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## ORIGINAL ARTICLE

Male Infertility

# Low *XIST* expression in Sertoli cells of Klinefelter syndrome patients causes high susceptibility of these cells to an extra X chromosome

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Klinefelter syndrome (KS) is the most common genetic cause of human male infertility. However, the effect of the extra X chromosome on different testicular cell types remains poorly understood. Here, we profiled testicular single-cell transcriptomes from three KS patients and normal karyotype control individuals. Among the different somatic cells, Sertoli cells showed the greatest transcriptome changes in KS patients. Further analysis showed that X-inactive-specific transcript (*XIST*), a key factor that inactivates one X chromosome in female mammals, was widely expressed in each testicular somatic cell type but not in Sertoli cells. The loss of *XIST* in Sertoli cells leads to an increased level of X chromosome genes, and further disrupts their transcription pattern and cellular function. This phenomenon was not detected in other somatic cells such as Leydig cells and vascular endothelial cells. These results proposed a new mechanism to explain why testicular atrophy in KS patients is heterogeneous with loss of seminiferous tubules but interstitial hyperplasia. Our study provides a theoretical basis for subsequent research and related treatment of KS by identifying Sertoli cell-specific X chromosome inactivation failure.

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**Keywords:** Klinefelter syndrome; nonobstructive azoospermia; Sertoli cell; spermatogenesis; X chromosome inactivation

## INTRODUCTION

Klinefelter syndrome (KS), 47,XXY, is one of the most frequent genetic causes of infertility. It occurs in approximately 0.015% of newborn males in the world.<sup>1</sup> KS patients exhibit persistent and irreversible degeneration of seminiferous tubules in the testes, which is manifested as a significantly reduced testicular volume since puberty, and the difference becomes even greater by adulthood.<sup>2</sup> Within the testes of KS patients, Sertoli cells, as the scaffold of the seminiferous tubules, are completely absent in most areas. However, the remaining Sertoli cells can still construct a seminiferous tubule structure (although the structure exhibits obvious pathological morphology, including reduced cell volume, an increased nucleocytoplasmic ratio, and loss of intercellular space) with other somatic cells and even support complete spermatogenesis for mosaicism of XY germ cells.<sup>3</sup> This indicates that the dose effect of the X chromosome genes greatly affects the cell fate and testicular morphology. Furthermore, compared with that in Sertoli cells, the damage caused by the extra X chromosome in other testicular cells (such as Leydig cells) and other systems (such as the cardiovascular, hepatobiliary, and respiratory systems) is so mild in KS patients that it is often neglected by doctors. Thus, different types of cells often show different susceptibilities to an extra X chromosome.

The X chromosome inactivation (XCI) and activation are regulated by completely different mechanisms in various biological processes. From embryonic day 7.5 (E 7.5) to E 12.5 of development, primordial germ cells undergo global removal of DNA methylation, leading to a global (including the X chromosome) increase in transcription.<sup>4</sup> During meiosis, the unsynapsed X and Y chromosomes are transcriptionally silenced through meiotic sex chromosome inactivation and are sequestered in a cellular domain known as the sex body.<sup>5</sup> After the initiation of spermiogenesis, the histone-to-protamine transition and high level of DNA methylation in spermatids also lead to global or independent repression of sex chromosome expression.<sup>6,7</sup> In addition to the above mechanisms of X chromosome silencing during spermatogenesis, X-inactive-specific transcript (*XIST*)-dependent XCI, a more universal XCI mechanism, plays a critical role in balancing the gene dosage between XY and XX cells by silencing one of the two X chromosomes in XX cells.<sup>8,9</sup>

However, it is certain that some genes are not or are only slightly affected by the XCI process.<sup>10,11</sup> These genes escape X inactivation. In women, approximately 15% of X-linked genes are biallelically expressed and most genes have a stable inactivation pattern.<sup>12</sup> The inactive state of

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the X chromosome can be (partially) reversed, and this X chromosome reactivation (XCR) might be associated with disease.<sup>13,14</sup> Therefore, we hypothesized that the heterogeneity of damage due to an additional X chromosome in different KS cells may occur because of the failure of the XCI process (a global increase in X gene expression) or the overexpression of some X genes that escape inactivation. Therefore, we profiled and analyzed over 37 000 single-cell transcriptomes from whole testes of patients with obstructive azoospermia (OA; patients with normal spermatogenesis) and KS patients and compared the X gene expression pattern among different testicular cells and within the same cell type. In addition, we also attempted to explain the etiological characteristics of several known XCI mechanisms to increase the understanding of the pathogenesis of azoospermia caused by KS.

## PARTICIPANTS AND METHODS

### Contact information for reagents and resource sharing

The RNA-seq matrix data can be obtained from the GEO database (GSE149512).<sup>15</sup> The data also can be found in MHA database (<http://malehealthatlas.cn/>).<sup>16</sup> Requests for further information, resources, and reagents should be directed to and will be fulfilled by the correspondence (ZL).

### Experimental model and participants

The experiments performed in this study were approved by the Ethics Committee of Shanghai General Hospital, Shanghai, China (Approval No. 2016KY196). All patients underwent microdissection testicular sperm extraction (micro-TESE) at Shanghai General Hospital from October 2018 to October 2019. All participants signed consent forms after being fully informed of the goal and characteristics of our study. Fresh testicular tissues were obtained from abandoned tissues after testicular sperm extraction operations performed for the following indications: OA ( $n = 2$ ), KS ( $n = 3$ ), and Y chromosome microdeletions of the azoospermia factor a (AZFa) regions ( $n = 1$ ). All samples were stored at 4°C after surgical excision and treated within 4 h to ensure cell activity. Each sample was equally divided into three parts, of which one part was transformed into single-cell suspension by enzymolysis for single-cell RNA sequencing (scRNA-seq), 4.0 mg ml<sup>-1</sup> collagenase type IV (Gibco, New York, NY, USA), 2.5 mg ml<sup>-1</sup> hyaluronidase (Sigma-Aldrich, Saint Louis, MO, USA), and 1.0 mg ml<sup>-1</sup> trypsin (Sigma-Aldrich) at 37°C for 20 min (Figure 1a). One part was used to Sertoli cell isolation and culture, and the last part was fixed with paraformaldehyde and then embedded in paraffin for histological examination. The karyotypes, genotypes, sex hormone levels, and morphology of seminiferous tubules of OA donors were normal. The karyotypes of three KS samples were XXY without mosaic. The AZFa region microdeletions (AZFa-Del) sample was used as a negative control to exclude germ cell interference. This patient was diagnosed by quantitative polymerase chain reaction (qPCR) examination before hospitalization, which showed that in this sample, sY84 and sY86 were completely deleted. Among all donors, other abnormal genotypes related to spermatogenic disorders were excluded by whole-exome sequencing.

### Histological examination

Fresh testicular tissues from donors were fixed in 4% paraformaldehyde for 12–24 h at 4°C, embedded in paraffin, and sectioned. Before staining, tissue sections were dewaxed in xylene, rehydrated using a gradient series of ethanol solutions, and washed in distilled water. Then, the sections were stained with periodic acid–Schiff (PAS)/hematoxylin (Servicebio, Wuhan, China) and dehydrated using increasing concentrations of ethanol and xylene. Sections were allowed to dry before applying neutral resin to the coverslips. The staining images

were captured with a Nikon Eclipse Ti-S fluorescence microscope (Nikon, Tokyo, Japan).

### DNA-fluorescence in situ hybridization (FISH) of KS Sertoli cells

KS Sertoli cells were isolated by sequential two-step enzyme digestion, as described in our previous study.<sup>17</sup> Briefly, testicular tissues were enzymatically digested with 4.0 mg ml<sup>-1</sup> collagenase type IV for 5 min to remove most interstitial cells (such as Leydig cells and PTM cells). Then, the tissues were digested with 4.0 mg ml<sup>-1</sup> collagenase type IV, 2.5 mg ml<sup>-1</sup> hyaluronidase, and 1.0 mg ml<sup>-1</sup> trypsin at 37°C for 20 min to divide the remaining tissue into single cells. After adherent growth for 24 h, these cells were redigested with 4.0 mg ml<sup>-1</sup> collagenase type IV for 1 min to remove germ cells. The remaining adherent Sertoli cells were digested with trypsin and fixed with 4% paraformaldehyde. DNA-FISH was performed according to the guidelines of the CEP X SpectrumOrange/Y SpectrumGreen DNA Probe Kit (Abbott, Chicago, IL, USA). In brief, after denaturation of the specimen DNA at 73°C for 5 min, 10 µl of the probe solution was incubated with the slide at 42°C for 30 min. After washing with SSC buffer (sodium chloride and sodium citrate), nuclei were labeled with 4',6'-diamidino-2-phenylindole (DAPI; Solarbio, Shanghai, China) by incubating tissue sections for 15 min. Images were captured with an OLYMPUS IX83 confocal microscope (OLYMPUS, Tokyo, Japan).

### Mapping, sample quality control, and integration of scRNA-seq data analysis

Single-cell isolation and RNA-seq library preparation were described in our previous study.<sup>15</sup> The raw data are labeled as GSE149512. After mapping, a Seurat object was created using the gene expression matrix through the Seurat package in R (Alcatel-Lucent, Jasmine Hill, NJ, USA). Cells were further filtered according to the following threshold parameters: total number of expressed genes, 500–9000; total unique molecular identifier (UMI) count, between negative infinity and 35 000; and proportion of mitochondrial genes expressed, <40%. Normalization was performed according to the software package manual ([https://satijalab.org/seurat/v3.1/pbmc3k\\_tutorial.html](https://satijalab.org/seurat/v3.1/pbmc3k_tutorial.html)). Batch correction was performed using the IntegrateData function in the Seurat package.

### Cell identification and clustering analysis

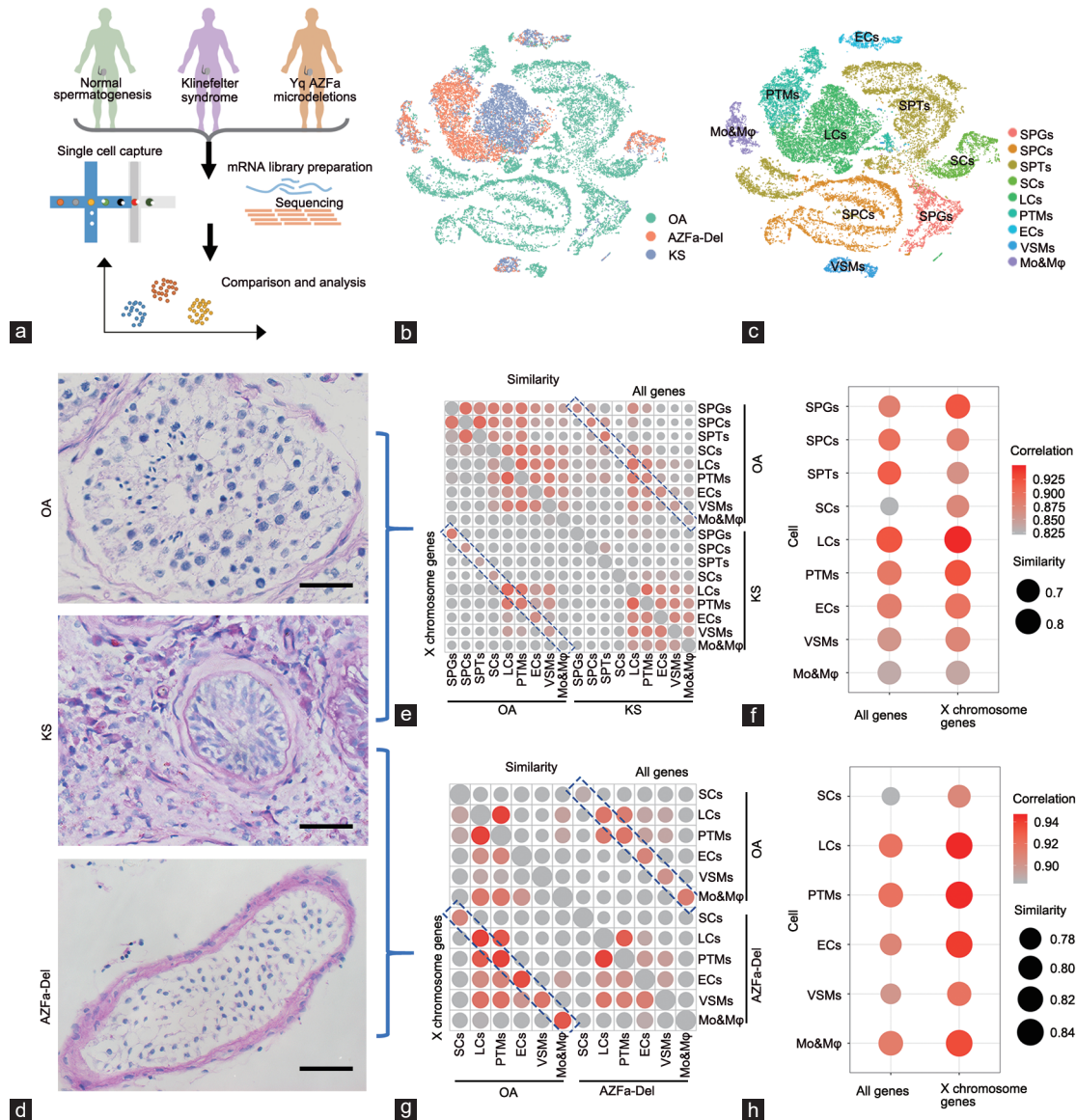
After batch correction, the merged Seurat objects were scaled and analyzed by principal component analysis. Then, the first 20 principal components (PCs) were used to construct a K-nearest-neighbor (KNN) graph and refine the edge weights between any two cells. Based on all of the local cell neighborhoods, the FindClusters function with a resolution parameter of 0.1 was used to cluster the cells. In total, 17 clusters were identified, and these clusters were renamed according to accepted marker genes. The first 20 PCs were also used to perform nonlinear dimensional reduction by tSNE, and the dimension reduction plots were produced as output.

### Similarity and correlation of testicular cells between KS, OA and AZFa-Del in pairs

The expression of each gene was treated as an independent variable. Similarities were represented with the Jaccard index, which was calculated with the vegan 2.5-6 R package. The result is shown as 1–Jaccard distance. The correlations were calculated with the function cor (object, method = spearman) in the stats 3.6.0 R package.

### Identification of differentially expressed genes (DEGs)

The Seurat FindAllMarkers function (test.use = “wilcox”) is based on the normalized UMI count and was used to identify unique



**Figure 1:** The global transcriptome pattern of obstructive azoospermia, Klinefelter syndrome, and AZFa-Del testes. (a) Schematic illustration of the study workflow. (b) T-distributed stochastic neighbor embedding plots of all six testicular single-cell samples. Each cell is labeled with a different color according to its sample type. (c) T-distributed stochastic neighbor embedding plots of all six testicular single-cell samples. Each cell is labeled with a different color according to its cell cluster. (d) Glycogen periodic acid–Schiff staining of OA, KS, and AZFa-Del testes illustrated typical pathological changes in their histological morphology. The scale bars represent 50  $\mu\text{m}$ . (e) A bubble diagram shows the similarity between KS and OA. The size of points represents the value of Jaccard distance. The upper right half represents the result when all expressed genes are considered, and the lower left half represents the results when only X chromosome genes are considered. The colors of the points represent the regression coefficients. The size of points represents the value of Jaccard distance. The colors of the points represent the regression coefficients. (f) A bubble diagram shows an enlarged view of the contents of the blue dotted rectangle, illustrating the similarities between the same types of KS and OA cells. The size of points represents the value of Jaccard distance. The colors of the points represent the regression coefficients. (g) A bubble diagram shows the similarity between KS and AZFa-Del. The size of points represents the value of Jaccard distance. The upper right half represents the result when all expressed genes are considered, and the lower left half represents the results when only X chromosome genes are considered. The colors of the points represent the regression coefficients. The size of points represents the value of Jaccard distance. The colors of the points represent the regression coefficients. (h) A bubble diagram shows an enlarged view of the contents of the blue dotted rectangle, illustrating the similarities between the same types of KS and AZFa-Del cells. The size of points represents the value of Jaccard distance. The colors of the points represent the regression coefficients. SPGs: spermatogonia; SPCs: spermatocytes; SPT: spermatids; SCs: Sertoli cells; LCs: Leydig cells; PTMs: peritubular myoid cells; ECs: endothelial cells; VSMS: vascular smooth muscle cells; Mo&Mφ: monocyte and macrophage; OA: obstructive azoospermia; KS: Klinefelter syndrome; AZFa-Del: Y chromosome microdeletions of the AZFa regions; AZFa: azoospermia factor a.

cluster-specific marker genes. Only the genes that were detected in at least 10% of the cells were tested, and the average  $\log_2$  (fold change) threshold was set as 0.25, 0.5, or 1 as needed.

**Upstream regulators, canonical pathways, and bio-function analysis**  
Ingenuity pathway analysis (IPA) was used to analyze the upstream regulators, canonical pathways, and bio-function differences between



KS and OA Sertoli cells. A total of 1333 DEGs with a change of over  $0.25 \log_2$  (fold change) and with  $P < 0.05$  were input into IPA. IPA terms with  $P < 0.05$  and  $z > 2$  or  $z < -2$  were considered significant.

### Prediction and analysis of candidate transcriptional regulators of XIST

The first 3000 bases at the transcription initiation site of *XIST* were considered the regulatory binding region, and 23 potential transcription regulators were predicted through the PROMO database ([https://alggen.lsi.upc.es/cgi-bin/promo\\_v3/promo/promoinit.cgi?dirDB=TF\\_8.3](https://alggen.lsi.upc.es/cgi-bin/promo_v3/promo/promoinit.cgi?dirDB=TF_8.3); last accessed on 05 December 2022). Then, the binding sites of these transcription factors were found and scored using the JASPAR database.

### Transcription factor network construction

A total of 1469 human transcription factors in the AnimalTFDB data set and a gene expression matrix of OA and KS Sertoli cells were used as input for the ARACNe-AP software. The results of the ARACNe-AP analysis were input into the *ssmarina* (version 1.01) R package, which further calculated the *marina* objects containing the normalized enrichment scores, *P* values, and a specific set of regulators.

## RESULTS

### Global transcriptome profiling showed that Sertoli cells underwent the greatest change in KS patients

To understand the global changes in each type of testicular cell in KS patients, we merged the single-cell expression data of the KS (3 patients) group with those of the OA (2 patients with normal spermatogenesis) and Y chromosome AZFa-Del (1 patient) groups. The sex hormone levels of the two OA donors were within the normal range. All three KS donors and the AZFa-Del donor had higher levels of follicle-stimulating hormone (FSH) and luteinizing hormone (LH), but their testosterone (T) and estradiol levels were within the normal ranges (Supplementary Figure 1a). In total, 27 597 OA cells, 8267 KS cells, and 5434 AZFa-Del cells were profiled. On average, 9359 reads (UMIs), 2719 expressed genes, and 3.7% mitochondrial genes were detected per cell; however, different types of cells showed high heterogeneity. In general, germ cells exhibited more active transcription and a lower proportion of mitochondrial genes (Supplementary Figure 2a). T-distributed stochastic neighbor embedding (tSNE) analysis showed that cells from the three types of patients had markedly different 2D spatial distributions, but good repeatability was demonstrated within the patient groups (Figures 1b and Supplementary Figure 2c). In total, nine cell clusters were identified in the whole cell population based on the expression of known cell type-specific markers (Figure 1c, Supplementary Figure 2b, and Supplementary Table 1).

The PAS/hematoxylin staining results showed that the OA testes exhibited normal morphology. In the AZFa-Del testis, seminiferous tubules showed Sertoli cell-only syndrome with a Johnsen score of 2 and exhibited vascular basement membrane thickening without interstitial proliferation. In addition, the morphology of these Sertoli cells was similar to that of OA testes. Unlike other types of nonobstructive azoospermia, the typical pathological changes in different regions of KS testes showed significant heterogeneity. In KS testes, most seminiferous tubules exhibited more severe atrophy, with Johnsen scores of 0–1 (germ cells were completely absent, and Sertoli cells were also reduced with abnormal morphology), and exhibited vascular basement membrane thickening with severe interstitial proliferation. However, a small number of larger and opaque seminiferous tubules with incomplete or even normal spermatogenesis were still present (Figure 1d and Supplementary Figure 1b).

Then, to further assess the effects of an extra X chromosome on various cell types, we calculated the Jaccard distance and correlations among nine cell types between KS and OA patients and found that Sertoli cells had the least similarity (largest Jaccard distance) and lowest correlation (smallest *r* index) compared with other cell types (Figure 1e and 1f). When only the X chromosome genes were considered, Sertoli cells were still one of the most variable cell clusters (Figure 1f). In addition, to exclude the potential effects of germ cells on somatic cells, we also compared KS cells with AZFa-Del cells using the same method and obtained similar results (Figure 1g and 1h). These results indicated that Sertoli cells underwent the greatest change of any cell type in the presence of an extra X chromosome.

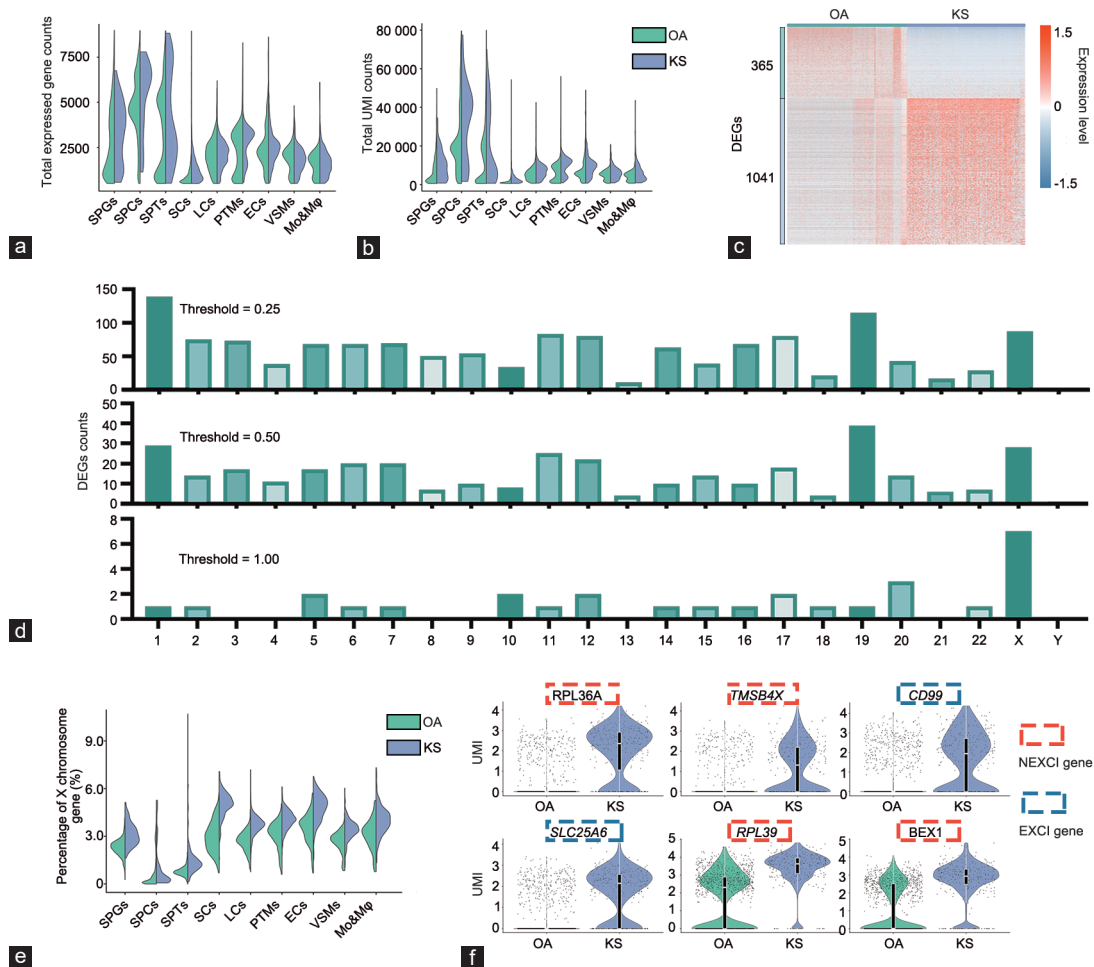
### Transcriptional changes in KS Sertoli cells mainly occurred on the X chromosome genes

Because Sertoli cells underwent the greatest change among the nine cell clusters in KS patients, we then focused on these cells and further analyzed the changes that occurred. In total, we obtained 1062 OA Sertoli cells, 434 AZFa-Del Sertoli cells, and 262 KS Sertoli cells. The global transcriptional level of Sertoli cells was the lowest among other cell types. The total number of expressed genes and total UMI count per cell in KS Sertoli cells were higher than those in OA Sertoli cells. This result was also observed in germ cells but not in other somatic cells (Figure 2a and 2b). When the fold change threshold was set to 0.25, we observed 365 downregulated and 1041 upregulated DEGs in KS Sertoli cells compared with OA Sertoli cells (Supplementary Table 2), and most of these DEGs were located on chromosome 1 (139 genes), chromosome 19 (115 genes), and the X chromosome (87 genes), as shown in Figure 2c. When the fold change threshold was increased to 0.5, most of the DEGs were still located on these chromosomes. However, when the fold change threshold was further increased to 1, only 29 DEGs were found, and seven were located on the X chromosome. This proportion was much higher than that observed for autosomes (Figure 2d). This result indicated that the extra X chromosome had a significant dose effect on gene expression levels; however, the dosage effect in other somatic cells was markedly weaker than that in Sertoli cells (Figure 2e). As expected, the expression levels of these seven X chromosome DEGs were higher in KS patients than those in OA patients. Interestingly, among these X chromosome DEGs, *CD99* and solute carrier family 25 member 6 (*SLC25A6*) are encoded by the pseudo-autosomal region (PAR) and would be expected to escape XCI (EXCI genes), with expression proportional to sex chromosome number; however, ribosomal protein L36a (*RPL36A*), thymosin beta 4 X-linked (*TMSB4X*), ribosomal protein L39 (*RPL39*), brain expressed X-linked 1 (*BEX1*), and glucose-6-phosphate dehydrogenase (*G6PD*) did not escape from XCI (NEXCI genes) according to a previous study on females (Figure 2f).<sup>18</sup> These results indicated that some NEXCI genes also escaped from XCI in KS Sertoli cells, leading to an increased X chromosome expression level in KS Sertoli cells.

### Failure of XCI in Sertoli cells

To further understand why KS Sertoli cells underwent a greater increase in the X gene level than OA Sertoli cells among somatic cells, we calculated the percent of EXCI gene and NEXCI gene expression in nine clusters of cells. As expected, the percentage of EXCI genes in all six types of KS somatic cells increased at least 1.5-fold but less than 2-fold compared with OA cells, indicating that the X chromosome gene expression level and X chromosome number were not strictly linearly correlated. However, the percentage of NEXCI gene expression in KS Sertoli cells was also 1.5 times higher than that in OA cells, and this



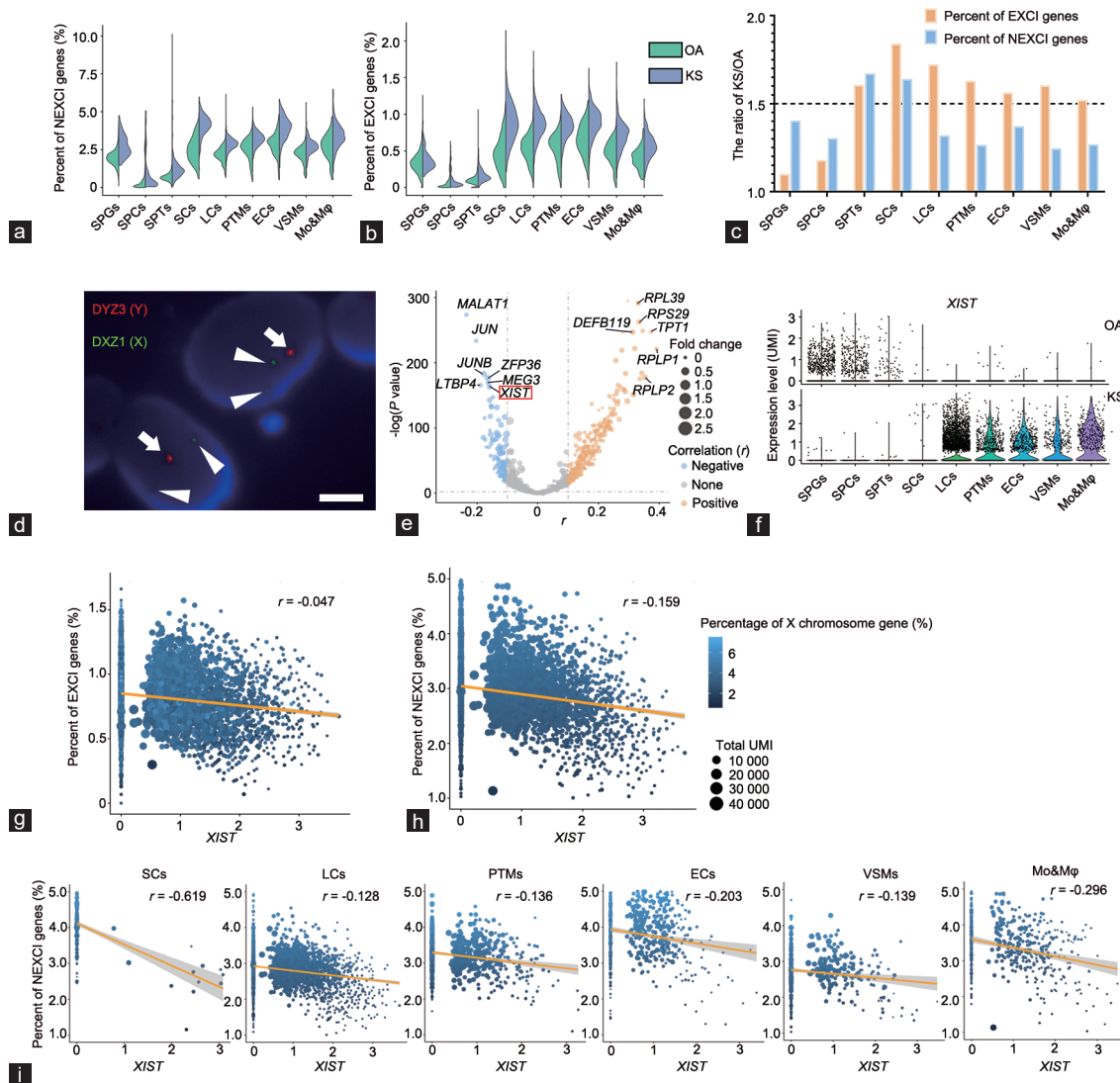


**Figure 2:** Comparison of global and X chromosome gene expression patterns between obstructive azoospermia and Klinefelter syndrome Sertoli cells. (a) Violin plot shows the total expressed gene counts of Sertoli cells; the column is divided according to cell type, including OA and KS cells. (b) Violin plot shows the total unique molecular identifier counts of Sertoli cells; the column is divided according to cell type, including OA and KS cells. (c) Heatmap shows DEGs between OA and KS Sertoli cells. DEG counts are shown on the left of the color bar, which indicates the cell type annotation. (d) The number of DEGs between OA and KS Sertoli cells located on each chromosome under different thresholds are shown. (e) A violin plot shows the percentage of X chromosome gene expression in Sertoli cells; the column is divided into OA and KS cells. (f) Violin plot shows the expression of the top six DEGs located on the X chromosome of Sertoli cells. The color of the rectangular box represents whether this gene can escape from XCI according to a previous study on females. SPGs: spermatogonia; SPCs: spermatocytes; SPTs: spermatids; SCs: Sertoli cells; LCs: Leydig cells; PTMs: peritubular myoid cells; ECs: endothelial cells; VSMs: vascular smooth muscle cells; Mo&Mφ: monocyte and macrophage; OA: obstructive azoospermia; KS: Klinefelter syndrome; XCI: X chromosome inactivation; EXCI genes: genes that escape from XCI; NEXCI genes: genes that not escape from XCI; UMI: unique molecular identifier; DEG: differentially expressed genes.

result was not found in the other five somatic cell types, even though the percentage of NEXCI gene expression in these cells was also increased in KS cells. All of these results indicated that Sertoli cells have different levels of ability to silence the extra X chromosome compared with other somatic cells (Figure 3a–3c).

Next, we identified the karyotype of KS Sertoli cells to determine whether the reason for this phenomenon was that KS Sertoli cells contained more than two X chromosomes. However, the DNA-FISH results showed that the karyotype of all Sertoli cells of all three patients (59, 37, and 41 Sertoli cells, respectively) in this study was 47,XXY (Figure 3d), indicating that the overexpression of X chromosome genes was not because of multiple chromosomes (48,XXXY or other karyotypes). Next, we calculated the correlation between the expression level of each gene and the percentage of NEXCI gene expression in KS somatic cells (including Sertoli cells) to identify the universal upstream or downstream regulatory genes that are

most closely related to XCI. As a result, metastasis-associated lung adenocarcinoma transcript 1 (*MALAT1*), Jun proto-oncogene (*JUN*), JunB proto-oncogene (*JUNB*), latent transforming growth factor beta-binding protein 4 (*LTBP4*), ZFP36 ring finger protein (*ZFP36*), maternally expressed 3 (*MEG3*), and *XIST* showed the highest negative correlation with NEXCI gene expression (Figure 3e). *XIST* was the first noncoding gene identified within the X inactivation center (XIC). It is expressed exclusively from the XIC of the inactive X chromosome, and is essential for the initiation and spread of XCI. Except for Sertoli cells, KS somatic cells had a significantly higher level of *XIST* than OA cells (Figure 3f). In somatic cells (including Sertoli cells), the *XIST* expression level was negatively correlated with the percentage of NEXCI gene expression ( $r = -0.159$ ,  $P = 1.24 \times 10^{-4}$ ; Figure 3h); however, its correlation with the percentage of EXCI genes was not strong ( $r = -0.047$ ,  $P = 0.015$ ; Figure 3g). The expression level of *XIST* was low in KS Sertoli cells. However, to answer the question of whether



**Figure 3:** The relationship between X chromosome gene expression patterns and *XIST* expression levels in Klinefelter syndrome. (a) Violin plot shows the percent of NEXCI genes in Sertoli cells. The column is divided according to cell type, comparing between OA and KS samples. (b) Violin plot shows the percent of EXCI genes in Sertoli cells. The column is divided according to cell type, comparing between OA and KS samples. (c) The ratio of NEXCI gene or EXCI gene expression levels between KS and OA cells. (d) DNA-fluorescence *in situ* hybridization shows the karyotype of sex chromosomes of KS Sertoli cells. The long arrow indicates the DY3 region of the Y chromosome (labeled by red fluorescence), and the triangular arrow indicates the DX3 region of the X chromosome (labeled by green fluorescence). The scale bar represents 0.5  $\mu\text{m}$ . (e) Volcano plot shows the correlation between NEXCI gene expression and that of each gene in all KS testicular cells. The X-axis represents the  $r$  value of the correlation coefficient. The Y-axis represents the  $P$  value. The sizes of the points represent the fold change in the gene expression level in KS cells compared with OA cells. (f) Violin plot shows the expression level of *XIST* in each cell cluster of OA (upper panel) or KS (lower panel) cells. (g) Regression analysis shows the correlation between *XIST* expression and the EXCI gene expression level in total KS somatic cells. The sizes of the points represent the total unique molecular identifier count of the cells, and the color represents the percentage of X chromosome gene expression. (h) Regression analysis shows the correlation between *XIST* expression and the NEXCI gene expression level in total KS somatic cells. The sizes of the points represent the total unique molecular identifier count of the cells, and the color represents the percentage of X chromosome gene expression. (i) Regression analysis shows the correlation between *XIST* expression and NEXCI gene expression level in different clusters of KS somatic cells. The sizes of the points represent the total unique molecular identifier count of the cells, and the color represents the percentage of X chromosome gene expression. *XIST*: X-inactive-specific transcript; SPGs: spermatogonia; SPCs: spermatocytes; SPT: spermatids; SCs: Sertoli cells; LCs: Leydig cells; PTMs: peritubular myoid cells; ECs: endothelial cells; VSMS: vascular smooth muscle cells; Mo&M $\phi$ : monocyte and macrophage; OA: obstructive azoospermia; KS: Klinefelter syndrome; XCI: X chromosome inactivation; EXCI genes: genes that escape from XCI; NEXCI genes: genes that not escape from XCI; UMI: unique molecular identifier; DY3: DY3 alpha satellite DNA probe corresponding to Yp11.1-q11.1 labeled with spectrumOrange; DX3: DX3 alpha satellite DNA probe corresponding to Xp11.1-g11.1 labeled with spectrumGreen.

*XIST* affects NEXCI gene expression in these cells, we isolated KS Sertoli cells and found that *XIST* expression was strongly negatively correlated with the percentage of NEXCI gene expression ( $r = -0.619$ ,  $P = 1.24 \times 10^{-6}$ ), and this negative correlation was also observed in other somatic cells (Figure 3i). Furthermore, we also calculated the

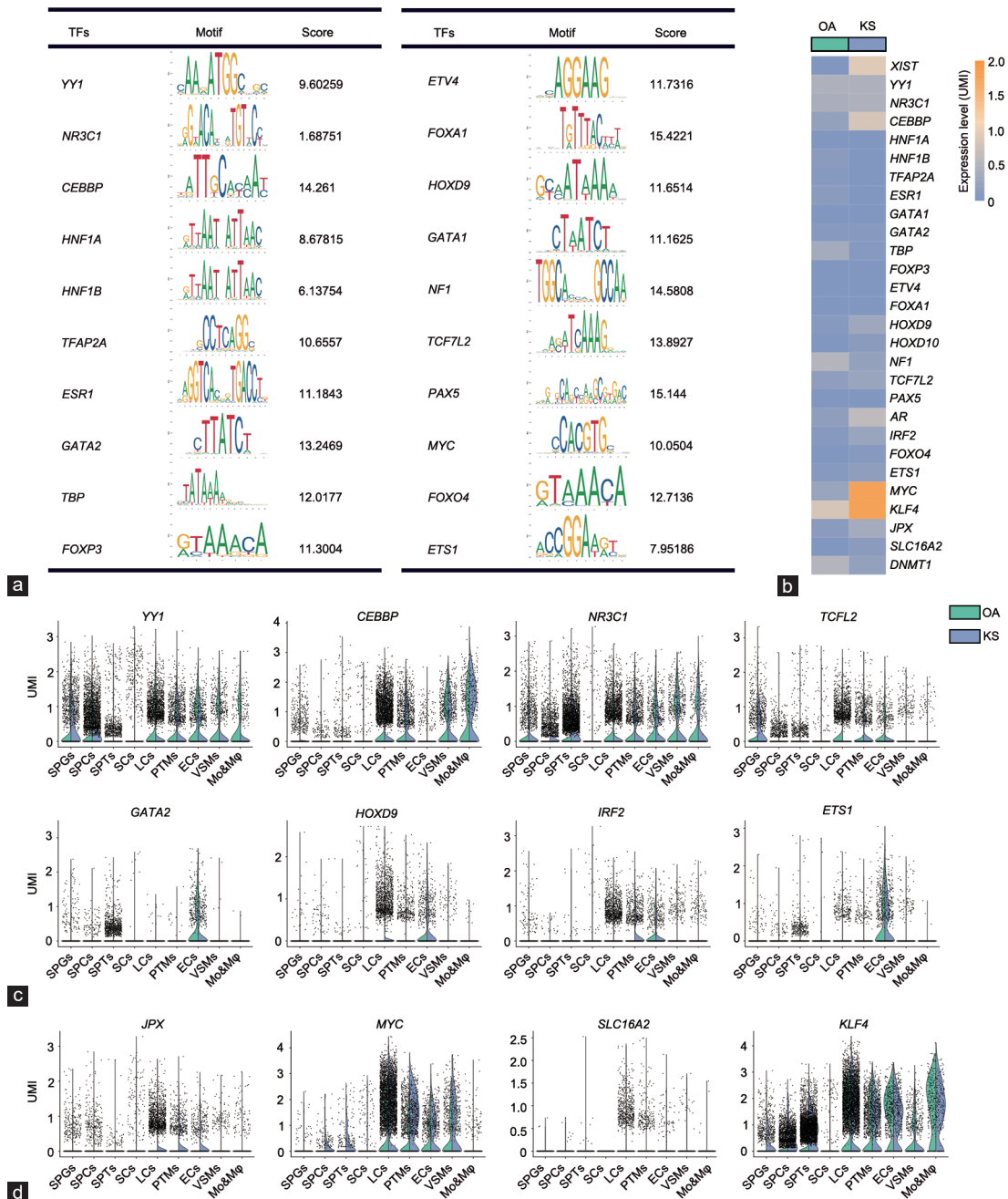
expression percent of the X chromosome gene and the expression level of *XIST* in each patient, and found a similar expression pattern in different KS patients (Supplementary Figure 3a and 3b). These results indicate that *XIST* is a universal silencing factor for NEXCI gene expression in KS somatic cells, including Sertoli cells, and the

abnormal increase in NEXCI gene expression in KS Sertoli cells may be caused by low *XIST* expression.

### Identification of known and novel candidate regulators of *XIST* expression in KS testicular cells

To explore why KS Sertoli cells expressed the lowest level of *XIST* among the nine clusters, we further predicted and analyzed the regulators of *XIST*. In total, 20 candidate regulators were found through the PROMO dataset, and forkhead box A1 (*FOXA1*), paired

box 5 (*PAX5*), neurofibromin 1 (*NF1*), CCAAT enhancer-binding protein beta (*CEBPB*), and GATA-binding protein 2 (*GATA2*) showed the top binding scores for the promoter region of *XIST* (Figure 4a). Among these new candidates and other known regulators such as MYC proto-oncogene (*MYC*), JPX transcript (*JPX*), and KLF transcription factor 4 (*KLF4*), *CEBPB*, homeobox D9 (*HOXD9*), androgen receptor (*AR*), and *MYC* were upregulated in KS cells, but TATA-box-binding protein (*TBP*), *NF1*, and DNA methyltransferase



**Figure 4:** Candidate regulators of *XIST*. (a) Twenty candidate transcription regulators and their binding motifs within  $-3$  kb of the transcriptional start site of the *XIST* gene. The score was calculated using the JASPAR dataset. (b) Heatmap showing the expression level of *XIST* and its regulators in OA and KS Sertoli cells. (c) A violin plot shows the expression level of *XIST* regulators predicted by the PROMO dataset in each cell cluster of OA and KS cells. (d) A violin plot shows the expression level of *XIST* regulators validated by previous studies in each cell cluster of OA and KS cells. *XIST*: X-inactive-specific transcript; SPGs: spermatogonia; SPCs: spermatocytes; SPT: spermatids; SCs: Sertoli cells; LCs: Leydig cells; PTMs: peritubular myoid cells; ECs: endothelial cells; VSMs: vascular smooth muscle cells; Mo&M $\phi$ : monocyte and macrophage; OA: obstructive azoospermia; KS: Klinefelter syndrome; UMI: unique molecular identifier.



1 (*DNMT1*) were downregulated in KS Sertoli cells (Figure 4b). After regulators with low expression levels were filtered out, we found eight new candidate regulators that showed a cell type-specific expression pattern. Specifically, YY1 transcription factor (*YY1*), nuclear receptor subfamily 3 group C member 1 (*NR3C1*), and transcription factor 7 like 2 (*TCF7L2*) were expressed in both germ cells and somatic cells, and CREB-binding protein (*CREBBP*), *GATA2*, *HOXD9*, interferon regulatory factor 2 (*IRF2*), and ETS proto-oncogene 1 (*ETS1*) were only expressed in one or some types of somatic cells. Interestingly, all of the predicted regulators showed no or extremely low expression in Sertoli cells (Figure 4c). In addition, some reported regulators of *XIST* also showed an “absent in Sertoli cells” expression pattern (Figure 4d). However, the expression of most of these regulators was higher in somatic cells than that in germ cells. The cell type-specific pattern of these *XIST* regulators may be related to the loss of *XIST* expression in Sertoli cells and germ cells.

#### Pathological changes in biological processes in KS Sertoli cells

Sertoli cells function as scaffolds of seminiferous tubules and “nurse” cells of spermatogenesis and therefore are one of the most important components of the spermatogenic environment. The pathological changes in KS Sertoli cells were directly related to the phenotype of KS testes (seminiferous tubule atrophy and failure of spermatogenesis). To understand these changes, we first predicted the upstream signaling with IPA based on the DEGs between OA and KS Sertoli cells. Among these signaling pathways, we found that metribolone (a synthetic nonaromatizable androgen and anabolic steroid),  $\beta$ -estradiol, and interleukin (IL)-5 contributed to a strong activation effect (activation  $z$  score  $>2$ ) in KS Sertoli cells, indicating that an abnormal inflammatory response and hormone disruption occurred in these cells. Consistent with signaling activation in the KS phenotype, immunosuppressant-associated drugs such as sirolimus<sup>19</sup> and CLPP<sup>20</sup> produced negative signaling with regard to the KS phenotype in Sertoli cells (Figure 5a). Next, we analyzed the changes in pathways in KS Sertoli cells, and IPA results showed that “estrogen receptor signaling” and inflammatory response terms such as “CXCR4 signaling”, “Fc $\gamma$  receptor-mediated phagocytosis in macrophage and monocytes”, and “IL-8 signaling” were activated in KS Sertoli cells (Figure 5b). Considering that some KS patients have symptoms of androgen deficiency (the androgen levels of all three KS patients were in the low-to-normal range, but the gonadotrophic hormone levels were higher than the normal range), abnormal enrichment of “estrogen receptor signaling” in KS Sertoli cells may also be caused by Leydig cell dysfunction. Therefore, we also examined changes in the androgen synthesis pathway in KS Leydig cells. Interestingly, most genes related to testosterone and dihydrotestosterone synthesis were upregulated in KS cells compared with normal adult cells (Supplementary Figure 4), which could be caused by the high gonadotropin levels in KS patients.

To investigate the master regulators and construct the transcriptional regulatory network during the pathological state of KS, we utilized the Algorithm for the Reconstruction of Accurate Cellular Networks (ARACNe) method to analyze all 1469 known transcription factors from the Animal Transcription Factor Database. Compared with those in OA Sertoli cells, the expression levels of *ATMIN*, *CCDC88A*, *LRRFIP2*, *ID4*, and *ZBTB20* decreased, and the expression levels of *JUNB*, *TCF25*, *FOS*, *NR0B1*, and *ELK1* increased in KS Sertoli cells (Figure 5c and 5d), indicating possible regulatory roles in the pathological process.

When specific bio-function changes were examined, we noticed that terms such as “cell death of fibroblast cell lines”, “infection of cells”,

“autophagy”, and “synthesis of lipid” were enriched in KS Sertoli cells, and terms such as “quantity of reactive oxygen species”, “quantity of hydrogen peroxide”, and “DNA damage” were enriched in OA Sertoli cells (Figure 5e). In general, these results described the changes in upstream signaling, pathways, regulators, and bio-functions in KS Sertoli cells (Figure 5f).

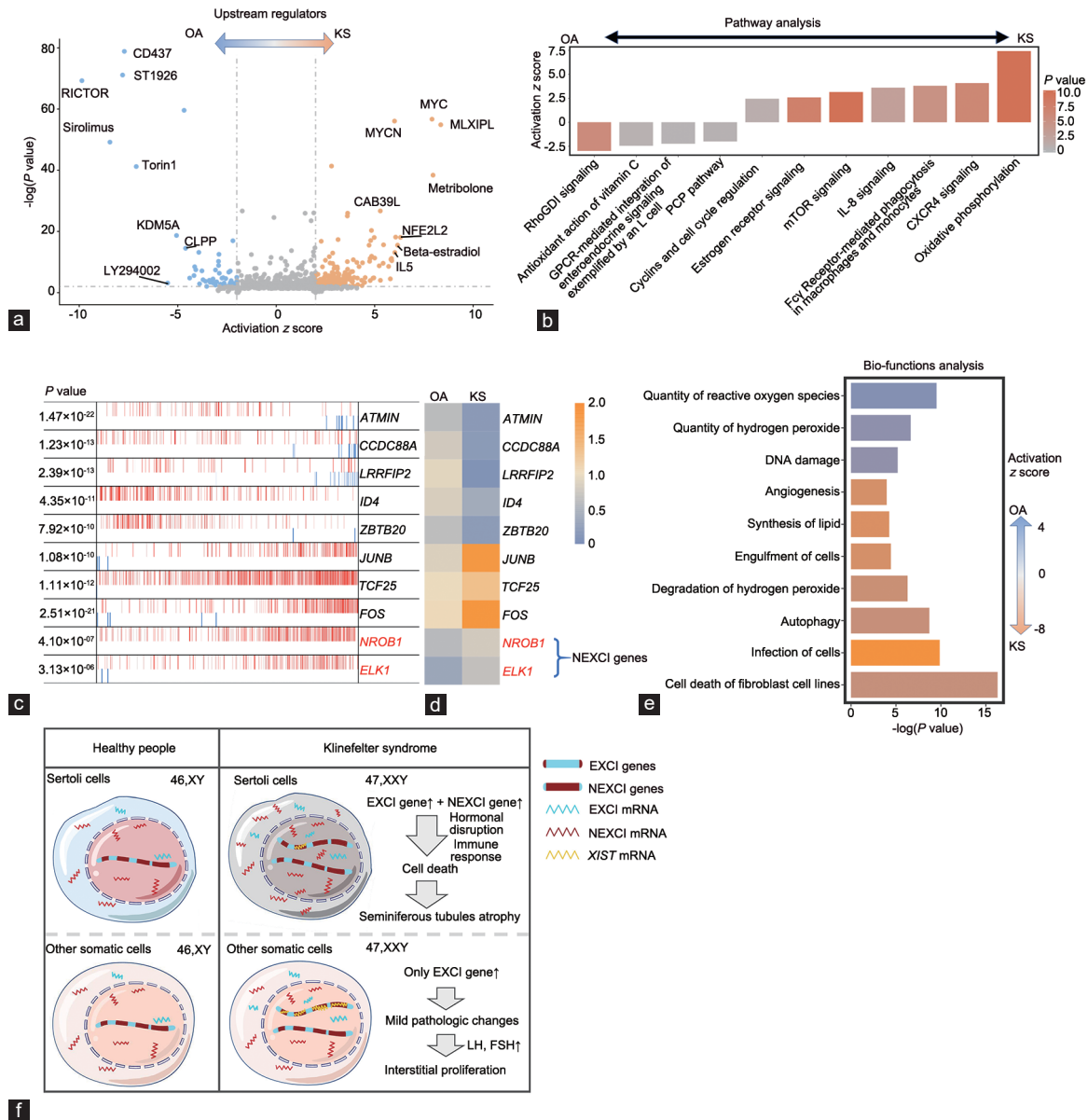
#### KS germ cells with low *XIST* expression were in the maintenance phase of XCI

In the above analysis, we noticed that both Sertoli cells and germ cells expressed *XIST* at low levels (Figure 3f); however, the percentage of X chromosome genes in spermatogonia (SPGs) and spermatocytes (SPCs) in KS patients were not as high as those in KS Sertoli cells. To explain this paradox, we further analyzed other mechanisms in germ cells that may affect X chromosome activation. Germ cells were further divided into 11 clusters according to known markers (Figure 6a and 6b), and each cluster contained KS cells, which showed little difference from OA cells (Figure 6c). In addition, the change in the expression level of sex chromosome genes during germ cell development was far greater than the difference between KS and OA cells. During meiosis, the expression of sex chromosome genes was extremely limited in both OA and KS cells (Figure 6d and 6e), indicating that the meiotic silencing of the unsynapsed chromatin (MSUC) mechanism has an important and effective function in both X chromosomes in KS germ cells. Interestingly, *XIST* was mainly expressed in spermatogonial stem cells (SSCs) and SPGs; and in SSCs, the *XIST* expression level in KS cells was not higher than that in OA cells (Figure 6f). Unlike KS somatic cells, no significant correlation was found between the *XIST* expression level and the percentage of NEXCI gene expression ( $r = -0.04033$ ,  $P = 0.63$ ), indicating that *XIST* may not play a key role in XCI in KS SSCs (Figure 6g). In addition, we found no difference in NEXCI gene expression levels between OA and KS cells, indicating that there are other mechanisms that regulate the expression of X gene in KS SSCs. Therefore, we assessed the correlations between the percentage of X chromosome gene expression and the expression level of each gene in KS SSCs and found that *CXorf23*, *CSAD*, *ACO2*, *PTGDS*, *NOVA1*, and *IGFBP7* showed negative correlations (Figure 6h). In addition, the expression levels of *CSAD*, *PTGDS*, *NOVA1*, and *IGFBP7* in KS SSCs were higher than those in OA SSCs, indicating that these genes may be candidate regulators of the X chromosome in KS SSCs. In addition to these candidate regulators, we also noticed that *JARID2*, which is implicated in the initial *XIST*-induced targeting of PRC2 to the inactive X chromosome,<sup>21</sup> also showed a significant correlation with NEXCI gene expression levels in KS SSCs (Figure 6h). During the initiation and maintenance phases of XCI, the PRC1 and PRC2 complexes are recruited and bind to the X chromosome and help to lock in the inactive state of the X chromosome.<sup>22</sup> Interestingly, nearly all parts of the PRC1 and PRC2 complexes showed a germ cell-enriched expression pattern, and *SFMBT1*, *BMI1*, *EZH2*, and *SUZ12* exhibited low expression levels in somatic cells (Figure 6i). In addition, *SLC25A3* and *RBBP4* were highly expressed in KS Sertoli cells but not in normal Sertoli cells (Figure 6i). Based on these results, we speculated that even though *XIST* was expressed at low levels in both KS Sertoli cells and germ cells, the latter still showed a relatively low level of X gene expression, which may be associated with a germ cell-specific PRC1/2-dependent XCI mechanism.

#### DISCUSSION

Klinefelter syndrome is a common cause of male infertility and affects up to 3.1% of the infertile male population and approximately 10% of

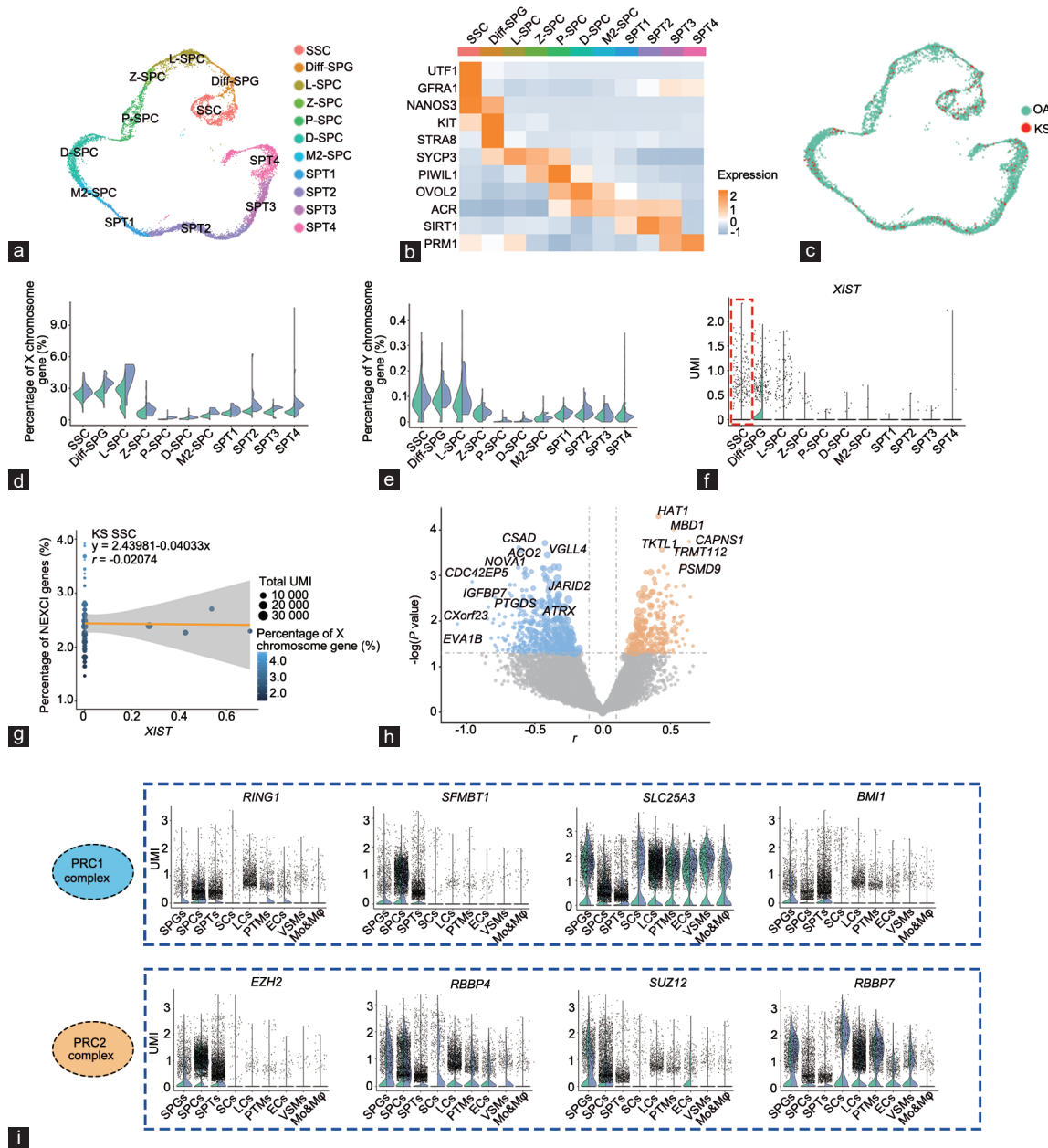




**Figure 5:** Changes in the regulatory pathway and bio-function in Klinefelter syndrome Sertoli cells. (a) Volcano plot shows upstream signaling, which may induce the differences between OA and KS Sertoli cells. (b) Ingenuity pathway analysis (IPA) pathway terms that are enriched and decreased in KS Sertoli cells are shown as a bar plot. The Y-axis represents the z score, and the red gradient indicates low-to-high P values. (c) The top 10 candidate master regulators that may induce the differences between OA and KS Sertoli cells were identified by the Master Regulator Inference Algorithm (MARINa). In the MARINa plots, activated targets are colored red, and repressed targets are colored blue for each potential master regulator (vertical lines on the X-axis). On the X-axis, genes were rank-sorted by their differential expression in OA and KS Sertoli cells from left to right. The P values on the left indicate the significance of enrichment. (d) Heatmap showing the expression levels of top 10 regulators in OA and KS Sertoli cells. (e) IPA bio-function terms enriched or decreased in KS Sertoli cells are shown as a bar plot. The X-axis represents the P value, and the gradient from orange to blue indicates KS to OA bias activation. (f) The schematic diagram shows the main pathologic changes and associated mechanism in KS somatic cells. OA: obstructive azoospermia; KS: Klinefelter syndrome; XCI: X chromosome inactivation; EXCI genes: genes that escape from XCI; NEXCI genes: genes that not escape from XCI; LH: luteinizing hormone; FSH: follicle-stimulating hormone.

azoospermia patients.<sup>23,24</sup> Testosterone replacement can improve the quality of life but has no positive effect on infertility, indicating that androgen deficiency may not be the main cause of spermatogenesis failure in KS patients. The low androgen levels in KS patients may be caused by a decreased number or dysfunction of Leydig cells. However, approximately 75% of adult males with KS are misdiagnosed because of normal fertility and a mild disease phenotype. In addition, most patients with azoospermia caused by KS (72%) have the possibility of sperm

retrieval through microdissection and testicular sperm extraction.<sup>23</sup> These findings indicate that the dosage effect of the X chromosome may affect the progression and prognosis of KS. The dosage effect of the X chromosome in KS includes at least three aspects: (1) high-grade chromosome aneuploidies (48,XXXY; 48,XXYY; or 49,XXXXY) or 46,XY/47,XXY mosaicism; (2) differences in sensitivities to X chromosome genes; and (3) differences in the ability to silence the extra X chromosome. Among these factors, the karyotype is arguably



**Figure 6:** The regulation of X chromosome gene expression patterns in Klinefelter syndrome germ cells. (a) T-distributed stochastic neighbor embedding plots of OA and KS germ cells. Each cell is labeled with a different color according to its cell cluster. (b) Heatmap showing the expression level of known stage-specific markers during human spermatogenesis in OA and KS germ cells. (c) T-distributed stochastic neighbor embedding plots of OA and KS germ cells. Each cell is labeled with a different color according to its sample type. (d) Violin plot shows the percentage of X chromosome gene expression levels in each germ cell subpopulation of OA and KS cells. (e) Violin plot shows the percentage of Y chromosome gene expression levels in each germ cell subpopulation of OA and KS cells. (f) Violin plot shows the *XIST* gene expression levels in each germ cell subpopulation of OA and KS cells. (g) Regression analysis shows the correlation between *XIST* expression and NEXCI gene expression levels in KS SSCs. (h) Volcano plot shows the correlation between NEXCI genes and each gene expression level in all KS SSCs. The X-axis represents the  $r$  value of the correlation coefficient. The Y-axis represents the  $P$  value. The sizes of the points represent the fold change of the gene expression level in KS cells compared with OA cells. (i) A violin plot shows the expression of the PRC1 and PRC2 complex in OA and KS germ cells. SSC: spermatogonial stem cells; Diff-SPG: differentiating or differentiated spermatogonia; L-SPC: leptotene spermatocytes; Z-SPC: zygotene spermatocytes; P-SPC: pachytene spermatocytes; D-SPC: diplotene spermatocytes; M2-SPC: secondary spermatocytes; SPT1–4: four stages of spermatids; OA: obstructive azoospermia; KS: Klinefelter syndrome; XCI: X chromosome inactivation; NEXCI genes: genes that not escape from XCI; UMI: unique molecular identifier; PRC1: polycomb repressor complex 1; *XIST*: X-inactive-specific transcript.

the most critical. It has been reported that only 46,XY SSCs can enter meiosis.<sup>3</sup> In this study, all three of our patients underwent successful sperm extraction, suggesting possible germ cell mosaicism. However, the DNA-FISH results showed that nearly all somatic cells in the seminiferous tubules, as well as those in vitreous degeneration lesions,

had a karyotype of 47,XXY. With traditional RNA sequencing (RNA-seq), it is difficult to clearly describe the heterogeneous phenotype and explore the potential mechanism within KS testicular cells. Here, we profiled over 35 000 testicular single-cell transcriptomes from OA and KS patients and observed the heterogeneity of susceptibility to



an extra X chromosome and the ability to counter X gene overload within KS testicular cells.

Except in cells undergoing meiosis, XCI triggered by *XIST* is the most important regulatory mechanism of X chromosome silencing in XX cells. *XIST* RNA is transcribed in the XIC and then spreads to spatially close sites and eventually to the entire X chromosome.<sup>8</sup> During the silencing maintenance phase, *XIST* RNA recruits silencing complexes, such as polycomb repressor complex 1 (PRC1), PRC2, and Jarid2 to lock the inactive state of the post-XCI chromosome.<sup>8,25</sup> Previous studies have mainly focused on females, and researchers have found and identified approximately 15% of X chromosome genes that may escape from XCI.<sup>12</sup> Our study obtained a similar result that most EXCI genes were upregulated in KS somatic cells; however, the percentage of NEXCI gene expression in KS Sertoli cells was also increased over 1.5-fold. Furthermore, *XIST* showed low expression levels in KS Sertoli cells; however, in the few KS Sertoli cells that expressed *XIST*, a significant negative correlation was found between the *XIST* expression level and the percentage of NEXCI gene expression, indicating that the decreased XCI ability in KS Sertoli cells was caused by the quantity of *XIST* expression but not the dysfunction of the *XIST* mechanism. In addition, premeiotic germ cells also expressed *XIST* at low levels, similar to those in Sertoli cells, but they also expressed high levels of PRC1/2 complexes. In these cells, *XIST* expression was not negatively correlated with the percentage of NEXCI gene expression. Although the recruitment of PRC2 to the X chromosome is directly or indirectly dependent on *XIST*, a significant spatial separation of PRC2 proteins and *XIST* was observed.<sup>26</sup> Furthermore, no PRC2 factors were found in a recent study that purified *XIST* interacting partners.<sup>27</sup> Therefore, we speculated that premeiotic germ cells were in an *XIST*-independent XCI maintenance phase. We found that XCI was completely dominated by a different mechanism in meiotic cells, and MSUC played a critical role in both OA and KS cells.

*XIST* is tightly controlled by a series of pluripotency factors, *trans*-acting factors, and *cis*-regulators in an X dosage-sensitive manner. For example, YY1, which has been implicated as a *trans*-acting activator of *XIST* expression and helps to tether *XIST* RNA to the X chromosome during XCI,<sup>28</sup> was widely expressed in different types of testicular cells but not in Sertoli cells. JPX, which enhances *XIST* expression in *cis*,<sup>29</sup> was expressed in KS somatic cells but not in KS Sertoli cells and normal somatic cells. In addition, we found that most *XIST* regulators showed a “low expression in Sertoli cells” pattern, indicating the presence of one or more common upstream regulatory signaling disorders in KS Sertoli cells. Overexpression of *XIST* in Sertoli cells is a potential treatment for KS patients; however, *XIST* RNA is too long (19 kbp) to embed in a vector. Therefore, a more feasible treatment may be to target the upstream signaling of *XIST*. In addition, although KS Sertoli cells lack *XIST*, the NEXCI genes were not increased by twofold in these cells, indicating the presence of other potential X-silencing mechanisms such as the PRC1/2 complex.

The pathological changes in KS Sertoli cells may be caused by abnormal estrogen receptor signaling and the immune response, as shown by pathway analysis. Furthermore, according to the MGI database (<http://www.informatics.jax.org/>), we found 14 NEXCI DEGs between OA and KS Sertoli cells with fertility-associated phenotypes in a mouse model (**Supplementary Table 3**). For example, TIMP-1 functions as a coregulator of basal testicular steroidogenesis, and mice with mutations in this gene have higher testis weights than age-matched wild-type males.<sup>30</sup> Ubiquitously transcribed tetratricopeptide repeat protein X-linked (UTX; H3K27me3 demethylase) may cause downregulation of lactate and cholesterol metabolism, thus affecting affects the nursing functions of XX/Sry Sertoli cells.<sup>31</sup> HPRT1 plays a

central role in the generation of purine nucleotides through the purine salvage pathway, and its mutant male mice at 34–38 weeks displayed complete testicular atrophy.<sup>32</sup> The abnormally high expression of these NEXCI DEGs may directly damage Sertoli cells alone or coordinately, and cause spermatogenesis failure.

Although we performed a transcriptional analysis to uncover the pathological changes and potential mechanisms of the KS spermatogenic microenvironment, additional evidence is still needed, such as immunohistochemistry and RNA-FISH in testis tissue sections. Some candidate regulators also need to be identified by functional experiments. In addition, some important regulators of *XIST* such as its antisense version, *TSIX*, were not detected in this study because its RNA lacks 3' poly-A signaling to be captured and undergoes reverse transcription. We observed abnormal hormonal and immune responses in KS Sertoli cells and predicted that some small molecule drugs could potentially have therapeutic effects, such as ST1962, sirolimus, and CD437. In the future, the spermatogenic microenvironment in KS patients may be improved through endocrine regulation and suppression of abnormal immune responses so that genetic safety issues caused by gene editing can be avoided.

In general, based on the single-cell transcriptome data from normal adults and KS patients, we propose a novel mechanism in which the weak XCI ability of Sertoli cells causes their high susceptibility to the extra X chromosome, and this increased damage to Sertoli cells leads to atrophy of seminiferous tubules and failure of spermatogenesis.

#### AUTHOR CONTRIBUTIONS

LYZ, PL, ZL, and ZZ designed the experiments. PL, RHT, and CCY collected the samples and clinical information. LYZ isolated cells for scRNA-seq and performed bioinformatics analyses. YZC drew the schematic illustration. LYZ and YXT wrote the manuscript. All authors read and approved the final manuscript.

#### COMPETING INTERESTS

All authors declare no competing interests.

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Supplementary Information is linked to the online version of the paper on the *Asian Journal of Andrology* website.

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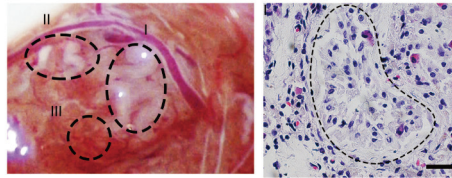
**Supplementary Table 3: Fertility-associated X-differentially expressed genes between obstructive azoospermia and Klinefelter syndrome Sertoli cells**

	<i>p_val</i>	<i>avg_logFC</i>	<i>KO mouse showed a fertility-associated phenotype</i>
<i>TIMP1</i>	1.96E-27	0.92397	MGI: 3512125
<i>UXT</i>	1.20E-24	0.645173	MGI: 6159372
<i>HPRT1</i>	1.12E-17	0.529665	MGI: 3831277
<i>PDHA1</i>	1.32E-20	0.49432	MGI: 2386703
<i>SAT1</i>	2.05E-15	0.454061	MGI: 3521903
<i>CETN2</i>	1.68E-16	0.432882	MGI: 5634782
<i>CDK16</i>	6.25E-09	0.341665	MGI: 5319210
<i>PGRMC1</i>	1.42E-09	0.335683	MGI: 5775088
<i>ABCD1</i>	4.50E-05	0.287123	MGI: 1861771
<i>USP11</i>	2.50E-08	0.284873	MGI: 6363163
<i>SMS</i>	5.64E-11	0.27472	MGI: 4431547
<i>NXF3</i>	1.11E-10	0.264091	MGI: 4950382
<i>ELK1</i>	1.03E-11	0.259978	MGI: 3028871
<i>UBE2A</i>	1.74E-06	0.250153	MGI: 5488492

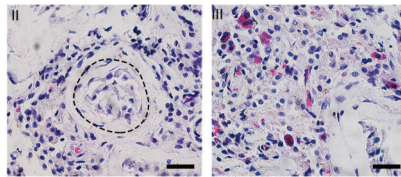
MGI: mouse genome informatics; KO: knockout

Sample ID	age	T (ng/ml)	E2 (pg/ml)	FSH (mIU/ml)	LH (mIU/ml)	testis volume (ml)
OA1	27	4.46	16	4.2	3.85	12
OA2	28	3.58	14	3.9	2.98	12
AZFa_Del	31	2.33	29	12.1	7.22	10
KS1	26	3.56	82	26.4	30.52	2
KS2	26	2.47	134	42.1	16.31	2
KS3	29	2.15	78	41.4	15.18	1.5

**a**

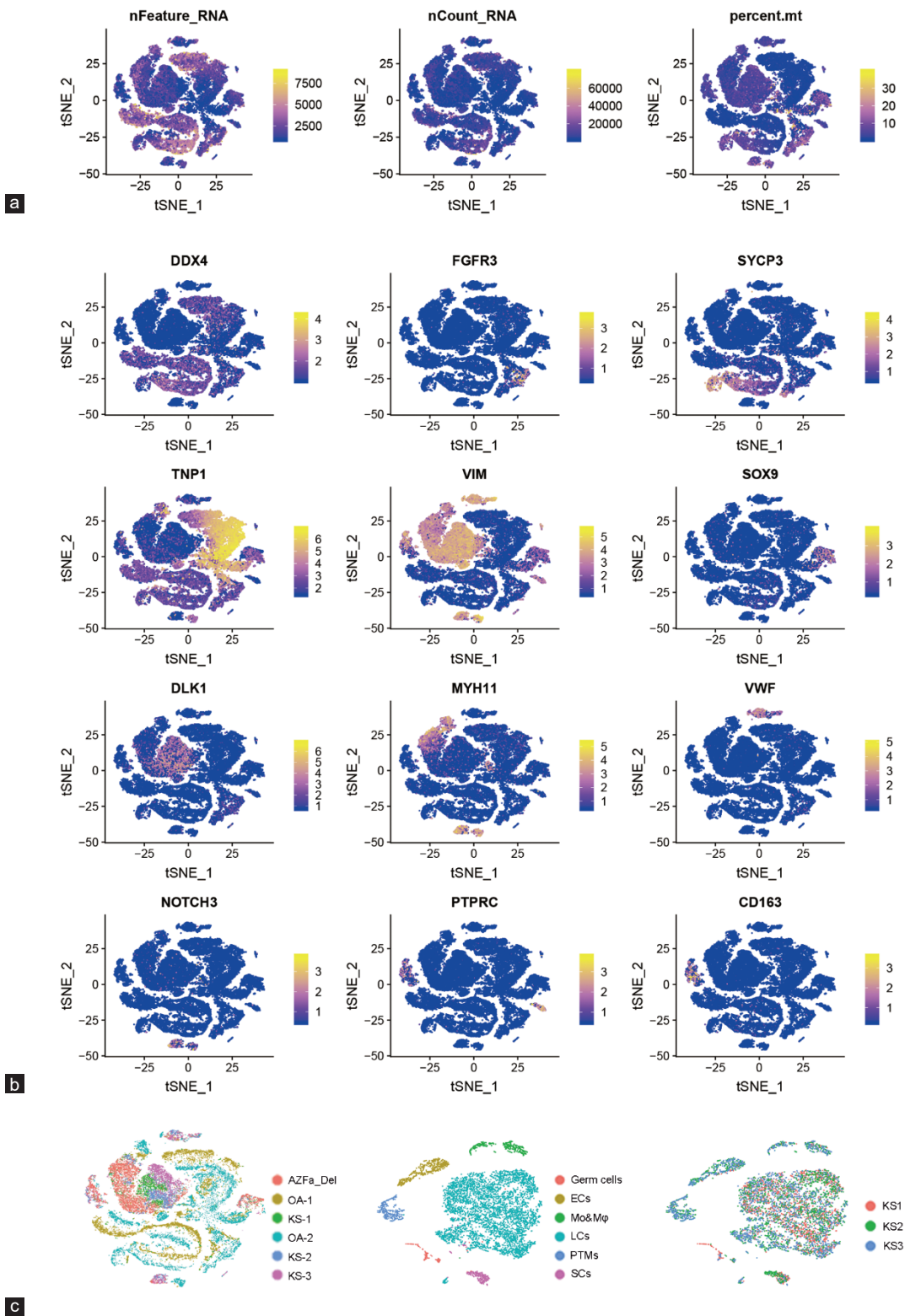


**b**

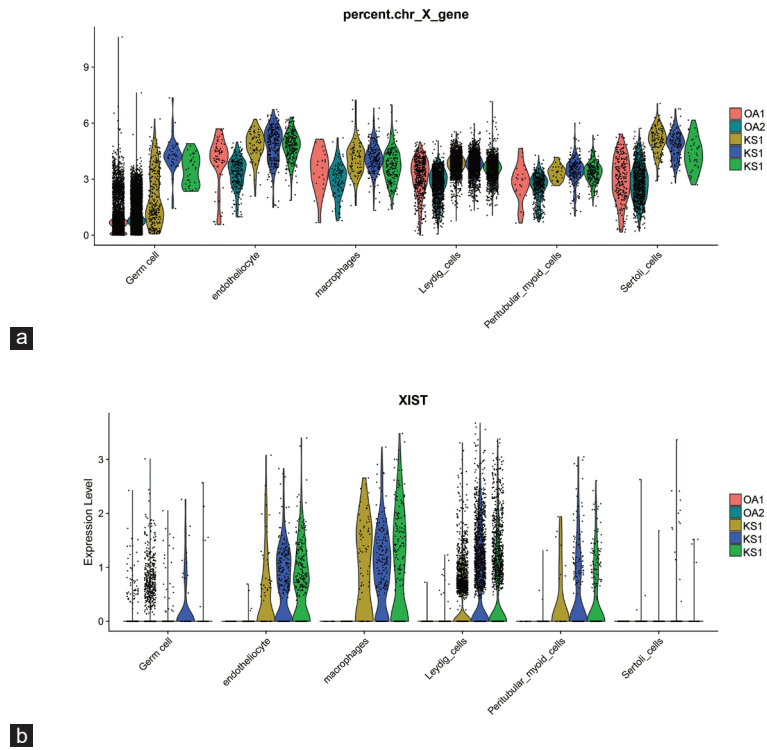


**Supplementary Figure 1: Clinical information and heterogeneous testicular atrophy in Klinefelter syndrome. (a)** The clinical information of two OA and three KS patients. **(b)** Photograph of a typical KS testis during microdissection and testicular sperm extraction revealing heterogeneous atrophy in different regions. Hematoxylin and eosin staining shows the histological changes in each region. Region I, larger and opaque seminiferous tubules with normal spermatogenesis; Region II, thin and transparent seminiferous tubules that only contain pathological Sertoli cells; Region III, severely atrophic seminiferous tubules with almost all Sertoli cells and lacking germ cells. The scale bar represents 40  $\mu$ m. OA: obstructive azoospermia; KS: Klinefelter syndrome.

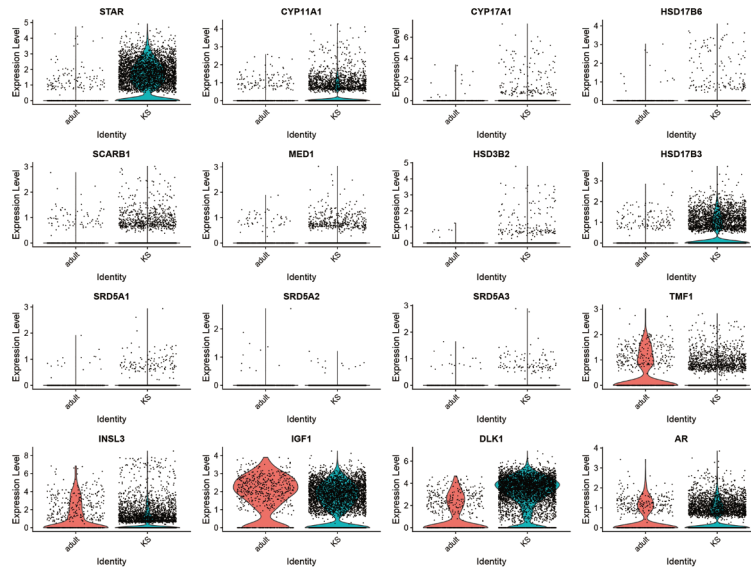




**Supplementary Figure 2:** Single-cell RNA sequencing quality information and known marker expression in each cluster. (a) The single-cell RNA sequencing quality information includes the total gene expression counts, unique molecular identifier counts, and the percent of mitochondrial gene expression projected on the tSNE plot. (b) Expression patterns of selected markers projected on the tSNE plot. (c) tSNE plots of testicular single-cell samples. Each cell is labeled with a different color according to patient ID (left and right panels) or cell cluster (middle panel). tSNE: T-distributed stochastic neighbor embedding.



**Supplementary Figure 3:** Expression percent of X chromosome gene and expression level of XIST in each sample. (a and b) Violin plot shows the expression percent of X chromosome gene (a) and expression level of XIST (b) in each patient. *XIST*: X-inactive-specific transcript.



**Supplementary Figure 4:** Change in the androgen synthesis pathway in Klinefelter syndrome Leydig cells. Violin plot shows the expression levels of androgen synthesis pathway-related genes in Klinefelter syndrome Leydig cells.

