	ENSG00000176533	GNG7	Less	protein-coding
chr14	106994085	106994585	Intergenic	55890	ENSG00000270816	LINC00221	Less	ncRNA
chr2	173375166	173375666	Intergenic	-44666	ENSG00000105373	ITGA6-AS1	Less	ncRNA
chr19	48244305	48244805	exon (NM_014601, exon 6 of 6)	-4248	ENSG00000105373	NOP53	Less	protein-coding
chr4	26824126	26824626	Intergenic	37490	ENSG00000105373	STIM2-AS1	Less	ncRNA

chr7	75614980	75615480	TTS (NM_031925)	8683	ENSG00000189077	TMEM120A	Less	protein-coding
chr18	74765453	74765453	intron (NM_001025100, intron 3 of 3)	-36192	ENSG00000197971	MBP	Less	protein-coding
chr4	54693	55193	intron (NM_001286053, intron 1 of 7)	1717	ENSG00000250312	ZNF718	Less	protein-coding
chr10	12784795	12785295	intron (NM_001351032, intron 5 of 11)	-17693	ENSG00000221331	MIR548Q	Less	ncRNA
chr1	98314794	98315294	intron (NM_000110, intron 2 of 22)	52567	ENSG00000235777	DPYD-AS2	Less	ncRNA
chr2	90246368	90246868	Intergenic	1134734	ENSG00000265510	MIR4436A	Less	ncRNA
chr3	126707617	126708117	exon (NM_032242, exon 1 of 31)	430	ENSG00000114554	PLXNA1	Less	protein-coding
chr18	77403021	77403521	intron (NR_136643, intron 2 of 4)	36474	ENSG00000178412	LOC284241	Less	ncRNA
chr7	74596720	74597220	Intergenic	-9168	ENSG00000165178	NCF1C	Less	pseudo
chr19	58661908	58662408	promoter-TSS (NM_024620)	-2	ENSG00000181894	ZNF329	Less	protein-coding
chr18	74208029	74208529	exon (NM_001272093, exon 2 of 3)	984		C18orf65	Less	protein-coding
chr22	19879033	19879533	intron (NR_147957, intron 10 of 16)	-36886	ENSG00000185838	GNB1L	Less	protein-coding
chr22	23657811	23658311	3' UTR (NM_021574, exon 22 of 22)	-10742	ENSG00000236611	LINC02556	Less	ncRNA
chr3	71158890	71159390	intron (NR_146142, intron 7 of 19)	20597	ENSG00000114861	FOXP1	Less	protein-coding
chr11	35160421	35160921	promoter-TSS (NM_000610)	-47	ENSG00000265508	CD44	Less	protein-coding
chr5	123149879	123150379	Intergenic	269018	ENSG00000151292	CSNK1G3	Less	protein-coding
chr3	148963373	148963873	Intergenic	-24007	ENSG00000047457	CP	Less	protein-coding
chr19	57049720	57050220	promoter-TSS (NM_020828)	-347	ENSG00000196867	ZFP28	Less	protein-coding
chr8	61789443	61789943	Intergenic	90614		LOC100130298	Less	ncRNA
chr1	17598758	175987258	intron (NM_022457, intron 15 of 19)	-49332	ENSG00000252906	SCARNA3	Less	ncRNA
chr9	92096555	92097055	intron (NM_001371194, intron 1 of 15)	-2000			Less	
chr19	44905523	44906023	promoter-TSS (NM_001291491)	1	ENSG00000267508	ZNF285	Less	protein-coding
chr2	134905738	134906238	intron (NM_001371457, intron 1 of 16)	21292	ENSG00000263813	MIR3679	Less	ncRNA
chr2	8574105	8574605	Intergenic	-105806	ENSG00000236790	LINC00299	Less	ncRNA
chr2	38060509	38061009	intron (NR_110012, intron 2 of 3)	-3905	ENSG00000237803	LINC00211	Less	ncRNA
chr4	37991791	37991791	intron (NM_001253912, intron 2 of 20)	29522	ENSG00000250254	PTTG2	Less	protein-coding
chr10	110361587	110362087	Intergenic	-532786	ENSG00000229981	LINC01435	Less	ncRNA
chr21	45723655	45723655	intron (NM_002626, intron 1 of 21)	3179	ENSG00000141959	PFKL	Less	protein-coding
chr1	86046761	86047261	intron (NM_001554, intron 1 of 4)	567	ENSG00000142871	CCN1	Less	protein-coding
chr20	48763290	48763790	intron (NM_001162505, intron 1 of 5)	6720	ENSG00000240849	TMEM189	Less	protein-coding
chr18	53256892	53257392	promoter-TSS (NM_001369584)	-100	ENSG00000196628	TCF4	Less	protein-coding
chr9	137824516	137825016	Intergenic	-15008	ENSG00000085265	FCN1	Less	protein-coding
chr8	2969476	2969976	intron (NM_033225, intron 42 of 69)	-383735	ENSG00000254319	LOC101927815	Less	ncRNA
chr14	106350663	106351163	Intergenic	-24329	ENSG00000265612	MIR4539	Less	ncRNA
chr8	28269946	28270446	Intergenic	-26219	ENSG00000186918	ZNF395	Less	protein-coding
chr10	110391608	110392108	Intergenic	-562807	ENSG00000229981	LINC01435	Less	ncRNA
chr1	207262620	207263120	5' UTR (NM_000716, exon 1 of 6)	242	ENSG00000123843	C4BPB	Less	protein-coding
chr2	161258858	161258858	intron (NM_002897, intron 1 of 13)	5785	ENSG00000283734	MIR4785	Less	ncRNA
chr14	102316035	102316535	intron (NM_001352916, intron 2 of 13)	40085	ENSG00000078304	PPP2R5C	Less	protein-coding
chr20	9489432	9489932	non-coding (NR_109957, exon 2 of 5)	-5323	ENSG00000125869	LAMP5	Less	protein-coding
chr19	22034620	22035120	promoter-TSS (NM_001256651)	0	ENSG00000198521	ZNF43	Less	protein-coding
chr14	105127928	105128428	non-coding (NR_135293, exon 2 of 2)	3717	ENSG00000260792	LINC02280	Less	ncRNA
chr3	67098916	67099416	Intergenic	50435	ENSG00000163376	KBTBD8	Less	protein-coding
chr16	70195423	70195923	3' UTR (NM_017990, exon 19 of 19)	11678	ENSG00000247228	LOC400541	Less	ncRNA
chr9	117214451	117214951	intron (NM_001083885, intron 3 of 11)	-26253	ENSG00000095397	WHRN	Less	protein-coding
chr8	27207888	27208388	intron (NM_004103, intron 2 of 31)	25057	ENSG00000120899	PTK2B	Less	protein-coding
chr10	110671526	110672026	Intergenic	-842725	ENSG00000229981	LINC01435	Less	ncRNA
chr8	11677694	11678194	intron (NM_004462, intron 3 of 7)	11291	ENSG00000079459	DFD1	Less	protein-coding
chr8	49863277	49863777	Intergenic	-29539	ENSG00000019549	SNAI2	Less	protein-coding
chr22	40926114	40926614	intron (NM_001282661, intron 3 of 13)	3467	ENSG00000196588	MRTFA	Less	protein-coding
chr22	37342653	37343153	Intergenic	-18386	ENSG00000215403	LL22NC01-81G9.3	Less	ncRNA
chr5	169820908	169821408	intron (NR_109899, intron 1 of 2)	4661	ENSG00000253647	CTD-2270F17.1	Less	ncRNA
chr1	53831082	53831582	Intergenic	37427	ENSG00000225675	LINC01771	Less	ncRNA
chr19	58666302	58666802	Intergenic	-4396	ENSG00000181894	ZNF329	Less	protein-coding
chr8	2777664	2777714	Intergenic	-191223	ENSG00000254319	LOC101927815	Less	ncRNA
chr16	46777203	46777703	intron (NM_001308301, intron 1 of 11)	4803	ENSG00000140795	MYLK3	Less	protein-coding
chr1	24224061	24224561	intron (NM_001841, intron 1 of 1)	15541	ENSG00000188822	CNR2	Less	protein-coding
chr6	138229861	138230361	Intergenic	36826	ENSG00000226004	LINC02528	Less	ncRNA
chr2	182146001	182146501	intron (NR_130784, intron 3 of 4)	24128	ENSG00000266705	MIR4437	Less	ncRNA
chr8	2787472	2787972	Intergenic	-201731	ENSG00000254319	LOC101927815	Less	ncRNA
chr17	80842810	80843310	intron (NM_005993, intron 15 of 38)	-45162	ENSG00000141579	ZNF750	Less	protein-coding
chr1	226185440	226185940	intron (NM_152608, intron 1 of 6)	1354	ENSG00000143751	SDE2	Less	protein-coding
chr19	18059808	18060308	Intergenic	-2053	ENSG00000105642	KCNJ1	Less	protein-coding
chr6	208801	208801	Intergenic	-3067	ENSG00000263667	LOC285766	Less	ncRNA
chr14	95811280	95811780	Intergenic	15609	ENSG00000258630	LINC02292	Less	ncRNA
chr19	39018843	39018843	intron (NM_000540, intron 73 of 105)	-68394	ENSG00000267291	LOC105372397	Less	ncRNA
chr10	101742478	101742978	intron (NM_015221, intron 1 of 16)	26976	ENSG00000107554	DNMBP	Less	protein-coding
chr20	9488644	9489144	intron (NR_109957, intron 2 of 4)	-6111	ENSG00000125869	LAMP5	Less	protein-coding
chr8	125018852	125019352	intron (NR_040044, intron 4 of 5)	33921	ENSG00000181171	FER1L6-AS1	Less	ncRNA
chr7	75317485	75317985	intron (NM_005338, intron 1 of 30)	50524	ENSG00000127946	HIP1	Less	protein-coding
chr16	1311279	1311779	Intergenic	5459	ENSG00000095917	TPSD1	Less	protein-coding
chr3	114303673	114304173	intron (NM_001348803, intron 6 of 13)	39130	ENSG00000181722	ZBTB20	Less	protein-coding
chr6	158060827	158061327	intron (NM_153746, intron 5 of 8)	110913	ENSG00000266617	MIR3692	Less	ncRNA
chr2	64408511	64409011	Intergenic	23858	ENSG00000230923	LINC00309	Less	ncRNA
chr13	100198238	100198738	intron (NM_004800, intron 10 of 16)	-30878		LINC01039	Less	ncRNA
chr17	80938459	80938959	intron (NR_135465, intron 6 of 13)	26155	ENSG00000175711	B3GNTL1	Less	protein-coding
chr6	152636494	152636994	intron (NM_033071, intron 86 of 145)	-64921		SYNE1-AS1	Less	ncRNA
chr8	29147554	29148054	Intergenic	-27217	ENSG00000197892	KIF13B	Less	protein-coding
chr4	69419512	69420012	intron (NM_001077, intron 3 of 5)	14483	ENSG00000197888	UGT2B17	Less	protein-coding
chr10	110389774	110390274	Intergenic	-560973	ENSG00000229981	LINC01435	Less	ncRNA
chr20	62270534	62271034	TTS (NM_015894)	12196	ENSG00000232442	MHENCN	Less	ncRNA
chr1	26297775	26298275	intron (NM_000437, intron 10 of 10)	26529	ENSG00000158006	PAFAH2	Less	protein-coding
chr20	50784679	50785179	intron (NM_199426, intron 2 of 5)	23389	ENSG00000202526	ZFP64	Less	protein-coding