Supplementary Table 1: DEGs of each cell cluster in normal state

logFC&gt;0.5

	p_val	avg_logFC	pct.1	pct.2	p_val_adj	P1/P2	cluster	gene
CD741	0	4.589360307	0.939	0.07	0	13.41428571	macrophages	CD74
CXCL8	0	4.335967189	0.842	0.024	0	35.08333333	macrophages	CXCL8
HLA.DRA	0	4.081392803	0.552	0.018	0	30.66666667	macrophages	HLA.DRA
CCL3L3	0	4.004574474	0.811	0.023	0	35.26086957	macrophages	CCL3L3
CCL4L2	0	3.863038733	0.811	0.017	0	47.70588235	macrophages	CCL4L2
IL1B	0	3.839781479	0.788	0.015	0	52.53333333	macrophages	IL1B
CCL3	0	3.810209385	0.788	0.011	0	71.63636364	macrophages	CCL3
HLA-DRA1	6.35E-294	3.715834332	0.384	0.026	3.90E-289	1.48E+01	macrophages	HLA-DRA
TAGLN1	0	3.6510815	0.941	0.129	0	7.294573643	VSM_cells	TAGLN
DCN	0	3.633166533	0.98	0.12	0	8.166666667	Leydig_cells	DCN
CFD	0	3.521249703	0.894	0.057	0	15.68421053	Leydig_cells	CFD
TPSB2	7.87E-60	3.477935867	0.34	0.02	4.83E-55	1.70E+01	mastocyte	TPSB2
HLA.DRB11	0	3.378041701	0.556	0.051	0	10.90196078	macrophages	HLA.DRB1
SRGN1	0	3.360395466	0.889	0.046	0	19.32608696	macrophages	SRGN
CCL4	0	3.278722374	0.731	0.056	0	13.05357143	macrophages	CCL4
ADIRF2	0	3.248291087	0.877	0.118	0	7.43220339	VSM_cells	ADIRF
CXCL31	0	3.207505116	0.71	0.024	0	29.58333333	macrophages	CXCL3
B2M5	2.42E-37	3.127936516	0.947	0.252	1.48E-32	3.76E+00	T_cells	B2M
CCL5	0	3.112461415	0.763	0.006	0	127.1666667	T_cells	CCL5
HLA.DPA1	0	3.111717823	0.539	0.008	0	67.375	macrophages	HLA.DPA1
MGP	0	3.032405707	0.913	0.157	0	5.815286624	endotheliocyte	MGP
RGS1	0	3.005160059	0.768	0.005	0	153.6	macrophages	RGS1
CXCL21	0	3.001068413	0.774	0.042	0	18.42857143	macrophages	CXCL2
TPM21	0	2.99208043	0.909	0.137	0	6.635036496	VSM_cells	TPM2
GPR183	0	2.983887021	0.781	0.006	0	130.1666667	macrophages	GPR183
B2M	0	2.972316038	0.985	0.242	0	4.070247934	endotheliocyte	B2M
TNFAIP31	0	2.95978865	0.815	0.109	0	7.47706422	macrophages	TNFAIP3
CCL41	1.82E-31	2.931540681	0.5	0.063	1.12E-26	7.94E+00	T_cells	CCL4
SELE	0	2.915731036	0.598	0.009	0	66.44444444	endotheliocyte	SELE
NFKBIA1	2.75E-242	2.859832344	0.855	0.207	1.69E-237	4.13E+00	macrophages	NFKBIA
IL32	1.25E-204	2.849971491	0.763	0.023	7.65E-200	3.32E+01	T_cells	IL32
PTGDS	0	2.849301788	0.991	0.666	0	1.487987988	Leydig_cells	PTGDS
PTGDS1	0	2.844915854	0.979	0.664	0	1.47439759	PTM_cells	PTGDS
SPARCL1	0	2.836369742	0.96	0.155	0	6.193548387	endotheliocyte	SPARCL1
CD83	0	2.835161206	0.828	0.063	0	13.14285714	macrophages	CD83
HLA.DQA1	0	2.811853558	0.508	0.004	0	127	macrophages	HLA.DQA1
HLA-DPB11	1.78E-213	2.806914001	0.357	0.032	1.09E-208	1.12E+01	macrophages	HLA-DPB1
ACTA2	0	2.784577725	0.912	0.149	0	6.120805369	PTM_cells	ACTA2
KLF61	7.89E-195	2.760582322	0.865	0.285	4.84E-190	3.04E+00	macrophages	KLF6
HLA-DPA11	8.53E-263	2.737647298	0.347	0.024	5.23E-258	1.45E+01	macrophages	HLA-DPA1
HLA.DPB1	0	2.69855066	0.542	0.005	0	108.4	macrophages	HLA.DPB1
HLA-DRB11	1.36E-34	2.696634654	0.357	0.15	8.33E-30	2.38E+00	macrophages	HLA-DRB1
MYH111	0	2.686007961	0.937	0.184	0	5.092391304	VSM_cells	MYH11
HLA.DRB5	0	2.678477625	0.471	0.015	0	31.4	macrophages	HLA.DRB5
ACTA21	0	2.662911479	0.924	0.174	0	5.310344828	VSM_cells	ACTA2
RNASE12	0	2.660771869	0.733	0.101	0	7.257425743	Sertoli_cells	RNASE1
S100A44	4.60E-90	2.651859632	0.763	0.053	2.82E-85	1.44E+01	T_cells	S100A4
APOA1	0	2.644927727	0.742	0.108	0	6.87037037	Sertoli_cells	APOA1
NLRP3	0	2.634359563	0.7	0.007	0	100	macrophages	NLRP3
IGFBP72	0	2.623014649	0.957	0.253	0	3.782608696	PTM_cells	IGFBP7
GADD45B4	0	2.618912838	0.848	0.181	0	4.685082873	VSM_cells	GADD45B
B2M1	1.20E-272	2.609591997	0.963	0.245	7.35E-268	3.93E+00	macrophages	B2M
NKG7	0	2.569689226	0.579	0.001	0	579	T_cells	NKG7
TM4SF1	0	2.568463225	0.921	0.073	0	12.61643836	endotheliocyte	TM4SF1
PLPP3	0	2.56828911	0.899	0.089	0	10.1011236	Leydig_cells	PLPP3
TPSAB1	0	2.561304711	0.3	0.002	0	150	mastocyte	TPSAB1
FATE1	0	2.547521129	0.81	0.068	0	11.91176471	Sertoli_cells	FATE1
HLA.DQB1	0	2.528569358	0.502	0.021	0	23.9047619	macrophages	HLA.DQB1
HLA-E	0	2.505912549	0.72	0.079	0	9.113924051	endotheliocyte	HLA-E
TMSB4X5	6.97E-31	2.505174793	0.974	0.338	4.28E-26	2.88E+00	T_cells	TMSB4X
GZMA	0	2.500833935	0.632	0.001	0	632	T_cells	GZMA
DEFB119	0	2.498591255	0.761	0.117	0	6.504273504	Sertoli_cells	DEFB119
CLU1	3.66E-303	2.498270374	0.746	0.657	2.25E-298	1.14E+00	Sertoli_cells	CLU
MYL91	0	2.486523818	0.905	0.15	0	6.033333333	VSM_cells	MYL9
TMSB4X	3.33E-302	2.476110042	0.975	0.329	2.05E-297	2.96E+00	endotheliocyte	TMSB4X
FTL1	1.08E-161	2.470003802	0.963	0.523	6.62E-157	1.84E+00	macrophages	FTL
TMSB104	0	2.468101568	0.913	0.363	0	2.515151515	Sertoli_cells	TMSB10
CXCR41	6.58E-213	2.451229727	0.658	0.016	4.04E-208	4.11E+01	T_cells	CXCR4
HLA-B2	6.07E-24	2.450813932	0.789	0.253	3.72E-19	3.12E+00	T_cells	HLA-B
APOE1	0	2.44562663	0.795	0.159	0	5	PTM_cells	APOE
CITED1	0	2.439601543	0.786	0.066	0	11.90909091	Sertoli_cells	CITED1



VIM4	1.40E-261	2.42576747	0.943	0.444	8.58E-257	2.12E+00	VSM_cells	VIM
CALD12	0	2.42188149	0.937	0.227	0	4.127753304	VSM_cells	CALD1
ANXA11	0	2.42010897	0.724	0.075	0	9.653333333	macrophages	ANXA1
NR4A21	1.15E-295	2.413191552	0.811	0.143	7.05E-291	5.67E+00	macrophages	NR4A2
TYROBP	0	2.409168261	0.815	0.004	0	203.75	macrophages	TYROBP
HLA-C5	6.34E-30	2.402507709	0.763	0.177	3.89E-25	4.31E+00	T_cells	HLA-C
HLA-A4	8.43E-19	2.402281545	0.763	0.309	5.17E-14	2.47E+00	T_cells	HLA-A
C11orf962	0	2.396933686	0.871	0.266	0	3.27443609	VSM_cells	C11orf96
MYH11	0	2.388047245	0.894	0.161	0	5.552795031	PTM_cells	MYH11
C1QA	0	2.381767492	0.68	0.002	0	340	macrophages	C1QA
C5AR1	0	2.38172501	0.633	0.017	0	37.23529412	macrophages	C5AR1
VWF	0	2.37655757	0.878	0.037	0	23.72972973	endotheliocyte	VWF
MALAT15	5.11E-19	2.363279102	1	0.838	3.14E-14	1.19E+00	T_cells	MALAT1
NFKBIZ1	0	2.361850579	0.801	0.101	0	7.930693069	macrophages	NFKBIZ
CD691	7.98E-38	2.357795113	0.18	0.009	4.90E-33	2.00E+01	mastocyte	CD69
IFI27	0	2.352623412	0.903	0.123	0	7.341463415	endotheliocyte	IFI27
SFRP1	0	2.343317747	0.822	0.073	0	11.26027397	Leydig_cells	SFRP1
IGFBP52	0	2.326690954	0.751	0.06	0	12.51666667	VSM_cells	IGFBP5
MIR202HG	0	2.322044523	0.701	0.05	0	14.02	Sertoli_cells	MIR202HG
MT.RNR11	3.55E-43	2.321435368	0.346	0.279	2.18E-38	1.24E+00	Sertoli_cells	MT.RNR1
CAV1	0	2.318789327	0.906	0.094	0	9.638297872	endotheliocyte	CAV1
TXNIP	0	2.318291856	0.913	0.163	0	5.601226994	endotheliocyte	TXNIP
FTH1P10	7.89E-99	2.315698459	0.539	0.158	4.84E-94	3.41E+00	macrophages	FTH1P10
ZFP362	0	2.314730368	0.867	0.217	0	3.995391705	Leydig_cells	ZFP36
IGF1	0	2.3134078	0.836	0.054	0	15.48148148	Leydig_cells	IGF1
CD52	0	2.301475966	0.684	0.004	0	171	T_cells	CD52
SAT11	6.92E-271	2.294417693	0.815	0.15	4.24E-266	5.43E+00	macrophages	SAT1
IER31	2.18E-255	2.287986297	0.68	0.103	1.34E-250	6.60E+00	macrophages	IER3
FLNA2	0	2.282760011	0.856	0.106	0	8.075471698	VSM_cells	FLNA
EMP1	0	2.28237729	0.866	0.049	0	17.67346939	endotheliocyte	EMP1
HLA-B	4.73E-184	2.279582731	0.72	0.246	2.90E-179	2.93E+00	endotheliocyte	HLA-B
COL1A2	0	2.277689388	0.915	0.151	0	6.059602649	Leydig_cells	COL1A2
RERGL	0	2.273889949	0.715	0.013	0	55	VSM_cells	RERGL
COL1A1	0	2.271752036	0.862	0.099	0	8.707070707	Leydig_cells	COL1A1
GNG11	0	2.268270205	0.841	0.044	0	19.11363636	endotheliocyte	GNG11
TMSB4X1	1.10E-194	2.264526486	0.949	0.332	6.72E-190	2.86E+00	macrophages	TMSB4X
BCL2A1	0	2.257895857	0.599	0.015	0	39.93333333	macrophages	BCL2A1
RGS2	2.38E-220	2.2522595	0.694	0.133	1.46E-215	5.22E+00	macrophages	RGS2
PLAUR	0	2.248061266	0.714	0.024	0	29.75	macrophages	PLAUR
IGF21	0	2.247648276	0.816	0.04	0	20.4	Leydig_cells	IGF2
MALAT14	1.04E-173	2.246974741	0.953	0.836	6.37E-169	1.14E+00	VSM_cells	MALAT1
DSTN1	3.21E-224	2.246848528	0.909	0.555	1.97E-219	1.64E+00	VSM_cells	DSTN
IER24	0	2.246074872	0.841	0.168	0	5.005952381	VSM_cells	IER2
IGFBP71	0	2.236594021	0.976	0.257	0	3.79766537	Leydig_cells	IGFBP7
LTBP4	0	2.231985259	0.92	0.127	0	7.244094488	Leydig_cells	LTBP4
TMSB4X3	0	2.229472121	0.946	0.307	0	3.081433225	PTM_cells	TMSB4X
CCL2	0	2.228119092	0.603	0.038	0	15.86842105	endotheliocyte	CCL2
FOS2	0	2.227875991	0.924	0.286	0	3.230769231	Leydig_cells	FOS
FN1	0	2.226875955	0.702	0.077	0	9.116883117	endotheliocyte	FN1
O2-Jun	0	2.221026079	0.928	0.346	0	2.682080925	Leydig_cells	JUN
HMG5	0	2.212928893	0.702	0.052	0	13.5	Sertoli_cells	HMG5
VIM2	0	2.212831794	0.98	0.429	0	2.284382284	Leydig_cells	VIM
FHL21	0	2.204024482	0.816	0.079	0	10.32911392	PTM_cells	FHL2
MYL9	0	2.197610697	0.85	0.128	0	6.640625	PTM_cells	MYL9
VIM	1.14E-253	2.189873203	0.983	0.444	7.01E-249	2.21E+00	endotheliocyte	VIM
S100A4	0	2.188441483	0.724	0.046	0	15.73913043	macrophages	S100A4
LYZ	0	2.184696671	0.653	0.003	0	217.6666667	macrophages	LYZ
HLA-C	3.12E-244	2.17739278	0.705	0.17	1.91E-239	4.15E+00	endotheliocyte	HLA-C
RGS5	2.42E-140	2.175761577	0.467	0.123	1.48E-135	3.80E+00	VSM_cells	RGS5
TPM2	0	2.160595245	0.846	0.115	0	7.356521739	PTM_cells	TPM2
SRGN3	2.47E-99	2.157558697	0.816	0.054	1.52E-94	1.51E+01	T_cells	SRGN
MT2A3	1.90E-298	2.153642436	0.82	0.222	1.17E-293	3.69E+00	VSM_cells	MT2A
DLK1	0	2.144193788	0.479	0.103	0	4.650485437	Leydig_cells	DLK1
FTH11	8.89E-143	2.140501428	0.98	0.72	5.45E-138	1.36E+00	macrophages	FTH1
HIST1H4C	0	2.137783371	0.648	0.133	0	4.872180451	spermatogonia	HIST1H4C
MS4A6A	0	2.135819205	0.724	0.005	0	144.8	macrophages	MS4A6A
ENG2	0	2.132021529	0.848	0.072	0	11.77777778	PTM_cells	ENG
CD692	0	2.124532088	0.684	0.008	0	85.5	T_cells	CD69
RPL10	4.34E-256	2.116374222	0.96	0.357	2.66E-251	2.69E+00	endotheliocyte	RPL10
SOCS32	0	2.109417199	0.717	0.1	0	7.17	Leydig_cells	SOCS3
RGS162	0	2.108192889	0.457	0.051	0	8.960784314	VSM_cells	RGS16
HLA.E1	1.22E-269	2.104158287	0.532	0.058	7.47E-265	9.17E+00	macrophages	HLA.E
CD3D	0	2.102635672	0.632	0.006	0	105.3333333	T_cells	CD3D
CLDN5	0	2.102463603	0.663	0.013	0	51	endotheliocyte	CLDN5
CYBA1	2.88E-95	2.102251138	0.684	0.04	1.77E-90	1.71E+01	T_cells	CYBA

MCAM	0	2.099309356	0.799	0.028	0	28.53571429	VSM_cells	MCAM
SERPINF1	0	2.098932582	0.889	0.118	0	7.533898305	Leydig_cells	SERPINF1
DUSP11	1.27E-202	2.093974562	0.781	0.18	7.79E-198	4.34E+00	macrophages	DUSP1
GZMK	1.43E-306	2.089078996	0.368	0.003	8.78E-302	1.23E+02	T_cells	GZMK
HLA.E	1.19E-56	2.087502422	0.241	0.06	7.33E-52	4.02E+00	endotheliocyte	HLA.E
C1S	0	2.079599276	0.864	0.072	0	12	Leydig_cells	C1S
FOSB2	0	2.06296444	0.859	0.321	0	2.676012461	Leydig_cells	FOSB
GSN	0	2.062933943	0.94	0.205	0	4.585365854	endotheliocyte	GSN
SGK1	1.79E-177	2.061884473	0.7	0.173	1.10E-172	4.05E+00	macrophages	SGK1
C1QB	0	2.056014741	0.556	0.002	0	278	macrophages	C1QB
C1QC	0	2.051554057	0.552	0.002	0	276	macrophages	C1QC
TRAC	2.02E-36	2.051321005	0.737	0.131	1.24E-31	5.63E+00	T_cells	TRAC
A2M	0	2.048504704	0.873	0.103	0	8.475728155	endotheliocyte	A2M
HLA.B1	1.14E-127	2.04643206	0.532	0.121	7.02E-123	4.40E+00	macrophages	HLA.B
TIMP32	0	2.040137855	0.861	0.142	0	6.063380282	PTM_cells	TIMP3
LAPTM5	0	2.033019968	0.684	0.007	0	97.71428571	macrophages	LAPTM5
SEPP1	3.86E-105	2.031029956	0.471	0.106	2.37E-100	4.44E+00	macrophages	SEPP1
PTPRC1	2.01E-209	2.02977531	0.711	0.019	1.23E-204	3.74E+01	T_cells	PTPRC
PLEK	0	2.028361081	0.65	0.012	0	54.16666667	macrophages	PLEK
IER2	0	2.024419461	0.916	0.168	0	5.452380952	endotheliocyte	IER2
APOE	0	2.020922295	0.65	0.17	0	3.823529412	Leydig_cells	APOE
CD14	0	2.017035062	0.613	0.01	0	61.3	macrophages	CD14
FCER1A	0	2.015355891	0.438	0.002	0	219	macrophages	FCER1A
TNP1	0	2.014407028	0.998	0.985	0	1.01319797	spermatid	TNP1
SOCS3	0	2.00066955	0.878	0.115	0	7.634782609	endotheliocyte	SOCS3
SH3BGRL32	3.64E-27	1.991738794	0.789	0.214	2.24E-22	3.69E+00	T_cells	SH3BGRL3
KLF2	0	1.990784025	0.861	0.158	0	5.449367089	endotheliocyte	KLF2
NFKBIA	0	1.987110308	0.886	0.204	0	4.343137255	endotheliocyte	NFKBIA
CST3	5.11E-164	1.982393292	0.963	0.426	3.13E-159	2.26E+00	macrophages	CST3
FCER1G	0	1.979915598	0.613	0.005	0	122.6	macrophages	FCER1G
HLA-DQA1	0	1.979835595	0.337	0.003	0	112.3333333	macrophages	HLA-DQA1
RPL105	3.67E-23	1.978110654	0.921	0.365	2.25E-18	2.52E+00	T_cells	RPL10
TAGLN	0	1.97718524	0.816	0.109	0	7.486238532	PTM_cells	TAGLN
ID21	7.33E-256	1.975583075	0.717	0.119	4.50E-251	6.03E+00	macrophages	ID2
TPM11	0	1.97354633	0.833	0.195	0	4.271794872	VSM_cells	TPM1
ITM2B2	0	1.97121108	0.933	0.3	0	3.11	Leydig_cells	ITM2B
S100A62	0	1.970358765	0.823	0.103	0	7.990291262	Leydig_cells	S100A6
PRM2	0	1.966700491	0.999	0.99	0	1.009090909	spermatid	PRM2
CCL4L21	1.57E-29	1.965608683	0.316	0.026	9.62E-25	1.22E+01	T_cells	CCL4L2
C1R	0	1.96359901	0.808	0.058	0	13.93103448	Leydig_cells	C1R
PPP1R15A1	3.57E-203	1.963287413	0.798	0.191	2.19E-198	4.18E+00	macrophages	PPP1R15A
CORO1A1	0	1.953718779	0.684	0.006	0	114	T_cells	CORO1A
RPL104	5.56E-256	1.950458101	0.92	0.356	3.41E-251	2.58E+00	VSM_cells	RPL10
COL6A2	0	1.94354344	0.865	0.092	0	9.402173913	Leydig_cells	COL6A2
JUNB2	0	1.94322526	0.905	0.325	0	2.784615385	Leydig_cells	JUNB
MT-ATP64	5.46E-217	1.942218328	0.907	0.426	3.35E-212	2.13E+00	VSM_cells	MT-ATP6
RRAD	0	1.939779	0.693	0.049	0	14.14285714	VSM_cells	RRAD
AIF1	0	1.938875441	0.657	0.002	0	328.5	macrophages	AIF1
CXCL2	0	1.935127587	0.63	0.041	0	15.36585366	endotheliocyte	CXCL2
SPARCL13	0	1.931795612	0.909	0.154	0	5.902597403	VSM_cells	SPARCL1
ZFP36L12	0	1.926547445	0.861	0.378	0	2.277777778	Leydig_cells	ZFP36L1
TIMP12	0	1.925981891	0.816	0.135	0	6.044444444	PTM_cells	TIMP1
CST7	0	1.923266112	0.658	0.001	0	658	T_cells	CST7
AEBP11	0	1.919894138	0.806	0.058	0	13.89655172	PTM_cells	AEBP1
IER3	0	1.919546682	0.782	0.099	0	7.898989899	endotheliocyte	IER3
XCL2	0	1.918746763	0.211	0	0	#DIV/0!	T_cells	XCL2
ARL4C1	1.24E-121	1.918466635	0.579	0.022	7.61E-117	2.63E+01	T_cells	ARL4C
HLA-DRB51	7.74E-56	1.915584107	0.313	0.081	4.75E-51	3.86E+00	macrophages	HLA-DRB5
KLRB1	0	1.912911661	0.368	0	0	#DIV/0!	T_cells	KLRB1
MT-ND14	1.23E-229	1.912284018	0.903	0.402	7.53E-225	2.25E+00	VSM_cells	MT-ND1
ZFP36	6.38E-304	1.907966106	0.918	0.234	3.92E-299	3.92E+00	endotheliocyte	ZFP36
GZMH	0	1.894872657	0.553	0.001	0	553	T_cells	GZMH
S100A64	0	1.893277911	0.708	0.123	0	5.756097561	VSM_cells	S100A6
PI16	0	1.892281796	0.603	0.042	0	14.35714286	Leydig_cells	PI16
KLF65	2.27E-18	1.891645619	0.789	0.291	1.39E-13	2.71E+00	T_cells	KLF6
GADD45B	0	1.890745135	0.906	0.182	0	4.978021978	endotheliocyte	GADD45B
ARHGDI1	1.82E-83	1.889158055	0.632	0.039	1.12E-78	1.62E+01	T_cells	ARHGDI1
TSC22D35	3.31E-29	1.888917216	0.711	0.147	2.03E-24	4.84E+00	T_cells	TSC22D3
COPE	0	1.883784461	0.839	0.567	0	1.479717813	Sertoli_cells	COPE
03-Jun	0	1.882398457	0.853	0.346	0	2.465317919	PTM_cells	JUN
KRT17	0	1.882168871	0.448	0.008	0	56	PTM_cells	KRT17
SPARCL12	0	1.881156274	0.893	0.13	0	6.869230769	PTM_cells	SPARCL1
PLN	0	1.870307559	0.759	0.176	0	4.3125	VSM_cells	PLN
SMC3	0	1.868053418	0.779	0.316	0	2.465189873	spermatogonia	SMC3
CXCR4	0	1.868015577	0.451	0.012	0	37.58333333	macrophages	CXCR4

ID1	0	1.857995236	0.685	0.064	0	10.703125	endotheliocyte	ID1
TEX101	0	1.857390898	0.57	0.134	0	4.253731343	spermatogonia	TEX101
EPPIN	0	1.848749457	0.588	0.039	0	15.07692308	Sertoli_cells	EPPIN
INSL3	0	1.846744554	0.461	0.098	0	4.704081633	Leydig_cells	INSL3
MT-CYB4	4.36E-222	1.844598538	0.901	0.389	2.67E-217	2.32E+00	VSM_cells	MT-CYB
KLF24	0	1.843926231	0.782	0.158	0	4.949367089	VSM_cells	KLF2
CD74	0	1.842981435	0.898	0.067	0	13.40298507	endotheliocyte	CD74
GSTA1	0	1.840676848	0.652	0.061	0	10.68852459	Sertoli_cells	GSTA1
EGR12	0	1.837154908	0.815	0.239	0	3.410041841	Leydig_cells	EGR1
CILP	0	1.837022426	0.715	0.022	0	32.5	Leydig_cells	CILP
CD3E	2.03E-223	1.836331227	0.579	0.012	1.25E-218	4.83E+01	T_cells	CD3E
HLA-A	9.30E-139	1.834798312	0.712	0.303	5.70E-134	2.35E+00	endotheliocyte	HLA-A
JUNB	6.60E-250	1.834618804	0.955	0.34	4.05E-245	2.81E+00	endotheliocyte	JUNB
MGP1	0	1.83331472	0.883	0.137	0	6.445255474	Leydig_cells	MGP
SMOC21	0	1.832348459	0.797	0.053	0	15.03773585	PTM_cells	SMOC2
RPS4X	2.56E-245	1.830493807	0.95	0.34	1.57E-240	2.79E+00	endotheliocyte	RPS4X
RPL396	1.99E-23	1.829596079	0.868	0.282	1.22E-18	3.08E+00	T_cells	RPL39
APOD	0	1.829458666	0.685	0.066	0	10.37878788	Leydig_cells	APOD
MALAT13	5.19E-267	1.821771164	0.916	0.834	3.18E-262	1.10E+00	PTM_cells	MALAT1
CD632	0	1.821037911	0.899	0.266	0	3.379699248	Leydig_cells	CD63
WISP2	0	1.820496705	0.648	0.031	0	20.90322581	Leydig_cells	WISP2
DPEP11	0	1.81505935	0.757	0.14	0	5.407142857	PTM_cells	DPEP1
COL3A1	0	1.813938597	0.712	0.151	0	4.715231788	Leydig_cells	COL3A1
MT.RNR22	1.60E-14	1.813507951	0.351	0.375	9.79E-10	9.36E-01	Sertoli_cells	MT.RNR2
GSN2	0	1.81272577	0.762	0.192	0	3.96875	Leydig_cells	GSN
MFGE81	0	1.811727984	0.82	0.08	0	10.25	VSM_cells	MFGE8
CALD11	0	1.809779788	0.874	0.206	0	4.242718447	PTM_cells	CALD1
TNFAIP32	1.66E-22	1.806902056	0.579	0.117	1.02E-17	4.95E+00	T_cells	TNFAIP3
NR4A3	0	1.806387654	0.549	0.031	0	17.70967742	macrophages	NR4A3
HLA-DQB1	4.81E-274	1.804545277	0.32	0.019	2.95E-269	1.68E+01	macrophages	HLA-DQB1
PLAC9	0	1.797889685	0.686	0.061	0	11.24590164	Leydig_cells	PLAC9
IFITM3	0	1.797374488	0.918	0.187	0	4.909090909	endotheliocyte	IFITM3
TIMP3	0	1.796963116	0.868	0.167	0	5.19760479	endotheliocyte	TIMP3
CCDC168	0	1.796779127	0.636	0.201	0	3.164179104	spermatid	CCDC168
NAMPT1	8.62E-183	1.793723594	0.68	0.148	5.29E-178	4.59E+00	macrophages	NAMPT
MT2A	2.70E-259	1.792798492	0.839	0.224	1.65E-254	3.75E+00	endotheliocyte	MT2A
S100A6	0	1.790828899	0.854	0.122	0	7	endotheliocyte	S100A6
HLA-E3	5.70E-43	1.790127976	0.684	0.088	3.50E-38	7.77E+00	T_cells	HLA-E
ZFP36L21	3.80E-194	1.787303812	0.707	0.142	2.33E-189	4.98E+00	macrophages	ZFP36L2
MT1E1	0	1.786292698	0.655	0.057	0	11.49122807	VSM_cells	MT1E
FOS4	5.79E-248	1.785533705	0.886	0.303	3.55E-243	2.92E+00	VSM_cells	FOS
MAFB	1.53E-305	1.77791731	0.572	0.06	9.41E-301	9.53E+00	macrophages	MAFB
ACTB6	8.33E-18	1.777603755	0.947	0.587	5.11E-13	1.61E+00	T_cells	ACTB
FTL2	0	1.77469336	0.943	0.51	0	1.849019608	Leydig_cells	FTL
MYL63	2.02E-191	1.77227303	0.911	0.661	1.24E-186	1.38E+00	VSM_cells	MYL6
CTSS	0	1.771926579	0.657	0.019	0	34.57894737	macrophages	CTSS
BGN	0	1.771590992	0.749	0.058	0	12.9137931	PTM_cells	BGN
ATF34	0	1.77145526	0.746	0.108	0	6.907407407	VSM_cells	ATF3
IFITM32	0	1.771424231	0.908	0.167	0	5.437125749	Leydig_cells	IFITM3
FOS	8.24E-241	1.767305581	0.931	0.304	5.06E-236	3.06E+00	endotheliocyte	FOS
NEAT1	2.98E-224	1.765348707	0.754	0.189	1.83E-219	3.99E+00	endotheliocyte	NEAT1
SERPINA5	0	1.764638177	0.56	0.17	0	3.294117647	Sertoli_cells	SERPINA5
TRBC21	5.55E-44	1.762690812	0.474	0.041	3.40E-39	1.16E+01	T_cells	TRBC2
JUNB4	6.65E-234	1.761869585	0.888	0.34	4.08E-229	2.61E+00	VSM_cells	JUNB
ZFP36L2	0	1.761071986	0.854	0.138	0	6.188405797	endotheliocyte	ZFP36L2
CCL23	0	1.760798856	0.469	0.039	0	12.02564103	VSM_cells	CCL2
BEX1	0	1.757474279	0.59	0.053	0	11.13207547	Sertoli_cells	BEX1
SPARC2	0	1.756558311	0.875	0.217	0	4.032258065	PTM_cells	SPARC
ANXA15	8.22E-50	1.755232064	0.711	0.082	5.04E-45	8.67E+00	T_cells	ANXA1
SCRG1	0	1.75498241	0.507	0.065	0	7.8	Sertoli_cells	SCRG1
CST33	0	1.751189061	0.753	0.41	0	1.836585366	Sertoli_cells	CST3
ADAMTS11	0	1.750058172	0.62	0.068	0	9.117647059	Leydig_cells	ADAMTS1
TCEAL41	0	1.749241869	0.807	0.161	0	5.01242236	PTM_cells	TCEAL4
RPL102	0	1.747415614	0.942	0.34	0	2.770588235	Leydig_cells	RPL10
JUNB6	1.08E-19	1.746437116	0.895	0.349	6.65E-15	2.56E+00	T_cells	JUNB
DEFB123	0	1.738069001	0.527	0.023	0	22.91304348	Sertoli_cells	DEFB123
MEG3	0	1.737314393	0.677	0.161	0	4.204968944	Leydig_cells	MEG3
MT-ND34	1.19E-225	1.729594348	0.896	0.366	7.27E-221	2.45E+00	VSM_cells	MT-ND3
SNHG7	1.37E-304	1.72828593	0.794	0.177	8.43E-300	4.49E+00	endotheliocyte	SNHG7
NR4A1	8.02E-128	1.726285447	0.758	0.256	4.92E-123	2.96E+00	macrophages	NR4A1
NEAT13	0	1.725348958	0.65	0.174	0	3.735632184	PTM_cells	NEAT1
ZFP361	8.31E-187	1.723357055	0.869	0.237	5.09E-182	3.67E+00	macrophages	ZFP36
FCGR2A	0	1.722879297	0.643	0.045	0	14.28888889	macrophages	FCGR2A
NR2F22	0	1.720345429	0.794	0.137	0	5.795620438	PTM_cells	NR2F2
SERPING11	0	1.720103438	0.766	0.089	0	8.606741573	Leydig_cells	SERPING1

MT-ND53	4.85E-259	1.715428962	0.877	0.287	2.98E-254	3.06E+00	VSM_cells	MT-ND5
CRISPLD2	0	1.714912078	0.699	0.099	0	7.060606061	Leydig_cells	CRISPLD2
PENK	1.06E-278	1.713390984	0.82	0.512	6.48E-274	1.60E+00	Leydig_cells	PENK
EPAS1	0	1.712286748	0.779	0.074	0	10.52702703	endotheliocyte	EPAS1
AKAP4	0	1.711122018	0.779	0.364	0	2.14010989	spermatid	AKAP4
04-Jun	3.74E-209	1.707128986	0.882	0.362	2.29E-204	2.44E+00	VSM_cells	JUN
AHNAK2	0	1.704105564	0.78	0.146	0	5.342465753	Leydig_cells	AHNAK
ALDH1A11	0	1.702596773	0.629	0.096	0	6.552083333	Sertoli_cells	ALDH1A1
COL6A1	0	1.702048661	0.786	0.092	0	8.543478261	Leydig_cells	COL6A1
CLDN11	0	1.700853586	0.5	0.067	0	7.462686567	Sertoli_cells	CLDN11
HLA.A1	3.29E-105	1.700070092	0.522	0.135	2.02E-100	3.87E+00	macrophages	HLA.A
TCEAL5	0	1.698754185	0.576	0.036	0	16	Sertoli_cells	TCEAL5
PNRC11	1.56E-128	1.698288589	0.852	0.393	9.56E-124	2.17E+00	macrophages	PNRC1
SEPP11	0	1.69815959	0.808	0.079	0	10.2278481	Leydig_cells	SEPP1
HSPA1A1	1.21E-65	1.694760997	0.694	0.36	7.42E-61	1.93E+00	macrophages	HSPA1A
SERPINE2	0	1.693013509	0.783	0.147	0	5.326530612	Leydig_cells	SERPINE2
ITGB2	0	1.692615818	0.616	0.003	0	205.3333333	macrophages	ITGB2
RPL103	0	1.691891036	0.926	0.337	0	2.747774481	PTM_cells	RPL10
SELM3	1.20E-284	1.691482505	0.776	0.208	7.38E-280	3.73E+00	VSM_cells	SELM
TSC22D31	2.25E-153	1.69126961	0.626	0.142	1.38E-148	4.41E+00	macrophages	TSC22D3
PTGS21	0	1.68912041	0.488	0.02	0	24.4	macrophages	PTGS2
PRM1	0	1.688848862	0.997	0.974	0	1.023613963	spermatid	PRM1
B2M2	0	1.687255989	0.957	0.222	0	4.310810811	Leydig_cells	B2M
ANXA22	0	1.68348754	0.853	0.272	0	3.136029412	Leydig_cells	ANXA2
CD34	0	1.682683964	0.801	0.057	0	14.05263158	endotheliocyte	CD34
LINC00919	0	1.681276077	0.76	0.417	0	1.822541966	spermatid	LINC00919
MEG31	0	1.679783919	0.607	0.161	0	3.770186335	PTM_cells	MEG3
PTRF	0	1.679371486	0.829	0.11	0	7.536363636	endotheliocyte	PTRF
PFN14	1.16E-11	1.677720232	0.737	0.409	7.12E-07	1.80E+00	T_cells	PFN1
CD163	0	1.675680789	0.572	0.023	0	24.86956522	macrophages	CD163
COL6A3	0	1.674790312	0.697	0.054	0	12.90740741	Leydig_cells	COL6A3
MT1M1	0	1.67288586	0.666	0.025	0	26.64	VSM_cells	MT1M
RHOB4	6.45E-270	1.672568679	0.822	0.231	3.95E-265	3.56E+00	VSM_cells	RHOB
LBH	0	1.670013068	0.708	0.09	0	7.866666667	VSM_cells	LBH
LELP1	0	1.668992653	0.939	0.81	0	1.159259259	spermatid	LELP1
ANXA14	0.005486279	1.668256773	0.18	0.083	1	2.168674699	mastocyte	ANXA1
HIST1H2AA	0	1.668180323	0.533	0.153	0	3.483660131	spermatogonia	HIST1H2AA
FAM71A	0	1.667801309	0.714	0.252	0	2.833333333	spermatid	FAM71A
FOSB1	3.10E-136	1.667658354	0.875	0.338	1.90E-131	2.59E+00	macrophages	FOSB
OAZ3	0	1.666256471	0.859	0.498	0	1.724899598	spermatid	OAZ3
TOP2A	0	1.665959043	0.693	0.239	0	2.89958159	spermatogonia	TOP2A
TMSB10	2.08E-226	1.665554042	0.96	0.39	1.28E-221	2.46E+00	endotheliocyte	TMSB10
GADD45A	0	1.663365502	0.722	0.064	0	11.28125	endotheliocyte	GADD45A
FOS3	0	1.663146346	0.856	0.285	0	3.003508772	PTM_cells	FOS
IGFBP3	2.27E-93	1.660222572	0.166	0.019	1.39E-88	8.74E+00	endotheliocyte	IGFBP3
ZFP364	3.05E-296	1.654008261	0.863	0.233	1.87E-291	3.70E+00	VSM_cells	ZFP36
TIMP11	0	1.652399069	0.807	0.14	0	5.764285714	Leydig_cells	TIMP1
OSR21	0	1.65191603	0.753	0.082	0	9.182926829	PTM_cells	OSR2
C11orf961	0	1.650661529	0.778	0.251	0	3.099601594	PTM_cells	C11orf96
COL15A11	0	1.649542125	0.677	0.106	0	6.386792453	Leydig_cells	COL15A1
H19	0	1.647882654	0.282	0.024	0	11.75	Leydig_cells	H19
PTGS2	0	1.644212345	0.484	0.018	0	26.88888889	endotheliocyte	PTGS2
HCST1	1.71E-161	1.644058887	0.605	0.018	1.05E-156	3.36E+01	T_cells	HCST
FGL2	0	1.643122658	0.586	0.055	0	10.65454545	macrophages	FGL2
ISLR1	0	1.639036081	0.651	0.05	0	13.02	Leydig_cells	ISLR
MT-ND24	1.11E-215	1.635799339	0.905	0.404	6.82E-211	2.24E+00	VSM_cells	MT-ND2
RP5-1023B21.1	0	1.634303983	0.569	0.318	0	1.789308176	spermatocyte	RP5-1023B21.1
MYLK	0	1.632184269	0.761	0.168	0	4.529761905	PTM_cells	MYLK
NR2F21	0	1.629218716	0.784	0.143	0	5.482517483	Leydig_cells	NR2F2
ZCWPW1	0	1.62844774	0.719	0.257	0	2.79766537	spermatogonia	ZCWPW1
LGALS11	0	1.628234752	0.821	0.177	0	4.638418079	PTM_cells	LGALS1
TPM1	0	1.626326199	0.788	0.177	0	4.451977401	PTM_cells	TPM1
RHOB	9.58E-265	1.621925627	0.876	0.232	5.88E-260	3.78E+00	endotheliocyte	RHOB
ISYNA1	2.21E-303	1.621428085	0.661	0.434	1.36E-298	1.52E+00	Sertoli_cells	ISYNA1
CEBPD1	9.08E-183	1.620356599	0.603	0.108	5.57E-178	5.58E+00	macrophages	CEBPD
ANGPTL1	0	1.618041373	0.708	0.034	0	20.82352941	Leydig_cells	ANGPTL1
NEAT11	3.80E-84	1.61752173	0.599	0.193	2.33E-79	3.10E+00	macrophages	NEAT1
LAPTM51	4.32E-172	1.617072371	0.553	0.014	2.65E-167	3.95E+01	T_cells	LAPTM5
SH3RF2	0	1.616578892	0.875	0.517	0	1.69245648	spermatid	SH3RF2
RAMP2	0	1.609266282	0.759	0.065	0	11.67692308	endotheliocyte	RAMP2
MCL11	6.55E-108	1.609226058	0.865	0.526	4.02E-103	1.64E+00	macrophages	MCL1
MALAT12	6.12E-263	1.608386613	0.965	0.833	3.76E-258	1.16E+00	Leydig_cells	MALAT1
MYL62	0	1.607100452	0.928	0.651	0	1.425499232	PTM_cells	MYL6
LGALS12	0	1.603074074	0.839	0.197	0	4.258883249	VSM_cells	LGALS1
AC007557.1	0	1.600462347	0.88	0.575	0	1.530434783	spermatid	AC007557.1



TPT1	1.57E-192	1.599333585	0.983	0.857	9.61E-188	1.15E+00	endotheliocyte	TPT1
MT-ND44	7.99E-203	1.598543694	0.905	0.41	4.90E-198	2.21E+00	VSM_cells	MT-ND4
PTPRC	0	1.598383553	0.569	0.014	0	40.64285714	macrophages	PTPRC
SAT1	5.88E-298	1.598305134	0.777	0.148	3.61E-293	5.25E+00	endotheliocyte	SAT1
IGFBP7	9.58E-229	1.59761725	0.906	0.278	5.88E-224	3.26E+00	endotheliocyte	IGFBP7
DUSP1	5.45E-301	1.595661545	0.829	0.176	3.34E-296	4.71E+00	endotheliocyte	DUSP1
SLC9A3R2	1.61E-207	1.594084037	0.672	0.17	9.86E-203	3.95E+00	endotheliocyte	SLC9A3R2
CSRP11	0	1.592800308	0.744	0.106	0	7.018867925	VSM_cells	CSRP1
CDKN1A	7.69E-306	1.591861843	0.717	0.122	4.72E-301	5.88E+00	endotheliocyte	CDKN1A
KLF22	0	1.590872697	0.711	0.145	0	4.903448276	Leydig_cells	KLF2
MALAT1	2.34E-107	1.590765952	0.943	0.837	1.44E-102	1.13E+00	endotheliocyte	MALAT1
NUAK1	0	1.588474325	0.677	0.02	0	33.85	endotheliocyte	NUAK1
SNCG1	0	1.587402931	0.611	0.025	0	24.44	VSM_cells	SNCG
JUNB3	0	1.587374251	0.842	0.324	0	2.598765432	PTM_cells	JUNB
DUSP23	1.31E-42	1.585567918	0.526	0.051	8.06E-38	1.03E+01	T_cells	DUSP2
ITM2A1	0	1.582789536	0.643	0.053	0	12.13207547	Leydig_cells	ITM2A
IGFBP73	3.59E-287	1.582479946	0.928	0.276	2.20E-282	3.36E+00	VSM_cells	IGFBP7
MT.ND32	4.08E-14	1.581382315	0.35	0.372	2.50E-09	9.41E-01	Sertoli_cells	MT.ND3
LRRFIP1	0	1.580697332	0.784	0.082	0	9.56097561	endotheliocyte	LRRFIP1
RPL39	4.76E-227	1.580445091	0.881	0.273	2.92E-222	3.23E+00	endotheliocyte	RPL39
MGP2	0	1.577268781	0.859	0.133	0	6.458646617	PTM_cells	MGP
SYCP3	0	1.576980764	0.685	0.256	0	2.67578125	spermatogonia	SYCP3
CSF1R	0	1.576215485	0.545	0.026	0	20.96153846	macrophages	CSF1R
IGFBP4	0	1.575891104	0.774	0.077	0	10.05194805	endotheliocyte	IGFBP4
CTGF	0	1.571751968	0.645	0.064	0	10.078125	endotheliocyte	CTGF
SOX17	0	1.568512826	0.663	0.041	0	16.17073171	endotheliocyte	SOX17
MS4A7	0	1.56799413	0.535	0.006	0	89.16666667	macrophages	MS4A7
RHOB2	0	1.56337796	0.756	0.219	0	3.452054795	Leydig_cells	RHOB
LGALS3BP	0	1.562681949	0.763	0.091	0	8.384615385	Leydig_cells	LGALS3BP
MT.CO1	2.09E-114	1.561129478	0.392	0.326	1.28E-109	1.20E+00	spermatogonia	MT.CO1
SMC1B	0	1.557804682	0.696	0.287	0	2.425087108	spermatogonia	SMC1B
SRGN	0	1.557417248	0.752	0.044	0	17.09090909	endotheliocyte	SRGN
ID3	0	1.556311672	0.613	0.039	0	15.71794872	endotheliocyte	ID3
ZFP36L25	1.70E-24	1.556278636	0.684	0.148	1.05E-19	4.62E+00	T_cells	ZFP36L2
HEMGN	0	1.555570117	0.762	0.286	0	2.664335664	spermatid	HEMGN
LUM	0	1.554177451	0.389	0.022	0	17.68181818	Leydig_cells	LUM
ITM2B3	0	1.553774535	0.864	0.299	0	2.889632107	PTM_cells	ITM2B
CYBA	0	1.553744983	0.529	0.035	0	15.11428571	macrophages	CYBA
OSR2	0	1.549235359	0.727	0.088	0	8.261363636	Leydig_cells	OSR2
P2RY13	0	1.548824962	0.458	0.001	0	458	macrophages	P2RY13
DUSP61	3.33E-125	1.54804193	0.438	0.08	2.04E-120	5.48E+00	macrophages	DUSP6
BTG11	9.83E-71	1.546449127	0.798	0.609	6.03E-66	1.31E+00	macrophages	BTG1
ODF1	0	1.546165614	0.691	0.436	0	1.584862385	spermatid	ODF1
CST9L	0	1.544770258	0.46	0.017	0	27.05882353	Sertoli_cells	CST9L
STK17B	2.01E-121	1.543343985	0.582	0.157	1.24E-116	3.71E+00	macrophages	STK17B
EMP34	8.22E-26	1.543161979	0.711	0.164	5.04E-21	4.34E+00	T_cells	EMP3
HMGB4	0	1.542191119	0.986	0.879	0	1.121729238	spermatid	HMGB4
FOS1	2.20E-119	1.54216855	0.835	0.308	1.35E-114	2.71E+00	macrophages	FOS
IGFBP6	0	1.54130405	0.487	0.08	0	6.0875	Leydig_cells	IGFBP6
CAV13	0	1.539492586	0.801	0.094	0	8.521276596	VSM_cells	CAV1
SYCP1	7.74E-270	1.538625933	0.564	0.413	4.75E-265	1.37E+00	spermatogonia	SYCP1
COL15A12	0	1.534470703	0.738	0.099	0	7.454545455	PTM_cells	COL15A1
HMG3	0	1.533685687	0.614	0.243	0	2.526748971	Sertoli_cells	HMG3
MT-CO14	3.32E-190	1.533203665	0.905	0.445	2.03E-185	2.03E+00	VSM_cells	MT-CO1
IFITM2	0	1.532415831	0.829	0.156	0	5.314102564	endotheliocyte	IFITM2
C10orf62	0	1.531866879	0.86	0.435	0	1.977011494	spermatid	C10orf62
CLEC7A	0	1.531270952	0.549	0.006	0	91.5	macrophages	CLEC7A
PRSS23	0	1.531088707	0.677	0.041	0	16.51219512	endotheliocyte	PRSS23
CCDC110	0	1.530789876	0.992	0.436	0	2.275229358	spermatocyte	CCDC110
HLA.C1	4.11E-123	1.528681743	0.421	0.074	2.52E-118	5.69E+00	macrophages	HLA.C
GZMM	0	1.528044205	0.5	0.005	0	100	T_cells	GZMM
HSPB13	1.22E-270	1.526678344	0.803	0.212	7.45E-266	3.79E+00	VSM_cells	HSPB1
TSSK6	0	1.525452937	0.762	0.309	0	2.466019417	spermatid	TSSK6
RPS8	3.04E-176	1.522572512	0.96	0.773	1.87E-171	1.24E+00	endotheliocyte	RPS8
RPL12	1.75E-150	1.520915214	0.923	0.631	1.08E-145	1.46E+00	endotheliocyte	RPL12
HMGA1	0	1.520084631	0.532	0.088	0	6.045454545	spermatogonia	HMGA1
RPL217	4.56E-16	1.517661792	0.921	0.477	2.80E-11	1.93E+00	T_cells	RPL21
MGST33	0	1.51625884	0.651	0.211	0	3.085308057	Sertoli_cells	MGST3
MYLK1	0	1.515664617	0.822	0.186	0	4.419354839	VSM_cells	MYLK
S100A10	5.16E-161	1.515633186	0.866	0.434	3.17E-156	2.00E+00	endotheliocyte	S100A10
KLF42	2.04E-278	1.512084854	0.782	0.475	1.25E-273	1.65E+00	Leydig_cells	KLF4
TMSB4X4	4.20E-229	1.509917426	0.886	0.329	2.58E-224	2.69E+00	VSM_cells	TMSB4X
BGN1	0	1.50937704	0.687	0.081	0	8.481481481	VSM_cells	BGN
ACTB1	3.64E-106	1.509246123	0.926	0.583	2.23E-101	1.59E+00	macrophages	ACTB
PTMA1	7.39E-185	1.508545093	0.968	0.652	4.53E-180	1.48E+00	endotheliocyte	PTMA

MARCKSL12	0	1.5073979	0.654	0.196	0	3.336734694	Sertoli_cells	MARCKSL1
MT-CO32	1.07E-182	1.505875222	0.907	0.462	6.58E-178	1.96E+00	VSM_cells	MT-CO3
TIMP21	0	1.50552163	0.847	0.402	0	2.106965174	PTM_cells	TIMP2
IFNG	0	1.504364458	0.368	0.001	0	368	T_cells	IFNG
GSG1	0	1.503359612	0.909	0.591	0	1.538071066	spermatid	GSG1
IGFBP5	0	1.502298436	0.455	0.055	0	8.272727273	Leydig_cells	IGFBP5
CD2	1.02E-23	1.501039098	0.553	0.106	6.28E-19	5.22E+00	T_cells	CD2
HSPB6	0	1.499121561	0.63	0.186	0	3.387096774	Leydig_cells	HSPB6
LIFR	1.10E-269	1.497951787	0.739	0.163	6.73E-265	4.53E+00	endotheliocyte	LIFR
CD48	0	1.497801254	0.632	0.008	0	79	T_cells	CD48
RPL416	8.15E-14	1.495896055	0.921	0.788	5.00E-09	1.17E+00	T_cells	RPL41
CYR611	0	1.494852645	0.66	0.089	0	7.415730337	PTM_cells	CYR61
CCL21	1.52E-57	1.493944747	0.236	0.044	9.32E-53	5.36E+00	macrophages	CCL2
LMOD11	0	1.493219633	0.693	0.046	0	15.06521739	VSM_cells	LMOD1
FAM71B	0	1.491643784	0.683	0.159	0	4.295597484	spermatid	FAM71B
FMR1NB	0	1.491527206	0.533	0.089	0	5.988764045	spermatogonia	FMR1NB
PEG10	0	1.490407065	0.529	0.101	0	5.237623762	Sertoli_cells	PEG10
PDE4B	0	1.490090213	0.498	0.043	0	11.58139535	macrophages	PDE4B
TNS11	0	1.489337695	0.732	0.074	0	9.891891892	PTM_cells	TNS1
TBPL1	0	1.489331899	0.978	0.427	0	2.290398126	spermatocyte	TBPL1
MT.CO32	2.32E-22	1.488920089	0.349	0.327	1.42E-17	1.07E+00	Sertoli_cells	MT.CO3
FTL3	0	1.488618109	0.905	0.509	0	1.777996071	PTM_cells	FTL
RPS3	1.70E-181	1.488256005	0.975	0.797	1.05E-176	1.22E+00	endotheliocyte	RPS3
IL2RG	0	1.48786343	0.474	0.003	0	158	T_cells	IL2RG
PMAIP1	3.56E-241	1.485698813	0.418	0.038	2.18E-236	1.10E+01	macrophages	PMAIP1
NGFRAP12	1.15E-280	1.485560125	0.399	0.122	7.03E-276	3.27E+00	Sertoli_cells	NGFRAP1
CLEC14A	0	1.48514605	0.6	0.019	0	31.57894737	endotheliocyte	CLEC14A
CTSB	3.02E-91	1.481805526	0.606	0.215	1.85E-86	2.82E+00	macrophages	CTSB
DUSP2	3.79E-274	1.480870762	0.492	0.047	2.32E-269	1.05E+01	macrophages	DUSP2
GNLY	1.28E-214	1.480726354	0.184	0.001	7.83E-210	1.84E+02	T_cells	GNLY
OTUD1	1.21E-105	1.477728232	0.539	0.147	7.40E-101	3.67E+00	macrophages	OTUD1
HLA.A	4.32E-14	1.477683996	0.241	0.138	2.65E-09	1.75E+00	endotheliocyte	HLA.A
MMP21	0	1.477476529	0.747	0.154	0	4.850649351	PTM_cells	MMP2
KCTD12	0	1.476527221	0.663	0.08	0	8.2875	endotheliocyte	KCTD12
BCAM	0	1.476318451	0.744	0.051	0	14.58823529	endotheliocyte	BCAM
FOSB3	0	1.472847267	0.782	0.321	0	2.436137072	PTM_cells	FOSB
CD811	0	1.471679064	0.801	0.296	0	2.706081081	Leydig_cells	CD81
C10orf101	0	1.471562742	0.452	0.037	0	12.21621622	VSM_cells	C10orf10
RPL13A6	3.65E-18	1.468031727	1	0.737	2.24E-13	1.36E+00	T_cells	RPL13A
PTMS2	0	1.466560039	0.795	0.185	0	4.297297297	PTM_cells	PTMS
TPT11	1.71E-118	1.466023672	0.976	0.858	1.05E-113	1.14E+00	macrophages	TPT1
RPS4X3	0	1.46348975	0.898	0.321	0	2.797507788	PTM_cells	RPS4X
TKTL1	0	1.462224641	0.531	0.157	0	3.382165605	spermatogonia	TKTL1
PLTP	0	1.461885923	0.669	0.147	0	4.551020408	Leydig_cells	PLTP
CCSER2	0	1.461843158	0.844	0.49	0	1.72244898	spermatid	CCSER2
TM4SF11	0	1.460147987	0.658	0.061	0	10.78688525	Leydig_cells	TM4SF1
IER51	9.30E-132	1.456255253	0.566	0.131	5.71E-127	4.32E+00	macrophages	IER5
MYL12A4	2.42E-13	1.456235792	0.711	0.328	1.49E-08	2.17E+00	T_cells	MYL12A
RPL13A	2.53E-162	1.456023772	0.965	0.734	1.55E-157	1.31E+00	endotheliocyte	RPL13A
TIMP2	0	1.454563942	0.836	0.406	0	2.0591133	Leydig_cells	TIMP2
IFITM22	0	1.454348133	0.751	0.14	0	5.364285714	Leydig_cells	IFITM2
RBP7	0	1.452646007	0.66	0.074	0	8.918918919	endotheliocyte	RBP7
JUN	8.79E-203	1.452046428	0.935	0.362	5.39E-198	2.58E+00	endotheliocyte	JUN
HOPX	0	1.451890941	0.484	0.084	0	5.761904762	Sertoli_cells	HOPX
FBLN51	0	1.451601023	0.708	0.065	0	10.89230769	PTM_cells	FBLN5
RPL211	7.68E-181	1.451435767	0.955	0.47	4.71E-176	2.03E+00	endotheliocyte	RPL21
CPA3	0	1.451265788	0.24	0.001	0	240	mastocyte	CPA3
SAT12	0	1.451107325	0.61	0.126	0	4.841269841	Sertoli_cells	SAT1
RPS18	5.00E-170	1.4492582	0.98	0.851	3.06E-165	1.15E+00	endotheliocyte	RPS18
EPHX1	0	1.448227669	0.69	0.108	0	6.388888889	Leydig_cells	EPHX1
ETS21	3.39E-271	1.448159374	0.552	0.062	2.08E-266	8.90E+00	macrophages	ETS2
C20orf141	0	1.445978799	0.804	0.319	0	2.520376176	spermatid	C20orf141
SLC2A3	0	1.445875386	0.677	0.084	0	8.05952381	endotheliocyte	SLC2A3
RPS82	0	1.445120856	0.969	0.768	0	1.26171875	Leydig_cells	RPS8
TIMP33	0	1.444683249	0.841	0.165	0	5.096969697	VSM_cells	TIMP3
SPTBN11	0	1.444462024	0.778	0.284	0	2.73943662	Leydig_cells	SPTBN1
NASP	0	1.443823864	0.846	0.329	0	2.571428571	spermatogonia	NASP
NFIB	0	1.44290787	0.71	0.066	0	10.75757576	endotheliocyte	NFIB
RNF151	0	1.442648281	0.822	0.446	0	1.843049327	spermatid	RNF151
RPS28	1.13E-146	1.441003683	0.913	0.606	6.93E-142	1.51E+00	endotheliocyte	RPS28
SCARA5	0	1.440846036	0.526	0.01	0	52.6	Leydig_cells	SCARA5
MGST32	2.11E-264	1.439959248	0.812	0.228	1.29E-259	3.56E+00	VSM_cells	MGST3
MTND1P232	2.43E-12	1.439525281	0.349	0.376	1.49E-07	9.28E-01	Sertoli_cells	MTND1P23
SPATA42	0	1.439346913	0.814	0.365	0	2.230136986	spermatid	SPATA42
SMAP2	3.10E-92	1.43918841	0.593	0.21	1.90E-87	2.82E+00	macrophages	SMAP2

TSHZ21	0	1.438153166	0.699	0.079	0	8.848101266	PTM_cells	TSHZ2
RPS22	1.89E-161	1.437454203	0.963	0.673	1.16E-156	1.43E+00	endotheliocyte	RPS2
SPARC4	9.95E-260	1.436070644	0.524	0.23	6.10E-255	2.28E+00	Sertoli_cells	SPARC
MFAP4	0	1.435472167	0.63	0.026	0	24.23076923	PTM_cells	MFAP4
CD742	1.97E-20	1.434664193	0.474	0.079	1.21E-15	6.00E+00	T_cells	CD74
SAMD4A	0	1.433617656	0.834	0.421	0	1.980997625	spermatid	SAMD4A
LTB	1.74E-277	1.432012015	0.421	0.005	1.06E-272	8.42E+01	T_cells	LTB
MT.ND51	5.47E-38	1.429534216	0.559	0.315	3.35E-33	1.77E+00	macrophages	MT.ND5
TINAGL11	0	1.4295101	0.662	0.013	0	50.92307692	VSM_cells	TINAGL1
ZFP36L11	8.41E-76	1.429311507	0.744	0.394	5.16E-71	1.89E+00	macrophages	ZFP36L1
HERPUD1	6.16E-62	1.428363921	0.657	0.364	3.78E-57	1.80E+00	macrophages	HERPUD1
GLUL	0	1.426578449	0.866	0.588	0	1.472789116	spermatid	GLUL
RPL144	8.32E-147	1.425716837	0.865	0.642	5.11E-142	1.35E+00	VSM_cells	RPL14
GADD45B2	0	1.424966152	0.757	0.168	0	4.505952381	Leydig_cells	GADD45B
AKAP1	0	1.423981567	0.752	0.308	0	2.441558442	spermatid	AKAP1
HLA.B	1.20E-16	1.422786518	0.236	0.124	7.38E-12	1.90E+00	endotheliocyte	HLA.B
CD633	0	1.422326647	0.847	0.264	0	3.208333333	PTM_cells	CD63
BTG22	0	1.422159044	0.64	0.11	0	5.818181818	Leydig_cells	BTG2
DES	1.96E-265	1.420700284	0.524	0.084	1.20E-260	6.24E+00	VSM_cells	DES
ICAM11	3.79E-277	1.417728326	0.488	0.046	2.33E-272	1.06E+01	macrophages	ICAM1
LGALS31	0	1.417108574	0.732	0.186	0	3.935483871	Leydig_cells	LGALS3
LAMC31	0	1.417035348	0.684	0.043	0	15.90697674	PTM_cells	LAMC3
APOD1	0	1.416653808	0.667	0.062	0	10.75806452	PTM_cells	APOD
ID32	0	1.416443405	0.567	0.038	0	14.92105263	VSM_cells	ID3
ALOX5AP	0	1.416322288	0.508	0.019	0	26.73684211	macrophages	ALOX5AP
RPL13A2	0	1.416247622	0.964	0.728	0	1.324175824	Leydig_cells	RPL13A
LINC00684	0	1.415452186	0.386	0.015	0	25.73333333	Sertoli_cells	LINC00684
PPP1R15A2	0	1.414998163	0.714	0.175	0	4.08	Leydig_cells	PPP1R15A
SPATA3	0	1.414294077	0.804	0.374	0	2.14973262	spermatid	SPATA3
TXNIP2	0	1.412937748	0.752	0.149	0	5.046979866	Leydig_cells	TXNIP
RPS266	4.34E-10	1.412569382	0.789	0.538	2.66E-05	1.47E+00	T_cells	RPS26
PTPRB	0	1.412004722	0.64	0.021	0	30.47619048	endotheliocyte	PTPRB
MT.CO22	2.50E-20	1.410658165	0.349	0.335	1.53E-15	1.04E+00	Sertoli_cells	MT.CO2
RPL10A	5.10E-158	1.410393523	0.931	0.659	3.13E-153	1.41E+00	endotheliocyte	RPL10A
VSIG4	0	1.409376174	0.512	0.023	0	22.26086957	macrophages	VSIG4
ZFP36L22	0	1.409230687	0.713	0.123	0	5.796747967	Leydig_cells	ZFP36L2
F13A1	2.09E-302	1.409151797	0.451	0.036	1.28E-297	1.25E+01	macrophages	F13A1
CDKN1A1	1.34E-141	1.406740432	0.589	0.126	8.24E-137	4.67E+00	macrophages	CDKN1A
MMP2	0	1.405332911	0.661	0.162	0	4.080246914	Leydig_cells	MMP2
CLEC10A	0	1.404909148	0.471	0.003	0	157	macrophages	CLEC10A
CABS1	0	1.404886202	0.813	0.34	0	2.391176471	spermatid	CABS1
FOSB	2.35E-209	1.403216114	0.933	0.335	1.44E-204	2.79E+00	endotheliocyte	FOSB
GPX1	1.31E-82	1.402103083	0.721	0.355	8.01E-78	2.03E+00	macrophages	GPX1
RPL18A7	1.56E-11	1.40165442	0.789	0.418	9.59E-07	1.89E+00	T_cells	RPL18A
TMSB105	1.18E-19	1.400185494	0.921	0.398	7.22E-15	2.31E+00	T_cells	TMSB10
MT.ND4	1.76E-71	1.399605175	0.392	0.37	1.08E-66	1.06E+00	spermatogonia	MT.ND4
TSPAN16	0	1.398377727	0.816	0.362	0	2.254143646	spermatid	TSPAN16
PRND	0	1.396905497	0.417	0.017	0	24.52941176	Sertoli_cells	PRND
TNFSF10	0	1.39674005	0.682	0.018	0	37.88888889	endotheliocyte	TNFSF10
NUPR2	0	1.395640917	0.959	0.699	0	1.371959943	spermatid	NUPR2
HLA.C	2.94E-36	1.39488016	0.231	0.076	1.80E-31	3.04E+00	endotheliocyte	HLA.C
RPL27A6	9.07E-15	1.394399084	0.921	0.787	5.56E-10	1.17E+00	T_cells	RPL27A
PSAP	7.38E-86	1.394293098	0.828	0.444	4.53E-81	1.86E+00	macrophages	PSAP
PDK41	1.53E-36	1.393845721	0.29	0.093	9.38E-32	3.12E+00	macrophages	PDK4
HLA-DRA	0	1.392636751	0.618	0.021	0	29.42857143	endotheliocyte	HLA-DRA
HSPB1	3.82E-244	1.391730141	0.836	0.213	2.34E-239	3.92E+00	endotheliocyte	HSPB1
ANXA1	0	1.391355404	0.749	0.072	0	10.40277778	endotheliocyte	ANXA1
BTG2	0	1.39123906	0.759	0.123	0	6.170731707	endotheliocyte	BTG2
OLR1	7.97E-143	1.390540871	0.401	0.059	4.89E-138	6.80E+00	macrophages	OLR1
TNF	0	1.38956989	0.32	0.004	0	80	macrophages	TNF
CPE1	0	1.387968129	0.777	0.185	0	4.2	PTM_cells	CPE
ACTB3	0	1.387559715	0.907	0.57	0	1.59122807	PTM_cells	ACTB
LDHC	0	1.387035444	0.996	0.581	0	1.714285714	spermatocyte	LDHC
MAGED21	0	1.383574062	0.74	0.11	0	6.727272727	PTM_cells	MAGED2
EGR13	0	1.383257295	0.743	0.239	0	3.108786611	PTM_cells	EGR1
BTG15	1.83E-10	1.382029935	0.789	0.611	1.12E-05	1.29E+00	T_cells	BTG1
CYBB	0	1.38168933	0.448	0.002	0	224	macrophages	CYBB
RPS4X4	1.63E-195	1.381236901	0.869	0.34	1.00E-190	2.56E+00	VSM_cells	RPS4X
PTTG1	0	1.380888361	0.988	0.456	0	2.166666667	spermatocyte	PTTG1
CTSG	1.27E-16	1.380507768	0.2	0.024	7.78E-12	8.33E+00	mastocyte	CTSG
CPE	0	1.379853041	0.77	0.189	0	4.074074074	Leydig_cells	CPE
NOTCH3	0	1.379725307	0.668	0.018	0	37.11111111	VSM_cells	NOTCH3
CD3G	1.19E-294	1.379714706	0.526	0.007	7.30E-290	7.51E+01	T_cells	CD3G
IQCF2	0	1.37965009	0.78	0.347	0	2.247838617	spermatid	IQCF2
RPL145	6.57E-13	1.379033981	0.868	0.646	4.03E-08	1.34E+00	T_cells	RPL14

PPP1R15A6	1.91E-17	1.378753511	0.684	0.197	1.17E-12	3.47E+00	T_cells	PPP1R15A
CLIC15	9.94E-07	1.378316125	0.5	0.265	0.060958577	1.886792453	T_cells	CLIC1
MARCKS1	1.60E-81	1.37776138	0.623	0.254	9.79E-77	2.45E+00	macrophages	MARCKS
MT.CO3	2.23E-120	1.377640511	0.391	0.312	1.37E-115	1.25E+00	spermatogonia	MT.CO3
RAMP3	0	1.377249177	0.61	0.028	0	21.78571429	endotheliocyte	RAMP3
RPL13A3	0	1.375600855	0.939	0.727	0	1.291609354	PTM_cells	RPL13A
ARPC1B3	1.08E-30	1.373961659	0.553	0.078	6.64E-26	7.09E+00	T_cells	ARPC1B
BTG24	1.23E-269	1.37294359	0.649	0.123	7.52E-265	5.28E+00	VSM_cells	BTG2
IFI16	0	1.371787643	0.712	0.076	0	9.368421053	endotheliocyte	IFI16
KRT131	0	1.370775087	0.447	0.045	0	9.933333333	PTM_cells	KRT13
ID23	1.53E-14	1.370770956	0.5	0.125	9.39E-10	4.00E+00	T_cells	ID2
MTCO1P121	3.54E-72	1.370483263	0.345	0.212	2.17E-67	1.63E+00	Sertoli_cells	MTCO1P12
ATF31	1.77E-142	1.369860206	0.569	0.114	1.09E-137	4.99E+00	macrophages	ATF3
FCGR2B	0	1.369614344	0.444	0.008	0	55.5	macrophages	FCGR2B
IER21	4.99E-106	1.368906945	0.63	0.175	3.06E-101	3.60E+00	macrophages	IER2
CEBPD	4.32E-284	1.368877259	0.655	0.105	2.65E-279	6.24E+00	endotheliocyte	CEBPD
C7	0	1.368174787	0.295	0.011	0	26.81818182	Leydig_cells	C7
RPL184	5.38E-152	1.36810521	0.888	0.568	3.30E-147	1.56E+00	VSM_cells	RPL18
ICAM1	0	1.368083735	0.524	0.043	0	12.18604651	endotheliocyte	ICAM1
MEIOB	0	1.367214554	0.466	0.131	0	3.557251908	spermatogonia	MEIOB
TMSB101	1.15E-137	1.366977128	0.933	0.392	7.03E-133	2.38E+00	macrophages	TMSB10
ACTB4	1.66E-162	1.366845273	0.905	0.581	1.02E-157	1.56E+00	VSM_cells	ACTB
MRC1	6.31E-150	1.365404231	0.458	0.075	3.87E-145	6.11E+00	macrophages	MRC1
ENTPD2	0	1.364122544	0.518	0.022	0	23.54545455	Leydig_cells	ENTPD2
CTGF2	3.62E-228	1.363185346	0.442	0.066	2.22E-223	6.70E+00	VSM_cells	CTGF
MALAT11	2.20E-63	1.362323653	0.963	0.837	1.35E-58	1.15E+00	macrophages	MALAT1
C2orf57	0	1.361834212	0.74	0.239	0	3.09623431	spermatid	C2orf57
CALM13	0	1.359704812	0.829	0.684	0	1.211988304	Sertoli_cells	CALM1
PTRF3	0	1.358473814	0.772	0.109	0	7.082568807	VSM_cells	PTRF
BST23	0	1.357673225	0.73	0.083	0	8.795180723	PTM_cells	BST2
PTMA4	1.92E-167	1.356637446	0.924	0.652	1.18E-162	1.42E+00	VSM_cells	PTMA
ACTB5	2.36E-299	1.35488999	0.765	0.575	1.45E-294	1.33E+00	Sertoli_cells	ACTB
STOM	2.03E-252	1.354424463	0.697	0.15	1.24E-247	4.65E+00	endotheliocyte	STOM
RPL26	4.33E-143	1.354420403	0.945	0.753	2.66E-138	1.25E+00	endotheliocyte	RPL26
EEF1A1	2.09E-183	1.35440274	0.99	0.924	1.28E-178	1.07E+00	endotheliocyte	EEF1A1
RPL283	1.38E-13	1.352707575	0.895	0.823	8.48E-09	1.09E+00	T_cells	RPL28
ACKR1	0	1.351787645	0.395	0.005	0	79	endotheliocyte	ACKR1
MSN3	1.05E-30	1.351720793	0.526	0.071	6.41E-26	7.41E+00	T_cells	MSN
TAGLN2	1.29E-240	1.351247717	0.799	0.204	7.93E-236	3.92E+00	endotheliocyte	TAGLN2
RPS23	3.23E-169	1.351120301	0.98	0.827	1.98E-164	1.19E+00	endotheliocyte	RPS23
BHLHE40	0	1.350741753	0.64	0.043	0	14.88372093	endotheliocyte	BHLHE40
XCL1	6.18E-68	1.349978567	0.184	0.004	3.79E-63	4.60E+01	T_cells	XCL1
TP53TG5	0	1.349539182	0.644	0.174	0	3.701149425	spermatid	TP53TG5
RPL41	2.18E-148	1.349520512	0.958	0.785	1.34E-143	1.22E+00	endotheliocyte	RPL41
PNRC12	0	1.349104446	0.778	0.382	0	2.036649215	Leydig_cells	PNRC1
RPLP14	1.54E-143	1.348521921	0.924	0.764	9.45E-139	1.21E+00	VSM_cells	RPLP1
PPP1R15A	9.34E-244	1.345625542	0.797	0.188	5.73E-239	4.24E+00	endotheliocyte	PPP1R15A
GMFG1	6.57E-35	1.345516303	0.553	0.071	4.03E-30	7.79E+00	T_cells	GMFG
PTMS1	0	1.344447913	0.74	0.192	0	3.854166667	Leydig_cells	PTMS
SORBS2	0	1.342233682	0.617	0.028	0	22.03571429	VSM_cells	SORBS2
LY6K	0	1.341604732	0.545	0.062	0	8.790322581	spermatogonia	LY6K
FSTL1	0	1.340600374	0.604	0.061	0	9.901639344	Leydig_cells	FSTL1
ITM2B1	1.25E-123	1.339999335	0.852	0.321	7.64E-119	2.65E+00	macrophages	ITM2B
CD991	0	1.339447115	0.789	0.171	0	4.614035088	Leydig_cells	CD99
IGFBP61	0	1.339127437	0.632	0.07	0	9.028571429	PTM_cells	IGFBP6
CD92	0	1.338313563	0.698	0.084	0	8.30952381	VSM_cells	CD9
GLIPR1	8.17E-133	1.337599202	0.539	0.12	5.01E-128	4.49E+00	macrophages	GLIPR1
NR4A22	7.40E-11	1.337340606	0.474	0.151	4.54E-06	3.14E+00	T_cells	NR4A2
FXD51	0	1.336513124	0.502	0.021	0	23.9047619	macrophages	FXD5
WBSCR22	0	1.336204844	0.796	0.328	0	2.426829268	spermatogonia	WBSCR22
EBF1	0	1.335977501	0.631	0.115	0	5.486956522	Leydig_cells	EBF1
CCNA1	0	1.334787395	0.93	0.274	0	3.394160584	spermatocyte	CCNA1
FYB1	4.47E-33	1.334323851	0.526	0.067	2.74E-28	7.85E+00	T_cells	FYB
NEAT14	5.28E-239	1.332646518	0.755	0.187	3.24E-234	4.04E+00	VSM_cells	NEAT1
ITGB11	0	1.331735709	0.788	0.187	0	4.213903743	PTM_cells	ITGB1
CST31	0	1.331722646	0.938	0.409	0	2.293398533	Leydig_cells	CST3
CD442	2.93E-15	1.331672981	0.447	0.099	1.80E-10	4.52E+00	T_cells	CD44
OGFRL1	0	1.331495733	0.498	0.025	0	19.92	macrophages	OGFRL1
CALD1	0	1.331094016	0.842	0.213	0	3.953051643	Leydig_cells	CALD1
NUPR11	0	1.330807205	0.724	0.109	0	6.642201835	PTM_cells	NUPR1
IRF1	1.55E-187	1.330295012	0.732	0.216	9.52E-183	3.39E+00	endotheliocyte	IRF1
BST2	0	1.33024352	0.749	0.105	0	7.133333333	endotheliocyte	BST2
RNASE11	3.80E-29	1.329476076	0.347	0.14	2.33E-24	2.48E+00	macrophages	RNASE1
DBF4	0	1.328710594	0.987	0.433	0	2.279445727	spermatocyte	DBF4
RPS196	3.89E-12	1.328646159	0.895	0.759	2.39E-07	1.18E+00	T_cells	RPS19



RPL18A1	5.29E-152	1.326051032	0.888	0.411	3.24E-147	2.16E+00	endotheliocyte	RPL18A
CDH1	9.49E-229	1.325930629	0.34	0.026	5.82E-224	1.31E+01	macrophages	CDH1
RPS220	4.54E-14	1.325915503	0.921	0.677	2.79E-09	1.36E+00	T_cells	RPS2
ADIRF1	0	1.325742108	0.714	0.106	0	6.735849057	Leydig_cells	ADIRF
PPP1R14A3	0	1.325597017	0.518	0.127	0	4.078740157	Sertoli_cells	PPP1R14A
EGR14	2.40E-217	1.325550068	0.814	0.254	1.47E-212	3.20E+00	VSM_cells	EGR1
DCXR	0	1.325108304	0.499	0.104	0	4.798076923	Sertoli_cells	DCXR
VIM1	6.53E-101	1.324606416	0.879	0.448	4.01E-96	1.96E+00	macrophages	VIM
MT-CO23	2.44E-173	1.324593726	0.903	0.428	1.49E-168	2.11E+00	VSM_cells	MT-CO2
SOD3	1.83E-195	1.324129	0.767	0.289	1.12E-190	2.65E+00	VSM_cells	SOD3
RPS36	5.75E-13	1.323831416	0.895	0.8	3.53E-08	1.12E+00	T_cells	RPS3
SMCP	0	1.323666409	0.944	0.668	0	1.413173653	spermatid	SMCP
RPL18	8.00E-144	1.321764054	0.916	0.569	4.91E-139	1.61E+00	endotheliocyte	RPL18
RPL10A4	2.95E-151	1.321086945	0.894	0.659	1.81E-146	1.36E+00	VSM_cells	RPL10A
MTATP6P1	2.40E-276	1.321078481	0.379	0.196	1.47E-271	1.93E+00	spermatogonia	MTATP6P1
TUBB4A	0	1.320673713	0.402	0.037	0	10.86486486	Sertoli_cells	TUBB4A
EGFL7	0	1.320021136	0.784	0.1	0	7.84	endotheliocyte	EGFL7
CD531	0	1.319877497	0.5	0.005	0	100	T_cells	CD53
RPL18A5	3.83E-157	1.319566143	0.85	0.41	2.35E-152	2.07E+00	VSM_cells	RPL18A
GSTP12	0	1.319459543	0.735	0.149	0	4.932885906	Leydig_cells	GSTP1
PPP3R2	0	1.318933981	0.975	0.452	0	2.157079646	spermatocyte	PPP3R2
GTSF1L	0	1.31813037	0.879	0.516	0	1.703488372	spermatid	GTSF1L
HLA-DRB1	5.24E-235	1.316840033	0.658	0.145	3.21E-230	4.54E+00	endotheliocyte	HLA-DRB1
FSCN3	0	1.316819004	0.674	0.171	0	3.941520468	spermatid	FSCN3
GIMAP7	0	1.315428428	0.643	0.004	0	160.75	endotheliocyte	GIMAP7
PCP2	0	1.314857547	0.8	0.344	0	2.325581395	spermatid	PCP2
HLA-B1	1.04E-14	1.312680896	0.374	0.252	6.35E-10	1.48E+00	macrophages	HLA-B
RHOB1	2.17E-91	1.312235456	0.673	0.237	1.33E-86	2.84E+00	macrophages	RHOB
ATF32	0	1.312104382	0.522	0.102	0	5.117647059	Leydig_cells	ATF3
TIMP31	0	1.311838552	0.755	0.152	0	4.967105263	Leydig_cells	TIMP3
TPM42	0	1.311770479	0.725	0.213	0	3.403755869	PTM_cells	TPM4
S100A41	0	1.310276366	0.48	0.035	0	13.71428571	Leydig_cells	S100A4
MT-ND52	0	1.310106634	0.735	0.275	0	2.672727273	PTM_cells	MT-ND5
HCLS1	0	1.307447331	0.488	0.008	0	61	macrophages	HCLS1
RPL11	3.24E-159	1.306266067	0.973	0.824	1.99E-154	1.18E+00	endotheliocyte	RPL11
EID11	0	1.305455822	0.843	0.345	0	2.443478261	Leydig_cells	EID1
NCL	0	1.304811857	0.824	0.341	0	2.416422287	spermatogonia	NCL
MYL6B	2.15E-296	1.304155256	0.742	0.594	1.32E-291	1.25E+00	Sertoli_cells	MYL6B
RPL392	0	1.304145175	0.8	0.26	0	3.076923077	Leydig_cells	RPL39
TSHZ2	0	1.303066271	0.66	0.086	0	7.674418605	Leydig_cells	TSHZ2
C20orf144	0	1.302913274	0.72	0.416	0	1.730769231	spermatid	C20orf144
CFH1	0	1.302363733	0.61	0.043	0	14.18604651	Leydig_cells	CFH
IRGC	0	1.301348	0.828	0.423	0	1.957446809	spermatid	IRGC
CAPZA3	0	1.301324338	0.863	0.519	0	1.662813102	spermatid	CAPZA3
LIMS1	1.31E-150	1.300737009	0.7	0.255	8.05E-146	2.75E+00	endotheliocyte	LIMS1
IER23	0	1.300509018	0.664	0.155	0	4.283870968	PTM_cells	IER2
NFKBIB	0	1.300216717	0.729	0.321	0	2.271028037	spermatid	NFKBIB
RAD51AP2	0	1.299923917	0.272	0.09	0	3.022222222	spermatogonia	RAD51AP2
PTN	5.32E-262	1.297309654	0.503	0.155	3.26E-257	3.25E+00	Leydig_cells	PTN
DNAJB6	0	1.296510678	0.805	0.458	0	1.757641921	spermatogonia	DNAJB6
EMP31	2.41E-106	1.295256119	0.572	0.16	1.48E-101	3.58E+00	macrophages	EMP3
FXYD52	1.81E-68	1.294808474	0.474	0.026	1.11E-63	1.82E+01	T_cells	FXYD5
SSPN	0	1.293939362	0.644	0.073	0	8.821917808	Leydig_cells	SSPN
KLF41	5.09E-61	1.293740014	0.747	0.485	3.12E-56	1.54E+00	macrophages	KLF4
CXCL16	0	1.293242388	0.808	0.417	0	1.93764988	spermatid	CXCL16
CLPB	0	1.29262138	0.84	0.464	0	1.810344828	spermatid	CLPB
ELK3	0	1.292120274	0.645	0.043	0	15	endotheliocyte	ELK3
FAM209A	0	1.291265643	0.751	0.423	0	1.775413712	spermatid	FAM209A
LGALS13	0	1.291021299	0.63	0.18	0	3.5	Sertoli_cells	LGALS1
LST1	0	1.290623757	0.441	0.009	0	49	macrophages	LST1
NBL1	0	1.289352515	0.591	0.078	0	7.576923077	Leydig_cells	NBL1
GAPDHS	0	1.288620756	0.879	0.495	0	1.775757576	spermatid	GAPDHS
ZFP36L13	0	1.288427536	0.805	0.377	0	2.135278515	PTM_cells	ZFP36L1
NEAT12	0	1.288207192	0.617	0.179	0	3.446927374	Leydig_cells	NEAT1
CHGA	0	1.287143666	0.397	0.056	0	7.089285714	Sertoli_cells	CHGA
CYLC2	0	1.286780758	0.875	0.485	0	1.804123711	spermatid	CYLC2
STK4	2.64E-13	1.286063809	0.579	0.201	1.62E-08	2.88E+00	T_cells	STK4
EHD4	0	1.285877428	0.65	0.055	0	11.81818182	endotheliocyte	EHD4
RPS4X2	0	1.285791953	0.896	0.325	0	2.756923077	Leydig_cells	RPS4X
TPPP2	0	1.285266441	0.872	0.519	0	1.680154143	spermatid	TPPP2
RPS285	1.75E-09	1.285046059	0.789	0.61	0.000107272	1.293442623	T_cells	RPS28
RPS83	0	1.285029456	0.928	0.768	0	1.208333333	PTM_cells	RPS8
RPL101	5.21E-120	1.28489913	0.909	0.36	3.20E-115	2.53E+00	macrophages	RPL10
IFI271	0	1.284828615	0.605	0.114	0	5.307017544	Leydig_cells	IFI27
BST22	0	1.28426785	0.695	0.089	0	7.808988764	Leydig_cells	BST2

LGALS1	0	1.283581267	0.74	0.185	0	4	Leydig_cells	LGALS1
MT.ATP6	3.33E-89	1.283571261	0.388	0.336	2.04E-84	1.15E+00	spermatogonia	MT.ATP6
MT-CYB6	6.75E-12	1.281276348	0.816	0.398	4.14E-07	2.05E+00	T_cells	MT-CYB
CCDC91	0	1.280548747	0.902	0.606	0	1.488448845	spermatid	CCDC91
FCGR3A	0	1.279150227	0.377	0.001	0	377	macrophages	FCGR3A
RASD1	0	1.279059136	0.591	0.045	0	13.13333333	PTM_cells	RASD1
SYNE2	2.96E-277	1.278477637	0.697	0.126	1.82E-272	5.53E+00	endotheliocyte	SYNE2
RPL10P31	1.05E-148	1.278221674	0.391	0.052	6.41E-144	7.52E+00	macrophages	RPL10P3
COL18A12	0	1.277780872	0.609	0.075	0	8.12	VSM_cells	COL18A1
PSMG1	0	1.277115783	0.983	0.471	0	2.087048832	spermatocyte	PSMG1
MT.CO2	3.30E-105	1.276924687	0.388	0.321	2.03E-100	1.21E+00	spermatogonia	MT.CO2
SMIM1	0	1.275539573	0.426	0.069	0	6.173913043	Sertoli_cells	SMIM1
S100A65	4.17E-31	1.275479922	0.763	0.133	2.56E-26	5.74E+00	T_cells	S100A6
HMGB2	0	1.27495277	0.776	0.327	0	2.373088685	spermatogonia	HMGB2
ETS2	0	1.274938294	0.65	0.058	0	11.20689655	endotheliocyte	ETS2
DUSP6	3.75E-276	1.27464422	0.546	0.077	2.30E-271	7.09E+00	endotheliocyte	DUSP6
CETN1	0	1.274471716	0.991	0.574	0	1.726480836	spermatocyte	CETN1
RPL10A3	0	1.274242792	0.902	0.651	0	1.385560676	PTM_cells	RPL10A
F3	0	1.273254602	0.637	0.052	0	12.25	PTM_cells	F3
PMP22	0	1.272207885	0.653	0.139	0	4.697841727	Leydig_cells	PMP22
RPS146	7.30E-13	1.272070694	0.921	0.831	4.48E-08	1.11E+00	T_cells	RPS14
RPS4X6	8.88E-16	1.27201358	0.868	0.349	5.45E-11	2.49E+00	T_cells	RPS4X
HCST	0	1.271441825	0.451	0.014	0	32.21428571	macrophages	HCST
PTCH2	0	1.271239363	0.507	0.067	0	7.567164179	Leydig_cells	PTCH2
VCAN1	0	1.268032218	0.595	0.046	0	12.93478261	PTM_cells	VCAN
RPSA	0	1.266399682	0.804	0.571	0	1.408056042	spermatogonia	RPSA
RPS9	8.13E-170	1.266232601	0.975	0.836	4.99E-165	1.17E+00	endotheliocyte	RPS9
C17orf105	0	1.266197216	0.777	0.381	0	2.039370079	spermatid	C17orf105
ACTL7A	0	1.265786792	0.854	0.461	0	1.852494577	spermatid	ACTL7A
ALOX5AP1	6.51E-51	1.26351435	0.395	0.024	3.99E-46	1.65E+01	T_cells	ALOX5AP
SOX9	0	1.263175205	0.446	0.09	0	4.955555556	Sertoli_cells	SOX9
CTSW	4.34E-202	1.262777086	0.395	0.006	2.66E-197	6.58E+01	T_cells	CTSW
HERC5	0	1.262448432	0.582	0.278	0	2.09352518	spermatogonia	HERC5
SFRP41	0	1.261199306	0.58	0.027	0	21.48148148	PTM_cells	SFRP4
CSRNP11	7.34E-93	1.261188603	0.576	0.179	4.50E-88	3.22E+00	macrophages	CSRNP1
RPL395	0	1.260021219	0.694	0.254	0	2.732283465	Sertoli_cells	RPL39
CEBPD2	0	1.25924178	0.556	0.094	0	5.914893617	Leydig_cells	CEBPD
LCP12	6.35E-11	1.258957818	0.632	0.289	3.89E-06	2.19E+00	T_cells	LCP1
RNASSET2	1.43E-107	1.2589285	0.519	0.132	8.80E-103	3.93E+00	macrophages	RNASSET2
DCUN1D1	0	1.25862545	0.903	0.687	0	1.31441048	spermatid	DCUN1D1
NEXN1	0	1.258423458	0.632	0.105	0	6.019047619	VSM_cells	NEXN
RP5.1052M9.11	4.27E-45	1.257838867	0.478	0.205	2.62E-40	2.33E+00	macrophages	RP5.1052M9.1
SUSD3	0	1.257274357	0.407	0.021	0	19.38095238	Sertoli_cells	SUSD3
PSAP1	0	1.256614059	0.863	0.43	0	2.006976744	Leydig_cells	PSAP
IDS3	1.10E-24	1.255607394	0.474	0.071	6.77E-20	6.68E+00	T_cells	IDS
REL1	5.34E-124	1.255264715	0.508	0.11	3.27E-119	4.62E+00	macrophages	REL
IQCF1	0	1.25443413	0.795	0.396	0	2.007575758	spermatid	IQCF1
ITGB21	7.06E-167	1.252912699	0.447	0.009	4.33E-162	4.97E+01	T_cells	ITGB2
MT-ATP66	2.93E-10	1.252203414	0.789	0.435	1.79E-05	1.81E+00	T_cells	MT-ATP6
RPS272	8.67E-09	1.250778346	0.921	0.823	0.000532164	1.119076549	T_cells	RPS27
DNAJB8	0	1.250733728	0.787	0.339	0	2.321533923	spermatid	DNAJB8
OGN	0	1.250605492	0.598	0.056	0	10.67857143	Leydig_cells	OGN
CCNI	0	1.250427457	0.797	0.479	0	1.66388309	spermatogonia	CCNI
UBQLN3	0	1.250221642	0.793	0.385	0	2.05974026	spermatid	UBQLN3
ALDH1A3	0	1.248845245	0.515	0.033	0	15.60606061	Leydig_cells	ALDH1A3
B3GNT5	3.40E-72	1.248591621	0.418	0.118	2.08E-67	3.54E+00	macrophages	B3GNT5
TNS12	0	1.246947843	0.751	0.095	0	7.905263158	VSM_cells	TNS1
LTBP41	0	1.246337763	0.778	0.129	0	6.031007752	PTM_cells	LTBP4
RPS15A3	6.67E-14	1.246155998	0.947	0.786	4.09E-09	1.20E+00	T_cells	RPS15A
CCDC85B	9.56E-308	1.24600168	0.705	0.117	5.87E-303	6.03E+00	endotheliocyte	CCDC85B
PRSS37	0	1.245352344	0.603	0.123	0	4.902439024	spermatid	PRSS37
C2CD4B	0	1.244780845	0.409	0.004	0	102.25	endotheliocyte	C2CD4B
CD1512	0	1.24420552	0.66	0.094	0	7.021276596	VSM_cells	CD151
TNFAIP3	5.83E-194	1.243957576	0.556	0.11	3.58E-189	5.05E+00	endotheliocyte	TNFAIP3
PECAM1	0	1.24388895	0.486	0.008	0	60.75	endotheliocyte	PECAM1
ABLIM11	0	1.243445053	0.716	0.265	0	2.701886792	PTM_cells	ABLIM1
MT.TM	1.47E-266	1.243438174	0.282	0.062	9.00E-262	4.55E+00	Sertoli_cells	MT.TM
ZNF683	0	1.24297888	0.684	0.183	0	3.737704918	spermatid	ZNF683
RPL23A4	4.15E-13	1.242524977	0.921	0.737	2.55E-08	1.25E+00	T_cells	RPL23A
ARHGDI1B	2.12E-292	1.241598905	0.441	0.035	1.30E-287	1.26E+01	macrophages	ARHGDI1B
PPP1R14A2	4.18E-289	1.241178755	0.717	0.142	2.57E-284	5.05E+00	VSM_cells	PPP1R14A
SPERT	0	1.240150959	0.758	0.306	0	2.477124183	spermatid	SPERT
ZMYND10	0	1.24013452	0.965	0.387	0	2.493540052	spermatocyte	ZMYND10
DUSP16	1.97E-13	1.240001975	0.605	0.186	1.21E-08	3.25E+00	T_cells	DUSP1
RPL3	1.27E-156	1.239728985	0.99	0.923	7.79E-152	1.07E+00	endotheliocyte	RPL3

GIMAP8	0	1.239721	0.563	0.003	0	187.6666667	endotheliocyte	GIMAP8
ABCA8	0	1.239065723	0.603	0.134	0	4.5	Leydig_cells	ABCA8
HOOK1	0	1.238979543	0.778	0.44	0	1.768181818	spermatid	HOOK1
IER2	0	1.238948174	0.686	0.157	0	4.369426752	Leydig_cells	IER2
EEF1A13	0	1.237807136	0.978	0.922	0	1.060737527	PTM_cells	EEF1A1
HEG1	0	1.237017124	0.591	0.051	0	11.58823529	endotheliocyte	HEG1
COL1A11	0	1.236660109	0.701	0.102	0	6.87254902	PTM_cells	COL1A1
CYTIP1	4.19E-150	1.236364779	0.526	0.014	2.57E-145	3.76E+01	T_cells	CYTIP
PALMD	2.16E-237	1.236144873	0.635	0.126	1.32E-232	5.04E+00	endotheliocyte	PALMD
MSR1	0	1.235968556	0.431	0.019	0	22.68421053	macrophages	MSR1
FCGRT2	0	1.235643671	0.671	0.174	0	3.856321839	Leydig_cells	FCGRT
MYL12A	7.01E-147	1.234017934	0.774	0.322	4.30E-142	2.40E+00	endotheliocyte	MYL12A
GSTP14	6.70E-286	1.23242629	0.763	0.164	4.11E-281	4.65E+00	VSM_cells	GSTP1
RPL215	5.49E-163	1.232247051	0.903	0.47	3.37E-158	1.92E+00	VSM_cells	RPL21
BCAM1	0	1.232133082	0.649	0.051	0	12.7254902	VSM_cells	BCAM
NFKBIZ	0	1.231870532	0.672	0.1	0	6.72	endotheliocyte	NFKBIZ
IL13RA1	1.01E-133	1.230880475	0.519	0.106	6.20E-129	4.90E+00	macrophages	IL13RA1
FAM129A1	0	1.230336991	0.63	0.018	0	35	VSM_cells	FAM129A
RPL23	5.65E-146	1.230244154	0.938	0.7	3.47E-141	1.34E+00	endotheliocyte	RPL23
PRKCDBP	0	1.229797256	0.91	0.351	0	2.592592593	spermatocyte	PRKCDBP
IFITM25	1.99E-14	1.228905612	0.579	0.165	1.22E-09	3.51E+00	T_cells	IFITM2
PODXL	0	1.22848414	0.593	0.007	0	84.71428571	endotheliocyte	PODXL
HLA.DMA	0	1.228475842	0.32	0.005	0	64	macrophages	HLA.DMA
HNRNPA2B1	0	1.227085764	0.905	0.628	0	1.441082803	spermatogonia	HNRNPA2B1
RPS27A	2.97E-158	1.226920436	0.975	0.859	1.82E-153	1.14E+00	endotheliocyte	RPS27A
LYAR	0	1.226779928	0.928	0.363	0	2.556473829	spermatocyte	LYAR
NUPR13	0	1.226627096	0.479	0.116	0	4.129310345	Sertoli_cells	NUPR1
PTMS	6.62E-248	1.226505649	0.839	0.205	4.06E-243	4.09E+00	endotheliocyte	PTMS
FLNA1	0	1.225571219	0.733	0.088	0	8.329545455	PTM_cells	FLNA
HBB	2.33E-08	1.224967452	0.043	0.03	0.001427552	1.433333333	spermatid	HBB
RCAN2	1.69E-270	1.224882466	0.664	0.147	1.04E-265	4.52E+00	VSM_cells	RCAN2
FAM71C	0	1.224579404	0.609	0.106	0	5.745283019	spermatid	FAM71C
GADD45B1	2.09E-146	1.224017416	0.744	0.187	1.28E-141	3.98E+00	macrophages	GADD45B
HSPA1B1	8.07E-40	1.223239002	0.451	0.193	4.95E-35	2.34E+00	macrophages	HSPA1B
EEF1A14	2.62E-158	1.222939536	0.966	0.924	1.61E-153	1.05E+00	VSM_cells	EEF1A1
TUBA1A2	0	1.22293584	0.688	0.183	0	3.759562842	Leydig_cells	TUBA1A
IQCF3	0	1.222496065	0.8	0.371	0	2.156334232	spermatid	IQCF3
CRISP2	0	1.221798355	0.965	0.81	0	1.191358025	spermatid	CRISP2
HSPG2	0	1.221664378	0.593	0.052	0	11.40384615	endotheliocyte	HSPG2
NAE1	0	1.221647953	0.67	0.082	0	8.170731707	spermatogonia	NAE1
MT.CYB1	3.90E-35	1.221395734	0.572	0.332	2.39E-30	1.72E+00	macrophages	MT.CYB
MT-CYB3	1.43E-296	1.221267892	0.786	0.378	8.77E-292	2.08E+00	PTM_cells	MT-CYB
CCNB2	0	1.221245278	0.949	0.296	0	3.206081081	spermatocyte	CCNB2
LINC00608	0	1.220887859	0.744	0.269	0	2.765799257	spermatid	LINC00608
ITM2A	0	1.220261336	0.675	0.069	0	9.782608696	endotheliocyte	ITM2A
SPINK2	0	1.219989303	0.993	0.697	0	1.424677188	spermatocyte	SPINK2
HES4	0	1.219937221	0.605	0.032	0	18.90625	VSM_cells	HES4
JUND	1.61E-113	1.219003841	0.841	0.499	9.87E-109	1.69E+00	endotheliocyte	JUND
LMO2	0	1.218805381	0.563	0.021	0	26.80952381	endotheliocyte	LMO2
GADD45B3	0	1.21634598	0.716	0.166	0	4.313253012	PTM_cells	GADD45B
CCND11	0	1.215994871	0.529	0.043	0	12.30232558	VSM_cells	CCND1
MT-CO3	3.58E-167	1.215871175	0.533	0.452	2.20E-162	1.18E+00	spermatogonia	MT-CO3
MT-ATP63	4.01E-266	1.215399622	0.789	0.417	2.46E-261	1.89E+00	PTM_cells	MT-ATP6
TSKS	0	1.214546708	0.787	0.392	0	2.007653061	spermatid	TSKS
LINC00238	0	1.214375803	0.373	0.088	0	4.238636364	spermatid	LINC00238
FOLR2	0	1.2137189	0.35	0.004	0	87.5	macrophages	FOLR2
ANKRD7	0	1.212887063	0.998	0.755	0	1.321854305	spermatocyte	ANKRD7
OXCT2	0	1.212432967	0.68	0.144	0	4.722222222	spermatid	OXCT2
RDX1	7.26E-171	1.21233291	0.794	0.268	4.45E-166	2.96E+00	endotheliocyte	RDX
TXNIP1	1.04E-77	1.212123425	0.549	0.171	6.37E-73	3.21E+00	macrophages	TXNIP
RPL123	0	1.211985459	0.881	0.623	0	1.414125201	PTM_cells	RPL12
LRWD1	0	1.210822523	0.992	0.541	0	1.833641405	spermatocyte	LRWD1
C16orf82	0	1.210500513	0.789	0.391	0	2.017902813	spermatid	C16orf82
DPEP3	0	1.21030811	0.583	0.132	0	4.416666667	spermatogonia	DPEP3
CCDC42	0	1.209718757	0.904	0.251	0	3.601593625	spermatocyte	CCDC42
PPP1R12B	6.40E-226	1.208954869	0.655	0.168	3.93E-221	3.90E+00	VSM_cells	PPP1R12B
RPL36A	1.74E-203	1.208688033	0.64	0.133	1.07E-198	4.81E+00	endotheliocyte	RPL36A
RPL231	3.94E-87	1.208457675	0.902	0.701	2.42E-82	1.29E+00	macrophages	RPL23
SPATA16	0	1.208255861	0.958	0.263	0	3.642585551	spermatocyte	SPATA16
RPL391	1.92E-93	1.207891526	0.747	0.277	1.18E-88	2.70E+00	macrophages	RPL39
RBP1	0	1.207582108	0.388	0.036	0	10.77777778	Sertoli_cells	RBP1
RPS4Y1	4.15E-186	1.205525221	0.826	0.266	2.55E-181	3.11E+00	endotheliocyte	RPS4Y1
KLF62	1.21E-261	1.205402406	0.655	0.276	7.43E-257	2.37E+00	Leydig_cells	KLF6
RPL6	6.89E-130	1.205347275	0.908	0.681	4.23E-125	1.33E+00	endotheliocyte	RPL6
IFITM33	0	1.205168587	0.811	0.166	0	4.885542169	PTM_cells	IFITM3

RPL186	9.57E-12	1.204897137	0.868	0.573	5.87E-07	1.51E+00	T_cells	RPL18
KRT13	1.24E-295	1.204452982	0.323	0.054	7.62E-291	5.98E+00	Leydig_cells	KRT13
PBK	0	1.204109848	0.975	0.385	0	2.532467532	spermatocyte	PBK
MCHR2-AS1	0	1.20408534	0.565	0.199	0	2.83919598	spermatocyte	MCHR2-AS1
RPS14	3.92E-143	1.203863428	0.96	0.829	2.40E-138	1.16E+00	endotheliocyte	RPS14
AC013461.1	2.16E-216	1.203757591	0.66	0.172	1.32E-211	3.84E+00	VSM_cells	AC013461.1
RPLP1	2.68E-144	1.203377743	0.985	0.763	1.64E-139	1.29E+00	endotheliocyte	RPLP1
RPS186	1.84E-12	1.202952299	0.921	0.853	1.13E-07	1.08E+00	T_cells	RPS18
RPL14	1.55E-127	1.200774612	0.901	0.642	9.52E-123	1.40E+00	endotheliocyte	RPL14
JUND1	2.09E-83	1.200498675	0.838	0.501	1.28E-78	1.67E+00	macrophages	JUND
GSTP13	0	1.200474621	0.738	0.145	0	5.089655172	PTM_cells	GSTP1
TAGLN23	0	1.200322266	0.521	0.192	0	2.713541667	Sertoli_cells	TAGLN2
THBD	0	1.200266433	0.561	0.042	0	13.35714286	endotheliocyte	THBD
TGFBI	0	1.200070857	0.397	0.011	0	36.09090909	macrophages	TGFBI
CRYAB1	3.65E-270	1.199983247	0.605	0.116	2.24E-265	5.22E+00	VSM_cells	CRYAB
BEX2	0	1.199662392	0.401	0.053	0	7.566037736	Sertoli_cells	BEX2
RPL10A2	0	1.199634424	0.916	0.652	0	1.404907975	Leydig_cells	RPL10A
RPL122	5.07E-301	1.199054977	0.886	0.625	3.11E-296	1.42E+00	Leydig_cells	RPL12
AHNAK	4.28E-255	1.198802743	0.772	0.163	2.63E-250	4.74E+00	endotheliocyte	AHNAK
FAM187B	0	1.197135094	0.657	0.155	0	4.238709677	spermatid	FAM187B
FXVD12	0	1.197076002	0.632	0.044	0	14.36363636	VSM_cells	FXVD1
ZFH31	0	1.196508471	0.613	0.081	0	7.567901235	VSM_cells	ZFH3
RPS171	4.88E-126	1.196227891	0.896	0.468	2.99E-121	1.91E+00	endotheliocyte	RPS17
JUNB1	4.50E-91	1.195959706	0.798	0.345	2.76E-86	2.31E+00	macrophages	JUNB
LRRFIP11	1.25E-137	1.195598727	0.485	0.089	7.68E-133	5.45E+00	macrophages	LRRFIP1
JAG11	0	1.195251288	0.588	0.042	0	14	VSM_cells	JAG1
CFL13	3.29E-09	1.194860611	0.816	0.737	0.000201761	1.107191316	T_cells	CFL1
MYC1	0	1.194609979	0.531	0.051	0	10.41176471	Leydig_cells	MYC
LMCD1	0	1.193926766	0.613	0.039	0	15.71794872	endotheliocyte	LMCD1
FAM209B	0	1.193910109	0.737	0.434	0	1.698156682	spermatid	FAM209B
DNAJC4	0	1.193855079	0.786	0.385	0	2.041558442	spermatid	DNAJC4
DPYSL31	0	1.193359995	0.625	0.092	0	6.793478261	PTM_cells	DPYSL3
FAM46C	0	1.193299674	0.761	0.376	0	2.02393617	spermatid	FAM46C
MT-CO2	3.30E-186	1.193011962	0.517	0.414	2.02E-181	1.25E+00	spermatogonia	MT-CO2
IRS2	1.05E-52	1.192648196	0.448	0.169	6.44E-48	2.65E+00	macrophages	IRS2
PROCA1	0	1.192182995	0.868	0.621	0	1.397745572	spermatid	PROCA1
RPL34	5.22E-117	1.192078927	0.98	0.905	3.20E-112	1.08E+00	endotheliocyte	RPL34
ACTN41	3.38E-235	1.191879921	0.655	0.155	2.07E-230	4.23E+00	VSM_cells	ACTN4
SCML1	0	1.191640523	0.421	0.197	0	2.137055838	spermatogonia	SCML1
HPRT11	0	1.191150444	0.509	0.141	0	3.609929078	Sertoli_cells	HPRT1
HSPA1L	0	1.191018424	0.663	0.234	0	2.833333333	spermatid	HSPA1L
HSPB12	0	1.190156823	0.722	0.196	0	3.683673469	PTM_cells	HSPB1
ZFP36L23	0	1.190114711	0.682	0.121	0	5.636363636	PTM_cells	ZFP36L2
COL1A21	0	1.189935716	0.76	0.153	0	4.967320261	PTM_cells	COL1A2
TSSK2	0	1.189296809	0.814	0.438	0	1.858447489	spermatid	TSSK2
FN11	0	1.188320298	0.567	0.065	0	8.723076923	Leydig_cells	FN1
AHNAK4	1.54E-281	1.1877623	0.753	0.162	9.45E-277	4.65E+00	VSM_cells	AHNAK
FDXR	0	1.187755739	0.43	0.088	0	4.886363636	Sertoli_cells	FDXR
HLA.DMB	0	1.187721201	0.286	0.001	0	286	macrophages	HLA.DMB
PEMT	0	1.187249853	0.61	0.082	0	7.43902439	PTM_cells	PEMT
CCNL1	3.18E-156	1.187100527	0.816	0.34	1.95E-151	2.40E+00	endotheliocyte	CCNL1
H1FNT	0	1.186979413	0.867	0.488	0	1.776639344	spermatid	H1FNT
TCEAL2	0	1.186787409	0.396	0.034	0	11.64705882	Sertoli_cells	TCEAL2
RPLP16	8.69E-13	1.186660214	0.947	0.766	5.33E-08	1.24E+00	T_cells	RPLP1
LINC01016	0	1.186592644	0.938	0.352	0	2.664772727	spermatocyte	LINC01016
LINC00936	9.95E-195	1.186434555	0.38	0.039	6.10E-190	9.74E+00	macrophages	LINC00936
IFIT3	0	1.186087643	0.516	0.024	0	21.5	endotheliocyte	IFIT3
ESAM	0	1.18564561	0.618	0.014	0	44.14285714	endotheliocyte	ESAM
RPL36	2.43E-118	1.185285758	0.903	0.699	1.49E-113	1.29E+00	endotheliocyte	RPL36
NEGR1	0	1.184893907	0.519	0.036	0	14.41666667	Leydig_cells	NEGR1
NDUFA4L2	1.43E-226	1.184287472	0.368	0.048	8.78E-222	7.67E+00	VSM_cells	NDUFA4L2
RPL232	0	1.184259527	0.909	0.694	0	1.309798271	Leydig_cells	RPL23
FAM71F1	0	1.184216604	0.778	0.391	0	1.989769821	spermatid	FAM71F1
COL6A21	0	1.183977619	0.739	0.093	0	7.946236559	PTM_cells	COL6A2
SCP2D1	0	1.183189377	0.659	0.178	0	3.702247191	spermatid	SCP2D1
MT-ND15	5.82E-41	1.182833515	0.488	0.406	3.57E-36	1.20E+00	Sertoli_cells	MT-ND1
ACE	0	1.182582294	0.778	0.379	0	2.052770449	spermatid	ACE
CALCRL	0	1.181930641	0.6	0.006	0	100	endotheliocyte	CALCRL
HLA-C1	1.06E-19	1.181879096	0.337	0.176	6.48E-15	1.91E+00	macrophages	HLA-C
06-Sep	0	1.18091148	0.414	0.054	0	7.666666667	Sertoli_cells	06-Sep
TGFBR2	0	1.180118694	0.573	0.023	0	24.91304348	endotheliocyte	TGFBR2
NDUFA41	1.38E-128	1.180068949	0.827	0.521	8.45E-124	1.59E+00	VSM_cells	NDUFA4
NET1	3.46E-207	1.180000092	0.575	0.132	2.12E-202	4.36E+00	VSM_cells	NET1
RILPL21	1.50E-112	1.179874574	0.397	0.072	9.18E-108	5.51E+00	macrophages	RILPL2
SPATA12	0	1.179719401	0.692	0.174	0	3.977011494	spermatid	SPATA12