chr5	53969569	53970069	intron (NR_104658, intron 1 of 2)	29333	LOC102467080	Less	ncRNA
chr7	44669432	44669932	intron (NM_001165036, intron 2 of 22)	23456	ENSG00000105953	Less	protein-coding
chr6	107163882	107164382	Intergenic	20772	ENSG00000229654	Less	ncRNA
chr7	76073207	76073707	Intergenic	-17515	ENSG00000091073	Less	protein-coding
chr3	195916907	195917407	Intergenic	21114	ENSG00000163958	Less	protein-coding
chr5	116041637	116042137	Intergenic	56018	LINC02214	Less	ncRNA
chr21	36511593	36512093	Intergenic	-90248	ENSG00000159216	Less	protein-coding
chr2	161264058	161264558	promoter-TSS (NR_039946)	85	ENSG00000283734	Less	ncRNA
chr11	44747753	44748253	promoter-TSS (NM_130783)	-509	ENSG00000157570	Less	protein-coding
chr5	98310917	98311417	intron (NR_151718, intron 1 of 3)	-45749	ENSG00000153922	Less	protein-coding
chr4	69443193	69443693	Intergenic	-9198	ENSG00000197888	Less	protein-coding
chr10	126375428	126375928	intron (NM_014661, intron 3 of 4)	-16919	FAM53B-AS1	Less	ncRNA
chr6	148990601	148991101	Intergenic	-77315	ENSG00000111962	Less	protein-coding
chr22	17291922	17292422	intron (NM_001318251, intron 1 of 3)	10417	ENSG00000172967	Less	protein-coding
chr16	28921892	28922392	intron (NM_024816, intron 7 of 12)	14417	ENSG00000177548	Less	protein-coding
chr2	145273430	145273930	intron (NR_033258, intron 2 of 2)	-3501	ENSG00000238057	Less	ncRNA
chr6	41651188	41651688	TTS (NM_001167827)	45232	ENSG00000112559	Less	protein-coding
chr16	424169	424669	intron (NM_021259, intron 9 of 12)	-3881	ENSG00000086504	Less	protein-coding
chr7	1134798	1135298	intron (NM_001350968, intron 2 of 5)	7299	ENSG00000164850	Less	protein-coding
chr6	73363978	73364478	intron (NR_120503, intron 2 of 3)	24005	ENSG00000233844	Less	ncRNA
chr2	225762648	225763148	intron (NM_001363762, intron 3 of 55)	48868	ENSG00000135905	Less	protein-coding
chrX	41545990	41546490	intron (NM_003688, intron 5 of 26)	-1986	ENSG00000171659	Less	protein-coding
chr1	226067532	226068032	intron (NM_014698, intron 1 of 24)	2298	ENSG00000196187	Less	protein-coding
chr12	111216621	111217121	Intergenic	-36175	ENSG00000186298	Less	protein-coding
chr3	18713952	18714452	Intergenic	-227118	ENSG00000182568	Less	protein-coding
chr3	99722763	99723263	intron (NM_182909, intron 1 of 5)	-39771	ENSG00000264897	Less	ncRNA
chr3	15446130	15446630	Intergenic	22671	ENSG00000206562	Less	protein-coding
chr20	62605820	62606320	3' UTR (NM_080621, exon 5 of 5)	-4787	ENSG00000196700	Less	protein-coding
chr3	171159933	171160433	intron (NM_015028, intron 1 of 32)	18011	ENSG00000154310	Less	protein-coding
chr3	178883393	178883893	intron (NM_006218, intron 1 of 20)	17498	ENSG00000121879	Less	protein-coding
chr17	48849626	48850126	Intergenic	3865	ENSG00000278672	Less	ncRNA
chr2	65259632	65260132	Intergenic	-23668	ENSG00000011523	Less	protein-coding
chr17	1673358	1673858	intron (NM_001329903, intron 3 of 7)	-1357	ENSG00000132386	Less	protein-coding
chr6	119797652	119798152	intron (NR_046100, intron 1 of 5)	14565	LOC285762	Less	ncRNA
chr12	65068287	65068787	intron (NM_178169, intron 1 of 4)	-52152	ENSG00000266016	Less	ncRNA
chr2	191750492	191750992	intron (NM_001256310, intron 1 of 14)	5195	ENSG00000115419	Less	protein-coding
chr20	23344397	23344397	promoter-TSS (NM_001317019)	-853	ENSG00000125812	Less	protein-coding
chr18	53902685	53903185	Intergenic	-44442	ENSG00000206129	Less	ncRNA
chr10	306821	307321	Intergenic	81137	ENSG00000015171	Less	protein-coding
chr19	21646565	21647065	Intergenic	-19702	ENSG00000268658	Less	ncRNA
chr11	66627474	66627974	3' UTR (NM_024036, exon 2 of 2)	3189	ENSG00000173621	Less	protein-coding
chr19	3812263	3812763	intron (NM_015174, intron 14 of 18)	-10716	ENSG00000007264	Less	protein-coding
chr1	17230434	17230934	Intergenic	8209	ENSG00000207005	Less	snRNA
chr22	50814525	50815025	intron (NM_001242898, intron 2 of 23)	-31096	MIR12114	Less	ncRNA
chr13	24777916	24778416	intron (NM_153023, intron 1 of 11)	41611	ENSG00000252695	Less	ncRNA
chr14	55532847	55533347	3' UTR (NM_144578, exon 4 of 4)	14732	ENSG00000168175	Less	protein-coding
chr17	3623657	3624157	intron (NM_002208, intron 28 of 30)	-3290	ENSG00000177602	Less	protein-coding
chr8	11379081	11379581	intron (NM_001330465, intron 1 of 11)	27435	ENSG00000136573	Less	protein-coding
chr15	40397729	40398229	intron (NM_001003940, intron 3 of 4)	308	ENSG00000104081	Less	protein-coding
chr15	72307087	72307587	intron (NM_006901, intron 6 of 41)	-99262	ENSG00000166192	Less	protein-coding
chr14	35613789	35614289	intron (NM_001256678, intron 3 of 6)	22281	ENSG00000100890	Less	protein-coding
chr10	110390926	110391426	Intergenic	-562125	ENSG00000229981	Less	ncRNA
chr17	80830792	80831292	intron (NM_005993, intron 14 of 38)	-33144	ENSG00000141579	Less	protein-coding
chr21	34734391	34734891	Intergenic	37366	ENSG00000142166	Less	protein-coding
chr22	32600852	32601352	promoter-TSS (NM_001364982)	0	ENSG00000242082	Less	ncRNA
chr14	106285596	106286096	Intergenic	38498	ENSG00000264024	Less	ncRNA
chr1	16893332	16893832	intron (NM_017940, intron 25 of 28)	18173	ENSG00000263811	Less	ncRNA
chr3	183901849	183902349	TTS (NM_001311198)	-1764	ENSG00000161204	Less	protein-coding
chr5	158880150	158880650	non-coding (NR_027110, exon 5 of 7)	12884	ENSG00000253298	Less	ncRNA
chr22	24094454	24094954	TTS (NM_0133378)	-1405	ENSG00000187792	Less	protein-coding
chr12	14325929	14326429	Intergenic	-192387	ENSG00000171681	Less	protein-coding
chr20	62638256	62638756	intron (NM_012469, intron 9 of 20)	26021	ENSG00000101161	Less	protein-coding
chr10	92864196	92864696	Intergenic	48391	NUDT9P1	Less	pseudo
chr6	127600845	127601345	intron (NM_001242849, intron 1 of 2)	13112	ENSG00000118518	Less	protein-coding
chr21	16813304	16813804	Intergenic	-288699	ENSG00000155313	Less	protein-coding
chr6	119854658	119855158	Intergenic	-16065	LOC105377975	Less	ncRNA
chr1	111150454	111150954	intron (NM_001204269, intron 1 of 4)	-1724	ENSG00000177301	Less	protein-coding
chr19	41633732	41634232	non-coding (NR_135528, exon 10 of 10)	13645	ENSG00000197446	Less	protein-coding
chr19	57018818	57019318	promoter-TSS (NM_020813)	-156	ENSG00000196263	Less	protein-coding
chrX	45654266	45654766	Intergenic	-47986	ENSG00000207725	Less	ncRNA
chr8	67399003	67399503	Intergenic	-6548	ENSG00000169085	Less	protein-coding
chr4	69447905	69448405	Intergenic	-13910	ENSG00000197888	Less	protein-coding
chr4	86398661	86399161	intron (NM_001025616, intron 1 of 9)	2608	ENSG00000138639	Less	protein-coding
chr19	2429277	2429277	3' UTR (NM_032737, exon 12 of 12)	-1943	ENSG00000099800	Less	protein-coding
chr9	92951580	92952080	Intergenic	-148049	ENSG00000227555	Less	ncRNA
chr2	134992084	134992584	intron (NM_001371457, intron 1 of 16)	-19309	ENSG00000152127	Less	protein-coding
chr5	171627289	171627789	intron (NM_001171183, intron 2 of 3)	6363	ENSG00000214360	Less	protein-coding
chr19	682566	683066	3' UTR (NM_005860, exon 5 of 5)	6424	ENSG00000070404	Less	protein-coding
chr14	64636831	64637331	exon (NM_182914, exon 94 of 116)	-43781	ENSG00000054654	Less	protein-coding
chr2	65257536	65258036	Intergenic	-25764	ENSG00000011523	Less	protein-coding
chr19	56115306	56115306	TTS (NM_153219)	3402	ENSG00000171443	Less	protein-coding
chr13	48755637	48756137	Intergenic	-51455	ENSG00000136156	Less	protein-coding
chr20	9495001	9495501	promoter-TSS (NM_012261)	14	ENSG00000125869	Less	protein-coding

chr7	139354057	139354557	intron (NM_001113239, intron 2 of 14)	123490	ENSG00000064393	HIPK2	Less	protein-coding
chr20	39679380	39679880	intron (NM_003286, intron 2 of 20)	22168	ENSG00000198900	TOP1	Less	protein-coding
chr21	36511007	36511507	Intergenic	-89662	ENSG00000159216	RUNX1	Less	protein-coding
chr9	130790605	130791105	Intergenic	38744	ENSG00000171169	NAIF1	Less	protein-coding
chr5	158867229	158867729	Intergenic	25805	ENSG00000253298	LINC01845	Less	ncRNA
chr3	129814453	129814953	intron (NM_001136152, intron 5 of 7)	-1556		LINC02014	Less	ncRNA
chr6	92194802	92195302	Intergenic	-36326	ENSG00000263734	MIR4643	Less	ncRNA
chr19	50932726	50933226	3' UTR (NM_001243998, exon 5 of 5)	-3173	ENSG00000086967	MYBP2	Less	protein-coding
chr19	49219913	49220413	promoter-TSS (NM_182574)	51	ENSG00000176909	MAMSTR	Less	protein-coding
chr4	4316928	4317428	intron (NM_001330625, intron 5 of 7)	25200	ENSG00000168826	ZBTB49	Less	protein-coding
chr18	53177856	53178356	promoter-TSS (NM_001243231)	-103	ENSG00000196628	TCF4	Less	protein-coding
chr2	60774833	60775333	intron (NM_022893, intron 1 of 3)	5550	ENSG00000119866	BCL11A	Less	protein-coding
chr20	1784028	1784528	Intergenic	-23886	ENSG00000232528	LOC100289473	Less	pseudo
chr22	38369157	38369657	3' UTR (NM_006941, exon 4 of 4)	5837	ENSG00000284289	MIR6820	Less	ncRNA
chr9	134136185	134136685	exon (NM_033387, exon 2 of 2)	15462	ENSG00000126882	FAM78A	Less	protein-coding
chr4	86402553	86403053	intron (NM_001025616, intron 1 of 9)	6500	ENSG00000138639	ARHGAP24	Less	protein-coding
chr10	7454438	7454938	Intergenic	-1240	ENSG00000198879	SFMBT2	Less	protein-coding
chr10	3697644	3698144	intron (NR_131187, intron 1 of 1)	129507	ENSG00000067082	KLF6	Less	protein-coding
chr4	186322639	186323139	intron (NR_144317, intron 11 of 11)	4894	ENSG00000186352	ANKRD37	Less	protein-coding
chr5	123546101	123546601	intron (NR_125774, intron 4 of 5)	227862		LINC01170	Less	ncRNA
chr2	106776684	106777184	intron (NM_025076, intron 4 of 14)	-21597	ENSG00000115652	UXS1	Less	protein-coding
chr17	78851060	78851560	intron (NM_001163034, intron 13 of 29)	-71878	ENSG00000262833	LOC101928855	Less	ncRNA
chr8	145161755	145162255	promoter-TSS (NM_001316309)	-637	ENSG00000179698	WDR97	Less	protein-coding
chr12	133349008	133349508	3' UTR (NM_005895, exon 24 of 24)	-10840	ENSG00000176915	ANKLE2	Less	protein-coding
chr5	96307955	96308455	intron (NM_175920, intron 1 of 17)	14068	ENSG00000113441	LNPEP	Less	protein-coding
chr2	64317381	64317881	Intergenic	53923	ENSG00000197329	PELI1	Less	protein-coding
chr13	30069279	30069779	intron (NM_001366650, intron 12 of 15)	-7642		MTUS2-AS1	Less	ncRNA
chr1	146372679	146373179	promoter-TSS (NM_001278141)	-928	ENSG00000268043	NBPF12	Less	protein-coding
chr2	550776	551276	Intergenic	5221	ENSG00000225942	LINC01875	Less	ncRNA
chr4	141628466	141628966	intron (NM_015130, intron 1 of 20)	48823	ENSG00000109436	TBC1D9	Less	protein-coding
chr10	52209718	52210218	intron (NM_147156, intron 5 of 10)	173748	ENSG00000198964	SGMS1	Less	protein-coding
chr5	65893261	65893761	intron (NM_001164664, intron 1 of 28)	1290	ENSG00000069020	MAST4	Less	protein-coding
chr16	48655189	48655689	Intergenic	-11348	ENSG00000102921	N4BP1	Less	protein-coding
chr4	141728990	141729490	Intergenic	-51701	ENSG00000109436	TBC1D9	Less	protein-coding
chr10	530857	531357	intron (NM_014974, intron 2 of 36)	-143397	ENSG00000225140	LOC101930421	Less	ncRNA
chr16	46944043	46944543	intron (NM_001142466, intron 6 of 11)	-23907		SNORD148	Less	snoRNA
chr21	27333317	27333817	intron (NM_001136129, intron 8 of 14)	179141	ENSG00000142192	APP	Less	protein-coding
chr19	38182976	38183476	promoter-TSS (NM_152605)	-10	ENSG00000196381	ZNF781	Less	protein-coding
chr16	2024488	2024988	intron (NM_006453, intron 5 of 21)	2684	ENSG00000183751	TBL3	Less	protein-coding
chr10	110354029	110354529	Intergenic	-525228	ENSG00000209981	LINC01435	Less	ncRNA
chr6	155479438	155479938	intron (NM_012454, intron 6 of 25)	-58412	ENSG00000146426	TIAM2	Less	protein-coding
chr20	9491580	9492080	intron (NR_109957, intron 1 of 4)	-3175	ENSG00000125869	LAMP5	Less	protein-coding
chr19	39854330	39854830	intron (NM_018028, intron 5 of 15)	21481	ENSG00000179134	SAMD4B	Less	protein-coding
chr12	31718742	31719242	intron (NM_001308339, intron 1 of 22)	-23865	ENSG00000255867	DENND5B-AS1	Less	ncRNA
chr3	196475922	196476422	intron (NM_002577, intron 1 of 14)	9444	ENSG00000180370	PAK2	Less	protein-coding
chr11	66615181	66615681	TTS (NM_022172)	4519	ENSG00000173653	RCE1	Less	protein-coding
chr6	149156965	149157465	intron (NM_005715, intron 1 of 7)	89049	ENSG00000111962	UST	Less	protein-coding
chr10	71104252	71104752	intron (NM_033497, intron 5 of 20)	25899	ENSG00000156515	HK1	Less	protein-coding
chr5	40388298	40388798	Intergenic	-291469	ENSG00000171522	PTGER4	Less	protein-coding
chr5	773607	774107	intron (NR_147095, intron 1 of 16)	-6823	ENSG00000206077	ZDHC11B	Less	protein-coding
chr20	9495616	9496116	promoter-TSS (NR_109957)	-221	ENSG00000225988	LAMP5-AS1	Less	ncRNA
chr12	6747427	6747927	intron (NM_032489, intron 9 of 9)	-2552	ENSG00000184574	LPAR5	Less	protein-coding
chr5	76786806	76787306	intron (NM_018268, intron 1 of 12)	1085	ENSG00000164253	WDR41	Less	protein-coding
chr22	24257405	24257905	Intergenic	-16538		MIF-AS1	Less	ncRNA
chr6	70421615	70422115	Intergenic	-66111	ENSG00000124782	RREB1	Less	protein-coding
chr18	53255729	53256229	promoter-TSS (NM_001369585)	-119	ENSG00000196628	TCF4	Less	protein-coding
chr11	34675408	34675908	intron (NM_012153, intron 6 of 8)	21545	ENSG00000135373	EHF	Less	protein-coding
chr12	106669941	106670441	Intergenic	-26320	ENSG00000166046	TCP11L2	Less	protein-coding
chr3	118532240	118532740	Intergenic	-2810		LOC105374060	Less	ncRNA
chr3	186626781	186627281	Intergenic	-21284	ENSG00000073849	ST6GAL1	Less	protein-coding
chr22	24239443	24239943	intron (NR_038911, intron 1 of 2)	1424		MIF-AS1	Less	ncRNA
chr20	62602585	62603085	Intergenic	-1552	ENSG00000196700	ZNF512B	Less	protein-coding
chr3	49759336	49759836	TTS (NR_135218)	1798	ENSG00000173540	GMPPB	Less	protein-coding
chr11	64005585	64006085	exon (NM_001243733, exon 7 of 7)	-2732	ENSG00000286264	LOC114841035	Less	protein-coding
chr10	112217928	112218428	Intergenic	-39487	ENSG00000138166	DUSP5	Less	protein-coding
chr11	58818799	58819299	intron (NR_033853, intron 2 of 5)	6876	ENSG00000255240	LOC283194	Less	ncRNA
chr12	6554511	6555011	intron (NM_001242, intron 2 of 5)	710	ENSG00000139193	CD27	Less	protein-coding
chr2	145281861	145282361	promoter-TSS (NR_136320)	-100		LOC105373656	Less	ncRNA
chr18	12432	12932	intron (NR_149137, intron 1 of 2)	607		LINC02564	Less	ncRNA
chr1	100259466	100259966	Intergenic	-27525	ENSG00000156869	FRRS1	Less	protein-coding
chr3	101719483	101719983	Intergenic	60030	ENSG00000214407	LINC02085	Less	ncRNA
chr4	141649070	141649570	intron (NM_015130, intron 1 of 20)	28219	ENSG00000109436	TBC1D9	Less	protein-coding
chr6	24547463	24547963	intron (NM_001168377, intron 18 of 18)	35742	ENSG00000137261	KIAA0319	Less	protein-coding
chr5	66488939	66489439	intron (NM_005582, intron 1 of 2)	3438	ENSG00000134061	CD180	Less	protein-coding
chr7	101961742	101962242	exon (NM_001359229, exon 7 of 7)	25623	ENSG00000264675	MIR4285	Less	ncRNA
chr16	87530012	87530512	intron (NR_110943, intron 1 of 3)	2469	ENSG00000260750	LOC101928737	Less	ncRNA
chr16	89600643	89601143	intron (NM_001363850, intron 9 of 17)	26082	ENSG00000197912	SPG7	Less	protein-coding
chr14	77588824	77589324	Intergenic	18013	ENSG00000177108	ZDHC22	Less	protein-coding
chr4	141665575	141666075	intron (NM_015130, intron 1 of 20)	11714	ENSG00000109436	TBC1D9	Less	protein-coding
chr7	75617577	75618077	exon (NM_031925, exon 5 of 12)	6086	ENSG00000189077	TMEM120A	Less	protein-coding
chr20	9501792	9502292	intron (NM_012261, intron 5 of 5)	-6397	ENSG00000225988	LAMP5-AS1	Less	ncRNA
chr10	88512631	88513131	Intergenic	-3515	ENSG00000107779	BMPR1A	Less	protein-coding
chr1	1265679	1266179	promoter-TSS (NM_152228)	-731	ENSG00000169962	TAS1R3	Less	protein-coding

chr12	6553871	6554371	promoter-TSS (NM_001242)	70	ENSG00000139193	CD27	Less	protein-coding
chr17	7758493	7758993	TTS (NM_001348716)	359	ENSG00000167874	TMEM88	Less	protein-coding
chr9	96926853	96927353	Intergenic	-11136	ENSG00000199165	MIRLET7A1	Less	ncRNA
chr15	63888004	63888504	intron (NR_034080, intron 1 of 2)	-1332	ENSG00000197361	FBXL22	Less	protein-coding
chr10	127725066	127725566	intron (NM_001288973, intron 20 of 22)	-63474	ENSG00000233409	FANK1-A51	Less	ncRNA
chr20	4975152	4975652	intron (NM_203327, intron 1 of 16)	6754	ENSG00000089057	SLC23A2	Less	protein-coding
chr1	206299241	206299741	Intergenic	-11294	ENSG00000263961	RHEX	Less	protein-coding
chr12	123824939	123825439	intron (NM_018183, intron 5 of 31)	24201	ENSG00000284425	MIR8072	Less	ncRNA
chr8	35755275	35755775	Intergenic	-187687		LOC101929550	Less	ncRNA
chr1	206305999	206306499	Intergenic	-11224	ENSG00000196188	CTSE	Less	protein-coding
chr20	60486770	60487270	intron (NM_001252339, intron 8 of 14)	41698	ENSG00000284193	MIR1257	Less	ncRNA
chr2	43444864	43445364	Intergenic	8631	ENSG00000152518	ZFP36L2	Less	protein-coding
chr7	24758566	24759066	exon (NM_001127453, exon 4 of 10)	38267	ENSG00000105928	GSDME	Less	protein-coding
chr12	123599913	123600413	Intergenic	-5127	ENSG00000090975	PITPNM2	Less	protein-coding
chr4	3939435	3939935	Intergenic	17470	ENSG00000251669	FAM86EP	Less	pseudo
chr12	45969811	45970311	Intergenic	151643		LINC00938	Less	ncRNA
chr6	32493819	32494319	intron (NM_002125, intron 1 of 5)	3995	ENSG00000198502	HLA-DRB5	Less	protein-coding
chr17	20870146	20870646	intron (NR_160717, intron 4 of 4)	28517	ENSG00000233098	LOC339260	Less	ncRNA
chr1	101516355	101516855	intron (NR_109849, intron 1 of 4)	25203		LOC102606465	Less	ncRNA
chr7	155091363	155091863	intron (NM_198337, intron 2 of 3)	2025	ENSG00000186480	INSIG1	Less	protein-coding
chr19	57683478	57683978	Intergenic	-4875	ENSG00000258873	DUXA	Less	protein-coding
chr22	43507084	43507584	intron (NM_001197, intron 1 of 4)	578	ENSG00000100290	BIK	Less	protein-coding
chr16	68073660	68074160	intron (NM_001271762, intron 2 of 15)	-16140	ENSG00000182810	DDX28	Less	protein-coding
chr11	36398870	36399370	intron (NM_024841, intron 2 of 9)	1585	ENSG00000135362	PRRS1	Less	protein-coding
chr20	62671496	62671996	Intergenic	6666	ENSG00000196421	C20orf204	Less	protein-coding
chr17	75606205	75606705	Intergenic	63432		LOC100507351	Less	ncRNA
chr16	3909900	3910400	intron (NM_004380, intron 1 of 30)	19971	ENSG00000005339	CREBBP	Less	protein-coding
chr18	55503183	55503683	Intergenic	-32886	ENSG00000081923	ATP8B1	Less	protein-coding
chr2	68998345	68998845	intron (NM_001364821, intron 1 of 10)	-3447	ENSG00000163219	ARHGAP25	Less	protein-coding
chr6	7306943	7307443	intron (NR_120448, intron 2 of 6)	6239	ENSG00000124783	SSR1	Less	protein-coding
chrX	119019841	119020341	Intergenic	-9765	ENSG00000186471	AKAP14	Less	protein-coding
chr18	53090804	53091304	intron (NM_001369572, intron 5 of 19)	-1526	ENSG00000196628	TCF4	Less	protein-coding
chr3	58324118	58324618	intron (NM_001349498, intron 1 of 17)	5335	ENSG00000168297	PXK	Less	protein-coding
chr19	56879362	56879862	non-coding (NR_024056, exon 1 of 6)	122	ENSG00000240225	ZNF542P	Less	pseudo
chr12	120516610	120517110	intron (NM_001367886, intron 7 of 9)	37697	ENSG00000111737	RAB35	Less	protein-coding
chr3	45595079	45595579	Intergenic	-40914	ENSG00000144791	LIMD1	Less	protein-coding
chr7	107844688	107845188	intron (NM_001371168, intron 14 of 31)	38891			Less	
chr20	5639419	5639919	Intergenic	-48017	ENSG00000125772	GPCPD1	Less	protein-coding
chr22	24095531	24096031	intron (NM_013378, intron 1 of 1)	831	ENSG00000128218	VPREB3	Less	protein-coding
chr11	130107283	130107783	intron (NR_163265, intron 4 of 7)	77074	ENSG00000196323	ZBTB44	Less	protein-coding
chr5	157346209	157346709	Intergenic	-60306	ENSG00000113282	CLINT1	Less	protein-coding
chr2	90259450	90259950	Intergenic	1147816	ENSG00000265510	MIR4436A	Less	ncRNA
chrX	16722867	16723367	intron (NM_019857, intron 1 of 18)	7223	ENSG00000047230	CTPS2	Less	protein-coding
chr18	53087833	53088333	intron (NM_001369572, intron 5 of 19)	1445	ENSG00000196628	TCF4	Less	protein-coding
chr4	71546223	71546723	Intergenic	-7776	ENSG00000132467	UTP3	Less	protein-coding
chr4	69441374	69441874	Intergenic	-7379	ENSG00000197888	UGT2B17	Less	protein-coding
chr19	2567540	2568040	intron (NM_052847, intron 2 of 4)	-62923	ENSG00000277904	MIR7850	Less	ncRNA
chr1	94137614	94138114	intron (NM_001261409, intron 2 of 11)	9062	ENSG00000137936	BCAR3	Less	protein-coding
chr15	86086912	86087412	exon (NM_006738, exon 5 of 37)	-76019	ENSG00000170776	AKAP13	Less	protein-coding
chr4	69488296	69488796	Intergenic	47824	ENSG00000196620	UGT2B15	Less	protein-coding
chr1	2190422	2190922	intron (NM_003036, intron 1 of 6)	30914	ENSG00000157933	SKI	Less	protein-coding
chr12	101395374	101395874	intron (NM_178826, intron 7 of 26)	100200	ENSG00000151572	ANO4	Less	protein-coding
chr6	15433056	15433556	intron (NM_004973, intron 3 of 17)	184220	ENSG00000008083	JARID2	Less	protein-coding
chr16	13521654	13522154	Intergenic	-492110	ENSG00000175595	ERCC4	Less	protein-coding
chr22	42306337	42306837	exon (NM_001353438, exon 3 of 4)	4491	ENSG00000234965	SHISA8	Less	protein-coding
chr5	107970498	107970998	Intergenic	93214	ENSG00000272523	LINC01023	Less	ncRNA
chr4	90992847	90993347	Intergenic	-55587	ENSG00000184305	CCSER1	Less	protein-coding
chr6	149092933	149093433	intron (NM_005715, intron 1 of 7)	25017	ENSG00000111962	UST	Less	protein-coding
chr11	34673600	34674100	intron (NM_012153, intron 6 of 8)	19737	ENSG00000135373	EHF	Less	protein-coding
chr4	165898607	165899107	promoter-TSS (NM_001012414)	-48	ENSG00000183439	TRIM61	Less	protein-coding
chr7	75610428	75610928	intron (NM_001367562, intron 7 of 16)	13235	ENSG00000189077	TMEM120A	Less	protein-coding
chr19	20355106	20355606	Intergenic	77333	ENSG00000256229	ZNF486	Less	protein-coding
chr5	54050720	54051220	Intergenic	-10884		LOC102467080	Less	ncRNA
chr10	110392974	110393474	Intergenic	-564173	ENSG00000229981	LINC01435	Less	ncRNA
chr12	106162294	106162794	Intergenic	61992	ENSG00000257859	CASC18	Less	ncRNA
chr19	22235582	22236082	intron (NM_001316998, intron 1 of 1)	546	ENSG00000197134	ZNF257	Less	protein-coding
chr5	158582936	158583436	Intergenic	51470	ENSG00000145860	RNF145	Less	protein-coding
chr3	71354944	71355444	TTS (NR_126463)	-1272	ENSG00000114861	FOXP1	Less	protein-coding
chr4	86580783	86581283	intron (NM_001025616, intron 2 of 9)	-62588	ENSG00000266421	MIR4451	Less	ncRNA
chr6	149080766	149081266	intron (NM_005715, intron 1 of 7)	12850	ENSG00000111962	UST	Less	protein-coding
chr2	65608534	65609034	intron (NM_181784, intron 1 of 5)	-14872	ENSG00000198369	SPRED2	Less	protein-coding
chr7	44807869	44808369	3' UTR (NM_001300959, exon 18 of 18)	12332	ENSG00000122515	ZMIZ2	Less	protein-coding
chr3	14470648	14471148	intron (NM_001134367, intron 10 of 22)	26792	ENSG00000131389	SLC6A6	Less	protein-coding
chr18	53255111	53255611	promoter-TSS (NM_001369585)	62	ENSG00000196628	TCF4	Less	protein-coding
chr5	10630788	10631288	intron (NM_001164440, intron 2 of 3)	66856	ENSG00000164236	ANKRD33B	Less	protein-coding
chr1	7887141	7887641	exon (NM_016831, exon 18 of 22)	25734	ENSG00000049247	UTS2	Less	protein-coding
chr3	57745335	57745835	intron (NM_007159, intron 1 of 20)	2602	ENSG00000163681	SLMAP	Less	protein-coding
chr4	69438686	69439186	Intergenic	-4691	ENSG00000197888	UGT2B17	Less	protein-coding
chr13	99703273	99703773	intron (NM_015296, intron 1 of 55)	35425	ENSG00000088387	DOCK9	Less	protein-coding
chr11	34674196	34674696	intron (NM_012153, intron 6 of 8)	20333	ENSG00000135373	EHF	Less	protein-coding
chr12	93966983	93967483	intron (NM_001270471, intron 1 of 1)	782	ENSG00000120833	SOCS2	Less	protein-coding
chr6	41694597	41695097	intron (NM_001167827, intron 1 of 8)	6501		MIR10398	Less	ncRNA
chr5	34244720	34245220	promoter-TSS (NR_146599)	-141	ENSG00000082196	C1QTNF3	Less	protein-coding
chr6	32472351	32472851	Intergenic	25463	ENSG00000198502	HLA-DRB5	Less	protein-coding