SMKR1	0	1.179708153	0.884	0.575	0	1.537391304	spermatid	SMKR1
FBN1	0	1.179613801	0.555	0.108	0	5.138888889	Leydig_cells	FBN1
LEMD1	0	1.179408494	0.76	0.324	0	2.345679012	spermatid	LEMD1
ABLIM1	6.07E-273	1.179025351	0.652	0.271	3.72E-268	2.41E+00	Leydig_cells	ABLIM1
PRSS58	0	1.178982652	0.547	0.117	0	4.675213675	spermatid	PRSS58
NFKBIA6	4.51E-10	1.178935348	0.579	0.214	2.77E-05	2.71E+00	T_cells	NFKBIA
CLGN	0	1.178703266	0.972	0.389	0	2.498714653	spermatocyte	CLGN
MTCO1P12	0	1.177774832	0.379	0.177	0	2.141242938	spermatogonia	MTCO1P12
OTUB2	0	1.176821516	0.67	0.233	0	2.875536481	spermatid	OTUB2
F8	0	1.176540286	0.591	0.018	0	32.83333333	endotheliocyte	F8
LDB2	0	1.176116554	0.623	0.026	0	23.96153846	endotheliocyte	LDB2
CXCL1	1.41E-169	1.175899616	0.131	0.005	8.68E-165	2.62E+01	macrophages	CXCL1
RPL412	0	1.175891233	0.955	0.78	0	1.224358974	Leydig_cells	RPL41
CLMN	0	1.175457952	0.66	0.26	0	2.538461538	spermatid	CLMN
TFAM	0	1.175301117	0.73	0.424	0	1.721698113	spermatid	TFAM
RPL183	0	1.174511111	0.881	0.558	0	1.578853047	PTM_cells	RPL18
LYRM5	0	1.17442062	0.917	0.334	0	2.745508982	spermatocyte	LYRM5
ZFP36L1	1.13E-145	1.173945971	0.856	0.391	6.93E-141	2.19E+00	endotheliocyte	ZFP36L1
ACSBG2	0	1.173266981	0.778	0.383	0	2.031331593	spermatid	ACSBG2
RPL393	0	1.172845435	0.794	0.256	0	3.1015625	PTM_cells	RPL39
CCDC173	0	1.172021164	0.991	0.48	0	2.064583333	spermatocyte	CCDC173
NPC21	2.73E-58	1.172006432	0.721	0.443	1.67E-53	1.63E+00	macrophages	NPC2
MT2A1	4.88E-225	1.171968753	0.567	0.218	2.99E-220	2.60E+00	Leydig_cells	MT2A
ISG20L2	0	1.171852002	0.77	0.436	0	1.766055046	spermatid	ISG20L2
HLA-F1	1.98E-31	1.171844426	0.474	0.057	1.21E-26	8.32E+00	T_cells	HLA-F
ITGB12	2.14E-238	1.171453281	0.784	0.206	1.31E-233	3.81E+00	VSM_cells	ITGB1
CCDC28B	0	1.171229551	0.4	0.07	0	5.714285714	Sertoli_cells	CCDC28B
ACTL9	0	1.170685137	0.744	0.31	0	2.4	spermatid	ACTL9
PRDX6	2.40E-276	1.169927424	0.744	0.625	1.47E-271	1.19E+00	Sertoli_cells	PRDX6
SPATA18	0	1.169745379	0.755	0.349	0	2.163323782	spermatid	SPATA18
B2M4	1.81E-278	1.169560139	0.899	0.241	1.11E-273	3.73E+00	VSM_cells	B2M
RPS191	8.95E-140	1.16908061	0.958	0.756	5.49E-135	1.27E+00	endotheliocyte	RPS19
C10orf82	0	1.168513507	0.76	0.361	0	2.105263158	spermatid	C10orf82
CCDC62	0	1.167739491	0.977	0.298	0	3.27852349	spermatocyte	CCDC62
GSN3	0	1.167628153	0.75	0.188	0	3.989361702	PTM_cells	GSN
C17orf74	0	1.16709969	0.681	0.186	0	3.661290323	spermatid	C17orf74
MT-CO25	6.73E-11	1.166591976	0.816	0.436	4.13E-06	1.87E+00	T_cells	MT-CO2
TEX35	0	1.16492325	0.771	0.386	0	1.997409326	spermatid	TEX35
CASC5	0	1.164692089	0.68	0.222	0	3.063063063	spermatogonia	CASC5
NFIA	0	1.164439691	0.643	0.197	0	3.263959391	Leydig_cells	NFIA
IFI6	0	1.164181979	0.65	0.089	0	7.303370787	endotheliocyte	IFI6
PLAC91	0	1.163432819	0.606	0.061	0	9.93442623	PTM_cells	PLAC9
IGFBP21	0	1.16320792	0.538	0.115	0	4.67826087	PTM_cells	IGFBP2
ADGRF5	0	1.162702155	0.516	0.036	0	14.33333333	endotheliocyte	ADGRF5
BCAP31	0	1.16247561	0.57	0.14	0	4.071428571	spermatogonia	BCAP31
RPS84	5.10E-129	1.161458988	0.896	0.774	3.13E-124	1.16E+00	VSM_cells	RPS8
IRF14	1.00E-136	1.160449795	0.63	0.216	6.16E-132	2.92E+00	VSM_cells	IRF1
MT-CO16	8.77E-11	1.160332997	0.816	0.453	5.38E-06	1.80E+00	T_cells	MT-CO1
GNB2L1	1.30E-74	1.160307049	0.712	0.468	8.00E-70	1.52E+00	endotheliocyte	GNB2L1
EEF1A12	0	1.159985046	0.987	0.922	0	1.070498915	Leydig_cells	EEF1A1
C1orf100	0	1.159907695	0.655	0.256	0	2.55859375	spermatid	C1orf100
RPS27A5	5.41E-11	1.159704956	0.895	0.861	3.32E-06	1.04E+00	T_cells	RPS27A
CD69	0	1.159219656	0.306	0.006	0	51	macrophages	CD69
PFKFB3	5.42E-106	1.159028221	0.306	0.045	3.32E-101	6.80E+00	macrophages	PFKFB3
AC004381.6	0	1.158955475	0.988	0.466	0	2.120171674	spermatocyte	AC004381.6
PTMS3	7.98E-247	1.158769228	0.786	0.204	4.89E-242	3.85E+00	VSM_cells	PTMS
FCGRT1	1.24E-74	1.158606508	0.545	0.191	7.63E-70	2.85E+00	macrophages	FCGRT
SPTBN12	0	1.158599439	0.764	0.281	0	2.71886121	PTM_cells	SPTBN1
EDN1	2.16E-219	1.158274387	0.308	0.029	1.32E-214	1.06E+01	endotheliocyte	EDN1
RPS293	8.28E-16	1.158075908	0.947	0.886	5.08E-11	1.07E+00	T_cells	RPS29
SPTY2D1.AS1	0	1.157466453	0.389	0.158	0	2.462025316	spermatid	SPTY2D1.AS1
SYNE22	4.83E-292	1.156232484	0.401	0.117	2.96E-287	3.43E+00	Sertoli_cells	SYNE2
RPL27A	4.26E-148	1.156193708	0.955	0.785	2.61E-143	1.22E+00	endotheliocyte	RPL27A
ST6GALNAC2	0	1.155524459	0.74	0.333	0	2.222222222	spermatid	ST6GALNAC2
GUCY1A3	0	1.155514646	0.575	0.008	0	71.875	VSM_cells	GUCY1A3
CTGF1	0	1.155092412	0.483	0.051	0	9.470588235	PTM_cells	CTGF
TRGC2	2.46E-22	1.154485228	0.289	0.029	1.51E-17	9.97E+00	T_cells	TRGC2
AHNAK1	6.44E-95	1.154433345	0.586	0.168	3.95E-90	3.49E+00	macrophages	AHNAK
RPL8	6.07E-148	1.153994163	0.953	0.854	3.72E-143	1.12E+00	endotheliocyte	RPL8
RPL214	0	1.153922848	0.912	0.455	0	2.004395604	PTM_cells	RPL21
JUND2	1.12E-217	1.153840877	0.781	0.492	6.87E-213	1.59E+00	Leydig_cells	JUND
HLA-DQA2	0	1.153724242	0.276	0.004	0	69	macrophages	HLA-DQA2
PTRF1	0	1.153538591	0.612	0.099	0	6.181818182	Leydig_cells	PTRF
RPL64	1.70E-127	1.153207381	0.875	0.681	1.04E-122	1.28E+00	VSM_cells	RPL6
HORMAD1	0	1.152618246	0.632	0.404	0	1.564356436	spermatogonia	HORMAD1

AARD	6.23E-265	1.152473007	0.475	0.186	3.82E-260	2.55E+00	Sertoli_cells	AARD
CFLAR1	3.76E-54	1.151379353	0.556	0.263	2.31E-49	2.11E+00	macrophages	CFLAR
OGN2	4.60E-227	1.15111707	0.465	0.072	2.82E-222	6.46E+00	VSM_cells	OGN
RAC22	2.52E-274	1.150653777	0.421	0.005	1.54E-269	8.42E+01	T_cells	RAC2
RP5.1023B21.1	0	1.149621915	0.379	0.108	0	3.509259259	spermatocyte	RP5.1023B21.1
PRF1	0	1.14859051	0.368	0	0	#DIV/0!	T_cells	PRF1
SNRPC	0	1.148132833	0.952	0.416	0	2.288461538	spermatocyte	SNRPC
TSPO	0	1.147741886	0.643	0.084	0	7.654761905	endotheliocyte	TSPO
FNDC8	0	1.147612252	0.664	0.176	0	3.772727273	spermatid	FNDC8
FAM134B	0	1.146976817	0.734	0.275	0	2.669090909	spermatid	FAM134B
SSPN1	0	1.146466351	0.653	0.069	0	9.463768116	PTM_cells	SSPN
EGFR	0	1.146376351	0.506	0.049	0	10.32653061	Leydig_cells	EGFR
ZEB2	1.20E-139	1.146153985	0.458	0.078	7.38E-135	5.87E+00	macrophages	ZEB2
EFNB2	0	1.145925026	0.558	0.02	0	27.9	endotheliocyte	EFNB2
RPL37	1.85E-159	1.145880837	0.97	0.803	1.13E-154	1.21E+00	endotheliocyte	RPL37
VIM3	0	1.145861632	0.912	0.429	0	2.125874126	PTM_cells	VIM
RPL115	1.06E-13	1.14537865	0.947	0.826	6.50E-09	1.15E+00	T_cells	RPL11
GTF2A2	0	1.144773243	0.989	0.683	0	1.448023426	spermatocyte	GTF2A2
SOCS34	8.01E-294	1.144648977	0.666	0.117	4.92E-289	5.69E+00	VSM_cells	SOCS3
TUBB1	0	1.144316889	0.715	0.23	0	3.108695652	Leydig_cells	TUBB
SLC25A41	1.02E-204	1.144310993	0.436	0.191	6.25E-200	2.28E+00	Sertoli_cells	SLC25A4
ACTRT2	0	1.143980063	0.839	0.435	0	1.928735632	spermatid	ACTRT2
RPLP13	0	1.143913491	0.948	0.757	0	1.252311757	PTM_cells	RPLP1
CARHSP1	0	1.143749159	0.888	0.628	0	1.414012739	spermatid	CARHSP1
NGFRAP11	0	1.143372496	0.617	0.115	0	5.365217391	PTM_cells	NGFRAP1
DCN1	0	1.142679619	0.842	0.121	0	6.958677686	PTM_cells	DCN
HLA-DMA1	4.12E-261	1.142501509	0.283	0.015	2.53E-256	1.89E+01	macrophages	HLA-DMA
FBLN5	0	1.140763631	0.529	0.078	0	6.782051282	Leydig_cells	FBLN5
APP1	0	1.140695341	0.75	0.328	0	2.286585366	Leydig_cells	APP
MAF	2.71E-125	1.140666247	0.424	0.072	1.66E-120	5.89E+00	macrophages	MAF
SLC25A25	0	1.140283424	0.573	0.052	0	11.01923077	endotheliocyte	SLC25A25
HSPA1B2	0	1.139868601	0.607	0.178	0	3.41011236	Leydig_cells	HSPA1B
NR2F23	9.59E-261	1.139787009	0.729	0.16	5.89E-256	4.56E+00	VSM_cells	NR2F2
XAF1	0	1.139580375	0.581	0.039	0	14.8974359	endotheliocyte	XAF1
LY6E	0	1.139393541	0.707	0.11	0	6.427272727	endotheliocyte	LY6E
PTGES3	0	1.139057468	0.824	0.451	0	1.827050998	spermatogonia	PTGES3
MNDA	0	1.138192234	0.391	0.008	0	48.875	macrophages	MNDA
MT.ND1	2.65E-65	1.137872856	0.393	0.376	1.62E-60	1.05E+00	spermatogonia	MT.ND1
RPL415	0	1.137756244	0.895	0.78	0	1.147435897	Sertoli_cells	RPL41
RARRES2	0	1.137315346	0.565	0.065	0	8.692307692	Leydig_cells	RARRES2
TMEM31	0	1.136454822	0.654	0.257	0	2.544747082	spermatid	TMEM31
ITM2A3	3.83E-26	1.135321999	0.526	0.078	2.35E-21	6.74E+00	T_cells	ITM2A
ITGA8	0	1.135196677	0.564	0.004	0	141	VSM_cells	ITGA8
RPL65	1.72E-12	1.134489377	0.895	0.684	1.06E-07	1.31E+00	T_cells	RPL6
THY1	0	1.134395018	0.453	0.025	0	18.12	Leydig_cells	THY1
SCCPDH	0	1.134084837	0.994	0.621	0	1.600644122	spermatocyte	SCCPDH
RHOB3	0	1.13366186	0.724	0.217	0	3.33640553	PTM_cells	RHOB
TXNDC2	0	1.133497761	0.657	0.224	0	2.933035714	spermatid	TXNDC2
C10orf120	0	1.133141718	0.613	0.178	0	3.443820225	spermatid	C10orf120
MT.ND5	2.91E-115	1.132683616	0.384	0.3	1.79E-110	1.28E+00	spermatogonia	MT.ND5
MT1E	0	1.132163828	0.546	0.061	0	8.950819672	endotheliocyte	MT1E
CCDC70	0	1.131775041	0.805	0.374	0	2.152406417	spermatid	CCDC70
RPL18A4	0	1.130735533	0.85	0.396	0	2.146464646	PTM_cells	RPL18A
SMARCA11	0	1.130729821	0.455	0.116	0	3.922413793	Sertoli_cells	SMARCA1
TRIB1	3.14E-247	1.130242553	0.34	0.024	1.92E-242	1.42E+01	macrophages	TRIB1
MT.ND12	8.36E-09	1.130242518	0.351	0.381	0.000512786	0.921259843	Sertoli_cells	MT.ND1
TEX37	0	1.1302264	0.631	0.159	0	3.968553459	spermatid	TEX37
MT.ND2	1.91E-59	1.130186724	0.393	0.383	1.17E-54	1.03E+00	spermatogonia	MT.ND2
TMEM191C	0	1.129825747	0.622	0.274	0	2.270072993	spermatid	TMEM191C
EFNA1	0	1.128753745	0.529	0.014	0	37.78571429	endotheliocyte	EFNA1
KIF2B	0	1.128023939	0.739	0.331	0	2.232628399	spermatid	KIF2B
MNS1	0	1.127603544	0.976	0.389	0	2.508997429	spermatocyte	MNS1
GSTA2	0	1.12712618	0.352	0.014	0	25.14285714	Sertoli_cells	GSTA2
CRIM11	0	1.12687282	0.59	0.042	0	14.04761905	VSM_cells	CRIM1
GYG1	0	1.126662573	0.925	0.399	0	2.318295739	spermatocyte	GYG1
NR4A12	2.27E-301	1.126275614	0.634	0.242	1.39E-296	2.62E+00	PTM_cells	NR4A1
ZFP363	0	1.125799009	0.75	0.218	0	3.440366972	PTM_cells	ZFP36
SNHG8	4.33E-140	1.12546591	0.747	0.303	2.65E-135	2.47E+00	endotheliocyte	SNHG8
MT-ND54	4.08E-12	1.12546542	0.763	0.297	2.50E-07	2.57E+00	T_cells	MT-ND5
PDGFRA	0	1.12484676	0.526	0.049	0	10.73469388	Leydig_cells	PDGFRA
FYB	1.58E-141	1.124619129	0.414	0.064	9.68E-137	6.47E+00	macrophages	FYB
RSRP11	7.31E-08	1.124193705	0.553	0.282	0.004481985	1.960992908	T_cells	RSRP1
TNP2	0	1.124094274	0.475	0.134	0	3.544776119	spermatid	TNP2
ARPC1B1	9.06E-137	1.123996042	0.444	0.074	5.56E-132	6.00E+00	macrophages	ARPC1B
MT.CYB	8.29E-85	1.123525967	0.383	0.322	5.08E-80	1.19E+00	spermatogonia	MT.CYB

TEX38	0	1.123400653	0.903	0.531	0	1.700564972	spermatid	TEX38
EMP32	0	1.123233358	0.59	0.146	0	4.04109589	Leydig_cells	EMP3
PRDX22	0	1.123196057	0.646	0.083	0	7.78313253	PTM_cells	PRDX2
MAF1	0	1.122772721	0.529	0.056	0	9.446428571	Leydig_cells	MAF
ACTN4	2.04E-220	1.122427637	0.69	0.156	1.25E-215	4.42E+00	endotheliocyte	ACTN4
SPATA20	0	1.12219738	0.78	0.399	0	1.954887218	spermatid	SPATA20
MT-ND4L2	5.94E-225	1.121773447	0.715	0.176	3.65E-220	4.06E+00	VSM_cells	MT-ND4L
CCT6B	0	1.12148102	0.991	0.492	0	2.014227642	spermatocyte	CCT6B
SPINT2	0	1.121256508	0.777	0.453	0	1.715231788	spermatogonia	SPINT2
B2M3	0	1.12120889	0.888	0.22	0	4.036363636	PTM_cells	B2M
TUBA4A	0	1.121182489	0.657	0.188	0	3.494680851	spermatid	TUBA4A
FHL5	0	1.120662874	0.785	0.401	0	1.957605985	spermatid	FHL5
SLIT3	0	1.120347206	0.577	0.082	0	7.036585366	VSM_cells	SLIT3
PCOLCE	0	1.119615693	0.503	0.101	0	4.98019802	Leydig_cells	PCOLCE
BANF2	0	1.119243498	0.708	0.273	0	2.593406593	spermatid	BANF2
HSP90AA1	0	1.11843778	0.983	0.844	0	1.164691943	spermatogonia	HSP90AA1
TMCO5A	0	1.118417922	0.85	0.469	0	1.812366738	spermatid	TMCO5A
MT-CO1	2.21E-164	1.117629406	0.521	0.435	1.36E-159	1.20E+00	spermatogonia	MT-CO1
UBL4B	0	1.117262681	0.828	0.461	0	1.796095445	spermatid	UBL4B
PTGER4	7.49E-113	1.117167741	0.397	0.073	4.60E-108	5.44E+00	macrophages	PTGER4
LPIN1	0	1.116924348	0.708	0.326	0	2.171779141	spermatid	LPIN1
KDM6B	2.97E-51	1.116676153	0.512	0.226	1.82E-46	2.27E+00	macrophages	KDM6B
ID4	2.73E-216	1.116524662	0.514	0.092	1.68E-211	5.59E+00	VSM_cells	ID4
MMRN2	0	1.116377598	0.568	0.008	0	71	endotheliocyte	MMRN2
CDKN1A3	4.48E-224	1.116099868	0.6	0.122	2.75E-219	4.92E+00	VSM_cells	CDKN1A
GKAP1	0	1.115976427	0.994	0.672	0	1.479166667	spermatocyte	GKAP1
GMPR	0	1.115784926	0.399	0.096	0	4.15625	Sertoli_cells	GMPR
VEGFA	1.42E-268	1.115361063	0.34	0.022	8.72E-264	1.55E+01	macrophages	VEGFA
RP5.1052M9.12	2.32E-57	1.114761138	0.35	0.202	1.43E-52	1.73E+00	Leydig_cells	RP5.1052M9.1
CKS2	0	1.114743437	0.804	0.373	0	2.155495979	spermatogonia	CKS2
RPL413	0	1.114402186	0.93	0.78	0	1.192307692	PTM_cells	RPL41
MAP3K81	3.01E-291	1.114324377	0.391	0.027	1.85E-286	1.45E+01	macrophages	MAP3K8
FLRT2	0	1.113798876	0.523	0.046	0	11.36956522	Leydig_cells	FLRT2
GSTM5	0	1.112910242	0.47	0.058	0	8.103448276	Leydig_cells	GSTM5
CSRP1	0	1.112255012	0.613	0.092	0	6.663043478	PTM_cells	CSRP1
HMGB1	0	1.111879515	0.765	0.493	0	1.551724138	spermatogonia	HMGB1
SH3BGRL5	0	1.11067493	0.67	0.103	0	6.504854369	VSM_cells	SH3BGRL
RPL63	0	1.108946256	0.891	0.673	0	1.323922734	PTM_cells	RPL6
GIMAP4	0	1.107603444	0.6	0.003	0	200	endotheliocyte	GIMAP4
MT.CO12	6.59E-15	1.107295219	0.35	0.339	4.04E-10	1.03E+00	Sertoli_cells	MT.CO1
GPR1831	3.86E-45	1.107271701	0.289	0.014	2.37E-40	2.06E+01	T_cells	GPR183
ICAM3	2.34E-15	1.107108716	0.395	0.078	1.43E-10	5.06E+00	T_cells	ICAM3
DPEP1	0	1.10689794	0.568	0.153	0	3.712418301	Leydig_cells	DPEP1
CD37	3.34E-91	1.106878886	0.505	0.138	2.05E-86	3.66E+00	macrophages	CD37
EID12	0	1.105594623	0.78	0.345	0	2.260869565	PTM_cells	EID1
EEF1A16	2.55E-15	1.105122166	0.974	0.925	1.56E-10	1.05E+00	T_cells	EEF1A1
C11orf96	0	1.104558804	0.705	0.258	0	2.73255814	Leydig_cells	C11orf96
S100A63	0	1.104436364	0.691	0.105	0	6.580952381	PTM_cells	S100A6
SYNPO21	0	1.104246504	0.598	0.051	0	11.7254902	VSM_cells	SYNPO2
TRIM36	0	1.104152115	0.867	0.631	0	1.374009509	spermatid	TRIM36
DPT	0	1.103779379	0.454	0.029	0	15.65517241	Leydig_cells	DPT
TXNIP4	1.94E-11	1.103300395	0.553	0.174	1.19E-06	3.18E+00	T_cells	TXNIP
PRPS21	0	1.103260502	0.609	0.071	0	8.577464789	PTM_cells	PRPS2
PSMD1	0	1.103137701	0.658	0.155	0	4.24516129	spermatogonia	PSMD1
FTH12	0	1.102735229	0.969	0.712	0	1.360955056	Leydig_cells	FTH1
SLC25A64	6.95E-242	1.10254489	0.755	0.186	4.26E-237	4.06E+00	VSM_cells	SLC25A6
VCX3B	0	1.102279442	0.486	0.115	0	4.226086957	spermatogonia	VCX3B
LRP11	0	1.102180729	0.562	0.064	0	8.78125	Leydig_cells	LRP1
DUSP12	0	1.102081439	0.65	0.166	0	3.915662651	Leydig_cells	DUSP1
PPIB1	0	1.100648308	0.695	0.273	0	2.545787546	PTM_cells	PPIB
SMC4	0	1.100422665	0.749	0.352	0	2.127840909	spermatogonia	SMC4
RPL265	1.04E-11	1.100397856	0.895	0.755	6.40E-07	1.19E+00	T_cells	RPL26
IQGAP2	0	1.100035781	0.743	0.38	0	1.955263158	spermatid	IQGAP2
VCX	0	1.099264382	0.472	0.13	0	3.630769231	spermatogonia	VCX
PRRX1	1.55E-264	1.09886664	0.75	0.393	9.48E-260	1.91E+00	Leydig_cells	PRRX1
SNED1	0	1.098710445	0.494	0.041	0	12.04878049	Leydig_cells	SNED1
GPSM31	4.77E-40	1.098674797	0.368	0.027	2.93E-35	1.36E+01	T_cells	GPSM3
14-Sep	0	1.0985805	0.374	0.016	0	23.375	Sertoli_cells	14-Sep
MTUS1	1.09E-228	1.098274234	0.625	0.124	6.66E-224	5.04E+00	endotheliocyte	MTUS1
ZFAND51	1.96E-28	1.098211777	0.63	0.485	1.20E-23	1.30E+00	macrophages	ZFAND5
SEPW11	1.69E-126	1.097504363	0.812	0.53	1.04E-121	1.53E+00	VSM_cells	SEPW1
KLF64	3.84E-167	1.097205163	0.759	0.283	2.36E-162	2.68E+00	VSM_cells	KLF6
TSSK1B	0	1.096826745	0.743	0.321	0	2.314641745	spermatid	TSSK1B
RPL9	1.96E-154	1.096096034	0.97	0.873	1.20E-149	1.11E+00	endotheliocyte	RPL9
RPS144	6.67E-138	1.096072503	0.941	0.829	4.09E-133	1.14E+00	VSM_cells	RPS14

ZPBP	0	1.095913439	0.988	0.48	0	2.058333333	spermatocyte	ZPBP
EIF4E	0	1.095828168	0.771	0.492	0	1.567073171	spermatid	EIF4E
SPTY2D1-AS1	8.38E-277	1.095272159	0.506	0.437	5.14E-272	1.16E+00	spermatid	SPTY2D1-AS1
ECM2	0	1.095150564	0.514	0.044	0	11.68181818	Leydig_cells	ECM2
RPL10P32	5.78E-275	1.094791612	0.287	0.046	3.54E-270	6.24E+00	Leydig_cells	RPL10P3
HLA-E1	5.82E-57	1.094720724	0.333	0.086	3.57E-52	3.87E+00	macrophages	HLA-E
CD634	1.92E-183	1.094631106	0.82	0.283	1.18E-178	2.90E+00	VSM_cells	CD63
NFKB1	1.85E-104	1.094193086	0.391	0.074	1.13E-99	5.28E+00	macrophages	NFKB1
LMNA	1.88E-125	1.094074886	0.784	0.366	1.15E-120	2.14E+00	endotheliocyte	LMNA
FXVD6	0	1.093906174	0.595	0.093	0	6.397849462	Leydig_cells	FXVD6
RPL18A3	1.84E-260	1.093560693	0.803	0.401	1.13E-255	2.00E+00	Leydig_cells	RPL18A
DUSP13	0	1.093369603	0.671	0.161	0	4.167701863	PTM_cells	DUSP1
ACTB2	0	1.093308235	0.925	0.572	0	1.617132867	Leydig_cells	ACTB
C1S1	0	1.093098148	0.681	0.076	0	8.960526316	PTM_cells	C1S
PDLIM1	7.68E-289	1.092850036	0.605	0.091	4.71E-284	6.65E+00	endotheliocyte	PDLIM1
CRISPLD21	0	1.092630202	0.612	0.1	0	6.12	PTM_cells	CRISPLD2
RPL306	4.69E-15	1.092321233	0.947	0.879	2.87E-10	1.08E+00	T_cells	RPL30
HHIP	0	1.092075877	0.468	0.015	0	31.2	Leydig_cells	HHIP
RPL125	5.08E-09	1.091666505	0.816	0.635	0.000311604	1.28503937	T_cells	RPL12
CBX1	0	1.091212379	0.716	0.232	0	3.086206897	spermatogonia	CBX1
MYH9	1.64E-183	1.090737106	0.643	0.157	1.01E-178	4.10E+00	endotheliocyte	MYH9
EGR15	3.04E-68	1.090456843	0.386	0.255	1.87E-63	1.51E+00	Sertoli_cells	EGR1
SDCBP	5.15E-183	1.090142545	0.687	0.185	3.16E-178	3.71E+00	endotheliocyte	SDCBP
RPS182	0	1.090066004	0.973	0.848	0	1.14740566	Leydig_cells	RPS18
SERPINF11	0	1.089352973	0.698	0.122	0	5.721311475	PTM_cells	SERPINF1
PFN4	0	1.089152562	0.949	0.304	0	3.121710526	spermatocyte	PFN4
RP5-942I16.1	0	1.08874198	0.564	0.228	0	2.473684211	spermatocyte	RP5-942I16.1
SDPR	0	1.087204731	0.444	0.038	0	11.68421053	endotheliocyte	SDPR
GS1-259H13.2	0	1.08717613	0.565	0.233	0	2.424892704	spermatocyte	GS1-259H13.2
SOD21	1.42E-31	1.086753643	0.623	0.5	8.71E-27	1.25E+00	macrophages	SOD2
NEXN	0	1.086496872	0.584	0.09	0	6.488888889	PTM_cells	NEXN
MSN1	4.79E-159	1.085204053	0.455	0.067	2.94E-154	6.79E+00	macrophages	MSN
RASGEF1B	0	1.085114794	0.384	0.017	0	22.58823529	macrophages	RASGEF1B
PHOSPHO1	0	1.085054286	0.592	0.162	0	3.654320988	spermatid	PHOSPHO1
MBNL11	3.37E-102	1.084749967	0.458	0.101	2.07E-97	4.53E+00	macrophages	MBNL1
RPS12	0	1.084612316	0.903	0.815	0	1.10797546	spermatogonia	RPS12
SPAG6	0	1.084254332	0.949	0.312	0	3.041666667	spermatocyte	SPAG6
SPTBN1	7.27E-147	1.083358676	0.789	0.298	4.46E-142	2.65E+00	endotheliocyte	SPTBN1
SLC2A33	5.81E-12	1.082967705	0.395	0.093	3.56E-07	4.25E+00	T_cells	SLC2A3
FAM110D	0	1.082843095	0.469	0.002	0	234.5	endotheliocyte	FAM110D
EIF1B	0	1.082792279	0.755	0.447	0	1.689038031	spermatogonia	EIF1B
C12orf54	0	1.08267786	0.674	0.291	0	2.316151203	spermatid	C12orf54
NR4A13	2.32E-149	1.082498431	0.706	0.254	1.42E-144	2.78E+00	VSM_cells	NR4A1
NAA20	0	1.082432973	0.966	0.378	0	2.555555556	spermatocyte	NAA20
ADAMTS13	5.72E-262	1.082095574	0.537	0.083	3.51E-257	6.47E+00	VSM_cells	ADAMTS1
SDC4	0	1.081637305	0.337	0.021	0	16.04761905	Sertoli_cells	SDC4
KIAA1210	0	1.081445973	0.36	0.018	0	20	Sertoli_cells	KIAA1210
TBX2	0	1.080376078	0.497	0.027	0	18.40740741	VSM_cells	TBX2
HDGFL1	0	1.080174314	0.973	0.428	0	2.273364486	spermatocyte	HDGFL1
SPACA3	0	1.079896565	0.776	0.392	0	1.979591837	spermatid	SPACA3
CD93	0	1.079894421	0.541	0.02	0	27.05	endotheliocyte	CD93
GRN1	5.57E-91	1.079813361	0.505	0.132	3.41E-86	3.83E+00	macrophages	GRN
PKDCC	0	1.079063574	0.435	0.044	0	9.886363636	Leydig_cells	PKDCC
CRIP1	0	1.078837251	0.524	0.014	0	37.42857143	VSM_cells	CRIP1
ANXA2	4.03E-159	1.078539375	0.804	0.289	2.47E-154	2.78E+00	endotheliocyte	ANXA2
MS4A2	1.02E-90	1.078382808	0.18	0.004	6.24E-86	4.50E+01	mastocyte	MS4A2
CCDC185	0	1.07798541	0.573	0.164	0	3.493902439	spermatid	CCDC185
RNPS1	0	1.077603043	0.711	0.21	0	3.385714286	spermatogonia	RNPS1
DAB21	7.00E-97	1.076804717	0.313	0.049	4.29E-92	6.39E+00	macrophages	DAB2
MAP1B3	7.07E-241	1.076764263	0.416	0.146	4.34E-236	2.85E+00	Sertoli_cells	MAP1B
SPARCL11	0	1.076576176	0.784	0.14	0	5.6	Leydig_cells	SPARCL1
COL3A11	0	1.076415256	0.637	0.151	0	4.218543046	PTM_cells	COL3A1
LMNA1	7.34E-34	1.076404098	0.582	0.37	4.50E-29	1.57E+00	macrophages	LMNA
DNAJA4	0	1.075654541	0.775	0.451	0	1.718403548	spermatid	DNAJA4
HSPA1A5	3.51E-19	1.074970248	0.369	0.363	2.15E-14	1.02E+00	Sertoli_cells	HSPA1A
NUCKS11	1.36E-267	1.074297792	0.742	0.387	8.35E-263	1.92E+00	Leydig_cells	NUCKS1
KLF6	1.68E-139	1.074170322	0.752	0.285	1.03E-134	2.64E+00	endotheliocyte	KLF6
MT-ND43	7.73E-266	1.073596272	0.788	0.4	4.74E-261	1.97E+00	PTM_cells	MT-ND4
CEP170	0	1.073410956	0.731	0.423	0	1.728132388	spermatid	CEP170
AURKA	0	1.07316644	0.757	0.173	0	4.375722543	spermatocyte	AURKA
CRHBP	0	1.073064069	0.449	0.006	0	74.83333333	endotheliocyte	CRHBP
LINC01350	0	1.073018182	0.664	0.233	0	2.849785408	spermatid	LINC01350
MT-ATP62	2.97E-88	1.072513754	0.61	0.427	1.82E-83	1.43E+00	Leydig_cells	MT-ATP6
CAV12	0	1.072208093	0.671	0.077	0	8.714285714	PTM_cells	CAV1
CSRP2	2.77E-111	1.072080235	0.63	0.279	1.70E-106	2.26E+00	VSM_cells	CSRP2



ELF11	5.22E-96	1.071064385	0.458	0.108	3.20E-91	4.24E+00	macrophages	ELF1
ADIRF	7.29E-223	1.070859829	0.645	0.124	4.47E-218	5.20E+00	endotheliocyte	ADIRF
C2orf88	0	1.070648098	0.72	0.449	0	1.603563474	spermatid	C2orf88
PNRC14	1.60E-135	1.069628763	0.793	0.391	9.79E-131	2.03E+00	VSM_cells	PNRC1
CH25H	0	1.069550119	0.209	0.005	0	41.8	macrophages	CH25H
BTG1	1.20E-108	1.06954412	0.856	0.607	7.34E-104	1.41E+00	endotheliocyte	BTG1
GLRX2	0	1.068347906	0.709	0.299	0	2.371237458	spermatid	GLRX2
FBXO25	0	1.068185589	0.984	0.514	0	1.914396887	spermatocyte	FBXO25
PNRC1	1.66E-123	1.068027613	0.801	0.392	1.02E-118	2.04E+00	endotheliocyte	PNRC1
RPL182	1.10E-268	1.067955012	0.875	0.56	6.76E-264	1.56E+00	Leydig_cells	RPL18
SMIM10	0	1.067626117	0.372	0.048	0	7.75	Sertoli_cells	SMIM10
H2AFJ	0	1.067607145	0.996	0.767	0	1.298565841	spermatocyte	H2AFJ
SFRP4	0	1.067575362	0.382	0.04	0	9.55	Leydig_cells	SFRP4
IQGAP11	2.63E-64	1.067154355	0.492	0.17	1.61E-59	2.89E+00	macrophages	IQGAP1
NDUFA4	4.82E-267	1.067132426	0.787	0.513	2.95E-262	1.53E+00	PTM_cells	NDUFA4
ZPBP2	0	1.06633555	0.966	0.399	0	2.421052632	spermatocyte	ZPBP2
PAGE2B	0	1.063196385	0.497	0.111	0	4.477477477	spermatogonia	PAGE2B
TM4SF18	0	1.063035687	0.491	0.006	0	81.833333333	endotheliocyte	TM4SF18
CD4	6.77E-216	1.062656913	0.34	0.028	4.16E-211	1.21E+01	macrophages	CD4
KANK21	0	1.061919045	0.591	0.053	0	11.1509434	PTM_cells	KANK2
NOSTRIN	1.47E-111	1.061846603	0.591	0.224	9.02E-107	2.64E+00	endotheliocyte	NOSTRIN
TCF4	7.44E-127	1.061678617	0.749	0.328	4.56E-122	2.28E+00	endotheliocyte	TCF4
PTMA2	5.03E-90	1.061424259	0.953	0.653	3.08E-85	1.46E+00	macrophages	PTMA
IZUMO4	0	1.061386838	0.991	0.669	0	1.481315396	spermatocyte	IZUMO4
NPDC1	0	1.061356035	0.6	0.068	0	8.823529412	endotheliocyte	NPDC1
MT-ND16	1.18E-09	1.061143185	0.789	0.411	7.27E-05	1.92E+00	T_cells	MT-ND1
LDLR	2.99E-286	1.060730166	0.524	0.066	1.83E-281	7.94E+00	endotheliocyte	LDLR
NRDC	0	1.060098263	0.814	0.495	0	1.644444444	spermatid	NRDC
CD992	0	1.059604266	0.742	0.169	0	4.390532544	PTM_cells	CD99
AHNAK3	0	1.059266749	0.696	0.145	0	4.8	PTM_cells	AHNAK
PTCH11	0	1.059134645	0.601	0.175	0	3.434285714	PTM_cells	PTCH1
C4orf48	1.55E-31	1.058981249	0.327	0.267	9.54E-27	1.22E+00	Sertoli_cells	C4orf48
MEF2C2	2.58E-219	1.058432719	0.619	0.147	1.58E-214	4.21E+00	VSM_cells	MEF2C
SPATA6	0	1.057958661	0.866	0.638	0	1.357366771	spermatid	SPATA6
OGN1	0	1.057936178	0.607	0.052	0	11.67307692	PTM_cells	OGN
TMEM130	0	1.057319313	0.331	0.018	0	18.38888889	Sertoli_cells	TMEM130
HSP90AB1	0	1.057286621	0.899	0.669	0	1.343796712	spermatogonia	HSP90AB1
LY6E1	0	1.057105587	0.562	0.1	0	5.62	Leydig_cells	LY6E
APH1B	0	1.0569322	0.992	0.585	0	1.695726496	spermatocyte	APH1B
EMCN	0	1.056736333	0.553	0.003	0	184.3333333	endotheliocyte	EMCN
SLC7A5	0	1.056590348	0.34	0.033	0	10.3030303	Sertoli_cells	SLC7A5
CST32	0	1.056127669	0.859	0.41	0	2.095121951	PTM_cells	CST3
MORF4L21	0	1.056018973	0.696	0.3	0	2.32	PTM_cells	MORF4L2
DAZL	0	1.05592653	0.687	0.333	0	2.063063063	spermatogonia	DAZL
RGCC	0	1.055846454	0.762	0.125	0	6.096	spermatocyte	RGCC
FAM71E1	0	1.05581497	0.807	0.496	0	1.627016129	spermatid	FAM71E1
A2M2	3.32E-307	1.055802396	0.634	0.105	2.04E-302	6.04E+00	VSM_cells	A2M
PTRF2	0	1.055697097	0.671	0.092	0	7.293478261	PTM_cells	PTRF
ENG	0	1.055516562	0.744	0.101	0	7.366336634	endotheliocyte	ENG
TMSB4X2	0	1.054390109	0.908	0.314	0	2.891719745	Leydig_cells	TMSB4X
C9orf24	0	1.054342839	0.784	0.442	0	1.773755656	spermatid	C9orf24
C1orf162	9.66E-91	1.05429294	0.418	0.096	5.92E-86	4.35E+00	macrophages	C1orf162
RPL10A5	6.84E-11	1.054208494	0.868	0.663	4.20E-06	1.31E+00	T_cells	RPL10A
RFPL3S	0	1.053985307	0.707	0.316	0	2.237341772	spermatid	RFPL3S
GIMAP1	0	1.053501648	0.551	0.002	0	275.5	endotheliocyte	GIMAP1
ASRGL1	0	1.053407162	0.96	0.482	0	1.991701245	spermatocyte	ASRGL1
CCIN	0	1.053195229	0.671	0.3	0	2.236666667	spermatid	CCIN
MYADM1	1.27E-212	1.052694682	0.546	0.21	7.81E-208	2.60E+00	Leydig_cells	MYADM
RPS4X5	0	1.05213984	0.81	0.318	0	2.547169811	Sertoli_cells	RPS4X
ZFAS1	9.08E-129	1.051917456	0.692	0.262	5.57E-124	2.64E+00	endotheliocyte	ZFAS1
RPL27A4	6.42E-123	1.051687049	0.89	0.785	3.94E-118	1.13E+00	VSM_cells	RPL27A
PRH1	0	1.051672237	0.672	0.263	0	2.55513308	spermatid	PRH1
SOX18	1.72E-120	1.051657828	0.524	0.155	1.06E-115	3.38E+00	endotheliocyte	SOX18
NDRG2	0	1.050426519	0.497	0.063	0	7.888888889	Leydig_cells	NDRG2
FAM205C	0	1.050278917	0.601	0.113	0	5.318584071	spermatid	FAM205C
CHMP1B	4.13E-21	1.049897432	0.391	0.224	2.53E-16	1.75E+00	macrophages	CHMP1B
TMEM210	0	1.049457505	0.678	0.292	0	2.321917808	spermatid	TMEM210
MSRB31	0	1.049305378	0.571	0.073	0	7.821917808	VSM_cells	MSRB3
DUSP51	5.01E-74	1.04882617	0.38	0.091	3.07E-69	4.18E+00	macrophages	DUSP5
KCTD122	0	1.048578006	0.51	0.071	0	7.183098592	Leydig_cells	KCTD12
G2E3	0	1.048216538	0.66	0.373	0	1.769436997	spermatid	G2E3
ITM2B	4.16E-164	1.048151145	0.873	0.319	2.55E-159	2.74E+00	endotheliocyte	ITM2B
SPATA19	0	1.047736381	0.727	0.34	0	2.138235294	spermatid	SPATA19
TMEM190	0	1.047224605	0.491	0.206	0	2.383495146	spermatid	TMEM190
FBLN2	0	1.047158475	0.504	0.071	0	7.098591549	Leydig_cells	FBLN2

RPL30	2.76E-147	1.047128415	0.973	0.877	1.70E-142	1.11E+00	endotheliocyte	RPL30
DUT	0	1.046954035	0.715	0.355	0	2.014084507	spermatogonia	DUT
LYN	0	1.046890537	0.367	0.021	0	17.47619048	macrophages	LYN
LMNA2	2.60E-267	1.046743052	0.726	0.357	1.60E-262	2.03E+00	Leydig_cells	LMNA
RHOBTB3	0	1.046622568	0.575	0.121	0	4.752066116	Leydig_cells	RHOBTB3
CX3CR1	0	1.046613869	0.323	0.004	0	80.75	macrophages	CX3CR1
C11orf71	0	1.046552538	0.835	0.614	0	1.359934853	spermatid	C11orf71
DAB22	0	1.04620679	0.492	0.033	0	14.90909091	Leydig_cells	DAB2
TPT12	0	1.045331013	0.975	0.854	0	1.141686183	Leydig_cells	TPT1
CYR612	5.39E-237	1.044637345	0.588	0.109	3.31E-232	5.39E+00	VSM_cells	CYR61
RPS27A4	2.36E-131	1.044309363	0.926	0.86	1.45E-126	1.08E+00	VSM_cells	RPS27A
GAMT1	0	1.043945392	0.387	0.091	0	4.252747253	Sertoli_cells	GAMT
MYL64	8.73E-306	1.043650028	0.802	0.656	5.35E-301	1.22E+00	Sertoli_cells	MYL6
IL7R	1.60E-69	1.043591784	0.237	0.006	9.84E-65	3.95E+01	T_cells	IL7R
RPS155	3.56E-10	1.043189129	0.895	0.766	2.18E-05	1.17E+00	T_cells	RPS15
LGALS3BP1	0	1.042971349	0.663	0.091	0	7.285714286	PTM_cells	LGALS3BP
KCTD121	4.53E-119	1.04279207	0.455	0.085	2.78E-114	5.35E+00	macrophages	KCTD12
RNASE6	0	1.042400322	0.327	0.001	0	327	macrophages	RNASE6
FXVD61	0	1.04226348	0.647	0.087	0	7.436781609	PTM_cells	FXVD6
BTG23	0	1.042177003	0.581	0.11	0	5.281818182	PTM_cells	BTG2
ARX	0	1.042068175	0.451	0.032	0	14.09375	Leydig_cells	ARX
FN12	1.91E-195	1.041741419	0.457	0.079	1.17E-190	5.78E+00	VSM_cells	FN1
ERICH2	0	1.041688401	0.772	0.527	0	1.464895636	spermatid	ERICH2
FOXC12	0	1.041595094	0.531	0.065	0	8.169230769	VSM_cells	FOXC1
C5orf47	0	1.041277528	0.631	0.331	0	1.906344411	spermatogonia	C5orf47
ENG1	0	1.04088765	0.636	0.087	0	7.310344828	Leydig_cells	ENG
RPL13A4	7.58E-118	1.040514976	0.892	0.735	4.65E-113	1.21E+00	VSM_cells	RPL13A
TMCO2	0	1.040163302	0.815	0.489	0	1.666666667	spermatid	TMCO2
FAM107A	1.24E-249	1.039817456	0.402	0.044	7.62E-245	9.14E+00	endotheliocyte	FAM107A
KLF23	0	1.039536757	0.622	0.145	0	4.289655172	PTM_cells	KLF2
LMNA4	7.94E-132	1.038897531	0.757	0.365	4.87E-127	2.07E+00	VSM_cells	LMNA
REEP1	2.75E-267	1.03873483	0.362	0.107	1.69E-262	3.38E+00	Sertoli_cells	REEP1
CLEC3B	0	1.038076697	0.485	0.085	0	5.705882353	Leydig_cells	CLEC3B
PLPP31	0	1.037803952	0.671	0.095	0	7.063157895	PTM_cells	PLPP3
KIF9	0	1.037800678	0.969	0.428	0	2.264018692	spermatocyte	KIF9
NKAPL	0	1.037505588	0.946	0.301	0	3.142857143	spermatocyte	NKAPL
RPS85	3.63E-10	1.037475108	0.868	0.776	2.23E-05	1.12E+00	T_cells	RPS8
C7orf55	0	1.037277911	0.948	0.362	0	2.61878453	spermatocyte	C7orf55
RGS101	1.04E-23	1.037099479	0.316	0.033	6.41E-19	9.58E+00	T_cells	RGS10
COTL1	9.74E-88	1.036862638	0.387	0.083	5.97E-83	4.66E+00	macrophages	COTL1
PTMA	0	1.036705059	0.916	0.585	0	1.565811966	spermatogonia	PTMA
PDLIM11	0	1.036461201	0.596	0.09	0	6.622222222	VSM_cells	PDLIM1
NFKBIA2	0	1.036400864	0.676	0.194	0	3.484536082	Leydig_cells	NFKBIA
IFI63	0	1.036257666	0.609	0.071	0	8.577464789	PTM_cells	IFI6
S100A42	8.23E-117	1.036205269	0.288	0.05	5.05E-112	5.76E+00	VSM_cells	S100A4
FRZB	0	1.035877879	0.516	0.025	0	20.64	VSM_cells	FRZB
PEBP11	1.97E-275	1.035576138	0.767	0.595	1.21E-270	1.29E+00	Sertoli_cells	PEBP1
GATM1	2.60E-278	1.035510004	0.377	0.112	1.59E-273	3.37E+00	Sertoli_cells	GATM
CD812	0	1.035122196	0.706	0.298	0	2.369127517	PTM_cells	CD81
PPIB	9.65E-237	1.035017928	0.627	0.279	5.92E-232	2.25E+00	Leydig_cells	PPIB
SRSF9	0	1.034963692	0.714	0.345	0	2.069565217	spermatogonia	SRSF9
MORN3	0	1.034700594	0.653	0.196	0	3.331632653	spermatid	MORN3
FXVD5	0	1.034307693	0.536	0.018	0	29.77777778	endotheliocyte	FXVD5
MT-CYB2	3.40E-101	1.034136896	0.608	0.389	2.09E-96	1.56E+00	Leydig_cells	MT-CYB
MT.ND31	4.14E-30	1.033896358	0.576	0.368	2.54E-25	1.57E+00	macrophages	MT.ND3
RPS15	3.39E-114	1.033851216	0.923	0.764	2.08E-109	1.21E+00	endotheliocyte	RPS15
CABYR	0	1.033688586	0.897	0.652	0	1.375766871	spermatid	CABYR
MT.ND21	2.40E-27	1.033648193	0.572	0.383	1.47E-22	1.49E+00	macrophages	MT.ND2
MSN	0	1.03352218	0.581	0.063	0	9.222222222	endotheliocyte	MSN
CD441	1.38E-209	1.033103464	0.49	0.092	8.49E-205	5.33E+00	VSM_cells	CD44
PPP1R15A4	1.05E-191	1.033017617	0.702	0.188	6.46E-187	3.73E+00	VSM_cells	PPP1R15A
ATF3	2.91E-216	1.032860886	0.615	0.112	1.79E-211	5.49E+00	endotheliocyte	ATF3
PAQR7	0	1.032503837	0.675	0.261	0	2.586206897	spermatid	PAQR7
RPS164	2.64E-126	1.032377	0.899	0.755	1.62E-121	1.19E+00	VSM_cells	RPS16
PSMB8	0	1.032128952	0.6	0.029	0	20.68965517	endotheliocyte	PSMB8
PDIA3	0	1.031738156	0.771	0.354	0	2.177966102	spermatogonia	PDIA3
PRDX21	0	1.031716599	0.585	0.09	0	6.5	Leydig_cells	PRDX2
NUCKS12	8.03E-301	1.031307733	0.741	0.385	4.93E-296	1.92E+00	PTM_cells	NUCKS1
EMP11	0	1.030902574	0.436	0.045	0	9.688888889	Leydig_cells	EMP1
HMGCS2	0	1.030449538	0.338	0.015	0	22.53333333	Sertoli_cells	HMGCS2
MS4A14	0	1.030389573	0.687	0.311	0	2.209003215	spermatid	MS4A14
AP1S2	2.26E-279	1.030190651	0.618	0.095	1.39E-274	6.51E+00	endotheliocyte	AP1S2
RPL414	8.02E-129	1.030022165	0.915	0.785	4.92E-124	1.17E+00	VSM_cells	RPL41
GLIPR11	2.73E-05	1.029972478	0.316	0.125	1	2.528	T_cells	GLIPR1
ARL6IP55	2.30E-08	1.029876999	0.5	0.205	0.001409505	2.43902439	T_cells	ARL6IP5

COTL11	1.35E-09	1.029777235	0.342	0.086	8.28E-05	3.98E+00	T_cells	COTL1
LGALS3	1.88E-190	1.02952398	0.754	0.201	1.15E-185	3.75E+00	endotheliocyte	LGALS3
LEPROTL1	0.004685222	1.028536319	0.5	0.435	1	1.149425287	T_cells	LEPROTL1
FAM81B	0	1.027835823	0.795	0.416	0	1.911057692	spermatid	FAM81B
TEX26	0	1.027535738	0.697	0.337	0	2.068249258	spermatid	TEX26
CALM14	1.30E-06	1.026986507	0.737	0.693	0.079618984	1.063492063	T_cells	CALM1
RPS3A	8.20E-154	1.026736208	0.98	0.897	5.03E-149	1.09E+00	endotheliocyte	RPS3A
VCX2	0	1.026229305	0.433	0.147	0	2.945578231	spermatogonia	VCX2
DSTN	0	1.026075228	0.84	0.547	0	1.535648995	PTM_cells	DSTN
BTG3	0	1.025921253	0.638	0.108	0	5.907407407	spermatogonia	BTG3
C1orf56	0	1.025873417	0.976	0.401	0	2.433915212	spermatocyte	C1orf56
RPL194	3.15E-11	1.025814503	0.921	0.839	1.93E-06	1.10E+00	T_cells	RPL19
ADGRE51	2.01E-34	1.024978124	0.316	0.023	1.23E-29	1.37E+01	T_cells	ADGRE5
ADGRL4	1.39E-162	1.02468763	0.625	0.181	8.51E-158	3.45E+00	endotheliocyte	ADGRL4
MTND1P23	1.39E-65	1.024623659	0.391	0.369	8.54E-61	1.06E+00	spermatogonia	MTND1P23
DDX24	0	1.024475448	0.871	0.566	0	1.538869258	spermatogonia	DDX24
HLA-A2	4.62E-139	1.023656583	0.548	0.298	2.83E-134	1.84E+00	Leydig_cells	HLA-A
UTRN1	3.26E-123	1.023377845	0.759	0.364	2.00E-118	2.09E+00	VSM_cells	UTRN
MT-CO34	1.02E-09	1.023247521	0.816	0.47	6.25E-05	1.74E+00	T_cells	MT-CO3
BHLHE41	1.57E-98	1.022881543	0.269	0.037	9.65E-94	7.27E+00	macrophages	BHLHE41
RPS261	6.14E-69	1.022765567	0.744	0.535	3.77E-64	1.39E+00	endotheliocyte	RPS26
CCT8	0	1.022678037	0.716	0.245	0	2.92244898	spermatogonia	CCT8
RPL24	2.87E-112	1.022623662	0.908	0.741	1.76E-107	1.23E+00	endotheliocyte	RPL24
STAB1	5.77E-255	1.022603988	0.273	0.015	3.54E-250	1.82E+01	macrophages	STAB1
CD994	7.65E-229	1.022499757	0.468	0.178	4.69E-224	2.63E+00	Sertoli_cells	CD99
LSP12	2.47E-33	1.022479894	0.368	0.031	1.52E-28	1.19E+01	T_cells	LSP1
NPTX2	0	1.022276962	0.564	0.109	0	5.174311927	PTM_cells	NPTX2
RPL34P181	3.53E-31	1.022001268	0.421	0.205	2.17E-26	2.05E+00	macrophages	RPL34P18
TSPYL2	2.24E-187	1.021694125	0.458	0.211	1.38E-182	2.17E+00	Sertoli_cells	TSPYL2
AKAP3	0	1.021670657	0.756	0.517	0	1.462282398	spermatid	AKAP3
FGFR11	0	1.021635475	0.538	0.118	0	4.559322034	Leydig_cells	FGFR1
INHA	0	1.021314718	0.329	0.012	0	27.41666667	Sertoli_cells	INHA
CCDC85B3	0	1.020638822	0.405	0.106	0	3.820754717	Sertoli_cells	CCDC85B
PPP1R12A	7.02E-104	1.020585394	0.759	0.474	4.31E-99	1.60E+00	VSM_cells	PPP1R12A
PSMB9	0	1.020254656	0.573	0.03	0	19.1	endotheliocyte	PSMB9
HCLS11	5.37E-92	1.020180489	0.395	0.013	3.30E-87	3.04E+01	T_cells	HCLS1
RPL10P3	3.41E-46	1.020006728	0.211	0.053	2.09E-41	3.98E+00	endotheliocyte	RPL10P3
PPP1R14A1	0	1.019924142	0.634	0.127	0	4.992125984	PTM_cells	PPP1R14A
RPLP12	0	1.019549611	0.966	0.758	0	1.274406332	Leydig_cells	RPLP1
TEX40	0	1.018955035	0.581	0.515	0	1.12815534	spermatocyte	TEX40
RPL32	2.77E-126	1.01894042	0.975	0.888	1.70E-121	1.10E+00	endotheliocyte	RPL32
TMIGD3	0	1.018641516	0.903	0.267	0	3.382022472	spermatocyte	TMIGD3
RPS165	1.52E-09	1.0174571	0.842	0.757	9.34E-05	1.11E+00	T_cells	RPS16
FTH1P20	2.68E-96	1.017249901	0.276	0.04	1.64E-91	6.90E+00	macrophages	FTH1P20
RPS15A	3.50E-114	1.017035504	0.931	0.784	2.15E-109	1.19E+00	endotheliocyte	RPS15A
LY6E3	1.92E-07	1.0165921	0.368	0.119	0.011757004	3.092436975	T_cells	LY6E
MIDN	1.95E-153	1.01627105	0.66	0.192	1.20E-148	3.44E+00	endotheliocyte	MIDN
TUBA1A5	7.71E-293	1.016199836	0.512	0.183	4.73E-288	2.80E+00	Sertoli_cells	TUBA1A
RPLP21	5.45E-10	1.016155388	0.947	0.835	3.34E-05	1.13E+00	T_cells	RPLP2
PSMF1	0	1.015951532	0.837	0.676	0	1.23816568	spermatid	PSMF1
CYR1	0	1.015893623	0.558	0.004	0	139.5	endotheliocyte	CYR1
UBA2	0	1.015870229	0.745	0.326	0	2.285276074	spermatogonia	UBA2
S100A161	0	1.015636066	0.343	0.049	0	7	Sertoli_cells	S100A16
SPESP1	0	1.015116922	0.966	0.397	0	2.43324937	spermatocyte	SPESP1
BPIFA3	0	1.014622394	0.739	0.342	0	2.160818713	spermatid	BPIFA3
DNAJC5B	0	1.01451615	0.763	0.376	0	2.029255319	spermatid	DNAJC5B
ADAMTS1	4.25E-192	1.014250233	0.506	0.085	2.61E-187	5.95E+00	endotheliocyte	ADAMTS1
PDLIM31	0	1.014196211	0.564	0.05	0	11.28	VSM_cells	PDLIM3
MT-ND32	2.02E-108	1.014141965	0.601	0.365	1.24E-103	1.65E+00	Leydig_cells	MT-ND3
RPN2	0	1.014072835	0.746	0.399	0	1.869674185	spermatogonia	RPN2
SMIM6	0	1.013627189	0.648	0.225	0	2.88	spermatid	SMIM6
CCNL13	4.77E-201	1.013492155	0.627	0.333	2.92E-196	1.88E+00	PTM_cells	CCNL1
CCNY	0	1.013412591	0.792	0.549	0	1.442622951	spermatid	CCNY
ODF2	0	1.013253795	0.921	0.774	0	1.189922481	spermatid	ODF2
RAMP1	0	1.013053663	0.469	0.019	0	24.68421053	VSM_cells	RAMP1
PPP1R15A3	0	1.012865435	0.674	0.173	0	3.895953757	PTM_cells	PPP1R15A
BEX4	0	1.012726271	0.368	0.083	0	4.43373494	Sertoli_cells	BEX4
LHFP	5.36E-242	1.012497173	0.547	0.202	3.29E-237	2.71E+00	Leydig_cells	LHFP
HNRNPA3	0	1.012438855	0.804	0.495	0	1.624242424	spermatogonia	HNRNPA3
LCK	1.85E-85	1.01233322	0.289	0.008	1.13E-80	3.61E+01	T_cells	LCK
TSPAN7	0	1.012181941	0.531	0.007	0	75.85714286	endotheliocyte	TSPAN7
RPL243	1.70E-114	1.01116579	0.884	0.741	1.04E-109	1.19E+00	VSM_cells	RPL24
FAM229A	0	1.010992348	0.769	0.506	0	1.519762846	spermatid	FAM229A
RP11.475C16.1	9.68E-28	1.010966217	0.384	0.186	5.94E-23	2.06E+00	macrophages	RP11.475C16.1
NBL11	0	1.010804278	0.622	0.073	0	8.520547945	PTM_cells	NBL1

C10orf54	8.50E-269	1.010034347	0.337	0.021	5.22E-264	1.60E+01	macrophages	C10orf54
MT.CYB3	3.13E-15	1.009184391	0.348	0.334	1.92E-10	1.04E+00	Sertoli_cells	MT.CYB
CLSPN	0	1.008966061	0.372	0.06	0	6.2	spermatogonia	CLSPN
CAV11	0	1.008787582	0.601	0.084	0	7.154761905	Leydig_cells	CAV1
PTPRE	0	1.008611499	0.354	0.018	0	19.66666667	macrophages	PTPRE
GADD45G	0	1.008432318	0.429	0.064	0	6.703125	Leydig_cells	GADD45G
LEPROT1	0	1.008343201	0.574	0.156	0	3.679487179	Leydig_cells	LEPROT
RPL22	6.06E-113	1.008194445	0.881	0.645	3.72E-108	1.37E+00	endotheliocyte	RPL22
GNB2L12	1.73E-214	1.007792381	0.712	0.459	1.06E-209	1.55E+00	PTM_cells	GNB2L1
RCN2	0	1.007554328	0.655	0.319	0	2.053291536	spermatogonia	RCN2
CENPH	0	1.007126089	0.602	0.15	0	4.013333333	spermatogonia	CENPH
ATPIF1	0	1.006656181	0.993	0.69	0	1.439130435	spermatocyte	ATPIF1
CPE2	7.54E-201	1.006625468	0.736	0.205	4.62E-196	3.59E+00	VSM_cells	CPE
NTRK21	0	1.005608146	0.531	0.027	0	19.66666667	VSM_cells	NTRK2
LAMB11	0	1.005567139	0.536	0.065	0	8.246153846	PTM_cells	LAMB1
RNF133	0	1.005438836	0.663	0.198	0	3.348484848	spermatid	RNF133
LDHB1	0	1.005334421	0.688	0.198	0	3.474747475	PTM_cells	LDHB
EHD1	0	1.004966188	0.8	0.549	0	1.4571949	spermatid	EHD1
POSTN	0	1.004912143	0.342	0.003	0	114	endotheliocyte	POSTN
CCDC31	0	1.004779736	0.567	0.04	0	14.175	VSM_cells	CCDC3
NRK	0	1.004504364	0.415	0.016	0	25.9375	Leydig_cells	NRK
LCA5L	0	1.004122475	0.992	0.571	0	1.737302977	spermatocyte	LCA5L
HSPA1A	1.20E-103	1.004122044	0.762	0.357	7.36E-99	2.13E+00	endotheliocyte	HSPA1A
CCDC83	0	1.003772754	0.925	0.289	0	3.200692042	spermatocyte	CCDC83
IL33	0	1.003027906	0.514	0.016	0	32.125	endotheliocyte	IL33
FBXO39	0	1.002765128	0.601	0.151	0	3.98013245	spermatid	FBXO39
PRSS50	0	1.002496585	0.444	0.097	0	4.577319588	spermatogonia	PRSS50
RPL213	4.73E-299	1.002446263	0.905	0.459	2.90E-294	1.97E+00	Leydig_cells	RPL21
COPRS	0	1.002381556	0.983	0.61	0	1.61147541	spermatocyte	COPRS
MRO	0	1.002312532	0.336	0.011	0	30.54545455	Sertoli_cells	MRO
MT-ND36	4.47E-10	1.002094498	0.789	0.375	2.74E-05	2.10E+00	T_cells	MT-ND3
IL10RA	0	1.001586335	0.35	0.002	0	175	macrophages	IL10RA
TACC1	2.95E-147	1.001437169	0.67	0.204	1.81E-142	3.28E+00	endotheliocyte	TACC1
SMOC1	0	1.00085494	0.543	0.057	0	9.526315789	PTM_cells	SMOC1
RNASE1	1.92E-286	1.000831211	0.752	0.133	1.18E-281	5.65E+00	endotheliocyte	RNASE1
RPL19	1.86E-126	1.000741153	0.978	0.837	1.14E-121	1.17E+00	endotheliocyte	RPL19
C12orf572	1.20E-108	0.999807648	0.757	0.454	7.39E-104	1.67E+00	VSM_cells	C12orf57
SLC3A2	1.26E-168	0.99920524	0.633	0.162	7.75E-164	3.91E+00	endotheliocyte	SLC3A2
NRP2	3.08E-199	0.999084569	0.409	0.059	1.89E-194	6.93E+00	endotheliocyte	NRP2
BANF1	0	0.999078458	0.773	0.348	0	2.221264368	spermatogonia	BANF1
CTSZ1	5.60E-132	0.999044538	0.38	0.057	3.44E-127	6.67E+00	macrophages	CTSZ
FAM120B	0	0.998432274	0.68	0.324	0	2.098765432	spermatid	FAM120B
ARRB2	1.30E-303	0.998356315	0.36	0.022	7.98E-299	1.64E+01	macrophages	ARRB2
SH3BGRL31	1.83E-28	0.997807163	0.414	0.212	1.12E-23	1.95E+00	macrophages	SH3BGRL3
PDHA2	0	0.99780464	0.975	0.41	0	2.37804878	spermatocyte	PDHA2
CSNK1G2	0	0.997613988	0.762	0.437	0	1.743707094	spermatid	CSNK1G2
OBSL1	0	0.996643674	0.979	0.591	0	1.656514382	spermatocyte	OBSL1
ZYX	3.88E-72	0.99651764	0.37	0.087	2.38E-67	4.25E+00	macrophages	ZYX
WBSCR28	0	0.996420735	0.678	0.322	0	2.105590062	spermatid	WBSCR28
LCP11	1.65E-50	0.99640299	0.586	0.286	1.01E-45	2.05E+00	macrophages	LCP1
MT-ND33	3.45E-262	0.996301609	0.768	0.355	2.12E-257	2.16E+00	PTM_cells	MT-ND3
B4GALT1	2.44E-37	0.995936026	0.424	0.184	1.50E-32	2.30E+00	macrophages	B4GALT1
PFN11	3.19E-37	0.995862579	0.626	0.407	1.96E-32	1.54E+00	macrophages	PFN1
KLF4	1.22E-96	0.995509086	0.801	0.483	7.50E-92	1.66E+00	endotheliocyte	KLF4
RPS2110	2.03E-10	0.995265504	0.816	0.525	1.25E-05	1.55E+00	T_cells	RPS21
MEX3C	0	0.995217122	0.713	0.375	0	1.901333333	spermatid	MEX3C
KIF5C	0	0.995071945	0.658	0.257	0	2.560311284	spermatid	KIF5C
PRSS21	0	0.994298838	0.637	0.444	0	1.434684685	spermatogonia	PRSS21
C10orf10	1.84E-161	0.994112717	0.318	0.04	1.13E-156	7.95E+00	endotheliocyte	C10orf10
CEP170P1	0	0.99407853	0.333	0.043	0	7.744186047	spermatid	CEP170P1
TCEAL6	0	0.994013183	0.299	0.01	0	29.9	Sertoli_cells	TCEAL6
RPL62	3.94E-231	0.993840983	0.852	0.677	2.41E-226	1.26E+00	Leydig_cells	RPL6
PLXDC2	2.99E-115	0.993707391	0.394	0.068	1.83E-110	5.79E+00	macrophages	PLXDC2
SH3BGRL4	0	0.993379672	0.622	0.086	0	7.23255814	PTM_cells	SH3BGRL
TLN11	5.10E-117	0.993198642	0.698	0.322	3.13E-112	2.17E+00	VSM_cells	TLN1
ABRACL	0	0.993084042	0.314	0.028	0	11.21428571	Sertoli_cells	ABRACL
MAP1B2	1.71E-204	0.992878686	0.649	0.155	1.05E-199	4.19E+00	VSM_cells	MAP1B
ICA1	0	0.992718756	0.749	0.363	0	2.063360882	spermatid	ICA1
BTG21	3.14E-83	0.992443534	0.492	0.129	1.93E-78	3.81E+00	macrophages	BTG2
RPL23A3	1.56E-116	0.992403431	0.89	0.735	9.55E-112	1.21E+00	VSM_cells	RPL23A
COX8A1	3.66E-172	0.991742085	0.451	0.216	2.25E-167	2.09E+00	Sertoli_cells	COX8A
NFIA1	0	0.991502949	0.646	0.193	0	3.347150259	PTM_cells	NFIA
VCX3A	0	0.991076608	0.431	0.094	0	4.585106383	spermatogonia	VCX3A
KLF91	7.87E-204	0.990461389	0.449	0.146	4.83E-199	3.08E+00	Leydig_cells	KLF9
RP6-91H8.2	0	0.990461288	0.5	0.097	0	5.154639175	spermatocyte	RP6-91H8.2

ECSCR.1	0	0.990071563	0.514	0.001	0	514	endotheliocyte	ECSCR.1
ETNK2	0	0.989858932	0.734	0.333	0	2.204204204	spermatid	ETNK2
NME5	0	0.988926554	0.965	0.431	0	2.238979118	spermatocyte	NME5
FMO2	0	0.988771928	0.447	0.01	0	44.7	endotheliocyte	FMO2
TXN1	3.13E-228	0.988134228	0.593	0.25	1.92E-223	2.37E+00	Leydig_cells	TXN
PDLIM2	0	0.988094398	0.548	0.044	0	12.45454545	PTM_cells	PDLIM2
SYK	1.72E-251	0.98778101	0.354	0.026	1.06E-246	1.36E+01	macrophages	SYK
WTIP	1.41E-277	0.987708455	0.571	0.096	8.64E-273	5.95E+00	VSM_cells	WTIP
TPT16	5.03E-12	0.987448948	0.921	0.859	3.09E-07	1.07E+00	T_cells	TPT1
FOXC1	2.61E-300	0.987272489	0.538	0.066	1.60E-295	8.15E+00	endotheliocyte	FOXC1
RPL10L	0	0.987000379	0.96	0.397	0	2.41813602	spermatocyte	RPL10L
ANXA5	1.79E-268	0.986828174	0.686	0.304	1.10E-263	2.26E+00	Leydig_cells	ANXA5
NUDT11	0	0.986555553	0.354	0.077	0	4.597402597	Sertoli_cells	NUDT11
TGFB1111	0	0.986236132	0.548	0.052	0	10.53846154	VSM_cells	TGFB111
IRF2BP21	1.08E-29	0.985822014	0.535	0.346	6.60E-25	1.55E+00	macrophages	IRF2BP2
MT-ND26	5.61E-11	0.985231585	0.816	0.413	3.44E-06	1.98E+00	T_cells	MT-ND2
TEX19	0	0.984270857	0.186	0.016	0	11.625	spermatogonia	TEX19
CD59	4.61E-107	0.98426424	0.816	0.503	2.83E-102	1.62E+00	endotheliocyte	CD59
MS4A6E	0	0.984125792	0.684	0.401	0	1.705735661	spermatid	MS4A6E
MAGED2	0	0.984099332	0.556	0.123	0	4.520325203	Leydig_cells	MAGED2
DYDC1	0	0.983524636	0.908	0.306	0	2.967320261	spermatocyte	DYDC1
LMNA5	0.001129508	0.983439629	0.5	0.372	1	1.344086022	T_cells	LMNA
TPM3	3.61E-130	0.983417232	0.824	0.383	2.22E-125	2.15E+00	endotheliocyte	TPM3
SDCBP2	3.14E-288	0.983280164	0.557	0.177	1.93E-283	3.15E+00	Leydig_cells	SDCBP
CX3CL1	0	0.983107162	0.447	0.021	0	21.28571429	endotheliocyte	CX3CL1
NACA	2.30E-99	0.983103971	0.898	0.747	1.41E-94	1.20E+00	endotheliocyte	NACA
MAGED1	0	0.982829352	0.363	0.06	0	6.05	Sertoli_cells	MAGED1
RANGAP1	0	0.982408411	0.679	0.397	0	1.710327456	spermatid	RANGAP1
SOCS2	2.18E-143	0.982327248	0.543	0.142	1.34E-138	3.82E+00	endotheliocyte	SOCS2
IFITM21	5.87E-61	0.982256816	0.488	0.162	3.60E-56	3.01E+00	macrophages	IFITM2
LDHB3	5.95E-199	0.98191622	0.474	0.205	3.65E-194	2.31E+00	Sertoli_cells	LDHB
EIF4H	0	0.981075311	0.734	0.529	0	1.387523629	spermatid	EIF4H
GNB2L13	6.35E-120	0.98070242	0.822	0.465	3.90E-115	1.77E+00	VSM_cells	GNB2L1
SH3GL3	0	0.9799683	0.75	0.425	0	1.764705882	spermatid	SH3GL3
STEAP4	1.49E-266	0.97991371	0.41	0.101	9.12E-262	4.06E+00	Leydig_cells	STEAP4
MT.ND41	2.62E-27	0.979505707	0.576	0.372	1.61E-22	1.55E+00	macrophages	MT.ND4
CALM2	0	0.979062958	0.916	0.751	0	1.219707057	spermatogonia	CALM2
LINC00854	0	0.978480388	0.326	0.072	0	4.527777778	spermatid	LINC00854
IL6ST	2.50E-114	0.97819727	0.677	0.269	1.53E-109	2.52E+00	endotheliocyte	IL6ST
MBNL3	0	0.977858172	0.343	0.035	0	9.8	Sertoli_cells	MBNL3
CMTM2	0	0.977594078	0.998	0.841	0	1.186682521	spermatocyte	CMTM2
PLAGL1	0	0.977063187	0.426	0.028	0	15.21428571	Leydig_cells	PLAGL1
CCDC179	0	0.976763355	0.548	0.144	0	3.805555556	spermatid	CCDC179
MT.ATP63	6.52E-12	0.976324028	0.349	0.347	4.00E-07	1.01E+00	Sertoli_cells	MT.ATP6
AC010980.2	0	0.976078746	0.407	0.15	0	2.713333333	spermatocyte	AC010980.2
COX7A2	0	0.975832383	0.995	0.801	0	1.242197253	spermatocyte	COX7A2
ZMYND12	0	0.975793524	0.946	0.294	0	3.217687075	spermatocyte	ZMYND12
PLA2G16	6.78E-119	0.975739128	0.579	0.462	4.16E-114	1.25E+00	Sertoli_cells	PLA2G16
IFI44L	0	0.975650574	0.536	0.032	0	16.75	endotheliocyte	IFI44L
MT-ND51	4.97E-137	0.975469841	0.581	0.285	3.05E-132	2.04E+00	Leydig_cells	MT-ND5
BAG1	0	0.974356455	0.808	0.613	0	1.318107667	spermatid	BAG1
MT1X2	1.04E-282	0.974209508	0.459	0.057	6.35E-278	8.05E+00	VSM_cells	MT1X
SMOC2	0	0.973776534	0.548	0.069	0	7.942028986	Leydig_cells	SMOC2
MT-ND4	3.35E-166	0.97375827	0.503	0.396	2.06E-161	1.27E+00	spermatogonia	MT-ND4
RPL394	1.55E-177	0.973757437	0.822	0.273	9.50E-173	3.01E+00	VSM_cells	RPL39
EMP2	7.89E-143	0.973550084	0.628	0.183	4.84E-138	3.43E+00	endotheliocyte	EMP2
PARP1	0	0.973092442	0.664	0.22	0	3.018181818	spermatogonia	PARP1
ZC2HC1C	0	0.973014727	0.943	0.349	0	2.702005731	spermatocyte	ZC2HC1C
SERPINF12	0	0.972877555	0.467	0.129	0	3.620155039	Sertoli_cells	SERPINF1
HES1	9.01E-260	0.972744893	0.538	0.074	5.53E-255	7.27E+00	endotheliocyte	HES1
VWA3B	0	0.972633429	0.704	0.303	0	2.323432343	spermatid	VWA3B
C16orf71	0	0.972525116	0.822	0.243	0	3.382716049	spermatocyte	C16orf71
SBNO1	0	0.972104694	0.787	0.465	0	1.692473118	spermatogonia	SBNO1
CCT6A	0	0.972062217	0.696	0.287	0	2.425087108	spermatogonia	CCT6A
NDUFAF3	0	0.970840893	0.995	0.702	0	1.417378917	spermatocyte	NDUFAF3
RP11-620J15.3	2.26E-170	0.970512616	0.36	0.219	1.38E-165	1.64E+00	spermatogonia	RP11-620J15.3
RGS10	4.69E-227	0.970346197	0.357	0.029	2.88E-222	1.23E+01	macrophages	RGS10
SLC25A66	3.38E-09	0.970187267	0.526	0.196	0.000207255	2.683673469	T_cells	SLC25A6
SELM2	0	0.970067357	0.616	0.198	0	3.111111111	PTM_cells	SELM
CD813	2.06E-132	0.969700693	0.744	0.31	1.26E-127	2.40E+00	VSM_cells	CD81
GPI	0	0.96956224	0.659	0.25	0	2.636	spermatid	GPI
GAS61	0	0.969221383	0.371	0.072	0	5.152777778	Sertoli_cells	GAS6
CD371	9.39E-13	0.968928463	0.5	0.142	5.76E-08	3.52E+00	T_cells	CD37
AHR	7.95E-115	0.968820457	0.3	0.04	4.87E-110	7.50E+00	macrophages	AHR
ARRDC31	7.19E-25	0.968778466	0.347	0.167	4.41E-20	2.08E+00	macrophages	ARRDC3



CMTM31	0	0.968761308	0.335	0.047	0	7.127659574	Sertoli_cells	CMTM3
PHACTR1	1.55E-50	0.968740131	0.377	0.122	9.51E-46	3.09E+00	macrophages	PHACTR1
WBP52	1.36E-144	0.96871588	0.264	0.087	8.37E-140	3.03E+00	Sertoli_cells	WBP5
KANK22	0	0.968669729	0.564	0.071	0	7.943661972	VSM_cells	KANK2
MFAP3L	0	0.96841968	0.683	0.317	0	2.154574132	spermatid	MFAP3L
SPEM1	0	0.96827984	0.582	0.175	0	3.325714286	spermatid	SPEM1
INMT1	0	0.968240266	0.535	0.027	0	19.81481481	PTM_cells	INMT
EGR3	1.34E-136	0.968189762	0.289	0.109	8.24E-132	2.65E+00	Sertoli_cells	EGR3
IFI161	9.00E-101	0.968146437	0.414	0.082	5.52E-96	5.05E+00	macrophages	IFI16
TPM31	4.20E-32	0.967862633	0.593	0.387	2.58E-27	1.53E+00	macrophages	TPM3
RPL34P27	7.57E-21	0.967668611	0.401	0.23	4.64E-16	1.74E+00	macrophages	RPL34P27
IGFBP41	0	0.967504458	0.493	0.069	0	7.144927536	Leydig_cells	IGFBP4
PABPC3	0	0.967391315	0.943	0.337	0	2.798219585	spermatocyte	PABPC3
PPP1R18	3.22E-15	0.967247468	0.368	0.067	1.97E-10	5.49E+00	T_cells	PPP1R18
PTGER41	6.53E-08	0.9666831	0.289	0.076	0.004007477	3.802631579	T_cells	PTGER4
CAST	0	0.965414946	0.753	0.536	0	1.404850746	spermatid	CAST
RPS6	1.71E-137	0.965391164	0.985	0.93	1.05E-132	1.06E+00	endotheliocyte	RPS6
EEF1A11	2.12E-91	0.965323509	0.993	0.924	1.30E-86	1.07E+00	macrophages	EEF1A1
PRDM1	1.63E-256	0.965011435	0.263	0.013	1.00E-251	2.02E+01	macrophages	PRDM1
APBB1IP	9.46E-114	0.964867387	0.263	0.005	5.80E-109	5.26E+01	T_cells	APBB1IP
IFITM35	0	0.964730187	0.553	0.174	0	3.17816092	Sertoli_cells	IFITM3
LGALS14	2.41E-08	0.964518008	0.553	0.209	0.001476105	2.645933014	T_cells	LGALS1
PODN	0	0.964291734	0.473	0.031	0	15.25806452	Leydig_cells	PODN
RPS233	0	0.964275134	0.936	0.824	0	1.13592233	PTM_cells	RPS23
MTATP6P11	2.32E-46	0.964228551	0.549	0.232	1.42E-41	2.37E+00	macrophages	MTATP6P1
HNRNPDL	0	0.964139233	0.734	0.391	0	1.877237852	spermatogonia	HNRNPDL
RPLP15	0	0.964039039	0.913	0.756	0	1.207671958	Sertoli_cells	RPLP1
RPS232	1.28E-306	0.963990609	0.958	0.824	7.86E-302	1.16E+00	Leydig_cells	RPS23
TCEAL8	0	0.963882181	0.337	0.063	0	5.349206349	Sertoli_cells	TCEAL8
EVI2B1	3.93E-21	0.963804972	0.316	0.037	2.41E-16	8.54E+00	T_cells	EVI2B
USP2	0	0.963696653	0.734	0.49	0	1.497959184	spermatid	USP2
LAMC3	0	0.963612966	0.463	0.058	0	7.982758621	Leydig_cells	LAMC3
PLTP1	0	0.963431423	0.607	0.146	0	4.157534247	PTM_cells	PLTP
ATP2B11	4.08E-64	0.963225757	0.444	0.131	2.50E-59	3.39E+00	macrophages	ATP2B1
NDN	0	0.963123997	0.539	0.133	0	4.052631579	Leydig_cells	NDN
F10	0	0.963099478	0.469	0.056	0	8.375	Leydig_cells	F10
C19orf71	0	0.961817549	0.584	0.201	0	2.905472637	spermatid	C19orf71
MAP1B	0	0.961484443	0.566	0.146	0	3.876712329	Leydig_cells	MAP1B
NFIX	1.24E-180	0.961396735	0.478	0.179	7.62E-176	2.67E+00	Leydig_cells	NFIX
VAMP5	0	0.961076757	0.571	0.067	0	8.52238806	endotheliocyte	VAMP5
C16orf95	0	0.960288683	0.879	0.272	0	3.231617647	spermatocyte	C16orf95
TSPAN6	0	0.959915224	0.612	0.265	0	2.309433962	spermatid	TSPAN6
EVI2B	4.99E-197	0.95971691	0.354	0.033	3.06E-192	1.07E+01	macrophages	EVI2B
S100A131	0	0.959447401	0.527	0.096	0	5.489583333	Leydig_cells	S100A13
RPS173	7.08E-230	0.959145268	0.827	0.459	4.34E-225	1.80E+00	Leydig_cells	RPS17
CAV2	9.51E-238	0.958844467	0.63	0.116	5.83E-233	5.43E+00	endotheliocyte	CAV2
TRMT112	0	0.958688053	0.777	0.457	0	1.700218818	spermatogonia	TRMT112
PNRC15	1.48E-07	0.958648246	0.658	0.398	0.009100716	1.653266332	T_cells	PNRC1
TCEAL3	0	0.958383743	0.563	0.063	0	8.936507937	PTM_cells	TCEAL3
C1orf122	1.17E-117	0.957859887	0.391	0.212	7.20E-113	1.84E+00	Sertoli_cells	C1orf122
FCGRT	3.49E-176	0.957733147	0.692	0.187	2.14E-171	3.70E+00	endotheliocyte	FCGRT
ZNF331	2.69E-22	0.956896872	0.468	0.296	1.65E-17	1.58E+00	macrophages	ZNF331
GNAQ	7.72E-197	0.956817894	0.581	0.117	4.74E-192	4.97E+00	endotheliocyte	GNAQ
RNF138	0	0.956659138	0.795	0.583	0	1.363636364	spermatid	RNF138
JUND4	1.91E-106	0.956250057	0.825	0.498	1.17E-101	1.66E+00	VSM_cells	JUND
MT.ND11	1.95E-27	0.956174805	0.576	0.377	1.20E-22	1.53E+00	macrophages	MT.ND1
GPR65	9.13E-22	0.955896406	0.263	0.025	5.60E-17	1.05E+01	T_cells	GPR65
SDCBP1	6.08E-55	0.955703872	0.492	0.189	3.73E-50	2.60E+00	macrophages	SDCBP
RPS32	1.90E-290	0.955240441	0.938	0.794	1.16E-285	1.18E+00	Leydig_cells	RPS3
RPL212	9.60E-72	0.955087449	0.889	0.473	5.89E-67	1.88E+00	macrophages	RPL21
HLA-DRB12	6.10E-07	0.954884136	0.395	0.152	0.037443349	2.598684211	T_cells	HLA-DRB1
SNRPB	0	0.954575152	0.667	0.287	0	2.324041812	spermatogonia	SNRPB
PCAT19	0	0.954506529	0.474	0.007	0	67.71428571	endotheliocyte	PCAT19
GK2	0	0.954463901	0.973	0.399	0	2.438596491	spermatocyte	GK2
CXorf65	0	0.95438763	0.59	0.145	0	4.068965517	spermatid	CXorf65
PLAC92	0	0.954237092	0.596	0.079	0	7.544303797	VSM_cells	PLAC9
EID13	7.89E-123	0.954055572	0.767	0.359	4.84E-118	2.14E+00	VSM_cells	EID1
DRG1	0	0.953953089	0.981	0.53	0	1.850943396	spermatocyte	DRG1
SVIL	0	0.95366021	0.565	0.1	0	5.65	PTM_cells	SVIL
AHNAK5	3.91E-09	0.953036705	0.5	0.172	0.000239985	2.906976744	T_cells	AHNAK
SH3GLB1	0	0.952965185	0.983	0.555	0	1.771171171	spermatocyte	SH3GLB1
JAG1	8.26E-292	0.952927719	0.444	0.046	5.07E-287	9.65E+00	endotheliocyte	JAG1
RPS264	1.19E-97	0.952888357	0.808	0.533	7.31E-93	1.52E+00	VSM_cells	RPS26
HBEGF1	1.33E-78	0.952796742	0.256	0.041	8.16E-74	6.24E+00	macrophages	HBEGF
ECHS1	2.37E-104	0.95266857	0.465	0.317	1.45E-99	1.47E+00	Sertoli_cells	ECHS1

FBXO24	0	0.952301703	0.701	0.302	0	2.321192053	spermatid	FBXO24
SLBP	0	0.951849076	0.616	0.239	0	2.577405858	spermatogonia	SLBP
BRDT	0	0.951547099	0.992	0.54	0	1.837037037	spermatocyte	BRDT
FAM171A1	0	0.951542616	0.524	0.016	0	32.75	endotheliocyte	FAM171A1
GLIPR1L1	0	0.951478378	0.848	0.232	0	3.655172414	spermatocyte	GLIPR1L1
CD86	1.22E-147	0.951379997	0.343	0.042	7.47E-143	8.17E+00	macrophages	CD86
CCNL12	2.83E-161	0.951368607	0.613	0.336	1.74E-156	1.82E+00	Leydig_cells	CCNL1
WWTR1	1.99E-222	0.951043663	0.553	0.096	1.22E-217	5.76E+00	endotheliocyte	WWTR1
NEAT15	4.13E-08	0.951011948	0.526	0.197	0.002533917	2.670050761	T_cells	NEAT1
DYRK3	0	0.95069892	0.939	0.276	0	3.402173913	spermatocyte	DYRK3
JUND5	6.01E-07	0.950694806	0.737	0.504	0.036896069	1.462301587	T_cells	JUND
GYPC2	1.20E-19	0.950412856	0.316	0.039	7.34E-15	8.10E+00	T_cells	GYPC
TMBIM4	0	0.95025555	0.879	0.444	0	1.97972973	spermatocyte	TMBIM4
RPS34	8.62E-111	0.950088369	0.896	0.798	5.29E-106	1.12E+00	VSM_cells	RPS3
ADIG	0	0.949236596	0.605	0.166	0	3.644578313	spermatid	ADIG
CTSH	1.59E-65	0.948585658	0.397	0.112	9.74E-61	3.54E+00	macrophages	CTSH
GNG2	0	0.948570138	0.702	0.366	0	1.918032787	spermatid	GNG2
CHST13	0	0.947772243	0.856	0.168	0	5.095238095	spermatocyte	CHST13
A2M1	2.34E-60	0.947443095	0.394	0.112	1.44E-55	3.52E+00	macrophages	A2M
RPL223	2.85E-106	0.947101901	0.85	0.645	1.75E-101	1.32E+00	VSM_cells	RPL22
LAMA4	3.49E-194	0.946951139	0.56	0.245	2.14E-189	2.29E+00	Leydig_cells	LAMA4
ACRV1	0	0.946783722	0.631	0.357	0	1.767507003	spermatid	ACRV1
TUBA1A1	1.53E-34	0.946667735	0.451	0.202	9.37E-30	2.23E+00	macrophages	TUBA1A
SPATA7	0	0.946377048	0.779	0.465	0	1.675268817	spermatid	SPATA7
PDLIM3	0	0.946303281	0.491	0.037	0	13.27027027	PTM_cells	PDLIM3
RPL13	3.64E-138	0.945939848	0.99	0.956	2.24E-133	1.04E+00	endotheliocyte	RPL13
ARRDC3	2.18E-81	0.945574611	0.474	0.164	1.34E-76	2.89E+00	endotheliocyte	ARRDC3
CD44	1.05E-73	0.94546629	0.387	0.096	6.47E-69	4.03E+00	macrophages	CD44
PTMA5	1.05E-11	0.945236437	0.921	0.656	6.45E-07	1.40E+00	T_cells	PTMA
MGST2	0	0.945105089	0.603	0.062	0	9.725806452	endotheliocyte	MGST2
TTYH1	0	0.944458377	0.324	0.036	0	9	Sertoli_cells	TTYH1
ETS11	6.27E-20	0.94386516	0.316	0.039	3.85E-15	8.10E+00	T_cells	ETS1
MBNL14	4.04E-12	0.943860016	0.421	0.105	2.48E-07	4.01E+00	T_cells	MBNL1
CALM1	2.93E-103	0.943804612	0.916	0.69	1.80E-98	1.33E+00	endotheliocyte	CALM1
KPNA2	0	0.943703884	0.984	0.54	0	1.822222222	spermatocyte	KPNA2
DCAF1	0	0.942907144	0.354	0.112	0	3.160714286	spermatid	DCAF1
CBX3	0	0.942458448	0.783	0.49	0	1.597959184	spermatogonia	CBX3
CMTM6	5.70E-46	0.942091738	0.455	0.188	3.49E-41	2.42E+00	macrophages	CMTM6
NTRK3	1.60E-103	0.941444739	0.573	0.235	9.79E-99	2.44E+00	VSM_cells	NTRK3
PDGFRB2	4.23E-228	0.941329892	0.478	0.078	2.59E-223	6.13E+00	VSM_cells	PDGFRB
HIST1H1A	0	0.940955018	0.209	0.016	0	13.0625	spermatogonia	HIST1H1A
CD1511	0	0.940940135	0.59	0.079	0	7.46835443	PTM_cells	CD151
MATN2	0	0.940801534	0.591	0.176	0	3.357954545	PTM_cells	MATN2
ARL6IP52	8.98E-279	0.940117294	0.57	0.189	5.51E-274	3.02E+00	Leydig_cells	ARL6IP5
LPP1	1.52E-106	0.939925278	0.82	0.476	9.34E-102	1.72E+00	VSM_cells	LPP
SHCBP1L	0	0.939769045	0.991	0.504	0	1.966269841	spermatocyte	SHCBP1L
RPL124	2.45E-94	0.939645988	0.839	0.632	1.50E-89	1.33E+00	VSM_cells	RPL12
ANP32B	0	0.939407979	0.652	0.351	0	1.857549858	spermatogonia	ANP32B
RPS121	9.05E-122	0.939131133	0.975	0.831	5.55E-117	1.17E+00	endotheliocyte	RPS12
LEPR	0	0.939078571	0.471	0.026	0	18.11538462	endotheliocyte	LEPR
RRAS	0	0.938510544	0.543	0.058	0	9.362068966	VSM_cells	RRAS
HNRNPH3	0	0.938454161	0.741	0.372	0	1.991935484	spermatogonia	HNRNPH3
SNHG82	2.78E-107	0.9382076	0.458	0.299	1.71E-102	1.53E+00	Sertoli_cells	SNHG8
S100A111	6.75E-47	0.938162054	0.64	0.351	4.14E-42	1.82E+00	macrophages	S100A11
METTL7A	0	0.93795703	0.445	0.043	0	10.34883721	Leydig_cells	METTL7A
RPS2	0	0.937884328	0.808	0.641	0	1.260530421	spermatogonia	RPS2
C1orf115	0	0.937842444	0.519	0.024	0	21.625	endotheliocyte	C1orf115
NEK2	0	0.937832776	0.851	0.265	0	3.211320755	spermatocyte	NEK2
IRF12	2.64E-182	0.93779099	0.523	0.21	1.62E-177	2.49E+00	Leydig_cells	IRF1
IL1RN	1.87E-21	0.937782729	0.226	0.084	1.15E-16	2.69E+00	macrophages	IL1RN
CTSC1	0	0.937615494	0.426	0.036	0	11.83333333	Leydig_cells	CTSC
CYLC1	0	0.937501911	0.665	0.275	0	2.418181818	spermatid	CYLC1
CD53	0	0.937460081	0.323	0.002	0	161.5	macrophages	CD53
STK31	0	0.93721334	0.685	0.297	0	2.306397306	spermatogonia	STK31
MT.ATP61	4.08E-30	0.937129198	0.576	0.345	2.50E-25	1.67E+00	macrophages	MT.ATP6
IFI273	5.58E-200	0.937091214	0.365	0.119	3.42E-195	3.07E+00	Sertoli_cells	IFI27
ATP6V1F	0	0.936652149	0.979	0.586	0	1.670648464	spermatocyte	ATP6V1F
FTL	2.77E-117	0.936540406	0.883	0.523	1.70E-112	1.69E+00	endotheliocyte	FTL
RGS22	0	0.936421278	0.789	0.552	0	1.429347826	spermatid	RGS22
INPP1	0	0.936178931	0.696	0.348	0	2	spermatid	INPP1
ELP5	0	0.936144171	0.964	0.432	0	2.231481481	spermatocyte	ELP5
CCDC54	0	0.93608365	0.779	0.401	0	1.942643392	spermatid	CCDC54
NDRG1	0	0.936071984	0.551	0.067	0	8.223880597	endotheliocyte	NDRG1
WNT2B	0	0.935997438	0.519	0.048	0	10.8125	PTM_cells	WNT2B
CAV23	5.18E-214	0.935358345	0.564	0.116	3.18E-209	4.86E+00	VSM_cells	CAV2