chr6	158235881	158236381	Intergenic	-8147	ENSG00000130340	SNX9	Less	protein-coding
chr22	48467596	48468096	Intergenic	-202330	ENSG00000266508	MIR3201	Less	ncRNA
chr22	17306048	17306548	Intergenic	-2066	ENSG00000229027	HSFY1P1	Less	pseudo
chr2	234776676	234777176	intron (NR_024322, intron 1 of 1)	129	ENSG00000224287	MSL3P1	Less	pseudo
chr2	134882782	134883282	intron (NM_001371457, intron 1 of 16)	-1664	ENSG00000263813	MIR3679	Less	ncRNA
chr5	123392788	123393288	Intergenic	381175		LINC01170	Less	ncRNA
chr3	193923263	193923763	intron (NR_125403, intron 1 of 2)	583	ENSG00000225742	LINC02036	Less	ncRNA
chr3	4870648	4871148	intron (NM_001099952, intron 57 of 58)	77288	ENSG00000235831	BHLHE40-AS1	Less	ncRNA
chr5	90520802	90521302	Intergenic	89167	ENSG00000248323	LUCAT1	Less	ncRNA
chr19	22817391	22817891	intron (NM_020855, intron 1 of 3)	515	ENSG00000229676	ZNF492	Less	protein-coding
chr7	102481641	102482141	intron (NM_001287150, intron 16 of 18)	-71556	ENSG00000128606	LRRC17	Less	protein-coding
chr3	33086211	33086711	intron (NM_001135602, intron 7 of 12)	51863	ENSG00000170266	GLB1	Less	protein-coding
chr12	132556157	132556657	intron (NM_015409, intron 51 of 52)	-12421	ENSG00000185684	EP400P1	Less	pseudo
chr13	99216459	99216959	intron (NM_001032296, intron 1 of 10)	12696	ENSG00000102572	STK24	Less	protein-coding

Supplemental Table 6

	Molecule Type	p-value of overlap	Target Molecules in Dataset	Mechanistic Network
Upstream Regulator	transcription regulator	5.57E-05	BDNF,DIO2,PAX6,RAX,ROBO2,SIX6	© 2000-2020 QJAGEN. All rights reserved.
LHX2	other	7.74E-05	PROX1,SERPINE1,TGFBR3	
GIPC1	transcription regulator	3.72E-04	HOXD10,HOXD9,PROX1	
HOXD8	transcription regulator	6.24E-04	AXIN2,BCL2L11,BMP1,BMP4,C15orf48,CD82,CDH2,CNR1,GATA4,GBX2	
EZH2	chemical drug	7.32E-04	PTK2,SERPINE1	
ibilone	chemical - endogenous non-mammalian	8.42E-04	ACTA2,BDNF,DUSP6,EGR2,mir-329,NPTX2,PFKFB3	
bicuculline	enzyme	9.99E-04	AXIN2,BMP4,GATA4	
RG519	other	9.99E-04	KIR2DL1,KIR2DL3,KLRCL,KLRD1	
MLANA	transcription regulator	1.07E-03	BDNF,GATA4,GBX2,IL1R1,LHX8,MUC2,MUC5B,PAX6,PCDH11,PCDH12	
CTCF	transcription regulator	1.15E-03	GATA4,HAND1,HOXAS,HOXA7,HOCX5,NKX2-2,SERPINA1	7 (2)
RNF2	transcription regulator	1.20E-03	GBX2,HAND1,PLAGL1,POU3F3	
DLX6	transcription regulator	1.31E-03	ABHD12B,ACTA2,AXIN2,BCL2L11,BDNF,BMP1,BMP4,CD47,CDH2,CNR1	42 (2)
CTNBN1	transcription regulator	1.47E-03	GBX2,POU3F3,SERPINE1	
DLX1	enzyme	1.84E-03	CDH2,EBF2,HOXA9,NKX2-2,OLIG1,PRDM16,SERPINE1	
PRMT1	transcription regulator	1.96E-03	AFF3,AXIN2,BCL2L11,CD86,EGR2,ERG,FGR,KLRCL1,LCE3D,MMP25	
PRDM1	transcription regulator	2.06E-03	GATA4,HOXA7,NKX2-2	
RYBP	chemical reagent	2.16E-03	AXIN2,CD47	
ICRT14	chemical drug	2.16E-03	ACTA2,SERPINE1	
TT1-101	other	2.21E-03	DLX1,EN1,GSX1,SP9	
PPP4R3A	transcription regulator	2.28E-03	ACTA2,AXIN2,CDH2,FLRT2,OLIG1,PTK2,SELP1G,SERPINE1,ST3GAL5,TNFSF11	
RUNX2	microRNA	2.29E-03	ACTA2,CD47,CDH2,CLDN3,ERRF1,GATA4,HOXAS,PCDH10,PIPSK1A,PTK2	
mir-8	transcription regulator	2.64E-03	CHD9,HOXAS,HOXA7,HOXA9	
PBX3	transcription regulator	2.80E-03	BMP4,DED2,DXH34,HDACS,HSPB1,MAPT,PRAME,RA051B,RPL22,TMPRSS3	
HSF1	group	3.50E-03	BMP4,CTNNA2,DIO2,IL1R1,SERPINA1,SERPINA3,SERPINAS,SERPINE1	42 (2)
TCF	chemical drug	3.62E-03	ACTA2,SERPINE1,SOD1	
tetrathiomolybdate	enzyme	3.96E-03	CNR1,FBXO32,GATA4,HAND1,HOCX12,HOXD10,LAMC2,PAX6,PCDH10,UHMK1	26 (2)
SUZ12	other	4.23E-03	BMP4,TNFSF11	
LRP4	other	4.23E-03	BDNF,CD86	
MZB1	chemical reagent	4.23E-03	BMP1,BMP4	
PMX 205	chemical drug	4.23E-03	BDNF,HDACS	
lamotrigine	transcription regulator	4.61E-03	DLX1,GSX1,PAX6	
GSX2	other	4.61E-03	ACTA2,BMP4,PAX6	
FRS2	group	4.73E-03	AB16,FEM1C,GYS1,LZTF11,NUDT13,PAM,PGAM1,RIPPLY3,SERPINE1,UULBP1	
EGLIN	chemical drug	4.76E-03	B3GALT5,BCL2L11,BDNF,BMP4,BRCA2,CD226,CD86,CDH2,CRMP1,EIF4E	
decitabine	chemical reagent	4.79E-03	APBA2,BDNF,MAPT,SERPINE1,SOD1	
M344	chemical reagent	4.86E-03	ACTA2,COL8A2,DUSP6,FZD7,GREM1,LBH,MLPH,PCDH10,STK38L,TP5311	
molybdenum disulfide	transcription regulator	5.32E-03	HOXAS,HOXA7,HOXA9,RPL22,SERPINE1	
ASXL1	transcription regulator	5.54E-03	BCL2L11,BFAR,BMP4,CASP10,CDH2,DLX1,EN1,GATA4,GBX2,HAND1	
POU5F1	transcription regulator	5.69E-03	GBX2,HAND1,PLAGL1,POU3F3	
DLX5	enzyme	5.75E-03	KIR2DL1,KIR2DL3,KLRCL,KLRD1	
TYR	chemical drug	5.89E-03	BDNF,CLDN3,PHB,SLC6A5,YWHAQ	
ouabain	chemical - other	5.92E-03	ANLN,B3GALT5,BDNF,CCDC126,CLCK2,DUSP6,EGR2,HDACS,LBH,NRN1	
2-amino-5-phosphonvaleric acid	other	6.80E-03	BRCA2,HIF3A,LIN28B,MAP2K6,SERPINE1,TJP2,TMPRSS3	
MACROH2A1	other	6.93E-03	AXIN2,TNFSF11	
FAF1	transcription regulator	6.93E-03	MAPT,NRN1	
ELAVL4	chemical drug	6.93E-03	BDNF,GRIN2B	
flenprodil	other	7.05E-03	NKX2-2,NNAT,PAX6	
Nkx2-2os	microRNA	7.05E-03	ERG,HOXA7,HOXA9	
mir-196	transmembrane receptor	7.05E-03	ACTA2,CD86,PTK2	
NRP1	group	7.05E-03	ACTA2,CDH2,SERPINE1	
Smad2/3/4	complex	7.85E-03	GATA4,HAND1,HOXD10,OLIG1,PCDH10	
PRC2	transcription regulator	8.22E-03	BMP4,EN1,GBX2,NKX2-2,PAX6,THBS4	
OTX2	transcription regulator	8.50E-03	NKX2-2,PAX6,YAP1	
NEUROG2	enzyme	8.60E-03	HOXAS,HOXA7,HOXA9,HOCX5,HOXD10	
KAT6A	growth factor	8.66E-03	ACTA2,BMP1,BMP4,CAV2,CDH2,FZD7,GREM1,NUDT13,PAX6,PRDM16	
BMP7	kinase	9.32E-03	BCL2L11,BMP4,CD86,EGR2,NPTX2,SOD1,TNFSF11	
MAPK3	transcription regulator	1.01E-02	CASP10,HSPB1,SERPINE1	
DAXX	other	1.02E-02	CDH2,SERPINE1	
LINC00842	other	1.02E-02	BCL2L11,TNFSF11	
MN1	peptidase	1.02E-02	ACTA2,PTK2	
OTUD7B	other	1.02E-02	DIO2,PRDM16	
BGLAP	transcription regulator	1.02E-02	HOXD10,HOXD9	
HOXD9	transporter	1.02E-02	CLDN3,MUC5B	
AQP5	other	1.02E-02	RPLP1,RPLP2	
GNRH2	other	1.02E-02	CDH2,SERPINE1	
NET1	cytokine	1.03E-02	ACTA2,AXIN2,BMP4,EIF4E,LBH,MRAS,NKX2-2,SERPINE1,TERC	
WNT1	enzyme	1.17E-02	EGR2,GATA4,HOXA9,PAX6	
TET1	enzyme	1.17E-02	CNTN4,GRIN2B,MTMR7,ROBO2	
SETDB1	enzyme	1.17E-02	GATA4,HAND1,NKX2-8,PAX6	
AHCY	G-protein coupled receptor	1.19E-02	ACTA2,BMP4,GATA4	
FZD8	enzyme	1.21E-02	ACTA2,BDNF,EGR2,OLIG1,SPI1	
DGCR8	other	1.21E-02	BMP4,EGR2,LAMC2,SERPINE1,TGFBR3	
TIMP3	other	1.30E-02	BCL2L11,MTERF1,PRDM16,SERPINE1	
FLCN	transcription regulator	1.30E-02	CHD9,HOXAS,HOXA7,HOXA9	
MES1	growth factor	1.31E-02	ACTA2,AXIN2,LAMC2,SERPINE1,TGFBR3	
CCN5	transcription regulator	1.37E-02	AKT3,BDNF,CA10,CALM1,CDH2,CIART,CRMP1,CTNNA2,DIO2,EGR2	
CREB1	other	1.39E-02	HOXAS,HOXA9,HOXD10	
EMD	peptidase	1.39E-02	ACTA2,CDH2,GRIN2B,MDM4,NR2E1,PAX6,SLC45A2	
ADAM10	group	1.40E-02	BDNF,GRIN2B	
dopamine D1 receptor	G-protein coupled receptor	1.40E-02	DIO2,PRDM16	
GPRC6A	other	1.40E-02	CDH2,PFKFB3	
BCAR4	chemical drug	1.40E-02	BDNF,PTK2	
penfluridol	kinase	1.40E-02	LHX8,SERPINE1	
WNK1	kinase	1.40E-02	ERRF1,PIPSK1A	
PIPSK1C	G-protein coupled receptor	1.40E-02	BDNF,EGR2	
ADCYAP1R1	complex	1.40E-02	HOXA-AS3,HOXA11-AS	
Cohesin	chemical drug	1.42E-02	CNTN4,EXOC6B,GPC6,NNAT,PDE4B,PTK2,RBFOX1,RCBTB2,ROBO2,TIAM1	
topotecan	growth factor	1.43E-02	ACTA2,BMP4,CD86,EGR2,KCNQ1OT1,LIPG,SERPINE1,TGFBR3	
TGFB2	growth factor	1.47E-02	BMP4,DLX1,EN1,ERRF1,GBX2,LHX8,PAX6	
FGF8	chemical drug	1.52E-02	PDHA2,PFKFB3,PGAM1,SERPINE1,TJP2	
salirasib	enzyme	1.54E-02	AFF3,BCL2L11,CBR1,FCN1,GATA4,IL1R1,PAX6,RAB44,RNF144A	
TET2	transcription regulator	1.58E-02	ACTA2,HPSE,PTK2,WWTR1	
ETV4	chemical drug	1.58E-02	BCL2L11,BDNF,CD86,PDE4B	
rolipram	transcription regulator	1.60E-02	PDE4B,PDE4C,PDE7A	
NONO	enzyme	1.68E-02	AXIN2,BCL2L11,BDNF,CD226,CD86,EGR2,KCNQ1OT1,LIPG,RAD23A,RBFOX1	
DICER1	complex	1.83E-02	CSNK2A1,SERPINA3,VP54A	
ACHR	microRNA	1.83E-02	ACTA2,BDNF,BRCA2,CDH2,DUSP6,GMNN,LIN28B,NR2E1,PLAGL1,SERPINE1	
let-7	other	1.84E-02	ARL2,HOXA9	
UCA1	transcription regulator	1.84E-02	BCL2L11,CASP10	
ARID3B	growth factor	1.84E-02	BMP4,GREM1	
LTBP4	other	1.84E-02	PCDH11,PCDH8	
STAG1	chemical drug	1.84E-02	BDNF,HDACS	
levetiracetam	complex	1.84E-02	CDYL,GBX2	
OCT4-NANOG	peptidase	1.84E-02	MDM4,SERPINE1	
USP2	other	1.84E-02	ACTA2,TGFBR3	
SDC2	transcription regulator	1.84E-02	HOXA7,HOXA9	
PSIP1	other	1.84E-02	AXIN2,FZD7	
CCDC80	other	1.84E-02	ACTA2,PTK2	
ACTA2	other	1.84E-02	ACTA2,PTK2	

SERPINE1	other	1.84E-02	CDH2,SERPINE1
cinnamon powder	chemical reagent	1.84E-02	GY51,MAPT
NROB2	ligand-dependent nuclear receptor	1.99E-02	BAA7,CD86,CYP7B1,ESRRG,mir-329,mir-541,SERPINE1
DOT1L	phosphatase	2.07E-02	HOXA9,SPI1,UBB
ITGA9	other	2.07E-02	ACTA2,CDH2,TNFSF11
CCN3	growth factor	2.07E-02	BMP4,GREM1,SERPINE1
TGFB	group	2.32E-02	ACTA2,TNFSF11
cytidyl-3'-5'-guanosine	chemical reagent	2.32E-02	BCL2L1,CD86
CPEB4	other	2.32E-02	GPC6,RBFOX1
AGRN	other	2.32E-02	BMP4,MAPT
WNT5B	other	2.32E-02	ACTA2,PROX1
CDKN2B	transcription regulator	2.32E-02	CD86,SERPINE1
PPP1CA	phosphatase	2.32E-02	CDH2,WWTR1
SLC30A3	transporter	2.32E-02	BDNF,GRIN2B
2-oxoglutaric acid	chemical - endogenous mammalian	2.32E-02	ACTA2,DIO2
TGFA	growth factor	2.38E-02	ERRF1,LAMC2,MUC2,PLAGL1,SERPINA1,SERPINE1
NANOG	transcription regulator	2.43E-02	DLX1,EN1,GATA4,GBX2,NKX2-2,PAX6,PRDM14,RIPPLY3
tetradecanoylphorbol acetate	chemical drug	2.62E-02	APRT,BDNF,CAV2,CD226,DIO2,DUSP6,EGR2,EIF4E,EN1,ERRF1
STK4	kinase	2.62E-02	BCL2L1,WWTR1,YAP1
SIX5	transcription regulator	2.62E-02	EBF2,PTN,TWIST2
HE11	transcription regulator	2.62E-02	ACTA2,GATA4,PROX1
1-methyl-4-phenylpyridinium	chemical toxicant	2.62E-02	BCL2L1,MAPT,SOD1
SB 290157	chemical reagent	2.62E-02	BMP1,BMP4,CD86
PP2A/G1879 tyrosine kinase inhibitor	chemical - kinase inhibitor	2.64E-02	BCL2L1,CDH2,FGFR,HOXD10,MAPT,SERPINE1
spironolactone	chemical drug	2.64E-02	BMP4,NR3C2,PRDM16,SLC22B1,ULBP1,ULBP2
MSX2	transcription regulator	2.64E-02	BMP4,CDH2,EGR2,PROX1
NKX2-5	transcription regulator	2.64E-02	ACTA2,DIO2,GATA4,HAND1
FOXP3	transcription regulator	2.68E-02	AKT3,ANLN,BCL2L1,CD101,CD226,DUSP6,mir-1206,NRN1,PLAGL1,TLR10
9-hydroxy-(5)-10,12-octadecadienoic acid	chemical - endogenous mammalian	2.71E-02	SERPINE1
ergosterol	chemical - endogenous mammalian	2.71E-02	BCL2L1
ORG 34517	chemical drug	2.71E-02	NR3C2
TRIM72	enzyme	2.71E-02	ACTA2
Becn2	other	2.71E-02	CNR1
Hdac-Rcor-Rest-Sin3a	complex	2.71E-02	BDNF
diacyl lipopeptide	chemical - other	2.71E-02	TNFSF11
selective serotonin reuptake inhibitor	chemical drug	2.71E-02	BDNF
miocamycin	chemical drug	2.71E-02	MUC2
loxoprofen	chemical drug	2.71E-02	MUC2
Morrbid	other	2.71E-02	BCL2L1
uridine triacetate	chemical drug	2.71E-02	BDNF
EMC2	other	2.71E-02	TRPC6
MSMB	other	2.71E-02	LIN28B
PRPF31	other	2.71E-02	MDM4
MCAT	enzyme	2.71E-02	LY96
IDH3B	enzyme	2.71E-02	PFKFB3
KREMEN1	other	2.71E-02	AXIN2
HOXD1	transcription regulator	2.71E-02	HOXD10
CAS4	other	2.71E-02	PTK2
TMPPSS2	peptidase	2.71E-02	ERG
MARCHF6	enzyme	2.71E-02	DIO2
B3GNT6	enzyme	2.71E-02	MUC2
USP9Y	peptidase	2.71E-02	MUC2
B3GALT1	enzyme	2.71E-02	B3GALT5
CARF	transcription regulator	2.71E-02	BDNF
Pantr2	other	2.71E-02	POU3F3
CDCA4	other	2.71E-02	GMNN
NLRP6	G-protein coupled receptor	2.71E-02	IL22RA2
CCDC47	other	2.71E-02	TRPC6
HOXD13	transcription regulator	2.71E-02	HOXD9
CLSTN1	other	2.71E-02	GRIN2B
EMC6	other	2.71E-02	TRPC6
Chr	group	2.71E-02	BDNF
black cohosh extract	chemical drug	2.71E-02	SERPINE1
USP39	peptidase	2.71E-02	MDM4
ginsenoside Rh1	chemical - endogenous non-mammalian	2.71E-02	BDNF
PRCC	other	2.71E-02	SERPINE1
DYNLRB1	other	2.71E-02	SERPINE1
BSN	other	2.71E-02	BDNF
MYLFP	other	2.71E-02	ACTA2
CXCR5	G-protein coupled receptor	2.71E-02	TNFSF11
PRL-3 inhibitor 1	chemical reagent	2.71E-02	ULBP2
KIF5A	transporter	2.71E-02	GABRB2
TSTA3	enzyme	2.71E-02	ACTA2
UBE2K	transcription regulator	2.71E-02	UBD
miR-1258 (miRNAs w/seed GUUAGGA)	mature microRNA	2.71E-02	HPSE
mir-1258	microRNA	2.71E-02	HPSE
miR-2861 (and other miRNAs w/seed GGGCCUG)	mature microRNA	2.71E-02	HDC5
miR-571 (miRNAs w/seed GAGUUGC)	mature microRNA	2.71E-02	GMNN
miR-1275 (and other miRNAs w/seed UGGGGGA)	mature microRNA	2.71E-02	HAND2,AS1
KREMEN2	other	2.71E-02	AXIN2
IFI6	other	2.71E-02	BCL2L1
HCN1	ion channel	2.71E-02	BDNF
3,4-diaminopyridine	chemical drug	2.71E-02	BDNF
GPRASP1	transporter	2.71E-02	CNR1
WDR61	other	2.71E-02	HOXA9
ITH5	other	2.71E-02	ACTA2
MYT1L	transcription regulator	2.71E-02	RBFOX1
GRIN2A	ion channel	2.71E-02	BDNF
SEM1	peptidase	2.71E-02	BRCA2
KIF17	transporter	2.71E-02	GRIN2B
WDR830S	other	2.71E-02	TRPC6
RXF1	G-protein coupled receptor	2.71E-02	ACTA2
ADAM19	peptidase	2.71E-02	EGR2
GDF10	growth factor	2.71E-02	SERPINE1
alpelisib	chemical drug	2.71E-02	BCL2L1
UBL5	other	2.71E-02	MDM4
NTSR1	G-protein coupled receptor	2.71E-02	BDNF
EEF2	translation regulator	2.71E-02	BDNF
UNC0224	chemical reagent	2.71E-02	BDNF
diacetylbis(4-methylthiosemicarbazonato)copper(II)	chemical reagent	2.71E-02	SOD1
NHP2	other	2.71E-02	TERC
GDC-0623	chemical drug	2.71E-02	BCL2L1
annonacin	chemical reagent	2.71E-02	MAPT
ralaniten	chemical reagent	2.71E-02	UBE2C
methaneselenol	chemical - endogenous non-mammalian	2.71E-02	ULBP2
AZ10606120	chemical reagent	2.71E-02	CD86
atomoxetine	chemical drug	2.71E-02	BDNF
zolidem	chemical drug	2.71E-02	BDNF
rivastigmine	chemical drug	2.71E-02	BDNF
SU9597	chemical - kinase inhibitor	2.71E-02	PAX6