INO80C	0	0.935302848	0.928	0.342	0	2.713450292	spermatocyte	INO80C
BEX3	0	0.935211492	0.273	0.032	0	8.53125	Sertoli_cells	BEX3
COL6A11	0	0.934955855	0.642	0.095	0	6.757894737	PTM_cells	COL6A1
SPATA22	0	0.934921418	0.911	0.418	0	2.179425837	spermatocyte	SPATA22
CDH5	1.12E-209	0.934908013	0.561	0.108	6.84E-205	5.19E+00	endotheliocyte	CDH5
KDM4D	0	0.934833682	0.936	0.245	0	3.820408163	spermatocyte	KDM4D
ANXA12	0	0.934395532	0.471	0.065	0	7.246153846	Leydig_cells	ANXA1
APLP2	0	0.933970749	0.64	0.235	0	2.723404255	spermatogonia	APLP2
SET	0	0.933957242	0.714	0.316	0	2.259493671	spermatogonia	SET
LGALS34	4.98E-174	0.933830363	0.44	0.193	3.06E-169	2.28E+00	Sertoli_cells	LGALS3
TPT13	0	0.933627014	0.946	0.855	0	1.106432749	PTM_cells	TPT1
FKBP1A	2.30E-93	0.933369716	0.754	0.431	1.41E-88	1.75E+00	endotheliocyte	FKBP1A
SEPP12	0	0.93332449	0.655	0.082	0	7.987804878	PTM_cells	SEPP1
KPNA5	0	0.932810009	0.829	0.19	0	4.363157895	spermatocyte	KPNA5
ACSL1	0	0.932538168	0.624	0.236	0	2.644067797	spermatid	ACSL1
PDK42	5.82E-272	0.932503945	0.381	0.083	3.57E-267	4.59E+00	Leydig_cells	PDK4
FAM166A	0	0.932502955	0.6	0.188	0	3.191489362	spermatid	FAM166A
ACTL7B	0	0.932368572	0.726	0.4	0	1.815	spermatid	ACTL7B
RPS4Y15	3.65E-08	0.932030517	0.605	0.274	0.002237865	2.208029197	T_cells	RPS4Y1
CREB3L1	0	0.931951407	0.394	0.021	0	18.76190476	Leydig_cells	CREB3L1
RPL276	8.76E-06	0.931757888	0.711	0.663	0.537151508	1.07239819	T_cells	RPL27
PRPS2	0	0.931479831	0.49	0.08	0	6.125	Leydig_cells	PRPS2
ROPN1	0	0.931252448	0.98	0.512	0	1.9140625	spermatocyte	ROPN1
PTP4A1	0	0.931160662	0.717	0.45	0	1.593333333	spermatid	PTP4A1
BRD7	0	0.930825133	0.664	0.304	0	2.184210526	spermatogonia	BRD7
GBP4	0	0.930721114	0.459	0.008	0	57.375	endotheliocyte	GBP4
MT.ND4L	0	0.930560605	0.341	0.125	0	2.728	spermatogonia	MT.ND4L
CTSK	0	0.930444366	0.439	0.042	0	10.45238095	Leydig_cells	CTSK
EGR21	3.89E-280	0.930252296	0.278	0.057	2.39E-275	4.88E+00	Sertoli_cells	EGR2
ITGB1	0	0.930235622	0.679	0.196	0	3.464285714	Leydig_cells	ITGB1
RPL5	5.47E-133	0.929297857	0.978	0.853	3.35E-128	1.15E+00	endotheliocyte	RPL5
MT-ND25	1.89E-19	0.928769046	0.454	0.41	1.16E-14	1.11E+00	Sertoli_cells	MT-ND2
NIPBL	0	0.928725953	0.617	0.22	0	2.804545455	spermatogonia	NIPBL
TLR2	0	0.928608125	0.303	0.003	0	101	macrophages	TLR2
CTSC2	1.75E-19	0.928459896	0.368	0.052	1.07E-14	7.08E+00	T_cells	CTSC
METAP1	0	0.92797596	0.654	0.253	0	2.584980237	spermatid	METAP1
LAMB2	0	0.927959583	0.467	0.079	0	5.911392405	Leydig_cells	LAMB2
CDC424	7.56E-06	0.927907114	0.605	0.417	0.463917143	1.450839329	T_cells	CDC42
TERF2IP	0	0.927848228	0.698	0.247	0	2.825910931	spermatogonia	TERF2IP
RPL233	4.12E-289	0.927425859	0.877	0.694	2.53E-284	1.26E+00	PTM_cells	RPL23
FTH13	0	0.927158153	0.936	0.712	0	1.314606742	PTM_cells	FTH1
MRPS15	0	0.926961935	0.971	0.578	0	1.679930796	spermatocyte	MRPS15
CYBRD1	0	0.926810635	0.469	0.043	0	10.90697674	Leydig_cells	CYBRD1
SAMHD1	3.77E-105	0.926523322	0.377	0.067	2.31E-100	5.63E+00	macrophages	SAMHD1
RPL52	0	0.926281823	0.938	0.851	0	1.102232667	PTM_cells	RPL5
PPDPF1	3.09E-84	0.926253861	0.533	0.44	1.90E-79	1.21E+00	Sertoli_cells	PPDPF
RPS24	1.06E-124	0.926215152	0.973	0.885	6.49E-120	1.10E+00	endotheliocyte	RPS24
SPATA24	0	0.926205569	0.732	0.491	0	1.490835031	spermatid	SPATA24
DZIP3	0	0.926079333	0.683	0.302	0	2.261589404	spermatogonia	DZIP3
SPATA4	0	0.92595379	0.983	0.516	0	1.90503876	spermatocyte	SPATA4
PLK1	0	0.925825309	0.872	0.215	0	4.055813953	spermatocyte	PLK1
MT.ATP8	0	0.925804893	0.335	0.132	0	2.537878788	spermatogonia	MT.ATP8
SLC25A62	0	0.925599388	0.604	0.179	0	3.374301676	Leydig_cells	SLC25A6
PSME1	2.78E-289	0.925480625	0.618	0.09	1.70E-284	6.87E+00	endotheliocyte	PSME1
MRVI11	2.07E-196	0.925084221	0.556	0.128	1.27E-191	4.34E+00	VSM_cells	MRVI1
RPS124	4.10E-10	0.924803917	0.921	0.834	2.52E-05	1.10E+00	T_cells	RPS12
HSPA8	0	0.924402973	0.803	0.501	0	1.602794411	spermatogonia	HSPA8
CDKN1A2	7.62E-190	0.924231183	0.407	0.119	4.68E-185	3.42E+00	Leydig_cells	CDKN1A
RNF2131	9.14E-20	0.924169612	0.368	0.052	5.61E-15	7.08E+00	T_cells	RNF213
SOD1	0	0.923747852	0.77	0.525	0	1.466666667	spermatogonia	SOD1
RPL342	1.73E-217	0.923465573	0.98	0.903	1.06E-212	1.09E+00	Leydig_cells	RPL34
U2SURP	0	0.923447491	0.705	0.32	0	2.203125	spermatogonia	U2SURP
C1orf234	0	0.923310876	0.651	0.277	0	2.350180505	spermatid	C1orf234
PDGFRA1	0	0.922822173	0.538	0.045	0	11.95555556	PTM_cells	PDGFRA
KLF9	4.28E-125	0.922694273	0.553	0.153	2.63E-120	3.61E+00	endotheliocyte	KLF9
FUNDC2P2	0	0.92244219	0.318	0.06	0	5.3	spermatid	FUNDC2P2
UBE2J1	0	0.922349317	0.629	0.297	0	2.117845118	spermatid	UBE2J1
DYNLRB2	0	0.922033691	0.968	0.549	0	1.763205829	spermatocyte	DYNLRB2
SNCG	0	0.921866096	0.519	0.028	0	18.53571429	endotheliocyte	SNCG
RPL234	1.53E-104	0.921342645	0.86	0.7	9.37E-100	1.23E+00	VSM_cells	RPL23
DGCR14	0	0.921331394	0.585	0.232	0	2.521551724	spermatid	DGCR14
SPATA8	0	0.921185623	0.952	0.417	0	2.282973621	spermatocyte	SPATA8
FOSB4	7.98E-137	0.921038711	0.805	0.336	4.90E-132	2.40E+00	VSM_cells	FOSB
SPACA7	0	0.920627993	0.72	0.399	0	1.804511278	spermatid	SPACA7
ROPN1L	0	0.920606621	0.995	0.743	0	1.339165545	spermatocyte	ROPN1L

BCL11B	4.07E-43	0.920504982	0.263	0.013	2.50E-38	2.02E+01	T_cells	BCL11B
RPS217	8.26E-112	0.920067737	0.894	0.674	5.07E-107	1.33E+00	VSM_cells	RPS2
ELAVL2	0	0.919979276	0.496	0.238	0	2.084033613	spermatogonia	ELAVL2
ROBO4	0	0.919977688	0.462	0.004	0	115.5	endotheliocyte	ROBO4
LAMA21	0	0.919708874	0.514	0.071	0	7.23943662	PTM_cells	LAMA2
HLA-DRB5	2.30E-179	0.919640472	0.449	0.078	1.41E-174	5.76E+00	endotheliocyte	HLA-DRB5
CTC.441N14.4	0	0.9194187	0.329	0.083	0	3.963855422	spermatid	CTC.441N14.4
LARP6	0	0.919203788	0.888	0.34	0	2.611764706	spermatocyte	LARP6
SUB1	0	0.918755684	0.758	0.461	0	1.644251627	spermatogonia	SUB1
ISOC2	0	0.918473368	0.725	0.188	0	3.856382979	spermatocyte	ISOC2
CLIC1	2.63E-124	0.918383615	0.682	0.259	1.61E-119	2.63E+00	endotheliocyte	CLIC1
RUNX3	3.25E-33	0.918140821	0.316	0.024	2.00E-28	1.32E+01	T_cells	RUNX3
CLEC5A	0	0.917998484	0.256	0.004	0	64	macrophages	CLEC5A
HK1	0	0.91785772	0.683	0.285	0	2.396491228	spermatid	HK1
RPL93	3.81E-125	0.917342134	0.928	0.874	2.34E-120	1.06E+00	VSM_cells	RPL9
TIMD4	0	0.916956081	0.793	0.455	0	1.742857143	spermatid	TIMD4
NACA4	1.26E-101	0.916670299	0.875	0.747	7.75E-97	1.17E+00	VSM_cells	NACA
RPS4Y12	0	0.91618855	0.717	0.252	0	2.845238095	PTM_cells	RPS4Y1
PLCZ1	0	0.915731101	0.703	0.34	0	2.067647059	spermatid	PLCZ1
EGFL7	0	0.915725587	0.362	0.041	0	8.829268293	spermatogonia	EGFL7
LRRD1	0	0.915576734	0.549	0.108	0	5.083333333	spermatid	LRRD1
FAU3	2.51E-08	0.915391584	0.895	0.838	0.001540353	1.068019093	T_cells	FAU
OAZ12	1.90E-06	0.915357228	0.737	0.617	0.116393152	1.194489465	T_cells	OAZ1
FANCD2OS	0	0.915356606	0.694	0.32	0	2.16875	spermatid	FANCD2OS
TGFBR31	5.14E-243	0.914994843	0.469	0.142	3.16E-238	3.30E+00	Leydig_cells	TGFBR3
RABIF	0	0.914980318	0.721	0.543	0	1.327808471	spermatid	RABIF
SQSTM1	7.66E-173	0.914965053	0.618	0.332	4.70E-168	1.86E+00	Leydig_cells	SQSTM1
WFDC1	0	0.914935787	0.514	0.12	0	4.283333333	PTM_cells	WFDC1
CDKL2	0	0.914815247	0.858	0.173	0	4.959537572	spermatocyte	CDKL2
MXRA8	0	0.914739643	0.455	0.057	0	7.98245614	Leydig_cells	MXRA8
RAB312	0	0.914573947	0.348	0.079	0	4.405063291	Sertoli_cells	RAB31
CHODL	0	0.91442729	0.31	0.032	0	9.6875	Sertoli_cells	CHODL
DLC1	2.59E-116	0.914262525	0.511	0.144	1.59E-111	3.55E+00	endotheliocyte	DLC1
DNAJC21	0	0.913971658	0.915	0.426	0	2.147887324	spermatocyte	DNAJC21
RPL13AP252	1.89E-67	0.913781892	0.273	0.121	1.16E-62	2.26E+00	Leydig_cells	RPL13AP25
BAG5	0	0.913570726	0.857	0.679	0	1.262150221	spermatid	BAG5
PRAME	0	0.91349021	0.447	0.159	0	2.811320755	spermatogonia	PRAME
TPTE	0	0.913324539	0.356	0.101	0	3.524752475	spermatogonia	TPTE
PFN3	0	0.913238496	0.543	0.207	0	2.623188406	spermatid	PFN3
MT-ND42	1.02E-90	0.913210578	0.61	0.411	6.27E-86	1.48E+00	Leydig_cells	MT-ND4
GPNMB	0	0.913160617	0.431	0.06	0	7.183333333	Leydig_cells	GPNMB
RPS5	1.33E-121	0.91312403	0.95	0.816	8.18E-117	1.16E+00	endotheliocyte	RPS5
HELLS	0	0.911926679	0.448	0.035	0	12.8	spermatogonia	HELLS
TEKT5	0	0.911625604	0.556	0.182	0	3.054945055	spermatid	TEKT5
RPL23AP42	1.14E-21	0.911605731	0.421	0.24	6.99E-17	1.75E+00	macrophages	RPL23AP42
SUZ12	0	0.911431148	0.626	0.224	0	2.794642857	spermatogonia	SUZ12
COX7A2L	0	0.911421157	0.704	0.329	0	2.139817629	spermatogonia	COX7A2L
C12orf50	0	0.91133528	0.793	0.446	0	1.778026906	spermatid	C12orf50
LITAF3	1.48E-07	0.911274537	0.316	0.092	0.009083979	3.434782609	T_cells	LITAF
MGP3	4.68E-191	0.910895411	0.666	0.159	2.87E-186	4.19E+00	VSM_cells	MGP
RPS73	6.11E-10	0.910827375	0.921	0.801	3.75E-05	1.15E+00	T_cells	RPS7
GNAI21	2.15E-33	0.910751756	0.62	0.424	1.32E-28	1.46E+00	macrophages	GNAI2
MT-ND46	5.54E-09	0.910441005	0.789	0.419	0.000339663	1.883054893	T_cells	MT-ND4
RPL341	3.77E-62	0.910079758	0.956	0.905	2.31E-57	1.06E+00	macrophages	RPL34
RPL53	1.91E-118	0.909927206	0.934	0.854	1.17E-113	1.09E+00	VSM_cells	RPL5
RP5.1052M9.1	0.001806435	0.909882555	0.236	0.208	1	1.134615385	endotheliocyte	RP5.1052M9.1
SIRPD	0	0.909541591	0.629	0.221	0	2.846153846	spermatid	SIRPD
NEU1	8.95E-09	0.909533661	0.237	0.047	0.000549203	5.042553191	T_cells	NEU1
KLF10	8.53E-106	0.909520998	0.633	0.24	5.23E-101	2.64E+00	endotheliocyte	KLF10
SRGN2	5.16E-09	0.909395394	0.24	0.055	0.00031686	4.363636364	mastocyte	SRGN
TRIM13	0	0.90938867	0.943	0.402	0	2.345771144	spermatocyte	TRIM13
BTG25	1.70E-12	0.909266101	0.5	0.132	1.04E-07	3.79E+00	T_cells	BTG2
XRCC6	0	0.909139547	0.83	0.525	0	1.580952381	spermatogonia	XRCC6
IFI163	4.54E-08	0.908843468	0.316	0.085	0.002785031	3.717647059	T_cells	IFI16
CD248	0	0.908781324	0.348	0.012	0	29	Leydig_cells	CD248
HLA-A3	6.32E-233	0.90865431	0.624	0.293	3.88E-228	2.13E+00	PTM_cells	HLA-A
EID1	3.01E-130	0.908508993	0.834	0.359	1.84E-125	2.32E+00	endotheliocyte	EID1
MEF2C1	1.61E-58	0.908498972	0.448	0.152	9.85E-54	2.95E+00	macrophages	MEF2C
RPL143	5.18E-226	0.908212779	0.822	0.637	3.18E-221	1.29E+00	PTM_cells	RPL14
GLIPR1L2	0	0.908150387	0.925	0.337	0	2.744807122	spermatocyte	GLIPR1L2
AQP1	0	0.907957199	0.295	0.007	0	42.14285714	endotheliocyte	AQP1
GIMAP71	3.32E-33	0.907637939	0.237	0.013	2.04E-28	1.82E+01	T_cells	GIMAP7
NDUFB112	3.06E-201	0.90720657	0.345	0.112	1.87E-196	3.08E+00	Sertoli_cells	NDUFB11
RPL193	8.35E-106	0.907068273	0.915	0.838	5.12E-101	1.09E+00	VSM_cells	RPL19
CCP110	0	0.906931053	0.526	0.152	0	3.460526316	spermatogonia	CCP110

PSMB81	3.23E-32	0.906847162	0.395	0.037	1.98E-27	1.07E+01	T_cells	PSMB8
SYNE11	4.86E-170	0.90646165	0.524	0.124	2.98E-165	4.23E+00	VSM_cells	SYNE1
RPS211	1.78E-112	0.906378764	0.891	0.52	1.09E-107	1.71E+00	endotheliocyte	RPS21
HCFC1R11	9.25E-173	0.905902646	0.577	0.15	5.67E-168	3.85E+00	VSM_cells	HCFC1R1
PCCB	0	0.905871816	0.552	0.197	0	2.802030457	spermatid	PCCB
ARHGAP28	0	0.905240768	0.729	0.389	0	1.87403599	spermatid	ARHGAP28
ATP1A2	0	0.904512986	0.463	0.022	0	21.04545455	VSM_cells	ATP1A2
KCNMB1	0	0.904346993	0.486	0.016	0	30.375	PTM_cells	KCNMB1
NFIB2	0	0.904169963	0.552	0.067	0	8.23880597	VSM_cells	NFIB
HSPA2	0	0.904043685	0.605	0.418	0	1.447368421	spermatogonia	HSPA2
RPS4Y11	1.01E-269	0.903784214	0.687	0.256	6.18E-265	2.68E+00	Leydig_cells	RPS4Y1
C9orf9	1.91E-160	0.903757042	0.455	0.416	1.17E-155	1.09E+00	spermatid	C9orf9
CETN3	0	0.903486502	0.586	0.336	0	1.744047619	spermatogonia	CETN3
ISG20	6.81E-06	0.903036814	0.316	0.115	0.417861698	2.747826087	T_cells	ISG20
F101	0	0.90273017	0.526	0.05	0	10.52	PTM_cells	F10
SIGLEC1	0	0.902712278	0.212	0.002	0	106	macrophages	SIGLEC1
CEBPD4	1.93E-180	0.902641296	0.52	0.106	1.18E-175	4.91E+00	VSM_cells	CEBPD
IFITM31	1.49E-89	0.902337062	0.653	0.193	9.12E-85	3.38E+00	macrophages	IFITM3
IL10RA1	5.04E-100	0.902095526	0.263	0.005	3.09E-95	5.26E+01	T_cells	IL10RA
CSRNP1	2.58E-114	0.90201515	0.578	0.178	1.58E-109	3.25E+00	endotheliocyte	CSRNP1
YBEY	0	0.901829637	0.948	0.409	0	2.317848411	spermatocyte	YBEY
PDLIM7	0	0.901764258	0.582	0.138	0	4.217391304	PTM_cells	PDLIM7
CLEC4E	0	0.901577996	0.232	0.003	0	77.33333333	macrophages	CLEC4E
SLC25A63	0	0.901283843	0.637	0.174	0	3.66091954	PTM_cells	SLC25A6
CHPF	0	0.901069406	0.319	0.061	0	5.229508197	Sertoli_cells	CHPF
C7orf31	0	0.901052049	0.687	0.438	0	1.568493151	spermatid	C7orf31
CUL9	0	0.900943078	0.636	0.274	0	2.321167883	spermatid	CUL9
TLE4	0	0.900874171	0.771	0.508	0	1.517716535	spermatid	TLE4
LRR1	0	0.900646753	0.905	0.262	0	3.454198473	spermatocyte	LRR1
PCYOX1	0	0.900586035	0.465	0.107	0	4.345794393	Leydig_cells	PCYOX1
HSPA6	1.73E-79	0.900553595	0.219	0.03	1.06E-74	7.30E+00	macrophages	HSPA6
DBI	0	0.900092658	0.974	0.564	0	1.726950355	spermatocyte	DBI
COL18A11	0	0.899732359	0.547	0.06	0	9.116666667	PTM_cells	COL18A1
IFI62	0	0.899491851	0.419	0.083	0	5.048192771	Leydig_cells	IFI6
ACTN12	6.26E-121	0.899393142	0.624	0.244	3.84E-116	2.56E+00	VSM_cells	ACTN1
IQCF6	0	0.899242864	0.487	0.121	0	4.024793388	spermatid	IQCF6
RPS283	1.06E-103	0.899056016	0.86	0.606	6.52E-99	1.42E+00	VSM_cells	RPS28
MBOAT7	0	0.89884709	0.326	0.053	0	6.150943396	Sertoli_cells	MBOAT7
SWAP70	0	0.898545912	0.504	0.052	0	9.692307692	endotheliocyte	SWAP70
CFAP206	0	0.898384188	0.944	0.284	0	3.323943662	spermatocyte	CFAP206
HES11	2.30E-255	0.898096454	0.499	0.074	1.41E-250	6.74E+00	VSM_cells	HES1
RPS33	3.16E-287	0.897782501	0.898	0.795	1.94E-282	1.13E+00	PTM_cells	RPS3
CFLAR	5.98E-87	0.897369713	0.6	0.261	3.67E-82	2.30E+00	endotheliocyte	CFLAR
RARRES21	0	0.897084212	0.541	0.063	0	8.587301587	PTM_cells	RARRES2
PARK7	0	0.89690612	0.785	0.408	0	1.924019608	spermatogonia	PARK7
RPL324	6.09E-11	0.896853629	0.947	0.889	3.74E-06	1.07E+00	T_cells	RPL32
SLC38A21	0	0.896713356	0.473	0.102	0	4.637254902	Leydig_cells	SLC38A2
ZFAND3	0	0.896628188	0.74	0.523	0	1.414913958	spermatid	ZFAND3
CCNH	0	0.896579756	0.934	0.33	0	2.83030303	spermatocyte	CCNH
IQCF4	0	0.896313085	0.351	0.108	0	3.25	spermatid	IQCF4
ANKEF1	0	0.896311869	0.604	0.167	0	3.616766467	spermatid	ANKEF1
RPL375	3.52E-11	0.896273531	0.895	0.806	2.16E-06	1.11E+00	T_cells	RPL37
PLP21	2.91E-09	0.896085767	0.342	0.09	0.000178437	3.8	T_cells	PLP2
EPB41L3	0	0.896085261	0.641	0.225	0	2.848888889	spermatid	EPB41L3
HSPA1B5	1.43E-86	0.895863865	0.342	0.186	8.78E-82	1.84E+00	Sertoli_cells	HSPA1B
PLS31	6.56E-285	0.895757529	0.516	0.073	4.02E-280	7.07E+00	VSM_cells	PLS3
RPL264	3.85E-111	0.895222795	0.915	0.753	2.36E-106	1.22E+00	VSM_cells	RPL26
RPS23P8	1.21E-19	0.895085306	0.387	0.222	7.45E-15	1.74E+00	macrophages	RPS23P8
MXRA81	0	0.894945752	0.529	0.051	0	10.37254902	PTM_cells	MXRA8
YEATS4	0	0.894077488	0.578	0.216	0	2.675925926	spermatogonia	YEATS4
HSPB61	0	0.894067018	0.602	0.185	0	3.254054054	PTM_cells	HSPB6
CLIC14	4.63E-105	0.89399073	0.607	0.259	2.84E-100	2.34E+00	VSM_cells	CLIC1
PDE5A	0	0.893955252	0.517	0.102	0	5.068627451	PTM_cells	PDE5A
RPL27A1	3.96E-61	0.893838275	0.892	0.786	2.43E-56	1.13E+00	macrophages	RPL27A
CD1C	2.53E-67	0.893392845	0.158	0.019	1.55E-62	8.32E+00	macrophages	CD1C
RPL23A	2.17E-94	0.893358467	0.908	0.735	1.33E-89	1.24E+00	endotheliocyte	RPL23A
AC002467.7	0	0.893231667	0.823	0.213	0	3.863849765	spermatocyte	AC002467.7
RPS183	0	0.893220307	0.962	0.848	0	1.134433962	PTM_cells	RPS18
DUSP21	0	0.89314508	0.249	0.038	0	6.552631579	Sertoli_cells	DUSP2
SYCP2	0	0.892699932	0.64	0.425	0	1.505882353	spermatogonia	SYCP2
HDAC2	0	0.892633439	0.705	0.372	0	1.89516129	spermatogonia	HDAC2
NFKBIA4	3.91E-165	0.89196007	0.696	0.206	2.40E-160	3.38E+00	VSM_cells	NFKBIA
C15orf61	0	0.891737296	0.902	0.351	0	2.56980057	spermatocyte	C15orf61
MOSPD3	0	0.891642007	0.697	0.354	0	1.968926554	spermatid	MOSPD3
SERPINI1	0	0.891335142	0.446	0.047	0	9.489361702	VSM_cells	SERPINI1



RPS175	6.08E-06	0.891113271	0.711	0.474	0.372785269	1.5	T_cells	RPS17
PLAU	0	0.891080761	0.259	0.002	0	129.5	macrophages	PLAU
C19orf70	0	0.891055644	0.754	0.56	0	1.346428571	spermatid	C19orf70
VCL	7.57E-203	0.891038911	0.562	0.122	4.64E-198	4.61E+00	VSM_cells	VCL
RPS27A3	5.64E-306	0.890742766	0.933	0.857	3.46E-301	1.09E+00	PTM_cells	RPS27A
EEF1D	4.52E-92	0.890700081	0.868	0.626	2.77E-87	1.39E+00	endotheliocyte	EEF1D
ID4	0	0.890415337	0.362	0.081	0	4.469135802	Sertoli_cells	ID4
FSCN1	0	0.890367753	0.335	0.061	0	5.491803279	Sertoli_cells	FSCN1
ELF13	3.49E-07	0.890277293	0.342	0.112	0.021412223	3.053571429	T_cells	ELF1
ATF7IP2	2.86E-85	0.890118481	0.471	0.354	1.76E-80	1.33E+00	Sertoli_cells	ATF7IP2
NFE2L21	7.33E-155	0.889853978	0.645	0.41	4.50E-150	1.57E+00	Leydig_cells	NFE2L2
FOS5	5.76E-08	0.889716668	0.658	0.313	0.003532983	2.102236422	T_cells	FOS
ICAM2	0	0.889616374	0.385	0.003	0	128.3333333	endotheliocyte	ICAM2
LMNA3	4.28E-257	0.888769839	0.7	0.355	2.63E-252	1.97E+00	PTM_cells	LMNA
TMEM191B	0	0.888223313	0.525	0.217	0	2.419354839	spermatid	TMEM191B
PROK1	7.96E-173	0.887936757	0.281	0.066	4.88E-168	4.26E+00	Leydig_cells	PROK1
ACTN11	0	0.887912289	0.613	0.232	0	2.642241379	PTM_cells	ACTN1
FAM213A	7.87E-140	0.887864577	0.405	0.203	4.83E-135	2.00E+00	Sertoli_cells	FAM213A
SLC25A34	3.85E-96	0.887420363	0.748	0.434	2.36E-91	1.72E+00	VSM_cells	SLC25A3
NACA2	0	0.887246567	0.91	0.335	0	2.71641791	spermatocyte	NACA2
RP11-1223D19.1	0	0.887175659	0.565	0.251	0	2.250996016	spermatocyte	RP11-1223D19.1
NDRG4	0	0.88709869	0.321	0.06	0	5.35	Sertoli_cells	NDRG4
TEX29	0	0.886978964	0.498	0.189	0	2.634920635	spermatid	TEX29
PDCL2	0	0.885970716	0.669	0.374	0	1.788770053	spermatid	PDCL2
C20orf173	0	0.885810442	0.539	0.138	0	3.905797101	spermatid	C20orf173
RP11-705C15.4	0	0.885753386	0.552	0.177	0	3.118644068	spermatocyte	RP11-705C15.4
ARID5B1	1.96E-175	0.885736731	0.539	0.126	1.20E-170	4.28E+00	VSM_cells	ARID5B
TUBA1A4	4.73E-159	0.885655628	0.677	0.196	2.90E-154	3.45E+00	VSM_cells	TUBA1A
CEP112	0	0.885555034	0.734	0.439	0	1.671981777	spermatid	CEP112
TSC22D34	1.45E-167	0.885513232	0.56	0.14	8.91E-163	4.00E+00	VSM_cells	TSC22D3
MAFF1	1.52E-70	0.88546664	0.316	0.066	9.34E-66	4.79E+00	macrophages	MAFF
CCNL14	1.06E-80	0.885237008	0.649	0.342	6.49E-76	1.90E+00	VSM_cells	CCNL1
IER5	9.24E-150	0.884939311	0.551	0.13	5.67E-145	4.24E+00	endotheliocyte	IER5
FTH1P101	2.80E-56	0.88486984	0.302	0.156	1.72E-51	1.94E+00	Leydig_cells	FTH1P10
HTRA11	0	0.884495762	0.505	0.04	0	12.625	PTM_cells	HTRA1
RBBP71	5.11E-162	0.884436029	0.465	0.232	3.13E-157	2.00E+00	Sertoli_cells	RBBP7
RNF130	2.45E-58	0.884341022	0.421	0.136	1.50E-53	3.10E+00	macrophages	RNF130
FAM198B	1.10E-244	0.884210334	0.452	0.056	6.73E-240	8.07E+00	endotheliocyte	FAM198B
AKAP12	0	0.884197387	0.903	0.438	0	2.061643836	spermatocyte	AKAP12
LAMTOR5	0	0.883906598	0.684	0.401	0	1.705735661	spermatogonia	LAMTOR5
RPL225	2.00E-08	0.883853915	0.816	0.649	0.0012264	1.257318952	T_cells	RPL22
AOC3	0	0.883801909	0.478	0.037	0	12.91891892	VSM_cells	AOC3
ACRBP	0	0.883702945	0.992	0.55	0	1.803636364	spermatocyte	ACRBP
MT-ND5	3.58E-78	0.883451712	0.68	0.292	2.20E-73	2.33E+00	endotheliocyte	MT-ND5
LRP12	0	0.883448602	0.557	0.061	0	9.131147541	PTM_cells	LRP1
PRMT12	1.37E-138	0.88326207	0.43	0.216	8.42E-134	1.99E+00	Sertoli_cells	PRMT1
MYADM	1.09E-29	0.883199856	0.438	0.222	6.69E-25	1.97E+00	macrophages	MYADM
RPL134	8.83E-12	0.882811779	0.947	0.956	5.42E-07	9.91E-01	T_cells	RPL13
C22orf23	0	0.882774703	0.924	0.332	0	2.78313253	spermatocyte	C22orf23
CSTB2	5.74E-160	0.882688042	0.389	0.161	3.52E-155	2.42E+00	Sertoli_cells	CSTB
RPL18A2	2.29E-41	0.882500959	0.721	0.415	1.41E-36	1.74E+00	macrophages	RPL18A
SAT2	5.58E-147	0.882441435	0.347	0.146	3.42E-142	2.38E+00	Sertoli_cells	SAT2
IER25	1.26E-15	0.881742107	0.658	0.179	7.71E-11	3.68E+00	T_cells	IER2
SUN5	0	0.88165524	0.533	0.221	0	2.411764706	spermatid	SUN5
C16orf78	0	0.881652783	0.537	0.097	0	5.536082474	spermatid	C16orf78
CMAS1	3.07E-110	0.881505765	0.476	0.316	1.88E-105	1.51E+00	Sertoli_cells	CMAS
RPS16	3.18E-111	0.881008542	0.938	0.755	1.95E-106	1.24E+00	endotheliocyte	RPS16
PCAT6	0	0.880989744	0.645	0.369	0	1.74796748	spermatid	PCAT6
ARGLU11	3.54E-81	0.880917451	0.727	0.416	2.17E-76	1.75E+00	endotheliocyte	ARGLU1
MRPL34	0	0.880547814	0.79	0.282	0	2.80141844	spermatocyte	MRPL34
IQGAP1	5.78E-140	0.880537433	0.608	0.167	3.55E-135	3.64E+00	endotheliocyte	IQGAP1
FBLIM1	0	0.880004308	0.501	0.029	0	17.27586207	PTM_cells	FBLIM1
PFDN2	0	0.879957009	0.602	0.281	0	2.142348754	spermatogonia	PFDN2
PDGFA	0	0.879925388	0.444	0.017	0	26.11764706	VSM_cells	PDGFA
CD635	6.42E-205	0.879747007	0.569	0.274	3.94E-200	2.08E+00	Sertoli_cells	CD63
C1R1	0	0.879202391	0.585	0.064	0	9.140625	PTM_cells	C1R
H2AFZ	0	0.879043527	0.738	0.448	0	1.647321429	spermatogonia	H2AFZ
WDR87	0	0.87873057	0.685	0.192	0	3.567708333	spermatocyte	WDR87
LTBP11	0	0.877889093	0.529	0.085	0	6.223529412	PTM_cells	LTBP1
MRPL47	0	0.877596887	0.937	0.415	0	2.257831325	spermatocyte	MRPL47
RPL13A1	3.04E-69	0.877516027	0.933	0.736	1.86E-64	1.27E+00	macrophages	RPL13A
RARRES3	6.58E-29	0.877484355	0.289	0.023	4.03E-24	1.26E+01	T_cells	RARRES3
KDELR2	0	0.877311477	0.963	0.55	0	1.750909091	spermatocyte	KDELR2
RPL28	5.53E-113	0.877239278	0.96	0.821	3.39E-108	1.17E+00	endotheliocyte	RPL28
YBX3	0	0.877222749	0.994	0.749	0	1.327102804	spermatocyte	YBX3

RPL35	0	0.877193647	0.969	0.921	0	1.052117264	PTM_cells	RPL3
LAPTM4B	1.57E-236	0.876978105	0.353	0.107	9.64E-232	3.30E+00	Sertoli_cells	LAPTM4B
ATF33	0	0.876388562	0.504	0.1	0	5.04	PTM_cells	ATF3
ZNRF4	0	0.876047219	0.715	0.329	0	2.17325228	spermatid	ZNRF4
TSSK3	0	0.876044176	0.616	0.249	0	2.473895582	spermatid	TSSK3
S100A61	2.30E-83	0.875946829	0.515	0.129	1.41E-78	3.99E+00	macrophages	S100A6
SYNE21	6.83E-155	0.87553788	0.533	0.128	4.19E-150	4.16E+00	VSM_cells	SYNE2
CORO1A	0	0.87539047	0.296	0.003	0	98.66666667	macrophages	CORO1A
TTLL2	0	0.875281185	0.528	0.101	0	5.227722772	spermatid	TTLL2
DDIT41	6.74E-57	0.875146656	0.333	0.085	4.13E-52	3.92E+00	macrophages	DDIT4
C1orf158	0	0.875072676	0.93	0.278	0	3.345323741	spermatocyte	C1orf158
BZW1	0	0.874912629	0.852	0.742	0	1.148247978	spermatid	BZW1
SETX	0	0.874843621	0.588	0.277	0	2.122743682	spermatogonia	SETX
SNX6	0	0.874553725	0.615	0.133	0	4.62406015	spermatogonia	SNX6
SPACA4	0	0.87451767	0.663	0.356	0	1.862359551	spermatid	SPACA4
CCDC85B1	0	0.874498744	0.574	0.102	0	5.62745098	PTM_cells	CCDC85B
SAT13	1.32E-09	0.873890735	0.5	0.157	8.10E-05	3.18E+00	T_cells	SAT1
TKTL2	0	0.87376158	0.853	0.216	0	3.949074074	spermatocyte	TKTL2
MT.RNR2	2.47E-60	0.873494776	0.392	0.369	1.52E-55	1.06E+00	spermatogonia	MT.RNR2
HLA-DPB12	7.55E-15	0.87347845	0.263	0.035	4.63E-10	7.51E+00	T_cells	HLA-DPB1
APOBEC3C	0	0.873276937	0.324	0.039	0	8.307692308	Sertoli_cells	APOBEC3C
CEP295NL	0	0.873202946	0.612	0.21	0	2.914285714	spermatid	CEP295NL
MEF2A	5.77E-32	0.873144493	0.401	0.186	3.54E-27	2.16E+00	macrophages	MEF2A
ALDH1A1	0	0.873092862	0.587	0.11	0	5.336363636	Leydig_cells	ALDH1A1
MT.ND3	3.39E-60	0.872872946	0.391	0.365	2.08E-55	1.07E+00	spermatogonia	MT.ND3
SH3BGRL3	5.41E-126	0.872373035	0.625	0.208	3.32E-121	3.00E+00	endotheliocyte	SH3BGRL3
INSR	0	0.872313617	0.494	0.079	0	6.253164557	PTM_cells	INSR
ROCK1	1.14E-78	0.872205799	0.715	0.452	6.98E-74	1.58E+00	VSM_cells	ROCK1
RNF32	0	0.872111623	0.964	0.432	0	2.231481481	spermatocyte	RNF32
LEPROT	6.89E-155	0.87158714	0.628	0.167	4.23E-150	3.76E+00	endotheliocyte	LEPROT
DRICH1	0	0.8713128	0.645	0.23	0	2.804347826	spermatid	DRICH1
ID2	2.82E-297	0.871214254	0.464	0.111	1.73E-292	4.18E+00	Leydig_cells	ID2
PDGFB	9.80E-180	0.871009126	0.273	0.021	6.01E-175	1.30E+01	macrophages	PDGFB
RPS11	7.56E-130	0.870951606	0.96	0.82	4.64E-125	1.17E+00	endotheliocyte	RPS11
MEX3B	0	0.870875401	0.581	0.192	0	3.026041667	spermatid	MEX3B
WDR53	0	0.870831758	0.942	0.354	0	2.661016949	spermatocyte	WDR53
COX7A11	0	0.870825949	0.502	0.062	0	8.096774194	PTM_cells	COX7A1
HLTF	0	0.870728349	0.601	0.129	0	4.658914729	spermatogonia	HLTF
SPOCK2	0	0.870546585	0.295	0.058	0	5.086206897	Sertoli_cells	SPOCK2
RP11.496H1.2	2.72E-261	0.870115618	0.408	0.252	1.67E-256	1.62E+00	spermatid	RP11.496H1.2
SDF2L1	0	0.87006609	0.525	0.275	0	1.909090909	spermatogonia	SDF2L1
AK1	5.25E-208	0.870051816	0.629	0.307	3.22E-203	2.05E+00	PTM_cells	AK1
RPS234	5.89E-104	0.8699082	0.918	0.828	3.61E-99	1.11E+00	VSM_cells	RPS23
RPS35	4.47E-292	0.869795005	0.857	0.796	2.74E-287	1.08E+00	Sertoli_cells	RPS3
RPL36A5	4.45E-09	0.869706532	0.447	0.14	0.000272971	3.192857143	T_cells	RPL36A
HSP90B1	0	0.869247829	0.709	0.579	0	1.224525043	spermatogonia	HSP90B1
IQCB1	0	0.869142247	0.536	0.085	0	6.305882353	spermatogonia	IQCB1
RPS13	1.59E-107	0.868995796	0.945	0.84	9.76E-103	1.13E+00	endotheliocyte	RPS13
HNRNPR	0	0.868944214	0.646	0.21	0	3.076190476	spermatogonia	HNRNPR
MFAP5	0	0.868843515	0.2	0.003	0	66.66666667	Leydig_cells	MFAP5
MT-CO22	9.03E-236	0.868839134	0.79	0.418	5.54E-231	1.89E+00	PTM_cells	MT-CO2
NDRG3	0	0.868766221	0.687	0.384	0	1.7890625	spermatid	NDRG3
ZCCHC171	1.06E-86	0.868709742	0.49	0.374	6.53E-82	1.31E+00	Sertoli_cells	ZCCHC17
LSP11	0	0.868268691	0.367	0.017	0	21.58823529	Leydig_cells	LSP1
TMPRSS12	0	0.868220982	0.8	0.146	0	5.479452055	spermatocyte	TMPRSS12
IQCF5	0	0.868212383	0.712	0.369	0	1.929539295	spermatid	IQCF5
LINC01191	0	0.868186367	0.918	0.488	0	1.881147541	spermatocyte	LINC01191
COX7B2	0	0.868099423	0.88	0.373	0	2.35924933	spermatocyte	COX7B2
NACA3	2.80E-221	0.868014664	0.866	0.743	1.72E-216	1.17E+00	PTM_cells	NACA
OSBPL10	0	0.867692161	0.604	0.184	0	3.282608696	spermatid	OSBPL10
RPS152	1.91E-252	0.86751483	0.898	0.76	1.17E-247	1.18E+00	PTM_cells	RPS15
CCDC188	0	0.867472588	0.56	0.138	0	4.057971014	spermatid	CCDC188
SNRPD1	0	0.86697227	0.659	0.271	0	2.431734317	spermatogonia	SNRPD1
DNAJB7	0	0.866860013	0.509	0.113	0	4.504424779	spermatid	DNAJB7
CD341	0	0.866783498	0.429	0.052	0	8.25	Leydig_cells	CD34
TSHZ1	0	0.866475723	0.49	0.031	0	15.80645161	PTM_cells	TSHZ1
GLTSCR2	1.39E-78	0.866343002	0.774	0.518	8.52E-74	1.49E+00	endotheliocyte	GLTSCR2
AKAP131	0.001093929	0.866245699	0.526	0.411	1	1.279805353	T_cells	AKAP13
CD63	1.88E-148	0.866142317	0.839	0.285	1.15E-143	2.94E+00	endotheliocyte	CD63
NSUN4	0	0.866054676	0.606	0.229	0	2.64628821	spermatid	NSUN4
UBTD2	0	0.865629	0.598	0.241	0	2.481327801	spermatid	UBTD2
TEX33	0	0.865490709	0.667	0.33	0	2.021212121	spermatid	TEX33
COL5A1	0	0.865155493	0.346	0.032	0	10.8125	Leydig_cells	COL5A1
TUBA1A3	0	0.864998116	0.599	0.184	0	3.255434783	PTM_cells	TUBA1A
TMEM173	0	0.864859436	0.499	0.032	0	15.59375	endotheliocyte	TMEM173

LIMS2	0	0.86472574	0.506	0.025	0	20.24	endotheliocyte	LIMS2
PDGFRB1	0	0.864665909	0.503	0.063	0	7.984126984	PTM_cells	PDGFRB
SOCS31	2.68E-90	0.864559193	0.502	0.122	1.65E-85	4.11E+00	macrophages	SOCS3
GRASP1	5.47E-150	0.86383136	0.242	0.02	3.36E-145	1.21E+01	macrophages	GRASP
C2orf40	0	0.863465184	0.642	0.372	0	1.725806452	spermatid	C2orf40
RPS162	2.87E-244	0.863451483	0.914	0.75	1.76E-239	1.22E+00	Leydig_cells	RPS16
EMP21	1.78E-229	0.863159866	0.515	0.176	1.09E-224	2.93E+00	Leydig_cells	EMP2
SRPK2	0	0.862776985	0.851	0.71	0	1.198591549	spermatid	SRPK2
GOT1	0	0.862597779	0.851	0.21	0	4.052380952	spermatocyte	GOT1
RPL34P271	2.81E-27	0.862338741	0.316	0.229	1.72E-22	1.38E+00	Leydig_cells	RPL34P27
RPL27A3	2.49E-269	0.862198748	0.891	0.782	1.53E-264	1.14E+00	PTM_cells	RPL27A
CD995	1.50E-07	0.861664006	0.5	0.197	0.009198995	2.538071066	T_cells	CD99
PCBP2	0	0.861436554	0.793	0.537	0	1.476722533	spermatogonia	PCBP2
FILIP1	6.32E-88	0.861272859	0.51	0.203	3.88E-83	2.51E+00	VSM_cells	FILIP1
LTBP12	2.35E-201	0.861198928	0.516	0.1	1.44E-196	5.16E+00	VSM_cells	LTBP1
CD8B	2.34E-149	0.86119771	0.132	0.001	1.43E-144	1.32E+02	T_cells	CD8B
CXorf36	0	0.861168799	0.419	0.001	0	419	endotheliocyte	CXorf36
MIR193BHG	0	0.861124161	0.538	0.145	0	3.710344828	spermatid	MIR193BHG
FAM43A	0	0.861085826	0.419	0.031	0	13.51612903	endotheliocyte	FAM43A
TCEAL1	0	0.861068117	0.489	0.036	0	13.583333333	PTM_cells	TCEAL1
NCKAP1L1	1.83E-33	0.860965835	0.237	0.013	1.12E-28	1.82E+01	T_cells	NCKAP1L
LRRC17	0	0.860842099	0.413	0.025	0	16.52	Leydig_cells	LRRC17
FCGBP	1.27E-21	0.860785558	0.175	0.054	7.82E-17	3.24E+00	macrophages	FCGBP
RPS19	0	0.860374129	0.859	0.732	0	1.173497268	spermatogonia	RPS19
RPL34P18	0.004644961	0.860250399	0.226	0.207	1	1.09178744	endotheliocyte	RPL34P18
EEF1B2	6.68E-89	0.860210893	0.849	0.615	4.10E-84	1.38E+00	endotheliocyte	EEF1B2
MX1	0	0.859968439	0.467	0.027	0	17.2962963	endotheliocyte	MX1
MROH7	0	0.859865232	0.619	0.223	0	2.775784753	spermatid	MROH7
HIP1	0	0.859227789	0.575	0.173	0	3.323699422	spermatid	HIP1
GNB2L14	2.37E-06	0.858956524	0.684	0.471	0.145628935	1.452229299	T_cells	GNB2L1
WDR83OS1	6.93E-91	0.858829703	0.396	0.234	4.25E-86	1.69E+00	Sertoli_cells	WDR83OS
TSC22D3	7.46E-167	0.858796908	0.6	0.141	4.57E-162	4.26E+00	endotheliocyte	TSC22D3
EIF5	0	0.858674725	0.872	0.681	0	1.280469897	spermatogonia	EIF5
LSM6	0	0.858280153	0.506	0.074	0	6.837837838	spermatogonia	LSM6
RPL185	9.10E-241	0.858058946	0.798	0.558	5.58E-236	1.43E+00	Sertoli_cells	RPL18
SP100	0	0.857877153	0.521	0.049	0	10.63265306	endotheliocyte	SP100
09-Sep	3.50E-219	0.857638359	0.371	0.123	2.15E-214	3.02E+00	Sertoli_cells	09-Sep
TAGAP	5.83E-209	0.857533564	0.313	0.024	3.58E-204	1.30E+01	macrophages	TAGAP
TPT14	1.43E-112	0.857522508	0.934	0.858	8.76E-108	1.09E+00	VSM_cells	TPT1
SSX2IP	0	0.857382967	0.813	0.613	0	1.326264274	spermatid	SSX2IP
SPA17	0	0.857377042	0.991	0.664	0	1.49246988	spermatocyte	SPA17
HENMT1	0	0.857326343	0.642	0.23	0	2.791304348	spermatogonia	HENMT1
GIMAP6	0	0.857165841	0.474	0.002	0	237	endotheliocyte	GIMAP6
RPS194	1.83E-264	0.857155758	0.912	0.752	1.12E-259	1.21E+00	PTM_cells	RPS19
MYC3	1.55E-196	0.857056488	0.419	0.065	9.50E-192	6.45E+00	VSM_cells	MYC
ARL6IP53	0	0.857045528	0.639	0.183	0	3.491803279	PTM_cells	ARL6IP5
INSL31	1.59E-82	0.856598678	0.267	0.106	9.73E-78	2.52E+00	PTM_cells	INSL3
G6PD	1.80E-307	0.856484586	0.313	0.067	1.10E-302	4.67E+00	Sertoli_cells	G6PD
RPL39L	0	0.856381578	0.974	0.534	0	1.823970037	spermatocyte	RPL39L
ZNF711	0	0.856365746	0.321	0.054	0	5.944444444	Sertoli_cells	ZNF711
SPARC	1.12E-132	0.856291034	0.742	0.241	6.87E-128	3.08E+00	endotheliocyte	SPARC
YPEL1	0	0.85624151	0.961	0.486	0	1.977366255	spermatocyte	YPEL1
PSAP2	9.80E-271	0.856146566	0.798	0.431	6.01E-266	1.85E+00	PTM_cells	PSAP
SLC38A7	0	0.855870985	0.578	0.13	0	4.446153846	spermatid	SLC38A7
NR4A14	8.16E-31	0.855592884	0.329	0.257	5.01E-26	1.28E+00	Sertoli_cells	NR4A1
FAM129A	4.48E-153	0.855444645	0.283	0.026	2.75E-148	1.09E+01	macrophages	FAM129A
TAGLN21	4.27E-38	0.855097147	0.471	0.21	2.62E-33	2.24E+00	macrophages	TAGLN2
TDRG1	0	0.854638109	0.387	0.142	0	2.725352113	spermatogonia	TDRG1
TMSB102	0	0.854372794	0.886	0.377	0	2.350132626	Leydig_cells	TMSB10
NDUFA42	2.12E-74	0.854185591	0.581	0.523	1.30E-69	1.11E+00	Sertoli_cells	NDUFA4
FOXP1	5.16E-67	0.854085348	0.675	0.395	3.17E-62	1.71E+00	endotheliocyte	FOXP1
SRRM2	0	0.853769354	0.792	0.491	0	1.613034623	spermatogonia	SRRM2
ATRX	8.11E-144	0.853631664	0.578	0.143	4.97E-139	4.04E+00	endotheliocyte	ATRX
MMP15	0	0.853251514	0.293	0.03	0	9.766666667	Sertoli_cells	MMP15
CHIC2	0	0.853200322	0.69	0.349	0	1.977077364	spermatogonia	CHIC2
RND3	0	0.8531933	0.427	0.046	0	9.282608696	VSM_cells	RND3
SPACA9	0	0.853023048	0.337	0.138	0	2.442028986	spermatid	SPACA9
RPL36A3	0	0.852937402	0.557	0.119	0	4.680672269	PTM_cells	RPL36A
PRR30	0	0.852847766	0.69	0.367	0	1.880108992	spermatid	PRR30
ARPC1B	3.75E-272	0.852771023	0.536	0.071	2.30E-267	7.55E+00	endotheliocyte	ARPC1B
GPAA1	0	0.852721505	0.548	0.143	0	3.832167832	spermatogonia	GPAA1
CITED22	3.34E-10	0.852506225	0.316	0.07	2.05E-05	4.51E+00	T_cells	CITED2
SLC2A32	0	0.852158416	0.432	0.076	0	5.684210526	PTM_cells	SLC2A3
SDPR1	0.006277763	0.851887237	0.12	0.044	1	2.727272727	mastocyte	SDPR
MCL15	0.001857294	0.851514493	0.579	0.53	1	1.09245283	T_cells	MCL1

FLNA3	4.54E-11	0.851096842	0.447	0.119	2.78E-06	3.76E+00	T_cells	FLNA
PPP1R1C	0	0.851055015	0.865	0.247	0	3.502024291	spermatocyte	PPP1R1C
RAE1	0	0.851019571	0.883	0.4	0	2.2075	spermatocyte	RAE1
TNFRSF1B1	2.08E-76	0.850832978	0.316	0.01	1.28E-71	3.16E+01	T_cells	TNFRSF1B
DCAF4L1	0	0.850790915	0.566	0.175	0	3.234285714	spermatogonia	DCAF4L1
HN1	0	0.850768488	0.992	0.709	0	1.399153738	spermatocyte	HN1
SLC9B1	0	0.850608645	0.879	0.278	0	3.161870504	spermatocyte	SLC9B1
ATP6V1G1	0	0.850036693	0.754	0.448	0	1.683035714	spermatogonia	ATP6V1G1
01-Mar	3.18E-244	0.84986653	0.296	0.018	1.95E-239	1.64E+01	macrophages	01-Mar
EEF1B25	7.11E-08	0.849736347	0.816	0.618	0.004364205	1.32038835	T_cells	EEF1B2
FUZ	0	0.849540059	0.766	0.53	0	1.445283019	spermatid	FUZ
PID1	0	0.849471728	0.393	0.03	0	13.1	Leydig_cells	PID1
TPM32	1.17E-78	0.849424933	0.484	0.383	7.16E-74	1.26E+00	Sertoli_cells	TPM3
UTRN	1.85E-64	0.849148322	0.66	0.366	1.14E-59	1.80E+00	endotheliocyte	UTRN
GLTSCR23	2.88E-06	0.849073147	0.684	0.521	0.176587217	1.312859885	T_cells	GLTSCR2
TPD52L3	0	0.849006945	0.983	0.498	0	1.973895582	spermatocyte	TPD52L3
ACTR2	9.56E-26	0.848708912	0.512	0.339	5.86E-21	1.51E+00	macrophages	ACTR2
GRB2	1.94E-42	0.848300465	0.397	0.149	1.19E-37	2.66E+00	macrophages	GRB2
MPEG1	0	0.848046499	0.29	0.001	0	290	macrophages	MPEG1
TSPO4	0	0.847983697	0.594	0.084	0	7.071428571	VSM_cells	TSPO
PABPC1	0	0.847979829	0.996	0.821	0	1.213154689	spermatocyte	PABPC1
LRRC46	0	0.847979063	0.934	0.296	0	3.155405405	spermatocyte	LRRC46
GMFG	3.17E-79	0.847884055	0.333	0.069	1.94E-74	4.83E+00	macrophages	GMFG
TAGAP1	9.62E-20	0.847864593	0.263	0.027	5.90E-15	9.74E+00	T_cells	TAGAP
SMS	0	0.847813245	0.32	0.058	0	5.517241379	spermatogonia	SMS
MGAT1	7.05E-21	0.847550422	0.397	0.233	4.33E-16	1.70E+00	macrophages	MGAT1
NES	0	0.84747678	0.412	0.028	0	14.71428571	endotheliocyte	NES
RGMB-AS1	0	0.847445116	0.566	0.257	0	2.20233463	spermatocyte	RGMB-AS1
MTX2	0	0.847380253	0.644	0.287	0	2.243902439	spermatogonia	MTX2
SLC39A13	0	0.847340983	0.682	0.333	0	2.048048048	spermatid	SLC39A13
MAP1B1	0	0.847121545	0.605	0.141	0	4.290780142	PTM_cells	MAP1B
TXNIP3	0	0.847056941	0.684	0.148	0	4.621621622	PTM_cells	TXNIP
RP11.597D13.8	0	0.847050195	0.351	0.129	0	2.720930233	spermatid	RP11.597D13.8
DMRTC2	0	0.846883145	0.485	0.094	0	5.159574468	spermatogonia	DMRTC2
HSPA1A4	6.38E-79	0.846671581	0.683	0.358	3.91E-74	1.91E+00	VSM_cells	HSPA1A
TCEAL4	0	0.84664859	0.627	0.173	0	3.624277457	Leydig_cells	TCEAL4
RAC11	6.30E-91	0.846323047	0.749	0.374	3.86E-86	2.00E+00	endotheliocyte	RAC1
FAU2	2.45E-117	0.845948039	0.909	0.836	1.50E-112	1.09E+00	VSM_cells	FAU
SQLE	0	0.845912015	0.603	0.217	0	2.778801843	spermatogonia	SQLE
C3AR1	0	0.845844562	0.279	0.008	0	34.875	macrophages	C3AR1
S100A101	1.16E-121	0.84581771	0.672	0.43	7.10E-117	1.56E+00	Leydig_cells	S100A10
IL6	1.28E-288	0.845737896	0.261	0.015	7.84E-284	1.74E+01	endotheliocyte	IL6
LY6E2	0	0.845294729	0.578	0.095	0	6.084210526	PTM_cells	LY6E
ANXA53	2.33E-288	0.844707159	0.689	0.301	1.43E-283	2.29E+00	PTM_cells	ANXA5
PSAP3	1.29E-20	0.844542939	0.431	0.45	7.94E-16	9.58E-01	Sertoli_cells	PSAP
TCTE3	0	0.844461876	0.859	0.228	0	3.76754386	spermatocyte	TCTE3
GEM	0	0.844461316	0.406	0.042	0	9.666666667	VSM_cells	GEM
SERTAD13	1.46E-239	0.84429963	0.469	0.07	8.97E-235	6.70E+00	VSM_cells	SERTAD1
SAE1	0	0.843781772	0.612	0.157	0	3.898089172	spermatogonia	SAE1
RPL29	1.05E-110	0.843460817	0.943	0.846	6.46E-106	1.11E+00	endotheliocyte	RPL29
HRASLS	0	0.843284207	0.951	0.428	0	2.221962617	spermatocyte	HRASLS
RPL27	2.93E-93	0.842439897	0.883	0.659	1.79E-88	1.34E+00	endotheliocyte	RPL27
MDFIC	1.27E-23	0.842408841	0.237	0.019	7.79E-19	1.25E+01	T_cells	MDFIC
CARTPT	0	0.842284682	0.765	0.117	0	6.538461538	spermatocyte	CARTPT
RNF114	0	0.841907592	0.99	0.64	0	1.546875	spermatocyte	RNF114
RPS93	1.18E-288	0.841712378	0.914	0.834	7.24E-284	1.10E+00	PTM_cells	RPS9
RPS213	4.46E-242	0.841710266	0.906	0.668	2.73E-237	1.36E+00	Leydig_cells	RPS2
RNF141	0	0.841577086	0.727	0.541	0	1.343807763	spermatid	RNF141
GALNTL5	0	0.841468554	0.638	0.243	0	2.625514403	spermatid	GALNTL5
TXN	1.02E-114	0.840769721	0.685	0.258	6.26E-110	2.66E+00	endotheliocyte	TXN
RBM46	0	0.840742688	0.592	0.203	0	2.916256158	spermatogonia	RBM46
GAMT	0	0.840654924	0.533	0.088	0	6.056818182	PTM_cells	GAMT
KIAA1551	0.000534581	0.840105999	0.342	0.177	1	1.93220339	T_cells	KIAA1551
TUBA3C	0	0.839688947	0.991	0.571	0	1.735551664	spermatocyte	TUBA3C
ZEB22	3.39E-255	0.839559732	0.497	0.074	2.08E-250	6.72E+00	VSM_cells	ZEB2
RAB11FIP1	5.57E-133	0.839543696	0.306	0.036	3.42E-128	8.50E+00	macrophages	RAB11FIP1
PPA11	9.92E-87	0.839435338	0.44	0.291	6.09E-82	1.51E+00	Sertoli_cells	PPA1
PPIG	0	0.839287153	0.667	0.267	0	2.498127341	spermatogonia	PPIG
MMP23B	0	0.838342763	0.465	0.025	0	18.6	PTM_cells	MMP23B
RPL364	2.82E-142	0.838097567	0.757	0.699	1.73E-137	1.08E+00	Sertoli_cells	RPL36
ARL4C	8.44E-119	0.83801351	0.219	0.02	5.18E-114	1.10E+01	macrophages	ARL4C
RPL222	2.19E-246	0.837633962	0.85	0.638	1.34E-241	1.33E+00	PTM_cells	RPL22
LRRIQ3	0	0.837287111	0.901	0.294	0	3.06462585	spermatocyte	LRRIQ3
RIF1	0	0.837146337	0.527	0.154	0	3.422077922	spermatogonia	RIF1
CD931	2.88E-139	0.837098551	0.263	0.025	1.77E-134	1.05E+01	macrophages	CD93

KLF104	2.01E-79	0.837006397	0.543	0.241	1.23E-74	2.25E+00	VSM_cells	KLF10
VASP	3.88E-08	0.836971413	0.263	0.061	0.002378949	4.31147541	T_cells	VASP
GLRX	2.47E-205	0.836696795	0.283	0.02	1.51E-200	1.42E+01	macrophages	GLRX
PRPF8	0	0.836606346	0.638	0.271	0	2.354243542	spermatogonia	PRPF8
MKRN1	0	0.836580706	0.961	0.501	0	1.918163673	spermatocyte	MKRN1
MTATP6P12	1.03E-44	0.836338559	0.374	0.23	6.31E-40	1.63E+00	Leydig_cells	MTATP6P1
ASB17	0	0.835919837	0.647	0.335	0	1.931343284	spermatid	ASB17
IFT74	0	0.835915359	0.895	0.295	0	3.033898305	spermatocyte	IFT74
MTND1P231	1.12E-26	0.835771298	0.576	0.372	6.89E-22	1.55E+00	macrophages	MTND1P23
PDCD7	0	0.835705099	0.578	0.142	0	4.070422535	spermatogonia	PDCD7
RPL362	4.37E-212	0.835676781	0.842	0.695	2.68E-207	1.21E+00	PTM_cells	RPL36
SRRM5	0	0.835617846	0.513	0.103	0	4.980582524	spermatid	SRRM5
RPS235	7.49E-08	0.835574712	0.842	0.83	0.004592166	1.014457831	T_cells	RPS23
ACP1	0	0.83542725	0.751	0.608	0	1.235197368	spermatid	ACP1
MFS2A	0	0.834747048	0.283	0.012	0	23.58333333	Sertoli_cells	MFS2A
ATAD1	0	0.834148541	0.76	0.522	0	1.455938697	spermatid	ATAD1
WDR78	0	0.834140178	0.9	0.234	0	3.846153846	spermatocyte	WDR78
QSOX11	8.20E-34	0.834073832	0.355	0.293	5.03E-29	1.21E+00	Sertoli_cells	QSOX1
CD68	0	0.833913249	0.3	0.004	0	75	macrophages	CD68
CYR613	2.29E-144	0.833720625	0.298	0.105	1.41E-139	2.84E+00	Sertoli_cells	CYR61
PER1	2.64E-28	0.833649541	0.414	0.204	1.62E-23	2.03E+00	macrophages	PER1
MT-ND11	3.01E-66	0.83362633	0.734	0.406	1.85E-61	1.81E+00	endotheliocyte	MT-ND1
ITGA7	0	0.83358526	0.448	0.048	0	9.333333333	VSM_cells	ITGA7
AKR1C11	0	0.833559821	0.503	0.074	0	6.797297297	PTM_cells	AKR1C1
LAMA2	2.75E-254	0.833512968	0.368	0.081	1.69E-249	4.54E+00	Leydig_cells	LAMA2
IGSF6	0	0.833508642	0.29	0.002	0	145	macrophages	IGSF6
TTK	0	0.833426516	0.844	0.243	0	3.473251029	spermatocyte	TTK
PA2G4	0	0.83342192	0.964	0.498	0	1.935742972	spermatocyte	PA2G4
CASP41	2.55E-30	0.832975158	0.263	0.018	1.57E-25	1.46E+01	T_cells	CASP4
MKRN2	0	0.832873315	0.672	0.475	0	1.414736842	spermatid	MKRN2
SLFN5	0	0.832693683	0.429	0.016	0	26.8125	endotheliocyte	SLFN5
CCDC146	0	0.832571912	0.932	0.281	0	3.316725979	spermatocyte	CCDC146
RBX1	0	0.832552774	0.698	0.325	0	2.147692308	spermatogonia	RBX1
RPL7	5.79E-70	0.832393269	0.913	0.794	3.55E-65	1.15E+00	endotheliocyte	RPL7
NFIC	6.26E-188	0.832231	0.559	0.234	3.84E-183	2.39E+00	Leydig_cells	NFIC
NR4A11	1.45E-127	0.832217569	0.522	0.25	8.91E-123	2.09E+00	Leydig_cells	NR4A1
HNRNPA1	5.69E-79	0.832107027	0.841	0.602	3.49E-74	1.40E+00	endotheliocyte	HNRNPA1
CKB1	3.21E-151	0.831899128	0.726	0.689	1.97E-146	1.05E+00	Sertoli_cells	CKB
RPSA3	2.30E-10	0.831661027	0.868	0.622	1.41E-05	1.40E+00	T_cells	RPSA
CCND2	0	0.831148242	0.463	0.039	0	11.87179487	PTM_cells	CCND2
PTMA3	1.14E-274	0.831114646	0.905	0.644	6.99E-270	1.41E+00	PTM_cells	PTMA
ROPN1B	0	0.831055006	0.99	0.627	0	1.578947368	spermatocyte	ROPN1B
AES	0	0.831037735	0.531	0.134	0	3.962686567	Leydig_cells	AES
CRTAP1	0	0.831019228	0.448	0.094	0	4.765957447	Leydig_cells	CRTAP
IFI44L1	5.23E-124	0.830964589	0.3	0.036	3.21E-119	8.33E+00	macrophages	IFI44L
IPO5	0	0.830913829	0.852	0.704	0	1.210227273	spermatid	IPO5
RPL242	1.70E-238	0.830695311	0.875	0.736	1.04E-233	1.19E+00	PTM_cells	RPL24
ATP5I	1.43E-33	0.83008821	0.361	0.293	8.78E-29	1.23E+00	Sertoli_cells	ATP5I
RPS252	1.19E-07	0.830040894	0.921	0.833	0.007320355	1.105642257	T_cells	RPS25
RPS114	1.40E-113	0.830012141	0.92	0.821	8.56E-109	1.12E+00	VSM_cells	RPS11
SERTAD1	1.39E-285	0.829971245	0.546	0.07	8.50E-281	7.80E+00	endotheliocyte	SERTAD1
COX7A12	7.00E-246	0.82977115	0.495	0.077	4.30E-241	6.43E+00	VSM_cells	COX7A1
RACK1	8.17E-16	0.829612863	0.374	0.232	5.01E-11	1.61E+00	macrophages	RACK1
SLC6A8	0	0.828937328	0.305	0.032	0	9.53125	Sertoli_cells	SLC6A8
CLEC2B1	2.23E-42	0.828542015	0.316	0.018	1.37E-37	1.76E+01	T_cells	CLEC2B
SLCO2B1	2.62E-226	0.828256604	0.263	0.015	1.61E-221	1.75E+01	macrophages	SLCO2B1
FRMD4B1	1.29E-81	0.82824299	0.337	0.067	7.91E-77	5.03E+00	macrophages	FRMD4B
SERPINH1	0	0.828170262	0.468	0.089	0	5.258426966	Leydig_cells	SERPINH1
TNFAIP8	9.59E-100	0.828033388	0.266	0.036	5.88E-95	7.39E+00	macrophages	TNFAIP8
C8orf41	0	0.827385595	0.34	0.017	0	20	Leydig_cells	C8orf4
RACK11	1.83E-25	0.827271858	0.312	0.23	1.12E-20	1.36E+00	Leydig_cells	RACK1
NUDC	0	0.826806382	0.704	0.415	0	1.696385542	spermatogonia	NUDC
LAMP2	0	0.826669552	0.444	0.085	0	5.223529412	Leydig_cells	LAMP2
IFI27L1	2.76E-82	0.826018947	0.582	0.534	1.69E-77	1.09E+00	Sertoli_cells	IFI27L1
RPL13AP251	7.09E-29	0.825720156	0.316	0.125	4.35E-24	2.53E+00	macrophages	RPL13AP25
SLCO6A1	0	0.825650737	0.904	0.255	0	3.545098039	spermatocyte	SLCO6A1
PROK11	0	0.825605762	0.401	0.058	0	6.913793103	PTM_cells	PROK1
LYVE1	0	0.825559774	0.205	0.005	0	41	macrophages	LYVE1
CD7	4.79E-53	0.825433589	0.158	0.004	2.94E-48	3.95E+01	T_cells	CD7
DSE	9.23E-39	0.825408841	0.33	0.115	5.66E-34	2.87E+00	macrophages	DSE
MIS18A	0	0.825050953	0.612	0.144	0	4.25	spermatogonia	MIS18A
DDX51	2.20E-49	0.825018633	0.855	0.764	1.35E-44	1.12E+00	macrophages	DDX5
TEX30	0	0.825001821	0.762	0.54	0	1.411111111	spermatogonia	TEX30
RPL94	2.42E-13	0.824849288	0.974	0.875	1.49E-08	1.11E+00	T_cells	RPL9
SNHG51	6.87E-38	0.824803003	0.273	0.081	4.22E-33	3.37E+00	macrophages	SNHG5



PRDX1	0	0.82450456	0.635	0.234	0	2.713675214	spermatogonia	PRDX1
RPL35A	3.48E-103	0.824293636	0.963	0.87	2.14E-98	1.11E+00	endotheliocyte	RPL35A
UBE2N	0	0.824160167	0.907	0.817	0	1.110159119	spermatid	UBE2N
RP11.104H15.12	0	0.823994237	0.309	0.085	0	3.635294118	spermatid	RP11.104H15.12
PNISR	0	0.823770404	0.703	0.359	0	1.95821727	spermatogonia	PNISR
LSP1	5.54E-129	0.823736384	0.273	0.029	3.40E-124	9.41E+00	macrophages	LSP1
PLOD1	0	0.823695688	0.336	0.03	0	11.2	Leydig_cells	PLOD1
RPS92	4.54E-256	0.823488733	0.936	0.834	2.78E-251	1.12E+00	Leydig_cells	RPS9
EMP22	0	0.823205989	0.577	0.17	0	3.394117647	PTM_cells	EMP2
GJA4	4.00E-286	0.823197993	0.251	0.014	2.45E-281	1.79E+01	endotheliocyte	GJA4
RAB11A	0	0.823119234	0.957	0.474	0	2.018987342	spermatocyte	RAB11A
MYCT1	6.21E-303	0.822837923	0.434	0.044	3.81E-298	9.86E+00	endotheliocyte	MYCT1
PYCARD	5.96E-299	0.822719859	0.313	0.016	3.65E-294	1.96E+01	macrophages	PYCARD
PPIF1	1.28E-176	0.82239201	0.323	0.112	7.85E-172	2.88E+00	Sertoli_cells	PPIF
ANAPC15	0	0.822322804	0.558	0.157	0	3.554140127	spermatogonia	ANAPC15
ADAM29	0	0.821841988	0.684	0.303	0	2.257425743	spermatid	ADAM29
PCDH17	0	0.821790787	0.747	0.168	0	4.446428571	spermatocyte	PCDH17
CTNNAL1	1.94E-65	0.8217033	0.618	0.337	1.19E-60	1.83E+00	endotheliocyte	CTNNAL1
RPS282	2.34E-219	0.821648889	0.83	0.599	1.44E-214	1.39E+00	PTM_cells	RPS28
ADD3	1.40E-126	0.821490598	0.63	0.406	8.62E-122	1.55E+00	Leydig_cells	ADD3
GGNBP2	0	0.821400805	0.985	0.577	0	1.707105719	spermatocyte	GGNBP2
MT-ND2	1.49E-137	0.821216193	0.487	0.393	9.16E-133	1.24E+00	spermatogonia	MT-ND2
REEP6	0	0.821079666	0.699	0.406	0	1.721674877	spermatid	REEP6
RNF113B	0	0.820990015	0.757	0.167	0	4.532934132	spermatocyte	RNF113B
VCAM1	0	0.820902566	0.323	0.019	0	17	endotheliocyte	VCAM1
SUPT20H	0	0.820897663	0.898	0.319	0	2.815047022	spermatocyte	SUPT20H
CCNL1	6.65E-26	0.820772635	0.535	0.345	4.08E-21	1.55E+00	macrophages	CCNL1
TBL2	0	0.820242889	0.987	0.537	0	1.837988827	spermatocyte	TBL2
LACTB2	0	0.820075574	0.879	0.307	0	2.863192182	spermatocyte	LACTB2
ADAM30	0	0.819843783	0.878	0.181	0	4.850828729	spermatocyte	ADAM30
TAF7L	2.51E-170	0.819826571	0.331	0.12	1.54E-165	2.76E+00	Sertoli_cells	TAF7L
LSAMP	0	0.819826517	0.4	0.081	0	4.938271605	Leydig_cells	LSAMP
UQCR10	0	0.819745884	0.913	0.513	0	1.779727096	spermatocyte	UQCR10
RPL36A2	9.98E-254	0.819498594	0.476	0.126	6.12E-249	3.78E+00	Leydig_cells	RPL36A
PIK3R1	1.79E-48	0.819346009	0.33	0.095	1.10E-43	3.47E+00	macrophages	PIK3R1
MT-ATP8	1.57E-194	0.819268866	0.529	0.106	9.66E-190	4.99E+00	VSM_cells	MT-ATP8
GS1.259H13.2	0	0.819074215	0.404	0.157	0	2.573248408	spermatocyte	GS1.259H13.2
DNAL1	0	0.819049676	0.913	0.346	0	2.638728324	spermatocyte	DNAL1
C1QTNF1	0	0.818999496	0.412	0.011	0	37.45454545	VSM_cells	C1QTNF1
DDX25	0	0.818837312	0.958	0.402	0	2.383084577	spermatocyte	DDX25
TSPO1	1.38E-58	0.818757466	0.35	0.09	8.46E-54	3.89E+00	macrophages	TSPO
TAX1BP31	0	0.818553802	0.493	0.098	0	5.030612245	PTM_cells	TAX1BP3
UBE2J2	0	0.818249471	0.96	0.498	0	1.927710843	spermatocyte	UBE2J2
EPAS1	4.71E-241	0.818123057	0.493	0.077	2.89E-236	6.40E+00	VSM_cells	EPAS1
SAXO1	0	0.818053884	0.553	0.286	0	1.933566434	spermatid	SAXO1
RPL263	1.64E-223	0.817931523	0.888	0.749	1.01E-218	1.19E+00	PTM_cells	RPL26
MGST21	0	0.817797325	0.29	0.056	0	5.178571429	Sertoli_cells	MGST2
PTN2	1.32E-156	0.817576175	0.373	0.156	8.08E-152	2.39E+00	Sertoli_cells	PTN
COL4A2	0	0.817529826	0.474	0.054	0	8.777777778	PTM_cells	COL4A2
CTD-2568A17.1	1.52E-157	0.81719053	0.439	0.368	9.33E-153	1.19E+00	spermatid	CTD-2568A17.1
CRIP2	4.35E-67	0.816971308	0.655	0.328	2.67E-62	2.00E+00	endotheliocyte	CRIP2
CYB5R33	2.13E-123	0.81689207	0.413	0.218	1.31E-118	1.89E+00	Sertoli_cells	CYB5R3
LINC009361	1.20E-07	0.816803072	0.211	0.043	0.007378944	4.906976744	T_cells	LINC00936
RPS281	5.20E-178	0.816779467	0.814	0.601	3.19E-173	1.35E+00	Leydig_cells	RPS28
IFT172	0	0.816770475	0.61	0.285	0	2.140350877	spermatid	IFT172
MRPL43	0	0.816746468	0.911	0.38	0	2.397368421	spermatocyte	MRPL43
EFCAB1	0	0.816389637	0.643	0.344	0	1.869186047	spermatid	EFCAB1
BBIP1	0	0.81633721	0.946	0.47	0	2.012765957	spermatocyte	BBIP1
BTG14	1.15E-74	0.816313865	0.797	0.607	7.05E-70	1.31E+00	VSM_cells	BTG1
C3orf22	0	0.816201826	0.569	0.207	0	2.748792271	spermatid	C3orf22
PIH1D2	0	0.816148812	0.951	0.38	0	2.502631579	spermatocyte	PIH1D2
RASSF4	9.95E-273	0.815881341	0.306	0.017	6.11E-268	1.80E+01	macrophages	RASSF4
YBX1	0	0.81571757	0.998	0.908	0	1.099118943	spermatocyte	YBX1
FOSB5	1.05E-26	0.814765558	0.389	0.341	6.43E-22	1.14E+00	Sertoli_cells	FOSB
TYSND1	0	0.814693556	0.848	0.255	0	3.325490196	spermatocyte	TYSND1
IFI272	0	0.814670874	0.553	0.113	0	4.89380531	PTM_cells	IFI27
RPL114	3.01E-107	0.814274143	0.922	0.824	1.85E-102	1.12E+00	VSM_cells	RPL11
RPL13A5	2.26E-280	0.813991482	0.858	0.729	1.38E-275	1.18E+00	Sertoli_cells	RPL13A
TMEM205	0	0.813876941	0.644	0.408	0	1.578431373	spermatid	TMEM205
NUCKS13	7.14E-94	0.813664984	0.729	0.396	4.38E-89	1.84E+00	VSM_cells	NUCKS1
FBN11	0	0.813616975	0.531	0.106	0	5.009433962	PTM_cells	FBN1
LGALS32	0	0.813461313	0.602	0.189	0	3.185185185	PTM_cells	LGALS3
HSBP1	0	0.813211672	0.943	0.528	0	1.785984848	spermatocyte	HSBP1
GSTP1	1.55E-171	0.813177341	0.702	0.166	9.50E-167	4.23E+00	endotheliocyte	GSTP1
CCDC65	0	0.813069333	0.932	0.258	0	3.612403101	spermatocyte	CCDC65

FTH1P102	9.64E-05	0.813007883	0.36	0.162	1	2.222222222	mastocyte	FTH1P10
MTHFD2	2.09E-119	0.812884549	0.503	0.155	1.28E-114	3.25E+00	VSM_cells	MTHFD2
HSF5	0	0.812835867	0.859	0.197	0	4.360406091	spermatocyte	HSF5
EZR	2.29E-20	0.81264635	0.424	0.247	1.41E-15	1.72E+00	macrophages	EZR
PLSCR4	0	0.812431228	0.484	0.033	0	14.66666667	endotheliocyte	PLSCR4
PIGP	0	0.812333407	0.561	0.319	0	1.75862069	spermatogonia	PIGP
TPM4	7.71E-115	0.812275316	0.655	0.231	4.73E-110	2.84E+00	endotheliocyte	TPM4
HLA-DPB1	0	0.812202128	0.491	0.028	0	17.53571429	endotheliocyte	HLA-DPB1
EID14	1.48E-126	0.811870109	0.548	0.354	9.10E-122	1.55E+00	Sertoli_cells	EID1
SLC26A8	0	0.811845795	0.891	0.25	0	3.564	spermatocyte	SLC26A8
CRIP21	3.49E-92	0.811550409	0.677	0.327	2.14E-87	2.07E+00	VSM_cells	CRIP2
DDX46	0	0.811458069	0.639	0.339	0	1.884955752	spermatogonia	DDX46
GUK12	6.01E-49	0.811248211	0.526	0.507	3.69E-44	1.04E+00	Sertoli_cells	GUK1
MAF3	6.35E-05	0.8111453	0.237	0.076	1	3.118421053	T_cells	MAF
GNAI2	7.57E-74	0.810998246	0.715	0.422	4.65E-69	1.69E+00	endotheliocyte	GNAI2
HSPA1A2	1.45E-149	0.810810801	0.634	0.352	8.89E-145	1.80E+00	Leydig_cells	HSPA1A
GRID2	0	0.810732921	0.578	0.156	0	3.705128205	spermatid	GRID2
PAGE2	0	0.810729287	0.354	0.036	0	9.833333333	spermatogonia	PAGE2
RPS25	4.76E-96	0.810650596	0.933	0.832	2.92E-91	1.12E+00	endotheliocyte	RPS25
MAGEA4	0	0.810446782	0.334	0.026	0	12.84615385	spermatogonia	MAGEA4
ZC3H13	0	0.810432345	0.546	0.123	0	4.43902439	spermatogonia	ZC3H13
LPP	0	0.810345451	0.724	0.37	0	1.956756757	spermatid	LPP
ANXA54	8.31E-88	0.81020082	0.462	0.311	5.10E-83	1.49E+00	Sertoli_cells	ANXA5
FXVD1	0	0.810072953	0.386	0.04	0	9.65	Leydig_cells	FXVD1
IFNGR11	2.58E-37	0.809886134	0.333	0.12	1.58E-32	2.78E+00	macrophages	IFNGR1
ANKRD53	0	0.809710042	0.568	0.17	0	3.341176471	spermatid	ANKRD53
ACAP11	1.55E-05	0.809701796	0.579	0.369	0.9496676	1.569105691	T_cells	ACAP1
RPL113	2.24E-262	0.809112711	0.924	0.821	1.38E-257	1.13E+00	PTM_cells	RPL11
CTSV	3.22E-285	0.809093219	0.285	0.059	1.98E-280	4.83E+00	Sertoli_cells	CTSV
RPS3A2	0	0.808840261	0.947	0.896	0	1.056919643	PTM_cells	RPS3A
ACAP1	0	0.808805228	0.601	0.262	0	2.29389313	spermatid	ACAP1
NDUFS52	3.46E-43	0.808760374	0.47	0.449	2.12E-38	1.05E+00	Sertoli_cells	NDUFS5
RB1	1.47E-28	0.80871611	0.357	0.164	9.02E-24	2.18E+00	macrophages	RB1
ASS1	0	0.808648878	0.484	0.034	0	14.23529412	endotheliocyte	ASS1
PPP2R3C	0	0.808626577	0.958	0.461	0	2.078091106	spermatocyte	PPP2R3C
AKAP13	1.07E-19	0.808578983	0.539	0.409	6.58E-15	1.32E+00	macrophages	AKAP13
ZFH3	5.98E-53	0.808387712	0.327	0.088	3.67E-48	3.72E+00	macrophages	ZFH3
ZFP36L14	4.45E-81	0.808318042	0.712	0.393	2.73E-76	1.81E+00	VSM_cells	ZFP36L1
UBE2S	0	0.808301755	0.973	0.566	0	1.719081272	spermatocyte	UBE2S
SPATA17	0	0.80809216	0.977	0.462	0	2.114718615	spermatocyte	SPATA17
SSB	0	0.807949831	0.57	0.158	0	3.607594937	spermatogonia	SSB
YWHAH	6.68E-47	0.807856282	0.33	0.098	4.10E-42	3.37E+00	macrophages	YWHAH
CYB5A1	3.43E-129	0.807768149	0.326	0.135	2.10E-124	2.41E+00	Sertoli_cells	CYB5A
RBM31	8.18E-131	0.807731483	0.71	0.221	5.02E-126	3.21E+00	endotheliocyte	RBM3
IGF11	0	0.807589393	0.473	0.067	0	7.059701493	PTM_cells	IGF1
SPARC1	0	0.807569409	0.706	0.229	0	3.082969432	Leydig_cells	SPARC
PFN1	0	0.807418931	0.635	0.347	0	1.829971182	spermatogonia	PFN1
STK17A	0.002082773	0.8073444	0.421	0.292	1	1.441780822	T_cells	STK17A
ANXA23	0	0.807324174	0.707	0.276	0	2.561594203	PTM_cells	ANXA2
NAMPT	1.92E-119	0.807291245	0.541	0.148	1.17E-114	3.66E+00	endotheliocyte	NAMPT
TSPO5	4.19E-10	0.807062662	0.368	0.092	2.57E-05	4.00E+00	T_cells	TSPO
EGR1	1.11E-109	0.806809739	0.715	0.257	6.83E-105	2.78E+00	endotheliocyte	EGR1
CYGB	0	0.806804953	0.321	0.019	0	16.89473684	Leydig_cells	CYGB
GGTA1P	0	0.806799178	0.185	0.002	0	92.5	macrophages	GGTA1P
ARFGAP3	0	0.806756947	0.618	0.281	0	2.199288256	spermatogonia	ARFGAP3
RPS21	0	0.80663011	0.746	0.464	0	1.607758621	spermatogonia	RPS21
08-Mar	0	0.806543638	0.622	0.395	0	1.574683544	spermatid	08-Mar
LDLR1	0	0.806325981	0.369	0.059	0	6.254237288	Leydig_cells	LDLR
JMJD1C1	1.13E-57	0.806281844	0.64	0.366	6.95E-53	1.75E+00	endotheliocyte	JMJD1C
STX11	0	0.806217479	0.286	0.01	0	28.6	macrophages	STX11
NKTR	0	0.806215984	0.68	0.332	0	2.048192771	spermatogonia	NKTR
EFHD2	1.62E-97	0.806172576	0.523	0.382	9.96E-93	1.37E+00	Sertoli_cells	EFHD2
MT.RNR21	7.46E-27	0.806138014	0.576	0.372	4.57E-22	1.55E+00	macrophages	MT.RNR2
GPR34	0	0.806135367	0.239	0.003	0	79.66666667	macrophages	GPR34
LMOD1	0	0.805990087	0.492	0.035	0	14.05714286	PTM_cells	LMOD1
ETS1	0	0.805408389	0.434	0.033	0	13.15151515	endotheliocyte	ETS1
RPS172	2.23E-39	0.805393637	0.741	0.471	1.37E-34	1.57E+00	macrophages	RPS17
CALM11	6.36E-224	0.805170539	0.846	0.685	3.90E-219	1.24E+00	PTM_cells	CALM1
KCNH2	0	0.805127139	0.299	0.035	0	8.542857143	Sertoli_cells	KCNH2
RPS163	2.22E-262	0.80502041	0.906	0.75	1.36E-257	1.21E+00	PTM_cells	RPS16
IL1R2	4.45E-186	0.804955926	0.182	0.009	2.73E-181	2.02E+01	macrophages	IL1R2
CD55	0	0.804180261	0.487	0.187	0	2.604278075	spermatid	CD55
CAV22	0	0.804033686	0.536	0.103	0	5.203883495	PTM_cells	CAV2
CNBP	0	0.804027593	0.727	0.407	0	1.786240786	spermatogonia	CNBP
IL62	4.13E-181	0.803858601	0.195	0.015	2.53E-176	1.30E+01	VSM_cells	IL6