SDM25N	chemical reagent	2.71E-02	CD86
GSK2656157	chemical - kinase inhibitor	2.71E-02	BDNF
N-acetylsertotonin	chemical - endogenous mammalian	2.71E-02	BDNF
myrcene	chemical - endogenous non-mammalian	2.71E-02	SOD1
cineole	chemical drug	2.71E-02	SOD1
SMAD3-EP300	complex	2.71E-02	SERPINE1
cyclololeucine	chemical toxicant	2.71E-02	PHB
fucose	chemical - endogenous mammalian	2.71E-02	ACTA2
Cr3+	chemical reagent	2.71E-02	TNFSF11
3,4,5,3',4'-pentachlorobiphenyl	chemical toxicant	2.78E-02	AKR1A1,BDNF,BMP4,PTGFR,SLCO2B1,SLCO3A1
cercosporin	chemical - endogenous non-mammalian	2.85E-02	ACTA2,AXIN2
SPRY4-IT1	other	2.85E-02	CDH2,CLDN3
MEOX1	transcription regulator	2.85E-02	BMP4,GATA4
RELN	peptidase	2.85E-02	BDNF,GRIN2B
GBX2	transcription regulator	2.85E-02	EGR2,EN1
HOXA1	transcription regulator	2.85E-02	EGR2,GATA4
midazolam	chemical drug	2.85E-02	BDNF,CD86
CGP 42112	chemical reagent	2.85E-02	MAPT,UBE2V2
EED	transcription regulator	2.85E-02	BDNF,GATA4,HOXC12,OLIG1
pituitary adenylate cyclase-activating polypeptide	biologic drug	2.85E-02	AXIN2,DUSP6,ERRF1,SEMA6D
EBF2	transcription regulator	2.92E-02	DIO2,NTM,THBS4
LRPAP1	other	2.92E-02	ACTA2,SERPINA3,SERPINE1
kainic acid	chemical toxicant	3.04E-02	BDNF,CIART,CNR1,CRMP1,EGR2,ERRF1,GABRB2,NPTX2,NR3C2
MET	kinase	3.07E-02	BMP1,CDH2,FBXO32,HSPB1,MPP7,ONECLT2,SLCO3A1,SOD1
SNAI2	transcription regulator	3.13E-02	BCL2L11,BRCA2,CDH2,EGR2,TWIST2
tretinoin	chemical - endogenous mammalian	3.19E-02	AKR1A1,APBA2,B3GALT5,BMP4,CBR1,CD101,CD47,CD82,CD86,CDH2
tetrachlorodibenzodioxin	chemical toxicant	3.20E-02	AKR1A1,BDNF,BMP4,CBR1,CD86,ESRRG,FZD7,HDAC5,HOXD10,KCNA3
TGFBR1	kinase	3.22E-02	ACTA2,BMP4,CD86,EGR2,MUC2,SERPINE1
PHF1	transcription regulator	3.23E-02	HOXA9,HOXD10,HOXD9
AZGP1	transporter	3.23E-02	BMP4,FBXO32,GYS1
K-252	chemical drug	3.23E-02	BDNF,HPSE,NRN1
EFNA5	kinase	3.31E-02	BDNF,DUSP6,NTM,UBE2C
PCGF2	transcription regulator	3.31E-02	CDH2,GATA4,HOXA7,NKX2-2
INS	other	3.37E-02	ACTA2,EGR2,EIF4E,ERRF1,PRDM16,SDHC,SOD1,SSTR1,YAP1
EPHB1	kinase	3.42E-02	EGR2,SERPINE1
RLIM	enzyme	3.42E-02	CDH2,SERPINE1
HAS2	enzyme	3.42E-02	ACTA2,PTK2
TBX1	transcription regulator	3.42E-02	BMP4,GBX2
ATP7A	transporter	3.42E-02	PAM,PTK2
ENTPD1	enzyme	3.42E-02	CD86,SERPINE1
carbamazepine	chemical drug	3.42E-02	BDNF,HDAC5
rosmarinic acid	chemical - endogenous non-mammalian	3.42E-02	ACTA2,BDNF
scopolamine	chemical drug	3.42E-02	BDNF,MAPT
MYC	transcription regulator	3.47E-02	AEBP2,BCL2L11,BDNF,CASP10,CD47,CD86,CDH2,DNPH1,DUSP6,EGR2
bucladesine	chemical toxicant	3.48E-02	AXIN2,BDNF,CD86,CDH2,DIO2,DUSP6,EGR2,ERRF1,PDE4B,PDE4C
MAPK9	kinase	3.49E-02	BCL2L11,BMP1,BMP4,DIO2,EIF4E,MUC5B,NR3C2,SELPLG,SERPINA1
POLR2A	enzyme	3.50E-02	EGR2,GATA4,HOXA9,UHMK1,YAP1
ZFX3	transcription regulator	3.54E-02	RPL37,RPLP2,SERPINA1,SIX6,SP9,VAX1
HOTAIR	other	3.55E-02	ACTA2,CDH2,LAMC2,PCDH10
UTP	chemical - endogenous mammalian	3.57E-02	CDH2,KCNA4,SERPINE1
NKX2-2-AS1	other	3.57E-02	EBF2,PHYH,PRDM16
DTX1	transcription regulator	3.57E-02	CD82,DUSP6,UHMK1
IL15	cytokine	3.64E-02	BCL2L11,CD226,CD86,EGR2,EIF4E,IL1R1,IL21R,KIR2DL1,KIR2DL3,KLRK1,KLRD1
FOXA1	transcription regulator	3.72E-02	ACTA2,EN1,HNF4G,MUC2,MUC5B,NPTX2,PAM,PAX6,SOD1
SPHK1	kinase	3.80E-02	ACTA2,BCL2L11,MAP2K6,SERPINE1
SLC13A1	transporter	3.88E-02	GPC6,HSPB1,NRN1,RAD51B,RPN1,TFG
collagen type I (family)	group	3.92E-02	CDH2,SERPINE1,TWIST2
beraprost	chemical drug	4.04E-02	CD86,SOD1
WWC1	transcription regulator	4.04E-02	CDH2,YAP1
LAMTOR5	other	4.04E-02	EIF4E,LIN28B
STAR	transporter	4.04E-02	CD86,NR1H2
CCR7	G-protein coupled receptor	4.04E-02	BCL2L11,CD86
SH3BP1	other	4.04E-02	CD86,SERPINE1
CDH5	other	4.04E-02	CDH2,TIAM1
ELN	other	4.04E-02	CD86,PTK2
Col17a1	other	4.04E-02	AXIN2,SERPINA1
bisphenol A diglycidyl ether	chemical reagent	4.04E-02	ACTA2,SERPINE1
PFS43	chemical - kinase inhibitor	4.05E-02	ACTA2,DIO2,FGR,XIRP1
DK1	growth factor	4.11E-02	ACTA2,AXIN2,BDNF,BMP4,LBH
PPARGC1A	transcription regulator	4.20E-02	BMP4,DIO2,EBF2,FBXO32,GPC6,LAMB1,LDHB,MAP2K6,PGAM1,PHYH
HOXA7	transcription regulator	4.28E-02	ERG,HOXA7,KCNA3
NFATC3	transcription regulator	4.33E-02	ACTA2,CASP10,EGR2,MUC2,TNFSF11
GDNF	growth factor	4.33E-02	BDNF,EGR2,NNAT,NRN1,PAX6
CG	complex	4.65E-02	ACTA2,BDNF,CDH2,DUSP6,EIF4E,GATA4,GREM1,HPSE,LIN28B,NR1H2
KDM6B	enzyme	4.67E-02	BHLHE23,CDH2,HOXC12
WP1066	chemical drug	4.69E-02	ACTA2,CD86
PPP3CB	phosphatase	4.69E-02	FBXO32,KLRD1
EN1	transcription regulator	4.69E-02	PAX6,TNFSF11
methylene blue	chemical drug	4.69E-02	BDNF,MAPT
S-equal	chemical drug	4.69E-02	CD86,SERPINE1
Calcineurin protein(s)	complex	4.78E-02	BCL2L11,BDNF,EGR2,SERPINE1,TRPC6
CDX2	transcription regulator	4.85E-02	AXIN2,B3GALT5,HOXA5,HOXA7,HOXA9,KCN115,LAMC2,MUC2
PLK1	kinase	4.89E-02	ACTA2,BCL2L11,CDH2,GMNN
BRD2	kinase	4.89E-02	CD47,LIN28B,LV9,RPN1
MYCN	transcription regulator	4.98E-02	AEBP2,GATA4,HDAC5,OLIG1,PHB,PTK2,RPL22,RPL37,RPLP1,RPLP2

Supplemental Table 7

Upstream Regulator	Expr Log Ratio	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules in Dataset
HGF		growth factor	Activated	2,707	2,18E-01	ACTA2,CASP10,DUSP6,ERRF1,GMNN,HDAC5,LAMC2,PGAM1,PHB,SERPINE1,UBE2C
ZBTB16		transcription regulator	Activated	2,646	7,68E-02	CD86,EGR2,HPSE,IL21R,LY96,SLAMF6,TNFSF11
NFE2L2		transcription regulator	Activated	2,592	1,00E00	AKR1A1,BDNF,CBR1,CD86,SERPINE1,SOD1,UBB
CNR1	-0,787	G-protein coupled receptor	Activated	2,326	3,82E-02	BDNF,BMP4,CNR1,CYP7B1,ERRF1,PAX6
AMPK		complex	Activated	2,219	1,61E-02	BCL2L11,FBXO32,LDHB,PFKFB3,SERPINE1,SOD1
PPARG		ligand-dependent nuclear receptor	Activated	2,200	4,69E-01	ACTA2,CAV2,KLF11,MBNL1,NR1H2,PFKFB3,SERPINA1,SERPINE1,SOD1
SMAD7		transcription regulator	Activated	2,186	1,19E-01	ACTA2,BCL2L11,CDH2,GATA4,SERPINE1
SERPINF1		other		1,982	1,51E-02	ACTA2,AXIN2,BDNF,OLIG1
DUSP1		phosphatase		1,980	1,30E-01	CD86,DUSP6,SERPINE1,UBD
RUNX1		transcription regulator		1,966	2,41E-01	BCL2L11,EVI5,SERPINE1,SHANK2,SPI1,ST3GAL5
MTOR		kinase		1,961	7,53E-03	AKR1A1,BCL2L11,CD86,FBXO32,GPHN,HSPB1,IL1R1,LDHB,LDHD,SERPINA1,SOD1,TXNL1,UBE2C
PPARD		ligand-dependent nuclear receptor		1,941	4,25E-01	ACTA2,LDHB,LIPG,PDE4C,ST3GAL5
FOXO1		transcription regulator		1,856	2,56E-01	AFF3,ANLN,ATP5MC3,BCL2L11,CNR1,EGR2,FBXO32,IL1R1,SERPINE1,SOD1
COLQ		other		1,732	2,83E-02	BDNF,BMP1,BMP4,LAMB1
MYC		transcription regulator		1,713	1,43E-03	AEBP2,BCL2L11,BDNF,CASP10,CD47,CD86,CDH2,DNPH1,DUSP6,EGR2,EIF2B3,EIF4E,FBXO32,GATA4,HSPB1,IPO7,LDHB,OLIG1,PAM,PFKFB3,PGAM1,PHB,RHPN1,RPL22,RPL37,RPLP1,RPLP2,SERPINA1,SERPINE1,SNRPD1,TIAM1,TNFSF11,UBE2C,UBE2S,ULBP1
MYCN		transcription regulator		1,473	3,39E-03	AEBP2,GATA4,HDAC5,OLIG1,PHB,PTK2,RPL22,RPL37,RPLP1,RPLP2,SERPINE1,UBE2V2
EGLN		group		1,373	4,09E-04	A1BG,FEM1C,GYS1,LZTFL1,NUDT13,PAM,PGAM1,SERPINE1,ULBP1,WWTR1
RUNX2		transcription regulator		1,344	2,71E-04	ACTA2,AXIN2,CDH2,OLIG1,PTK2,SELPLG,SERPINE1,ST3GAL5,TNFSF11
TIMP3		other		1,342	1,58E-03	BMP4,EGR2,LAMC2,SERPINE1,TGFBR3
KAT2A		enzyme		1,342	7,51E-03	FBXO32,IPO7,PGAM1,UBE2S,ULBP1
PTEN		phosphatase		1,303	2,82E-02	BCL2L11,BMP1,CD86,CDH2,DNPH1,EGR2,ERRF1,GPHN,GTTF2A1,GYS1,HDAC5,LAMP3,LDHB,MPP7,PFKFB3,PTP4A2,RAD51B,SERPINE1,SLCO2B1

APP	other	1,244	5,63E-03	ACTA2,AXIN2,BCL2L11,BDNF,BMP4,CD82,CD86,CDH2,CSNK2A1,FZD7,GRIN2B,HIVEP3,HSPB1,LDHB,LPAR6,NNAT,PAX6,PDE4B,PFKFB3,PGAM1,RASSF2,RNF24,SERPINE1,SNX14,SOD1,ST3GAL5,TLR10
CTNNB1	transcription regulator	1,173	2,79E-03	ACTA2,AXIN2,BCL2L11,BDNF,BMP1,BMP4,CD47,CDH2,CNR1,CTNNA2,CYP7B1,FZD7,GET4,IL1R1,LAMB1,LAMC2,LBH,OLIG1,ONECUT2,PDE4B,RAD23A,RPL22,RPL37,RPLP2,SERPINA1,SERPINE1,SPI1,TNFSF11
let-7	microRNA	1,155	1,56E-02	ACTA2,BDNF,BRCA2,CDH2,DUSP6,GMNN,PLAGL1,SERPINE1,SSR1
KLF2	transcription regulator	1,091	1,17E-02	BMP4,CD86,CDH2,FGR,GATA4,HPSE,SELPLG,SERPINE1
PRDM1	transcription regulator	1,000	1,21E-02	AFF3,AXIN2,BCL2L11,CD86,EGR2,FGR,MMP25,PDE4C,RASSF2,SLCO2B1
miR-122-5p (miRNAs w/seed GGAGUGU)	mature microRNA	0,984	2,45E-02	AKT3,GYS1,RAB11FIP1,XPO6
FOXP3	transcription regulator	0,882	3,62E-03	AKT3,ANLN,BCL2L11,CD101,CD226,DUSP6,NRN1,PLAGL1,TLR10
MAPK9	kinase	0,849	2,05E-02	BCL2L11,BMP1,BMP4,EIF4E,NR3C2,SELPLG,SERPINA1
KRAS	enzyme	0,808	3,33E-03	AXIN2,BMP4,CCDC125,CDH2,CYP2J2,DUSP6,EGR2,EIF4E,GMNN,GPC5,HSPB1,LAMB1,LAMC2,LAMP3,LBH,LIPG,NRN1,PDE4B,PLAGL1,PTK2,RPN1,SPI1,TCERG1,UBE2S
CSF2	cytokine	0,721	8,50E-03	AKR1A1,ANLN,BCL2L11,CD101,CD86,DUSP6,EGR2,IL1R1,LAMP3,LY9,LY96,PDE4B,PTK2,SNRPD1,SPI1,UBD,UBE2C
FOSL1	transcription regulator	0,686	4,00E-02	BDNF,CYP2J2,EGR2,SERPINE1
IL1B	cytokine	0,684	2,52E-02	ACTA2,BMP4,CASP10,CAV2,CD82,CD86,CDH2,EIF4E,ERRF1,GYS1,HSPB1,IL1R1,KCNQ1OT1,LAMC2,LY96,MAP2K6,NLRP7,OSGIN2,PAX6,PDE4B,PGAM1,SERPINE1,TNFSF11,UBD,UBE2V2
IL15	cytokine	0,667	1,50E-03	BCL2L11,CD226,CD86,EGR2,EIF4E,IL1R1,IL21R,KLRD1,LYPLA1,NR3C2,PDE4B,PFKFB3,PTP4A2,SELPLG,TJP2,TNFSF11,ULBP2
IL10RA	transmembrane receptor	0,632	3,76E-02	AKT3,BMP4,CALHM6,HPSE,LRG1,MMP25,PAM,SLAMF6,SLCO2B1,THBS4