SPRY1	0	0.8038326	0.373	0.064	0	5.828125	Leydig_cells	SPRY1
RPL112	1.06E-206	0.803831545	0.923	0.822	6.47E-202	1.12E+00	Leydig_cells	RPL11
MXRA7	2.38E-260	0.803766357	0.451	0.115	1.46E-255	3.92E+00	Leydig_cells	MXRA7
DDX3X	0	0.803533666	0.681	0.429	0	1.587412587	spermatid	DDX3X
MAPRE3	0	0.802746766	0.609	0.358	0	1.701117318	spermatid	MAPRE3
RPL372	1.05E-237	0.802629163	0.917	0.801	6.43E-233	1.14E+00	Leydig_cells	RPL37
PAFAH1B3	0	0.802619879	0.296	0.067	0	4.417910448	spermatogonia	PAFAH1B3
RPS103	4.81E-07	0.80220044	0.763	0.541	0.029508898	1.410351201	T_cells	RPS10
RUVBL1	0	0.802159104	0.62	0.191	0	3.246073298	spermatogonia	RUVBL1
CCDC159	0	0.802037768	0.573	0.199	0	2.879396985	spermatid	CCDC159
ZYX1	2.92E-282	0.801894555	0.321	0.074	1.79E-277	4.34E+00	Sertoli_cells	ZYX
PPP3CC	0	0.801808644	0.896	0.261	0	3.432950192	spermatocyte	PPP3CC
CNN1	0	0.801803058	0.621	0.226	0	2.747787611	spermatid	CNN1
DDAH2	6.05E-236	0.80179349	0.5	0.162	3.71E-231	3.09E+00	Leydig_cells	DDAH2
RPL216	4.64E-273	0.801768578	0.81	0.455	2.85E-268	1.78E+00	Sertoli_cells	RPL21
DDIT42	0	0.801744011	0.488	0.067	0	7.28358209	PTM_cells	DDIT4
SMARCA1	2.48E-303	0.801720053	0.504	0.122	1.52E-298	4.13E+00	Leydig_cells	SMARCA1
ZDHHC19	0	0.801374884	0.645	0.28	0	2.303571429	spermatid	ZDHHC19
ISG15	5.27E-240	0.801226903	0.404	0.045	3.23E-235	8.98E+00	endotheliocyte	ISG15
PPP1CC	0	0.800907586	0.98	0.576	0	1.701388889	spermatocyte	PPP1CC
SLC3A21	1.62E-114	0.800650431	0.337	0.158	9.94E-110	2.13E+00	Sertoli_cells	SLC3A2
LGALS9	3.81E-179	0.800612672	0.256	0.019	2.33E-174	1.35E+01	macrophages	LGALS9
MAP3K14-AS1	0	0.800342312	0.396	0.174	0	2.275862069	spermatid	MAP3K14-AS1
TPR	0	0.800299616	0.789	0.595	0	1.32605042	spermatogonia	TPR
RPS95	9.83E-09	0.799733867	0.895	0.838	0.000602967	1.068019093	T_cells	RPS9
DUSP5	2.51E-145	0.799414552	0.454	0.088	1.54E-140	5.16E+00	endotheliocyte	DUSP5
CD151	3.34E-208	0.798925133	0.566	0.097	2.05E-203	5.84E+00	endotheliocyte	CD151
WSB11	5.41E-20	0.798922598	0.549	0.425	3.32E-15	1.29E+00	macrophages	WSB1
COL4A21	3.60E-222	0.798859672	0.446	0.068	2.21E-217	6.56E+00	VSM_cells	COL4A2
TMEM99	2.92E-258	0.798852103	0.564	0.421	1.79E-253	1.34E+00	spermatogonia	TMEM99
GSTK1	0	0.798791576	0.682	0.333	0	2.048048048	spermatid	GSTK1
KLF102	2.97E-147	0.798681517	0.507	0.235	1.82E-142	2.16E+00	Leydig_cells	KLF10
LYPD4	0	0.798670801	0.972	0.462	0	2.103896104	spermatocyte	LYPD4
MTF2	0	0.798633276	0.575	0.13	0	4.423076923	spermatogonia	MTF2
KIF20B	0	0.798553925	0.595	0.219	0	2.716894977	spermatogonia	KIF20B
PIWIL2	0	0.798501804	0.53	0.127	0	4.173228346	spermatogonia	PIWIL2
HCFC1R1	0	0.798234593	0.502	0.14	0	3.585714286	PTM_cells	HCFC1R1
SUN3	0	0.797889895	0.606	0.322	0	1.881987578	spermatid	SUN3
MTCH11	8.33E-120	0.797697885	0.39	0.198	5.11E-115	1.97E+00	Sertoli_cells	MTCH1
IER32	3.52E-143	0.797630964	0.336	0.1	2.16E-138	3.36E+00	Leydig_cells	IER3
WT1	0	0.797439723	0.286	0.016	0	17.875	Sertoli_cells	WT1
FAM220A	0	0.797315265	0.666	0.374	0	1.780748663	spermatid	FAM220A
SLC6A16	0	0.797209339	0.924	0.303	0	3.04950495	spermatocyte	SLC6A16
TRBC1	5.24E-61	0.797168436	0.184	0.004	3.22E-56	4.60E+01	T_cells	TRBC1
FBXO211	2.30E-109	0.79711222	0.375	0.197	1.41E-104	1.90E+00	Sertoli_cells	FBXO21
C5orf58	1.71E-148	0.796865012	0.254	0.133	1.05E-143	1.91E+00	spermatogonia	C5orf58
RPL38	6.63E-116	0.796804206	0.96	0.923	4.07E-111	1.04E+00	VSM_cells	RPL3
BMPR2	3.51E-140	0.796786598	0.481	0.106	2.15E-135	4.54E+00	endotheliocyte	BMPR2
CDKN3	0	0.796593576	0.984	0.634	0	1.552050473	spermatocyte	CDKN3
AMN1	0	0.796108549	0.915	0.343	0	2.667638484	spermatocyte	AMN1
MT-CO13	1.01E-220	0.795928933	0.791	0.436	6.18E-216	1.81E+00	PTM_cells	MT-CO1
RPS174	5.08E-218	0.795874524	0.812	0.457	3.12E-213	1.78E+00	PTM_cells	RPS17
PFN13	1.57E-86	0.795796228	0.725	0.404	9.64E-82	1.79E+00	VSM_cells	PFN1
CITED21	0	0.795700805	0.379	0.056	0	6.767857143	Leydig_cells	CITED2
COL1A22	1.04E-157	0.795617329	0.402	0.168	6.37E-153	2.39E+00	Sertoli_cells	COL1A2
PSENN	0	0.795591652	0.956	0.391	0	2.445012788	spermatocyte	PSENN
FOSL21	7.02E-83	0.795504176	0.3	0.052	4.30E-78	5.77E+00	macrophages	FOSL2
HLA-C2	1.36E-190	0.79502727	0.473	0.165	8.34E-186	2.87E+00	Leydig_cells	HLA-C
LCP2	0	0.794368309	0.263	0.009	0	29.22222222	macrophages	LCP2
HLA-DPA1	0	0.793741209	0.514	0.02	0	25.7	endotheliocyte	HLA-DPA1
AC005754.7	0	0.79358357	0.868	0.273	0	3.179487179	spermatocyte	AC005754.7
S100A103	0.002599307	0.793568031	0.553	0.44	1	1.256818182	T_cells	S100A10
RPS3A4	7.56E-11	0.793458674	0.921	0.898	4.64E-06	1.03E+00	T_cells	RPS3A
HNRNPM	0	0.793300282	0.722	0.341	0	2.117302053	spermatogonia	HNRNPM
LAT	1.04E-86	0.793237199	0.289	0.008	6.38E-82	3.61E+01	T_cells	LAT
CDC14A	0	0.79314855	0.564	0.185	0	3.048648649	spermatid	CDC14A
LITAF	7.53E-48	0.793143014	0.316	0.089	4.62E-43	3.55E+00	macrophages	LITAF
USP25	0	0.792482988	0.607	0.289	0	2.100346021	spermatid	USP25
MAFF	1.27E-235	0.792394078	0.471	0.062	7.80E-231	7.60E+00	endotheliocyte	MAFF
CALR	0	0.792259665	0.714	0.458	0	1.558951965	spermatogonia	CALR
CLDN1	6.65E-290	0.792210368	0.232	0.009	4.08E-285	2.58E+01	macrophages	CLDN1
ABCA9	0	0.791948032	0.303	0.022	0	13.77272727	Leydig_cells	ABCA9
IGFBP62	2.67E-175	0.791505048	0.474	0.091	1.64E-170	5.21E+00	VSM_cells	IGFBP6
ACE2	0	0.791502803	0.279	0.01	0	27.9	Sertoli_cells	ACE2
SLC2A5	0	0.790958492	0.837	0.233	0	3.592274678	spermatocyte	SLC2A5

RP11-545G3.1	0	0.790936163	0.405	0.203	0	1.995073892	spermatid	RP11-545G3.1
TRIM42	0	0.790926298	0.511	0.087	0	5.873563218	spermatid	TRIM42
PPP2R2B	0	0.790893865	0.524	0.09	0	5.822222222	spermatid	PPP2R2B
RPL31	9.81E-43	0.790879041	0.933	0.838	6.02E-38	1.11E+00	endotheliocyte	RPL31
SORL1	0	0.790738363	0.372	0.048	0	7.75	Leydig_cells	SORL1
LHX9	0	0.790721506	0.335	0.028	0	11.96428571	Leydig_cells	LHX9
NFKBIZ2	4.55E-204	0.790719327	0.377	0.097	2.79E-199	3.89E+00	Leydig_cells	NFKBIZ
ADAMTS12	0	0.790507748	0.465	0.072	0	6.458333333	PTM_cells	ADAMTS1
C12orf571	4.84E-188	0.790445171	0.697	0.448	2.97E-183	1.56E+00	PTM_cells	C12orf57
SPI1	4.98E-89	0.790369075	0.327	0.06	3.05E-84	5.45E+00	macrophages	SPI1
CD302	2.21E-18	0.790315029	0.38	0.235	1.36E-13	1.62E+00	macrophages	CD302
OAZ11	6.76E-107	0.790305088	0.669	0.614	4.15E-102	1.09E+00	Sertoli_cells	OAZ1
OSCP1	0	0.789844951	0.949	0.398	0	2.384422111	spermatocyte	OSCP1
PAGE1	0	0.789814153	0.339	0.015	0	22.6	spermatogonia	PAGE1
HBEGF	0	0.789752411	0.414	0.037	0	11.18918919	endotheliocyte	HBEGF
CEBPB1	1.75E-279	0.789710306	0.478	0.063	1.08E-274	7.59E+00	VSM_cells	CEBPB
RPL262	1.10E-181	0.789623966	0.892	0.749	6.73E-177	1.19E+00	Leydig_cells	RPL26
CIRBP3	1.24E-234	0.789576066	0.787	0.431	7.62E-230	1.83E+00	PTM_cells	CIRBP
IER5L2	0.001316623	0.789498528	0.184	0.064	1	2.875	T_cells	IER5L
RCS1	0	0.789397167	0.253	0.008	0	31.625	macrophages	RCS1
MT-CYB1	1.14E-62	0.789311383	0.73	0.393	6.97E-58	1.86E+00	endotheliocyte	MT-CYB
SLFNL1	0	0.789163442	0.535	0.135	0	3.962962963	spermatid	SLFNL1
SLA1	6.85E-154	0.7891608	0.263	0.003	4.20E-149	8.77E+01	T_cells	SLA
WBP51	0	0.789153783	0.506	0.078	0	6.487179487	PTM_cells	WBP5
VAPA	0	0.788878781	0.661	0.269	0	2.457249071	spermatogonia	VAPA
SLPI	0	0.788451621	0.439	0.106	0	4.141509434	spermatid	SLPI
BHLHE401	1.43E-84	0.788213262	0.296	0.05	8.79E-80	5.92E+00	macrophages	BHLHE40
LINC00643	0	0.788110399	0.676	0.252	0	2.682539683	spermatocyte	LINC00643
CYB5A	5.40E-276	0.787816304	0.489	0.132	3.31E-271	3.70E+00	Leydig_cells	CYB5A
TMEM147	0	0.787631145	0.63	0.352	0	1.789772727	spermatogonia	TMEM147
MT-CO31	9.27E-219	0.787165628	0.794	0.453	5.69E-214	1.75E+00	PTM_cells	MT-CO3
CEP85L	0	0.786927103	0.707	0.47	0	1.504255319	spermatid	CEP85L
EMILIN1	0	0.786916824	0.425	0.018	0	23.61111111	PTM_cells	EMILIN1
LINC00301	0	0.786762166	0.916	0.431	0	2.125290023	spermatocyte	LINC00301
RNF38	0	0.786718382	0.707	0.508	0	1.391732283	spermatid	RNF38
SLC25A31	0	0.786515076	0.469	0.205	0	2.287804878	spermatogonia	SLC25A31
GABARAPL2	0	0.786422563	0.696	0.394	0	1.766497462	spermatogonia	GABARAPL2
RPL81	5.86E-225	0.78635965	0.935	0.852	3.60E-220	1.10E+00	Leydig_cells	RPL8
RPL72	2.44E-99	0.786116018	0.888	0.795	1.50E-94	1.12E+00	VSM_cells	RPL7
RPL27A2	2.32E-217	0.785614658	0.903	0.782	1.42E-212	1.15E+00	Leydig_cells	RPL27A
CFAP53	0	0.78545429	0.982	0.514	0	1.910505837	spermatocyte	CFAP53
NGFR	0	0.785346827	0.275	0.017	0	16.17647059	Leydig_cells	NGFR
UBQLNL	0	0.78529717	0.512	0.105	0	4.876190476	spermatid	UBQLNL
SRSF5	1.62E-75	0.785247979	0.844	0.598	9.91E-71	1.41E+00	endotheliocyte	SRSF5
CD99	3.08E-150	0.785141545	0.707	0.189	1.89E-145	3.74E+00	endotheliocyte	CD99
RPL365	2.29E-07	0.784840341	0.842	0.702	0.014045804	1.199430199	T_cells	RPL36
RAB341	0	0.784656359	0.49	0.042	0	11.66666667	PTM_cells	RAB34
HPCAL1	3.26E-85	0.784559282	0.361	0.214	2.00E-80	1.69E+00	Sertoli_cells	HPCAL1
PFKP	0	0.784553278	0.985	0.498	0	1.977911647	spermatocyte	PFKP
PEG31	7.33E-177	0.784444374	0.563	0.262	4.50E-172	2.15E+00	PTM_cells	PEG3
TCF3	0	0.7843766	0.317	0.074	0	4.283783784	spermatogonia	TCF3
HDAC11	0	0.784266148	0.619	0.276	0	2.242753623	spermatid	HDAC11
AHSA1	1.11E-54	0.783983083	0.467	0.409	6.84E-50	1.14E+00	Sertoli_cells	AHSA1
CIR1	0	0.783901929	0.917	0.358	0	2.561452514	spermatocyte	CIR1
ECE1	3.26E-226	0.783679487	0.506	0.074	2.00E-221	6.84E+00	endotheliocyte	ECE1
IFITM1	0	0.78367503	0.454	0.021	0	21.61904762	endotheliocyte	IFITM1
RPL274	7.89E-94	0.783667819	0.852	0.659	4.84E-89	1.29E+00	VSM_cells	RPL27
CYB5R3	1.43E-189	0.783653443	0.548	0.217	8.75E-185	2.53E+00	Leydig_cells	CYB5R3
PDXK	0	0.783560607	0.995	0.725	0	1.372413793	spermatocyte	PDXK
RGS11	6.44E-30	0.783382489	0.2	0.013	3.95E-25	1.54E+01	mastocyte	RGS1
JMJD1C2	2.87E-19	0.782828583	0.515	0.369	1.76E-14	1.40E+00	macrophages	JMJD1C
RPS184	7.80E-99	0.782823472	0.928	0.852	4.78E-94	1.09E+00	VSM_cells	RPS18
MPST	0	0.782156037	0.89	0.302	0	2.947019868	spermatocyte	MPST
DST	2.05E-66	0.781872655	0.619	0.342	1.26E-61	1.81E+00	VSM_cells	DST
LRRCC1	0	0.781689296	0.95	0.372	0	2.553763441	spermatocyte	LRRCC1
12-Sep	0	0.781270542	0.949	0.353	0	2.688385269	spermatocyte	12-Sep
ESPN	1.39E-78	0.781185282	0.354	0.215	8.51E-74	1.65E+00	Sertoli_cells	ESPN
VSIG1	0	0.78091698	0.271	0.023	0	11.7826087	Sertoli_cells	VSIG1
KLF93	9.48E-114	0.780603699	0.503	0.153	5.82E-109	3.29E+00	VSM_cells	KLF9
BOLL	0	0.780509508	0.925	0.347	0	2.665706052	spermatocyte	BOLL
EPCAM	0	0.780500158	0.461	0.09	0	5.122222222	spermatogonia	EPCAM
GIMAP41	1.04E-35	0.780371688	0.237	0.012	6.38E-31	1.98E+01	T_cells	GIMAP4
THBS1	0	0.7801954	0.241	0.011	0	21.90909091	VSM_cells	THBS1
ATRX2	0	0.779961879	0.541	0.13	0	4.161538462	PTM_cells	ATRX
RBM25	0	0.779877466	0.729	0.435	0	1.675862069	spermatogonia	RBM25

YTHDF2	0	0.779827914	0.598	0.185	0	3.232432432	spermatogonia	YTHDF2
HPGDS	1.14E-49	0.779695455	0.1	0.002	6.99E-45	5.00E+01	mastocyte	HPGDS
NXF3	0	0.779576132	0.266	0.009	0	29.55555556	Sertoli_cells	NXF3
ATP5E	0	0.779520986	0.825	0.627	0	1.315789474	spermatogonia	ATP5E
FLJ27354	0	0.778996946	0.491	0.141	0	3.482269504	spermatid	FLJ27354
ATG9A	0	0.778994404	0.885	0.276	0	3.206521739	spermatocyte	ATG9A
TEX43	0	0.778669287	0.457	0.127	0	3.598425197	spermatid	TEX43
07-Sep	5.71E-80	0.778573474	0.846	0.654	3.50E-75	1.29E+00	VSM_cells	07-Sep
CD47	0	0.778101276	0.834	0.233	0	3.579399142	spermatocyte	CD47
RBM17	0	0.778002701	0.7	0.392	0	1.785714286	spermatogonia	RBM17
SYNE23	2.64E-07	0.77792362	0.395	0.135	0.016195589	2.925925926	T_cells	SYNE2
NUPR1	0	0.777878098	0.562	0.12	0	4.683333333	Leydig_cells	NUPR1
C3orf30	0	0.777791644	0.571	0.223	0	2.560538117	spermatid	C3orf30
SERPINB9	1.06E-104	0.777777164	0.253	0.03	6.51E-100	8.43E+00	macrophages	SERPINB9
AEBP12	1.43E-208	0.777477454	0.505	0.087	8.76E-204	5.80E+00	VSM_cells	AEBP1
01-Jun	2.24E-38	0.7774439	0.653	0.368	1.38E-33	1.77E+00	macrophages	JUN
KIAA0355	8.86E-151	0.777259487	0.506	0.112	5.43E-146	4.52E+00	endotheliocyte	KIAA0355
PTGIS	2.30E-252	0.777248539	0.38	0.038	1.41E-247	1.00E+01	endotheliocyte	PTGIS
FKBP2	0	0.777231105	0.647	0.399	0	1.621553885	spermatogonia	FKBP2
ALS2CR11	0	0.777151678	0.961	0.382	0	2.515706806	spermatocyte	ALS2CR11
RPL7A2	7.85E-100	0.777130911	0.937	0.878	4.82E-95	1.07E+00	VSM_cells	RPL7A
S100A16	0	0.777005024	0.551	0.061	0	9.032786885	endotheliocyte	S100A16
VRK1	0	0.776950003	0.566	0.219	0	2.584474886	spermatogonia	VRK1
FAM133A	3.10E-141	0.776905483	0.272	0.094	1.90E-136	2.89E+00	Sertoli_cells	FAM133A
CA2	0	0.776761638	0.474	0.097	0	4.886597938	spermatid	CA2
PLCB4	0	0.776598785	0.409	0.021	0	19.47619048	endotheliocyte	PLCB4
CCT3	0	0.776397474	0.791	0.517	0	1.529980658	spermatogonia	CCT3
CPM	2.44E-135	0.776142731	0.376	0.076	1.50E-130	4.95E+00	VSM_cells	CPM
KIAA1211	0	0.776113315	0.489	0.121	0	4.041322314	spermatid	KIAA1211
XAF11	1.18E-70	0.775852117	0.259	0.045	7.23E-66	5.76E+00	macrophages	XAF1
RPLP01	5.42E-88	0.775654602	0.901	0.739	3.33E-83	1.22E+00	endotheliocyte	RPLP0
USMG5	1.61E-17	0.775620399	0.501	0.558	9.85E-13	8.98E-01	Sertoli_cells	USMG5
TGM2	0	0.775576585	0.328	0.022	0	14.90909091	endotheliocyte	TGM2
CCL31	1.24E-17	0.774753077	0.211	0.019	7.59E-13	1.11E+01	T_cells	CCL3
SYCE3	0	0.774559661	0.901	0.38	0	2.371052632	spermatocyte	SYCE3
RB1CC1	0	0.774351617	0.69	0.453	0	1.523178808	spermatogonia	RB1CC1
FAM24A	0	0.77420314	0.47	0.114	0	4.122807018	spermatocyte	FAM24A
COL6A22	4.59E-195	0.773932177	0.573	0.117	2.81E-190	4.90E+00	VSM_cells	COL6A2
C11orf88	0	0.773572172	0.812	0.217	0	3.741935484	spermatocyte	C11orf88
CHSY1	0	0.77354931	0.369	0.06	0	6.15	Leydig_cells	CHSY1
PAGE5	0	0.773484376	0.374	0.09	0	4.155555556	spermatogonia	PAGE5
RPS112	4.58E-244	0.773437714	0.943	0.817	2.81E-239	1.15E+00	Leydig_cells	RPS11
RBM393	8.18E-05	0.773399341	0.632	0.479	1	1.319415449	T_cells	RBM39
PPIA7	2.94E-05	0.77317484	0.737	0.627	1	1.175438596	T_cells	PPIA
MT.ND4L1	1.86E-30	0.773072861	0.401	0.169	1.14E-25	2.37E+00	macrophages	MT.ND4L
CH17-140K24.2	0	0.772721818	0.562	0.21	0	2.676190476	spermatocyte	CH17-140K24.2
RPS94	1.28E-94	0.772693186	0.907	0.837	7.86E-90	1.08E+00	VSM_cells	RPS9
SEC621	1.03E-156	0.772689415	0.68	0.424	6.35E-152	1.60E+00	Leydig_cells	SEC62
LTBP2	0	0.772630065	0.426	0.022	0	19.36363636	PTM_cells	LTBP2
SPZ1	0	0.772603911	0.596	0.207	0	2.879227053	spermatid	SPZ1
RPS15A2	2.11E-223	0.772583396	0.896	0.78	1.30E-218	1.15E+00	PTM_cells	RPS15A
NCOA7	1.82E-217	0.772464641	0.414	0.053	1.12E-212	7.81E+00	endotheliocyte	NCOA7
RPS15A1	1.51E-189	0.772344232	0.912	0.78	9.29E-185	1.17E+00	Leydig_cells	RPS15A
APLNR	0	0.772324567	0.29	0.001	0	290	endotheliocyte	APLNR
MT-ND13	5.07E-223	0.772170017	0.773	0.392	3.11E-218	1.97E+00	PTM_cells	MT-ND1
PLAT	1.65E-140	0.772160952	0.233	0.025	1.01E-135	9.32E+00	endotheliocyte	PLAT
RPS284	9.94E-126	0.772126176	0.711	0.604	6.10E-121	1.18E+00	Sertoli_cells	RPS28
NFIB1	0	0.772108744	0.395	0.062	0	6.370967742	Leydig_cells	NFIB
TNFAIP81	4.17E-20	0.771953355	0.316	0.038	2.56E-15	8.32E+00	T_cells	TNFAIP8
GGN	0	0.771885208	0.958	0.37	0	2.589189189	spermatocyte	GGN
FTH14	2.15E-93	0.771856872	0.903	0.72	1.32E-88	1.25E+00	VSM_cells	FTH1
DPCD	0	0.771811601	0.957	0.488	0	1.961065574	spermatocyte	DPCD
ART3	0	0.771808078	0.541	0.335	0	1.614925373	spermatogonia	ART3
PRDX5	0	0.771544297	0.728	0.494	0	1.473684211	spermatogonia	PRDX5
AQP5	0	0.771495093	0.992	0.637	0	1.557299843	spermatocyte	AQP5
PODN1	0	0.771203517	0.457	0.029	0	15.75862069	PTM_cells	PODN
TBX18-AS1	0	0.770976012	0.387	0.2	0	1.935	spermatid	TBX18-AS1
RPS143	2.90E-241	0.770948435	0.923	0.827	1.78E-236	1.12E+00	PTM_cells	RPS14
MT.ND43	6.53E-06	0.770921647	0.349	0.376	0.400469526	0.928191489	Sertoli_cells	MT.ND4
IFITM34	1.08E-190	0.770556616	0.751	0.188	6.65E-186	3.99E+00	VSM_cells	IFITM3
RPS23P81	4.40E-21	0.770471852	0.293	0.221	2.70E-16	1.33E+00	Leydig_cells	RPS23P8
RBPJ1	2.06E-17	0.770449942	0.519	0.395	1.26E-12	1.31E+00	macrophages	RBPJ
NAT8L	0	0.770213668	0.271	0.011	0	24.63636364	Sertoli_cells	NAT8L
DNMT1	0	0.770211295	0.583	0.268	0	2.175373134	spermatogonia	DNMT1
PNRC13	5.26E-220	0.770203122	0.704	0.383	3.23E-215	1.84E+00	PTM_cells	PNRC1



KIF2C	0	0.770028326	0.704	0.463	0	1.520518359	spermatid	KIF2C
HSPE1	0	0.770015152	0.566	0.216	0	2.62037037	spermatogonia	HSPE1
PRM3	0	0.769970811	0.549	0.213	0	2.577464789	spermatid	PRM3
ACTRT3	0	0.769918747	0.648	0.366	0	1.770491803	spermatid	ACTRT3
RP6.91H8.2	0	0.769881806	0.354	0.119	0	2.974789916	spermatocyte	RP6.91H8.2
MT-ND35	1.43E-20	0.769838972	0.431	0.372	8.78E-16	1.16E+00	Sertoli_cells	MT-ND3
SEMA3D	3.14E-216	0.769823232	0.411	0.112	1.92E-211	3.67E+00	Leydig_cells	SEMA3D
PDE7A	0.000735354	0.76974632	0.263	0.115	1	2.286956522	T_cells	PDE7A
USP44	0	0.769308662	0.933	0.308	0	3.029220779	spermatocyte	USP44
ADAM28	0	0.769079839	0.269	0.007	0	38.42857143	macrophages	ADAM28
FSTL11	0	0.768984311	0.504	0.062	0	8.129032258	PTM_cells	FSTL1
PPP1CA	1.59E-07	0.76897123	0.342	0.102	0.009740752	3.352941176	T_cells	PPP1CA
FYN	4.04E-07	0.768760864	0.263	0.069	0.024776062	3.811594203	T_cells	FYN
CSTB	2.21E-257	0.768535635	0.534	0.16	1.36E-252	3.34E+00	Leydig_cells	CSTB
SMARCA5	0	0.768490301	0.675	0.366	0	1.844262295	spermatogonia	SMARCA5
DDB1	0	0.768398306	0.594	0.182	0	3.263736264	spermatogonia	DDB1
B4GALT11	9.70E-82	0.768107262	0.324	0.177	5.95E-77	1.83E+00	Sertoli_cells	B4GALT1
JAML	0	0.767992697	0.246	0.008	0	30.75	macrophages	JAML
ISLR	4.96E-208	0.76788729	0.476	0.069	3.04E-203	6.90E+00	endotheliocyte	ISLR
C6orf48	0	0.767839622	0.956	0.509	0	1.878192534	spermatocyte	C6orf48
ANKLE2	0	0.767728335	0.923	0.336	0	2.74702381	spermatocyte	ANKLE2
FNBP1	9.62E-07	0.767501994	0.342	0.116	0.059009181	2.948275862	T_cells	FNBP1
ABI3BP1	0	0.767373732	0.358	0.042	0	8.523809524	Leydig_cells	ABI3BP
MORF4L1	0	0.767218603	0.995	0.781	0	1.274007682	spermatocyte	MORF4L1
DUSP14	1.44E-130	0.767027131	0.603	0.179	8.85E-126	3.37E+00	VSM_cells	DUSP1
RP11-322N21.2	0	0.766608579	0.376	0.189	0	1.989417989	spermatid	RP11-322N21.2
FAM127A	0	0.766511531	0.408	0.066	0	6.181818182	Leydig_cells	FAM127A
ECE1	1.78E-276	0.76633047	0.355	0.068	1.09E-271	5.22E+00	Leydig_cells	ECE1
ATRX4	0.000126673	0.766207336	0.342	0.15	1	2.28	T_cells	ATRX
ITGA6	5.46E-79	0.766206465	0.489	0.173	3.35E-74	2.83E+00	endotheliocyte	ITGA6
RPS292	9.91E-264	0.766176124	0.868	0.888	6.08E-259	9.77E-01	Sertoli_cells	RPS29
SUPT16H	0	0.765966376	0.676	0.37	0	1.827027027	spermatogonia	SUPT16H
COLEC12	0	0.765915536	0.322	0.034	0	9.470588235	Leydig_cells	COLEC12
ZNF689	0	0.765890717	0.78	0.222	0	3.513513514	spermatocyte	ZNF689
ZNF677	0	0.765809137	0.629	0.42	0	1.497619048	spermatid	ZNF677
HBA2	8.06E-05	0.765807524	0.048	0.061	1	0.786885246	spermatid	HBA2
MT.ND23	5.10E-05	0.765358541	0.349	0.388	1	0.899484536	Sertoli_cells	MT.ND2
TGFB111	0	0.765345892	0.487	0.038	0	12.81578947	PTM_cells	TGFB111
COX5B	8.02E-59	0.76494934	0.579	0.576	4.92E-54	1.01E+00	Sertoli_cells	COX5B
ALDH2	4.47E-247	0.764930526	0.294	0.07	2.74E-242	4.20E+00	Sertoli_cells	ALDH2
HNRNPK	0	0.764792169	0.778	0.49	0	1.587755102	spermatogonia	HNRNPK
NDUFA8	0	0.764760892	0.963	0.503	0	1.914512922	spermatocyte	NDUFA8
CMA1	2.41E-301	0.7645633	0.16	0.001	1.48E-296	1.60E+02	mastocyte	CMA1
CRTAP3	9.29E-201	0.764558069	0.526	0.102	5.70E-196	5.16E+00	VSM_cells	CRTAP
GALNT3	0	0.764298913	0.818	0.159	0	5.144654088	spermatocyte	GALNT3
CT62	0	0.764148258	0.881	0.272	0	3.238970588	spermatocyte	CT62
HNRNPA13	2.29E-169	0.7639435	0.771	0.597	1.41E-164	1.29E+00	PTM_cells	HNRNPA1
HLA.DQA11	0.008439984	0.763915685	0.053	0.01	1	5.3	T_cells	HLA.DQA1
PSME15	0.000152273	0.763902396	0.263	0.098	1	2.683673469	T_cells	PSME1
KLF21	2.59E-45	0.763720359	0.458	0.166	1.59E-40	2.76E+00	macrophages	KLF2
AES3	3.00E-07	0.763716508	0.421	0.151	0.018426338	2.78807947	T_cells	AES
ARHGAP18	3.51E-23	0.76362035	0.296	0.131	2.15E-18	2.26E+00	macrophages	ARHGAP18
HEXIM1	7.81E-36	0.76353965	0.31	0.103	4.79E-31	3.01E+00	macrophages	HEXIM1
ARL6IP51	9.96E-27	0.763525547	0.407	0.203	6.11E-22	2.00E+00	macrophages	ARL6IP5
CD9	5.48E-57	0.763428513	0.315	0.092	3.36E-52	3.42E+00	endotheliocyte	CD9
CD96	2.58E-111	0.763382844	0.263	0.005	1.58E-106	5.26E+01	T_cells	CD96
GALM	0	0.763374556	0.446	0.021	0	21.23809524	PTM_cells	GALM
LRRC34	0	0.763261931	0.8	0.193	0	4.14507772	spermatocyte	LRRC34
ARL4A	0	0.763125345	0.99	0.698	0	1.418338109	spermatocyte	ARL4A
PSMB91	6.85E-11	0.763087272	0.237	0.038	4.20E-06	6.24E+00	T_cells	PSMB9
TACC14	2.03E-117	0.762644587	0.605	0.204	1.25E-112	2.97E+00	VSM_cells	TACC1
FAM173A	0	0.762595866	0.876	0.352	0	2.488636364	spermatocyte	FAM173A
RPS263	7.94E-155	0.762588232	0.735	0.528	4.87E-150	1.39E+00	PTM_cells	RPS26
ITGAM	0	0.762576782	0.249	0.004	0	62.25	macrophages	ITGAM
GATA3	6.38E-147	0.762545632	0.289	0.004	3.91E-142	7.23E+01	T_cells	GATA3
TXN2	7.48E-259	0.762137437	0.616	0.246	4.59E-254	2.50E+00	PTM_cells	TXN
SH3KBP1	2.12E-78	0.762017485	0.3	0.054	1.30E-73	5.56E+00	macrophages	SH3KBP1
RPL23A2	1.85E-206	0.761642771	0.879	0.73	1.14E-201	1.20E+00	PTM_cells	RPL23A
SAYSD1	0	0.76164217	0.919	0.367	0	2.504087193	spermatocyte	SAYSD1
TCF41	1.41E-115	0.761526358	0.553	0.325	8.67E-111	1.70E+00	Leydig_cells	TCF4
MT1M	0	0.761410821	0.407	0.031	0	13.12903226	endotheliocyte	MT1M
SLC44A2	1.31E-45	0.761044018	0.352	0.26	8.01E-41	1.35E+00	Sertoli_cells	SLC44A2
IQGAP13	1.73E-06	0.761019824	0.421	0.174	0.106170491	2.41954023	T_cells	IQGAP1
RPL273	5.04E-201	0.760833821	0.826	0.654	3.09E-196	1.26E+00	PTM_cells	RPL27
CYTH4	0	0.760630859	0.236	0.002	0	118	macrophages	CYTH4

GSTM3	0	0.760506157	0.996	0.823	0	1.210206561	spermatocyte	GSTM3
IFT57	0	0.760347544	0.865	0.7	0	1.235714286	spermatid	IFT57
FAU	5.03E-97	0.760331971	0.933	0.836	3.08E-92	1.12E+00	endotheliocyte	FAU
RPL294	3.27E-09	0.760326875	0.974	0.848	0.000200793	1.148584906	T_cells	RPL29
TSPAN1	0	0.760268555	0.501	0.08	0	6.2625	spermatid	TSPAN1
IFITM24	1.05E-138	0.760034956	0.577	0.158	6.47E-134	3.65E+00	VSM_cells	IFITM2
AP2S1	1.68E-28	0.759707844	0.434	0.43	1.03E-23	1.01E+00	Sertoli_cells	AP2S1
ATP5C1	2.90E-29	0.759679269	0.366	0.318	1.78E-24	1.15E+00	Sertoli_cells	ATP5C1
ANKRD44	1.42E-07	0.759667329	0.263	0.066	0.008718628	3.984848485	T_cells	ANKRD44
EZR2	3.36E-86	0.759579888	0.393	0.239	2.06E-81	1.64E+00	Sertoli_cells	EZR
EEF1D4	2.95E-05	0.759516267	0.737	0.63	1	1.16984127	T_cells	EEF1D
C1orf194	0	0.759000749	0.984	0.636	0	1.547169811	spermatocyte	C1orf194
SEPW1	1.25E-178	0.758961736	0.751	0.523	7.70E-174	1.44E+00	PTM_cells	SEPW1
CLIC12	5.70E-139	0.7589382	0.511	0.255	3.50E-134	2.00E+00	Leydig_cells	CLIC1
OVOL1	0	0.758804266	0.827	0.23	0	3.595652174	spermatocyte	OVOL1
PITHD1	0	0.758666359	0.614	0.211	0	2.909952607	spermatogonia	PITHD1
ACTB	1.59E-101	0.758601511	0.918	0.582	9.76E-97	1.58E+00	endotheliocyte	ACTB
CYTIP	8.70E-240	0.758419726	0.246	0.012	5.34E-235	2.05E+01	macrophages	CYTIP
CD8A	4.21E-102	0.758287921	0.211	0.003	2.58E-97	7.03E+01	T_cells	CD8A
CHCHD2	0	0.758232918	0.838	0.599	0	1.398998331	spermatogonia	CHCHD2
MT.CYB2	2.58E-15	0.758099566	0.378	0.333	1.58E-10	1.14E+00	Leydig_cells	MT.CYB
RPL23AP421	4.64E-21	0.758080188	0.311	0.239	2.85E-16	1.30E+00	Leydig_cells	RPL23AP42
PEAR1	0	0.757469093	0.334	0.035	0	9.542857143	Leydig_cells	PEAR1
FLNB	5.13E-194	0.757305674	0.459	0.073	3.15E-189	6.29E+00	endotheliocyte	FLNB
TBC1D21	0	0.75714488	0.639	0.26	0	2.457692308	spermatid	TBC1D21
DYNLL2	0	0.757119601	0.733	0.561	0	1.306595365	spermatid	DYNLL2
NDN1	0	0.756873389	0.549	0.13	0	4.223076923	PTM_cells	NDN
WHSC1L1	0.002238302	0.756846748	0.447	0.325	1	1.375384615	T_cells	WHSC1L1
PLIN2	1.84E-20	0.756619983	0.226	0.084	1.13E-15	2.69E+00	macrophages	PLIN2
POLR2J	0	0.756564244	0.597	0.295	0	2.023728814	spermatogonia	POLR2J
TRMT6	0	0.756430991	0.486	0.051	0	9.529411765	spermatogonia	TRMT6
PCSK1N	0	0.756367161	0.302	0.06	0	5.033333333	spermatogonia	PCSK1N
BCCIP	0	0.756067341	0.596	0.195	0	3.056410256	spermatogonia	BCCIP
RPL92	1.33E-300	0.755839396	0.943	0.871	8.16E-296	1.08E+00	PTM_cells	RPL9
C11orf74	0	0.75574586	0.92	0.386	0	2.383419689	spermatocyte	C11orf74
IFI27L21	1.02E-142	0.755502745	0.254	0.08	6.25E-138	3.18E+00	Sertoli_cells	IFI27L2
CIRBP4	4.43E-86	0.755424638	0.795	0.442	2.72E-81	1.80E+00	VSM_cells	CIRBP
PSIP1	0	0.755195844	0.68	0.465	0	1.462365591	spermatogonia	PSIP1
CHD5	0	0.754974141	0.59	0.252	0	2.341269841	spermatid	CHD5
CELF2	4.08E-18	0.754745846	0.424	0.27	2.50E-13	1.57E+00	macrophages	CELF2
RPL13AP52	7.72E-58	0.754601381	0.231	0.098	4.74E-53	2.36E+00	Leydig_cells	RPL13AP5
LGALS33	9.08E-121	0.754252568	0.611	0.202	5.57E-116	3.02E+00	VSM_cells	LGALS3
MFGE8	0	0.754155425	0.42	0.079	0	5.316455696	Leydig_cells	MFGE8
SPARC3	6.70E-136	0.754093477	0.719	0.241	4.11E-131	2.98E+00	VSM_cells	SPARC
DPH7	0	0.753922563	0.295	0.045	0	6.555555556	spermatogonia	DPH7
ZCCHC24	0	0.75380006	0.35	0.056	0	6.25	Leydig_cells	ZCCHC24
SLC25A61	4.09E-40	0.75379623	0.468	0.194	2.51E-35	2.41E+00	macrophages	SLC25A6
RAB311	0	0.753714902	0.5	0.075	0	6.666666667	PTM_cells	RAB31
C19orf60	1.24E-08	0.753588219	0.368	0.106	0.000757662	3.471698113	T_cells	C19orf60
PDLIM5	1.52E-93	0.753534534	0.476	0.168	9.33E-89	2.83E+00	VSM_cells	PDLIM5
AP1S21	2.50E-57	0.75348992	0.367	0.1	1.53E-52	3.67E+00	macrophages	AP1S2
RHEB	0	0.753433978	0.546	0.27	0	2.022222222	spermatogonia	RHEB
BEX5	0	0.753337469	0.235	0.01	0	23.5	Sertoli_cells	BEX5
RPL91	1.15E-259	0.753326822	0.958	0.871	7.08E-255	1.10E+00	Leydig_cells	RPL9
MT.CO21	7.40E-30	0.753229823	0.576	0.333	4.54E-25	1.73E+00	macrophages	MT.CO2
RPL83	2.35E-104	0.753174251	0.928	0.854	1.44E-99	1.09E+00	VSM_cells	RPL8
DHX57	0	0.753129614	0.56	0.23	0	2.434782609	spermatid	DHX57
PEA15	2.02E-08	0.753073187	0.444	0.385	0.001237036	1.153246753	macrophages	PEA15
RPL272	2.39E-172	0.752920433	0.821	0.656	1.47E-167	1.25E+00	Leydig_cells	RPL27
11-Mar	0	0.75249818	0.839	0.219	0	3.831050228	spermatocyte	11-Mar
PELI1	6.67E-41	0.752385729	0.303	0.093	4.09E-36	3.26E+00	macrophages	PELI1
PTPN7	6.49E-29	0.752294971	0.263	0.019	3.98E-24	1.38E+01	T_cells	PTPN7
CPEB1	0	0.752046669	0.493	0.141	0	3.496453901	spermatogonia	CPEB1
YWHAB1	8.44E-87	0.751892964	0.737	0.347	5.18E-82	2.12E+00	endotheliocyte	YWHAB
PRKAR2A	0	0.751812355	0.708	0.544	0	1.301470588	spermatid	PRKAR2A
RPL344	4.94E-07	0.751750839	0.947	0.906	0.030284926	1.045253863	T_cells	RPL34
UBE2E3	0	0.751749705	0.572	0.221	0	2.588235294	spermatogonia	UBE2E3
FSIP2	0	0.751521185	0.9	0.331	0	2.719033233	spermatocyte	FSIP2
FOXO3	1.08E-16	0.751458037	0.286	0.143	6.64E-12	2.00E+00	macrophages	FOXO3
STAT3	6.19E-78	0.751430043	0.588	0.263	3.80E-73	2.24E+00	endotheliocyte	STAT3
CMTM61	1.06E-84	0.751116794	0.329	0.182	6.53E-80	1.81E+00	Sertoli_cells	CMTM6
ATP5A1	0	0.751056118	0.728	0.458	0	1.589519651	spermatogonia	ATP5A1
NDUFA1	1.84E-69	0.750645185	0.377	0.24	1.13E-64	1.57E+00	Sertoli_cells	NDUFA1
TSACC	0	0.750601501	0.999	0.919	0	1.087051143	spermatocyte	TSACC
RBM33	4.12E-220	0.749822748	0.595	0.212	2.53E-215	2.81E+00	Leydig_cells	RBM3

MID1IP1	0	0.749719879	0.258	0.041	0	6.292682927	Sertoli_cells	MID1IP1
SLC25A6	1.81E-132	0.749512323	0.663	0.19	1.11E-127	3.49E+00	endotheliocyte	SLC25A6
TPM43	9.03E-79	0.748582328	0.548	0.232	5.54E-74	2.36E+00	VSM_cells	TPM4
RPS210	1.87E-51	0.74848869	0.879	0.675	1.15E-46	1.30E+00	macrophages	RPS2
CLU	4.35E-67	0.748452847	0.846	0.66	2.67E-62	1.28E+00	endotheliocyte	CLU
MT-ND31	2.97E-63	0.748345249	0.722	0.37	1.82E-58	1.95E+00	endotheliocyte	MT-ND3
NFIC1	4.96E-275	0.74818513	0.616	0.229	3.04E-270	2.69E+00	PTM_cells	NFIC
CDH11	0	0.747732345	0.433	0.033	0	13.12121212	PTM_cells	CDH11
RAB11FIP4	0	0.747539441	0.598	0.266	0	2.248120301	spermatid	RAB11FIP4
ADAP2	1.69E-227	0.747532123	0.226	0.011	1.04E-222	2.05E+01	macrophages	ADAP2
MIR7515HG	0	0.747462202	0.545	0.215	0	2.534883721	spermatid	MIR7515HG
FTH1	4.45E-91	0.747456401	0.943	0.72	2.73E-86	1.31E+00	endotheliocyte	FTH1
RIBC2	0	0.747266111	0.898	0.298	0	3.013422819	spermatocyte	RIBC2
WFDC3	0	0.747007566	0.807	0.272	0	2.966911765	spermatocyte	WFDC3
CXCL12	7.26E-75	0.746822065	0.194	0.031	4.46E-70	6.26E+00	endotheliocyte	CXCL12
ALDH6A1	1.30E-168	0.746743149	0.299	0.101	7.97E-164	2.96E+00	Sertoli_cells	ALDH6A1
S100A13	1.26E-190	0.746712291	0.563	0.107	7.74E-186	5.26E+00	endotheliocyte	S100A13
MT.ATP62	2.17E-13	0.746690872	0.381	0.346	1.33E-08	1.10E+00	Leydig_cells	MT.ATP6
PSME12	0	0.746628185	0.421	0.084	0	5.011904762	Leydig_cells	PSME1
RPS27A2	1.35E-203	0.746553949	0.934	0.858	8.30E-199	1.09E+00	Leydig_cells	RPS27A
METTL23	0	0.746515017	0.855	0.332	0	2.575301205	spermatocyte	METTL23
CASP8	1.69E-10	0.746397587	0.184	0.025	1.04E-05	7.36E+00	T_cells	CASP8
LSM10	6.01E-145	0.74621673	0.258	0.083	3.69E-140	3.11E+00	Sertoli_cells	LSM10
SERPINB1	2.33E-254	0.746130582	0.437	0.05	1.43E-249	8.74E+00	endotheliocyte	SERPINB1
HSD17B111	2.45E-10	0.746129767	0.237	0.041	1.50E-05	5.78E+00	T_cells	HSD17B11
CIRBP2	3.18E-184	0.746120584	0.781	0.434	1.95E-179	1.80E+00	Leydig_cells	CIRBP
NUPR12	6.91E-196	0.746037512	0.617	0.13	4.24E-191	4.75E+00	VSM_cells	NUPR1
EMP33	0	0.745903941	0.563	0.144	0	3.909722222	PTM_cells	EMP3
VIMP	0	0.745733658	0.688	0.394	0	1.746192893	spermatogonia	VIMP
PPFIBP1	4.44E-225	0.745535537	0.414	0.051	2.72E-220	8.12E+00	endotheliocyte	PPFIBP1
RPL236	1.19E-06	0.745441678	0.816	0.703	0.072908752	1.160739687	T_cells	RPL23
PGAM2	0	0.745210629	0.952	0.436	0	2.183486239	spermatocyte	PGAM2
MLLT10	0	0.745020967	0.588	0.411	0	1.430656934	spermatogonia	MLLT10
PREX1	1.23E-63	0.74495087	0.279	0.058	7.55E-59	4.81E+00	macrophages	PREX1
ILF3	0	0.744902843	0.688	0.354	0	1.943502825	spermatogonia	ILF3
SMIM20	7.62E-62	0.744807057	0.261	0.141	4.68E-57	1.85E+00	Sertoli_cells	SMIM20
LRRC73	0	0.744749985	0.923	0.317	0	2.911671924	spermatocyte	LRRC73
GINS2	0	0.744422413	0.405	0.049	0	8.265306122	spermatogonia	GINS2
GUK1	7.38E-70	0.744318367	0.757	0.505	4.53E-65	1.50E+00	endotheliocyte	GUK1
SLC7A2	1.13E-165	0.74423491	0.431	0.084	6.94E-161	5.13E+00	VSM_cells	SLC7A2
RP11.466H18.11	3.37E-61	0.74420891	0.219	0.037	2.06E-56	5.92E+00	macrophages	RP11.466H18.1
RPL9P9	2.86E-15	0.744009025	0.384	0.245	1.76E-10	1.57E+00	macrophages	RPL9P9
RPLP11	9.80E-55	0.743976673	0.933	0.765	6.01E-50	1.22E+00	macrophages	RPLP1
SYPL1	0	0.743792368	0.976	0.593	0	1.645868465	spermatocyte	SYPL1
AKIRIN1	0	0.743760334	0.686	0.564	0	1.216312057	spermatid	AKIRIN1
SPANXB1	0	0.743753859	0.557	0.214	0	2.602803738	spermatid	SPANXB1
GRK2	1.62E-37	0.743458267	0.209	0.05	9.91E-33	4.18E+00	macrophages	GRK2
ATP1A11	6.66E-54	0.743449687	0.376	0.281	4.08E-49	1.34E+00	Sertoli_cells	ATP1A1
MFSD1	5.08E-42	0.743396254	0.293	0.087	3.12E-37	3.37E+00	macrophages	MFSD1
CITED2	5.57E-53	0.7428463	0.286	0.067	3.42E-48	4.27E+00	macrophages	CITED2
SLIT1-AS1	0	0.742504859	0.341	0.105	0	3.247619048	spermatid	SLIT1-AS1
CPED11	0	0.742395135	0.4	0.033	0	12.12121212	VSM_cells	CPED1
C1QBP	0	0.742240011	0.455	0.242	0	1.880165289	spermatogonia	C1QBP
CDK11B	0	0.742236897	0.681	0.302	0	2.254966887	spermatogonia	CDK11B
SLC38A2	8.68E-32	0.742199443	0.32	0.116	5.33E-27	2.76E+00	macrophages	SLC38A2
APP	2.23E-75	0.742158392	0.69	0.341	1.37E-70	2.02E+00	endotheliocyte	APP
LITAF2	5.60E-180	0.741715507	0.45	0.085	3.44E-175	5.29E+00	VSM_cells	LITAF
MTCH2	0	0.741571159	0.973	0.542	0	1.795202952	spermatocyte	MTCH2
RPL7A	2.82E-92	0.741564699	0.97	0.878	1.73E-87	1.10E+00	endotheliocyte	RPL7A
TCEAL32	1.22E-245	0.741562148	0.303	0.073	7.48E-241	4.15E+00	Sertoli_cells	TCEAL3
SLC25A37	0	0.740991432	0.752	0.546	0	1.377289377	spermatid	SLC25A37
YWHAH1	1.82E-151	0.740802899	0.442	0.094	1.12E-146	4.70E+00	VSM_cells	YWHAH
PKHD1	0	0.740699391	0.489	0.28	0	1.746428571	spermatid	PKHD1
TSPO3	0	0.740483546	0.518	0.071	0	7.295774648	PTM_cells	TSPO
PRDM11	1.02E-16	0.740414041	0.184	0.016	6.25E-12	1.15E+01	T_cells	PRDM1
IL18	1.42E-141	0.740383959	0.259	0.025	8.72E-137	1.04E+01	macrophages	IL18
KHDRBS1	0	0.740381153	0.656	0.32	0	2.05	spermatogonia	KHDRBS1
CHCHD10	1.04E-130	0.740308108	0.467	0.121	6.36E-126	3.86E+00	VSM_cells	CHCHD10
PDZD8	0	0.740195538	0.636	0.337	0	1.887240356	spermatid	PDZD8
ATP6V0B	0	0.740051159	0.556	0.121	0	4.595041322	spermatogonia	ATP6V0B
RPL10P33	0.004042033	0.739574585	0.158	0.056	1	2.821428571	T_cells	RPL10P3
C6orf99	0	0.739490955	0.974	0.484	0	2.012396694	spermatocyte	C6orf99
HLA.E2	5.44E-132	0.738989823	0.231	0.056	3.34E-127	4.13E+00	Leydig_cells	HLA.E
HLA-DMB	0	0.738863968	0.229	0.004	0	57.25	macrophages	HLA-DMB
COMT2	6.24E-179	0.738773252	0.299	0.092	3.83E-174	3.25E+00	Sertoli_cells	COMT

CLEC2B	3.19E-222	0.738760801	0.266	0.016	1.95E-217	1.66E+01	macrophages	CLEC2B
ECH1	2.98E-28	0.738732472	0.407	0.39	1.83E-23	1.04E+00	Sertoli_cells	ECH1
CYP1B1	3.62E-85	0.738447119	0.341	0.156	2.22E-80	2.19E+00	Leydig_cells	CYP1B1
MT-ND22	7.58E-84	0.738413712	0.606	0.405	4.65E-79	1.50E+00	Leydig_cells	MT-ND2
DDX5	4.59E-88	0.738326186	0.916	0.762	2.82E-83	1.20E+00	endotheliocyte	DDX5
ZCRB1	0	0.738148088	0.966	0.588	0	1.642857143	spermatocyte	ZCRB1
EMB1	1.07E-16	0.73814614	0.211	0.021	6.54E-12	1.00E+01	T_cells	EMB
MTRNR2L1	2.57E-179	0.737876427	0.248	0.066	1.57E-174	3.76E+00	Sertoli_cells	MTRNR2L1
VEGFB	0	0.737696837	0.444	0.037	0	12	PTM_cells	VEGFB
SLC1A5	0	0.737593149	0.746	0.155	0	4.812903226	spermatocyte	SLC1A5
RPS244	1.93E-100	0.737506871	0.945	0.885	1.18E-95	1.07E+00	VSM_cells	RPS24
VIM5	2.65E-09	0.737497396	0.789	0.452	0.000162344	1.745575221	T_cells	VIM
RPL34P182	2.14E-21	0.737418271	0.279	0.204	1.31E-16	1.37E+00	Leydig_cells	RPL34P18
LSM2	0	0.737256185	0.47	0.114	0	4.122807018	spermatogonia	LSM2
TPP1	1.41E-55	0.737111745	0.246	0.05	8.63E-51	4.92E+00	macrophages	TPP1
HLA.A2	4.18E-45	0.737000637	0.261	0.134	2.57E-40	1.95E+00	Leydig_cells	HLA.A
JAM2	6.57E-150	0.736997653	0.471	0.097	4.03E-145	4.86E+00	endotheliocyte	JAM2
TPD52L1	6.58E-294	0.736995349	0.4	0.037	4.04E-289	1.08E+01	endotheliocyte	TPD52L1
XRCC6BP1	0	0.736982484	0.555	0.188	0	2.95212766	spermatocyte	XRCC6BP1
CNN3	2.54E-116	0.736822291	0.582	0.355	1.56E-111	1.64E+00	Leydig_cells	CNN3
PQLC1	0	0.736615687	0.629	0.35	0	1.797142857	spermatid	PQLC1
CEP55	0	0.736571505	0.776	0.149	0	5.208053691	spermatocyte	CEP55
CST8	0	0.736288287	0.478	0.082	0	5.829268293	spermatid	CST8
LZTFL1	0	0.736264816	0.895	0.25	0	3.58	spermatocyte	LZTFL1
CTSL	0	0.736235824	0.546	0.202	0	2.702970297	spermatogonia	CTSL
DNAJC18	0	0.735665447	0.687	0.399	0	1.721804511	spermatid	DNAJC18
BIRC3	4.43E-70	0.735531762	0.199	0.027	2.72E-65	7.37E+00	macrophages	BIRC3
MGST3	3.25E-233	0.735523933	0.611	0.222	1.99E-228	2.75E+00	Leydig_cells	MGST3
SRSF51	5.28E-24	0.735487905	0.694	0.601	3.24E-19	1.15E+00	macrophages	SRSF5
NFKBIZ3	1.27E-125	0.73521261	0.438	0.103	7.79E-121	4.25E+00	VSM_cells	NFKBIZ
CYBRD11	0	0.735069648	0.48	0.04	0	12	PTM_cells	CYBRD1
CORO2A	0	0.734842399	0.264	0.017	0	15.52941176	Sertoli_cells	CORO2A
RP11-231D20.2	0	0.734757386	0.56	0.2	0	2.8	spermatocyte	RP11-231D20.2
APP2	2.82E-227	0.734696881	0.681	0.329	1.73E-222	2.07E+00	PTM_cells	APP
PCMTD1	3.62E-121	0.734592106	0.499	0.128	2.22E-116	3.90E+00	endotheliocyte	PCMTD1
ZNF846	0	0.734453848	0.806	0.246	0	3.276422764	spermatocyte	ZNF846
PABPC4	5.11E-296	0.734290847	0.527	0.323	3.14E-291	1.63E+00	spermatogonia	PABPC4
MT-ATP6	3.18E-55	0.733715328	0.734	0.43	1.95E-50	1.71E+00	endotheliocyte	MT-ATP6
ZNF428	7.36E-71	0.733615029	0.458	0.386	4.52E-66	1.19E+00	spermatogonia	ZNF428
PSD3	0	0.73353455	0.643	0.348	0	1.847701149	spermatid	PSD3
LINC00943	0	0.733182891	0.657	0.336	0	1.955357143	spermatid	LINC00943
RPL9P9	1.24E-15	0.73304205	0.297	0.245	7.60E-11	1.21E+00	Leydig_cells	RPL9P9
ARHGAP21	9.17E-194	0.732884087	0.456	0.153	5.62E-189	2.98E+00	Leydig_cells	ARHGAP21
THBD	0	0.732689905	0.387	0.033	0	11.72727273	PTM_cells	THBD
PLS3	2.95E-170	0.732644822	0.449	0.075	1.81E-165	5.99E+00	endotheliocyte	PLS3
PRDX12	6.12E-125	0.732631941	0.529	0.307	3.75E-120	1.72E+00	Sertoli_cells	PRDX1
MT.ND52	1.07E-17	0.73241227	0.375	0.315	6.58E-13	1.19E+00	Leydig_cells	MT.ND5
RPLP0	9.26E-269	0.73234804	0.811	0.722	5.68E-264	1.12E+00	spermatogonia	RPLP0
LRTOMT	0	0.732238886	0.695	0.507	0	1.370808679	spermatid	LRTOMT
SSMEM1	0	0.732211867	0.852	0.28	0	3.042857143	spermatocyte	SSMEM1
HSPA1A3	9.44E-155	0.73185259	0.626	0.35	5.79E-150	1.79E+00	PTM_cells	HSPA1A
KCNAB1	4.06E-272	0.731765766	0.391	0.044	2.49E-267	8.89E+00	VSM_cells	KCNAB1
ADAM15	0	0.731713634	0.429	0.025	0	17.16	endotheliocyte	ADAM15
DUSP22	0	0.731666917	0.504	0.209	0	2.411483254	spermatogonia	DUSP22
ANKRD31	0	0.731505662	0.436	0.069	0	6.31884058	spermatogonia	ANKRD31
KRT10	0	0.731170776	0.742	0.361	0	2.055401662	spermatocyte	KRT10
OLAH	0	0.731151041	0.494	0.238	0	2.075630252	spermatid	OLAH
PPIA4	7.81E-196	0.731009137	0.826	0.617	4.79E-191	1.34E+00	PTM_cells	PPIA
CCDC73	0	0.730978551	0.37	0.032	0	11.5625	spermatogonia	CCDC73
SLC39A3	0	0.730825678	0.917	0.412	0	2.225728155	spermatocyte	SLC39A3
TRIM56	2.62E-274	0.730778452	0.437	0.046	1.60E-269	9.50E+00	endotheliocyte	TRIM56
SNAI1	1.09E-275	0.730595486	0.409	0.041	6.69E-271	9.98E+00	endotheliocyte	SNAI1
EFCAB6	0	0.730518193	0.651	0.381	0	1.708661417	spermatid	EFCAB6
MT.CO11	8.03E-28	0.730291888	0.572	0.337	4.92E-23	1.70E+00	macrophages	MT.CO1
CDHR2	0	0.730273031	0.45	0.088	0	5.113636364	spermatid	CDHR2
ARL6IP1	5.65E-279	0.730114789	0.584	0.434	3.47E-274	1.35E+00	spermatogonia	ARL6IP1
LINC-PINT	3.39E-10	0.730112915	0.184	0.026	2.08E-05	7.08E+00	T_cells	LINC-PINT
C8orf88	0	0.73007735	0.928	0.409	0	2.268948655	spermatocyte	C8orf88
RPS81	5.81E-55	0.729630239	0.919	0.775	3.57E-50	1.19E+00	macrophages	RPS8
NPM1	0	0.729527072	0.874	0.648	0	1.348765432	spermatogonia	NPM1
CD46	0	0.729456977	0.464	0.288	0	1.611111111	spermatid	CD46
PDE2A	0	0.729394497	0.345	0.014	0	24.64285714	endotheliocyte	PDE2A
EIF4A23	3.75E-199	0.729072935	0.765	0.451	2.30E-194	1.70E+00	PTM_cells	EIF4A2
MT-CYB	2.88E-160	0.72897341	0.504	0.369	1.76E-155	1.37E+00	spermatogonia	MT-CYB
FAM98A	1.64E-51	0.728929327	0.39	0.297	1.00E-46	1.31E+00	Sertoli_cells	FAM98A

PMP221	0	0.728534886	0.546	0.141	0	3.872340426	PTM_cells	PMP22
DCUN1D5	0	0.728472779	0.506	0.086	0	5.88372093	spermatogonia	DCUN1D5
GOLGA6L2	0	0.728317951	0.653	0.216	0	3.023148148	spermatocyte	GOLGA6L2
NFKBIA5	8.89E-92	0.728247375	0.379	0.203	5.46E-87	1.87E+00	Sertoli_cells	NFKBIA
GIGYF2	0	0.728237735	0.663	0.402	0	1.649253731	spermatid	GIGYF2
CIRBP	0	0.728034428	0.732	0.37	0	1.978378378	spermatogonia	CIRBP
PSMG2	0	0.728008107	0.955	0.512	0	1.865234375	spermatocyte	PSMG2
DDX52	2.48E-09	0.727958937	0.921	0.764	0.000152315	1.205497382	T_cells	DDX5
BST24	8.35E-212	0.727941926	0.575	0.106	5.12E-207	5.42E+00	VSM_cells	BST2
RP11-402G3.5	0	0.727859982	0.366	0.175	0	2.091428571	spermatid	RP11-402G3.5
OSR1	0	0.727753408	0.285	0.017	0	16.76470588	Leydig_cells	OSR1
RILPL2	0.000552478	0.727740164	0.211	0.075	1	2.813333333	T_cells	RILPL2
MAD2L1	0	0.727535894	0.459	0.044	0	10.43181818	spermatogonia	MAD2L1
MYL6	3.43E-98	0.727490198	0.913	0.661	2.10E-93	1.38E+00	endotheliocyte	MYL6
TSG101	0	0.727342471	0.662	0.339	0	1.95280236	spermatogonia	TSG101
C12orf75	2.46E-23	0.72728071	0.46	0.472	1.51E-18	9.75E-01	Sertoli_cells	C12orf75
ADGRE5	3.52E-91	0.727226114	0.195	0.021	2.16E-86	9.29E+00	macrophages	ADGRE5
TCFL5	0	0.726839801	0.772	0.229	0	3.371179039	spermatocyte	TCFL5
RUNX1	8.32E-20	0.726829806	0.266	0.118	5.10E-15	2.25E+00	macrophages	RUNX1
SUN21	3.95E-08	0.72674363	0.316	0.084	0.002422895	3.761904762	T_cells	SUN2
GOLGA4	0	0.726559161	0.755	0.571	0	1.322241681	spermatogonia	GOLGA4
PRNP	1.65E-116	0.726385214	0.465	0.228	1.02E-111	2.04E+00	Leydig_cells	PRNP
EVL	0.001832898	0.726283687	0.263	0.123	1	2.138211382	T_cells	EVL
ARL6IP5	1.28E-104	0.725999536	0.596	0.199	7.86E-100	2.99E+00	endotheliocyte	ARL6IP5
CCNI2	2.29E-219	0.725948998	0.794	0.535	1.40E-214	1.48E+00	PTM_cells	CCNI
REEP5	0	0.725855603	0.931	0.411	0	2.265206813	spermatocyte	REEP5
DAW1	0	0.72576335	0.812	0.244	0	3.327868852	spermatocyte	DAW1
CCDC34	0	0.725751926	0.973	0.49	0	1.985714286	spermatocyte	CCDC34
DPYSL2	3.34E-193	0.725526334	0.509	0.086	2.05E-188	5.92E+00	endotheliocyte	DPYSL2
TMED2	0	0.725522385	0.532	0.16	0	3.325	spermatogonia	TMED2
IER53	1.12E-104	0.725471965	0.452	0.13	6.90E-100	3.48E+00	VSM_cells	IER5
LTBP31	0	0.725363154	0.477	0.069	0	6.913043478	PTM_cells	LTBP3
SLC25A51	7.97E-124	0.72528983	0.345	0.146	4.89E-119	2.36E+00	Sertoli_cells	SLC25A5
RASSF8	0	0.725001421	0.721	0.493	0	1.462474645	spermatid	RASSF8
MCHR2.AS1	0	0.724955202	0.378	0.092	0	4.108695652	spermatocyte	MCHR2.AS1
PRELID1	0	0.724871983	0.456	0.094	0	4.85106383	spermatogonia	PRELID1
COL6A31	0	0.724836055	0.474	0.061	0	7.770491803	PTM_cells	COL6A3
LMO41	0	0.724816757	0.541	0.119	0	4.546218487	PTM_cells	LMO4
ID2	3.51E-122	0.724624798	0.499	0.12	2.15E-117	4.16E+00	endotheliocyte	ID2
SBDS	0	0.724577	0.662	0.535	0	1.237383178	spermatid	SBDS
CDRT15	0	0.724389832	0.705	0.229	0	3.07860262	spermatocyte	CDRT15
THBD2	0	0.724252912	0.3	0.039	0	7.692307692	Leydig_cells	THBD
AURKC	0	0.724148696	0.89	0.254	0	3.503937008	spermatocyte	AURKC
CAPNS1	0	0.72412875	0.924	0.397	0	2.327455919	spermatocyte	CAPNS1
RPL371	2.56E-40	0.723816102	0.869	0.805	1.57E-35	1.08E+00	macrophages	RPL37
DMRTB1	0	0.723771587	0.584	0.357	0	1.635854342	spermatogonia	DMRTB1
ELL2	1.04E-21	0.723749767	0.253	0.1	6.40E-17	2.53E+00	macrophages	ELL2
GLB1L	0	0.723620012	0.773	0.192	0	4.026041667	spermatocyte	GLB1L
FTH15	1.23E-273	0.723492572	0.896	0.711	7.53E-269	1.26E+00	Sertoli_cells	FTH1
PDCD4	8.68E-57	0.723467691	0.571	0.284	5.32E-52	2.01E+00	endotheliocyte	PDCD4
TAF12	0	0.72346467	0.51	0.243	0	2.098765432	spermatogonia	TAF12
MCL1	7.79E-59	0.723427969	0.764	0.526	4.78E-54	1.45E+00	endotheliocyte	MCL1
LAMB1	5.35E-167	0.723387967	0.308	0.079	3.28E-162	3.90E+00	Leydig_cells	LAMB1
GSTP11	1.65E-48	0.723216871	0.481	0.171	1.01E-43	2.81E+00	macrophages	GSTP1
RBBP8	0	0.723023152	0.556	0.178	0	3.123595506	spermatogonia	RBBP8
CCDC80	0	0.722892784	0.576	0.256	0	2.25	spermatid	CCDC80
ILK1	1.14E-65	0.722877301	0.55	0.288	7.02E-61	1.91E+00	VSM_cells	ILK
VDAC2	0	0.722734719	0.905	0.432	0	2.094907407	spermatocyte	VDAC2
RAI14	0	0.722681199	0.614	0.334	0	1.838323353	spermatid	RAI14
CSNK2B	0	0.722611742	0.972	0.561	0	1.732620321	spermatocyte	CSNK2B
TLR7	0	0.722536559	0.215	0.001	0	215	macrophages	TLR7
AC022007.5	0	0.72252246	0.853	0.238	0	3.584033613	spermatocyte	AC022007.5
ARHGAP9	0	0.722474798	0.832	0.191	0	4.356020942	spermatocyte	ARHGAP9
RPS27L	1.22E-137	0.722399738	0.578	0.338	7.50E-133	1.71E+00	PTM_cells	RPS27L
SERP2	0	0.722288623	0.559	0.265	0	2.109433962	spermatid	SERP2
RTN4	0	0.722288466	0.964	0.592	0	1.628378378	spermatocyte	RTN4
IER3IP1	0	0.722271967	0.482	0.149	0	3.234899329	spermatogonia	IER3IP1
GNB5	0	0.722113142	0.457	0.056	0	8.160714286	PTM_cells	GNB5
RASSF21	0	0.721524571	0.453	0.087	0	5.206896552	PTM_cells	RASSF2
GSN4	6.26E-163	0.721439725	0.698	0.207	3.84E-158	3.37E+00	VSM_cells	GSN
ATP6V1A	0	0.721393661	0.595	0.344	0	1.729651163	spermatid	ATP6V1A
MARCKSL1	5.98E-229	0.721194831	0.598	0.209	3.67E-224	2.86E+00	Leydig_cells	MARCKSL1
C11orf70	0	0.720487855	0.875	0.314	0	2.786624204	spermatocyte	C11orf70
FABP4	3.05E-14	0.720371829	0.025	0.003	1.87E-09	8.33E+00	endotheliocyte	FABP4
FLI1	0	0.720236249	0.395	0.003	0	131.6666667	endotheliocyte	FLI1



SYCN	0	0.720215333	0.188	0.009	0	20.88888889	Sertoli_cells	SYCN
TEX12	0	0.719768318	0.395	0.033	0	11.96969697	spermatogonia	TEX12
RNF144B	6.46E-66	0.719745148	0.209	0.032	3.96E-61	6.53E+00	macrophages	RNF144B
NDUFB113	6.69E-08	0.7194345	0.395	0.127	0.00410186	3.11023622	T_cells	NDUFB11
DEK1	4.59E-114	0.719294496	0.609	0.21	2.82E-109	2.90E+00	VSM_cells	DEK
CTNNB1	1.61E-98	0.719251129	0.543	0.177	9.87E-94	3.07E+00	endotheliocyte	CTNNB1
COL18A1	0	0.719222535	0.39	0.071	0	5.492957746	Leydig_cells	COL18A1
SMARCA2	0	0.719186973	0.743	0.294	0	2.527210884	spermatocyte	SMARCA2
C1orf105	0	0.719125631	0.846	0.265	0	3.19245283	spermatocyte	C1orf105
RPL17	2.03E-44	0.719099267	0.596	0.372	1.24E-39	1.60E+00	endotheliocyte	RPL17
NDUFAF7	0	0.718722922	0.877	0.299	0	2.933110368	spermatocyte	NDUFAF7
SUMO2	0	0.718555041	0.843	0.669	0	1.260089686	spermatogonia	SUMO2
RPL142	1.21E-139	0.71852033	0.785	0.64	7.42E-135	1.23E+00	Leydig_cells	RPL14
HCFC2	0	0.71845295	0.924	0.344	0	2.686046512	spermatocyte	HCFC2
RP5.88207.1	2.87E-18	0.718322182	0.232	0.097	1.76E-13	2.39E+00	macrophages	RP5.88207.1
TES	0	0.718280574	0.598	0.328	0	1.823170732	spermatid	TES
GTSF1	0	0.718068558	0.99	0.644	0	1.537267081	spermatocyte	GTSF1
RNF139	0	0.717966262	0.706	0.505	0	1.398019802	spermatid	RNF139
CCDC107	9.95E-110	0.717960863	0.514	0.169	6.10E-105	3.04E+00	VSM_cells	CCDC107
LHFP1	2.15E-78	0.717916087	0.518	0.212	1.32E-73	2.44E+00	VSM_cells	LHFP
NUB1	0	0.717885501	0.946	0.364	0	2.598901099	spermatocyte	NUB1
DCAF4L2	0	0.717765805	0.51	0.117	0	4.358974359	spermatogonia	DCAF4L2
GAS6	3.49E-150	0.717709825	0.457	0.086	2.14E-145	5.31E+00	endotheliocyte	GAS6
PRPS1L1	0	0.717664765	0.802	0.156	0	5.141025641	spermatocyte	PRPS1L1
ADAM32	0	0.717604542	0.907	0.271	0	3.346863469	spermatocyte	ADAM32
RP11.425L10.1	2.30E-12	0.717486539	0.367	0.245	1.41E-07	1.50E+00	macrophages	RP11.425L10.1
IFITM11	0	0.717159214	0.3	0.016	0	18.75	Leydig_cells	IFITM1
ALKBH7	0	0.717145366	0.997	0.833	0	1.196878752	spermatocyte	ALKBH7
IGF2	2.18E-286	0.717116421	0.546	0.065	1.34E-281	8.40E+00	endotheliocyte	IGF2
SH3BGRL6	2.80E-145	0.717081236	0.296	0.1	1.72E-140	2.96E+00	Sertoli_cells	SH3BGRL
RPS3A3	2.26E-96	0.717027435	0.937	0.898	1.39E-91	1.04E+00	VSM_cells	RPS3A
RPL3P4	9.54E-13	0.717014685	0.338	0.305	5.85E-08	1.11E+00	Leydig_cells	RPL3P4
RFX2	0	0.716999113	0.928	0.358	0	2.592178771	spermatocyte	RFX2
MLF1	0	0.716805425	0.97	0.866	0	1.120092379	spermatid	MLF1
MDH1B	0	0.716676142	0.871	0.248	0	3.512096774	spermatocyte	MDH1B
C1orf111	0	0.716460962	0.624	0.317	0	1.968454259	spermatid	C1orf111
CENPF	0	0.716376444	0.813	0.207	0	3.927536232	spermatocyte	CENPF
CD247	1.14E-115	0.716373789	0.184	0.002	6.98E-111	9.20E+01	T_cells	CD247
HSPA83	2.48E-05	0.716315349	0.711	0.567	1	1.253968254	T_cells	HSPA8
OAZ1	1.10E-26	0.716291185	0.707	0.616	6.77E-22	1.15E+00	macrophages	OAZ1
ARID5B	8.94E-179	0.716104484	0.394	0.122	5.49E-174	3.23E+00	Leydig_cells	ARID5B
FAM210B	0	0.715935212	0.463	0.043	0	10.76744186	PTM_cells	FAM210B
TBC1D10C	5.40E-185	0.715926235	0.237	0.002	3.31E-180	1.19E+02	T_cells	TBC1D10C
MS4A5	0	0.71578233	0.656	0.328	0	2	spermatid	MS4A5
C18orf63	0	0.715763789	0.323	0.045	0	7.177777778	spermatogonia	C18orf63
RPS115	4.86E-09	0.715760091	0.895	0.822	0.000298258	1.088807786	T_cells	RPS11
CALM12	6.46E-91	0.715449207	0.886	0.69	3.96E-86	1.28E+00	VSM_cells	CALM1
CIAPIN1	0	0.714970656	0.652	0.254	0	2.566929134	spermatocyte	CIAPIN1
RPS4X1	2.05E-56	0.714900254	0.754	0.345	1.26E-51	2.19E+00	macrophages	RPS4X
MIS18BP1	0	0.714883101	0.522	0.132	0	3.954545455	spermatogonia	MIS18BP1
BRAP	0	0.714803094	0.944	0.426	0	2.215962441	spermatocyte	BRAP
CST13P	0	0.714685063	0.272	0.036	0	7.555555556	spermatid	CST13P
TYMP	3.92E-121	0.71461002	0.226	0.021	2.40E-116	1.08E+01	macrophages	TYMP
GPR146	0	0.714136303	0.35	0.004	0	87.5	endotheliocyte	GPR146
PLD3	2.66E-163	0.714026952	0.462	0.171	1.63E-158	2.70E+00	Leydig_cells	PLD3
FUNDC2	0	0.713718812	0.568	0.265	0	2.143396226	spermatid	FUNDC2
SLC40A1	1.14E-234	0.713327553	0.375	0.091	6.98E-230	4.12E+00	Leydig_cells	SLC40A1
UBE2R2	0	0.713017699	0.69	0.578	0	1.193771626	spermatid	UBE2R2
TCP11	0	0.712973078	0.884	0.702	0	1.259259259	spermatid	TCP11
PRC1	0	0.712892986	0.57	0.207	0	2.753623188	spermatogonia	PRC1
SYNM	3.12E-77	0.712770695	0.414	0.146	1.91E-72	2.84E+00	VSM_cells	SYNM
CDK7	0	0.712726791	0.737	0.137	0	5.379562044	spermatocyte	CDK7
NDFIP1	3.49E-41	0.712664874	0.346	0.267	2.14E-36	1.30E+00	Sertoli_cells	NDFIP1
PHLDA11	3.17E-252	0.712568026	0.32	0.06	1.94E-247	5.33E+00	Leydig_cells	PHLDA1
RPS242	3.38E-195	0.712357139	0.952	0.883	2.07E-190	1.08E+00	Leydig_cells	RPS24
PLP1	0	0.712177033	0.26	0.014	0	18.57142857	Sertoli_cells	PLP1
TUBA1B	1.81E-64	0.711699398	0.734	0.724	1.11E-59	1.01E+00	spermatogonia	TUBA1B
RHOBTB31	0	0.711604142	0.511	0.121	0	4.223140496	PTM_cells	RHOBTB3
WDR60	0	0.711556457	0.968	0.468	0	2.068376068	spermatocyte	WDR60
ACTG2	1.34E-263	0.71114745	0.313	0.028	8.20E-259	1.12E+01	VSM_cells	ACTG2
ALDH1A2	0	0.711038311	0.91	0.31	0	2.935483871	spermatocyte	ALDH1A2
KHDRBS3	0	0.710581912	0.975	0.509	0	1.915520629	spermatocyte	KHDRBS3
SPPL2C	0	0.71052988	0.464	0.069	0	6.724637681	spermatid	SPPL2C
ACSL4	0	0.71052847	0.27	0.038	0	7.105263158	Sertoli_cells	ACSL4
PPM1J	0	0.710466596	0.602	0.254	0	2.37007874	spermatid	PPM1J

MTND2P281	6.31E-21	0.710352443	0.283	0.121	3.87E-16	2.34E+00	macrophages	MTND2P28
PPIA3	1.16E-170	0.710220615	0.848	0.617	7.10E-166	1.37E+00	Leydig_cells	PPIA
AGBL5	0	0.710203915	0.981	0.502	0	1.954183267	spermatocyte	AGBL5
XPO1	0	0.709977941	0.555	0.142	0	3.908450704	spermatogonia	XPO1
HLA-C3	0	0.709763455	0.542	0.159	0	3.408805031	PTM_cells	HLA-C
ADAD1	0	0.709729603	0.978	0.54	0	1.811111111	spermatocyte	ADAD1
AC009487.4	0	0.709701928	0.464	0.102	0	4.549019608	spermatid	AC009487.4
TAF15	0	0.709587187	0.569	0.182	0	3.126373626	spermatogonia	TAF15
SH3KBP11	2.72E-15	0.709493779	0.342	0.056	1.67E-10	6.11E+00	T_cells	SH3KBP1
RPL291	5.44E-219	0.709221165	0.934	0.844	3.34E-214	1.11E+00	Leydig_cells	RPL29
IQGAP12	5.55E-82	0.709188628	0.474	0.168	3.41E-77	2.82E+00	VSM_cells	IQGAP1
FYTTD1	0	0.708969935	0.627	0.27	0	2.322222222	spermatogonia	FYTTD1
SNU13	0	0.708920854	0.979	0.644	0	1.520186335	spermatocyte	SNU13
LMAN2	0	0.708919962	0.713	0.476	0	1.49789916	spermatogonia	LMAN2
RPS102	7.83E-79	0.708880948	0.814	0.536	4.80E-74	1.52E+00	VSM_cells	RPS10
CLPTM1L	0	0.708764473	0.525	0.15	0	3.5	spermatogonia	CLPTM1L
IFT22	0	0.70875558	0.925	0.475	0	1.947368421	spermatocyte	IFT22
RIPK2	2.78E-57	0.708364274	0.283	0.064	1.71E-52	4.42E+00	macrophages	RIPK2
COMMD8	0	0.708324251	0.775	0.221	0	3.50678733	spermatocyte	COMMD8
GRHPR	8.48E-57	0.708244365	0.282	0.163	5.20E-52	1.73E+00	Sertoli_cells	GRHPR
MT-CO33	3.36E-30	0.708092103	0.523	0.466	2.06E-25	1.12E+00	Sertoli_cells	MT-CO3
ANXA51	6.36E-24	0.707919717	0.515	0.318	3.90E-19	1.62E+00	macrophages	ANXA5
EEF1D3	2.37E-82	0.707903733	0.852	0.626	1.46E-77	1.36E+00	VSM_cells	EEF1D
MEX3D	0	0.707757466	0.46	0.175	0	2.628571429	spermatid	MEX3D
ABCA5	0	0.707538346	0.48	0.171	0	2.807017544	spermatogonia	ABCA5
ATP5E1	1.61E-84	0.707459204	0.688	0.669	9.89E-80	1.03E+00	Sertoli_cells	ATP5E
NCF4	0	0.707248096	0.226	0.001	0	226	macrophages	NCF4
RPSA1	2.33E-94	0.707154516	0.891	0.618	1.43E-89	1.44E+00	endotheliocyte	RPSA
HNRNPC	0	0.707150422	0.773	0.576	0	1.342013889	spermatogonia	HNRNPC
PLPP1	4.19E-88	0.707140414	0.464	0.277	2.57E-83	1.68E+00	Leydig_cells	PLPP1
HECTD1	0	0.707126104	0.512	0.118	0	4.338983051	spermatogonia	HECTD1
MYOCD1	0	0.706873125	0.391	0.037	0	10.56756757	VSM_cells	MYOCD
XRCC5	0	0.706837178	0.755	0.497	0	1.519114688	spermatogonia	XRCC5
RPL4	9.86E-78	0.70673635	0.906	0.749	6.05E-73	1.21E+00	endotheliocyte	RPL4
MYH91	4.09E-306	0.706711042	0.523	0.145	2.51E-301	3.61E+00	PTM_cells	MYH9
GPSM3	9.20E-140	0.706690628	0.259	0.025	5.64E-135	1.04E+01	macrophages	GPSM3
CAPZA2	3.79E-107	0.706498087	0.558	0.175	2.32E-102	3.19E+00	endotheliocyte	CAPZA2
RPS243	1.99E-244	0.706400231	0.945	0.883	1.22E-239	1.07E+00	PTM_cells	RPS24
IGFBP2	0	0.706357269	0.352	0.076	0	4.631578947	spermatogonia	IGFBP2
PPP1R36	0	0.706161317	0.93	0.364	0	2.554945055	spermatocyte	PPP1R36
LAMC1	1.43E-174	0.705881089	0.361	0.103	8.76E-170	3.50E+00	Leydig_cells	LAMC1
RPL26P19	5.01E-19	0.70580018	0.266	0.12	3.07E-14	2.22E+00	macrophages	RPL26P19
AIMP2	0	0.705734007	0.912	0.337	0	2.706231454	spermatocyte	AIMP2
PALLD1	1.82E-60	0.705625727	0.732	0.511	1.12E-55	1.43E+00	VSM_cells	PALLD
CFH2	0	0.705508748	0.468	0.047	0	9.957446809	PTM_cells	CFH
CDK12	0	0.705498272	0.571	0.227	0	2.515418502	spermatogonia	CDK12
PDE3A	0	0.70524231	0.362	0.01	0	36.2	VSM_cells	PDE3A
HNRNPA12	7.19E-127	0.70519612	0.76	0.598	4.41E-122	1.27E+00	Leydig_cells	HNRNPA1
RPL36A1	7.74E-23	0.705133866	0.323	0.138	4.75E-18	2.34E+00	macrophages	RPL36A
YWHAE	0	0.70510072	0.873	0.737	0	1.184531886	spermatogonia	YWHAE
CDV3	0	0.704910981	0.667	0.454	0	1.469162996	spermatid	CDV3
ADGB	0	0.704840903	0.871	0.252	0	3.456349206	spermatocyte	ADGB
TNFSF13B	6.11E-206	0.704786881	0.215	0.011	3.75E-201	1.95E+01	macrophages	TNFSF13B
RAB3IL1	0	0.704779905	0.568	0.261	0	2.176245211	spermatid	RAB3IL1
SFPQ	0	0.704388487	0.752	0.522	0	1.440613027	spermatogonia	SFPQ
RPS219	2.37E-110	0.704318616	0.647	0.517	1.45E-105	1.25E+00	Sertoli_cells	RPS21
MYOCD	0	0.70431173	0.388	0.025	0	15.52	PTM_cells	MYOCD
FCGRT3	0	0.704296914	0.577	0.175	0	3.297142857	PTM_cells	FCGRT
IER34	6.15E-115	0.704245428	0.431	0.104	3.77E-110	4.14E+00	VSM_cells	IER3
DMC1	0	0.704214749	0.287	0.016	0	17.9375	spermatogonia	DMC1
MIDN4	8.94E-82	0.704116233	0.512	0.194	5.49E-77	2.64E+00	VSM_cells	MIDN
OMD	0	0.703930866	0.302	0.014	0	21.57142857	Leydig_cells	OMD
MMP14	0	0.703856178	0.266	0.021	0	12.66666667	Leydig_cells	MMP14
MAGEB2	0	0.70295875	0.281	0.021	0	13.38095238	spermatogonia	MAGEB2
S100A102	3.48E-61	0.702901517	0.546	0.433	2.14E-56	1.26E+00	Sertoli_cells	S100A10
STAR	0	0.702836316	0.243	0.021	0	11.57142857	Sertoli_cells	STAR
MAGEC2	0	0.70280314	0.352	0.018	0	19.55555556	spermatogonia	MAGEC2
ARHGAP102	1.45E-115	0.702694178	0.474	0.137	8.90E-111	3.46E+00	VSM_cells	ARHGAP10
YWHAQ	0	0.702619481	0.951	0.563	0	1.689165187	spermatocyte	YWHAQ
MATR3	1.05E-303	0.70258953	0.331	0.138	6.43E-299	2.40E+00	spermatogonia	MATR3
PGRMC11	0	0.702574033	0.52	0.103	0	5.048543689	PTM_cells	PGRMC1
TMEM2	2.97E-12	0.702524572	0.237	0.035	1.82E-07	6.77E+00	T_cells	TMEM2
RPL121	2.21E-28	0.702467566	0.751	0.634	1.35E-23	1.18E+00	macrophages	RPL12
GEMIN6	0	0.70242156	0.834	0.241	0	3.460580913	spermatocyte	GEMIN6
CKAP4	7.52E-248	0.702382201	0.362	0.08	4.62E-243	4.53E+00	Leydig_cells	CKAP4

C11orf1	0	0.702298903	0.599	0.418	0	1.433014354	spermatid	C11orf1
ERG	0	0.702032154	0.372	0.006	0	62	endotheliocyte	ERG
FAM134A	0	0.701959083	0.953	0.473	0	2.014799154	spermatocyte	FAM134A
S1PR1	0	0.701769263	0.333	0.002	0	166.5	endotheliocyte	S1PR1
YWHAB	0	0.701409923	0.56	0.296	0	1.891891892	spermatogonia	YWHAB
RAB14	0	0.70133401	0.661	0.357	0	1.851540616	spermatogonia	RAB14
WAS	3.08E-297	0.701236195	0.215	0.007	1.89E-292	3.07E+01	macrophages	WAS
TRIP11	0	0.701215054	0.557	0.227	0	2.453744493	spermatogonia	TRIP11
CDC421	6.42E-74	0.701130854	0.749	0.412	3.94E-69	1.82E+00	endotheliocyte	CDC42
ZBTB16	6.14E-180	0.701111079	0.438	0.081	3.77E-175	5.41E+00	VSM_cells	ZBTB16
FAM46A1	0	0.700757916	0.345	0.054	0	6.388888889	Leydig_cells	FAM46A
TTC7A	0	0.700305677	0.487	0.191	0	2.54973822	spermatid	TTC7A
RPL271	9.65E-32	0.700300906	0.774	0.662	5.92E-27	1.17E+00	macrophages	RPL27
AKR1C1	6.00E-297	0.70022435	0.399	0.082	3.68E-292	4.87E+00	Leydig_cells	AKR1C1
PMEPA1	3.42E-272	0.700118065	0.387	0.042	2.10E-267	9.21E+00	VSM_cells	PMEPA1
THAP2	1.57E-06	0.700061403	0.421	0.38	0.096153417	1.107894737	macrophages	THAP2
RPS31	6.99E-51	0.699805445	0.906	0.799	4.29E-46	1.13E+00	macrophages	RPS3
C9orf3	3.09E-92	0.699637258	0.49	0.181	1.90E-87	2.71E+00	VSM_cells	C9orf3
CNTRL	0	0.699527558	0.933	0.352	0	2.650568182	spermatocyte	CNTRL
C11orf58	0	0.69950368	0.702	0.451	0	1.55654102	spermatogonia	C11orf58
SH3PXD2A	0	0.699405232	0.312	0.039	0	8	Leydig_cells	SH3PXD2A
RPS133	7.40E-88	0.699310991	0.905	0.84	4.54E-83	1.08E+00	VSM_cells	RPS13
EEF1B24	2.30E-82	0.699192586	0.643	0.616	1.41E-77	1.04E+00	Sertoli_cells	EEF1B2
RP5.1052M9.13	6.38E-41	0.699047591	0.301	0.202	3.91E-36	1.49E+00	Sertoli_cells	RP5.1052M9.1
C11orf963	1.45E-96	0.698820283	0.444	0.265	8.87E-92	1.68E+00	Sertoli_cells	C11orf96
SERINC1	4.42E-100	0.698786723	0.499	0.144	2.71E-95	3.47E+00	endotheliocyte	SERINC1
FEM1B	0	0.698649142	0.667	0.446	0	1.495515695	spermatid	FEM1B
RPL235	3.04E-100	0.69864891	0.684	0.705	1.87E-95	9.70E-01	Sertoli_cells	RPL23
ADO	0	0.698611108	0.95	0.416	0	2.283653846	spermatocyte	ADO
MAP3K19	0	0.69853665	0.51	0.182	0	2.802197802	spermatid	MAP3K19
RHOG	6.24E-87	0.698494996	0.283	0.045	3.83E-82	6.29E+00	macrophages	RHOG
IFT81	0	0.698407083	0.538	0.285	0	1.887719298	spermatogonia	IFT81
MEF2C	3.15E-87	0.698396434	0.476	0.15	1.93E-82	3.17E+00	endotheliocyte	MEF2C
SORBS3	0	0.698344248	0.622	0.323	0	1.925696594	spermatid	SORBS3
C11orf311	6.65E-41	0.698293828	0.305	0.202	4.08E-36	1.51E+00	Sertoli_cells	C11orf31
DDOST	0	0.698281471	0.589	0.305	0	1.931147541	spermatogonia	DDOST
COMT1	0	0.698262545	0.499	0.085	0	5.870588235	PTM_cells	COMT
ENAH	5.48E-144	0.698002562	0.56	0.299	3.36E-139	1.87E+00	PTM_cells	ENAH
PLA2G5	2.14E-293	0.697953651	0.362	0.034	1.31E-288	1.06E+01	VSM_cells	PLA2G5
FHAD1	0	0.697765469	0.605	0.312	0	1.939102564	spermatid	FHAD1
LRRFIP13	6.51E-06	0.697743377	0.289	0.093	0.399456238	3.107526882	T_cells	LRRFIP1
RND1	7.16E-226	0.697706547	0.256	0.019	4.39E-221	1.35E+01	endotheliocyte	RND1
HSP90AB11	3.47E-80	0.697694789	0.928	0.716	2.13E-75	1.30E+00	endotheliocyte	HSP90AB1
SKP1	0	0.697651261	0.884	0.731	0	1.209302326	spermatogonia	SKP1
SCP2	7.21E-33	0.697312259	0.334	0.26	4.42E-28	1.28E+00	Sertoli_cells	SCP2
RPL221	2.59E-161	0.697289249	0.82	0.641	1.59E-156	1.28E+00	Leydig_cells	RPL22
PPT1	2.89E-13	0.697178435	0.343	0.221	1.77E-08	1.55E+00	macrophages	PPT1
SLC15A3	2.17E-20	0.697028945	0.205	0.075	1.33E-15	2.73E+00	macrophages	SLC15A3
MACF11	1.96E-76	0.697018958	0.571	0.248	1.20E-71	2.30E+00	VSM_cells	MACF1
PTCH1	1.77E-94	0.696870926	0.403	0.187	1.09E-89	2.16E+00	Leydig_cells	PTCH1
GAPDH	8.40E-202	0.696866206	0.883	0.806	5.15E-197	1.10E+00	PTM_cells	GAPDH
SNRPG	0	0.696865128	0.653	0.36	0	1.813888889	spermatogonia	SNRPG
HSPD11	4.93E-110	0.6967799	0.414	0.216	3.03E-105	1.92E+00	Sertoli_cells	HSPD1
FAM186A	0	0.696742869	0.505	0.195	0	2.58974359	spermatid	FAM186A
MARCKS2	1.00E-91	0.696739122	0.451	0.25	6.16E-87	1.80E+00	Leydig_cells	MARCKS
RPL26L1	0	0.69672633	0.918	0.451	0	2.035476718	spermatocyte	RPL26L1
APOL3	0	0.696559938	0.37	0.006	0	61.66666667	endotheliocyte	APOL3
CAMK1	2.83E-261	0.696242562	0.245	0.046	1.73E-256	5.33E+00	Sertoli_cells	CAMK1
SYNPO	1.33E-227	0.696202486	0.362	0.038	8.18E-223	9.53E+00	endotheliocyte	SYNPO
RPL71	4.36E-170	0.695856321	0.903	0.791	2.67E-165	1.14E+00	PTM_cells	RPL7
RPL13AP25	3.76E-06	0.695643342	0.186	0.126	0.23083354	1.476190476	endotheliocyte	RPL13AP25
IER33	5.92E-212	0.695458931	0.371	0.096	3.63E-207	3.86E+00	PTM_cells	IER3
MYC2	0	0.695057403	0.436	0.052	0	8.384615385	PTM_cells	MYC
STK33	0	0.695047888	0.909	0.36	0	2.525	spermatocyte	STK33
MGST31	0	0.694936106	0.657	0.217	0	3.02764977	PTM_cells	MGST3
PDIA6	0	0.694918529	0.516	0.198	0	2.606060606	spermatogonia	PDIA6
SERPINB11	1.66E-73	0.694789825	0.29	0.053	1.02E-68	5.47E+00	macrophages	SERPINB1
NDUFB3	0	0.694680152	0.904	0.361	0	2.504155125	spermatocyte	NDUFB3
TTC29	0	0.694675504	0.971	0.457	0	2.124726477	spermatocyte	TTC29
PLXND1	1.02E-267	0.69435027	0.397	0.039	6.26E-263	1.02E+01	endotheliocyte	PLXND1
UNC119	7.39E-285	0.694341957	0.235	0.039	4.53E-280	6.03E+00	Sertoli_cells	UNC119
ROMO1	0	0.694330903	0.633	0.308	0	2.055194805	spermatogonia	ROMO1
SPATA3-AS1	0	0.693799698	0.361	0.161	0	2.242236025	spermatid	SPATA3-AS1
CD84	1.01E-277	0.693514333	0.226	0.009	6.18E-273	2.51E+01	macrophages	CD84
PDGFRL	1.68E-221	0.693514314	0.376	0.096	1.03E-216	3.92E+00	Leydig_cells	PDGFRL