IL6	cytokine	0,626	4,70E-02	ACTA2,AXIN2,BCL2L11,BDNF,CD82,CD86,DUSP6,EGR2,ERRFI1,IL1R1,KLRD1,LRG1,LY96,PHB,SERPINA1,SERPINE1,SPI1,TLR10,TNFSF11,UBE2C
ID2	transcription regulator	0,577	3,51E-02	ACTA2,AXIN2,BCL2L11,EGR2,MAP2K6,SLAMF6,TGFBR3,TNFSF11
EZH2	transcription regulator	0,563	1,73E-02	AXIN2,BCL2L11,BMP1,BMP4,C15orf48,CD82,CDH2,CNR1,GATA4,LAMC2,PAX6,SERPINA1,UBD
YAP1	transcription regulator	0,555	4,90E-02	ACTA2,ANLN,BCL2L11,FBXO32,RPL22,RPL37,RPLP2,SERPINE1,WWTR1
PPARGC1A	transcription regulator	0,533	4,53E-02	BMP4,FBXO32,GPC6,LAMB1,LDHB,MAP2K6,PGAM1,PHYH,SOD1,TGFBR3,TNFSF11
mir-223	microRNA	0,447	3,41E-02	ACTA2,C15orf48,EGR2,GRIN2B,LY96,MMP25
MACROH2A1	other	0,447	1,21E-02	BRCA2,MAP2K6,SERPINE1,TJP2,TMPRSS3
EGR1	transcription regulator	0,414	1,52E-02	ACTA2,BCL2L11,EGR2,HPSE,SERPINE1,SOD1,TIAM1,TNFSF11
CG	complex	0,400	5,85E-03	ACTA2,BDNF,BMP4,CDH2,DUSP6,EIF4E,GATA4,HPSE,NR1H2,NR3C2,PFKFB3,RASSF2,SOD1,TGFBR3
TGFA	growth factor	0,374	1,21E-02	ERRFI1,LAMC2,PLAGL1,SERPINA1,SERPINE1
TP53	transcription regulator	0,369	2,33E-02	ACTA2,AKT3,ANLN,ATL3,ATP5MC3,BCL2L11,BDNF,BMP1,BRCA2,CAV2,CD47,CD82,DUSP6,EGR2,FZD7,GATA4,GMNN,GPHN,HDAC5,HSPB1,IL21R,IPO7,LAMC2,LAMP3,LDHB,LYPLA1,MAP2K6,MCAT,MDM4,PDE4B,PFKFB3,PTK2,RAD23A,RALBP1,RASSF2,RCHY1,RPN1,SDHC,SERPINE1,SOD1,THBS4,TP53I11,UBD,UBE2C
mir-8	microRNA	0,362	1,57E-02	ACTA2,CD47,CDH2,ERRFI1,GATA4,PIP5K1A,PTK2,TIAM1
FOXO3	transcription regulator	0,338	2,90E-02	ACTA2,BCL2L11,EGR2,FBXO32,GMNN,IL1R1,MBNL1,OSGIN2,SERPINE1,SOD1,UBE2C
WNT3A	cytokine	0,312	2,77E-02	ACTA2,AXIN2,BDNF,BMP4,CDH2,EGR2,GATA4,LBH,OLIG1,TNFSF11
RETNLB	other	0,277	1,09E-02	ACTA2,BMP1,CD86,THBS4,UBE2C
FSH	complex	0,184	4,17E-02	ACTA2,AXIN2,BDNF,CDH2,GATA4,HDAC5,RASSF2,SERPINE1,TGFBR3,TP53I11,USPL1,ZNF331
DICER1	enzyme	0,018	2,21E-03	AXIN2,BCL2L11,BDNF,CD226,CD86,EGR2,KCNQ1OT1,LIPG,RAD23A,SERPINA1,SERPINE1,SPI1,TPO
SLC13A1	transporter	0,000	4,45E-03	GPC6,HSPB1,NRN1,RAD51B,RPN1,TFG
UCHL1	peptidase	0,000	4,00E-02	EIF2B3,LBH,LDHB,SERPINE1

ANXA7	ion channel	0,000	2,83E-02	BRCA2,CDH2,PAX6,RAD23A
MEF2D	transcription regulator	0,000	3,84E-02	BDNF,EGR2,HDAC5,SOD1
MEF2C	transcription regulator	-0,000	2,52E-02	BDNF,EGR2,GATA4,HDAC5,MMP25,PLAGL1
STAT3	transcription regulator	-0,229	2,08E-02	ACTA2,BCL2L11,CALHM6,CD226,CD86,CDH2, EGR2,IL1R1,LDHB,PAX6,PHB,PTK2,RNLS, SERPINA1,SERPINE1,SPI1,TNFSF11,UBD
miR-124-3p (and other miRNAs w/seed AAGGCAC)	mature microRNA	-0,271	1,60E-02	ATL3,BDNF,HDAC5,MDFIC,MMADHC,NR3C2, PHF19,TJP2,UHMK1
CCN5	growth factor	-0,277	1,73E-03	ACTA2,AXIN2,LAMC2,SERPINE1,TGFBR3 CD226,CD86,EGR2,EIF4E,GYS1,HIVEP3,IL1R1, IL21R,PDE4B,PGAM1,PHB,TNFSF11
CD28	transmembrane receptor	-0,309	1,71E-02	
miR-1-3p (and other miRNAs w/seed GGAAUGU)	mature microRNA	-0,310	4,28E-02	AGMAT,BDNF,LZTFL1,UHMK1,XPO6,YWHAQ, ZNF264
AKT1	kinase	-0,329	1,22E-02	ACTA2,ATP5MC3,BCL2L11,CD86,FBXO32,LAMB1, LDHB,SERPINE1,TGFBR3,TNFSF11,UBE2C
MAPK14	kinase	-0,356	4,28E-02	ACTA2,AXIN2,CD86,DUSP6,MAP2K6,SOD1, TNFSF11
BHLHE40	transcription regulator	-0,378	3,70E-03	ACTA2,AFF3,BDNF,C15orf48,CD86,IPCEF1, SLAMF6
HSF1	transcription regulator	-0,421	9,02E-05	BMP4,DEDD2,DHX34,HDAC5,HSPB1,PRAME, RAD51B,RPL22,TMPRSS3,TNFSF11,TRA2B,UBB, ZNF473
NGF	growth factor	-0,629	1,64E-02	AXIN2,BCL2L11,BDNF,CD86,DUSP6,EGR2,ERRF1, GRIN2B,SOD1
TGFBR1	kinase	-0,651	1,67E-02	ACTA2,BMP4,CD86,EGR2,SERPINE1 ACTA2,AGGF1,ANLN,AXIN2,BCL2L11,BDNF,BMP4, BRCA2,CASP10,CAV2,CDC42SE2,CYP7B1,GOPC, HSF2BP,IPO7,KLHL20,LAMB1,MAP2K6,MDM4, NR1H2,ONECUT2,PDE7A,PHB,PHF19,PLCE1,PTK2, PTP4A2,RAD51B,ROBO2,RPL37,SERPINE1, SHANK2,THBS4,TJP2,TMPRSS3,TNFSF11,TP53I11, UHMK1,ULBP2
ESR1	ligand-dependent nuclear receptor	-0,690	1,41E-03	BCL2L11,BDNF,EGR2,HSPB1
MAP2K1/2	group	-0,694	4,33E-02	AFF3,BCL2L11,CBR1,GATA4,IL1R1,PAX6,RAB44, RNF144A
TET2	enzyme	-0,707	2,71E-03	

MET	kinase	-0,734	2,07E-03	BMP1,CDH2,FBXO32,HSPB1,MPP7,ONECUT2,SLCO3A1,SOD1
PLG	peptidase	-0,832	3,84E-02	BDNF,PIP5K1A,SERPINE1,TNFSF11
CD3	complex	-0,834	4,10E-02	BCL2L11,CD226,CD86,EGR2,EIF4E,GYS1,HIVEP3,IL1R1,IL21R,LYPLA1,NR3C2,PDE4B,PGAM1,PHB,PTP4A2,SELPLG,TNFSF11
GDNF	growth factor	-0,882	7,09E-03	BDNF,EGR2,NNAT,NRN1,PAX6
FN1	enzyme	-0,912	9,55E-03	ACTA2,BCL7B,CDH2,CSNK2A1,IL1R1,RASSF2,SDHC,SERPINE1,VPS4A
TGFB2	growth factor	-0,944	7,87E-04	ACTA2,BMP4,CD86,EGR2,KCNQ1OT1,LIPG,SERPINE1,TGFBR3
26s Proteasome	complex	-0,981	4,26E-02	BCL2L11,BRCA2,MDM4,UBD,ULBP1,ULBP2
WNT1	cytokine	-0,988	2,44E-02	ACTA2,AXIN2,BMP4,EIF4E,LBH,SERPINE1
SHC1	other	-1,000	2,70E-02	BCL2L11,CDH2,KLF11,SERPINE1
MAPK3	kinase	-1,044	3,01E-03	BCL2L11,BMP4,CD86,EGR2,SOD1,TNFSF11
CAV1	transmembrane receptor	-1,261	3,93E-02	BCL2L11,CAV2,GRIN2B,NR3C2,SERPINE1,TJP2
DKK1	growth factor	-1,292	6,30E-03	ACTA2,AXIN2,BDNF,BMP4,LBH
MAP4K4	kinase	-1,342	4,81E-02	DHODH,GYS1,LDHB,PGAM1,PHYH
MAPK1	kinase	-1,405	5,85E-03	BDNF,CDH2,CPED1,CTNNA2,EGR2,EVI5,FBXO32,GMNN,LAMP3,NRN1,SERPINE1,SHANK2,TNFSF11,UBE2C
TP73	transcription regulator	-1,412	2,11E-02	ACTA2,AGGF1,BCL2L11,HPSE,LBH,LDHD,LRG1,RFX2,RFX3,SERPINA1,SERPINE1,TP53I11,UBE2C
BMP7	growth factor	-1,445	3,24E-03	ACTA2,BMP1,BMP4,CAV2,CDH2,FZD7,NUDT13,PAX6,SERPINE1
DGCR8	enzyme	-1,446	1,58E-03	ACTA2,BDNF,EGR2,OLIG1,SPI1
ITGB1	transmembrane receptor	-1,673	9,61E-03	ACTA2,BMP1,CDH2,LAMB1,PTK2,SERPINE1,TNFSF11
miR-16-5p (and other miRNAs w/seed AGCAGCA)	mature microRNA	-1,766	5,83E-02	ANLN,ARL2,BDNF,EIF4E,GOLGA5,SPI1,UBE2S
CDKN1A	kinase	-1,875	2,97E-01	ACTA2,ANLN,IL1R1,SERPINE1,UBE2C,UBE2S
Tcf7	transcription regulator	-1,890	7,97E-02	EGR2,EVI5,IL1R1,IL21R,MMP25,NRN1,TIAM1
SP1	transcription regulator	-1,937	5,88E-02	ACTA2,AFAP1L1,BDNF,BMP4,CDH2,CSNK2A1,CYP7B1,HPSE,IL21R,KCNA3,RNLS,SERPINE1,SOD1,TGFBR3,TNFSF11
TICAM1	other	-1,941	9,41E-02	CD86,LZTFL1,PDE4B,SERPINE1,TNFSF11

MYB	transcription regulator		-1,960	3,50E-01	AXIN2,C15orf48,CDH2,PAX6
ETV4	transcription regulator		-1,963	2,95E-03	ACTA2,HPSE,PTK2,WWTR1
CXCL12	cytokine		-1,969	5,36E-02	ACTA2,BMP1,CD47,CD82,GOPC,SELPLG,TNFSF11
CD38	enzyme		-1,982	2,82E-01	ACTA2,CD86,EVI5,RPN1
CD40LG	cytokine		-1,996	1,35E-01	APRT,CD86,IL21R,LAMP3,PEX14,RASSF2,SELPLG, SERPINE1,TNFSF11,UBD
ADAM10	peptidase	Inhibited	-2,000	1,99E-02	ACTA2,CDH2,GRIN2B,MDM4,PAX6
Jnk	group	Inhibited	-2,022	7,12E-02	ACTA2,BCL2L11,CD86,CDH2,FBXO32,PTK2, SERPINE1
OGA	enzyme	Inhibited	-2,121	2,72E-01	ADAMTS17,CD47,CD86,EGR2,IL21R,LAMB1, PLCE1,TGFBR3,WWTR1
ANGPT2	growth factor	Inhibited	-2,576	3,67E-03	ACTA2,AXIN2,BCL2L11,CD86,GATA4,HDAC5, NR3C2,SERPINE1,SOD1,TNFSF11
Diap dopamine D1 receptor	group			4,93E-02	ACTA2
ARHGEF12	other			5,52E-03	BDNF,GRIN2B
EPHB1	kinase			3,31E-02	ACTA2
TRIM72	enzyme			1,38E-02	EGR2,SERPINE1
Becn2	other			1,67E-02	ACTA2
MAP3K	group			1,67E-02	CNR1
Foxo	group			3,31E-02	BDNF
Wnt	group			3,21E-02	BCL2L11,FBXO32
TMSB4	group			4,14E-02	CDH2,GATA4,TNFSF11
TGFBR	group			3,94E-02	BMP4,SERPINE1
Calcineurin protein(s)	complex			9,26E-03	ACTA2,TNFSF11
Smad3- Smad4	complex			3,38E-02	BCL2L11,BDNF,EGR2,SERPINE1
Hdac-Rcor- Rest-Sin3a	complex			3,31E-02	BCL2L11
CRNDE	other			1,67E-02	BDNF
HOTAIR	other			2,20E-02	DUSP6,IL1R1,TIAM1
Morrbid	other			4,14E-02	ACTA2,CDH2,LAMC2
Calcb	other			1,67E-02	BCL2L11
LINC00842	other			3,31E-02	SPI1
IGF2-AS	other			3,99E-03	CDH2,SERPINE1
FOXQ1	transcription regulator			4,93E-02	BDNF
LRP4	other			3,31E-02	NRXN3
				1,63E-03	BMP4,TNFSF11

CADPS		other	4,93E-02	BDNF
ARID3B		transcription regulator	7,28E-03	BCL2L11,CASP10
EPB42		transporter	3,31E-02	CD47
TET1		enzyme	1,74E-02	EGR2,GATA4,PAX6
USP6		peptidase	4,93E-02	BMP4
MN1		other	3,99E-03	BCL2L11,TNFSF11
PRPF31		other	1,67E-02	MDM4
MCAT	0,096	enzyme	1,67E-02	LY96
IDH3B		enzyme	1,67E-02	PFKFB3
KREMEN1		other	1,67E-02	AXIN2
BCAR4		other	5,52E-03	CDH2,PFKFB3
ZFP90		transcription regulator	4,93E-02	BMP4
CYLD		transcription regulator	2,71E-02	AXIN2,CD86,SERPINE1
SOX17		transcription regulator	1,89E-02	AXIN2,GATA4,LAMB1
CASS4		other	1,67E-02	PTK2
H1-3		other	4,93E-02	AXIN2
ZNF451		enzyme	4,93E-02	SERPINE1
ST6GALNAC2		enzyme	4,93E-02	SELPLG
RAI1		other	3,31E-02	BDNF
FLCN		other	1,89E-02	BCL2L11,MTERF1,SERPINE1
CARF		transcription regulator	1,67E-02	BDNF
PSMD14		peptidase	4,93E-02	BCL2L11
WLS		other	4,74E-02	BDNF,BMP4
GLIS3		transcription regulator	4,74E-02	BCL2L11,PAX6
CDCA4		other	1,67E-02	GMNN
ITGBL1		other	4,93E-02	TNFSF11
HDGF		growth factor	4,93E-02	SERPINE1
NFKBID		transcription regulator	2,22E-02	CD86,CDH2
MASTL		kinase	4,14E-02	ANLN,RAB11FIP1,SERPINE1
TAF3		transcription regulator	4,93E-02	GATA4
HERC2		enzyme	4,93E-02	USP16
HNF1A-AS1		other	3,94E-02	CDH2,UBE2C
CLSTN1		other	1,67E-02	GRIN2B
FOXG1		transcription regulator	2,53E-02	BCL2L11,SERPINE1
PTPN23		phosphatase	4,93E-02	CDH2
CADPS2		other	3,31E-02	BDNF
FZD8		G-protein coupled receptor	3,13E-03	ACTA2,BMP4,GATA4
AGO3		translation regulator	3,31E-02	BCL2L11
PARM1		other	3,31E-02	BMP4

Crhr	group	1,67E-02	BDNF
Trk Receptor	group	4,93E-02	DUSP6
AChR	complex	4,74E-02	CSNK2A1,VPS4A
adrenoceptor	group	4,93E-02	PDE4B
Nkx2-2os	other	2,53E-02	NNAT,PAX6
HIP1	other	3,31E-02	BDNF
TNKS2	enzyme	3,31E-02	AXIN2
Collagen type IV	complex	4,74E-02	ACTA2,SERPINE1
USP39	peptidase	1,67E-02	MDM4
FBLIM1	other	3,31E-02	TNFSF11
NFATC3	transcription regulator	3,10E-02	ACTA2,CASP10,EGR2,TNFSF11
CSNK1E	kinase	4,93E-02	SERPINE1
LPXN	transcription regulator	4,93E-02	ACTA2
SETDB1	enzyme	1,74E-02	CNTN4,GRIN2B,ROBO2
PRCC	other	1,67E-02	SERPINE1
LHX2	transcription regulator	9,03E-03	BDNF,PAX6,ROBO2
DYNLRB1	other	1,67E-02	SERPINE1
MAPK8IP2	other	3,31E-02	BDNF
STAR	transporter	1,64E-02	CD86,NR1H2
BSN	other	1,67E-02	BDNF
ACTC1	enzyme	3,31E-02	ACTA2
LAMTOR2	other	4,93E-02	LAMTOR1
MYLPF	other	1,67E-02	ACTA2
MED12	transcription regulator	4,74E-02	BMP4,EGR2
CCN4	other	1,15E-02	AXIN2,CDH2
MZB1	other	8,25E-04	BDNF,CD86
VAMP7	transporter	4,93E-02	CD82
HLTF	transcription regulator	3,31E-02	SERPINE1
FAF1	other	2,69E-03	AXIN2,TNFSF11
CXCR5	G-protein coupled receptor	1,67E-02	TNFSF11
MAT1A	enzyme	4,74E-02	PHB,SOD1
TMOD1	enzyme	4,93E-02	PTK2
PPP3CB	phosphatase	1,92E-02	FBXO32,KLRD1
PURB	transcription regulator	4,93E-02	ACTA2
MSX2	transcription regulator	3,28E-02	BMP4,CDH2,EGR2
PRPF8	other	3,31E-02	MDM4
CDH2	-3,408 other	2,53E-02	ACTA2,AKT3
GASS-AS1	other	3,31E-02	ACTA2

ADAMTS9-AS2		other	3,31E-02	TGFBR3
EN1		transcription regulator	1,92E-02	PAX6,TNFSF11
OSMR		transmembrane receptor	2,11E-02	C15orf48,LRG1,SERPINA1,TNFSF11
KIF5A		transporter	1,67E-02	GABRB2
CCR7		G-protein coupled receptor	2,22E-02	BCL2L11,CD86
RLIM		enzyme	1,38E-02	CDH2,SERPINE1
LTBR		transmembrane receptor	4,84E-02	ACTA2,CD86,SERPINA1
SH3KBP1		other	1,64E-02	CD86,SERPINE1
LY96	0,057	transmembrane receptor	2,86E-02	CD86,LY96
TSTA3		enzyme	1,67E-02	ACTA2
NGFR		transmembrane receptor	2,04E-02	GRIN2B,HPSE,SERPINE1
UBE2K		transcription regulator	1,67E-02	UBD
APBB1		transcription regulator	2,53E-02	ACTA2,CD82
miR-222-5p (miRNAs w/seed UCAGUAG)		mature microRNA	4,93E-02	ACTA2
miR-743b-3p (and other miRNAs w/seed AAAGACA)		mature microRNA	4,93E-02	EIF4E
mir-878		microRNA	3,31E-02	EIF4E
mir-880		microRNA	3,31E-02	EIF4E
miR-450a-5p (and other miRNAs w/seed UUUGCGA)		mature microRNA	2,20E-02	FZD7,PTK2,SERPINE1
miR-1258 (miRNAs w/seed GUUAGGA)		mature microRNA	1,67E-02	HPSE
mir-1258		microRNA	1,67E-02	HPSE
mir-134		microRNA	3,31E-02	BDNF

miR-2861 (and other miRNAs w/seed GGGCCUG)	mature microRNA	1,67E-02	HDAC5
miR-571 (miRNAs w/seed GAGUUGG)	mature microRNA	1,67E-02	GMNN
miR-1298-5p (and other miRNAs w/seed UCAUUCG)	mature microRNA	3,31E-02	PTK2
KREMEN2	other	1,67E-02	AXIN2
EED	transcription regulator	3,49E-02	BDNF,GATA4,OLIG1
PLK1	kinase	1,03E-02	ACTA2,BCL2L11,CDH2,GMNN
RGS19	enzyme	2,43E-04	AXIN2,BMP4,GATA4
IFI6	other	1,67E-02	BCL2L11
SUZ12	enzyme	2,68E-02	CNR1,FBXO32,GATA4,LAMC2,PAX6,UHMK1
CSK	kinase	2,86E-02	FGR,PTK2
BAZ1A	other	3,31E-02	TNFSF11
HCN1	ion channel	1,67E-02	BDNF
EXOC5	other	1,67E-02	ACTA2
ITGA9	other	5,62E-03	ACTA2,CDH2,TNFSF11
MYH11	other	4,93E-02	ACTA2
AXIN2	-1,321 other	3,31E-02	BMP4
DTX1	transcription regulator	1,00E-02	CD82,DUSP6,UHMK1
HAS2	enzyme	1,38E-02	ACTA2,PTK2
TRIM63	enzyme	4,93E-02	FBXO32
CDKN2B	transcription regulator	9,26E-03	CD86,SERPINE1
RBM4	other	4,93E-02	ULBP1
CLCN1	ion channel	4,93E-02	HDAC5
GPRASP1	transporter	1,67E-02	CNR1
USP2	peptidase	7,28E-03	MDM4,SERPINE1
ACKR1	G-protein coupled receptor	4,74E-02	BDNF,UBD
SOST	other	1,74E-02	AXIN2,SOD1,TNFSF11
STK16	kinase	4,93E-02	SERPINE1
MEOX1	transcription regulator	1,15E-02	BMP4,GATA4
ITIH5	other	1,67E-02	ACTA2

SPHK1	kinase	7,75E-03	ACTA2,BCL2L11,MAP2K6,SERPINE1
BCAN	other	3,31E-02	CDH2
OTUD7B	peptidase	3,99E-03	ACTA2,PTK2
STRAP	other	4,93E-02	SERPINE1
IFT57	other	2,86E-02	BDNF,CASP10
FANCC	other	2,70E-02	AXIN2,CYP7B1,IL1R1,WWTR1
PIP5K1C	kinase	5,52E-03	ERRFI1,PIP5K1A
β -catenin- BCL9-PYGO- TCF/LEF	complex	3,31E-02	AXIN2
CEACAM1	transporter	2,89E-02	CD86,ULBP1,ULBP2
GIPC1	other	1,63E-03	SERPINE1,TGFBR3
SDC2	other	7,28E-03	ACTA2,TGFBR3
GRIN2A	ion channel	1,67E-02	BDNF
SEM1	peptidase	1,67E-02	BRCA2
GFRA2	transmembrane receptor	4,93E-02	EGR2
PLEKHA1	other	3,31E-02	CD86
RELN	peptidase	1,15E-02	BDNF,GRIN2B
FRS2	other	1,17E-03	ACTA2,BMP4,PAX6
NRP1	transmembrane receptor	1,81E-03	ACTA2,CD86,PTK2
GABRG2	ion channel	3,31E-02	GPHN
ERG	transcription regulator	2,46E-02	AXIN2,CDH2,CHTOP,CNR1,EVI5,GPATCH2L, RAPH1,RPL22
ING2	transcription regulator	3,31E-02	SERPINE1
RGCC	other	2,22E-02	ACTA2,CDH2
RBMX	other	3,31E-02	BRCA2
LAMC1	other	2,22E-02	ACTA2,EGR2
BARX2	transcription regulator	3,57E-02	ACTA2,ANLN
LYPD6	other	4,93E-02	AXIN2
KIF17	transporter	1,67E-02	GRIN2B
AGO4	translation regulator	3,31E-02	BCL2L11
SNAI2	transcription regulator	2,33E-02	BCL2L11,BRCA2,CDH2,EGR2
SVIL	other	3,31E-02	ANLN
CDH5	other	1,64E-02	CDH2,TIAM1
ADCYAP1R1	G-protein coupled receptor	5,52E-03	BDNF,EGR2
NDRG1	kinase	2,71E-02	BCL2L11,CD82,ERRFI1
ATP7A	transporter	1,38E-02	PAM,PTK2
PPP1CA	phosphatase	9,26E-03	CDH2,WWTR1
PLEKHA2	other	3,31E-02	CD86

STX6		transporter	3,31E-02	PTK2
PLAT		peptidase	1,89E-02	BDNF,GRIN2B,SERPINE1
RPA1		other	4,33E-02	NAV2,RASSF10
CDK5R2		other	4,93E-02	BDNF
Smad2/3/4		group	1,81E-03	ACTA2,CDH2,SERPINE1
ENTPD1		enzyme	1,38E-02	CD86,SERPINE1
BAIAP2		kinase	4,93E-02	GRIN2B
NONO		transcription regulator	4,26E-03	PDE4B,PDE4C,PDE7A
RXFP1		G-protein coupled receptor	1,67E-02	ACTA2
EFNB2		kinase	2,86E-02	TIAM1,TNFSF11
ADAM19		peptidase	1,67E-02	EGR2
GDF10		growth factor	1,67E-02	SERPINE1
ELN		other	1,64E-02	CD86,PTK2
NOX4		enzyme	4,84E-02	ACTA2,BCL2L11,SERPINE1
CCDC80		other	7,28E-03	AXIN2,FZD7
GSK3A		kinase	3,94E-02	GATA4,SERPINE1
DAXX		transcription regulator	2,64E-03	CASP10,HSPB1,SERPINE1
RHCE/RHD		transporter	3,31E-02	CD47
ST8SIA2		enzyme	3,31E-02	PAX6
UBL5		other	1,67E-02	MDM4
CYP2J2	1,873	enzyme	4,74E-02	CD82,CYP2J2
HOXA1		transcription regulator	1,15E-02	EGR2,GATA4
EFNA2		kinase	1,51E-02	BDNF,DUSP6,UBE2C,UBE2S
NTSR1		G-protein coupled receptor	1,67E-02	BDNF
AZIN1		enzyme	4,93E-02	ACTA2
LOC10035958				
3/Ptma		other	3,31E-02	BCL2L11
CRTAP		other	3,31E-02	SERPINE1
ACTA2	-0,245	other	7,28E-03	ACTA2,PTK2
CDC42		enzyme	1,60E-02	BCL2L11,CD86,UBE2C
Cdc42		enzyme	3,49E-02	ACTA2,CD86,SPI1
Col17a1		other	1,64E-02	AXIN2,SERPINA1
NEDD4		enzyme	3,21E-02	DUSP6,ERRFI1
PCDH11Y		other	4,74E-02	AXIN2,BMP4
RNF11		enzyme	3,31E-02	SERPINE1
H1-5		other	3,31E-02	AXIN2
RPS4Y1		other	3,31E-02	CDH2
HUS1		kinase	3,31E-02	BCL2L11
GNRH2		other	9,26E-03	RPLP1,RPLP2

AZGP1		transporter	9,03E-03	BMP4,FBXO32,GYS1
NET1		other	3,99E-03	CDH2,SERPINE1
LAMB2		enzyme	3,31E-02	LAMB1
SERPINH1		other	9,26E-03	CDH2,SERPINE1
EEF2		translation regulator	1,67E-02	BDNF
SLC30A3		transporter	9,26E-03	BDNF,GRIN2B
SNRNP70		other	4,93E-02	MDM4
ZFYVE16		other	3,31E-02	SERPINE1
SOD1	0,650	enzyme	3,40E-02	BMP4,CDH2,CNR1,HIVEP3,HSPB1,SHANK2,SOD1, TNFSF11,VAPB
SMAD3- EP300		complex	1,67E-02	SERPINE1
TCF		group	1,91E-02	BMP4,CTNNA2,IL1R1,SERPINA1,SERPINE1