IZUMO2	0	0.693046349	0.627	0.301	0	2.083056478	spermatid	IZUMO2
RP4-665J23.1	0	0.692863029	0.552	0.174	0	3.172413793	spermatocyte	RP4-665J23.1
TAPBP1	1.73E-12	0.692584834	0.263	0.042	1.06E-07	6.26E+00	T_cells	TAPBP
NUCKS1	1.15E-68	0.692528847	0.712	0.397	7.03E-64	1.79E+00	endotheliocyte	NUCKS1
GOLGA7	0	0.692524351	0.627	0.263	0	2.384030418	spermatogonia	GOLGA7
GNB2L11	2.57E-52	0.692430869	0.558	0.468	1.58E-47	1.19E+00	Leydig_cells	GNB2L1
PKMYT1	0	0.692119108	0.515	0.257	0	2.003891051	spermatogonia	PKMYT1
FRMD4B	3.62E-183	0.692078271	0.422	0.065	2.22E-178	6.49E+00	endotheliocyte	FRMD4B
LRR6	0	0.691821082	0.892	0.269	0	3.31598513	spermatocyte	LRR6
GNAQ1	6.25E-35	0.691743245	0.337	0.122	3.84E-30	2.76E+00	macrophages	GNAQ
REL2	0.000881989	0.691685879	0.263	0.114	1	2.307017544	T_cells	REL
KIF5B	0	0.691640733	0.738	0.555	0	1.32972973	spermatogonia	KIF5B
DYRK4	0	0.69150385	0.598	0.342	0	1.748538012	spermatid	DYRK4
PDK4	3.29E-55	0.691467889	0.313	0.092	2.02E-50	3.40E+00	endotheliocyte	PDK4
HSPA4	0	0.691391189	0.681	0.404	0	1.685643564	spermatogonia	HSPA4
RUVBL2	0	0.691299254	0.973	0.534	0	1.822097378	spermatocyte	RUVBL2
PPIL6	0	0.691297804	0.87	0.308	0	2.824675325	spermatocyte	PPIL6
TNFAIP8L1	0	0.691271266	0.54	0.227	0	2.378854626	spermatid	TNFAIP8L1
HDAC7	9.57E-122	0.691216641	0.444	0.102	5.87E-117	4.35E+00	endotheliocyte	HDAC7
BRCA1	0	0.691174155	0.474	0.115	0	4.12173913	spermatogonia	BRCA1
HINT1	0	0.691030895	0.968	0.635	0	1.524409449	spermatocyte	HINT1
AC006019.3	0	0.690939095	0.584	0.25	0	2.336	spermatid	AC006019.3
MRC2	1.21E-163	0.690938326	0.426	0.147	7.40E-159	2.90E+00	Leydig_cells	MRC2
FXVD6	2.97E-191	0.690917193	0.326	0.1	1.82E-186	3.26E+00	Sertoli_cells	FXVD6
MAF2	0	0.690886764	0.458	0.056	0	8.178571429	PTM_cells	MAF
NDRG11	1.04E-291	0.690755562	0.293	0.06	6.37E-287	4.88E+00	Sertoli_cells	NDRG1
S100PBP	0	0.690575719	0.542	0.164	0	3.304878049	spermatogonia	S100PBP
RAB31	6.41E-56	0.690533575	0.354	0.093	3.93E-51	3.81E+00	macrophages	RAB31
LTBP3	2.11E-254	0.690461255	0.364	0.077	1.29E-249	4.73E+00	Leydig_cells	LTBP3
GATA2	2.37E-176	0.690454358	0.365	0.051	1.46E-171	7.16E+00	endotheliocyte	GATA2
SUN2	1.65E-203	0.690425581	0.273	0.071	1.01E-198	3.85E+00	Sertoli_cells	SUN2
NPDC11	0	0.690388007	0.387	0.062	0	6.241935484	Leydig_cells	NPDC1
SLC2A31	1.61E-165	0.69025265	0.316	0.084	9.85E-161	3.76E+00	Leydig_cells	SLC2A3
PP2D1	0	0.690215358	0.576	0.215	0	2.679069767	spermatid	PP2D1
EPS8	2.16E-66	0.69012929	0.457	0.191	1.33E-61	2.39E+00	VSM_cells	EPS8
EPDR1	0	0.690105807	0.426	0.022	0	19.36363636	PTM_cells	EPDR1
SNRPF	0	0.690064335	0.593	0.266	0	2.229323308	spermatogonia	SNRPF
ATP5G23	2.09E-37	0.690062313	0.504	0.495	1.28E-32	1.02E+00	Sertoli_cells	ATP5G2
INMT	0	0.689971351	0.335	0.039	0	8.58974359	Leydig_cells	INMT
REEP3	0	0.689804023	0.846	0.323	0	2.619195046	spermatocyte	REEP3
ATRX3	7.82E-117	0.689789673	0.51	0.143	4.80E-112	3.57E+00	VSM_cells	ATRX
CSTB1	0	0.689692385	0.564	0.156	0	3.615384615	PTM_cells	CSTB
MIR503HG	0	0.689479825	0.284	0.022	0	12.90909091	Leydig_cells	MIR503HG
LINC01548	0	0.689094211	0.475	0.072	0	6.597222222	spermatid	LINC01548
CKB	4.21E-168	0.689052035	0.826	0.684	2.58E-163	1.21E+00	PTM_cells	CKB
ADAM2	0	0.689043948	0.736	0.162	0	4.543209877	spermatocyte	ADAM2
KPNB1	0	0.688876817	0.763	0.501	0	1.522954092	spermatogonia	KPNB1
FAM84A	3.59E-191	0.688749927	0.235	0.057	2.20E-186	4.12E+00	Sertoli_cells	FAM84A
RHOXF1	0	0.688387539	0.253	0.011	0	23	spermatogonia	RHOXF1
RPS7	8.44E-64	0.688197054	0.901	0.8	5.18E-59	1.13E+00	endotheliocyte	RPS7
ATP6V0E11	8.83E-202	0.688128061	0.616	0.286	5.42E-197	2.15E+00	PTM_cells	ATP6V0E1
MRPL51	0	0.687817048	0.977	0.662	0	1.475830816	spermatocyte	MRPL51
ARMC12	0	0.687577325	0.637	0.289	0	2.204152249	spermatid	ARMC12
RNF168	0	0.687542818	0.59	0.275	0	2.145454545	spermatid	RNF168
RP11.620J15.3	9.45E-104	0.687458547	0.212	0.115	5.80E-99	1.84E+00	spermatogonia	RP11.620J15.3
MEAF6	0	0.687452189	0.622	0.333	0	1.867867868	spermatogonia	MEAF6
MT-ND23	2.38E-203	0.687394609	0.765	0.395	1.46E-198	1.94E+00	PTM_cells	MT-ND2
RPL84	1.20E-08	0.687291384	0.947	0.855	0.000733148	1.107602339	T_cells	RPL8
TEPP	0	0.687087171	0.514	0.145	0	3.544827586	spermatid	TEPP
HNRNPD	0	0.686797121	0.66	0.348	0	1.896551724	spermatogonia	HNRNPD
LCP1	0	0.686727197	0.53	0.178	0	2.97752809	spermatid	LCP1
C15orf39	0	0.686545709	0.811	0.233	0	3.480686695	spermatocyte	C15orf39
PTGIS1	0	0.686364395	0.395	0.025	0	15.8	PTM_cells	PTGIS
DES12	0	0.686313984	0.947	0.444	0	2.132882883	spermatocyte	DES12
GPC2	0.000115995	0.686148586	0.34	0.162	1	2.098765432	mastocyte	GPC2
PLD4	0	0.685999229	0.226	0.007	0	32.28571429	macrophages	PLD4
EHP1	0	0.68588848	0.608	0.37	0	1.643243243	spermatid	EHP1
LTBP1	4.16E-200	0.685786178	0.37	0.095	2.55E-195	3.89E+00	Leydig_cells	LTBP1
ZNF518A	0	0.685762006	0.485	0.168	0	2.886904762	spermatogonia	ZNF518A
LRR675A.AS1	0.008159124	0.685657618	0.186	0.161	1	1.155279503	endotheliocyte	LRR675A.AS1
CYP1B11	1.28E-217	0.685597276	0.443	0.149	7.87E-213	2.97E+00	PTM_cells	CYP1B1
RPL244	1.19E-05	0.685572397	0.789	0.743	0.731516052	1.061911171	T_cells	RPL24
SPACA1	3.00E-158	0.685570293	0.522	0.407	1.84E-153	1.28E+00	spermatid	SPACA1
TCHH	1.34E-36	0.685470412	0.152	0.028	8.19E-32	5.43E+00	macrophages	TCHH
MYADM4	0.000814848	0.685367609	0.395	0.224	1	1.763392857	T_cells	MYADM

TTC25	0	0.685282541	0.914	0.29	0	3.151724138	spermatocyte	TTC25
RPL304	1.21E-85	0.685221712	0.93	0.878	7.43E-81	1.06E+00	VSM_cells	RPL30
PRKCH1	1.09E-05	0.685211673	0.237	0.069	0.665974968	3.434782609	T_cells	PRKCH
SAFB	0	0.685157905	0.546	0.146	0	3.739726027	spermatogonia	SAFB
TJP11	1.26E-68	0.685039045	0.596	0.273	7.70E-64	2.18E+00	endotheliocyte	TJP1
BBOF1	0	0.684844894	0.907	0.33	0	2.748484848	spermatocyte	BBOF1
WIPF3	0	0.684794189	0.262	0.043	0	6.093023256	Sertoli_cells	WIPF3
MTPN	0	0.684686103	0.58	0.306	0	1.895424837	spermatogonia	MTPN
CLEC2D	0.006303045	0.684674716	0.316	0.191	1	1.654450262	T_cells	CLEC2D
LINC00929	0	0.684637017	0.523	0.198	0	2.641414141	spermatid	LINC00929
NRN1	0	0.684628839	0.335	0.001	0	335	endotheliocyte	NRN1
RPS151	1.00E-147	0.68456047	0.869	0.762	6.14E-143	1.14E+00	Leydig_cells	RPS15
SENP6	0	0.684420204	0.569	0.229	0	2.484716157	spermatogonia	SENP6
EHD22	1.59E-296	0.684312372	0.412	0.043	9.77E-292	9.58E+00	VSM_cells	EHD2
MORN5	0	0.684282469	0.918	0.397	0	2.312342569	spermatocyte	MORN5
ZFP365	2.06E-07	0.684269974	0.579	0.244	0.012610776	2.37295082	T_cells	ZFP36
GAS2L1	1.05E-88	0.68424033	0.298	0.147	6.45E-84	2.03E+00	Sertoli_cells	GAS2L1
ADH51	5.67E-200	0.684223328	0.594	0.284	3.48E-195	2.09E+00	PTM_cells	ADH5
SELM1	2.30E-152	0.684214124	0.496	0.206	1.41E-147	2.41E+00	Leydig_cells	SELM
UBN1	0	0.684136978	0.638	0.386	0	1.652849741	spermatogonia	UBN1
YWHAB5	6.83E-05	0.684065968	0.579	0.353	1	1.640226629	T_cells	YWHAB
MT.ND42	4.69E-09	0.684033024	0.381	0.374	0.0002879	1.018716578	Leydig_cells	MT.ND4
VARS	0	0.683971638	0.601	0.322	0	1.866459627	spermatid	VARS
PPM1K	4.99E-64	0.6838275	0.332	0.209	3.06E-59	1.59E+00	Sertoli_cells	PPM1K
FMNL1	3.55E-165	0.683793678	0.246	0.019	2.18E-160	1.29E+01	macrophages	FMNL1
UBLCP1	0	0.683788964	0.538	0.151	0	3.562913907	spermatogonia	UBLCP1
SPAG1	0	0.683753017	0.847	0.212	0	3.995283019	spermatocyte	SPAG1
SNRPA1	0	0.683535255	0.798	0.251	0	3.179282869	spermatocyte	SNRPA1
MT-ND12	7.60E-78	0.683492761	0.603	0.403	4.66E-73	1.50E+00	Leydig_cells	MT-ND1
PSMA8	0	0.68347365	0.456	0.208	0	2.192307692	spermatogonia	PSMA8
CSMD2-AS1	6.01E-264	0.68337566	0.387	0.233	3.69E-259	1.66E+00	spermatid	CSMD2-AS1
MYADM2	1.40E-214	0.683296956	0.54	0.208	8.56E-210	2.60E+00	PTM_cells	MYADM
HSPB11	2.98E-183	0.683231268	0.557	0.207	1.83E-178	2.69E+00	Leydig_cells	HSPB1
RP11.466H18.1	2.28E-44	0.683188397	0.169	0.037	1.40E-39	4.57E+00	endotheliocyte	RP11.466H18.1
RPL303	2.21E-246	0.683056222	0.936	0.876	1.36E-241	1.07E+00	PTM_cells	RPL30
NUDT4	0	0.683050276	0.863	0.254	0	3.397637795	spermatocyte	NUDT4
DNPEP	0	0.683039869	0.626	0.375	0	1.669333333	spermatid	DNPEP
NDUFC1	0	0.682984861	0.933	0.477	0	1.955974843	spermatocyte	NDUFC1
SRSF21	0.008960714	0.682698275	0.553	0.518	1	1.067567568	T_cells	SRSF2
BCLAF1	0	0.682603447	0.648	0.289	0	2.242214533	spermatogonia	BCLAF1
TMEM47	0	0.682355257	0.352	0.033	0	10.66666667	Leydig_cells	TMEM47
MT.ATP81	2.78E-24	0.682238071	0.38	0.174	1.71E-19	2.18E+00	macrophages	MT.ATP8
FANCI	0	0.681856189	0.484	0.102	0	4.745098039	spermatogonia	FANCI
ACR	0	0.681527379	0.916	0.301	0	3.043189369	spermatocyte	ACR
ELOVL5	1.51E-35	0.681483178	0.364	0.302	9.24E-31	1.21E+00	Sertoli_cells	ELOVL5
ARL6IP11	1.99E-48	0.681283618	0.715	0.463	1.22E-43	1.54E+00	endotheliocyte	ARL6IP1
MRPS33	0	0.681211666	0.834	0.318	0	2.622641509	spermatocyte	MRPS33
GMPS	0	0.681172082	0.959	0.488	0	1.965163934	spermatocyte	GMPS
PTK7	0	0.681103662	0.394	0.105	0	3.752380952	spermatid	PTK7
CRTAP2	0	0.681030398	0.495	0.089	0	5.561797753	PTM_cells	CRTAP
GBP1	0	0.680618463	0.35	0.018	0	19.44444444	endotheliocyte	GBP1
C9orf116	0	0.680371255	0.838	0.357	0	2.347338936	spermatocyte	C9orf116
PTMAP5	3.57E-32	0.680300705	0.222	0.063	2.19E-27	3.52E+00	macrophages	PTMAP5
GLO11	1.20E-196	0.680210682	0.395	0.113	7.39E-192	3.50E+00	Leydig_cells	GLO1
EIF4A2	0	0.680078532	0.719	0.397	0	1.811083123	spermatogonia	EIF4A2
RPS215	8.40E-244	0.680017416	0.898	0.666	5.15E-239	1.35E+00	PTM_cells	RPS2
MAP2K3	3.59E-107	0.679975338	0.253	0.03	2.20E-102	8.43E+00	macrophages	MAP2K3
NRP21	7.05E-37	0.67984808	0.232	0.062	4.32E-32	3.74E+00	macrophages	NRP2
MSN2	4.42E-222	0.679646543	0.44	0.064	2.71E-217	6.88E+00	VSM_cells	MSN
GPRIN3	4.69E-44	0.679387056	0.184	0.006	2.88E-39	3.07E+01	T_cells	GPRIN3
MAPRE2	2.48E-203	0.67932657	0.412	0.065	1.52E-198	6.34E+00	VSM_cells	MAPRE2
SEMA7A	0	0.679194839	0.226	0.018	0	12.55555556	Sertoli_cells	SEMA7A
GZMB	8.11E-120	0.679028883	0.105	0.001	4.98E-115	1.05E+02	T_cells	GZMB
PFKL	2.80E-247	0.67826955	0.264	0.056	1.72E-242	4.71E+00	Sertoli_cells	PFKL
TMEM471	0	0.678242663	0.404	0.04	0	10.1	VSM_cells	TMEM47
HYAL2	6.92E-96	0.678031097	0.38	0.089	4.25E-91	4.27E+00	endotheliocyte	HYAL2
RPS27	1.29E-63	0.677993129	0.955	0.821	7.93E-59	1.16E+00	endotheliocyte	RPS27
PGRMC1	3.60E-268	0.677990414	0.45	0.109	2.21E-263	4.13E+00	Leydig_cells	PGRMC1
PLAC8L1	0	0.677952768	0.564	0.238	0	2.369747899	spermatid	PLAC8L1
CFH	6.59E-184	0.677915727	0.427	0.062	4.04E-179	6.89E+00	endotheliocyte	CFH
DNAJA2	0	0.67787324	0.694	0.442	0	1.570135747	spermatogonia	DNAJA2
MS4A4A	0	0.677741055	0.202	0.003	0	67.33333333	macrophages	MS4A4A
CLDND1	0	0.677725186	0.927	0.348	0	2.663793103	spermatocyte	CLDND1
RBBP4	0	0.67766514	0.608	0.315	0	1.93015873	spermatogonia	RBBP4
RPL192	1.55E-209	0.677458016	0.932	0.834	9.51E-205	1.12E+00	PTM_cells	RPL19



DYNLT1	0	0.676890993	0.879	0.435	0	2.020689655	spermatocyte	DYNLT1
LSM7	0	0.67685827	0.441	0.144	0	3.0625	spermatogonia	LSM7
RPL241	3.04E-126	0.676842591	0.837	0.739	1.86E-121	1.13E+00	Leydig_cells	RPL24
MARCKSL11	0	0.676759905	0.64	0.204	0	3.137254902	PTM_cells	MARCKSL1
TOP2B	0	0.676551993	0.337	0.068	0	4.955882353	spermatogonia	TOP2B
MYH10	4.34E-42	0.676405157	0.404	0.199	2.66E-37	2.03E+00	VSM_cells	MYH10
CCND31	1.42E-08	0.67632623	0.316	0.082	0.000871763	3.853658537	T_cells	CCND3
PRKDC	0	0.676258708	0.549	0.203	0	2.704433498	spermatogonia	PRKDC
RPL36AL	6.46E-63	0.676186294	0.801	0.624	3.97E-58	1.28E+00	VSM_cells	RPL36AL
NEIL2	0	0.675740702	0.375	0.042	0	8.928571429	spermatogonia	NEIL2
RPL27A5	7.81E-157	0.675720864	0.784	0.787	4.79E-152	9.96E-01	Sertoli_cells	RPL27A
CYP26B11	0	0.675625039	0.353	0.038	0	9.289473684	PTM_cells	CYP26B1
COX8A	6.25E-87	0.67550877	0.569	0.225	3.83E-82	2.53E+00	VSM_cells	COX8A
CARMN	0	0.675490765	0.311	0.015	0	20.733333333	VSM_cells	CARMN
MDH1	4.34E-52	0.675472766	0.336	0.221	2.66E-47	1.52E+00	Sertoli_cells	MDH1
COL4A1	5.75E-261	0.675427546	0.37	0.04	3.53E-256	9.25E+00	VSM_cells	COL4A1
ARPC3	4.60E-14	0.675388994	0.572	0.535	2.82E-09	1.07E+00	macrophages	ARPC3
IL1A	1.79E-37	0.675384765	0.205	0.049	1.10E-32	4.18E+00	macrophages	IL1A
GAS5	1.29E-12	0.675149786	0.146	0.065	7.92E-08	2.25E+00	endotheliocyte	GAS5
TGFB11	1.52E-12	0.675087916	0.263	0.042	9.32E-08	6.26E+00	T_cells	TGFB1
IDH1	7.87E-97	0.675036476	0.27	0.117	4.83E-92	2.31E+00	Sertoli_cells	IDH1
RAP2B	1.42E-108	0.674827681	0.253	0.029	8.71E-104	8.72E+00	macrophages	RAP2B
NACA1	3.64E-138	0.674825635	0.855	0.745	2.24E-133	1.15E+00	Leydig_cells	NACA
LPAR6	0	0.674712456	0.533	0.193	0	2.761658031	spermatid	LPAR6
C2orf401	3.16E-39	0.674480585	0.712	0.453	1.94E-34	1.57E+00	VSM_cells	C2orf40
TCERG1	0	0.674327528	0.535	0.154	0	3.474025974	spermatogonia	TCERG1
CNTN4	0	0.674035594	0.53	0.22	0	2.409090909	spermatid	CNTN4
YWHAZ	0	0.673791897	0.802	0.732	0	1.095628415	spermatid	YWHAZ
TEX36-AS1	0	0.673760032	0.336	0.111	0	3.027027027	spermatid	TEX36-AS1
RP11-195F19.5	3.26E-173	0.673649963	0.494	0.444	2.00E-168	1.11E+00	spermatid	RP11-195F19.5
YIPF2	0	0.673629917	0.894	0.304	0	2.940789474	spermatocyte	YIPF2
DNAJC1	8.13E-253	0.673525236	0.414	0.231	4.99E-248	1.79E+00	spermatogonia	DNAJC1
LIMCH1	6.99E-51	0.673419568	0.459	0.208	4.29E-46	2.21E+00	endotheliocyte	LIMCH1
LINC01206	1.90E-191	0.673371358	0.366	0.221	1.16E-186	1.66E+00	spermatogonia	LINC01206
CFAP36	0	0.673361225	0.986	0.589	0	1.674023769	spermatocyte	CFAP36
CD81	3.85E-70	0.673208975	0.667	0.312	2.36E-65	2.14E+00	endotheliocyte	CD81
C11orf31	0	0.673181317	0.49	0.131	0	3.740458015	spermatogonia	C11orf31
S1PR3	0	0.67307237	0.294	0.008	0	36.75	VSM_cells	S1PR3
YWHAB2	5.53E-25	0.672778241	0.566	0.351	3.39E-20	1.61E+00	macrophages	YWHAB
AC109829.1	0	0.672770666	0.438	0.162	0	2.703703704	spermatid	AC109829.1
CYB5R31	1.73E-262	0.672715498	0.594	0.212	1.06E-257	2.80E+00	PTM_cells	CYB5R3
PHLDA1	1.35E-137	0.672701056	0.385	0.066	8.30E-133	5.83E+00	endotheliocyte	PHLDA1
FABP5	0	0.672699497	0.503	0.208	0	2.418269231	spermatogonia	FABP5
LRR39	0	0.672675138	0.466	0.112	0	4.160714286	spermatocyte	LRR39
C11orf63	0	0.672309565	0.84	0.216	0	3.888888889	spermatocyte	C11orf63
CCDC126	0	0.672045456	0.609	0.371	0	1.641509434	spermatid	CCDC126
SYNGR4	0	0.672025971	0.448	0.259	0	1.72972973	spermatogonia	SYNGR4
HPRT1	0	0.671971773	0.431	0.091	0	4.736263736	spermatogonia	HPRT1
TNS1	1.69E-206	0.67180151	0.379	0.094	1.04E-201	4.03E+00	Leydig_cells	TNS1
GOLM1	0	0.671798553	0.513	0.237	0	2.164556962	spermatid	GOLM1
VCL1	1.70E-118	0.671790256	0.293	0.119	1.04E-113	2.46E+00	Sertoli_cells	VCL
UBB	0	0.671732064	0.999	0.929	0	1.075349839	spermatocyte	UBB
KCNA5	0	0.671716662	0.349	0.001	0	349	VSM_cells	KCNA5
PLSCR1	3.24E-285	0.671574367	0.437	0.044	1.99E-280	9.93E+00	endotheliocyte	PLSCR1
RPL411	3.78E-49	0.671537836	0.909	0.786	2.32E-44	1.16E+00	macrophages	RPL41
RAN	0	0.671459212	0.884	0.611	0	1.446808511	spermatogonia	RAN
SASH1	0	0.671379851	0.407	0.035	0	11.62857143	endotheliocyte	SASH1
PGLS	0.003611884	0.671235533	0.342	0.207	1	1.652173913	T_cells	PGLS
EEF1B23	1.09E-61	0.67120284	0.789	0.615	6.70E-57	1.28E+00	VSM_cells	EEF1B2
RPL351	6.67E-05	0.671075702	0.895	0.843	1	1.06168446	T_cells	RPL35
ACTL10	0	0.671023669	0.594	0.256	0	2.3203125	spermatid	ACTL10
ATP6V0E1	3.71E-131	0.670964958	0.558	0.291	2.27E-126	1.92E+00	Leydig_cells	ATP6V0E1
ATRX1	3.01E-191	0.670914636	0.443	0.137	1.85E-186	3.23E+00	Leydig_cells	ATRX
TNFRSF10D	2.85E-214	0.67084332	0.3	0.028	1.75E-209	1.07E+01	endotheliocyte	TNFRSF10D
C9orf135-AS1	0	0.670799972	0.557	0.184	0	3.027173913	spermatocyte	C9orf135-AS1
ATF4	2.22E-53	0.670538254	0.648	0.354	1.36E-48	1.83E+00	endotheliocyte	ATF4
TAP11	1.26E-11	0.670512239	0.211	0.029	7.71E-07	7.28E+00	T_cells	TAP1
MT-CO21	2.03E-71	0.67030366	0.609	0.429	1.24E-66	1.42E+00	Leydig_cells	MT-CO2
MXRA7	0	0.670246071	0.481	0.111	0	4.333333333	PTM_cells	MXRA7
TMEM123	1.92E-22	0.670202313	0.394	0.203	1.18E-17	1.94E+00	macrophages	TMEM123
TRIM69	0	0.670123611	0.883	0.307	0	2.876221498	spermatocyte	TRIM69
AR	0	0.670062083	0.338	0.054	0	6.259259259	Leydig_cells	AR
CNN32	1.66E-162	0.669868822	0.623	0.351	1.02E-157	1.77E+00	PTM_cells	CNN3
APOC11	0	0.669652749	0.354	0.022	0	16.09090909	PTM_cells	APOC1
PLEK1	9.57E-29	0.669622922	0.263	0.019	5.87E-24	1.38E+01	T_cells	PLEK

GJA5	1.72E-11	0.669559515	0.146	0.069	1.06E-06	2.12E+00	endotheliocyte	GJA5
APLP21	7.48E-27	0.669537947	0.545	0.321	4.59E-22	1.70E+00	macrophages	APLP2
RP5.956O18.2	0	0.669196281	0.257	0.03	0	8.566666667	spermatid	RP5.956O18.2
H2AFY	1.35E-15	0.669039	0.481	0.347	8.28E-11	1.39E+00	macrophages	H2AFY
HLA-DMA	0	0.668961786	0.395	0.013	0	30.38461538	endotheliocyte	HLA-DMA
RPL33	1.17E-213	0.668797663	0.974	0.921	7.16E-209	1.06E+00	Leydig_cells	RPL3
PPP1R42	0	0.668772522	0.774	0.151	0	5.125827815	spermatocyte	PPP1R42
ARIH2	0	0.668735931	0.571	0.244	0	2.340163934	spermatogonia	ARIH2
RGS12	1.22E-25	0.66872013	0.211	0.013	7.46E-21	1.62E+01	T_cells	RGS1
ATXN7	0.001255573	0.668656581	0.316	0.163	1	1.938650307	T_cells	ATXN7
CTD-2538C1.2	0	0.668609575	0.535	0.148	0	3.614864865	spermatocyte	CTD-2538C1.2
MYL12B1	7.69E-37	0.668467751	0.582	0.629	4.71E-32	9.25E-01	Sertoli_cells	MYL12B
NID1	0	0.668462421	0.27	0.021	0	12.85714286	Leydig_cells	NID1
ADRBK1	4.04E-07	0.668367142	0.184	0.036	0.024805996	5.111111111	T_cells	ADRBK1
YBX2	0	0.668322496	0.988	0.61	0	1.619672131	spermatocyte	YBX2
EIF3K	1.33E-62	0.668214815	0.722	0.482	8.18E-58	1.50E+00	endotheliocyte	EIF3K
TIMM23	0	0.668088192	0.882	0.306	0	2.882352941	spermatocyte	TIMM23
RPS245	6.81E-08	0.667899594	0.947	0.886	0.004179126	1.068848758	T_cells	RPS24
PSMD4	0	0.667816057	0.968	0.52	0	1.861538462	spermatocyte	PSMD4
CTSD1	1.21E-119	0.667605497	0.338	0.148	7.44E-115	2.28E+00	Sertoli_cells	CTSD
RPS51	2.95E-174	0.667603484	0.895	0.815	1.81E-169	1.10E+00	Leydig_cells	RPS5
TKT	5.69E-197	0.667597199	0.455	0.147	3.49E-192	3.10E+00	Leydig_cells	TKT
MT-ND3	1.83E-158	0.667574076	0.482	0.346	1.12E-153	1.39E+00	spermatogonia	MT-ND3
ERP29	0	0.667570554	0.465	0.136	0	3.419117647	spermatogonia	ERP29
RPA2	0	0.667548597	0.645	0.39	0	1.653846154	spermatogonia	RPA2
NDUFB4	0	0.667388298	0.956	0.561	0	1.704099822	spermatocyte	NDUFB4
CDA	0	0.667324412	0.395	0.003	0	131.6666667	endotheliocyte	CDA
USP1	0	0.667266802	0.948	0.455	0	2.083516484	spermatocyte	USP1
CCDC67	0	0.666997961	0.718	0.33	0	2.175757576	spermatocyte	CCDC67
SLA	0	0.666991276	0.182	0.002	0	91	macrophages	SLA
WFDC6	0	0.66698929	0.208	0.007	0	29.71428571	Sertoli_cells	WFDC6
KTN1	0	0.666950528	0.99	0.681	0	1.453744493	spermatocyte	KTN1
CIRBP1	2.07E-71	0.666907819	0.806	0.443	1.27E-66	1.82E+00	endotheliocyte	CIRBP
PFDN4	0	0.666655179	0.861	0.316	0	2.724683544	spermatocyte	PFDN4
PGK2	0	0.666579963	0.818	0.56	0	1.460714286	spermatid	PGK2
AKAP14	0	0.666424323	0.551	0.258	0	2.135658915	spermatid	AKAP14
ATF41	1.58E-10	0.666415278	0.448	0.358	9.70E-06	1.25E+00	macrophages	ATF4
TIE1	0	0.666185528	0.367	0.01	0	36.7	endotheliocyte	TIE1
NFKBIA3	7.18E-293	0.666027048	0.607	0.194	4.41E-288	3.13E+00	PTM_cells	NFKBIA
PRMT2	5.31E-05	0.666006667	0.342	0.146	1	2.342465753	T_cells	PRMT2
KRBOX11	0	0.665607919	0.936	0.43	0	2.176744186	spermatocyte	KRBOX1
VKORC1	2.57E-257	0.665504283	0.428	0.104	1.58E-252	4.12E+00	Leydig_cells	VKORC1
PRIM1	0	0.665320245	0.359	0.043	0	8.348837209	spermatogonia	PRIM1
DDR2	6.08E-181	0.66526613	0.316	0.08	3.73E-176	3.95E+00	Leydig_cells	DDR2
RPL23A1	2.71E-136	0.665132175	0.867	0.732	1.66E-131	1.18E+00	Leydig_cells	RPL23A
AZIN2	0	0.665035599	0.53	0.224	0	2.366071429	spermatid	AZIN2
SHC1	7.24E-211	0.664983902	0.407	0.052	4.44E-206	7.83E+00	endotheliocyte	SHC1
RALGDS	8.61E-298	0.664939424	0.355	0.028	5.28E-293	1.27E+01	endotheliocyte	RALGDS
CKS1B	0	0.66488672	0.569	0.234	0	2.431623932	spermatogonia	CKS1B
C17orf64	0	0.66479199	0.967	0.515	0	1.877669903	spermatocyte	C17orf64
FGFR1	7.61E-86	0.664627582	0.449	0.131	4.67E-81	3.43E+00	endotheliocyte	FGFR1
VAMP8	1.23E-13	0.664622582	0.323	0.201	7.54E-09	1.61E+00	macrophages	VAMP8
TWISTNB	6.81E-07	0.664492194	0.215	0.135	0.041803303	1.592592593	macrophages	TWISTNB
THRAP3	0	0.664309768	0.606	0.226	0	2.681415929	spermatogonia	THRAP3
SPATA32	0	0.664191894	0.46	0.096	0	4.791666667	spermatid	SPATA32
SAMSN1	1.22E-133	0.664181979	0.211	0.002	7.49E-129	1.06E+02	T_cells	SAMSN1
GCC2	0	0.664008981	0.576	0.34	0	1.694117647	spermatogonia	GCC2
CNN3	4.55E-50	0.664001523	0.63	0.361	2.79E-45	1.75E+00	endotheliocyte	CNN3
RAB21	0	0.663758216	0.581	0.334	0	1.739520958	spermatid	RAB21
PGAM11	5.58E-67	0.663700837	0.373	0.235	3.42E-62	1.59E+00	Sertoli_cells	PGAM1
LINC01210	0	0.663585412	0.734	0.122	0	6.016393443	spermatocyte	LINC01210
RILPL2	4.71E-188	0.663528063	0.444	0.069	2.89E-183	6.43E+00	endotheliocyte	RILPL2
COL14A1	1.49E-236	0.663376549	0.355	0.041	9.16E-232	8.66E+00	VSM_cells	COL14A1
CHST1	0	0.663163489	0.748	0.133	0	5.62406015	spermatocyte	CHST1
BRCA2	0	0.663100143	0.435	0.101	0	4.306930693	spermatogonia	BRCA2
SNRPE	0	0.662874194	0.578	0.263	0	2.197718631	spermatogonia	SNRPE
THBD1	8.46E-25	0.662841407	0.175	0.049	5.19E-20	3.57E+00	macrophages	THBD
ZFP36L24	1.56E-116	0.66264163	0.52	0.142	9.57E-112	3.66E+00	VSM_cells	ZFP36L2
SLIRP	0	0.66260772	0.884	0.415	0	2.130120482	spermatocyte	SLIRP
CTSK1	0	0.662542126	0.449	0.039	0	11.51282051	PTM_cells	CTSK
HVCN1	0	0.662381716	0.84	0.303	0	2.772277228	spermatocyte	HVCN1
RPL302	3.08E-177	0.662315424	0.937	0.876	1.89E-172	1.07E+00	Leydig_cells	RPL30
BCL2L14	0	0.662173139	0.642	0.283	0	2.268551237	spermatid	BCL2L14
FKBP9	4.12E-230	0.662149691	0.365	0.038	2.53E-225	9.61E+00	endotheliocyte	FKBP9
EGR11	4.96E-27	0.662074688	0.508	0.261	3.04E-22	1.95E+00	macrophages	EGR1

PRSS54	0	0.662040548	0.595	0.302	0	1.970198675	spermatid	PRSS54
LSM4	0	0.661968565	0.716	0.567	0	1.262786596	spermatogonia	LSM4
ACTG1	0	0.661950311	0.891	0.768	0	1.16015625	spermatogonia	ACTG1
PEBP1	1.34E-192	0.66192638	0.84	0.594	8.20E-188	1.41E+00	PTM_cells	PEBP1
RAD23B	0	0.661911055	0.679	0.443	0	1.532731377	spermatid	RAD23B
RP5.1056L3.3	1.96E-09	0.661838705	0.296	0.195	0.000120437	1.517948718	macrophages	RP5.1056L3.3
C6orf201	0	0.66170905	0.68	0.398	0	1.708542714	spermatid	C6orf201
MYO9B	3.85E-140	0.661693828	0.283	0.102	2.36E-135	2.77E+00	Sertoli_cells	MYO9B
RPS132	8.61E-208	0.661681322	0.906	0.838	5.28E-203	1.08E+00	PTM_cells	RPS13
RAB11FIP5	0	0.661547866	0.888	0.399	0	2.22556391	spermatocyte	RAB11FIP5
PPP1R15B1	1.86E-23	0.66139744	0.323	0.148	1.14E-18	2.18E+00	macrophages	PPP1R15B
RNF20	0	0.661172204	0.77	0.175	0	4.4	spermatocyte	RNF20
ARHGAP15	0	0.661118635	0.741	0.163	0	4.54601227	spermatocyte	ARHGAP15
CISD1	0	0.661105143	0.818	0.33	0	2.478787879	spermatocyte	CISD1
PRDX11	5.93E-177	0.660777635	0.673	0.306	3.64E-172	2.20E+00	Leydig_cells	PRDX1
PRPS22	3.70E-196	0.660684061	0.301	0.083	2.27E-191	3.63E+00	Sertoli_cells	PRPS2
KLF43	5.09E-95	0.660577637	0.648	0.48	3.13E-90	1.35E+00	PTM_cells	KLF4
LRRFIP12	1.56E-152	0.660558587	0.431	0.087	9.59E-148	4.95E+00	VSM_cells	LRRFIP1
POLR2A	0	0.660477575	0.618	0.304	0	2.032894737	spermatogonia	POLR2A
RPS161	1.71E-36	0.660267746	0.862	0.756	1.05E-31	1.14E+00	macrophages	RPS16
MT-ATP6	1.29E-134	0.660186722	0.518	0.412	7.93E-130	1.26E+00	spermatogonia	MT-ATP6
CCDC136	0	0.660152608	0.992	0.618	0	1.605177994	spermatocyte	CCDC136
BASP1	1.90E-81	0.660072372	0.199	0.024	1.17E-76	8.29E+00	macrophages	BASP1
PDCD42	1.06E-179	0.65984493	0.576	0.273	6.48E-175	2.11E+00	PTM_cells	PDCD4
NSA2	0	0.659676932	0.942	0.464	0	2.030172414	spermatocyte	NSA2
IGFBP31	0	0.659663703	0.196	0.014	0	14	Leydig_cells	IGFBP3
RPS4Y13	2.22E-97	0.65948865	0.689	0.267	1.36E-92	2.58E+00	VSM_cells	RPS4Y1
NFKBID	1.85E-251	0.659411641	0.232	0.01	1.14E-246	2.32E+01	macrophages	NFKBID
ID31	0	0.659127171	0.287	0.037	0	7.756756757	Leydig_cells	ID3
PIAS2	0	0.659125819	0.978	0.556	0	1.758992806	spermatocyte	PIAS2
CTSC	5.98E-69	0.65900203	0.273	0.05	3.67E-64	5.46E+00	macrophages	CTSC
CCT4	0	0.658931979	0.947	0.489	0	1.936605317	spermatocyte	CCT4
RPL7A1	3.26E-192	0.658786148	0.934	0.876	2.00E-187	1.07E+00	PTM_cells	RPL7A
ENOX1	0	0.65866515	0.539	0.201	0	2.68159204	spermatid	ENOX1
SPAM1	0	0.658554576	0.46	0.166	0	2.771084337	spermatid	SPAM1
WNK3	8.72E-142	0.658542278	0.262	0.087	5.35E-137	3.01E+00	Sertoli_cells	WNK3
CDKN1A5	0.000268917	0.658525702	0.316	0.131	1	2.41221374	T_cells	CDKN1A
CTSS1	5.17E-10	0.658432829	0.184	0.026	3.17E-05	7.08E+00	T_cells	CTSS
CD631	7.02E-45	0.65836471	0.633	0.289	4.31E-40	2.19E+00	macrophages	CD63
PDGFRB	1.67E-222	0.658303836	0.335	0.074	1.02E-217	4.53E+00	Leydig_cells	PDGFRB
TSKU	0	0.658231717	0.255	0.022	0	11.59090909	Leydig_cells	TSKU
GLT8D1	0	0.657932104	0.83	0.282	0	2.943262411	spermatocyte	GLT8D1
RPS53	2.56E-79	0.657761831	0.886	0.817	1.57E-74	1.08E+00	VSM_cells	RPS5
PSPC1	0	0.657524114	0.545	0.217	0	2.511520737	spermatogonia	PSPC1
USP53	9.69E-20	0.657487918	0.246	0.103	5.94E-15	2.39E+00	macrophages	USP53
RPS3AP47	5.58E-07	0.657272127	0.347	0.275	0.034244837	1.261818182	macrophages	RPS3AP47
ZFAND5	1.57E-45	0.657184263	0.702	0.483	9.62E-41	1.45E+00	endotheliocyte	ZFAND5
MT1A1	4.94E-235	0.657086572	0.326	0.034	3.03E-230	9.59E+00	VSM_cells	MT1A
BRD8	0	0.657071392	0.919	0.361	0	2.545706371	spermatocyte	BRD8
IL61	5.97E-158	0.657027076	0.124	0.014	3.66E-153	8.86E+00	Leydig_cells	IL6
NGFRAP1	4.12E-244	0.656967554	0.475	0.125	2.53E-239	3.80E+00	Leydig_cells	NGFRAP1
CAPN2	2.27E-80	0.656864785	0.568	0.206	1.39E-75	2.76E+00	endotheliocyte	CAPN2
MRPL14	0	0.656804588	0.852	0.383	0	2.224543081	spermatocyte	MRPL14
ANXA71	2.44E-300	0.656788598	0.502	0.143	1.50E-295	3.51E+00	PTM_cells	ANXA7
TFPI	4.30E-74	0.656784214	0.377	0.107	2.64E-69	3.52E+00	endotheliocyte	TFPI
PDIA4	0	0.656743426	0.487	0.083	0	5.86746988	spermatogonia	PDIA4
RPL293	5.80E-89	0.656556053	0.909	0.847	3.56E-84	1.07E+00	VSM_cells	RPL29
RPS142	9.70E-157	0.656533114	0.908	0.828	5.95E-152	1.10E+00	Leydig_cells	RPS14
TIAM2	0	0.656482549	0.483	0.154	0	3.136363636	spermatid	TIAM2
RPL111	2.39E-35	0.65646857	0.909	0.825	1.47E-30	1.10E+00	macrophages	RPL11
TUBB4B	0	0.656198089	0.997	0.842	0	1.184085511	spermatocyte	TUBB4B
EEF1D2	2.67E-165	0.655915196	0.798	0.621	1.64E-160	1.29E+00	PTM_cells	EEF1D
ATP1B11	0	0.655675369	0.527	0.132	0	3.992424242	PTM_cells	ATP1B1
SCD	3.55E-98	0.655570043	0.279	0.122	2.18E-93	2.29E+00	Sertoli_cells	SCD
FAM49B	1.01E-29	0.655484529	0.364	0.155	6.20E-25	2.35E+00	macrophages	FAM49B
HNRNPA14	1.19E-55	0.655424742	0.761	0.603	7.32E-51	1.26E+00	VSM_cells	HNRNPA1
CCDC112	0	0.655420007	0.509	0.219	0	2.324200913	spermatogonia	CCDC112
FAM71F2	0	0.655360861	0.484	0.108	0	4.481481481	spermatid	FAM71F2
TCP10L	0	0.655025754	0.982	0.565	0	1.738053097	spermatocyte	TCP10L
MUM1L1	0	0.655020372	0.239	0.034	0	7.029411765	Sertoli_cells	MUM1L1
GPRC5B	6.91E-83	0.654918097	0.305	0.157	4.24E-78	1.94E+00	Sertoli_cells	GPRC5B
EREG	1.74E-41	0.654862566	0.094	0.011	1.07E-36	8.55E+00	macrophages	EREG
COX5A	0	0.654848257	0.966	0.619	0	1.560581583	spermatocyte	COX5A
FLT1	4.04E-43	0.654824956	0.563	0.328	2.48E-38	1.72E+00	endotheliocyte	FLT1
ITGA5	0	0.654578655	0.347	0.009	0	38.55555556	endotheliocyte	ITGA5

MT-ND1	3.90E-140	0.654483206	0.497	0.387	2.40E-135	1.28E+00	spermatogonia	MT-ND1
C12orf57	2.19E-88	0.654306507	0.607	0.453	1.34E-83	1.34E+00	Leydig_cells	C12orf57
GBP5	5.89E-27	0.654264488	0.184	0.01	3.61E-22	1.84E+01	T_cells	GBP5
CEBPB	5.34E-56	0.654191396	0.293	0.068	3.28E-51	4.31E+00	macrophages	CEBPB
ZNF638	0	0.65412863	0.583	0.24	0	2.429166667	spermatogonia	ZNF638
DKC1	1.14E-137	0.654123849	0.302	0.109	6.97E-133	2.77E+00	Sertoli_cells	DKC1
EDIL3	1.31E-162	0.654113453	0.406	0.078	8.04E-158	5.21E+00	VSM_cells	EDIL3
CDC20	0	0.654026195	0.831	0.229	0	3.628820961	spermatocyte	CDC20
TF	0	0.653829773	0.234	0.015	0	15.6	Sertoli_cells	TF
CPE3	8.32E-87	0.65375811	0.375	0.203	5.10E-82	1.85E+00	Sertoli_cells	CPE
RPL10A1	3.15E-31	0.653594111	0.768	0.662	1.93E-26	1.16E+00	macrophages	RPL10A
PGM5	3.33E-167	0.653228281	0.285	0.032	2.04E-162	8.91E+00	endotheliocyte	PGM5
PARP15	3.18E-22	0.652971894	0.132	0.006	1.95E-17	2.20E+01	T_cells	PARP15
STK39	0	0.652869421	0.739	0.26	0	2.842307692	spermatocyte	STK39
RPL18AP3	7.49E-33	0.652804572	0.189	0.046	4.60E-28	4.11E+00	macrophages	RPL18AP3
POMP	0	0.652712854	0.976	0.687	0	1.420669578	spermatocyte	POMP
HABP4	0	0.65271019	0.608	0.4	0	1.52	spermatid	HABP4
EDNRA2	1.68E-253	0.652629065	0.389	0.045	1.03E-248	8.64E+00	VSM_cells	EDNRA
LIMA1	2.53E-47	0.652463696	0.474	0.223	1.55E-42	2.13E+00	endotheliocyte	LIMA1
ARHGAP35	2.46E-299	0.652436973	0.668	0.503	1.51E-294	1.33E+00	spermatid	ARHGAP35
LINC00226	0	0.652416634	0.52	0.259	0	2.007722008	spermatid	LINC00226
CDC42	0	0.652382013	0.683	0.344	0	1.985465116	spermatogonia	CDC42
TRIB2	1.83E-267	0.652111072	0.311	0.054	1.12E-262	5.76E+00	Leydig_cells	TRIB2
PAPOLB	0	0.652062267	0.878	0.259	0	3.38996139	spermatocyte	PAPOLB
CEP85	0	0.651444154	0.463	0.094	0	4.925531915	spermatogonia	CEP85
RGS191	1.32E-35	0.651381563	0.237	0.012	8.08E-31	1.98E+01	T_cells	RGS19
LINC01096	0	0.651301559	0.808	0.174	0	4.643678161	spermatocyte	LINC01096
CRYAB	0	0.651226562	0.44	0.109	0	4.036697248	PTM_cells	CRYAB
FNDC4	0	0.651186426	0.526	0.191	0	2.753926702	spermatid	FNDC4
BTG12	2.02E-87	0.651146808	0.717	0.606	1.24E-82	1.18E+00	Leydig_cells	BTG1
RPS145	1.70E-132	0.651079178	0.865	0.829	1.04E-127	1.04E+00	Sertoli_cells	RPS14
RPS195	8.39E-89	0.651046498	0.907	0.757	5.15E-84	1.20E+00	VSM_cells	RPS19
SOX7	0	0.650889058	0.352	0.008	0	44	endotheliocyte	SOX7
SF3B1	0	0.650878736	0.638	0.277	0	2.303249097	spermatogonia	SF3B1
IRF11	1.83E-19	0.650820293	0.407	0.222	1.12E-14	1.83E+00	macrophages	IRF1
ZC3HAV1	1.16E-07	0.650779082	0.342	0.104	0.007138885	3.288461538	T_cells	ZC3HAV1
BPTF	0	0.650758874	0.614	0.327	0	1.877675841	spermatogonia	BPTF
LCP21	1.61E-37	0.650645265	0.237	0.012	9.89E-33	1.98E+01	T_cells	LCP2
LINC01539	0	0.650628817	0.573	0.221	0	2.592760181	spermatid	LINC01539
ATP2B1	0	0.65044189	0.346	0.076	0	4.552631579	spermatogonia	ATP2B1
IDS	8.95E-39	0.650437067	0.256	0.069	5.49E-34	3.71E+00	macrophages	IDS
IL1R1	1.03E-257	0.650408958	0.342	0.03	6.30E-253	1.14E+01	endotheliocyte	IL1R1
SOX5	0	0.650354105	0.893	0.297	0	3.006734007	spermatocyte	SOX5
TSEN34	3.68E-56	0.650345335	0.296	0.173	2.26E-51	1.71E+00	Sertoli_cells	TSEN34
HTATSF1	2.53E-115	0.650330551	0.321	0.138	1.55E-110	2.33E+00	Sertoli_cells	HTATSF1
CD831	2.46E-237	0.650312078	0.264	0.058	1.51E-232	4.55E+00	Sertoli_cells	CD83
TTC39A	0	0.650284955	0.657	0.389	0	1.688946015	spermatid	TTC39A
ADCY4	0	0.650094012	0.34	0.006	0	56.66666667	endotheliocyte	ADCY4
DNAAF1	0	0.649998406	0.912	0.316	0	2.886075949	spermatocyte	DNAAF1
SPN	4.24E-153	0.64990368	0.211	0.002	2.60E-148	1.06E+02	T_cells	SPN
SLC2A14	7.17E-109	0.649850554	0.321	0.217	4.40E-104	1.48E+00	spermatogonia	SLC2A14
JUND3	2.46E-100	0.649767813	0.678	0.495	1.51E-95	1.37E+00	PTM_cells	JUND
LSM14B	0	0.649680371	0.555	0.244	0	2.274590164	spermatid	LSM14B
SWI5	0	0.64965938	0.693	0.48	0	1.44375	spermatid	SWI5
CDR2	0	0.649481044	0.777	0.235	0	3.306382979	spermatocyte	CDR2
KLF101	9.12E-12	0.649344652	0.364	0.245	5.59E-07	1.49E+00	macrophages	KLF10
HSPA1B3	7.90E-228	0.649186813	0.523	0.179	4.84E-223	2.92E+00	PTM_cells	HSPA1B
EIF4G1	0	0.649174307	0.573	0.297	0	1.929292929	spermatid	EIF4G1
FTH16	8.85E-05	0.649063736	0.816	0.723	1	1.128630705	T_cells	FTH1
INSIG1	0.000290847	0.649010489	0.286	0.245	1	1.167346939	macrophages	INSIG1
ITM2B5	4.39E-09	0.648976112	0.737	0.327	0.000269332	2.25382263	T_cells	ITM2B
C14orf1	0	0.648898312	0.92	0.367	0	2.506811989	spermatocyte	C14orf1
ZNF706	0	0.648892006	0.632	0.468	0	1.35042735	spermatid	ZNF706
RPL36A4	5.42E-129	0.64878212	0.522	0.134	3.33E-124	3.90E+00	VSM_cells	RPL36A
WDR1	0	0.648770322	0.691	0.542	0	1.274907749	spermatid	WDR1
UBL5	0	0.648754146	0.751	0.531	0	1.414312618	spermatogonia	UBL5
ELN2	3.05E-191	0.648558846	0.338	0.045	1.87E-186	7.51E+00	VSM_cells	ELN
RPL61	2.80E-19	0.648308308	0.714	0.684	1.72E-14	1.04E+00	macrophages	RPL6
EIF3K1	1.35E-59	0.648263776	0.689	0.482	8.26E-55	1.43E+00	VSM_cells	EIF3K
DOK2	0	0.648235009	0.226	0.007	0	32.28571429	macrophages	DOK2
GABRG3.AS1	0	0.648219056	0.279	0.059	0	4.728813559	spermatid	GABRG3.AS1
AIFM1	8.45E-246	0.647990335	0.257	0.053	5.18E-241	4.85E+00	Sertoli_cells	AIFM1
RAC2	0	0.64795491	0.182	0.003	0	60.66666667	macrophages	RAC2
TMC6	1.58E-27	0.647566615	0.211	0.013	9.72E-23	1.62E+01	T_cells	TMC6
TUBA3E	0	0.647485399	0.805	0.311	0	2.588424437	spermatocyte	TUBA3E

ARHGAP30	0	0.647374863	0.192	0.004	0	48	macrophages	ARHGAP30
RP11-80B9.4	2.10E-304	0.64691589	0.341	0.164	1.29E-299	2.08E+00	spermatid	RP11-80B9.4
NDUFS51	1.25E-61	0.646879444	0.679	0.446	7.68E-57	1.52E+00	VSM_cells	NDUFS5
APOC1	0	0.646857909	0.29	0.027	0	10.74074074	Leydig_cells	APOC1
CPSF3	0	0.64625468	0.91	0.341	0	2.668621701	spermatocyte	CPSF3
EMB	8.54E-143	0.646179001	0.229	0.019	5.24E-138	1.21E+01	macrophages	EMB
C16orf86	0	0.646084842	0.783	0.199	0	3.934673367	spermatocyte	C16orf86
CCDC169	0	0.646079521	0.729	0.567	0	1.285714286	spermatid	CCDC169
ATP1B12	1.63E-104	0.645716351	0.311	0.141	1.00E-99	2.21E+00	Sertoli_cells	ATP1B1
TNFAIP2	1.24E-15	0.645671984	0.343	0.192	7.61E-11	1.79E+00	macrophages	TNFAIP2
SH3BP5	1.83E-190	0.645374796	0.602	0.273	1.13E-185	2.21E+00	PTM_cells	SH3BP5
RPS131	1.06E-158	0.645258048	0.917	0.838	6.49E-154	1.09E+00	Leydig_cells	RPS13
HSD17B12	3.95E-65	0.645035371	0.471	0.183	2.42E-60	2.57E+00	endotheliocyte	HSD17B12
BAZ1B	0	0.645007788	0.487	0.144	0	3.381944444	spermatogonia	BAZ1B
KRT19	0	0.644874364	0.26	0.011	0	23.63636364	PTM_cells	KRT19
MZT2A	1.37E-169	0.644858328	0.566	0.271	8.43E-165	2.09E+00	PTM_cells	MZT2A
HLTF1	3.06E-67	0.644828646	0.367	0.222	1.88E-62	1.65E+00	Sertoli_cells	HLTF
ATAD2	0	0.64480168	0.56	0.263	0	2.129277567	spermatogonia	ATAD2
TDRD9	0	0.644744809	0.509	0.169	0	3.01183432	spermatogonia	TDRD9
BLVRB	0	0.644687038	0.36	0.056	0	6.428571429	Leydig_cells	BLVRB
ORC6	0	0.64466143	0.464	0.118	0	3.93220339	spermatogonia	ORC6
IL6ST1	4.73E-75	0.644228504	0.455	0.268	2.90E-70	1.70E+00	Leydig_cells	IL6ST
FZD2	0	0.644134802	0.193	0.015	0	12.86666667	Leydig_cells	FZD2
RAB11FIP11	1.74E-08	0.644110092	0.211	0.039	0.001064977	5.41025641	T_cells	RAB11FIP1
SAP18	0	0.643988622	0.978	0.685	0	1.427737226	spermatocyte	SAP18
ARPC5	0	0.643901979	0.602	0.282	0	2.134751773	spermatogonia	ARPC5
MARK4	0	0.643886311	0.245	0.034	0	7.205882353	Sertoli_cells	MARK4
ACTN1	4.11E-61	0.643756665	0.541	0.247	2.52E-56	2.19E+00	endotheliocyte	ACTN1
ACTN42	0.001957822	0.643714375	0.316	0.164	1	1.926829268	T_cells	ACTN4
PLEC	8.69E-168	0.643589304	0.387	0.057	5.33E-163	6.79E+00	endotheliocyte	PLEC
G3BP1	0	0.643299107	0.594	0.327	0	1.816513761	spermatogonia	G3BP1
MRFAP1	0	0.643264327	0.714	0.418	0	1.708133971	spermatogonia	MRFAP1
PDE6D	0	0.643240247	0.898	0.376	0	2.388297872	spermatocyte	PDE6D
XYLT2	0	0.643155743	0.524	0.234	0	2.239316239	spermatid	XYLT2
SH3BGRL1	3.80E-39	0.643076487	0.343	0.11	2.33E-34	3.12E+00	macrophages	SH3BGRL
FEZ21	2.41E-135	0.642851505	0.264	0.09	1.48E-130	2.93E+00	Sertoli_cells	FEZ2
SYTL1	6.83E-07	0.642701049	0.184	0.037	0.041908029	4.972972973	T_cells	SYTL1
HSPA1B4	2.58E-57	0.642616927	0.461	0.191	1.58E-52	2.41E+00	VSM_cells	HSPA1B
TNS2	3.54E-262	0.642615962	0.417	0.043	2.17E-257	9.70E+00	endotheliocyte	TNS2
SIVA1	0	0.642610291	0.729	0.476	0	1.531512605	spermatogonia	SIVA1
TMEM97	2.03E-37	0.642394544	0.346	0.266	1.25E-32	1.30E+00	Sertoli_cells	TMEM97
CCDC801	5.87E-67	0.642173177	0.528	0.35	3.60E-62	1.51E+00	Leydig_cells	CCDC80
GAPDH1	9.27E-132	0.64189388	0.8	0.81	5.69E-127	9.88E-01	Sertoli_cells	GAPDH
PRPH	0	0.641790009	0.921	0.366	0	2.516393443	spermatocyte	PRPH
SFMBT1	0	0.641664576	0.811	0.263	0	3.08365019	spermatocyte	SFMBT1
RAC15	7.05E-64	0.641662917	0.668	0.375	4.33E-59	1.78E+00	VSM_cells	RAC1
DPT1	0	0.641487763	0.378	0.03	0	12.6	PTM_cells	DPT
NUCB1	3.82E-103	0.641486894	0.491	0.134	2.34E-98	3.66E+00	endotheliocyte	NUCB1
REXO1	0	0.641348295	0.527	0.23	0	2.291304348	spermatid	REXO1
ATP1A1	4.98E-48	0.641282705	0.541	0.283	3.05E-43	1.91E+00	endotheliocyte	ATP1A1
IQCE	0	0.641260109	0.656	0.451	0	1.454545455	spermatid	IQCE
SOD31	1.54E-22	0.641024872	0.34	0.295	9.46E-18	1.15E+00	Sertoli_cells	SOD3
IMPACT	0	0.640903207	0.525	0.161	0	3.260869565	spermatogonia	IMPACT
RRBP1	0	0.64087432	0.543	0.261	0	2.08045977	spermatogonia	RRBP1
IKZF11	3.68E-07	0.640844244	0.158	0.027	0.022570072	5.851851852	T_cells	IKZF1
RPL141	1.50E-24	0.640781003	0.737	0.645	9.21E-20	1.14E+00	macrophages	RPL14
OTUD6B-AS1	0	0.640736614	0.564	0.308	0	1.831168831	spermatocyte	OTUD6B-AS1
BUB1B	0	0.640729674	0.443	0.102	0	4.343137255	spermatogonia	BUB1B
SON	0	0.640675505	0.763	0.529	0	1.442344045	spermatogonia	SON
KCNQ1OT1	6.17E-204	0.640472901	0.301	0.139	3.79E-199	2.17E+00	spermatogonia	KCNQ1OT1
LRIF1	1.71E-45	0.640390215	0.292	0.185	1.05E-40	1.58E+00	Sertoli_cells	LRIF1
ARF1	0	0.640340944	0.959	0.648	0	1.479938272	spermatocyte	ARF1
HSPH1	0	0.640327739	0.744	0.53	0	1.403773585	spermatogonia	HSPH1
RCC1	0	0.640271742	0.504	0.223	0	2.260089686	spermatid	RCC1
CTCFL	0	0.640171397	0.282	0.022	0	12.81818182	spermatogonia	CTCFL
ZEB21	2.78E-296	0.640154749	0.37	0.069	1.70E-291	5.36E+00	Leydig_cells	ZEB2
PIK3R11	2.32E-204	0.640105739	0.348	0.087	1.42E-199	4.00E+00	Leydig_cells	PIK3R1
KRT23	0	0.639968222	0.78	0.192	0	4.0625	spermatocyte	KRT23
NDRG21	2.25E-161	0.639824059	0.412	0.075	1.38E-156	5.49E+00	VSM_cells	NDRG2
GPBP1	0	0.639814043	0.776	0.573	0	1.354275742	spermatogonia	GPBP1
FBLN21	1.72E-240	0.639812822	0.343	0.076	1.05E-235	4.51E+00	PTM_cells	FBLN2
S100A114	8.10E-59	0.639771618	0.636	0.349	4.97E-54	1.82E+00	VSM_cells	S100A11
ZFAS13	4.29E-170	0.639464141	0.542	0.254	2.63E-165	2.13E+00	PTM_cells	ZFAS1
GPNMB1	0	0.639112468	0.431	0.057	0	7.561403509	PTM_cells	GPNMB
GTF3A	0	0.638950817	0.464	0.236	0	1.966101695	spermatogonia	GTF3A

PDCD41	7.10E-89	0.638790509	0.487	0.279	4.35E-84	1.75E+00	Leydig_cells	PDCD4
ATG3	0	0.638708351	0.953	0.512	0	1.861328125	spermatocyte	ATG3
SOX4	0	0.638613559	0.303	0.093	0	3.258064516	spermatogonia	SOX4
IFIT31	3.43E-303	0.638590832	0.222	0.023	2.10E-298	9.65E+00	Leydig_cells	IFIT3
AC010649.1	0	0.638405231	0.433	0.114	0	3.798245614	spermatid	AC010649.1
COX7B	1.79E-103	0.638139755	0.495	0.153	1.10E-98	3.24E+00	VSM_cells	COX7B
CSMD2.AS1	0	0.638067054	0.289	0.071	0	4.070422535	spermatid	CSMD2.AS1
FAM71D	0	0.637995454	0.513	0.201	0	2.552238806	spermatid	FAM71D
MIEF1	0	0.637983285	0.59	0.329	0	1.79331307	spermatid	MIEF1
PCBD1	2.76E-107	0.637949074	0.212	0.07	1.69E-102	3.03E+00	Sertoli_cells	PCBD1
KANK3	0	0.637816301	0.385	0.014	0	27.5	endotheliocyte	KANK3
CEBPD3	0	0.637805899	0.438	0.097	0	4.515463918	PTM_cells	CEBPD
APRT	2.61E-149	0.637775718	0.446	0.169	1.60E-144	2.64E+00	Leydig_cells	APRT
INHBB	0	0.637772315	0.224	0.021	0	10.66666667	Sertoli_cells	INHBB
SNHG5	3.51E-08	0.637759873	0.149	0.082	0.0021563	1.817073171	endotheliocyte	SNHG5
MT-ND41	8.07E-53	0.63765131	0.73	0.414	4.95E-48	1.76E+00	endotheliocyte	MT-ND4
RPL42	5.01E-148	0.637613294	0.828	0.747	3.07E-143	1.11E+00	PTM_cells	RPL4
SVIL1	8.61E-101	0.637554633	0.423	0.118	5.28E-96	3.58E+00	VSM_cells	SVIL
RPL13AP5	6.12E-08	0.637553479	0.171	0.102	0.003753355	1.676470588	endotheliocyte	RPL13AP5
AK3	2.13E-276	0.637550351	0.341	0.063	1.31E-271	5.41E+00	Leydig_cells	AK3
MRPL42	0	0.637315396	0.872	0.405	0	2.15308642	spermatocyte	MRPL42
PHLDA2	2.36E-257	0.637273147	0.245	0.017	1.45E-252	1.44E+01	VSM_cells	PHLDA2
CBR3	0	0.637267312	0.311	0.02	0	15.55	Leydig_cells	CBR3
EGFR1	0	0.63723761	0.434	0.049	0	8.857142857	PTM_cells	EGFR
DGUOK	0	0.637224687	0.553	0.197	0	2.807106599	spermatogonia	DGUOK
IFIT1	1.27E-290	0.63695417	0.355	0.028	7.80E-286	1.27E+01	endotheliocyte	IFIT1
CLTA	0	0.636937761	0.716	0.468	0	1.52991453	spermatogonia	CLTA
SLC38A22	8.13E-107	0.636901625	0.429	0.112	4.99E-102	3.83E+00	VSM_cells	SLC38A2
CXXC5	0	0.636855287	0.631	0.37	0	1.705405405	spermatid	CXXC5
TBP	0	0.636666762	0.754	0.178	0	4.235955056	spermatocyte	TBP
CPED1	0	0.636548811	0.384	0.022	0	17.45454545	PTM_cells	CPED1
PPIB2	0.005634475	0.636497517	0.421	0.294	1	1.431972789	T_cells	PPIB
CD82	1.93E-177	0.636314497	0.357	0.047	1.18E-172	7.60E+00	endotheliocyte	CD82
KLRG1	1.54E-19	0.636261431	0.158	0.01	9.46E-15	1.58E+01	T_cells	KLRG1
RBPJ	0	0.636246479	0.633	0.331	0	1.912386707	spermatogonia	RBPJ
NAA38	0	0.636194148	0.713	0.588	0	1.212585034	spermatid	NAA38
ARHGEF1	9.48E-13	0.636043281	0.237	0.034	5.82E-08	6.97E+00	T_cells	ARHGEF1
RPS111	3.84E-37	0.63596537	0.889	0.822	2.35E-32	1.08E+00	macrophages	RPS11
SLF1	0	0.635841551	0.522	0.167	0	3.125748503	spermatogonia	SLF1
MED4	0	0.635803682	0.636	0.39	0	1.630769231	spermatogonia	MED4
RPS262	1.91E-68	0.635721003	0.648	0.533	1.17E-63	1.22E+00	Leydig_cells	RPS26
NAA15	0	0.635579071	0.515	0.136	0	3.786764706	spermatogonia	NAA15
CCND3	1.65E-142	0.635575178	0.414	0.077	1.02E-137	5.38E+00	endotheliocyte	CCND3
SERTAD12	1.18E-247	0.635574862	0.334	0.066	7.26E-243	5.06E+00	Leydig_cells	SERTAD1
ATP5D1	0.003458305	0.635523896	0.332	0.387	1	0.857881137	Sertoli_cells	ATP5D
ATP5G22	2.65E-61	0.635461711	0.729	0.491	1.62E-56	1.48E+00	VSM_cells	ATP5G2
ATP2A2	0	0.635389941	0.574	0.318	0	1.805031447	spermatogonia	ATP2A2
MAP3K7CL	0	0.635355827	0.281	0.012	0	23.41666667	VSM_cells	MAP3K7CL
CLGN1	0.006974257	0.635296131	0.62	0.541	1	1.146025878	mastocyte	CLGN
FAM114A1	0	0.634979007	0.356	0.05	0	7.12	Leydig_cells	FAM114A1
C21orf59	0	0.634925151	0.846	0.298	0	2.838926174	spermatocyte	C21orf59
PALLD	0	0.634729721	0.915	0.374	0	2.446524064	spermatocyte	PALLD
OOSP2	0	0.634704976	0.191	0.004	0	47.75	Sertoli_cells	OOSP2
CD814	1.61E-67	0.634571054	0.446	0.309	9.85E-63	1.44E+00	Sertoli_cells	CD81
KDM1A	0	0.634519464	0.704	0.451	0	1.56097561	spermatogonia	KDM1A
DAZAP2	3.99E-11	0.634449722	0.438	0.339	2.45E-06	1.29E+00	macrophages	DAZAP2
IFNGR12	0.008671569	0.63420369	0.237	0.122	1	1.942622951	T_cells	IFNGR1
CT83	0	0.634146353	0.527	0.233	0	2.261802575	spermatid	CT83
TFPI1	3.87E-190	0.634010519	0.361	0.101	2.37E-185	3.57E+00	Leydig_cells	TFPI
RP11.402G3.5	0	0.633995749	0.259	0.04	0	6.475	spermatid	RP11.402G3.5
TAGLN24	0.002920771	0.633957108	0.368	0.213	1	1.727699531	T_cells	TAGLN2
DDIT44	1.78E-07	0.633857953	0.316	0.087	0.01094533	3.632183908	T_cells	DDIT4
CAMK2N1	0	0.633835552	0.384	0.037	0	10.37837838	PTM_cells	CAMK2N1
BCL6	1.50E-25	0.633592802	0.273	0.102	9.21E-21	2.68E+00	macrophages	BCL6
PHYHIPL	0	0.633207904	0.895	0.346	0	2.586705202	spermatocyte	PHYHIPL
CYFIP2	0.001077632	0.6331512	0.184	0.064	1	2.875	T_cells	CYFIP2
SPDL1	0	0.633124597	0.509	0.2	0	2.545	spermatogonia	SPDL1
FERMT2	2.80E-207	0.63284256	0.534	0.216	1.72E-202	2.47E+00	PTM_cells	FERMT2
TMEM981	0	0.632795703	0.465	0.107	0	4.345794393	PTM_cells	TMEM98
CTNNA3	0	0.632753872	0.463	0.104	0	4.451923077	spermatid	CTNNA3
AES1	0	0.632710218	0.547	0.13	0	4.207692308	PTM_cells	AES
CALU1	2.05E-240	0.632553806	0.509	0.173	1.26E-235	2.94E+00	PTM_cells	CALU
SLFN51	7.17E-12	0.632440402	0.184	0.022	4.40E-07	8.36E+00	T_cells	SLFN5
SERPINA1	0	0.632315512	0.185	0.001	0	185	macrophages	SERPINA1
SLC52A3	0	0.632294161	0.23	0.008	0	28.75	Sertoli_cells	SLC52A3



GADD45G2	3.76E-88	0.632222127	0.321	0.075	2.31E-83	4.28E+00	VSM_cells	GADD45G
STAG3	0	0.632024011	0.559	0.304	0	1.838815789	spermatogonia	STAG3
C11orf97	0	0.631953399	0.601	0.193	0	3.113989637	spermatocyte	C11orf97
ANXA5	4.34E-69	0.631905793	0.658	0.315	2.66E-64	2.09E+00	endotheliocyte	ANXA5
APRT1	6.07E-05	0.631472492	0.395	0.181	1	2.182320442	T_cells	APRT
JAM21	3.30E-121	0.631403487	0.254	0.092	2.02E-116	2.76E+00	Sertoli_cells	JAM2
BPI	0	0.631373582	0.551	0.217	0	2.539170507	spermatid	BPI
KRT72	0	0.631301021	0.602	0.085	0	7.082352941	spermatocyte	KRT72
HSPD1	0	0.631235994	0.497	0.154	0	3.227272727	spermatogonia	HSPD1
ZBTB38	0	0.631185034	0.572	0.306	0	1.869281046	spermatid	ZBTB38
RP11.120B7.1	2.81E-11	0.631178479	0.421	0.301	1.72E-06	1.40E+00	macrophages	RP11.120B7.1
GUCY1B3	0	0.631081559	0.332	0.013	0	25.53846154	VSM_cells	GUCY1B3
GABRG3-AS1	0	0.631078745	0.361	0.171	0	2.111111111	spermatid	GABRG3-AS1
VMO1	0	0.630972193	0.212	0.005	0	42.4	macrophages	VMO1
TYMS	0	0.63095259	0.742	0.196	0	3.785714286	spermatocyte	TYMS
ZNF829	0	0.630935314	0.517	0.246	0	2.101626016	spermatid	ZNF829
RPS3A1	7.13E-206	0.630879634	0.961	0.896	4.38E-201	1.07E+00	Leydig_cells	RPS3A
C2orf73	0	0.630845928	0.625	0.448	0	1.395089286	spermatid	C2orf73
AC015971.2	0	0.630627467	0.391	0.133	0	2.939849624	spermatid	AC015971.2
BEND2	0	0.630616169	0.225	0.014	0	16.07142857	spermatogonia	BEND2
RABGAP1L	0	0.630484519	0.841	0.286	0	2.940559441	spermatocyte	RABGAP1L
RBM39	0	0.63033431	0.705	0.417	0	1.690647482	spermatogonia	RBM39
CRTAP	2.12E-23	0.630086178	0.276	0.107	1.30E-18	2.58E+00	macrophages	CRTAP
KDELR1	6.91E-137	0.629889952	0.533	0.245	4.24E-132	2.18E+00	Leydig_cells	KDELR1
RPGRIP1	0	0.629876061	0.924	0.362	0	2.552486188	spermatocyte	RPGRIP1
POLR2B	0	0.629595291	0.509	0.132	0	3.856060606	spermatogonia	POLR2B
CREBRF	0	0.629525668	0.537	0.187	0	2.871657754	spermatogonia	CREBRF
PGK1	4.75E-23	0.629511092	0.343	0.158	2.91E-18	2.17E+00	macrophages	PGK1
PRELP	0	0.629319447	0.343	0.025	0	13.72	PTM_cells	PRELP
RPL373	1.64E-208	0.629305155	0.893	0.801	1.01E-203	1.11E+00	PTM_cells	RPL37
GJA1	5.10E-155	0.629171874	0.228	0.022	3.13E-150	1.04E+01	endotheliocyte	GJA1
TACC1	2.01E-17	0.629166496	0.38	0.209	1.24E-12	1.82E+00	macrophages	TACC1
GSKIP	0	0.629147003	0.543	0.35	0	1.551428571	spermatid	GSKIP
IRF8	6.79E-134	0.628919236	0.219	0.018	4.16E-129	1.22E+01	macrophages	IRF8
RPL82	1.97E-223	0.628850498	0.922	0.852	1.21E-218	1.08E+00	PTM_cells	RPL8
PCMT1	0	0.628835004	0.701	0.641	0	1.093603744	spermatid	PCMT1
LNP1	0	0.628809199	0.801	0.188	0	4.260638298	spermatocyte	LNP1
CTSZ	1.21E-217	0.628480072	0.422	0.055	7.44E-213	7.67E+00	endotheliocyte	CTSZ
MRPL20	0	0.62834471	0.581	0.29	0	2.003448276	spermatogonia	MRPL20
SSFA2	7.81E-61	0.628337245	0.464	0.178	4.79E-56	2.61E+00	endotheliocyte	SSFA2
MBNL1	1.44E-112	0.628261297	0.437	0.1	8.84E-108	4.37E+00	endotheliocyte	MBNL1
IRF13	7.14E-133	0.628239724	0.472	0.211	4.38E-128	2.24E+00	PTM_cells	IRF1
CCDC181	0	0.628124816	0.897	0.361	0	2.484764543	spermatocyte	CCDC181
SFRP11	0	0.6281221	0.438	0.087	0	5.034482759	PTM_cells	SFRP1
ARL15	4.27E-231	0.628007105	0.293	0.025	2.62E-226	1.17E+01	endotheliocyte	ARL15
NR6A1	0	0.62799581	0.591	0.353	0	1.674220963	spermatogonia	NR6A1
MAFB1	2.81E-243	0.627908641	0.302	0.055	1.72E-238	5.49E+00	Leydig_cells	MAFB
LINC00694	0	0.627722687	0.575	0.194	0	2.963917526	spermatocyte	LINC00694
DPYSL3	3.39E-83	0.627712834	0.414	0.114	2.08E-78	3.63E+00	endotheliocyte	DPYSL3
HMGB13	1.27E-74	0.627579464	0.827	0.547	7.77E-70	1.51E+00	VSM_cells	HMGB1
SEC31A	9.32E-64	0.62748989	0.461	0.304	5.72E-59	1.52E+00	Leydig_cells	SEC31A
MT2A2	5.25E-161	0.62747023	0.514	0.218	3.22E-156	2.36E+00	PTM_cells	MT2A
SELK	5.30E-18	0.627467249	0.479	0.529	3.25E-13	9.05E-01	Sertoli_cells	SELK
SPNS2	0	0.627383233	0.283	0.007	0	40.42857143	endotheliocyte	SPNS2
ELMO3	0	0.627322584	0.498	0.128	0	3.890625	spermatocyte	ELMO3
DCTN1	1.33E-39	0.627300587	0.349	0.261	8.16E-35	1.34E+00	Sertoli_cells	DCTN1
EIF4A1	8.22E-63	0.627289519	0.533	0.235	5.04E-58	2.27E+00	endotheliocyte	EIF4A1
MBNL12	1.92E-186	0.627249396	0.355	0.094	1.18E-181	3.78E+00	Leydig_cells	MBNL1
CENPW	0	0.626898145	0.795	0.277	0	2.870036101	spermatocyte	CENPW
CENPU	0	0.626854218	0.972	0.534	0	1.820224719	spermatocyte	CENPU
MYL12B	9.95E-49	0.626850881	0.769	0.624	6.10E-44	1.23E+00	endotheliocyte	MYL12B
ZFAS12	7.28E-92	0.626794161	0.47	0.259	4.47E-87	1.81E+00	Leydig_cells	ZFAS1
NUDT3	0	0.626567231	0.551	0.162	0	3.401234568	spermatogonia	NUDT3
MAEL	0	0.626490464	0.986	0.617	0	1.598055105	spermatocyte	MAEL
COMMD6	0.007980703	0.626388492	0.526	0.487	1	1.080082136	T_cells	COMMD6
AC093901.1	0	0.626323056	0.838	0.245	0	3.420408163	spermatocyte	AC093901.1
MSRB3	0	0.626174123	0.407	0.065	0	6.261538462	PTM_cells	MSRB3
RBBP7	3.23E-220	0.626092144	0.591	0.23	1.98E-215	2.57E+00	PTM_cells	RBBP7
GADD45G1	0	0.626007509	0.415	0.062	0	6.693548387	PTM_cells	GADD45G
TXN3	1.98E-83	0.625925342	0.598	0.258	1.22E-78	2.32E+00	VSM_cells	TXN
PRPF6	0	0.625781095	0.615	0.315	0	1.952380952	spermatogonia	PRPF6
RP11-80F22.15	0	0.625757246	0.554	0.209	0	2.650717703	spermatocyte	RP11-80F22.15
SYNPO2	0	0.625729961	0.386	0.044	0	8.772727273	PTM_cells	SYNPO2
MT.CO31	2.43E-29	0.625679485	0.572	0.326	1.49E-24	1.75E+00	macrophages	MT.CO3
SLC25A4	8.35E-86	0.625586612	0.518	0.201	5.13E-81	2.58E+00	VSM_cells	SLC25A4

FHL1	0	0.625404797	0.596	0.297	0	2.006734007	spermatid	FHL1
ZC3H12A	2.83E-25	0.625394291	0.219	0.071	1.74E-20	3.08E+00	macrophages	ZC3H12A
PCYOX11	0	0.625365476	0.478	0.104	0	4.596153846	PTM_cells	PCYOX1
C7orf62	0	0.62530001	0.833	0.227	0	3.669603524	spermatocyte	C7orf62
RMND5B	0	0.625250353	0.922	0.396	0	2.328282828	spermatocyte	RMND5B
DDX42	0	0.625105327	0.528	0.178	0	2.966292135	spermatogonia	DDX42
RPS61	4.06E-07	0.625034158	0.947	0.931	0.024901783	1.017185822	T_cells	RPS6
RHOC	3.02E-95	0.62481709	0.511	0.15	1.85E-90	3.41E+00	endotheliocyte	RHOC
FAM8A1	0	0.624592122	0.574	0.403	0	1.424317618	spermatid	FAM8A1
SPRED1	1.01E-22	0.624511504	0.316	0.144	6.23E-18	2.19E+00	macrophages	SPRED1
SYCE1	3.13E-304	0.624470259	0.615	0.423	1.92E-299	1.45E+00	spermatogonia	SYCE1
PDZD9	0	0.624397385	0.781	0.164	0	4.762195122	spermatocyte	PDZD9
ATP6V0E12	4.00E-27	0.624301589	0.36	0.299	2.45E-22	1.20E+00	Sertoli_cells	ATP6V0E1
ASGR1	0	0.624284037	0.478	0.168	0	2.845238095	spermatid	ASGR1
STARD6	0	0.624220538	0.819	0.261	0	3.137931034	spermatocyte	STARD6
TIMP1	4.15E-143	0.62418697	0.653	0.161	2.55E-138	4.06E+00	endotheliocyte	TIMP1
LINC00657	3.38E-125	0.623786215	0.488	0.25	2.07E-120	1.95E+00	PTM_cells	LINC00657
TNFRSF14	3.81E-22	0.623652493	0.237	0.02	2.34E-17	1.19E+01	T_cells	TNFRSF14
SYNE1	3.62E-77	0.623578	0.422	0.126	2.22E-72	3.35E+00	endotheliocyte	SYNE1
DEK	0	0.623548201	0.449	0.153	0	2.934640523	spermatogonia	DEK
C10orf128	0	0.623391375	0.313	0.005	0	62.6	endotheliocyte	C10orf128
GTF3C2-AS1	0	0.623384629	0.34	0.101	0	3.366336634	spermatid	GTF3C2-AS1
PSMD2	0	0.623362907	0.742	0.535	0	1.386915888	spermatogonia	PSMD2
KIF3A	0	0.623267986	0.65	0.409	0	1.589242054	spermatogonia	KIF3A
CHCHD101	6.76E-31	0.622986252	0.202	0.122	4.15E-26	1.66E+00	Sertoli_cells	CHCHD10
AES2	1.13E-135	0.622851622	0.345	0.138	6.91E-131	2.50E+00	Sertoli_cells	AES
MT-ATP65	1.59E-30	0.62276767	0.502	0.43	9.74E-26	1.17E+00	Sertoli_cells	MT-ATP6
SIRPA	3.39E-97	0.622702218	0.219	0.025	2.08E-92	8.76E+00	macrophages	SIRPA
ATP5E2	6.20E-05	0.622579697	0.737	0.67	1	1.1	T_cells	ATP5E
NINJ1	2.07E-36	0.622508628	0.222	0.057	1.27E-31	3.89E+00	macrophages	NINJ1
EIF2AK2	3.81E-140	0.622503318	0.387	0.067	2.34E-135	5.78E+00	endotheliocyte	EIF2AK2
REG3G	0	0.622400268	0.186	0.004	0	46.5	Sertoli_cells	REG3G
NUDT41	5.57E-35	0.622270714	0.588	0.41	3.42E-30	1.43E+00	VSM_cells	NUDT4
TSPAN18	7.04E-109	0.622109079	0.37	0.078	4.32E-104	4.74E+00	endotheliocyte	TSPAN18
ZNF596	0	0.621977324	0.736	0.134	0	5.492537313	spermatocyte	ZNF596
PINK1	0	0.621911825	0.904	0.455	0	1.986813187	spermatocyte	PINK1
RAC1	0	0.621901396	0.606	0.317	0	1.911671924	spermatogonia	RAC1
EHD2	0	0.621693698	0.313	0.038	0	8.236842105	Leydig_cells	EHD2
HNRNPA15	0.002891881	0.621513083	0.658	0.605	1	1.087603306	T_cells	HNRNPA1
RP11-12M5.1	0	0.621417876	0.345	0.139	0	2.482014388	spermatid	RP11-12M5.1
CSE1L	0	0.621397831	0.677	0.441	0	1.535147392	spermatogonia	CSE1L
BAG2	0	0.621300333	0.798	0.238	0	3.352941176	spermatocyte	BAG2
TUBA3D	0	0.621292534	0.97	0.456	0	2.127192982	spermatocyte	TUBA3D
CRAT	0	0.621251471	0.942	0.446	0	2.112107623	spermatocyte	CRAT
PKM1	1.42E-70	0.621218496	0.588	0.52	8.71E-66	1.13E+00	Sertoli_cells	PKM
PPIA	0	0.621208189	0.773	0.587	0	1.316865417	spermatogonia	PPIA
KMT2B	0	0.621195586	0.452	0.102	0	4.431372549	spermatogonia	KMT2B
PPIA1	3.86E-57	0.621174357	0.859	0.623	2.37E-52	1.38E+00	endotheliocyte	PPIA
PPP2CB	3.97E-133	0.621161868	0.572	0.336	2.43E-128	1.70E+00	PTM_cells	PPP2CB
C9orf135	0	0.620950559	0.663	0.176	0	3.767045455	spermatocyte	C9orf135
PPA1	0	0.620949742	0.58	0.223	0	2.600896861	spermatogonia	PPA1
THAP5	0	0.620670499	0.601	0.407	0	1.476658477	spermatid	THAP5
RASIP1	1.15E-195	0.620593403	0.4	0.054	7.04E-191	7.41E+00	endotheliocyte	RASIP1
ATG4D	0	0.620419429	0.748	0.185	0	4.043243243	spermatocyte	ATG4D
RPL261	1.68E-26	0.62040797	0.832	0.755	1.03E-21	1.10E+00	macrophages	RPL26
WBP2NL	0	0.620190415	0.529	0.241	0	2.195020747	spermatid	WBP2NL
WWTR11	0	0.620188601	0.416	0.087	0	4.781609195	PTM_cells	WWTR1
ELN1	0	0.620016538	0.36	0.034	0	10.58823529	PTM_cells	ELN
MYL65	2.69E-06	0.619921393	0.816	0.665	0.165289757	1.227067669	T_cells	MYL6
AXL	2.64E-30	0.61987537	0.219	0.063	1.62E-25	3.48E+00	macrophages	AXL
ANXA6	7.33E-226	0.619766375	0.481	0.163	4.50E-221	2.95E+00	PTM_cells	ANXA6
RPS10	6.03E-38	0.619522029	0.7	0.538	3.70E-33	1.30E+00	endotheliocyte	RPS10
CLK4	0	0.619458414	0.514	0.297	0	1.730639731	spermatid	CLK4
VDAC3	0	0.619356974	0.887	0.442	0	2.00678733	spermatocyte	VDAC3
FTL4	2.23E-90	0.619305302	0.831	0.523	1.37E-85	1.59E+00	VSM_cells	FTL
DXO	0	0.619299483	0.632	0.502	0	1.258964143	spermatid	DXO
RAD9B	0	0.619190755	0.387	0.05	0	7.74	spermatogonia	RAD9B
SEMA3G	6.43E-282	0.619156793	0.171	0.006	3.95E-277	2.85E+01	endotheliocyte	SEMA3G
HIPK3	4.16E-45	0.619151934	0.444	0.201	2.55E-40	2.21E+00	endotheliocyte	HIPK3
BNIP3L	8.11E-88	0.619119021	0.649	0.534	4.97E-83	1.22E+00	Leydig_cells	BNIP3L
LINC01120	0	0.619062028	0.201	0.029	0	6.931034483	spermatogonia	LINC01120
ELOF1	0	0.61903158	0.958	0.513	0	1.867446394	spermatocyte	ELOF1
FAM122B	0	0.618948004	0.235	0.021	0	11.19047619	Sertoli_cells	FAM122B
LDHB2	6.64E-106	0.618929547	0.626	0.215	4.07E-101	2.91E+00	VSM_cells	LDHB
ISCA1	0	0.618816189	0.657	0.527	0	1.246679317	spermatid	ISCA1

MORF4L2	2.78E-94	0.618809166	0.523	0.311	1.71E-89	1.68E+00	Leydig_cells	MORF4L2
TBXAS1	0	0.618660656	0.215	0.004	0	53.75	macrophages	TBXAS1
RPS72	3.40E-74	0.618581819	0.915	0.799	2.09E-69	1.15E+00	VSM_cells	RPS7
THEMIS2	0	0.618446275	0.185	0.01	0	18.5	Sertoli_cells	THEMIS2
RPS6KA3	3.40E-260	0.618388203	0.367	0.034	2.08E-255	1.08E+01	endotheliocyte	RPS6KA3
H1FX2	9.16E-79	0.618376553	0.419	0.135	5.62E-74	3.10E+00	VSM_cells	H1FX
TBX2-AS1	0	0.618346504	0.298	0.018	0	16.55555556	VSM_cells	TBX2-AS1
PPIA2	9.87E-24	0.618224813	0.744	0.626	6.06E-19	1.19E+00	macrophages	PPIA
HLA.DOA	0	0.618172367	0.165	0.001	0	165	macrophages	HLA.DOA
METTL5	0	0.618172183	0.42	0.081	0	5.185185185	spermatogonia	METTL5
SLCO3A1	0	0.618109099	0.854	0.27	0	3.162962963	spermatocyte	SLCO3A1
HSD17B11	0	0.617881669	0.409	0.035	0	11.68571429	endotheliocyte	HSD17B11
RBM392	8.53E-19	0.617754078	0.606	0.478	5.23E-14	1.27E+00	macrophages	RBM39
RPS153	1.66E-78	0.617635068	0.89	0.764	1.02E-73	1.16E+00	VSM_cells	RPS15
ARV1	0	0.617450752	0.768	0.2	0	3.84	spermatocyte	ARV1
RP13-270P17.1	0	0.617299117	0.548	0.171	0	3.204678363	spermatocyte	RP13-270P17.1
DDI1	0	0.617248224	0.619	0.276	0	2.242753623	spermatid	DDI1
PRDX23	1.16E-156	0.617232119	0.495	0.104	7.15E-152	4.76E+00	VSM_cells	PRDX2
COX7A1	3.15E-155	0.617045061	0.442	0.079	1.93E-150	5.59E+00	endotheliocyte	COX7A1
ELF1	7.53E-107	0.616923845	0.434	0.107	4.62E-102	4.06E+00	endotheliocyte	ELF1
SIRT2	0	0.616822093	0.47	0.177	0	2.655367232	spermatid	SIRT2
ADAMTS5	0	0.616730132	0.24	0.02	0	12	Leydig_cells	ADAMTS5
LBH1	1.67E-06	0.616544898	0.316	0.101	0.102240605	3.128712871	T_cells	LBH
CETN31	6.70E-05	0.616544149	0.58	0.39	1	1.487179487	mastocyte	CETN3
RP11.545G3.1	0	0.616359781	0.27	0.1	0	2.7	spermatid	RP11.545G3.1
NOTCH4	4.54E-69	0.616319886	0.387	0.124	2.78E-64	3.12E+00	endotheliocyte	NOTCH4
TMEM232	0	0.616201442	0.817	0.24	0	3.404166667	spermatocyte	TMEM232
LAIR1	1.28E-20	0.616174919	0.239	0.096	7.87E-16	2.49E+00	macrophages	LAIR1
SELENBP1	0	0.616133409	0.289	0.019	0	15.21052632	Leydig_cells	SELENBP1
DR1	0	0.616129997	0.933	0.4	0	2.3325	spermatocyte	DR1
TRAPPC1	2.30E-11	0.615939755	0.301	0.286	1.41E-06	1.05E+00	Sertoli_cells	TRAPPC1
USF2	1.74E-36	0.615663801	0.286	0.087	1.07E-31	3.29E+00	macrophages	USF2
NDUFA13	4.08E-208	0.61563703	0.566	0.451	2.51E-203	1.25E+00	spermatid	NDUFA13
IER52	3.10E-146	0.615624681	0.375	0.126	1.90E-141	2.98E+00	Leydig_cells	IER5
TNFRSF1B	1.74E-224	0.615586213	0.199	0.008	1.07E-219	2.49E+01	macrophages	TNFRSF1B
FAM205A	0	0.615551151	0.448	0.179	0	2.502793296	spermatid	FAM205A
TGFBR3	8.52E-40	0.615543105	0.365	0.152	5.22E-35	2.40E+00	endotheliocyte	TGFBR3
KRBOX1	0	0.61553934	0.738	0.513	0	1.438596491	spermatogonia	KRBOX1
MTX1	0	0.615519303	0.686	0.519	0	1.32177264	spermatid	MTX1
MAPK13	0	0.615440492	0.865	0.275	0	3.145454545	spermatocyte	MAPK13
TSGA10	0	0.615439368	0.958	0.47	0	2.038297872	spermatocyte	TSGA10
C4orf17	0	0.615378579	0.566	0.171	0	3.30994152	spermatocyte	C4orf17
UQCRH2	3.26E-20	0.615361155	0.436	0.438	2.00E-15	9.95E-01	Sertoli_cells	UQCRH
NUP93	0	0.615164116	0.526	0.168	0	3.130952381	spermatogonia	NUP93
CYB5R2	0	0.615029357	0.957	0.423	0	2.262411348	spermatocyte	CYB5R2
MT-CO15	4.01E-20	0.614881584	0.495	0.451	2.46E-15	1.10E+00	Sertoli_cells	MT-CO1
MIR22HG1	2.95E-105	0.614797942	0.389	0.098	1.81E-100	3.97E+00	VSM_cells	MIR22HG
MAFF2	9.93E-207	0.614745991	0.29	0.059	6.09E-202	4.92E+00	Leydig_cells	MAFF
PLK2	1.06E-42	0.614681141	0.501	0.252	6.51E-38	1.99E+00	endotheliocyte	PLK2
HRASLS5	0	0.614566958	0.958	0.42	0	2.280952381	spermatocyte	HRASLS5
ACSL6	0	0.614449697	0.758	0.124	0	6.112903226	spermatocyte	ACSL6
CTAGE1	0	0.614312219	0.663	0.128	0	5.1796875	spermatocyte	CTAGE1
WDR63	0	0.614079042	0.685	0.124	0	5.524193548	spermatocyte	WDR63
MAP7D2	0	0.614030868	0.359	0.087	0	4.126436782	spermatogonia	MAP7D2
LYRM7	0	0.613605685	0.859	0.316	0	2.71835443	spermatocyte	LYRM7
TRIM17	0	0.61360126	0.46	0.167	0	2.754491018	spermatid	TRIM17
KLHL10	0	0.613312633	0.631	0.329	0	1.917933131	spermatid	KLHL10
NFE2L1	4.12E-72	0.6132546	0.406	0.218	2.53E-67	1.86E+00	Leydig_cells	NFE2L1
RBM35	2.39E-89	0.613232046	0.596	0.222	1.47E-84	2.68E+00	VSM_cells	RBM3
CASC3	0	0.613177479	0.571	0.264	0	2.162878788	spermatogonia	CASC3
BNC2	7.06E-222	0.613044806	0.32	0.068	4.33E-217	4.71E+00	Leydig_cells	BNC2
MT1X1	2.13E-219	0.612968258	0.288	0.055	1.30E-214	5.24E+00	Leydig_cells	MT1X
RP5.942I16.1	0	0.612912312	0.37	0.114	0	3.245614035	spermatocyte	RP5.942I16.1
NDUFB111	1.43E-124	0.612878165	0.482	0.121	8.78E-120	3.98E+00	VSM_cells	NDUFB11
CALU	1.98E-111	0.612835134	0.411	0.18	1.22E-106	2.28E+00	Leydig_cells	CALU
FKBP6	0	0.612734479	0.479	0.243	0	1.971193416	spermatogonia	FKBP6
RASSF51	4.38E-19	0.612537272	0.184	0.014	2.69E-14	1.31E+01	T_cells	RASSF5
MT-ND4L3	0.001265581	0.612497698	0.368	0.186	1	1.978494624	T_cells	MT-ND4L
ZFYVE21	3.00E-62	0.612494263	0.531	0.225	1.84E-57	2.36E+00	endotheliocyte	ZFYVE21
ASF1B	0	0.612316822	0.463	0.161	0	2.875776398	spermatogonia	ASF1B
CHGB	0	0.612244117	0.368	0.064	0	5.75	spermatogonia	CHGB
ATP6VOE13	0.000135426	0.612222487	0.5	0.302	1	1.655629139	T_cells	ATP6VOE1
TMEM179B	0	0.612147229	0.49	0.134	0	3.656716418	spermatogonia	TMEM179B
VMP1	1.35E-07	0.6120622	0.283	0.197	0.008263498	1.436548223	macrophages	VMP1
HLA-C4	6.86E-93	0.611964436	0.51	0.172	4.21E-88	2.97E+00	VSM_cells	HLA-C

PDLIM71	2.06E-68	0.611949641	0.425	0.156	1.26E-63	2.72E+00	VSM_cells	PDLIM7
SRP14	0	0.611905759	0.854	0.696	0	1.227011494	spermatogonia	SRP14
PTAFR	6.24E-74	0.611873	0.172	0.02	3.83E-69	8.60E+00	macrophages	PTAFR
CFAP126	0	0.611806511	0.578	0.119	0	4.857142857	spermatocyte	CFAP126
LRRC37A	0	0.611728833	0.372	0.143	0	2.601398601	spermatid	LRRC37A
LYZL2	0	0.611636279	0.655	0.338	0	1.937869822	spermatid	LYZL2
RP11.332E4.1	1.30E-07	0.611588786	0.273	0.187	0.007962653	1.459893048	macrophages	RP11.332E4.1
NACA5	7.67E-05	0.611300951	0.789	0.749	1	1.053404539	T_cells	NACA
DNAJC15	0	0.611121793	0.877	0.432	0	2.030092593	spermatocyte	DNAJC15
ATP6AP2	2.48E-170	0.611107933	0.474	0.166	1.52E-165	2.86E+00	Leydig_cells	ATP6AP2
LRRC32	0	0.610779053	0.337	0.016	0	21.0625	endotheliocyte	LRRC32
LCN6	0	0.610659933	0.335	0.001	0	335	endotheliocyte	LCN6
C3orf58	2.92E-22	0.610544788	0.232	0.086	1.79E-17	2.70E+00	macrophages	C3orf58
SH2D1A	5.21E-304	0.61046525	0.184	0.001	3.19E-299	1.84E+02	T_cells	SH2D1A
SOX6	0	0.610434455	0.539	0.318	0	1.694968553	spermatid	SOX6
CFL11	2.67E-19	0.61042863	0.751	0.737	1.64E-14	1.02E+00	macrophages	CFL1
ITGA1	7.60E-123	0.610419444	0.296	0.053	4.66E-118	5.58E+00	VSM_cells	ITGA1
FAM127A1	0	0.610315864	0.434	0.062	0	7	PTM_cells	FAM127A
JAML1	1.86E-13	0.610269305	0.132	0.01	1.14E-08	1.32E+01	T_cells	JAML
CMIP1	1.12E-157	0.610265431	0.449	0.181	6.89E-153	2.48E+00	PTM_cells	CMIP
DDR21	0	0.610221602	0.404	0.073	0	5.534246575	PTM_cells	DDR2
ISLR2	0	0.610178218	0.402	0.059	0	6.813559322	PTM_cells	ISLR
CRBN	0	0.610160296	0.907	0.427	0	2.12412178	spermatocyte	CRBN
PKM	0	0.610120612	0.658	0.462	0	1.424242424	spermatid	PKM
PPP4R1	3.99E-231	0.609940216	0.497	0.354	2.45E-226	1.40E+00	spermatid	PPP4R1
ALKBH5	0	0.609864593	0.658	0.388	0	1.695876289	spermatogonia	ALKBH5
PUF60	0	0.609863583	0.609	0.29	0	2.1	spermatogonia	PUF60
CAP2	0	0.609760362	0.328	0.011	0	29.81818182	VSM_cells	CAP2
SELT	0	0.609637273	0.437	0.127	0	3.440944882	spermatogonia	SELT
AEBP1	8.36E-279	0.609632651	0.403	0.081	5.13E-274	4.98E+00	Leydig_cells	AEBP1
FMNL11	1.16E-12	0.609574543	0.184	0.021	7.12E-08	8.76E+00	T_cells	FMNL1
RTN3	0	0.609306327	0.639	0.386	0	1.655440415	spermatogonia	RTN3
RPL18A6	2.10E-130	0.609224402	0.649	0.402	1.29E-125	1.61E+00	Sertoli_cells	RPL18A
CCL8	2.72E-07	0.609108219	0.074	0.027	0.016714914	2.740740741	macrophages	CCL8
DOCK9	7.11E-212	0.60904139	0.38	0.046	4.36E-207	8.26E+00	endotheliocyte	DOCK9
IER5L1	3.66E-156	0.608942938	0.357	0.059	2.25E-151	6.05E+00	VSM_cells	IER5L
KANK2	2.76E-202	0.60894037	0.316	0.069	1.69E-197	4.58E+00	Leydig_cells	KANK2
RBPMS2	3.28E-161	0.60893153	0.336	0.053	2.01E-156	6.34E+00	VSM_cells	RBPMS2
RPLP2	3.50E-62	0.608894813	0.945	0.833	2.15E-57	1.13E+00	endotheliocyte	RPLP2
ARPC1B2	9.56E-169	0.608884228	0.412	0.072	5.87E-164	5.72E+00	VSM_cells	ARPC1B
CCND1	0	0.608786122	0.351	0.036	0	9.75	PTM_cells	CCND1
POLR2K	0	0.608752078	0.479	0.132	0	3.628787879	spermatogonia	POLR2K
ACTG11	2.30E-66	0.608695866	0.948	0.793	1.41E-61	1.20E+00	endotheliocyte	ACTG1
TCEAL42	9.09E-110	0.608685529	0.588	0.185	5.57E-105	3.18E+00	VSM_cells	TCEAL4
TINAGL1	0	0.608650997	0.328	0.02	0	16.4	endotheliocyte	TINAGL1
SH3BGRL	1.45E-151	0.608647629	0.531	0.106	8.92E-147	5.01E+00	endotheliocyte	SH3BGRL
RAB3IP	0	0.608536434	0.611	0.4	0	1.5275	spermatid	RAB3IP
GLTSCR22	2.52E-49	0.608314664	0.698	0.518	1.55E-44	1.35E+00	VSM_cells	GLTSCR2
TAF7	2.60E-29	0.608284002	0.444	0.425	1.59E-24	1.04E+00	Sertoli_cells	TAF7
FLJ36000	0	0.608260574	0.513	0.232	0	2.211206897	spermatid	FLJ36000
M6PR	0	0.6082214	0.485	0.155	0	3.129032258	spermatogonia	M6PR
COX4I2	0	0.60819143	0.23	0.007	0	32.85714286	VSM_cells	COX4I2
LINC01420	8.80E-154	0.608188088	0.207	0.052	5.40E-149	3.98E+00	Sertoli_cells	LINC01420
IL13	0	0.608142621	0.816	0.202	0	4.03960396	spermatocyte	IL13
CHRAC1	0	0.608128254	0.494	0.125	0	3.952	spermatogonia	CHRAC1
COLEC11	0	0.608093194	0.355	0.028	0	12.67857143	PTM_cells	COLEC11
SPINT21	0.007691661	0.607982188	0.58	0.523	1	1.108986616	mastocyte	SPINT2
TFDP2	2.73E-211	0.607741905	0.665	0.575	1.67E-206	1.16E+00	spermatid	TFDP2
GID4	0	0.607703449	0.588	0.483	0	1.217391304	spermatid	GID4
NRIP3	0	0.607701121	0.959	0.472	0	2.031779661	spermatocyte	NRIP3
SUGP2	3.03E-273	0.607554093	0.651	0.517	1.86E-268	1.26E+00	spermatogonia	SUGP2
HCK	2.53E-194	0.607510587	0.205	0.011	1.55E-189	1.86E+01	macrophages	HCK
EEF1B21	7.87E-100	0.607350322	0.732	0.613	4.83E-95	1.19E+00	Leydig_cells	EEF1B2
CTNNAL11	3.25E-10	0.607299234	0.335	0.341	2.00E-05	9.82E-01	Sertoli_cells	CTNNAL1
GRK4	0	0.607282554	0.951	0.454	0	2.094713656	spermatocyte	GRK4
MYO5A	3.93E-18	0.607251447	0.199	0.074	2.41E-13	2.69E+00	macrophages	MYO5A
NOV	0	0.607234664	0.256	0.008	0	32	VSM_cells	NOV
ATRAID	0	0.607234574	0.89	0.472	0	1.88559322	spermatocyte	ATRAID
PNN	0	0.60723225	0.613	0.354	0	1.731638418	spermatogonia	PNN
CLIC11	5.71E-13	0.607203493	0.384	0.264	3.50E-08	1.45E+00	macrophages	CLIC1
SPATC1	0	0.607199691	0.398	0.058	0	6.862068966	spermatid	SPATC1
RPS154	4.37E-89	0.607054119	0.779	0.766	2.68E-84	1.02E+00	Sertoli_cells	RPS15
DKKL11	0	0.606974426	0.857	0.633	0	1.353870458	spermatid	DKKL1
USO1	0	0.606617904	0.548	0.219	0	2.502283105	spermatogonia	USO1
AP1S22	3.00E-124	0.606599498	0.262	0.092	1.84E-119	2.85E+00	Sertoli_cells	AP1S2

FLRT21	0	0.606530341	0.378	0.05	0	7.56	PTM_cells	FLRT2
RPS17	0	0.606426964	0.743	0.4	0	1.8575	spermatogonia	RPS17
HSPA1B	8.32E-97	0.606270514	0.591	0.19	5.10E-92	3.11E+00	endotheliocyte	HSPA1B
MYL61	3.79E-202	0.605834219	0.879	0.656	2.33E-197	1.34E+00	Leydig_cells	MYL6
FBLN22	4.18E-183	0.605823334	0.277	0.076	2.57E-178	3.64E+00	Sertoli_cells	FBLN2
CSF2RA	0	0.605740925	0.182	0.001	0	182	macrophages	CSF2RA
CDCA2	0	0.605736314	0.777	0.221	0	3.515837104	spermatocyte	CDCA2
FAM27C	0	0.605722612	0.503	0.283	0	1.777385159	spermatid	FAM27C
TLN1	6.33E-08	0.605424593	0.404	0.328	0.003885113	1.231707317	macrophages	TLN1
SENP1	0	0.60538328	0.533	0.31	0	1.719354839	spermatogonia	SENP1
PPP1R15B	9.02E-54	0.605359549	0.392	0.146	5.53E-49	2.68E+00	endotheliocyte	PPP1R15B
IFNGR1	6.60E-73	0.605351194	0.392	0.118	4.05E-68	3.32E+00	endotheliocyte	IFNGR1
SOD2	1.23E-26	0.605231403	0.625	0.499	7.56E-22	1.25E+00	endotheliocyte	SOD2
TSPAN3	0	0.605206131	0.576	0.274	0	2.102189781	spermatogonia	TSPAN3
MFF	0	0.605109566	0.985	0.688	0	1.431686047	spermatocyte	MFF
RPL374	4.45E-74	0.605074637	0.892	0.804	2.73E-69	1.11E+00	VSM_cells	RPL37
FBXW7	0	0.604968526	0.516	0.202	0	2.554455446	spermatogonia	FBXW7
ZFYVE211	3.29E-200	0.604849459	0.532	0.214	2.02E-195	2.49E+00	PTM_cells	ZFYVE21
PCYT2	0	0.604770961	0.976	0.533	0	1.831144465	spermatocyte	PCYT2
TET2	7.23E-138	0.604717339	0.226	0.019	4.44E-133	1.19E+01	macrophages	TET2
C1QTNF9B-AS1	0	0.604644373	0.551	0.174	0	3.166666667	spermatocyte	C1QTNF9B-AS1
MT-CYB5	7.01E-27	0.604414495	0.471	0.393	4.30E-22	1.20E+00	Sertoli_cells	MT-CYB
KRIT1	0	0.604339145	0.515	0.239	0	2.154811715	spermatogonia	KRIT1
ABHD4	0	0.604258529	0.22	0.021	0	10.47619048	Sertoli_cells	ABHD4
DGCR6	0	0.604188816	0.433	0.095	0	4.557894737	spermatid	DGCR6
EIF4A24	4.66E-62	0.604183704	0.761	0.462	2.86E-57	1.65E+00	VSM_cells	EIF4A2
RPS251	8.45E-74	0.604120799	0.901	0.832	5.18E-69	1.08E+00	VSM_cells	RPS25
GOLGB1	5.63E-63	0.603950252	0.544	0.394	3.45E-58	1.38E+00	Leydig_cells	GOLGB1
BCL2	2.74E-108	0.6039385	0.195	0.018	1.68E-103	1.08E+01	macrophages	BCL2
RHOC2	2.75E-53	0.603936362	0.268	0.148	1.69E-48	1.81E+00	Sertoli_cells	RHOC
PTPN12	0	0.603782724	0.356	0.064	0	5.5625	spermatogonia	PTPN12
LYAR1	0.000919752	0.60370533	0.66	0.51	1	1.294117647	mastocyte	LYAR
SERINC5	7.53E-296	0.603643614	0.248	0.042	4.62E-291	5.90E+00	Sertoli_cells	SERINC5
ADGRA2	0	0.603573803	0.262	0.016	0	16.375	Leydig_cells	ADGRA2
MEIOC	2.51E-216	0.603525033	0.599	0.495	1.54E-211	1.21E+00	spermatogonia	MEIOC
AZGP1	7.17E-185	0.603522281	0.207	0.046	4.40E-180	4.50E+00	Sertoli_cells	AZGP1
TEX15	3.47E-127	0.60352136	0.392	0.275	2.13E-122	1.43E+00	spermatogonia	TEX15
SRP19	0	0.603441707	0.671	0.205	0	3.273170732	spermatocyte	SRP19
GPBP1L1	0	0.603376611	0.538	0.223	0	2.412556054	spermatogonia	GPBP1L1
DSN1	0	0.603262632	0.517	0.19	0	2.721052632	spermatogonia	DSN1
HIGD1A	0	0.603249813	0.491	0.184	0	2.668478261	spermatogonia	HIGD1A
HMMR	0	0.603248088	0.864	0.281	0	3.074733096	spermatocyte	HMMR
REEP4	0	0.603168951	0.692	0.165	0	4.193939394	spermatocyte	REEP4
MRGPRF	0	0.603123513	0.367	0.03	0	12.233333333	PTM_cells	MRGPRF
ZFAS14	4.50E-62	0.603006794	0.539	0.263	2.76E-57	2.05E+00	VSM_cells	ZFAS1
NAP1L1	3.05E-133	0.602952428	0.778	0.661	1.87E-128	1.18E+00	PTM_cells	NAP1L1
ESCO2	0	0.602820505	0.333	0.054	0	6.166666667	spermatogonia	ESCO2
ANGPTL11	0	0.602693864	0.402	0.045	0	8.933333333	PTM_cells	ANGPTL1
THEMIS	9.90E-87	0.602479903	0.184	0.003	6.07E-82	6.13E+01	T_cells	THEMIS
SRSF3	0	0.602400076	0.75	0.587	0	1.277683135	spermatogonia	SRSF3
CRY1	0	0.602380635	0.452	0.157	0	2.878980892	spermatogonia	CRY1
EVI2A	7.99E-200	0.60237291	0.195	0.009	4.90E-195	2.17E+01	macrophages	EVI2A
MT-ND21	8.06E-56	0.602279809	0.732	0.408	4.95E-51	1.79E+00	endotheliocyte	MT-ND2
NFATC2IP	0	0.602095805	0.524	0.175	0	2.994285714	spermatogonia	NFATC2IP
TRABD2A	0	0.602074079	0.563	0.255	0	2.207843137	spermatid	TRABD2A
UTP6	0	0.60205144	0.525	0.233	0	2.253218884	spermatogonia	UTP6
NDUFB2	2.37E-280	0.602040383	0.638	0.537	1.46E-275	1.19E+00	spermatid	NDUFB2
SAMD4B	0	0.601978157	0.509	0.172	0	2.959302326	spermatogonia	SAMD4B
NAMPTP1	7.25E-116	0.60188943	0.128	0.007	4.45E-111	1.83E+01	macrophages	NAMPTP1
PTBP2	0	0.601839088	0.455	0.097	0	4.690721649	spermatogonia	PTBP2
POLR1D	0	0.601802761	0.933	0.522	0	1.787356322	spermatocyte	POLR1D
TRPC5OS	0	0.601742085	0.2	0.005	0	40	Sertoli_cells	TRPC5OS
CKAP2	0	0.601658603	0.54	0.264	0	2.045454545	spermatogonia	CKAP2
CNOT1	0	0.601592743	0.881	0.391	0	2.253196931	spermatocyte	CNOT1
TMEM225	0	0.601588347	0.747	0.134	0	5.574626866	spermatocyte	TMEM225
CCDC7	0	0.601555597	0.956	0.448	0	2.133928571	spermatocyte	CCDC7
AC062017.1	0	0.601547874	0.886	0.321	0	2.760124611	spermatocyte	AC062017.1
HSP90AB12	2.92E-171	0.601438959	0.871	0.711	1.79E-166	1.23E+00	PTM_cells	HSP90AB1
DYNC2L11	0	0.601375224	0.795	0.257	0	3.093385214	spermatocyte	DYNC2L1
BTF3	2.13E-59	0.601352994	0.846	0.713	1.31E-54	1.19E+00	endotheliocyte	BTF3
NGLY1	0	0.601350715	0.7	0.57	0	1.228070175	spermatid	NGLY1
EQTN	9.09E-290	0.601306523	0.491	0.277	5.58E-285	1.77E+00	spermatid	EQTN
PTPN18	2.68E-82	0.601263303	0.202	0.025	1.64E-77	8.08E+00	macrophages	PTPN18
TMEM91	0	0.601242135	0.477	0.152	0	3.138157895	spermatid	TMEM91
PPP4C	0	0.601148969	0.639	0.439	0	1.455580866	spermatogonia	PPP4C

DKKL1	0	0.601025118	0.991	0.603	0	1.64344942	spermatocyte	DKKL1
CENPK	0	0.600975979	0.461	0.139	0	3.316546763	spermatogonia	CENPK
NT5DC2	8.91E-262	0.600771307	0.447	0.121	5.46E-257	3.69E+00	PTM_cells	NT5DC2
PTPN6	0.005581804	0.600580117	0.184	0.076	1	2.421052632	T_cells	PTPN6
CELF1	0	0.600326737	0.501	0.138	0	3.630434783	spermatogonia	CELF1
SRSF2	0	0.600099053	0.696	0.468	0	1.487179487	spermatogonia	SRSF2
NCOA4	9.09E-07	0.599871883	0.387	0.338	0.055751392	1.144970414	macrophages	NCOA4
HSPA14	0	0.599831252	0.54	0.318	0	1.698113208	spermatogonia	HSPA14
NR2F1	2.23E-237	0.599807613	0.257	0.042	1.37E-232	6.12E+00	Leydig_cells	NR2F1
NENF	0	0.599672298	0.476	0.108	0	4.407407407	PTM_cells	NENF
MAFF3	1.24E-124	0.599499409	0.336	0.064	7.64E-120	5.25E+00	VSM_cells	MAFF
MDK	3.03E-108	0.599219992	0.437	0.103	1.86E-103	4.24E+00	endotheliocyte	MDK
YPEL2	4.93E-97	0.599102976	0.323	0.065	3.02E-92	4.97E+00	endotheliocyte	YPEL2
CASQ2	3.04E-238	0.5990583	0.281	0.025	1.87E-233	1.12E+01	VSM_cells	CASQ2
CHAF1A	0	0.598876068	0.38	0.055	0	6.909090909	spermatogonia	CHAF1A
EEF1B22	2.91E-129	0.598829278	0.757	0.611	1.78E-124	1.24E+00	PTM_cells	EEF1B2
ATN11	7.90E-57	0.598518307	0.283	0.134	4.84E-52	2.11E+00	Leydig_cells	ATN1
EEF1A15	0	0.598391322	0.954	0.923	0	1.033586132	Sertoli_cells	EEF1A1
SERF2	0	0.598218016	0.981	0.712	0	1.377808989	spermatocyte	SERF2
CD41	0	0.598214406	0.246	0.022	0	11.18181818	Leydig_cells	CD4
TUBB3	4.22E-82	0.598164384	0.411	0.24	2.59E-77	1.71E+00	Sertoli_cells	TUBB
TMEM51	0	0.598007465	0.317	0.016	0	19.8125	VSM_cells	TMEM51
EIF5A2	1.08E-279	0.597970348	0.562	0.45	6.64E-275	1.25E+00	spermatid	EIF5A2
ITGAL	3.37E-40	0.597907112	0.184	0.007	2.07E-35	2.63E+01	T_cells	ITGAL
ZBTB32	0	0.597834614	0.645	0.139	0	4.64028777	spermatocyte	ZBTB32
ACSS1	2.96E-154	0.597683922	0.273	0.087	1.81E-149	3.14E+00	Sertoli_cells	ACSS1
TSC22D32	5.85E-128	0.597671697	0.377	0.138	3.59E-123	2.73E+00	Leydig_cells	TSC22D3
MYO1F	2.59E-51	0.597657739	0.205	0.039	1.59E-46	5.26E+00	macrophages	MYO1F
LDHA	3.51E-45	0.597478578	0.769	0.601	2.16E-40	1.28E+00	endotheliocyte	LDHA
MRV11.AS1	1.26E-158	0.59726183	0.356	0.235	7.73E-154	1.51E+00	spermatid	MRV11.AS1
ANXA111	3.58E-137	0.59723866	0.448	0.1	2.19E-132	4.48E+00	VSM_cells	ANXA11
TUBB	1.69E-81	0.597218162	0.645	0.245	1.04E-76	2.63E+00	endotheliocyte	TUBB
TMEM53	0	0.597208087	0.515	0.279	0	1.845878136	spermatid	TMEM53
MAN1A1	0	0.597198848	0.462	0.214	0	2.158878505	spermatid	MAN1A1
ANGPTL41	0	0.59713218	0.371	0.023	0	16.13043478	PTM_cells	ANGPTL4
IGFBP51	1.29E-181	0.596981477	0.274	0.062	7.93E-177	4.42E+00	PTM_cells	IGFBP5
MRPL36	0	0.5969288	0.878	0.432	0	2.032407407	spermatocyte	MRPL36
RAN1	0	0.596780174	0.899	0.59	0	1.523728814	spermatocyte	RAN
TBCA	7.47E-10	0.596472673	0.363	0.373	4.59E-05	9.73E-01	Sertoli_cells	TBCA
ATP5G21	3.40E-14	0.59633781	0.576	0.494	2.09E-09	1.17E+00	macrophages	ATP5G2
TRAPPC3	0	0.596300763	0.885	0.404	0	2.190594059	spermatocyte	TRAPPC3
PTRHD1	0	0.596208779	0.855	0.333	0	2.567567568	spermatocyte	PTRHD1
NRP1	2.23E-288	0.596201822	0.362	0.03	1.37E-283	1.21E+01	endotheliocyte	NRP1
S100A43	0.006376732	0.596142199	0.14	0.054	1	2.592592593	mastocyte	S100A4
SRC	0	0.596113037	0.231	0.016	0	14.4375	Sertoli_cells	SRC
SERINC12	1.10E-128	0.595968304	0.381	0.139	6.73E-124	2.74E+00	Leydig_cells	SERINC1
DNAJB1	0	0.595939689	0.976	0.6	0	1.626666667	spermatocyte	DNAJB1
ART5	0	0.595870333	0.57	0.101	0	5.643564356	spermatocyte	ART5
JUNB5	7.00E-34	0.595719069	0.423	0.345	4.29E-29	1.23E+00	Sertoli_cells	JUNB
GFOD1	0	0.595689402	0.308	0.018	0	17.11111111	endotheliocyte	GFOD1
SERPINE1	0	0.59563829	0.277	0.012	0	23.08333333	PTM_cells	SERPINE1
PPM1G	0	0.595592258	0.996	0.793	0	1.255989912	spermatocyte	PPM1G
MT.ND4L2	8.10E-36	0.595453798	0.292	0.167	4.97E-31	1.75E+00	Leydig_cells	MT.ND4L
DCAF7	0	0.595438724	0.876	0.279	0	3.139784946	spermatocyte	DCAF7
TBX18.AS1	0	0.59538505	0.259	0.066	0	3.924242424	spermatid	TBX18.AS1
TIFA	6.24E-152	0.595332181	0.305	0.04	3.83E-147	7.63E+00	endotheliocyte	TIFA
NPC22	2.57E-75	0.595283046	0.605	0.439	1.58E-70	1.38E+00	Leydig_cells	NPC2
CCDC37-AS1	4.16E-231	0.595254683	0.378	0.221	2.55E-226	1.71E+00	spermatid	CCDC37-AS1
SELM	6.62E-80	0.595246547	0.568	0.213	4.06E-75	2.67E+00	endotheliocyte	SELM
COX6A1	0	0.595217467	0.935	0.541	0	1.728280961	spermatocyte	COX6A1
ITPRIP	3.40E-52	0.595213935	0.325	0.106	2.08E-47	3.07E+00	endotheliocyte	ITPRIP
CLK1	4.33E-18	0.595200184	0.313	0.157	2.65E-13	1.99E+00	macrophages	CLK1
CTNNA1	1.87E-67	0.595198589	0.459	0.164	1.15E-62	2.80E+00	endotheliocyte	CTNNA1
AZIN1-AS1	4.73E-213	0.595139151	0.38	0.245	2.90E-208	1.55E+00	spermatid	AZIN1-AS1
FTLP3	1.02E-114	0.595007834	0.148	0.01	6.27E-110	1.48E+01	macrophages	FTLP3
VIT	0	0.594856075	0.269	0.02	0	13.45	Leydig_cells	VIT
MAGEH1	2.94E-275	0.594801599	0.232	0.039	1.80E-270	5.95E+00	Sertoli_cells	MAGEH1
RAD50	0	0.594744694	0.584	0.306	0	1.908496732	spermatogonia	RAD50
ANXA21	8.24E-18	0.5945943	0.471	0.295	5.05E-13	1.60E+00	macrophages	ANXA2
VPS29	2.93E-278	0.594510082	0.496	0.3	1.80E-273	1.65E+00	spermatogonia	VPS29
EMP23	1.19E-93	0.594481793	0.524	0.184	7.28E-89	2.85E+00	VSM_cells	EMP2
ACTR10	0	0.594481229	0.497	0.166	0	2.993975904	spermatogonia	ACTR10
GMNN	0	0.594251715	0.836	0.254	0	3.291338583	spermatocyte	GMNN
CCDC38	0	0.59404526	0.751	0.16	0	4.69375	spermatocyte	CCDC38
RP11.219E7.2	0	0.59401924	0.228	0.02	0	11.4	spermatid	RP11.219E7.2



RPS231	7.72E-40	0.594006822	0.916	0.829	4.74E-35	1.10E+00	macrophages	RPS23
RHOA1	1.64E-83	0.593975225	0.712	0.539	1.01E-78	1.32E+00	Leydig_cells	RHOA
COL16A1	3.23E-233	0.593784898	0.398	0.109	1.98E-228	3.65E+00	PTM_cells	COL16A1
RP11-389G6.5	0	0.593735844	0.542	0.162	0	3.345679012	spermatocyte	RP11-389G6.5
ILF2	0	0.593707406	0.714	0.449	0	1.590200445	spermatogonia	ILF2
RHOH	1.10E-84	0.593605466	0.211	0.004	6.73E-80	5.28E+01	T_cells	RHOH
TEX264	0	0.593570978	0.775	0.312	0	2.483974359	spermatocyte	TEX264
ESF1	0	0.593548014	0.583	0.349	0	1.670487106	spermatogonia	ESF1
TMSB4XP4	0.000491413	0.593403445	0.079	0.014	1	5.642857143	T_cells	TMSB4XP4
CALCOCO2	0	0.59339426	0.703	0.64	0	1.0984375	spermatid	CALCOCO2
OPLAH	0	0.593346975	0.51	0.184	0	2.77173913	spermatid	OPLAH
IL18RAP	7.40E-41	0.593241308	0.053	0.001	4.54E-36	5.30E+01	T_cells	IL18RAP
CREM	0	0.593098692	0.991	0.691	0	1.434153401	spermatocyte	CREM
MDH2	0	0.593002876	0.894	0.414	0	2.15942029	spermatocyte	MDH2
PRKAR1A	0	0.592797538	0.964	0.54	0	1.785185185	spermatocyte	PRKAR1A
WBP5	8.34E-234	0.592688511	0.382	0.086	5.12E-229	4.44E+00	Leydig_cells	WBP5
RBM36	0.000754585	0.592609245	0.421	0.228	1	1.846491228	T_cells	RBM3
MDC1	0	0.592578633	0.418	0.141	0	2.964539007	spermatogonia	MDC1
NOP10	5.46E-41	0.592554393	0.235	0.136	3.35E-36	1.73E+00	Sertoli_cells	NOP10
SRSF11	0	0.592423576	0.711	0.514	0	1.383268482	spermatogonia	SRSF11
TNFAIP6	0	0.59239038	0.489	0.252	0	1.94047619	spermatid	TNFAIP6
CD993	1.78E-118	0.592379967	0.626	0.189	1.09E-113	3.31E+00	VSM_cells	CD99
SMCHD1	8.02E-208	0.592253904	0.503	0.335	4.92E-203	1.50E+00	spermatogonia	SMCHD1
PTGDR	1.37E-297	0.592094113	0.211	0.001	8.40E-293	2.11E+02	T_cells	PTGDR
C5orf52	0	0.592033458	0.526	0.289	0	1.820069204	spermatid	C5orf52
SNAPC1	0	0.591772084	0.522	0.305	0	1.71147541	spermatogonia	SNAPC1
TPT15	1.19E-247	0.59174058	0.901	0.856	7.29E-243	1.05E+00	Sertoli_cells	TPT1
SYTL2	2.23E-08	0.591721828	0.211	0.04	0.001368334	5.275	T_cells	SYTL2
CMIP	6.78E-51	0.59167535	0.457	0.19	4.16E-46	2.41E+00	endotheliocyte	CMIP
ODF3L1	0	0.591454752	0.581	0.117	0	4.965811966	spermatocyte	ODF3L1
IDE	0	0.591333343	0.762	0.18	0	4.233333333	spermatocyte	IDE
DDIT4	1.65E-87	0.591317638	0.362	0.083	1.01E-82	4.36E+00	endotheliocyte	DDIT4
CNN1	1.95E-51	0.591261667	0.628	0.346	1.20E-46	1.82E+00	VSM_cells	CNN1
NDNF	0	0.591252212	0.447	0.15	0	2.98	spermatid	NDNF
DNAL4	0	0.591238288	0.889	0.312	0	2.849358974	spermatocyte	DNAL4
PGAM1	1.06E-201	0.591137958	0.56	0.227	6.50E-197	2.47E+00	PTM_cells	PGAM1
HMOX2	0	0.590973177	0.706	0.585	0	1.206837607	spermatid	HMOX2
RCN21	0.000785453	0.590936282	0.56	0.392	1	1.428571429	mastocyte	RCN2
INPP4B	0	0.590822543	0.498	0.161	0	3.093167702	spermatid	INPP4B
RASSF2	4.07E-84	0.590740192	0.267	0.098	2.50E-79	2.72E+00	Leydig_cells	RASSF2
ARHGAP301	1.78E-33	0.59072607	0.158	0.006	1.09E-28	2.63E+01	T_cells	ARHGAP30
HCAR2	3.01E-67	0.590628578	0.185	0.025	1.85E-62	7.40E+00	macrophages	HCAR2
RNF148	0	0.590578942	0.482	0.234	0	2.05982906	spermatid	RNF148
RPL301	1.84E-37	0.590522353	0.926	0.878	1.13E-32	1.05E+00	macrophages	RPL30
GUCA1A	0	0.590333318	0.432	0.089	0	4.853932584	spermatid	GUCA1A
RPL191	5.50E-124	0.590302932	0.906	0.836	3.38E-119	1.08E+00	Leydig_cells	RPL19
CDK5RAP3	0	0.590283754	0.762	0.251	0	3.035856574	spermatocyte	CDK5RAP3
RPS113	2.49E-204	0.59020762	0.908	0.818	1.53E-199	1.11E+00	PTM_cells	RPS11
RBM44	0	0.58999452	0.432	0.101	0	4.277227723	spermatogonia	RBM44
C7orf50	3.93E-49	0.589915349	0.239	0.132	2.41E-44	1.81E+00	Sertoli_cells	C7orf50
SIN3B	2.61E-65	0.589900241	0.329	0.161	1.60E-60	2.04E+00	Leydig_cells	SIN3B
FAM26F	2.63E-34	0.589645556	0.259	0.078	1.61E-29	3.32E+00	macrophages	FAM26F
HMGB11	1.38E-71	0.589632343	0.859	0.548	8.47E-67	1.57E+00	endotheliocyte	HMGB1
LEPR1	0	0.589628503	0.234	0.024	0	9.75	Leydig_cells	LEPR
APOBEC3C1	2.28E-08	0.589525989	0.263	0.057	0.001399901	4.614035088	T_cells	APOBEC3C
SRSF10	0	0.589485021	0.675	0.445	0	1.516853933	spermatogonia	SRSF10
GSTO2	0	0.589427685	0.539	0.325	0	1.658461538	spermatid	GSTO2
ZNF345	0	0.589355984	0.483	0.192	0	2.515625	spermatid	ZNF345
LINC01364	0	0.589340654	0.458	0.127	0	3.606299213	spermatid	LINC01364
HSPA5	2.39E-192	0.589327926	0.714	0.586	1.47E-187	1.22E+00	spermatogonia	HSPA5
LY86	7.08E-236	0.589258471	0.202	0.008	4.34E-231	2.53E+01	macrophages	LY86
RUNX1T1	2.56E-132	0.589254256	0.387	0.071	1.57E-127	5.45E+00	endotheliocyte	RUNX1T1
PXYLP1	0	0.589195356	0.777	0.228	0	3.407894737	spermatocyte	PXYLP1
IFI162	9.18E-273	0.589127113	0.371	0.073	5.63E-268	5.08E+00	Leydig_cells	IFI16
FERMT21	1.27E-52	0.588950308	0.474	0.227	7.77E-48	2.09E+00	VSM_cells	FERMT2
HNRNPA11	1.81E-17	0.588932456	0.673	0.605	1.11E-12	1.11E+00	macrophages	HNRNPA1
FGFBP2	2.84E-20	0.588900452	0.132	0.007	1.74E-15	1.89E+01	T_cells	FGFBP2
DCBLD2	3.09E-161	0.588886635	0.246	0.07	1.89E-156	3.51E+00	Sertoli_cells	DCBLD2
AKR1C3	4.06E-214	0.588742477	0.382	0.044	2.49E-209	8.68E+00	endotheliocyte	AKR1C3
TUBA1A	7.50E-91	0.588696796	0.608	0.198	4.60E-86	3.07E+00	endotheliocyte	TUBA1A
MYC	2.63E-150	0.588664301	0.407	0.066	1.61E-145	6.17E+00	endotheliocyte	MYC
SERTAD11	3.17E-26	0.588584167	0.232	0.076	1.95E-21	3.05E+00	macrophages	SERTAD1
ADI11	1.83E-87	0.588525335	0.425	0.133	1.12E-82	3.20E+00	VSM_cells	ADI1
ZBTB7A	6.27E-06	0.588359683	0.263	0.08	0.384476592	3.2875	T_cells	ZBTB7A
SOBP	0	0.588317739	0.757	0.186	0	4.069892473	spermatocyte	SOBP

ARHGAP31	0	0.588195161	0.342	0.014	0	24.42857143	endotheliocyte	ARHGAP31
ORMDL3	0	0.588052896	0.537	0.257	0	2.089494163	spermatid	ORMDL3
COL15A1	1.89E-43	0.588052877	0.355	0.127	1.16E-38	2.80E+00	endotheliocyte	COL15A1
FAM46A	1.65E-27	0.587982158	0.215	0.064	1.01E-22	3.36E+00	macrophages	FAM46A
RPL132	2.13E-214	0.587976987	0.988	0.955	1.30E-209	1.03E+00	PTM_cells	RPL13
LEPROT2	4.72E-244	0.587890783	0.495	0.157	2.90E-239	3.15E+00	PTM_cells	LEPROT
RPL6P271	2.03E-12	0.587883844	0.218	0.165	1.25E-07	1.32E+00	Leydig_cells	RPL6P27
ELL	0	0.587776282	0.517	0.22	0	2.35	spermatid	ELL
PIP5K1B	0	0.587727892	0.717	0.123	0	5.829268293	spermatocyte	PIP5K1B
DDX1	0	0.587667335	0.55	0.257	0	2.140077821	spermatogonia	DDX1
NDUFS5	2.88E-121	0.587600859	0.644	0.44	1.77E-116	1.46E+00	PTM_cells	NDUFS5
ELF12	0.000362413	0.587560306	0.26	0.112	1	2.321428571	mastocyte	ELF1
HEXIM12	0	0.587514407	0.432	0.088	0	4.909090909	PTM_cells	HEXIM1
CDC422	4.62E-15	0.587432503	0.539	0.416	2.84E-10	1.30E+00	macrophages	CDC42
ACTG12	0.001330781	0.587342595	0.868	0.795	1	1.091823899	T_cells	ACTG1
COBLL11	0	0.587264668	0.296	0.019	0	15.57894737	VSM_cells	COBLL1
RASSF5	4.36E-100	0.58720787	0.158	0.013	2.67E-95	1.22E+01	macrophages	RASSF5
LARP7	0	0.586996562	0.524	0.191	0	2.743455497	spermatogonia	LARP7
BSG	0	0.586988758	0.804	0.653	0	1.231240429	spermatogonia	BSG
VCP	0	0.586859333	0.669	0.389	0	1.719794344	spermatogonia	VCP
LINC00911	0	0.586655797	0.531	0.108	0	4.916666667	spermatocyte	LINC00911
CLIP4	0	0.586583558	0.484	0.197	0	2.456852792	spermatid	CLIP4
TPM41	2.40E-96	0.586562749	0.457	0.228	1.47E-91	2.00E+00	Leydig_cells	TPM4
TSTD1	2.22E-15	0.586537728	0.238	0.188	1.36E-10	1.27E+00	Sertoli_cells	TSTD1
GAGE1	0	0.586526036	0.267	0.011	0	24.27272727	spermatogonia	GAGE1
C17orf80	0	0.586432109	0.877	0.3	0	2.923333333	spermatocyte	C17orf80
HACD3	0	0.586338028	0.643	0.443	0	1.451467269	spermatogonia	HACD3
COX7B1	3.01E-29	0.586162215	0.238	0.154	1.84E-24	1.55E+00	Sertoli_cells	COX7B
CSRNP12	1.66E-46	0.586121242	0.32	0.178	1.02E-41	1.80E+00	Leydig_cells	CSRNP1
TM2D1	0	0.586042977	0.485	0.163	0	2.975460123	spermatogonia	TM2D1
DDX17	0	0.586041096	0.665	0.458	0	1.451965066	spermatogonia	DDX17
RPS4Y14	4.91E-80	0.585875903	0.45	0.263	3.01E-75	1.71E+00	Sertoli_cells	RPS4Y1
GNB1	0	0.585870751	0.583	0.304	0	1.917763158	spermatogonia	GNB1
TCF21	0	0.585781497	0.354	0.014	0	25.28571429	PTM_cells	TCF21
VAMP2	0	0.585752095	0.599	0.28	0	2.139285714	spermatogonia	VAMP2
FSTL3	3.35E-268	0.585751658	0.212	0.034	2.05E-263	6.24E+00	Sertoli_cells	FSTL3
DDX20	0	0.585726125	0.745	0.553	0	1.347197107	spermatid	DDX20
IQUB	0	0.585529872	0.913	0.351	0	2.601139601	spermatocyte	IQUB
SH2B3	4.95E-14	0.585478182	0.263	0.138	3.04E-09	1.91E+00	macrophages	SH2B3
SUSD5	0	0.58536214	0.3	0.015	0	20	VSM_cells	SUSD5
VAMP51	0	0.58528425	0.408	0.058	0	7.034482759	PTM_cells	VAMP5
PEA151	1.94E-10	0.585283348	0.368	0.387	1.19E-05	9.51E-01	Sertoli_cells	PEA15
FKBP5	3.66E-80	0.585157523	0.283	0.137	2.24E-75	2.07E+00	Sertoli_cells	FKBP5
CRIM1	1.02E-167	0.585116789	0.352	0.047	6.27E-163	7.49E+00	endotheliocyte	CRIM1
RNF213	1.01E-37	0.585003297	0.212	0.051	6.23E-33	4.16E+00	macrophages	RNF213
MGLL	5.13E-148	0.584986312	0.395	0.066	3.15E-143	5.98E+00	endotheliocyte	MGLL
ITPKB	1.52E-200	0.584943446	0.295	0.029	9.32E-196	1.02E+01	endotheliocyte	ITPKB
FAM49B1	5.51E-39	0.584871297	0.247	0.151	3.38E-34	1.64E+00	Sertoli_cells	FAM49B
NNMT	0	0.584796526	0.248	0.009	0	27.55555556	endotheliocyte	NNMT
VCAN	1.84E-113	0.584742955	0.241	0.066	1.13E-108	3.65E+00	Leydig_cells	VCAN
GLG1	0	0.584674714	0.608	0.365	0	1.665753425	spermatogonia	GLG1
ATF42	5.53E-51	0.584659606	0.494	0.353	3.39E-46	1.40E+00	Leydig_cells	ATF4
DHX9	0	0.584618768	0.576	0.257	0	2.241245136	spermatogonia	DHX9
MAGED23	1.10E-127	0.584340657	0.33	0.128	6.75E-123	2.58E+00	Sertoli_cells	MAGED2
SPATA33	0	0.584314873	0.824	0.686	0	1.201166181	spermatid	SPATA33
NCKAP5L	0	0.584300983	0.363	0.045	0	8.066666667	PTM_cells	NCKAP5L
AC016739.2	8.25E-22	0.584253231	0.205	0.07	5.06E-17	2.93E+00	macrophages	AC016739.2
IFIT2	0	0.584238208	0.246	0.01	0	24.6	endotheliocyte	IFIT2
RPL363	3.94E-66	0.584154096	0.848	0.7	2.42E-61	1.21E+00	VSM_cells	RPL36
TAX1BP1	0	0.584091817	0.718	0.515	0	1.394174757	spermatogonia	TAX1BP1
DMD	0	0.584062933	0.386	0.078	0	4.948717949	PTM_cells	DMD
NPC2	0	0.58385438	0.64	0.392	0	1.632653061	spermatogonia	NPC2
PLSCR11	2.98E-45	0.583830712	0.222	0.048	1.83E-40	4.63E+00	macrophages	PLSCR1
ITGB3BP	0	0.583825942	0.797	0.277	0	2.877256318	spermatocyte	ITGB3BP
NFKB2	8.09E-47	0.5838062	0.195	0.037	4.96E-42	5.27E+00	macrophages	NFKB2
CLMP	0	0.583736355	0.342	0.011	0	31.09090909	PTM_cells	CLMP
APOBEC3G	2.73E-27	0.583726538	0.238	0.162	1.67E-22	1.47E+00	Sertoli_cells	APOBEC3G
CRYZL1	0	0.583724081	0.777	0.228	0	3.407894737	spermatocyte	CRYZL1
MRPS6	2.61E-14	0.583698693	0.347	0.332	1.60E-09	1.05E+00	Sertoli_cells	MRPS6
HLA-E2	1.11E-153	0.58365248	0.425	0.083	6.79E-149	5.12E+00	VSM_cells	HLA-E
ORMDL1	0	0.583610661	0.563	0.324	0	1.737654321	spermatogonia	ORMDL1
FOSL2	8.06E-157	0.583592025	0.352	0.051	4.95E-152	6.90E+00	endotheliocyte	FOSL2
PRMT1	0	0.583485569	0.546	0.142	0	3.845070423	spermatogonia	PRMT1
GRASP	0	0.583463133	0.34	0.018	0	18.88888889	endotheliocyte	GRASP
RP11-498B4.5	7.18E-222	0.583428368	0.348	0.194	4.41E-217	1.79E+00	spermatid	RP11-498B4.5

ACADM	0	0.583390805	0.53	0.285	0	1.859649123	spermatogonia	ACADM
TCEA1	0	0.583378418	0.57	0.266	0	2.142857143	spermatogonia	TCEA1
MFAP41	4.22E-150	0.583320316	0.33	0.051	2.59E-145	6.47E+00	VSM_cells	MFAP4
LSM5	0	0.583154589	0.436	0.146	0	2.98630137	spermatogonia	LSM5
GPC1	6.66E-282	0.583121013	0.227	0.036	4.09E-277	6.31E+00	Sertoli_cells	GPC1
HSPG21	1.90E-185	0.583089445	0.372	0.055	1.16E-180	6.76E+00	VSM_cells	HSPG2
CDCA8	0	0.583024425	0.429	0.084	0	5.107142857	spermatogonia	CDCA8
CLTB	5.03E-53	0.582915852	0.252	0.136	3.09E-48	1.85E+00	Sertoli_cells	CLTB
BST21	1.09E-37	0.582841588	0.35	0.112	6.67E-33	3.13E+00	macrophages	BST2
PPP3CA	3.36E-141	0.582772411	0.414	0.075	2.06E-136	5.52E+00	endotheliocyte	PPP3CA
KDM2A	0	0.582743753	0.524	0.223	0	2.349775785	spermatogonia	KDM2A
LIN7A	0	0.582571213	0.785	0.191	0	4.109947644	spermatocyte	LIN7A
TJP1	0	0.582486043	0.472	0.224	0	2.107142857	spermatogonia	TJP1
LINC01227	0	0.582473445	0.412	0.058	0	7.103448276	spermatid	LINC01227
GLRX1	1.11E-11	0.582424225	0.184	0.023	6.80E-07	8.00E+00	T_cells	GLRX
MBD1	0	0.582348158	0.815	0.298	0	2.734899329	spermatocyte	MBD1
LINC00494	0	0.582292123	0.424	0.068	0	6.235294118	spermatid	LINC00494
TSPAN41	7.38E-264	0.582108999	0.338	0.064	4.53E-259	5.28E+00	Leydig_cells	TSPAN4
RWDD2A	0	0.581941746	0.741	0.16	0	4.63125	spermatocyte	RWDD2A
BOD1L2	0	0.581907366	0.995	0.836	0	1.190191388	spermatocyte	BOD1L2
RANBP9	0	0.581778152	0.887	0.419	0	2.116945107	spermatocyte	RANBP9
TMEM247	0	0.581767774	0.631	0.434	0	1.453917051	spermatid	TMEM247
OARD1	0	0.581565362	0.661	0.475	0	1.391578947	spermatogonia	OARD1
FAM96B	0	0.581488886	0.601	0.395	0	1.521518987	spermatogonia	FAM96B
DPY19L2	1.05E-06	0.581433264	0.66	0.412	0.064382308	1.601941748	mastocyte	DPY19L2
FIP1L1	0	0.581314937	0.565	0.253	0	2.233201581	spermatogonia	FIP1L1
RPS134	2.12E-05	0.581303839	0.868	0.841	1	1.032104637	T_cells	RPS13
LIN7B	0	0.581221959	0.241	0.024	0	10.04166667	spermatogonia	LIN7B
DNAJC27	0	0.581199596	0.805	0.26	0	3.096153846	spermatocyte	DNAJC27
ACTR6	0	0.581157221	0.845	0.295	0	2.86440678	spermatocyte	ACTR6
LPAR2	0	0.581080589	0.224	0.013	0	17.23076923	Sertoli_cells	LPAR2
ITM2A2	0	0.58095668	0.453	0.059	0	7.677966102	PTM_cells	ITM2A
DDAH22	3.29E-70	0.580858394	0.452	0.171	2.02E-65	2.64E+00	VSM_cells	DDAH2
SDHB	0	0.580713384	0.898	0.362	0	2.480662983	spermatocyte	SDHB
IGFBP42	0	0.580710955	0.409	0.071	0	5.76056338	PTM_cells	IGFBP4
CBX6	2.47E-185	0.580710404	0.289	0.064	1.51E-180	4.52E+00	Leydig_cells	CBX6
PLIN21	7.60E-146	0.580705289	0.247	0.075	4.66E-141	3.29E+00	Sertoli_cells	PLIN2
PSME14	2.41E-134	0.5806671	0.427	0.092	1.48E-129	4.64E+00	VSM_cells	PSME1
MSTO1	0	0.580583203	0.52	0.306	0	1.699346405	spermatid	MSTO1
MT-ND45	1.94E-20	0.580485225	0.48	0.415	1.19E-15	1.16E+00	Sertoli_cells	MT-ND4
FNBP1	2.70E-21	0.580356927	0.276	0.114	1.66E-16	2.42E+00	macrophages	FNBP1
RAP1A	0.008084213	0.580194077	0.289	0.168	1	1.720238095	T_cells	RAP1A
CSF3	0	0.580136035	0.176	0.004	0	44	endotheliocyte	CSF3
HAGH	0	0.580017574	0.903	0.411	0	2.197080292	spermatocyte	HAGH
NOP56	0	0.579839423	0.503	0.235	0	2.140425532	spermatogonia	NOP56
PKP4	2.97E-37	0.579597052	0.412	0.191	1.82E-32	2.16E+00	endotheliocyte	PKP4
SNX10	1.67E-64	0.579549802	0.209	0.032	1.02E-59	6.53E+00	macrophages	SNX10
DHRS71	1.44E-10	0.579530718	0.289	0.057	8.84E-06	5.07E+00	T_cells	DHRS7
RPL292	1.44E-199	0.579385465	0.916	0.844	8.81E-195	1.09E+00	PTM_cells	RPL29
TACC13	4.74E-207	0.579359408	0.534	0.194	2.91E-202	2.75E+00	PTM_cells	TACC1
RPL6P27	5.84E-09	0.579348969	0.266	0.166	0.000358105	1.602409639	macrophages	RPL6P27
GPX3	2.09E-142	0.579348798	0.281	0.04	1.28E-137	7.03E+00	VSM_cells	GPX3
USPL1	0	0.579197317	0.503	0.228	0	2.206140351	spermatid	USPL1
NTRK2	0	0.579196426	0.259	0.026	0	9.961538462	Leydig_cells	NTRK2
PGD	1.68E-43	0.579184537	0.292	0.191	1.03E-38	1.53E+00	Sertoli_cells	PGD
ABHD8	0	0.579068946	0.835	0.241	0	3.46473029	spermatocyte	ABHD8
CCT8L2	0	0.579021557	0.473	0.156	0	3.032051282	spermatid	CCT8L2
MIDN5	6.91E-34	0.578925439	0.283	0.194	4.24E-29	1.46E+00	Sertoli_cells	MIDN
WSB1	2.96E-39	0.57885034	0.635	0.423	1.81E-34	1.50E+00	endotheliocyte	WSB1
SPON2	0	0.578818144	0.203	0.012	0	16.91666667	Leydig_cells	SPON2
REC114	0	0.578813194	0.875	0.3	0	2.916666667	spermatocyte	REC114
DDX43	0	0.578665149	0.48	0.166	0	2.891566265	spermatogonia	DDX43
BOC	0	0.578562081	0.266	0.027	0	9.851851852	Leydig_cells	BOC
OVOS21	0.002386217	0.578546697	0.48	0.316	1	1.518987342	mastocyte	OVOS2
MRC21	1.14E-246	0.578544671	0.482	0.143	7.02E-242	3.37E+00	PTM_cells	MRC2
ZMYND8	5.61E-122	0.578527709	0.264	0.096	3.44E-117	2.75E+00	Sertoli_cells	ZMYND8
COX6C	0	0.578350493	0.982	0.746	0	1.316353887	spermatocyte	COX6C
TRAFD1	0	0.578265909	0.409	0.085	0	4.811764706	spermatogonia	TRAFD1
RPL310	1.24E-06	0.578252736	0.947	0.924	0.076331471	1.024891775	T_cells	RPL3
SERPING1	1.04E-126	0.578134436	0.499	0.112	6.36E-122	4.46E+00	endotheliocyte	SERPING1
C4orf22	0	0.578058544	0.795	0.2	0	3.975	spermatocyte	C4orf22
BLZF1	0	0.578047592	0.828	0.262	0	3.160305344	spermatocyte	BLZF1
DDIT43	1.12E-79	0.577974407	0.326	0.083	6.90E-75	3.93E+00	VSM_cells	DDIT4
LAMB21	1.80E-285	0.577954207	0.381	0.081	1.10E-280	4.70E+00	PTM_cells	LAMB2
FAM53C	0	0.577850514	0.634	0.418	0	1.516746411	spermatid	FAM53C

EZR1	1.02E-86	0.577787922	0.46	0.24	6.23E-82	1.92E+00	Leydig_cells	EZR
RPS54	0.000845721	0.577773245	0.816	0.818	1	0.997555012	T_cells	RPS5
C11orf94	0	0.577737328	0.461	0.234	0	1.97008547	spermatid	C11orf94
FUCA2	1.03E-249	0.577719167	0.292	0.052	6.32E-245	5.62E+00	Leydig_cells	FUCA2
STAT32	4.34E-38	0.577642331	0.463	0.264	2.66E-33	1.75E+00	VSM_cells	STAT3
ACOT13	7.48E-228	0.577638647	0.62	0.562	4.59E-223	1.10E+00	spermatid	ACOT13
USP11	2.59E-166	0.57749134	0.326	0.187	1.59E-161	1.74E+00	spermatogonia	USP11
PHF2	0	0.577233039	0.444	0.096	0	4.625	spermatid	PHF2
PLP2	3.83E-125	0.577211707	0.387	0.085	2.35E-120	4.55E+00	VSM_cells	PLP2
C2orf16	0	0.577204706	0.368	0.127	0	2.897637795	spermatid	C2orf16
BBX	0	0.577180053	0.727	0.569	0	1.277680141	spermatid	BBX
MAGI1	0	0.577145398	0.79	0.183	0	4.316939891	spermatocyte	MAGI1
FDFT1	0	0.577112718	0.93	0.437	0	2.128146453	spermatocyte	FDFT1
HLA-F	3.61E-172	0.577056238	0.367	0.053	2.22E-167	6.92E+00	endotheliocyte	HLA-F
RYK	0	0.577054277	0.437	0.154	0	2.837662338	spermatogonia	RYK
PLCD1	5.61E-291	0.577043987	0.207	0.029	3.44E-286	7.14E+00	Sertoli_cells	PLCD1
MT-CO11	4.73E-50	0.576980354	0.739	0.449	2.90E-45	1.65E+00	endotheliocyte	MT-CO1
C15orf48	0	0.576926202	0.897	0.405	0	2.214814815	spermatocyte	C15orf48
DPYSL2	1.69E-213	0.576919156	0.35	0.081	1.04E-208	4.32E+00	Leydig_cells	DPYSL2
PDCD5	0	0.576867819	0.743	0.563	0	1.319715808	spermatogonia	PDCD5
HSPA9	2.30E-43	0.576819496	0.326	0.223	1.41E-38	1.46E+00	Sertoli_cells	HSPA9
CINP	0	0.57676965	0.776	0.223	0	3.479820628	spermatocyte	CINP
TSC22D33	4.81E-244	0.576643144	0.454	0.132	2.95E-239	3.44E+00	PTM_cells	TSC22D3
DTD1	0	0.576488417	0.505	0.234	0	2.158119658	spermatogonia	DTD1
CCDC187	0	0.576481997	0.401	0.066	0	6.075757576	spermatid	CCDC187
HAGLR	0	0.576427733	0.91	0.351	0	2.592592593	spermatocyte	HAGLR
FSCB	0	0.576418415	0.536	0.214	0	2.504672897	spermatid	FSCB
TIMP13	9.03E-152	0.576358919	0.397	0.153	5.54E-147	2.59E+00	Sertoli_cells	TIMP1
RDX	0	0.576294869	0.52	0.208	0	2.5	spermatogonia	RDX
ADH5	3.36E-12	0.576272955	0.316	0.298	2.06E-07	1.06E+00	Sertoli_cells	ADH5
CRNDE	0	0.576199935	0.963	0.554	0	1.738267148	spermatocyte	CRNDE
SPATA9	0	0.576037842	0.586	0.272	0	2.154411765	spermatid	SPATA9
MYL12A2	5.59E-58	0.575963003	0.615	0.324	3.43E-53	1.90E+00	VSM_cells	MYL12A
PGM5	1.69E-241	0.575818211	0.313	0.031	1.04E-236	1.01E+01	VSM_cells	PGM5
ITIH4	0	0.575630622	0.411	0.066	0	6.227272727	spermatid	ITIH4
AHRR	0	0.57558876	0.822	0.225	0	3.653333333	spermatocyte	AHRR
CCL2	1.12E-149	0.575490579	0.206	0.039	6.86E-145	5.28E+00	Leydig_cells	CCL2
RPL15	1.24E-59	0.57528831	0.973	0.902	7.59E-55	1.08E+00	endotheliocyte	RPL15
CPTP	0	0.575281114	0.836	0.255	0	3.278431373	spermatocyte	CPTP
SMARCB1	0	0.57527723	0.508	0.273	0	1.860805861	spermatogonia	SMARCB1
ELN	3.14E-87	0.575276721	0.261	0.047	1.93E-82	5.55E+00	endotheliocyte	ELN
PRDX2	6.64E-164	0.575237496	0.543	0.104	4.07E-159	5.22E+00	endotheliocyte	PRDX2
EGR4	7.95E-232	0.57521508	0.185	0.029	4.88E-227	6.38E+00	Sertoli_cells	EGR4
DAD1	0	0.575128882	0.915	0.5	0	1.83	spermatocyte	DAD1
11-Sep	2.30E-260	0.575119721	0.326	0.061	1.41E-255	5.34E+00	Leydig_cells	11-Sep
NUTF2	0	0.575094831	0.507	0.179	0	2.832402235	spermatogonia	NUTF2
SGF29	0	0.575018651	0.529	0.269	0	1.966542751	spermatid	SGF29
ATP6V1G11	2.13E-24	0.574930206	0.513	0.515	1.31E-19	9.96E-01	Sertoli_cells	ATP6V1G1
RPS27L1	2.10E-36	0.574818807	0.537	0.347	1.29E-31	1.55E+00	VSM_cells	RPS27L
ARF4	7.85E-12	0.574663424	0.431	0.482	4.82E-07	8.94E-01	Sertoli_cells	ARF4
PPP1R32	0	0.574421724	0.563	0.261	0	2.157088123	spermatid	PPP1R32
UCLH3	0	0.574253481	0.823	0.313	0	2.629392971	spermatocyte	UCLH3
LOXHD1	0	0.573854771	0.486	0.151	0	3.218543046	spermatid	LOXHD1
RPS21	2.17E-65	0.573675664	0.795	0.521	1.33E-60	1.53E+00	VSM_cells	RPS21
WNK1	0	0.573664499	0.598	0.373	0	1.603217158	spermatogonia	WNK1
EGLN2	0	0.573600786	0.941	0.467	0	2.014989293	spermatocyte	EGLN2
SERPING1	0	0.573599236	0.488	0.098	0	4.979591837	PTM_cells	SERPING1
FBL	1.45E-38	0.573587899	0.515	0.476	8.91E-34	1.08E+00	Sertoli_cells	FBL
RPL26P37	3.00E-14	0.573587455	0.175	0.071	1.84E-09	2.46E+00	macrophages	RPL26P37
FAM216A	0	0.573355601	0.763	0.249	0	3.064257028	spermatocyte	FAM216A
VKORC1	0	0.573349828	0.451	0.101	0	4.465346535	PTM_cells	VKORC1
ATP5A1	1.19E-27	0.573101571	0.502	0.518	7.28E-23	9.69E-01	Sertoli_cells	ATP5A1
UBE2D2	0	0.573088533	0.974	0.613	0	1.588907015	spermatocyte	UBE2D2
MYL12A1	3.05E-154	0.573000532	0.609	0.314	1.87E-149	1.94E+00	PTM_cells	MYL12A
TACC1	4.03E-99	0.572927685	0.439	0.201	2.47E-94	2.18E+00	Leydig_cells	TACC1
SLC25A3	1.73E-126	0.572912991	0.66	0.428	1.06E-121	1.54E+00	PTM_cells	SLC25A3
PARP14	0	0.572813983	0.342	0.023	0	14.86956522	endotheliocyte	PARP14
TRPV2	1.38E-13	0.572806119	0.132	0.01	8.45E-09	1.32E+01	T_cells	TRPV2
CBLN4	0	0.572765198	0.316	0.003	0	105.3333333	PTM_cells	CBLN4
DNAI2	0	0.572708468	0.693	0.131	0	5.290076336	spermatocyte	DNAI2
ANKRD13A	0	0.572534833	0.914	0.381	0	2.398950131	spermatocyte	ANKRD13A
KLK5	0	0.572409566	0.416	0.062	0	6.709677419	spermatid	KLK5
LDB3	1.25E-86	0.572281774	0.304	0.074	7.66E-82	4.11E+00	VSM_cells	LDB3
PPP1R2	0	0.572194802	0.909	0.463	0	1.963282937	spermatocyte	PPP1R2
ROCK2	3.85E-79	0.572188696	0.452	0.156	2.36E-74	2.90E+00	VSM_cells	ROCK2

C11orf42	0	0.572164501	0.419	0.065	0	6.446153846	spermatid	C11orf42
LPCAT2	4.56E-43	0.572031452	0.242	0.058	2.80E-38	4.17E+00	macrophages	LPCAT2
BACH1	0	0.571756741	0.492	0.199	0	2.472361809	spermatid	BACH1
MGST1	3.66E-258	0.571699248	0.313	0.065	2.25E-253	4.82E+00	PTM_cells	MGST1
HEXIM13	5.76E-132	0.571682634	0.271	0.094	3.53E-127	2.88E+00	Sertoli_cells	HEXIM1
MACF1	8.74E-41	0.571590726	0.499	0.25	5.36E-36	2.00E+00	endotheliocyte	MACF1
ATP5F1	0	0.571524909	0.94	0.515	0	1.825242718	spermatocyte	ATP5F1
RCAN3	3.30E-14	0.571239435	0.211	0.024	2.02E-09	8.79E+00	T_cells	RCAN3
CPVL	0	0.57086748	0.359	0.15	0	2.393333333	spermatogonia	CPVL
MOV10	6.65E-254	0.570843664	0.227	0.041	4.08E-249	5.54E+00	Sertoli_cells	MOV10
ALDH1A31	0	0.570841598	0.343	0.039	0	8.794871795	PTM_cells	ALDH1A3
GNPNAT1	0	0.570756224	0.707	0.142	0	4.978873239	spermatocyte	GNPNAT1
FRY	7.98E-113	0.570628491	0.298	0.057	4.90E-108	5.23E+00	VSM_cells	FRY
GUCY1A2	1.01E-189	0.570239901	0.241	0.045	6.21E-185	5.36E+00	Leydig_cells	GUCY1A2
TMEM98	1.18E-141	0.570147175	0.355	0.115	7.23E-137	3.09E+00	Leydig_cells	TMEM98
FZD1	6.18E-81	0.5700498	0.202	0.025	3.79E-76	8.08E+00	macrophages	FZD1
MPHOSPH8	0	0.570010756	0.651	0.429	0	1.517482517	spermatogonia	MPHOSPH8
ST6GALNAC1	0	0.570001826	0.323	0.003	0	107.6666667	endotheliocyte	ST6GALNAC1
PTPRM	3.84E-59	0.569999891	0.407	0.144	2.36E-54	2.83E+00	endotheliocyte	PTPRM
SNED11	0	0.569924942	0.343	0.046	0	7.456521739	PTM_cells	SNED1
HSP90B11	4.22E-119	0.569916313	0.811	0.598	2.59E-114	1.36E+00	Leydig_cells	HSP90B1
RAC13	9.06E-91	0.569854123	0.59	0.371	5.56E-86	1.59E+00	Leydig_cells	RAC1
DDX6	0	0.569839743	0.506	0.148	0	3.418918919	spermatogonia	DDX6
MED28	0	0.569795556	0.497	0.148	0	3.358108108	spermatogonia	MED28
TUBB2	2.46E-231	0.569684738	0.622	0.232	1.51E-226	2.68E+00	PTM_cells	TUBB
ATN1	7.21E-58	0.569417599	0.4	0.136	4.42E-53	2.94E+00	endotheliocyte	ATN1
RPL181	1.87E-24	0.569136153	0.737	0.572	1.15E-19	1.29E+00	macrophages	RPL18
TTLL10	0	0.569109626	0.476	0.186	0	2.559139785	spermatid	TTLL10
CSTF1	0	0.569083448	0.65	0.138	0	4.710144928	spermatocyte	CSTF1
CCDC59	0	0.569080489	0.878	0.342	0	2.567251462	spermatocyte	CCDC59
DNAJB11	0	0.569009699	0.457	0.213	0	2.145539906	spermatogonia	DNAJB11
CEP68	5.59E-78	0.568982575	0.362	0.095	3.43E-73	3.81E+00	endotheliocyte	CEP68
RPL311	1.73E-67	0.568911457	0.907	0.836	1.06E-62	1.08E+00	Leydig_cells	RPL31
IGFN1	1.69E-266	0.568848206	0.189	0.019	1.03E-261	9.95E+00	Leydig_cells	IGFN1
Sep-91	0.008370263	0.568803473	0.263	0.139	1	1.892086331	T_cells	09-Sep
TSC22D4	2.58E-283	0.568486878	0.21	0.031	1.58E-278	6.77E+00	Sertoli_cells	TSC22D4
PLXDC21	0	0.568462985	0.372	0.056	0	6.642857143	PTM_cells	PLXDC2
IFI61	6.96E-25	0.56842984	0.266	0.096	4.27E-20	2.77E+00	macrophages	IFI6
WIPF11	0.003985304	0.568413278	0.237	0.111	1	2.135135135	T_cells	WIPF1
BHLHE402	1.38E-187	0.568383862	0.349	0.047	8.45E-183	7.43E+00	VSM_cells	BHLHE40
LRPAP1	2.78E-305	0.568333376	0.614	0.408	1.71E-300	1.50E+00	spermatogonia	LRPAP1
FAM229B	0	0.56832628	0.943	0.805	0	1.171428571	spermatid	FAM229B
NME3	6.47E-297	0.568255584	0.459	0.115	3.97E-292	3.99E+00	PTM_cells	NME3
NROB1	0	0.568226451	0.18	0.007	0	25.71428571	Sertoli_cells	NROB1
CBR1	5.99E-158	0.568069927	0.346	0.104	3.68E-153	3.33E+00	Leydig_cells	CBR1
CCT7	0	0.567996693	0.955	0.537	0	1.77839851	spermatocyte	CCT7
DSC2	3.45E-217	0.567985889	0.162	0.006	2.12E-212	2.70E+01	macrophages	DSC2
RP11-147C23.1	0	0.567980937	0.33	0.108	0	3.055555556	spermatid	RP11-147C23.1
PRKCZ	0	0.567697281	0.535	0.267	0	2.003745318	spermatid	PRKCZ
PICALM	8.98E-07	0.567398095	0.397	0.345	0.055112992	1.150724638	macrophages	PICALM
TMED10	0	0.567306906	0.613	0.337	0	1.818991098	spermatogonia	TMED10
FOXC11	3.80E-171	0.567071249	0.281	0.064	2.33E-166	4.39E+00	Leydig_cells	FOXC1
RPL13AP51	7.63E-10	0.567053907	0.199	0.102	4.68E-05	1.95E+00	macrophages	RPL13AP5
RPS71	2.98E-140	0.566952465	0.888	0.797	1.83E-135	1.11E+00	PTM_cells	RPS7
GOSR2	0	0.566817167	0.54	0.346	0	1.560693642	spermatid	GOSR2
NFIX1	2.07E-157	0.566801899	0.456	0.178	1.27E-152	2.56E+00	PTM_cells	NFIX
RPS52	7.95E-176	0.566800293	0.877	0.815	4.88E-171	1.08E+00	PTM_cells	RPS5
CNIH4	0	0.566661217	0.479	0.16	0	2.99375	spermatogonia	CNIH4
LINC00662	0	0.56657479	0.819	0.312	0	2.625	spermatocyte	LINC00662
COPB1	0	0.566536855	0.523	0.222	0	2.355855856	spermatogonia	COPB1
HOXD8	0	0.566345104	0.754	0.235	0	3.208510638	spermatocyte	HOXD8
AK31	0	0.566291803	0.4	0.058	0	6.896551724	PTM_cells	AK3
LEPROT3	1.91E-80	0.56626068	0.476	0.168	1.17E-75	2.83E+00	VSM_cells	LEPROT
FGF7	0	0.566237132	0.238	0.005	0	47.6	Leydig_cells	FGF7
ODF3L2	0	0.566213656	0.38	0.095	0	4	spermatid	ODF3L2
IDS2	0	0.566087563	0.384	0.055	0	6.981818182	PTM_cells	IDS
PHF14	0	0.56601753	0.491	0.186	0	2.639784946	spermatogonia	PHF14
DEF6	0	0.5659294	0.735	0.163	0	4.509202454	spermatocyte	DEF6
TERF1	0	0.565895345	0.477	0.194	0	2.458762887	spermatogonia	TERF1
TMF1	0	0.565841896	0.725	0.577	0	1.256499133	spermatid	TMF1
CA9	0	0.565759088	0.398	0.123	0	3.235772358	spermatid	CA9
ATP2A3	7.79E-29	0.565691117	0.158	0.007	4.78E-24	2.26E+01	T_cells	ATP2A3
HEXIM11	1.65E-138	0.565578222	0.322	0.096	1.01E-133	3.35E+00	Leydig_cells	HEXIM1
LDLR2	9.92E-110	0.565553555	0.33	0.068	6.08E-105	4.85E+00	VSM_cells	LDLR
CRIP11	2.01E-08	0.565552392	0.158	0.023	0.0012347	6.869565217	T_cells	CRIP1

TOPAZ1	0	0.565551737	0.374	0.052	0	7.192307692	spermatogonia	TOPAZ1
EMC2	0	0.565433931	0.811	0.286	0	2.835664336	spermatocyte	EMC2
SNHG71	1.62E-254	0.565348072	0.535	0.169	9.93E-250	3.17E+00	PTM_cells	SNHG7
HCAR3	1.96E-290	0.565325794	0.152	0.003	1.20E-285	5.07E+01	macrophages	HCAR3
SLC8A1	0	0.565056324	0.277	0.012	0	23.083333333	VSM_cells	SLC8A1
NISCH	9.20E-119	0.564975126	0.523	0.271	5.65E-114	1.93E+00	PTM_cells	NISCH
SNX3	0	0.564953201	0.949	0.575	0	1.650434783	spermatocyte	SNX3
UGCG	2.00E-106	0.564868746	0.32	0.119	1.23E-101	2.69E+00	Leydig_cells	UGCG
SNX14	0	0.56484892	0.821	0.266	0	3.086466165	spermatocyte	SNX14
CAMK2G	1.25E-218	0.56479621	0.334	0.039	7.64E-214	8.56E+00	VSM_cells	CAMK2G
SLC25A65	6.08E-73	0.564741791	0.346	0.187	3.73E-68	1.85E+00	Sertoli_cells	SLC25A6
UNG	0	0.564713657	0.353	0.039	0	9.051282051	spermatogonia	UNG
RPL323	2.63E-71	0.56462568	0.918	0.888	1.61E-66	1.03E+00	VSM_cells	RPL32
MAPK3	0	0.564609105	0.456	0.203	0	2.246305419	spermatid	MAPK3
ZNF703	2.94E-275	0.564582193	0.298	0.024	1.80E-270	1.24E+01	VSM_cells	ZNF703
RHOC1	6.85E-245	0.564576369	0.473	0.139	4.20E-240	3.40E+00	PTM_cells	RHOC
RPS212	2.67E-25	0.56446642	0.71	0.524	1.64E-20	1.35E+00	macrophages	RPS21
MBNL13	2.84E-99	0.564448054	0.391	0.1	1.74E-94	3.91E+00	VSM_cells	MBNL1
PPP1R10	5.71E-07	0.564382707	0.357	0.296	0.035001498	1.206081081	macrophages	PPP1R10
CCL3L31	3.26E-13	0.564301531	0.237	0.032	2.00E-08	7.41E+00	T_cells	CCL3L3
DDAH21	4.90E-204	0.564244397	0.468	0.161	3.01E-199	2.91E+00	PTM_cells	DDAH2
TAF9	0	0.564096908	0.956	0.54	0	1.77037037	spermatocyte	TAF9
RHOQ	1.61E-08	0.564072134	0.215	0.125	0.000987527	1.72	macrophages	RHOQ
EIF4B	5.74E-41	0.564009158	0.715	0.562	3.52E-36	1.27E+00	endotheliocyte	EIF4B
CCDC172	0	0.56381136	0.391	0.168	0	2.327380952	spermatogonia	CCDC172
POLE3	0	0.563792967	0.494	0.133	0	3.714285714	spermatogonia	POLE3
TMOD3	9.87E-57	0.563712792	0.429	0.166	6.05E-52	2.58E+00	endotheliocyte	TMOD3
MT-CO24	6.31E-24	0.563711046	0.495	0.433	3.87E-19	1.14E+00	Sertoli_cells	MT-CO2
RPS91	3.50E-41	0.563647079	0.912	0.837	2.15E-36	1.09E+00	macrophages	RPS9
ARRB21	1.35E-07	0.563632463	0.158	0.025	0.008273142	6.32	T_cells	ARRB2
TUBA1B2	1.29E-70	0.563632369	0.673	0.73	7.90E-66	9.22E-01	Sertoli_cells	TUBA1B
ARMC3	0	0.563507302	0.933	0.337	0	2.768545994	spermatocyte	ARMC3
RSPH6A	0	0.563432501	0.706	0.115	0	6.139130435	spermatocyte	RSPH6A
SMIM19	0	0.563395562	0.848	0.363	0	2.336088154	spermatocyte	SMIM19
AFF4	0	0.563373943	0.556	0.31	0	1.793548387	spermatid	AFF4
C10orf102	0	0.563312104	0.228	0.032	0	7.125	Sertoli_cells	C10orf10
WBP11	0	0.563298217	0.866	0.378	0	2.291005291	spermatocyte	WBP11
SNHG52	2.36E-44	0.563188194	0.187	0.078	1.45E-39	2.40E+00	Leydig_cells	SNHG5
FAM228A	0	0.563119687	0.754	0.179	0	4.212290503	spermatocyte	FAM228A
ILKAP	0	0.563063153	0.457	0.111	0	4.117117117	spermatogonia	ILKAP
SMARCA4	0	0.562898083	0.612	0.374	0	1.636363636	spermatogonia	SMARCA4
SLK	0	0.562880903	0.425	0.114	0	3.728070175	spermatogonia	SLK
TLE1	0	0.562876281	0.256	0.043	0	5.953488372	spermatogonia	TLE1
CLIC13	2.31E-145	0.562835616	0.518	0.252	1.42E-140	2.06E+00	PTM_cells	CLIC1
CMBL	0	0.56275881	0.268	0.031	0	8.64516129	Leydig_cells	CMBL
TEX36.AS1	0	0.562683978	0.219	0.017	0	12.88235294	spermatid	TEX36.AS1
WIPF1	8.09E-20	0.56253461	0.259	0.11	4.96E-15	2.35E+00	macrophages	WIPF1
MAP3K82	1.28E-304	0.562503631	0.326	0.026	7.83E-300	1.25E+01	VSM_cells	MAP3K8
MYO6	5.29E-63	0.562443495	0.275	0.148	3.24E-58	1.86E+00	Sertoli_cells	MYO6
PKDCC1	0	0.562342798	0.373	0.044	0	8.477272727	PTM_cells	PKDCC
NOSIP	0	0.562331134	0.903	0.44	0	2.052272727	spermatocyte	NOSIP
CXCL3	2.65E-214	0.562142391	0.303	0.028	1.63E-209	1.08E+01	endotheliocyte	CXCL3
ID11	4.18E-96	0.562132158	0.319	0.07	2.56E-91	4.56E+00	VSM_cells	ID1
NUCB11	8.36E-121	0.562087682	0.36	0.13	5.13E-116	2.77E+00	Leydig_cells	NUCB1
COL9A3	0	0.56207683	0.348	0.057	0	6.105263158	spermatid	COL9A3
RGS19	5.49E-153	0.561991332	0.182	0.011	3.37E-148	1.65E+01	macrophages	RGS19
ATL3	0	0.561939333	0.57	0.387	0	1.472868217	spermatid	ATL3
CAMK2N11	9.80E-100	0.561836462	0.268	0.05	6.01E-95	5.36E+00	VSM_cells	CAMK2N1
RP1-20208.3	0	0.561788797	0.56	0.245	0	2.285714286	spermatocyte	RP1-20208.3
PTPN1	0.00099087	0.561638039	0.286	0.254	1	1.125984252	macrophages	PTPN1
MT.ND53	8.80E-11	0.561536441	0.34	0.316	5.40E-06	1.08E+00	Sertoli_cells	MT.ND5
DUSP15	0	0.561532858	0.934	0.443	0	2.108352144	spermatocyte	DUSP15
INPP5D	2.05E-39	0.561522942	0.242	0.062	1.25E-34	3.90E+00	macrophages	INPP5D
TMSB103	0	0.561473037	0.835	0.376	0	2.220744681	PTM_cells	TMSB10
ADCY5	0	0.561369734	0.343	0.05	0	6.86	PTM_cells	ADCY5
DPYSL21	3.65E-30	0.561207951	0.273	0.09	2.24E-25	3.03E+00	macrophages	DPYSL2
C14orf39	0	0.561126834	0.369	0.077	0	4.792207792	spermatogonia	C14orf39
PSMB7	0	0.561014925	0.952	0.551	0	1.727767695	spermatocyte	PSMB7
POLR2L	0	0.560950157	0.574	0.373	0	1.538873995	spermatogonia	POLR2L
ARPC51	2.37E-17	0.560699727	0.376	0.35	1.45E-12	1.07E+00	Sertoli_cells	ARPC5
IFI27L2	3.86E-249	0.560660804	0.368	0.079	2.37E-244	4.66E+00	Leydig_cells	IFI27L2
CAND1	0	0.56065395	0.503	0.148	0	3.398648649	spermatogonia	CAND1
SQSTM11	3.24E-143	0.560608923	0.602	0.33	1.99E-138	1.82E+00	PTM_cells	SQSTM1
SNUPN	0	0.560526398	0.797	0.243	0	3.279835391	spermatocyte	SNUPN
BOD1L1	4.81E-29	0.560472166	0.329	0.255	2.95E-24	1.29E+00	Sertoli_cells	BOD1L1



RPL322	1.02E-180	0.560408056	0.945	0.886	6.26E-176	1.07E+00	PTM_cells	RPL32
SMTN	1.95E-199	0.5603694	0.347	0.045	1.19E-194	7.71E+00	VSM_cells	SMTN
MECP2	0.003910827	0.560233652	0.184	0.073	1	2.520547945	T_cells	MECP2
ITM2C	0	0.560179602	0.386	0.047	0	8.212765957	PTM_cells	ITM2C
LVCAT1	0	0.560141136	0.663	0.138	0	4.804347826	spermatocyte	LVCAT1
PML	5.28E-220	0.560106388	0.347	0.036	3.24E-215	9.64E+00	endotheliocyte	PML
CTB.50L17.10	0	0.560028077	0.346	0.099	0	3.494949495	spermatocyte	CTB.50L17.10
RPS192	6.59E-34	0.559998699	0.862	0.758	4.04E-29	1.14E+00	macrophages	RPS19
CEP19	0	0.559963434	0.744	0.168	0	4.428571429	spermatocyte	CEP19
MIF	2.43E-182	0.559920391	0.448	0.162	1.49E-177	2.77E+00	PTM_cells	MIF
NDUFB7	1.75E-274	0.55990508	0.575	0.413	1.07E-269	1.39E+00	spermatogonia	NDUFB7
RFWD3	0	0.559890871	0.429	0.098	0	4.37755102	spermatogonia	RFWD3
RHOA	0	0.559880366	0.767	0.485	0	1.581443299	spermatogonia	RHOA
AGPAT3	0	0.559667624	0.514	0.244	0	2.106557377	spermatid	AGPAT3
SRP141	2.52E-41	0.559514869	0.849	0.728	1.55E-36	1.17E+00	endotheliocyte	SRP14
TAPBP	1.88E-202	0.559455304	0.34	0.037	1.15E-197	9.19E+00	endotheliocyte	TAPBP
KLF5	0	0.559243347	0.494	0.267	0	1.850187266	spermatid	KLF5
MT-ND4L1	5.56E-164	0.559154783	0.473	0.171	3.41E-159	2.77E+00	PTM_cells	MT-ND4L
PRMT11	1.93E-75	0.558708499	0.593	0.224	1.18E-70	2.65E+00	endotheliocyte	PRMT1
AC006942.4	0	0.558695162	0.479	0.182	0	2.631868132	spermatid	AC006942.4
PLD31	5.05E-216	0.558541496	0.499	0.167	3.10E-211	2.99E+00	PTM_cells	PLD3
NDUFB81	1.10E-48	0.558440973	0.581	0.335	6.72E-44	1.73E+00	VSM_cells	NDUFB8
RIBC1	0	0.558435354	0.538	0.252	0	2.134920635	spermatid	RIBC1
SERBP1	0	0.558382541	0.981	0.649	0	1.51155624	spermatocyte	SERBP1
SP1002	1.55E-05	0.558377572	0.211	0.056	0.951830493	3.767857143	T_cells	SP100
DLC11	3.80E-78	0.558365919	0.319	0.142	2.33E-73	2.25E+00	Leydig_cells	DLC1
FOXN3	4.85E-07	0.558178454	0.32	0.243	0.029751212	1.316872428	macrophages	FOXN3
NPHP1	0	0.558088726	0.862	0.295	0	2.922033898	spermatocyte	NPHP1
GSTA4	3.98E-179	0.557904517	0.196	0.041	2.44E-174	4.78E+00	Sertoli_cells	GSTA4
ZFP91	0	0.557877504	0.939	0.537	0	1.748603352	spermatocyte	ZFP91
FOXO31	1.59E-72	0.557872582	0.272	0.135	9.75E-68	2.01E+00	Sertoli_cells	FOXO3
ADI12	6.46E-43	0.557855671	0.232	0.132	3.96E-38	1.76E+00	Sertoli_cells	ADI1
HSPB9	0	0.557743629	0.786	0.247	0	3.182186235	spermatocyte	HSPB9
COL6A12	6.72E-125	0.557664651	0.476	0.116	4.12E-120	4.10E+00	VSM_cells	COL6A1
PKIG	0	0.557641188	0.814	0.307	0	2.651465798	spermatocyte	PKIG
MND1	0	0.557594728	0.345	0.098	0	3.520408163	spermatogonia	MND1
CLDND2	0	0.557387595	0.597	0.21	0	2.842857143	spermatocyte	CLDND2
NBR1	0	0.557326558	0.644	0.48	0	1.341666667	spermatid	NBR1
C8orf4	1.11E-199	0.557288584	0.288	0.027	6.83E-195	1.07E+01	endotheliocyte	C8orf4
EIF4A3	0	0.557210324	0.581	0.321	0	1.809968847	spermatogonia	EIF4A3
CFL12	1.06E-45	0.557183583	0.633	0.744	6.52E-41	8.51E-01	Sertoli_cells	CFL1
APOA1BP	1.34E-28	0.557062911	0.155	0.084	8.22E-24	1.85E+00	Sertoli_cells	APOA1BP
SNHG19	1.76E-301	0.557051282	0.203	0.027	1.08E-296	7.52E+00	Sertoli_cells	SNHG19
ENSA	4.54E-40	0.55704594	0.504	0.265	2.78E-35	1.90E+00	endotheliocyte	ENSA
KLHDC3	0	0.557039105	0.97	0.529	0	1.833648393	spermatocyte	KLHDC3
ITGA9	0	0.556853569	0.322	0.02	0	16.1	PTM_cells	ITGA9
GPR18	0	0.556792438	0.424	0.113	0	3.752212389	spermatid	GPR18
NUF2	0	0.556762357	0.531	0.309	0	1.718446602	spermatogonia	NUF2
PTGER2	1.39E-27	0.556723909	0.158	0.007	8.52E-23	2.26E+01	T_cells	PTGER2
PCBP1	4.81E-39	0.55662899	0.628	0.371	2.95E-34	1.69E+00	endotheliocyte	PCBP1
NDUFB72	8.26E-05	0.556607074	0.39	0.452	1	0.862831858	Sertoli_cells	NDUFB7
SLCO2A1	0	0.556211303	0.273	0.006	0	45.5	endotheliocyte	SLCO2A1
UPF3A	0	0.556173938	0.93	0.472	0	1.970338983	spermatocyte	UPF3A
MPHOSPH10	0	0.556050244	0.448	0.087	0	5.149425287	spermatogonia	MPHOSPH10
FAM186B	0	0.555886275	0.831	0.24	0	3.4625	spermatocyte	FAM186B
NFIA2	2.00E-66	0.55577675	0.503	0.21	1.23E-61	2.40E+00	VSM_cells	NFIA
RHOBTB32	5.13E-77	0.555707604	0.276	0.131	3.15E-72	2.11E+00	Sertoli_cells	RHOBTB3
RGS16	7.46E-86	0.555684931	0.283	0.055	4.58E-81	5.15E+00	endotheliocyte	RGS16
LRP8	2.16E-198	0.555602637	0.23	0.053	1.33E-193	4.34E+00	Sertoli_cells	LRP8
TPI1	1.26E-34	0.555492248	0.567	0.579	7.71E-30	9.79E-01	Sertoli_cells	TPI1
FAM129B	2.05E-187	0.555389307	0.323	0.036	1.26E-182	8.97E+00	endotheliocyte	FAM129B
RPS6KA31	1.60E-54	0.555389077	0.209	0.037	9.84E-50	5.65E+00	macrophages	RPS6KA3
NSFL1C	0	0.555363444	0.55	0.258	0	2.131782946	spermatogonia	NSFL1C
C5orf581	0.00110908	0.555362744	0.32	0.159	1	2.012578616	mastocyte	C5orf58
LAMB22	7.94E-96	0.555241454	0.366	0.091	4.87E-91	4.02E+00	VSM_cells	LAMB2
GRN	0	0.555017479	0.307	0.089	0	3.449438202	spermatogonia	GRN
MSMO1	4.42E-62	0.554967562	0.22	0.104	2.71E-57	2.12E+00	Sertoli_cells	MSMO1
ASZ1	0	0.554927407	0.416	0.06	0	6.933333333	spermatogonia	ASZ1
RAP2A	6.09E-26	0.55491996	0.189	0.054	3.73E-21	3.50E+00	macrophages	RAP2A
NEURL1B	1.75E-176	0.554919371	0.24	0.048	1.08E-171	5.00E+00	Leydig_cells	NEURL1B
DDX171	9.41E-36	0.554917462	0.707	0.499	5.77E-31	1.42E+00	endotheliocyte	DDX17
PRKAR2B	9.88E-92	0.5549171	0.225	0.086	6.06E-87	2.62E+00	Sertoli_cells	PRKAR2B
NFIC2	3.03E-45	0.554512476	0.349	0.241	1.86E-40	1.45E+00	Sertoli_cells	NFIC
RBMS3	9.61E-102	0.554497056	0.336	0.134	5.89E-97	2.51E+00	Leydig_cells	RBMS3
06-Mar	0	0.554483022	0.556	0.269	0	2.066914498	spermatogonia	06-Mar

RPS181	6.57E-38	0.554446629	0.939	0.852	4.03E-33	1.10E+00	macrophages	RPS18
CECR1	7.05E-13	0.554392633	0.219	0.105	4.32E-08	2.09E+00	macrophages	CECR1
ATP5D	3.55E-46	0.554205384	0.592	0.38	2.18E-41	1.56E+00	VSM_cells	ATP5D
PTGES	0	0.554192262	0.208	0.016	0	13	Sertoli_cells	PTGES
LSM1	0	0.554188247	0.434	0.128	0	3.390625	spermatogonia	LSM1
GOT2	3.10E-128	0.554143427	0.232	0.074	1.90E-123	3.14E+00	Sertoli_cells	GOT2
RPL21	0	0.554096903	0.766	0.398	0	1.924623116	spermatogonia	RPL21
MTFR1	0	0.554045642	0.58	0.4	0	1.45	spermatid	MTFR1
SMOC11	6.19E-162	0.553892845	0.249	0.07	3.80E-157	3.56E+00	Sertoli_cells	SMOC1
CNN21	1.00E-07	0.553862376	0.211	0.042	0.006133555	5.023809524	T_cells	CNN2
JTB	8.42E-49	0.553837684	0.293	0.177	5.17E-44	1.66E+00	Sertoli_cells	JTB
C17orf50	0	0.553651339	0.69	0.373	0	1.849865952	spermatid	C17orf50
IL13RA2	3.30E-244	0.553607173	0.472	0.306	2.02E-239	1.54E+00	spermatid	IL13RA2
CCDC96	0	0.553446967	0.884	0.346	0	2.554913295	spermatocyte	CCDC96
PDE1A	0	0.553398432	0.592	0.283	0	2.091872792	spermatid	PDE1A
FEZ2	5.67E-126	0.55325275	0.449	0.096	3.48E-121	4.68E+00	endotheliocyte	FEZ2
RPS214	2.05E-132	0.553166503	0.776	0.515	1.26E-127	1.51E+00	Leydig_cells	RPS21
CENPV	0	0.553125044	0.439	0.128	0	3.4296875	spermatogonia	CENPV
INO80E	0	0.553116244	0.428	0.116	0	3.689655172	spermatogonia	INO80E
KIF1A	0	0.553006066	0.174	0.02	0	8.7	spermatogonia	KIF1A
BUB1	0	0.552978536	0.446	0.203	0	2.197044335	spermatogonia	BUB1
REL	1.81E-74	0.552931615	0.387	0.11	1.11E-69	3.52E+00	endotheliocyte	REL
VRK3	0	0.552898246	0.764	0.618	0	1.236245955	spermatid	VRK3
HSPA8	1.45E-37	0.552835656	0.555	0.568	8.92E-33	9.77E-01	Sertoli_cells	HSPA8
PLSCR12	0	0.552627391	0.291	0.039	0	7.461538462	Leydig_cells	PLSCR1
GLTSCR21	1.91E-105	0.552614979	0.679	0.514	1.17E-100	1.32E+00	PTM_cells	GLTSCR2
MCL14	0.009610309	0.552431524	0.412	0.538	1	0.765799257	Sertoli_cells	MCL1
EDNRA1	0	0.552408352	0.357	0.036	0	9.916666667	PTM_cells	EDNRA
ALDOA	3.46E-118	0.552235023	0.761	0.608	2.12E-113	1.25E+00	PTM_cells	ALDOA
SCD5	6.19E-26	0.552194781	0.28	0.215	3.80E-21	1.30E+00	Sertoli_cells	SCD5
SLC25A5	1.88E-86	0.552177159	0.484	0.153	1.15E-81	3.16E+00	VSM_cells	SLC25A5
RNF216	9.80E-287	0.552107502	0.602	0.406	6.02E-282	1.48E+00	spermatogonia	RNF216
FHL2	2.08E-237	0.551952264	0.422	0.102	1.28E-232	4.14E+00	Leydig_cells	FHL2
RP11.466H18.12	5.28E-108	0.551932419	0.162	0.034	3.24E-103	4.76E+00	Leydig_cells	RP11.466H18.1
PIWIL1	1.25E-67	0.551632315	0.355	0.29	7.67E-63	1.22E+00	spermatogonia	PIWIL1
NKX3.1	0	0.551608094	0.193	0.009	0	21.44444444	Sertoli_cells	NKX3.1
MAN1A2	1.08E-187	0.551414739	0.449	0.275	6.64E-183	1.63E+00	spermatogonia	MAN1A2
GADD45A1	0	0.551175585	0.402	0.057	0	7.052631579	PTM_cells	GADD45A
B3GALT4	0	0.551080544	0.616	0.122	0	5.049180328	spermatocyte	B3GALT4
TP53RK	0	0.551013482	0.772	0.254	0	3.039370079	spermatocyte	TP53RK
YY1	0	0.551010486	0.57	0.26	0	2.192307692	spermatogonia	YY1
UCP2	4.37E-11	0.550875588	0.249	0.141	2.68E-06	1.77E+00	macrophages	UCP2
FCGR2C	3.76E-102	0.550825417	0.118	0.007	2.31E-97	1.69E+01	macrophages	FCGR2C
MT1X	5.26E-126	0.550801059	0.355	0.06	3.23E-121	5.92E+00	endotheliocyte	MT1X
JDP21	0	0.550741596	0.242	0.025	0	9.68	Leydig_cells	JDP2
ATP2B4	2.94E-47	0.550717525	0.433	0.204	1.80E-42	2.12E+00	VSM_cells	ATP2B4
CEP70	0	0.550673382	0.911	0.384	0	2.372395833	spermatocyte	CEP70
PCM1	0	0.550578395	0.981	0.653	0	1.50229709	spermatocyte	PCM1
TAP1	2.35E-236	0.550569281	0.303	0.025	1.44E-231	1.21E+01	endotheliocyte	TAP1
QSOX1	2.27E-41	0.550435273	0.42	0.291	1.39E-36	1.44E+00	Leydig_cells	QSOX1
CDC37L1	0	0.550413854	0.448	0.105	0	4.266666667	spermatogonia	CDC37L1
RPS241	7.98E-27	0.550285211	0.902	0.886	4.90E-22	1.02E+00	macrophages	RPS24
RANGRF	0	0.550277618	0.925	0.451	0	2.050997783	spermatocyte	RANGRF
ARPC1A	5.82E-30	0.550197127	0.529	0.364	3.57E-25	1.45E+00	VSM_cells	ARPC1A
CCNB1	0	0.550193719	0.741	0.224	0	3.308035714	spermatocyte	CCNB1
SP1001	9.70E-33	0.550094707	0.209	0.055	5.95E-28	3.80E+00	macrophages	SP100
FBL	0	0.550085537	0.614	0.416	0	1.475961538	spermatid	FBL
SHANK3	1.71E-227	0.549957729	0.298	0.026	1.05E-222	1.15E+01	endotheliocyte	SHANK3
SFR1	0	0.549925738	0.429	0.209	0	2.052631579	spermatogonia	SFR1
PSMA2	0	0.54980586	0.512	0.257	0	1.992217899	spermatogonia	PSMA2
CAPN11	0	0.549764536	0.591	0.13	0	4.546153846	spermatocyte	CAPN11
UBXN8	0	0.549715832	0.489	0.257	0	1.902723735	spermatid	UBXN8
LMO4	1.01E-263	0.549662168	0.277	0.102	6.22E-259	2.72E+00	spermatogonia	LMO4
TRAPPC2L	0	0.54963028	0.918	0.449	0	2.04454343	spermatocyte	TRAPPC2L
MSL1	0	0.549614065	0.525	0.25	0	2.1	spermatogonia	MSL1
KCNQ1OT11	1.98E-51	0.549577812	0.322	0.167	1.21E-46	1.93E+00	Leydig_cells	KCNQ1OT1
QKI	1.35E-11	0.549523348	0.396	0.426	8.28E-07	9.30E-01	Sertoli_cells	QKI
AKR1C2	1.24E-168	0.549465154	0.274	0.064	7.60E-164	4.28E+00	Leydig_cells	AKR1C2
CDC42EP4	1.94E-177	0.54945366	0.328	0.039	1.19E-172	8.41E+00	endotheliocyte	CDC42EP4
EIF4A21	5.00E-49	0.549387467	0.759	0.462	3.07E-44	1.64E+00	endotheliocyte	EIF4A2
H1FX	3.92E-73	0.549365591	0.437	0.135	2.40E-68	3.24E+00	endotheliocyte	H1FX
FKBP11	0.000539505	0.549181472	0.211	0.075	1	2.813333333	T_cells	FKBP11
HMG2	3.19E-257	0.54902772	0.731	0.587	1.95E-252	1.25E+00	spermatogonia	HMG2
MTFR1L	0	0.549024975	0.848	0.364	0	2.32967033	spermatocyte	MTFR1L
TMA7	2.77E-22	0.548858573	0.627	0.718	1.70E-17	8.73E-01	Sertoli_cells	TMA7

C20orf85	0	0.548789168	0.862	0.385	0	2.238961039	spermatocyte	C20orf85
SESN3	0	0.548540779	0.646	0.44	0	1.468181818	spermatid	SESN3
NCF2	4.30E-200	0.548477109	0.199	0.01	2.64E-195	1.99E+01	macrophages	NCF2
THUMPD3	0	0.54839789	0.953	0.479	0	1.989561587	spermatocyte	THUMPD3
EIF3L	4.32E-45	0.548397429	0.564	0.343	2.65E-40	1.64E+00	VSM_cells	EIF3L
TMPO-AS1	0	0.548380847	0.519	0.145	0	3.579310345	spermatocyte	TMPO-AS1
MT.ATP8	3.24E-48	0.548348238	0.292	0.168	1.99E-43	1.74E+00	Sertoli_cells	MT.ATP8
FBXO21	3.05E-195	0.548290528	0.509	0.193	1.87E-190	2.64E+00	PTM_cells	FBXO21
MEST	1.36E-30	0.548238665	0.307	0.206	8.34E-26	1.49E+00	Leydig_cells	MEST
NFASC	1.20E-177	0.548234505	0.258	0.028	7.35E-173	9.21E+00	VSM_cells	NFASC
DDX18	0	0.548179621	0.519	0.219	0	2.369863014	spermatogonia	DDX18
ATP6V0D1	0	0.548097082	0.89	0.334	0	2.664670659	spermatocyte	ATP6V0D1
SRSF91	4.92E-30	0.548073385	0.469	0.422	3.02E-25	1.11E+00	Sertoli_cells	SRSF9
SOX30	8.04E-291	0.548068951	0.601	0.461	4.93E-286	1.30E+00	spermatid	SOX30
RPL343	3.64E-134	0.547762784	0.933	0.904	2.23E-129	1.03E+00	PTM_cells	RPL34
AURKAIP1	0	0.547725884	0.985	0.745	0	1.322147651	spermatocyte	AURKAIP1
CCDC69	0	0.547702883	0.315	0.019	0	16.57894737	endotheliocyte	CCDC69
AMZ2	0	0.547639804	0.971	0.535	0	1.814953271	spermatocyte	AMZ2
SPAG5	0	0.547620922	0.876	0.322	0	2.720496894	spermatocyte	SPAG5
UBE2B	0	0.547464187	0.64	0.459	0	1.394335512	spermatogonia	UBE2B
PARM1	7.67E-120	0.547462025	0.323	0.062	4.71E-115	5.21E+00	VSM_cells	PARM1
SEC62	5.71E-43	0.547404366	0.667	0.431	3.50E-38	1.55E+00	endotheliocyte	SEC62
TCEAL43	8.52E-108	0.547338721	0.385	0.179	5.23E-103	2.15E+00	Sertoli_cells	TCEAL4
TTC23L	0	0.547177024	0.514	0.245	0	2.097959184	spermatid	TTC23L
ATP6V1B2	0	0.547161328	0.754	0.282	0	2.673758865	spermatocyte	ATP6V1B2
BNIP3L1	9.26E-87	0.547097451	0.655	0.533	5.68E-82	1.23E+00	PTM_cells	BNIP3L
MCL12	1.61E-34	0.547063062	0.575	0.528	9.89E-30	1.09E+00	Leydig_cells	MCL1
BBS5	0	0.547056493	0.703	0.205	0	3.429268293	spermatocyte	BBS5
PRNP1	6.06E-168	0.546934149	0.515	0.224	3.72E-163	2.30E+00	PTM_cells	PRNP
TMED9	0	0.546927971	0.484	0.144	0	3.361111111	spermatogonia	TMED9
NEFM	0	0.546741938	0.76	0.196	0	3.87755102	spermatocyte	NEFM
PPDPF2	0.008946809	0.546709673	0.526	0.446	1	1.179372197	T_cells	PPDPF
ELMSAN1	2.75E-98	0.546654823	0.365	0.078	1.69E-93	4.68E+00	endotheliocyte	ELMSAN1
C19orf45	0	0.546541474	0.459	0.147	0	3.12244898	spermatid	C19orf45
LRRIQ1	0	0.54638344	0.929	0.443	0	2.097065463	spermatocyte	LRRIQ1
AC008155.1	9.41E-20	0.546375423	0.158	0.048	5.77E-15	3.29E+00	macrophages	AC008155.1
SNAI2	0	0.546368079	0.268	0.016	0	16.75	Leydig_cells	SNAI2
GAS51	7.85E-52	0.546360347	0.17	0.061	4.82E-47	2.79E+00	Leydig_cells	GAS5
CHMP1B1	0.00269496	0.546330398	0.368	0.226	1	1.628318584	T_cells	CHMP1B
POU2F2	3.24E-14	0.546282893	0.286	0.152	1.99E-09	1.88E+00	macrophages	POU2F2
PIGT	0	0.546237036	0.53	0.262	0	2.022900763	spermatogonia	PIGT
PFN12	4.42E-131	0.546215249	0.653	0.397	2.71E-126	1.64E+00	PTM_cells	PFN1
ATP6AP21	5.93E-255	0.54610213	0.529	0.161	3.64E-250	3.29E+00	PTM_cells	ATP6AP2
MT-CO12	1.17E-60	0.546049234	0.607	0.447	7.19E-56	1.36E+00	Leydig_cells	MT-CO1
TERF2IP1	1.76E-51	0.545927867	0.456	0.338	1.08E-46	1.35E+00	Sertoli_cells	TERF2IP
LAT2	3.09E-205	0.545798811	0.202	0.01	1.90E-200	2.02E+01	macrophages	LAT2
CPEB3	0	0.545727084	0.467	0.179	0	2.608938547	spermatid	CPEB3
PHF20L1	0	0.545681199	0.847	0.325	0	2.606153846	spermatocyte	PHF20L1
EEA1	1.93E-236	0.545615161	0.397	0.212	1.18E-231	1.87E+00	spermatogonia	EEA1
PRCP	0	0.545578559	0.746	0.193	0	3.865284974	spermatocyte	PRCP
CCDC74B	0	0.545444876	0.878	0.337	0	2.605341246	spermatocyte	CCDC74B
SPCS2	0	0.545415226	0.567	0.318	0	1.783018868	spermatogonia	SPCS2
SORL1	9.21E-34	0.545169295	0.226	0.06	5.65E-29	3.77E+00	macrophages	SORL1
KLC1	0	0.54512104	0.447	0.1	0	4.47	spermatogonia	KLC1
CCDC86	0	0.545022782	0.581	0.147	0	3.952380952	spermatocyte	CCDC86
HS6ST2	0	0.545017025	0.229	0.009	0	25.44444444	Leydig_cells	HS6ST2
MVP	2.73E-206	0.544901467	0.207	0.041	1.67E-201	5.05E+00	Sertoli_cells	MVP
BTF32	2.16E-50	0.544867028	0.827	0.713	1.33E-45	1.16E+00	VSM_cells	BTF3
RPL282	2.73E-73	0.544777619	0.819	0.823	1.67E-68	9.95E-01	Sertoli_cells	RPL28
TCEA2	0	0.544760956	0.844	0.378	0	2.232804233	spermatocyte	TCEA2
EAF1	0	0.544693927	0.467	0.191	0	2.445026178	spermatid	EAF1
EDF1	3.77E-111	0.544647052	0.709	0.528	2.31E-106	1.34E+00	PTM_cells	EDF1
CHURC1	2.49E-38	0.544617171	0.554	0.347	1.52E-33	1.60E+00	VSM_cells	CHURC1
ENAH1	7.93E-32	0.544347138	0.493	0.309	4.87E-27	1.60E+00	VSM_cells	ENAH
GHITM	0	0.544322368	0.809	0.734	0	1.102179837	spermatid	GHITM
RPL35A2	2.85E-168	0.5441928	0.933	0.868	1.75E-163	1.07E+00	PTM_cells	RPL35A
SOHLH1	0	0.544142539	0.351	0.074	0	4.743243243	spermatogonia	SOHLH1
BSDC1	0.005697429	0.544122497	0.42	0.302	1	1.390728477	mastocyte	BSDC1
C1QTNF3	0	0.544104913	0.481	0.23	0	2.091304348	spermatid	C1QTNF3
PCID2	0	0.544052049	0.785	0.268	0	2.929104478	spermatocyte	PCID2
S100A8	0	0.543993193	0.381	0.092	0	4.141304348	spermatid	S100A8
HNRNPAB	0	0.543895681	0.515	0.213	0	2.417840376	spermatogonia	HNRNPAB
ZC3H14	0	0.543827331	0.978	0.596	0	1.640939597	spermatocyte	ZC3H14
RPS6KA2	1.07E-95	0.543817125	0.375	0.089	6.55E-91	4.21E+00	endotheliocyte	RPS6KA2
RBMX1	1.38E-100	0.543630712	0.408	0.178	8.49E-96	2.29E+00	Leydig_cells	RBMX

ZNF770	0	0.543356718	0.404	0.116	0	3.482758621	spermatogonia	ZNF770
SPAG9	0	0.543291353	0.945	0.493	0	1.9168357	spermatocyte	SPAG9
ASAHI	2.47E-83	0.543268395	0.395	0.116	1.51E-78	3.41E+00	VSM_cells	ASAHI
ZFYVE212	1.46E-62	0.543111535	0.507	0.225	8.93E-58	2.25E+00	VSM_cells	ZFYVE21
ARL6IP12	3.27E-30	0.543101239	0.485	0.465	2.01E-25	1.04E+00	Sertoli_cells	ARL6IP1
MRPS22	0	0.543095525	0.809	0.242	0	3.342975207	spermatocyte	MRPS22
RPL224	3.43E-36	0.543077524	0.627	0.65	2.11E-31	9.65E-01	Sertoli_cells	RPL22
RPS141	8.15E-22	0.54294608	0.869	0.831	5.00E-17	1.05E+00	macrophages	RPS14
RP11.475C16.11	7.12E-11	0.542800811	0.233	0.186	4.37E-06	1.25E+00	Leydig_cells	RP11.475C16.1
IQCK	0	0.542709312	0.798	0.245	0	3.257142857	spermatocyte	IQCK
VWA1	5.12E-173	0.542700543	0.308	0.035	3.14E-168	8.80E+00	endotheliocyte	VWA1
TMEM215	0	0.542613419	0.353	0.059	0	5.983050847	spermatid	TMEM215
UQCRH1	1.93E-48	0.542574493	0.655	0.434	1.19E-43	1.51E+00	VSM_cells	UQCRH
RSPH9	0	0.542531739	0.804	0.248	0	3.241935484	spermatocyte	RSPH9
DCC	0	0.542494792	0.457	0.156	0	2.929487179	spermatid	DCC
CFDP1	4.56E-287	0.542481396	0.591	0.411	2.80E-282	1.44E+00	spermatogonia	CFDP1
PARD6A	0	0.542463866	0.44	0.226	0	1.946902655	spermatid	PARD6A
RARRES22	1.10E-92	0.542435557	0.345	0.082	6.76E-88	4.21E+00	VSM_cells	RARRES2
CTSD	5.45E-15	0.542356643	0.31	0.159	3.35E-10	1.95E+00	macrophages	CTSD
PCSK7	2.90E-36	0.542356165	0.408	0.21	1.78E-31	1.94E+00	VSM_cells	PCSK7
SYNGR1	7.20E-49	0.542339692	0.456	0.336	4.42E-44	1.36E+00	Leydig_cells	SYNGR1
ETHE1	4.79E-06	0.542033037	0.158	0.032	0.293934212	4.9375	T_cells	ETHE1
CCDC1121	0.00074237	0.542015857	0.46	0.281	1	1.637010676	mastocyte	CCDC112
MT-ND6	1.42E-66	0.541978394	0.334	0.101	8.69E-62	3.31E+00	VSM_cells	MT-ND6
THAP7	0	0.541834053	0.451	0.188	0	2.39893617	spermatogonia	THAP7
CDC42EP41	1.30E-267	0.541822899	0.208	0.032	7.96E-263	6.50E+00	Sertoli_cells	CDC42EP4
RAC14	3.09E-129	0.541731265	0.634	0.367	1.90E-124	1.73E+00	PTM_cells	RAC1
CXCR3	4.81E-233	0.541644992	0.132	0	2.95E-228	#DIV/0!	T_cells	CXCR3
AC008132.13	1.19E-17	0.541584764	0.166	0.132	7.27E-13	1.26E+00	spermatogonia	AC008132.13
MORC2.AS1	0	0.541500484	0.314	0.105	0	2.99047619	spermatocyte	MORC2.AS1
GAA	0	0.541360776	0.729	0.234	0	3.115384615	spermatocyte	GAA
MRGBP	0	0.541354275	0.926	0.441	0	2.099773243	spermatocyte	MRGBP
RBM32	1.11E-24	0.541208702	0.458	0.226	6.80E-20	2.03E+00	macrophages	RBM3
OCIAD2	8.68E-262	0.541154607	0.328	0.027	5.32E-257	1.21E+01	endotheliocyte	OCIAD2
PPP3R21	0.000182583	0.541051234	0.76	0.588	1	1.292517007	mastocyte	PPP3R2
ADAMTSL4	0	0.541050533	0.226	0.015	0	15.06666667	Leydig_cells	ADAMTSL4
RP11.113D6.10	0	0.541024589	0.322	0.075	0	4.293333333	spermatocyte	RP11.113D6.10
DENR	0	0.541011964	0.382	0.094	0	4.063829787	spermatogonia	DENR
TAGLN22	4.21E-107	0.540890738	0.45	0.203	2.58E-102	2.22E+00	Leydig_cells	TAGLN2
TBC1D15	0	0.540860293	0.872	0.302	0	2.887417219	spermatocyte	TBC1D15
ZNF451	0	0.540832754	0.596	0.433	0	1.376443418	spermatid	ZNF451
THYN1	0	0.540798441	0.486	0.224	0	2.169642857	spermatogonia	THYN1
NRGN	2.73E-67	0.540734031	0.258	0.065	1.68E-62	3.97E+00	VSM_cells	NRGN
TGIF1	1.59E-07	0.540588299	0.259	0.173	0.009747878	1.497109827	macrophages	TGIF1
MTND2P28	0	0.5405499	0.267	0.083	0	3.21686747	spermatogonia	MTND2P28
DHFR	0	0.540499658	0.442	0.203	0	2.177339901	spermatogonia	DHFR
PRKCH	5.06E-118	0.540410348	0.347	0.065	3.10E-113	5.34E+00	endotheliocyte	PRKCH
SPON21	5.66E-07	0.540270574	0.132	0.02	0.034694032	6.6	T_cells	SPON2
LRP1	2.37E-29	0.540252	0.259	0.084	1.45E-24	3.08E+00	macrophages	LRP1
EEF1D1	4.44E-97	0.540198103	0.769	0.624	2.72E-92	1.23E+00	Leydig_cells	EEF1D
KATNAL2	0	0.540197034	0.716	0.135	0	5.303703704	spermatocyte	KATNAL2
EFHD1	3.27E-59	0.540186317	0.397	0.16	2.00E-54	2.48E+00	VSM_cells	EFHD1
MT.RNR1	5.90E-31	0.540152057	0.535	0.28	3.62E-26	1.91E+00	macrophages	MT.RNR1
SNRNP40	0	0.540046554	0.423	0.113	0	3.743362832	spermatogonia	SNRNP40
NEDD81	0.000189123	0.540039909	0.369	0.422	1	0.874407583	Sertoli_cells	NEDD8
PHACTR21	1.05E-184	0.540008068	0.313	0.074	6.46E-180	4.23E+00	Leydig_cells	PHACTR2
USP22	1.79E-40	0.539957572	0.296	0.196	1.10E-35	1.51E+00	Sertoli_cells	USP22
MYADM3	2.10E-53	0.539745526	0.48	0.219	1.29E-48	2.19E+00	VSM_cells	MYADM
TMEM14C	1.29E-141	0.539673648	0.456	0.175	7.94E-137	2.61E+00	Leydig_cells	TMEM14C
PTCH21	2.08E-254	0.539637124	0.342	0.073	1.27E-249	4.68E+00	PTM_cells	PTCH2
SNHG81	2.69E-131	0.539528625	0.549	0.297	1.65E-126	1.85E+00	PTM_cells	SNHG8
RPS123	1.40E-211	0.539520935	0.93	0.829	8.59E-207	1.12E+00	PTM_cells	RPS12
HSF2	1.04E-252	0.539422478	0.418	0.235	6.37E-248	1.78E+00	spermatogonia	HSF2
PHB	2.30E-36	0.539330824	0.257	0.163	1.41E-31	1.58E+00	Sertoli_cells	PHB
MEPCE	0	0.539129739	0.734	0.231	0	3.177489177	spermatocyte	MEPCE
PTN1	1.06E-124	0.539116461	0.391	0.159	6.48E-120	2.46E+00	PTM_cells	PTN
NLRP1	0	0.539067815	0.659	0.335	0	1.967164179	spermatocyte	NLRP1
15-Sep	0	0.539047096	0.789	0.279	0	2.827956989	spermatocyte	15-Sep
LINC00467	0	0.539044331	0.958	0.845	0	1.133727811	spermatid	LINC00467
TRBC2	1.31E-244	0.53891482	0.233	0.033	8.05E-240	7.06E+00	Leydig_cells	TRBC2
TCEAL9	0	0.538853639	0.198	0.023	0	8.608695652	Sertoli_cells	TCEAL9
FAM198B1	1.26E-172	0.538811859	0.255	0.054	7.73E-168	4.72E+00	Leydig_cells	FAM198B
NRP11	1.01E-178	0.538750598	0.271	0.03	6.22E-174	9.03E+00	VSM_cells	NRP1
TXN21	1.86E-12	0.538617159	0.316	0.297	1.14E-07	1.06E+00	Sertoli_cells	TXN2
TRIM44	0	0.53858896	0.45	0.155	0	2.903225806	spermatogonia	TRIM44

SPTAN1	1.90E-25	0.538580494	0.504	0.323	1.16E-20	1.56E+00	endotheliocyte	SPTAN1
KDR	0	0.538573441	0.246	0.003	0	82	endotheliocyte	KDR
LINC01249	0	0.538553899	0.706	0.134	0	5.268656716	spermatocyte	LINC01249
ITM2B4	8.09E-100	0.538492442	0.767	0.319	4.96E-95	2.40E+00	VSM_cells	ITM2B
TMEM14C1	6.86E-230	0.538452822	0.518	0.169	4.21E-225	3.07E+00	PTM_cells	TMEM14C
NR4A2	7.70E-72	0.538397242	0.447	0.146	4.73E-67	3.06E+00	endotheliocyte	NR4A2
TDRD1	0	0.538389006	0.403	0.135	0	2.985185185	spermatogonia	TDRD1
KLF63	2.53E-181	0.538264108	0.598	0.276	1.55E-176	2.17E+00	PTM_cells	KLF6
MGC39584	0	0.538202599	0.431	0.153	0	2.816993464	spermatid	MGC39584
ITSN2	1.03E-12	0.538188746	0.269	0.142	6.32E-08	1.89E+00	macrophages	ITSN2
IER5L	0	0.538177371	0.327	0.05	0	6.54	PTM_cells	IER5L
RP5.991B18.2	0	0.538131088	0.287	0.108	0	2.657407407	spermatid	RP5.991B18.2
PMS1	0	0.538024958	0.634	0.371	0	1.708894879	spermatid	PMS1
HDDC2	0	0.538021929	0.543	0.353	0	1.538243626	spermatogonia	HDDC2
IPO8	0	0.537981695	0.687	0.154	0	4.461038961	spermatocyte	IPO8
USP9X	0	0.537969811	0.372	0.155	0	2.4	spermatogonia	USP9X
LINC00935	0	0.537921291	0.435	0.158	0	2.753164557	spermatid	LINC00935
MBP	0.000267374	0.537863736	0.237	0.087	1	2.724137931	T_cells	MBP
DHRS7	2.73E-296	0.537829418	0.304	0.046	1.68E-291	6.61E+00	Leydig_cells	DHRS7
FUS	0	0.537811245	0.741	0.59	0	1.255932203	spermatogonia	FUS
TEKT3	0	0.537737353	0.553	0.311	0	1.778135048	spermatid	TEKT3
GCSH	2.11E-175	0.537701326	0.469	0.19	1.30E-170	2.47E+00	PTM_cells	GCSH
GDI1	0	0.53762808	0.342	0.09	0	3.8	spermatogonia	GDI1
FAM9B	0	0.53738093	0.262	0.008	0	32.75	spermatogonia	FAM9B
UQCRFS1	0	0.53734788	0.909	0.449	0	2.024498886	spermatocyte	UQCRFS1
SLC25A28	0	0.537293591	0.89	0.336	0	2.648809524	spermatocyte	SLC25A28
ANKDD1A	1.10E-306	0.537223622	0.252	0.031	6.73E-302	8.13E+00	Leydig_cells	ANKDD1A
TAX1BP3	1.65E-125	0.537179036	0.326	0.108	1.01E-120	3.02E+00	Leydig_cells	TAX1BP3
ILK	3.83E-104	0.537054097	0.493	0.283	2.35E-99	1.74E+00	PTM_cells	ILK
MIDN2	7.36E-67	0.536945169	0.373	0.192	4.51E-62	1.94E+00	Leydig_cells	MIDN2
BTF33	0.000210951	0.536925556	0.816	0.714	1	1.142857143	T_cells	BTF33
CYB5R32	6.77E-67	0.53683599	0.533	0.225	4.15E-62	2.37E+00	VSM_cells	CYB5R32
RANBP1	0	0.536775722	0.761	0.612	0	1.243464052	spermatogonia	RANBP1
ANXA13	9.18E-125	0.53673085	0.378	0.077	5.63E-120	4.91E+00	VSM_cells	ANXA13
UBL5	1.85E-17	0.536649551	0.543	0.581	1.14E-12	9.35E-01	Sertoli_cells	UBL5
ARL6IP54	5.05E-67	0.536274936	0.493	0.2	3.10E-62	2.47E+00	VSM_cells	ARL6IP54
BAZ1A	0	0.536249135	0.731	0.599	0	1.220367279	spermatid	BAZ1A
MYL12B2	0.00932517	0.536230278	0.632	0.626	1	1.009584665	T_cells	MYL12B2
TMEM217	0	0.536196009	0.632	0.105	0	6.019047619	spermatocyte	TMEM217
UBXN1	0	0.536141249	0.705	0.547	0	1.288848263	spermatogonia	UBXN1
RASSF9	0	0.536032793	0.295	0.004	0	73.75	endotheliocyte	RASSF9
PRRX2-AS1	0	0.53602951	0.333	0.125	0	2.664	spermatid	PRRX2-AS1
ITPR2	9.80E-32	0.535905742	0.192	0.048	6.01E-27	4.00E+00	macrophages	ITPR2
RPL275	1.13E-40	0.535858736	0.639	0.664	6.96E-36	9.62E-01	Sertoli_cells	RPL275
C4orf36	0	0.535780684	0.401	0.099	0	4.050505051	spermatid	C4orf36
WDR83OS	1.25E-67	0.535705133	0.583	0.239	7.64E-63	2.44E+00	endotheliocyte	WDR83OS
SIN3B1	5.05E-140	0.535668392	0.402	0.156	3.10E-135	2.58E+00	PTM_cells	SIN3B1
KLHDC9	0	0.535646646	0.906	0.398	0	2.27638191	spermatocyte	KLHDC9
OSBPL8	7.76E-297	0.535536166	0.44	0.234	4.76E-292	1.88E+00	spermatogonia	OSBPL8
SVIP	0	0.535481011	0.884	0.479	0	1.845511482	spermatocyte	SVIP
CBLN1	0	0.535409294	0.82	0.294	0	2.789115646	spermatocyte	CBLN1
MT1A	3.56E-226	0.535355875	0.219	0.031	2.18E-221	7.06E+00	Leydig_cells	MT1A
GBP2	2.75E-08	0.535180752	0.209	0.121	0.001686847	1.727272727	macrophages	GBP2
SLC25A3	0	0.535175372	0.66	0.378	0	1.746031746	spermatogonia	SLC25A3
FLNA	4.10E-118	0.535044662	0.494	0.114	2.51E-113	4.33E+00	endotheliocyte	FLNA
EIF4G2	0	0.535017986	0.787	0.664	0	1.185240964	spermatogonia	EIF4G2
PAIP2B	0	0.53498456	0.587	0.139	0	4.223021583	spermatocyte	PAIP2B
MRPS10	0	0.534959269	0.482	0.166	0	2.903614458	spermatogonia	MRPS10
RPS271	4.67E-118	0.534924212	0.919	0.818	2.87E-113	1.12E+00	PTM_cells	RPS271
AC016739.21	3.33E-51	0.53475591	0.177	0.066	2.05E-46	2.68E+00	Leydig_cells	AC016739.21
SPTAN11	2.17E-19	0.534703492	0.358	0.323	1.33E-14	1.11E+00	Sertoli_cells	SPTAN11
HLA-A1	0.003583398	0.534672846	0.333	0.309	1	1.077669903	macrophages	HLA-A1
HTRA1	5.78E-138	0.534652795	0.362	0.059	3.54E-133	6.14E+00	endotheliocyte	HTRA1
ALDH7A1	3.05E-112	0.534627525	0.211	0.068	1.87E-107	3.10E+00	Sertoli_cells	ALDH7A1
AIF1L	2.70E-163	0.534563513	0.335	0.044	1.66E-158	7.61E+00	endotheliocyte	AIF1L
DYNC1H1	0	0.534530778	0.574	0.277	0	2.072202166	spermatogonia	DYNC1H1
YWHAB4	4.23E-41	0.534487931	0.438	0.348	2.59E-36	1.26E+00	Sertoli_cells	YWHAB4
CCDC82	0	0.534416	0.744	0.372	0	2	spermatocyte	CCDC82
LRG1	0	0.534354025	0.191	0.002	0	95.5	endotheliocyte	LRG1
RAC12	4.28E-13	0.534190085	0.502	0.379	2.63E-08	1.32E+00	macrophages	RAC12
PWRN1	0	0.534059359	0.477	0.166	0	2.873493976	spermatid	PWRN1
USP8	0	0.534015182	0.863	0.318	0	2.713836478	spermatocyte	USP8
SERTAD14	0.001102569	0.534011375	0.211	0.077	1	2.74025974	T_cells	SERTAD14
WDR74	1.80E-119	0.533975809	0.352	0.257	1.11E-114	1.37E+00	spermatid	WDR74
APOPT1	0	0.533966592	0.692	0.568	0	1.218309859	spermatid	APOPT1

ADI1	2.34E-230	0.533956336	0.424	0.123	1.44E-225	3.45E+00	PTM_cells	ADI1
METRNL	2.26E-13	0.533864041	0.259	0.135	1.39E-08	1.92E+00	macrophages	METRNL
AC079779.5	0	0.533828171	0.387	0.083	0	4.662650602	spermatid	AC079779.5
MMP28	1.77E-209	0.533824953	0.35	0.039	1.09E-204	8.97E+00	endotheliocyte	MMP28
PCDH18	0	0.533811271	0.215	0.02	0	10.75	Leydig_cells	PCDH18
C9orf173	0	0.533806138	0.346	0.133	0	2.601503759	spermatid	C9orf173
CNPY3	0	0.533723067	0.762	0.21	0	3.628571429	spermatocyte	CNPY3
PHACTR2.AS1	0	0.533645898	0.28	0.098	0	2.857142857	spermatid	PHACTR2.AS1
C1orf185	0	0.533633291	0.528	0.298	0	1.771812081	spermatid	C1orf185
MGLL1	6.20E-127	0.533598699	0.345	0.066	3.81E-122	5.23E+00	VSM_cells	MGLL
SLC51A1	0	0.533438334	0.391	0.078	0	5.012820513	PTM_cells	SLC51A
RP11.864N7.2	3.27E-06	0.533381373	0.276	0.197	0.20062941	1.401015228	macrophages	RP11.864N7.2
AHDC1	6.69E-155	0.533360302	0.245	0.054	4.11E-150	4.54E+00	Leydig_cells	AHDC1
CUTC	0	0.533261159	0.613	0.184	0	3.331521739	spermatocyte	CUTC
CEP78	0	0.533175917	0.453	0.159	0	2.849056604	spermatogonia	CEP78
ARGLU1	0	0.533153209	0.623	0.364	0	1.711538462	spermatogonia	ARGLU1
DGKH	1.82E-34	0.53313654	0.304	0.134	1.12E-29	2.27E+00	VSM_cells	DGKH
DYNLRB11	6.43E-41	0.533129914	0.56	0.355	3.95E-36	1.58E+00	VSM_cells	DYNLRB1
PPIA5	1.41E-52	0.533007259	0.816	0.624	8.64E-48	1.31E+00	VSM_cells	PPIA
TSPO2	3.56E-207	0.532979826	0.352	0.081	2.19E-202	4.35E+00	Leydig_cells	TSPO
MAP4K4	0	0.532944747	0.423	0.199	0	2.125628141	spermatogonia	MAP4K4
RPL35A3	7.22E-06	0.532913406	0.921	0.871	0.44281738	1.057405281	T_cells	RPL35A
EGR2	9.83E-16	0.532577244	0.185	0.07	6.03E-11	2.64E+00	macrophages	EGR2
DKK3	2.43E-50	0.532527566	0.433	0.194	1.49E-45	2.23E+00	VSM_cells	DKK3
LTC4S	0	0.53247838	0.315	0.01	0	31.5	endotheliocyte	LTC4S
RAB34	2.53E-294	0.532434928	0.323	0.052	1.55E-289	6.21E+00	Leydig_cells	RAB34
RBM3	0	0.532391249	0.419	0.175	0	2.394285714	spermatogonia	RBM3
IK	0	0.532245416	0.971	0.535	0	1.814953271	spermatocyte	IK
PRKCE	0	0.532154139	0.458	0.122	0	3.754098361	spermatid	PRKCE
PSME11	6.60E-28	0.532140808	0.276	0.096	4.05E-23	2.88E+00	macrophages	PSME1
GPR135	0	0.532111872	0.582	0.37	0	1.572972973	spermatid	GPR135
CDC423	3.39E-23	0.531987673	0.439	0.416	2.08E-18	1.06E+00	Sertoli_cells	CDC42
MRPL16	4.82E-05	0.531942617	0.225	0.219	1	1.02739726	Sertoli_cells	MRPL16
RBM391	6.99E-38	0.531861938	0.692	0.476	4.29E-33	1.45E+00	endotheliocyte	RBM39
RP11-597D13.8	2.01E-172	0.531695144	0.38	0.248	1.24E-167	1.53E+00	spermatid	RP11-597D13.8
FCGR3A1	2.75E-26	0.531656187	0.132	0.005	1.69E-21	2.64E+01	T_cells	FCGR3A
NEDD9	3.05E-170	0.531605618	0.323	0.04	1.87E-165	8.08E+00	endotheliocyte	NEDD9
TEK	0	0.531551999	0.295	0.005	0	59	endotheliocyte	TEK
RPL151	1.79E-61	0.531442962	0.958	0.902	1.10E-56	1.06E+00	VSM_cells	RPL15
C9orf153	0	0.531418001	0.474	0.197	0	2.406091371	spermatid	C9orf153
SEMA6C	0	0.531287821	0.219	0.031	0	7.064516129	Sertoli_cells	SEMA6C
ADORA1	0	0.531185617	0.195	0.004	0	48.75	Sertoli_cells	ADORA1
TSPAN4	6.65E-141	0.531141206	0.404	0.071	4.08E-136	5.69E+00	endotheliocyte	TSPAN4
SLC25A32	5.86E-47	0.531083984	0.697	0.436	3.60E-42	1.60E+00	endotheliocyte	SLC25A3
FKBP91	5.55E-258	0.53103768	0.243	0.034	3.41E-253	7.15E+00	Leydig_cells	FKBP9
RPL35A1	3.32E-142	0.530919391	0.944	0.868	2.04E-137	1.09E+00	Leydig_cells	RPL35A
MT-ND4L	2.94E-105	0.530751402	0.427	0.175	1.80E-100	2.44E+00	Leydig_cells	MT-ND4L
PHOSPHO2	0	0.530620771	0.714	0.202	0	3.534653465	spermatocyte	PHOSPHO2
DOC2A	0	0.530519438	0.478	0.204	0	2.343137255	spermatid	DOC2A
PEG3	1.97E-34	0.530505493	0.391	0.272	1.21E-29	1.44E+00	Leydig_cells	PEG3
RPL18A	0	0.530445024	0.661	0.351	0	1.883190883	spermatogonia	RPL18A
CD91	3.09E-23	0.530176921	0.256	0.094	1.90E-18	2.72E+00	macrophages	CD9
ARHGAP29	5.80E-32	0.530116175	0.499	0.286	3.56E-27	1.74E+00	endotheliocyte	ARHGAP29
NDUFB71	4.00E-38	0.530071271	0.626	0.445	2.46E-33	1.41E+00	VSM_cells	NDUFB7
TYROBP1	0.000446872	0.530066976	0.079	0.013	1	6.076923077	T_cells	TYROBP
PNRC2	2.14E-46	0.530006281	0.459	0.206	1.31E-41	2.23E+00	endotheliocyte	PNRC2
LINC00654	0	0.529974167	0.722	0.208	0	3.471153846	spermatocyte	LINC00654
RP11.347H15.5	0	0.529951962	0.264	0.094	0	2.808510638	spermatid	RP11.347H15.5
OS9	6.02E-11	0.529874012	0.316	0.198	3.69E-06	1.60E+00	macrophages	OS9
CHTOP	0	0.529849722	0.546	0.27	0	2.022222222	spermatogonia	CHTOP
MYH93	0.002482454	0.529845354	0.316	0.164	1	1.926829268	T_cells	MYH9
PPDPF	1.27E-38	0.529822815	0.624	0.443	7.79E-34	1.41E+00	VSM_cells	PPDPF
MIF1	1.97E-15	0.529789255	0.226	0.173	1.21E-10	1.31E+00	Sertoli_cells	MIF
CBR11	1.01E-293	0.529771022	0.416	0.098	6.19E-289	4.24E+00	PTM_cells	CBR1
RAC21	2.35E-39	0.529762145	0.14	0.005	1.44E-34	2.80E+01	mastocyte	RAC2
AMDHD2	0	0.52974715	0.782	0.198	0	3.949494949	spermatocyte	AMDHD2
TEX14	0	0.529738236	0.403	0.129	0	3.124031008	spermatogonia	TEX14
ESAM1	0	0.529699658	0.294	0.019	0	15.47368421	VSM_cells	ESAM
CALM3	0	0.529613159	0.995	0.824	0	1.207524272	spermatocyte	CALM3
SPATS2	0	0.5294927	0.591	0.351	0	1.683760684	spermatogonia	SPATS2
CENPV1	1.92E-29	0.5294842	0.273	0.19	1.18E-24	1.44E+00	Sertoli_cells	CENPV
NUP188	0	0.529472495	0.62	0.262	0	2.366412214	spermatocyte	NUP188
SULF1	0	0.529452537	0.467	0.181	0	2.580110497	spermatid	SULF1
RPL321	5.20E-125	0.529384093	0.943	0.886	3.19E-120	1.06E+00	Leydig_cells	RPL32
ST6GAL1	0	0.529374329	0.313	0.005	0	62.6	endotheliocyte	ST6GAL1



ARL6IP4	6.47E-51	0.529357436	0.662	0.399	3.97E-46	1.66E+00	VSM_cells	ARL6IP4
VKORC12	2.80E-71	0.529259025	0.243	0.109	1.72E-66	2.23E+00	Sertoli_cells	VKORC1
RPS13P2	4.46E-05	0.529010305	0.283	0.221	1	1.280542986	macrophages	RPS13P2
RGMA	1.13E-129	0.529005054	0.274	0.075	6.93E-125	3.65E+00	Leydig_cells	RGMA
RPS291	1.08E-31	0.52899503	0.906	0.886	6.60E-27	1.02E+00	macrophages	RPS29
PLBD2	0	0.528839103	0.503	0.28	0	1.796428571	spermatid	PLBD2
HSPA81	1.77E-20	0.528794941	0.7	0.565	1.09E-15	1.24E+00	macrophages	HSPA8
KMT2E	2.09E-34	0.528779102	0.581	0.377	1.28E-29	1.54E+00	endotheliocyte	KMT2E
MRPS9	0	0.528685661	0.74	0.22	0	3.363636364	spermatocyte	MRPS9
SEC63	0	0.528654844	0.63	0.429	0	1.468531469	spermatogonia	SEC63
FGL21	2.47E-168	0.528529553	0.249	0.053	1.52E-163	4.70E+00	Leydig_cells	FGL2
FTL5	4.55E-07	0.528412747	0.789	0.528	0.027896433	1.494318182	T_cells	FTL
FAM104A	0	0.528355673	0.805	0.658	0	1.223404255	spermatid	FAM104A
CATSPER2	0	0.52826884	0.801	0.232	0	3.452586207	spermatocyte	CATSPER2
NEDD8	1.09E-102	0.528190446	0.608	0.408	6.69E-98	1.49E+00	PTM_cells	NEDD8
UBE2K	0	0.52816478	0.861	0.365	0	2.35890411	spermatocyte	UBE2K
EEF2KMT	0	0.528049991	0.426	0.16	0	2.6625	spermatid	EEF2KMT
CCDC109B	2.76E-05	0.528024677	0.184	0.047	1	3.914893617	T_cells	CCDC109B
RPS193	1.37E-140	0.527894719	0.875	0.754	8.41E-136	1.16E+00	Leydig_cells	RPS19
RSRP1	2.56E-43	0.527866177	0.531	0.278	1.57E-38	1.91E+00	endotheliocyte	RSRP1
POLR3C	0	0.527851917	0.554	0.369	0	1.501355014	spermatid	POLR3C
DDR2	3.75E-79	0.527725512	0.323	0.085	2.30E-74	3.80E+00	VSM_cells	DDR2
THBS3	0	0.527662739	0.546	0.283	0	1.929328622	spermatid	THBS3
MYH9	1.44E-62	0.52756478	0.427	0.159	8.85E-58	2.69E+00	VSM_cells	MYH9
DAB1-AS1	4.00E-216	0.52745805	0.362	0.205	2.45E-211	1.77E+00	spermatid	DAB1-AS1
SH3BGRL2	2.71E-228	0.527359126	0.415	0.099	1.66E-223	4.19E+00	Leydig_cells	SH3BGRL
PLA2G6	0	0.527232829	0.682	0.151	0	4.516556291	spermatocyte	PLA2G6
ATXN2L	0	0.527097814	0.853	0.418	0	2.040669856	spermatocyte	ATXN2L
EI24	0	0.527092021	0.485	0.28	0	1.732142857	spermatogonia	EI24
MOK	0	0.527002837	0.91	0.407	0	2.235872236	spermatocyte	MOK
CCDC3	0	0.526972355	0.329	0.035	0	9.4	PTM_cells	CCDC3
EMC7	0	0.526960558	0.84	0.368	0	2.282608696	spermatocyte	EMC7
CHCHD6	0	0.526860052	0.767	0.284	0	2.700704225	spermatocyte	CHCHD6
C1orf87	0	0.526787566	0.537	0.131	0	4.099236641	spermatocyte	C1orf87
UBBP4	0.000160187	0.526675782	0.3	0.131	1	2.290076336	mastocyte	UBBP4
CAV21	1.52E-120	0.526592385	0.336	0.115	9.34E-116	2.92E+00	Leydig_cells	CAV2
RPN1	0	0.526346947	0.537	0.251	0	2.139442231	spermatogonia	RPN1
CIB4	0	0.526138837	0.541	0.172	0	3.145348837	spermatocyte	CIB4
PDE5A1	1.06E-67	0.525986243	0.362	0.118	6.48E-63	3.07E+00	VSM_cells	PDE5A
PRC1.AS1	1.42E-301	0.525971974	0.274	0.105	8.70E-297	2.61E+00	spermatid	PRC1.AS1
MAFB2	0	0.525955533	0.367	0.05	0	7.34	PTM_cells	MAFB
CCER1	0	0.52592958	0.735	0.298	0	2.466442953	spermatocyte	CCER1
RPS216	2.95E-154	0.525777034	0.786	0.512	1.81E-149	1.54E+00	PTM_cells	RPS21
ITGB7	6.93E-39	0.52569687	0.105	0.002	4.25E-34	5.25E+01	T_cells	ITGB7
PPIA6	1.34E-48	0.525367355	0.619	0.628	8.24E-44	9.86E-01	Sertoli_cells	PPIA
RPS101	6.12E-91	0.525353973	0.695	0.533	3.75E-86	1.30E+00	PTM_cells	RPS10
KIAA1462	9.87E-217	0.525216421	0.196	0.035	6.05E-212	5.60E+00	Sertoli_cells	KIAA1462
SCAPER	0	0.525147075	0.565	0.362	0	1.560773481	spermatogonia	SCAPER
EFCAB10	0	0.525139626	0.812	0.274	0	2.96350365	spermatocyte	EFCAB10
GPIHBP1	0	0.525065592	0.243	0.001	0	243	endotheliocyte	GPIHBP1
GPR155	4.13E-51	0.525047992	0.182	0.031	2.53E-46	5.87E+00	macrophages	GPR155
DDX19B	0	0.524963243	0.875	0.324	0	2.700617284	spermatocyte	DDX19B
C3orf38	0	0.524959889	0.832	0.334	0	2.491017964	spermatocyte	C3orf38
FAM3C	9.67E-93	0.524922157	0.335	0.14	5.93E-88	2.39E+00	Leydig_cells	FAM3C
SRSF52	0.006351079	0.524888714	0.605	0.602	1	1.004983389	T_cells	SRSF5
NDUFB11	0	0.524830592	0.483	0.109	0	4.431192661	PTM_cells	NDUFB11
LRP10	4.00E-74	0.524753469	0.365	0.099	2.45E-69	3.69E+00	endotheliocyte	LRP10
LINC00668	0	0.524643822	0.309	0.098	0	3.153061224	spermatogonia	LINC00668
S100A11	3.44E-49	0.524606648	0.65	0.349	2.11E-44	1.86E+00	endotheliocyte	S100A11
ASB9	1.77E-162	0.524547848	0.193	0.042	1.09E-157	4.60E+00	Sertoli_cells	ASB9
TMEM8A	5.55E-58	0.524487703	0.265	0.143	3.40E-53	1.85E+00	Sertoli_cells	TMEM8A
LINC01095	0	0.524458223	0.458	0.184	0	2.489130435	spermatid	LINC01095
NOL4L	0	0.524287782	0.829	0.264	0	3.140151515	spermatocyte	NOL4L
TGS1	0	0.524273679	0.396	0.073	0	5.424657534	spermatogonia	TGS1
C5orf46	0	0.52426913	0.423	0.154	0	2.746753247	spermatid	C5orf46
FRMD6	0	0.524202527	0.546	0.293	0	1.863481229	spermatid	FRMD6
TEKT2	0	0.524190626	0.581	0.345	0	1.684057971	spermatid	TEKT2
GULP1	0	0.524173254	0.47	0.132	0	3.560606061	spermatocyte	GULP1
ANGPTL2	1.54E-262	0.524165875	0.187	0.019	9.47E-258	9.84E+00	Leydig_cells	ANGPTL2
SYNGR2	8.43E-17	0.524015653	0.229	0.099	5.17E-12	2.31E+00	macrophages	SYNGR2
DNAJC2	0	0.523998242	0.945	0.47	0	2.010638298	spermatocyte	DNAJC2
MTRNR2L12	9.85E-88	0.523987285	0.235	0.093	6.04E-83	2.53E+00	Sertoli_cells	MTRNR2L12
PKNOX1	0	0.523973191	0.819	0.292	0	2.804794521	spermatocyte	PKNOX1
PRKACG	0	0.523945588	0.735	0.162	0	4.537037037	spermatocyte	PRKACG
RASL11A	0	0.523905815	0.279	0.01	0	27.9	VSM_cells	RASL11A

ATF43	4.64E-116	0.523864961	0.595	0.347	2.85E-111	1.71E+00	PTM_cells	ATF4
XXyac-YX155B6.5	1.74E-247	0.523803269	0.319	0.16	1.07E-242	1.99E+00	spermatid	XXyac-YX155B6.5
RPL43	6.57E-49	0.523773798	0.831	0.75	4.03E-44	1.11E+00	VSM_cells	RPL4
PCNT	0	0.523755962	0.474	0.183	0	2.590163934	spermatogonia	PCNT
TNFRSF1A	4.25E-226	0.523727969	0.347	0.034	2.61E-221	1.02E+01	endotheliocyte	TNFRSF1A
VGLL4	1.23E-57	0.523572201	0.26	0.139	7.55E-53	1.87E+00	Sertoli_cells	VGLL4
COMT	2.31E-174	0.523534973	0.352	0.094	1.42E-169	3.74E+00	Leydig_cells	COMT
NTF3	0	0.523484414	0.268	0.009	0	29.777777778	VSM_cells	NTF3
ERP291	1.44E-70	0.52342162	0.356	0.197	8.86E-66	1.81E+00	Sertoli_cells	ERP29
SESN1	4.69E-18	0.523329956	0.295	0.248	2.88E-13	1.19E+00	Sertoli_cells	SESN1
RPL131	2.02E-129	0.523283553	0.985	0.955	1.24E-124	1.03E+00	Leydig_cells	RPL13
NCKAP1L	1.59E-178	0.523198106	0.202	0.011	9.75E-174	1.84E+01	macrophages	NCKAP1L
NOL7	0	0.523185703	0.895	0.44	0	2.034090909	spermatocyte	NOL7
LITAF1	0	0.52317669	0.384	0.077	0	4.987012987	PTM_cells	LITAF
RAD51D	0	0.523135333	0.407	0.1	0	4.07	spermatid	RAD51D
S100A112	4.04E-71	0.523128928	0.547	0.345	2.48E-66	1.59E+00	Leydig_cells	S100A11
EWSR1	0	0.523123185	0.942	0.408	0	2.308823529	spermatocyte	EWSR1
MAP3K11	4.95E-124	0.523062298	0.39	0.077	3.04E-119	5.06E+00	endotheliocyte	MAP3K11
SLC35E4	0	0.523039277	0.773	0.224	0	3.450892857	spermatocyte	SLC35E4
SMDT1	0	0.523009221	0.79	0.371	0	2.129380054	spermatocyte	SMDT1
JDP2	2.71E-24	0.523001145	0.138	0.033	1.66E-19	4.18E+00	macrophages	JDP2
PRDX3	8.17E-28	0.522943047	0.218	0.14	5.01E-23	1.56E+00	Sertoli_cells	PRDX3
BUD31	0	0.522787453	0.92	0.485	0	1.896907216	spermatocyte	BUD31
IRF2BP2	1.06E-26	0.522706958	0.526	0.345	6.50E-22	1.52E+00	endotheliocyte	IRF2BP2
CPQ	5.11E-224	0.522706034	0.285	0.054	3.13E-219	5.28E+00	Leydig_cells	CPQ
SIT1	1.58E-265	0.522637158	0.105	0	9.66E-261	#DIV/0!	T_cells	SIT1
SLTM	2.77E-260	0.522597194	0.588	0.447	1.70E-255	1.32E+00	spermatogonia	SLTM
ARHGAP101	8.46E-200	0.522414839	0.41	0.13	5.19E-195	3.15E+00	PTM_cells	ARHGAP10
C6orf62	0	0.52235655	0.63	0.433	0	1.454965358	spermatogonia	C6orf62
TMEM202	0	0.522340532	0.71	0.166	0	4.277108434	spermatocyte	TMEM202
UCHL1	0	0.522324265	0.278	0.056	0	4.964285714	spermatogonia	UCHL1
RPS3AP471	0.000328975	0.522287957	0.275	0.276	1	0.996376812	Leydig_cells	RPS3AP47
PRKAA1	0	0.522252783	0.887	0.371	0	2.39083558	spermatocyte	PRKAA1
TM4SF12	6.94E-139	0.522251239	0.41	0.081	4.26E-134	5.06E+00	VSM_cells	TM4SF1
RP11-168L7.3	0	0.522240912	0.313	0.099	0	3.161616162	spermatid	RP11-168L7.3
CNTN1	3.32E-154	0.52216826	0.283	0.073	2.04E-149	3.88E+00	Leydig_cells	CNTN1
CPPED1	3.52E-181	0.52214898	0.193	0.04	2.16E-176	4.83E+00	Sertoli_cells	CPPED1
DECR1	0	0.522141466	0.862	0.351	0	2.455840456	spermatocyte	DECR1
REEP61	1.43E-22	0.522089449	0.503	0.499	8.75E-18	1.01E+00	Sertoli_cells	REEP6
IFI44	2.76E-105	0.522070405	0.178	0.015	1.69E-100	1.19E+01	macrophages	IFI44
LIMA11	1.93E-66	0.522002078	0.392	0.22	1.19E-61	1.78E+00	Leydig_cells	LIMA1
AC105339.1	0	0.521876655	0.345	0.045	0	7.666666667	spermatid	AC105339.1
EFCAB11	0	0.521785895	0.597	0.426	0	1.401408451	spermatid	EFCAB11
HYPM	0	0.52177643	0.438	0.164	0	2.670731707	spermatid	HYPM
RP4-586O15.1	2.14E-159	0.521768508	0.367	0.239	1.31E-154	1.54E+00	spermatid	RP4-586O15.1
NDUFB8	1.11E-121	0.521716292	0.58	0.327	6.80E-117	1.77E+00	PTM_cells	NDUFB8
TPRG1	0	0.521689055	0.474	0.127	0	3.732283465	spermatocyte	TPRG1
UBA52	0	0.521651043	0.934	0.923	0	1.01191766	spermatid	UBA52
RERG	7.88E-71	0.521613999	0.332	0.102	4.84E-66	3.25E+00	VSM_cells	RERG
EDNRA	3.31E-201	0.521600912	0.243	0.043	2.03E-196	5.65E+00	Leydig_cells	EDNRA
PHB2	1.77E-65	0.521545312	0.421	0.153	1.08E-60	2.75E+00	VSM_cells	PHB2
DRC7	0	0.52151717	0.796	0.231	0	3.445887446	spermatocyte	DRC7
ATXN10	0	0.521120037	0.622	0.401	0	1.551122195	spermatogonia	ATXN10
TGOLN2	0.00010176	0.520992038	0.303	0.248	1	1.221774194	macrophages	TGOLN2
HP1BP3	0	0.520926076	0.591	0.335	0	1.764179104	spermatogonia	HP1BP3
IKZF1	2.99E-48	0.520916942	0.162	0.026	1.83E-43	6.23E+00	macrophages	IKZF1
SEC61G	0	0.520852037	0.655	0.448	0	1.462053571	spermatogonia	SEC61G
SOCS7	0	0.520840878	0.644	0.51	0	1.262745098	spermatid	SOCS7
NR2F2	4.07E-73	0.520538846	0.506	0.165	2.50E-68	3.07E+00	endotheliocyte	NR2F2
RP11.51O6.1	1.31E-07	0.520436573	0.199	0.116	0.008041166	1.715517241	macrophages	RP11.51O6.1
RPS29	1.39E-54	0.520414225	0.943	0.885	8.55E-50	1.07E+00	endotheliocyte	RPS29
GUK11	2.23E-95	0.520383384	0.654	0.501	1.37E-90	1.31E+00	PTM_cells	GUK1
TBC1D1	3.49E-29	0.52033791	0.493	0.329	2.14E-24	1.50E+00	VSM_cells	TBC1D1
ARHGEF3	3.22E-58	0.520297854	0.387	0.133	1.98E-53	2.91E+00	endotheliocyte	ARHGEF3
ATP5G2	1.88E-41	0.52024543	0.705	0.492	1.15E-36	1.43E+00	endotheliocyte	ATP5G2
RGS161	1.79E-105	0.520153582	0.205	0.052	1.10E-100	3.94E+00	Leydig_cells	RGS16
FAM175A	0	0.519966556	0.485	0.261	0	1.858237548	spermatogonia	FAM175A
UQCRH	0	0.519927395	0.607	0.391	0	1.552429668	spermatogonia	UQCRH
RPL44	0.000519066	0.519924222	0.816	0.751	1	1.086551265	T_cells	RPL4
SNRNP200	0	0.519854267	0.545	0.268	0	2.03358209	spermatogonia	SNRNP200
MIR22HG	2.23E-92	0.519828074	0.272	0.096	1.37E-87	2.83E+00	Leydig_cells	MIR22HG
MFSD6L	0	0.51981143	0.771	0.194	0	3.974226804	spermatocyte	MFSD6L
TGFB1	1.32E-44	0.519765459	0.199	0.04	8.12E-40	4.98E+00	macrophages	TGFB1
SCG5	0	0.519712906	0.655	0.139	0	4.712230216	spermatocyte	SCG5
ARHGAP10	5.74E-90	0.519705831	0.327	0.135	3.52E-85	2.42E+00	Leydig_cells	ARHGAP10

EIF4A22	7.22E-83	0.519542936	0.676	0.458	4.43E-78	1.48E+00	Leydig_cells	EIF4A2
CCDC57	0	0.519271059	0.44	0.213	0	2.0657277	spermatid	CCDC57
ATP1B31	1.58E-06	0.519056343	0.579	0.571	0.096890431	1.014010508	macrophages	ATP1B3
AP2B1	0	0.518863384	0.97	0.556	0	1.744604317	spermatocyte	AP2B1
NBEAL1	3.91E-46	0.518845985	0.408	0.193	2.40E-41	2.11E+00	VSM_cells	NBEAL1
SWT1	0	0.518754238	0.852	0.266	0	3.203007519	spermatocyte	SWT1
C3	5.29E-06	0.518751239	0.229	0.154	0.32452869	1.487012987	macrophages	C3
SRRM1	0	0.518724348	0.735	0.555	0	1.324324324	spermatogonia	SRRM1
ATP1B1	3.06E-14	0.518704002	0.29	0.15	1.88E-09	1.93E+00	macrophages	ATP1B1
STUB1	1.49E-17	0.518625615	0.273	0.219	9.13E-13	1.25E+00	Sertoli_cells	STUB1
C4orf32	5.74E-22	0.518563346	0.432	0.287	3.52E-17	1.51E+00	endotheliocyte	C4orf32
CDIPT.AS1	2.78E-287	0.518549586	0.301	0.126	1.70E-282	2.39E+00	spermatid	CDIPT.AS1
LIMS21	2.08E-264	0.518464126	0.311	0.027	1.28E-259	1.15E+01	VSM_cells	LIMS2
PSME2	1.24E-67	0.518342276	0.469	0.169	7.60E-63	2.78E+00	endotheliocyte	PSME2
GYPC1	3.40E-260	0.518056093	0.342	0.034	2.08E-255	1.01E+01	VSM_cells	GYPC
SERINC11	6.33E-17	0.518023358	0.3	0.147	3.88E-12	2.04E+00	macrophages	SERINC1
RP4.584D14.6	0	0.518003532	0.212	0.041	0	5.170731707	spermatid	RP4.584D14.6
TCEAL31	1.71E-120	0.517940653	0.389	0.082	1.05E-115	4.74E+00	VSM_cells	TCEAL3
TRIML1	0	0.517895862	0.406	0.123	0	3.300813008	spermatid	TRIML1
DYNC1LI1	0	0.517782125	0.661	0.443	0	1.492099323	spermatogonia	DYNC1LI1
AR1	0	0.517640875	0.375	0.05	0	7.5	PTM_cells	AR
LYZL6	0	0.51760714	0.644	0.301	0	2.139534884	spermatocyte	LYZL6
PXN	7.82E-114	0.517510206	0.298	0.048	4.80E-109	6.21E+00	endotheliocyte	PXN
AKR1C21	0	0.51749431	0.364	0.058	0	6.275862069	PTM_cells	AKR1C2
MAT2A	2.61E-06	0.517489273	0.367	0.305	0.160263958	1.203278689	macrophages	MAT2A
ORC2	0	0.517445669	0.764	0.198	0	3.858585859	spermatocyte	ORC2
STAU1	0	0.51742236	0.541	0.25	0	2.164	spermatogonia	STAU1
RPL361	2.67E-92	0.517383298	0.783	0.699	1.64E-87	1.12E+00	Leydig_cells	RPL36
TPP2	0	0.517340236	0.962	0.551	0	1.745916515	spermatocyte	TPP2
PTTG1IP	3.96E-24	0.517188053	0.593	0.44	2.43E-19	1.35E+00	endotheliocyte	PTTG1IP
ZMYND19	0	0.517173496	0.438	0.125	0	3.504	spermatogonia	ZMYND19
RP11.630C16.1	0	0.517167712	0.226	0.046	0	4.913043478	spermatid	RP11.630C16.1
PSME13	0	0.517146063	0.433	0.081	0	5.345679012	PTM_cells	PSME1
EMC3	0	0.517143674	0.91	0.46	0	1.97826087	spermatocyte	EMC3
RBM34	1.30E-211	0.517077791	0.59	0.21	7.99E-207	2.81E+00	PTM_cells	RBM3
POLR2J3	0	0.517066933	0.419	0.096	0	4.364583333	spermatogonia	POLR2J3
NUDT10	2.82E-261	0.516751328	0.192	0.028	1.73E-256	6.86E+00	Sertoli_cells	NUDT10
RBM8A	0	0.516634707	0.69	0.492	0	1.402439024	spermatogonia	RBM8A
FAM49A	5.13E-123	0.516620749	0.152	0.009	3.15E-118	1.69E+01	macrophages	FAM49A
SMARCC1	0	0.516609038	0.579	0.314	0	1.843949045	spermatogonia	SMARCC1
NT5C1B	0	0.516573598	0.533	0.258	0	2.065891473	spermatid	NT5C1B
INCA1	9.15E-127	0.516548072	0.408	0.29	5.61E-122	1.41E+00	spermatogonia	INCA1
MARCKS	5.35E-28	0.51653287	0.442	0.256	3.28E-23	1.73E+00	endotheliocyte	MARCKS
TMEM134	0	0.516512791	0.509	0.281	0	1.8113879	spermatogonia	TMEM134
PPID	0	0.51643159	0.503	0.268	0	1.876865672	spermatogonia	PPID
BTG13	7.24E-84	0.516401369	0.717	0.605	4.44E-79	1.19E+00	PTM_cells	BTG1
AC007969.5	5.91E-06	0.516377966	0.293	0.221	0.362300018	1.325791855	macrophages	AC007969.5
GSN1	5.34E-25	0.516226538	0.438	0.214	3.28E-20	2.05E+00	macrophages	GSN
SLC1A6	7.78E-93	0.516164021	0.211	0.078	4.78E-88	2.71E+00	Sertoli_cells	SLC1A6
RPS185	2.76E-138	0.516067996	0.89	0.851	1.70E-133	1.05E+00	Sertoli_cells	RPS18
NOMO1	0	0.516060344	0.33	0.087	0	3.793103448	spermatogonia	NOMO1
RPL133	3.79E-68	0.516017658	0.962	0.956	2.32E-63	1.01E+00	VSM_cells	RPL13
PPP1R15A5	0.007922494	0.515990471	0.34	0.198	1	1.717171717	mastocyte	PPP1R15A
VPS13C	1.02E-15	0.51593764	0.259	0.122	6.27E-11	2.12E+00	macrophages	VPS13C
LETM2	0	0.515914717	0.738	0.164	0	4.5	spermatocyte	LETM2
PHACTR2	8.90E-117	0.515804114	0.397	0.079	5.46E-112	5.03E+00	endotheliocyte	PHACTR2
ERH	0	0.515783087	0.696	0.532	0	1.308270677	spermatogonia	ERH
TMEM109	8.96E-113	0.515773136	0.306	0.103	5.49E-108	2.97E+00	Leydig_cells	TMEM109
SHROOM4	0	0.51569314	0.283	0.004	0	70.75	endotheliocyte	SHROOM4
MCL13	8.40E-65	0.515463271	0.635	0.525	5.15E-60	1.21E+00	PTM_cells	MCL1
PPP2CA	0	0.51538996	0.542	0.283	0	1.915194346	spermatogonia	PPP2CA
CPQ1	0	0.515378079	0.368	0.048	0	7.666666667	PTM_cells	CPQ
FXYD11	0	0.515354905	0.306	0.041	0	7.463414634	PTM_cells	FXYD1
BMP2K	2.46E-05	0.515330805	0.303	0.243	1	1.24691358	macrophages	BMP2K
KNSTRN	0	0.515252306	0.605	0.424	0	1.426886792	spermatid	KNSTRN
SLC51A	2.18E-133	0.515247198	0.289	0.084	1.34E-128	3.44E+00	Leydig_cells	SLC51A
MAGED22	2.90E-127	0.515225585	0.531	0.134	1.78E-122	3.96E+00	VSM_cells	MAGED2
UBE2F	0	0.515110081	0.426	0.147	0	2.897959184	spermatogonia	UBE2F
C20orf195	6.01E-137	0.515071505	0.399	0.276	3.69E-132	1.45E+00	spermatid	C20orf195
CFAP43	0	0.515063087	0.835	0.294	0	2.840136054	spermatocyte	CFAP43
SEC11A	0	0.515047499	0.593	0.376	0	1.57712766	spermatogonia	SEC11A
RNU6.1064P	8.04E-32	0.514878384	0.15	0.066	4.93E-27	2.27E+00	Leydig_cells	RNU6.1064P
DKFZP434K028	0	0.51476446	0.396	0.058	0	6.827586207	spermatid	DKFZP434K028
SH2D2A	1.13E-48	0.514637605	0.158	0.004	6.94E-44	3.95E+01	T_cells	SH2D2A
ITGB6	0	0.514366731	0.692	0.22	0	3.145454545	spermatocyte	ITGB6

TCF7L1	1.59E-80	0.514264601	0.305	0.126	9.73E-76	2.42E+00	Leydig_cells	TCF7L1
AFAP1	0	0.514257126	0.483	0.243	0	1.987654321	spermatid	AFAP1
BNIP2	6.30E-45	0.514222178	0.452	0.21	3.87E-40	2.15E+00	endotheliocyte	BNIP2
RP11-619L12.4	0	0.514222127	0.303	0.067	0	4.52238806	spermatid	RP11-619L12.4
ANXA7	2.16E-103	0.514150406	0.369	0.152	1.32E-98	2.43E+00	Leydig_cells	ANXA7
LYPLA1	0	0.514040781	0.656	0.517	0	1.268858801	spermatid	LYPLA1
COIL	0	0.51403849	0.915	0.511	0	1.790606654	spermatocyte	COIL
DCAF15	0	0.513945026	0.582	0.179	0	3.251396648	spermatocyte	DCAF15
FAU1	7.64E-23	0.513942349	0.842	0.838	4.68E-18	1.00E+00	macrophages	FAU
KCTD13	3.51E-11	0.513933194	0.289	0.269	2.15E-06	1.07E+00	Sertoli_cells	KCTD13
DCDC2	0	0.513766396	0.665	0.101	0	6.584158416	spermatocyte	DCDC2
MSI2	1.64E-85	0.513725393	0.236	0.098	1.00E-80	2.41E+00	Sertoli_cells	MSI2
AKR1C31	5.95E-246	0.513631983	0.259	0.04	3.65E-241	6.48E+00	Leydig_cells	AKR1C3
MYL12A3	1.03E-19	0.513575355	0.373	0.326	6.33E-15	1.14E+00	Sertoli_cells	MYL12A
NFE2L2	0.000376262	0.513561082	0.424	0.42	1	1.00952381	macrophages	NFE2L2
ADAM18	0	0.513531454	0.702	0.156	0	4.5	spermatocyte	ADAM18
GALK1	6.94E-115	0.51352071	0.172	0.046	4.26E-110	3.74E+00	Sertoli_cells	GALK1
SUMO3	1.96E-285	0.513327672	0.517	0.328	1.20E-280	1.58E+00	spermatogonia	SUMO3
ZNF165	0	0.513309126	0.782	0.219	0	3.570776256	spermatocyte	ZNF165
RPL51	3.82E-135	0.513201975	0.927	0.852	2.34E-130	1.09E+00	Leydig_cells	RPL5
MORN2	0	0.513165478	0.828	0.717	0	1.154811715	spermatid	MORN2
PDCD6	0	0.513102202	0.531	0.291	0	1.824742268	spermatogonia	PDCD6
EIF2AK21	0	0.513018599	0.362	0.057	0	6.350877193	PTM_cells	EIF2AK2
CD164	3.43E-183	0.51299674	0.603	0.461	2.11E-178	1.31E+00	spermatogonia	CD164
COBLL1	5.77E-249	0.512681916	0.275	0.02	3.54E-244	1.38E+01	endotheliocyte	COBLL1
AKR1B1	0	0.512581671	0.337	0.078	0	4.320512821	spermatogonia	AKR1B1
RPSA2	2.08E-68	0.512555245	0.827	0.618	1.27E-63	1.34E+00	VSM_cells	RPSA
LAP3	0	0.512549322	0.775	0.228	0	3.399122807	spermatocyte	LAP3
APMAP	0	0.512438572	0.487	0.187	0	2.604278075	spermatogonia	APMAP
SOCS33	1.66E-208	0.512387425	0.409	0.112	1.02E-203	3.65E+00	PTM_cells	SOCS3
MCM7	0	0.512374625	0.55	0.346	0	1.589595376	spermatogonia	MCM7
CXADR	3.32E-190	0.512313446	0.213	0.047	2.04E-185	4.53E+00	Sertoli_cells	CXADR
S100A113	4.88E-117	0.512298538	0.611	0.341	2.99E-112	1.79E+00	PTM_cells	S100A11
DZIP1	0	0.512236164	0.964	0.492	0	1.959349593	spermatocyte	DZIP1
RNF34	0	0.512215273	0.477	0.254	0	1.877952756	spermatogonia	RNF34
FBXO17	0	0.512043641	0.359	0.041	0	8.756097561	PTM_cells	FBXO17
MYOZ3	0	0.511915333	0.269	0.007	0	38.42857143	PTM_cells	MYOZ3
IFT43	0	0.511851189	0.826	0.28	0	2.95	spermatocyte	IFT43
EDRF1	0.008968155	0.511812581	0.4	0.292	1	1.369863014	mastocyte	EDRF1
C11orf85	0	0.511642388	0.267	0.047	0	5.680851064	spermatogonia	C11orf85
B9D1	0	0.51160664	0.803	0.288	0	2.788194444	spermatocyte	B9D1
PPIF	1.22E-07	0.511602458	0.212	0.125	0.007476248	1.696	macrophages	PPIF
OSTC	7.85E-78	0.511569458	0.414	0.219	4.81E-73	1.89E+00	Leydig_cells	OSTC
ASNS	0	0.511557838	0.486	0.22	0	2.209090909	spermatid	ASNS
BIN1	1.59E-10	0.511351711	0.259	0.149	9.75E-06	1.74E+00	macrophages	BIN1
C5orf49	0	0.511330955	0.59	0.366	0	1.612021858	spermatid	C5orf49
DERL2	0	0.511295618	0.879	0.38	0	2.313157895	spermatocyte	DERL2
NAMPT2	1.54E-52	0.511283259	0.389	0.15	9.45E-48	2.59E+00	VSM_cells	NAMPT
RPS122	1.00E-159	0.511279745	0.925	0.83	6.16E-155	1.11E+00	Leydig_cells	RPS12
PLCB2	1.97E-54	0.511062537	0.162	0.023	1.21E-49	7.04E+00	macrophages	PLCB2
RP11-251P6.1	3.91E-180	0.511020337	0.354	0.219	2.40E-175	1.62E+00	spermatid	RP11-251P6.1
WAS1	3.21E-21	0.510789913	0.158	0.009	1.97E-16	1.76E+01	T_cells	WAS
GLO1	3.50E-69	0.510773272	0.4	0.121	2.15E-64	3.31E+00	endotheliocyte	GLO1
EFR3A	0	0.510758292	0.467	0.167	0	2.796407186	spermatogonia	EFR3A
C10orf53	0	0.510688695	0.891	0.459	0	1.941176471	spermatocyte	C10orf53
NUSAP1	0	0.510646915	0.705	0.167	0	4.221556886	spermatocyte	NUSAP1
CNKSR3	6.29E-50	0.510631525	0.325	0.105	3.86E-45	3.10E+00	endotheliocyte	CNKSR3
TSPAN17	0	0.510490726	0.192	0.018	0	10.66666667	Sertoli_cells	TSPAN17
PSMC6	0	0.510388103	0.445	0.158	0	2.816455696	spermatogonia	PSMC6
SYNJ2BP	0	0.510373592	0.688	0.154	0	4.467532468	spermatocyte	SYNJ2BP
ZFAND4	0	0.510324586	0.659	0.499	0	1.320641283	spermatid	ZFAND4
ASPH	1.86E-227	0.510110179	0.296	0.056	1.14E-222	5.29E+00	Leydig_cells	ASPH
CCDC74A	0	0.510071981	0.93	0.427	0	2.177985948	spermatocyte	CCDC74A
FAM69B	1.94E-137	0.510031735	0.34	0.055	1.19E-132	6.18E+00	endotheliocyte	FAM69B
C6orf163	0	0.509983417	0.392	0.12	0	3.266666667	spermatid	C6orf163
ZBTB20.AS1	0	0.509972167	0.246	0.066	0	3.727272727	spermatid	ZBTB20.AS1
GPX4	0	0.509971826	0.981	0.899	0	1.091212458	spermatid	GPX4
PKD2L2	0	0.509875185	0.673	0.11	0	6.118181818	spermatocyte	PKD2L2
CLIC4	3.30E-33	0.509851854	0.476	0.302	2.02E-28	1.58E+00	VSM_cells	CLIC4
CTDSPL	5.72E-255	0.509837932	0.378	0.09	3.51E-250	4.20E+00	PTM_cells	CTDSPL
PACRG	0	0.509837898	0.843	0.303	0	2.782178218	spermatocyte	PACRG
LRPPRC	3.05E-27	0.509340258	0.293	0.221	1.87E-22	1.33E+00	Sertoli_cells	LRPPRC
MT.ND22	7.11E-07	0.509311874	0.382	0.386	0.043621693	0.989637306	Leydig_cells	MT.ND2
DAB2	1.69E-177	0.509276839	0.367	0.048	1.03E-172	7.65E+00	endotheliocyte	DAB2
CDRT15L2	0	0.509233886	0.63	0.104	0	6.057692308	spermatocyte	CDRT15L2

ZDHC3	0	0.509219507	0.727	0.608	0	1.195723684	spermatid	ZDHC3
FPR1	5.32E-134	0.509212687	0.182	0.012	3.26E-129	1.52E+01	macrophages	FPR1
SMIM23	0	0.509209288	0.357	0.126	0	2.833333333	spermatid	SMIM23
PKN1	0	0.509167941	0.316	0.076	0	4.157894737	spermatogonia	PKN1
ALS2CR12	0	0.509101627	0.664	0.174	0	3.816091954	spermatocyte	ALS2CR12
HTRA12	4.20E-122	0.509087144	0.321	0.059	2.57E-117	5.44E+00	VSM_cells	HTRA1
CTDSP1	0.000278165	0.509034646	0.184	0.056	1	3.285714286	T_cells	CTDSP1
CREB3L2	1.85E-148	0.509018536	0.405	0.159	1.14E-143	2.55E+00	PTM_cells	CREB3L2
TMEM50B	0	0.508980884	0.53	0.329	0	1.610942249	spermatogonia	TMEM50B
YWHAB3	2.96E-57	0.508927258	0.649	0.348	1.82E-52	1.86E+00	VSM_cells	YWHAB
CYP26B1	6.75E-99	0.508870484	0.189	0.048	4.14E-94	3.94E+00	Leydig_cells	CYP26B1
SYCE2	1.67E-241	0.508774296	0.422	0.246	1.02E-236	1.72E+00	spermatogonia	SYCE2
SERPINH11	0	0.508763995	0.418	0.089	0	4.696629213	PTM_cells	SERPINH1
PTCD3	0	0.508664005	0.56	0.31	0	1.806451613	spermatogonia	PTCD3
WISP21	4.18E-116	0.508572417	0.3	0.053	2.56E-111	5.66E+00	VSM_cells	WISP2
GNA13	1.02E-11	0.508530491	0.199	0.095	6.28E-07	2.09E+00	macrophages	GNA13
ZCCHC17	4.97E-305	0.508529265	0.557	0.333	3.05E-300	1.67E+00	spermatogonia	ZCCHC17
LDHB	7.40E-152	0.508527739	0.533	0.208	4.54E-147	2.56E+00	Leydig_cells	LDHB
PPP1R14A	3.08E-167	0.508454621	0.441	0.139	1.89E-162	3.17E+00	Leydig_cells	PPP1R14A
EHD21	0	0.508443837	0.333	0.035	0	9.514285714	PTM_cells	EHD2
DCDC2C	0	0.508406369	0.357	0.05	0	7.14	spermatid	DCDC2C
UIMC1	0	0.508392741	0.531	0.263	0	2.019011407	spermatogonia	UIMC1
PHYHD1	3.21E-284	0.50817898	0.239	0.03	1.97E-279	7.97E+00	Leydig_cells	PHYHD1
HMGB12	3.36E-151	0.508109125	0.791	0.54	2.06E-146	1.46E+00	PTM_cells	HMGB1
SPATA81	0.002165668	0.507869272	0.66	0.556	1	1.18705036	mastocyte	SPATA8
TMEM258	7.49E-234	0.507672005	0.664	0.516	4.59E-229	1.29E+00	spermatogonia	TMEM258
WASF2	0	0.507667771	0.646	0.427	0	1.512880562	spermatogonia	WASF2
LINC00152	8.08E-18	0.507466443	0.132	0.008	4.95E-13	1.65E+01	T_cells	LINC00152
CMTM3	4.01E-31	0.507276451	0.226	0.063	2.46E-26	3.59E+00	macrophages	CMTM3
ABI3BP	2.60E-60	0.507239881	0.238	0.053	1.59E-55	4.49E+00	endotheliocyte	ABI3BP
ATP1B3	0	0.507230839	0.696	0.513	0	1.356725146	spermatid	ATP1B3
AIF1L1	2.35E-124	0.507216343	0.194	0.042	1.44E-119	4.62E+00	Leydig_cells	AIF1L
MEA1	0	0.507158284	0.981	0.622	0	1.577170418	spermatocyte	MEA1
CDKN1A4	2.90E-102	0.506889057	0.292	0.12	1.78E-97	2.43E+00	Sertoli_cells	CDKN1A
EZH2	0	0.506855152	0.858	0.306	0	2.803921569	spermatocyte	EZH2
RP11.234A1.1	4.52E-12	0.506832687	0.182	0.08	2.77E-07	2.28E+00	macrophages	RP11.234A1.1
GEMIN4	0	0.506775694	0.843	0.289	0	2.916955017	spermatocyte	GEMIN4
CMAS	0	0.506621532	0.581	0.256	0	2.26953125	spermatogonia	CMAS
EMP3	1.02E-64	0.506606164	0.457	0.16	6.27E-60	2.86E+00	endotheliocyte	EMP3
SLC2A8	0	0.506557126	0.813	0.288	0	2.822916667	spermatocyte	SLC2A8
GAGE12H	0	0.506548416	0.191	0.007	0	27.28571429	spermatogonia	GAGE12H
CGRRF1	0	0.506370294	0.751	0.271	0	2.771217712	spermatocyte	CGRRF1
MRVI1	1.86E-155	0.506355313	0.362	0.124	1.14E-150	2.92E+00	PTM_cells	MRVI1
JMJD1C	0	0.506339777	0.57	0.315	0	1.80952381	spermatogonia	JMJD1C
PGK11	2.21E-210	0.506336711	0.453	0.145	1.36E-205	3.12E+00	PTM_cells	PGK1
CATSPER3	0	0.506314189	0.439	0.221	0	1.986425339	spermatid	CATSPER3
GATA4	1.22E-120	0.506269355	0.202	0.059	7.47E-116	3.42E+00	Sertoli_cells	GATA4
CCDC14	0	0.50623957	0.526	0.3	0	1.753333333	spermatogonia	CCDC14
OVOS2	1.48E-29	0.506215096	0.334	0.311	9.10E-25	1.07E+00	spermatogonia	OVOS2
CANX	1.62E-244	0.506207559	0.696	0.608	9.96E-240	1.14E+00	spermatogonia	CANX
HLA.DRB1	1.68E-17	0.506197025	0.149	0.056	1.03E-12	2.66E+00	endotheliocyte	HLA.DRB1
CFL1	5.21E-43	0.50619478	0.851	0.735	3.19E-38	1.16E+00	endotheliocyte	CFL1
MIDN3	3.83E-145	0.506128294	0.456	0.186	2.35E-140	2.45E+00	PTM_cells	MIDN
S100A132	5.62E-251	0.506116826	0.402	0.099	3.45E-246	4.06E+00	PTM_cells	S100A13
H1FX1	9.42E-85	0.506036507	0.323	0.132	5.78E-80	2.45E+00	Leydig_cells	H1FX
SLC15A4	0	0.50599309	0.768	0.216	0	3.555555556	spermatocyte	SLC15A4
LPIN2	0	0.505934095	0.367	0.088	0	4.170454545	spermatogonia	LPIN2
ANGPTL4	1.32E-262	0.505893591	0.238	0.032	8.09E-258	7.44E+00	Leydig_cells	ANGPTL4
TMEM159	1.92E-88	0.505887774	0.315	0.075	1.18E-83	4.20E+00	VSM_cells	TMEM159
SRM	0	0.505839184	0.33	0.087	0	3.793103448	spermatogonia	SRM
TUBA1C	7.28E-109	0.505664183	0.328	0.114	4.46E-104	2.88E+00	Leydig_cells	TUBA1C
LDHAL6B	8.83E-209	0.505648293	0.353	0.186	5.42E-204	1.90E+00	spermatogonia	LDHAL6B
SPO11	0	0.505609655	0.247	0.011	0	22.45454545	spermatogonia	SPO11
NME31	8.76E-73	0.50559124	0.397	0.127	5.37E-68	3.13E+00	VSM_cells	NME3
CUL1	0	0.505580575	0.66	0.533	0	1.238273921	spermatid	CUL1
LRRC8A	2.57E-87	0.505576477	0.345	0.079	1.58E-82	4.37E+00	endotheliocyte	LRRC8A
WBP4	0	0.505568751	0.433	0.129	0	3.356589147	spermatogonia	WBP4
CCDC861	0.000180107	0.505480519	0.44	0.26	1	1.692307692	mastocyte	CCDC86
RRM1	0	0.505155806	0.453	0.217	0	2.087557604	spermatogonia	RRM1
MRPL22	0	0.505140196	0.748	0.256	0	2.921875	spermatocyte	MRPL22
MTCH1	6.69E-82	0.505030507	0.414	0.201	4.10E-77	2.06E+00	Leydig_cells	MTCH1
ETS22	5.92E-104	0.505014634	0.309	0.063	3.63E-99	4.90E+00	VSM_cells	ETS2
GFPT1	0	0.504958415	0.869	0.327	0	2.657492355	spermatocyte	GFPT1
CDC25B	0.001570584	0.504844947	0.105	0.026	1	4.038461538	T_cells	CDC25B
RPL281	5.32E-139	0.504774488	0.904	0.819	3.27E-134	1.10E+00	PTM_cells	RPL28

HES12	7.72E-138	0.50466789	0.238	0.071	4.74E-133	3.35E+00	Sertoli_cells	HES1
CPXM2	1.94E-168	0.504654577	0.391	0.135	1.19E-163	2.90E+00	PTM_cells	CPXM2
NDUFS6	0	0.504643386	0.909	0.493	0	1.843813387	spermatocyte	NDUFS6
CCDC39	0	0.504545701	0.746	0.206	0	3.621359223	spermatocyte	CCDC39
MIEN1	0	0.504483581	0.779	0.278	0	2.802158273	spermatocyte	MIEN1
CCNI1	2.89E-62	0.50446094	0.826	0.543	1.78E-57	1.52E+00	endotheliocyte	CCNI
RPS26	1.71E-305	0.504455433	0.681	0.498	1.05E-300	1.37E+00	spermatogonia	RPS26
GYPC	0	0.504451723	0.343	0.023	0	14.91304348	PTM_cells	GYPC
CFAP77	0	0.504409229	0.76	0.207	0	3.671497585	spermatocyte	CFAP77
ITPR3	5.07E-39	0.504380737	0.26	0.164	3.11E-34	1.59E+00	Sertoli_cells	ITPR3
NEDD91	1.32E-31	0.504352298	0.178	0.043	8.11E-27	4.14E+00	macrophages	NEDD9
CSDC2	0	0.504288544	0.196	0.013	0	15.07692308	Sertoli_cells	CSDC2
MAP3K8	3.99E-269	0.504205585	0.333	0.027	2.45E-264	1.23E+01	endotheliocyte	MAP3K8
PRKG1	3.55E-51	0.50408484	0.374	0.151	2.18E-46	2.48E+00	VSM_cells	PRKG1
PLEKHG4	0	0.50402261	0.369	0.064	0	5.765625	spermatogonia	PLEKHG4
NBPF1	1.61E-260	0.503966686	0.48	0.26	9.87E-256	1.85E+00	spermatogonia	NBPF1
ATP5G3	0	0.503961823	0.637	0.401	0	1.588528678	spermatogonia	ATP5G3
CCSER1	0	0.503924888	0.449	0.178	0	2.52247191	spermatid	CCSER1
GLS	8.28E-13	0.503708032	0.263	0.141	5.08E-08	1.87E+00	macrophages	GLS
ADH5	1.50E-52	0.503687116	0.438	0.293	9.19E-48	1.49E+00	Leydig_cells	ADH5
FTMT	1.49E-297	0.503686102	0.586	0.38	9.13E-293	1.54E+00	spermatid	FTMT
KMT2A	2.35E-46	0.503642102	0.397	0.153	1.44E-41	2.59E+00	endotheliocyte	KMT2A
MCF2	0	0.503575806	0.183	0.013	0	14.07692308	Sertoli_cells	MCF2
WSCD1	0	0.503565722	0.349	0.053	0	6.58490566	spermatid	WSCD1
CDC42EP1	4.79E-84	0.503565116	0.266	0.05	2.94E-79	5.32E+00	endotheliocyte	CDC42EP1
C12orf42	0	0.503563207	0.527	0.244	0	2.159836066	spermatid	C12orf42
INHBA	1.56E-140	0.50349055	0.198	0.04	9.58E-136	4.95E+00	Leydig_cells	INHBA
TUBA1B1	2.57E-24	0.503479311	0.768	0.726	1.58E-19	1.06E+00	macrophages	TUBA1B
BTF31	1.64E-111	0.50334134	0.809	0.71	1.01E-106	1.14E+00	PTM_cells	BTF3
KATNB1	0	0.503174997	0.81	0.245	0	3.306122449	spermatocyte	KATNB1
10-Mar	0	0.503003091	0.717	0.538	0	1.332713755	spermatid	10-Mar
GATM	2.00E-09	0.502915885	0.226	0.128	0.000122439	1.765625	macrophages	GATM
RIOK3	0	0.502826062	0.611	0.442	0	1.382352941	spermatid	RIOK3
TTLL12	1.78E-207	0.502824335	0.214	0.043	1.09E-202	4.98E+00	Sertoli_cells	TTLL12
ZNF487	0	0.502823926	0.525	0.304	0	1.726973684	spermatid	ZNF487
PHLDB2	4.90E-103	0.502818755	0.262	0.048	3.00E-98	5.46E+00	VSM_cells	PHLDB2
CLEC4A	7.09E-108	0.502697865	0.182	0.016	4.35E-103	1.14E+01	macrophages	CLEC4A
RGS6	0	0.50262267	0.421	0.101	0	4.168316832	spermatid	RGS6
DYNLRB1	3.07E-106	0.502390588	0.565	0.348	1.88E-101	1.62E+00	PTM_cells	DYNLRB1
KLF92	2.36E-115	0.50238421	0.371	0.148	1.45E-110	2.51E+00	PTM_cells	KLF9
KLF103	1.35E-100	0.502372696	0.456	0.235	8.31E-96	1.94E+00	PTM_cells	KLF10
CCAR1	0	0.502285853	0.544	0.298	0	1.825503356	spermatogonia	CCAR1
DOT1L	0	0.502263773	0.696	0.255	0	2.729411765	spermatocyte	DOT1L
CYR61	5.85E-91	0.502209312	0.305	0.109	3.59E-86	2.80E+00	Leydig_cells	CYR61
CCDC85B2	6.28E-98	0.501996518	0.444	0.12	3.85E-93	3.70E+00	VSM_cells	CCDC85B
TMEM14C2	4.09E-71	0.501939635	0.49	0.181	2.51E-66	2.71E+00	VSM_cells	TMEM14C
ARPC2	0.005804925	0.501928266	0.763	0.769	1	0.992197659	T_cells	ARPC2
CNN2	0	0.50187137	0.321	0.028	0	11.46428571	PTM_cells	CNN2
GIMAP61	8.82E-23	0.501762722	0.158	0.009	5.41E-18	1.76E+01	T_cells	GIMAP6
CPNE5	0	0.501759969	0.192	0.02	0	9.6	Sertoli_cells	CPNE5
CASP4	0	0.501711154	0.33	0.013	0	25.38461538	endotheliocyte	CASP4
FAM13A	3.63E-124	0.501504351	0.204	0.059	2.23E-119	3.46E+00	Sertoli_cells	FAM13A
RPL305	6.39E-113	0.501483437	0.882	0.878	3.92E-108	1.00E+00	Sertoli_cells	RPL30
ZFAS11	3.48E-08	0.501442264	0.36	0.267	0.002135573	1.348314607	macrophages	ZFAS1
SSH1	1.55E-76	0.501412517	0.273	0.057	9.49E-72	4.79E+00	endotheliocyte	SSH1
RPS265	2.70E-10	0.50134393	0.488	0.542	1.66E-05	9.00E-01	Sertoli_cells	RPS26
KLF7	1.25E-10	0.501170764	0.185	0.089	7.66E-06	2.08E+00	macrophages	KLF7
STAT31	1.21E-46	0.501148544	0.396	0.262	7.44E-42	1.51E+00	Leydig_cells	STAT3
C17orf97	0	0.50114727	0.942	0.447	0	2.10738255	spermatocyte	C17orf97
CSF3R	0	0.501131878	0.152	0.002	0	76	macrophages	CSF3R
IFITM23	1.35E-220	0.501075956	0.489	0.149	8.30E-216	3.28E+00	PTM_cells	IFITM2
RPS27A1	5.76E-26	0.500995502	0.902	0.86	3.54E-21	1.05E+00	macrophages	RPS27A
FAH	4.44E-136	0.500910723	0.175	0.042	2.72E-131	4.17E+00	Sertoli_cells	FAH
BDH2	0	0.500841395	0.367	0.036	0	10.19444444	PTM_cells	BDH2
SNRK	1.29E-40	0.500799751	0.407	0.185	7.94E-36	2.20E+00	endotheliocyte	SNRK
ABCC4	1.85E-181	0.500645479	0.308	0.034	1.14E-176	9.06E+00	endotheliocyte	ABCC4
IDS1	4.38E-190	0.500579389	0.289	0.062	2.68E-185	4.66E+00	Leydig_cells	IDS
KLHL23	3.20E-95	0.500559121	0.275	0.055	1.96E-90	5.00E+00	VSM_cells	KLHL23
LINC00865	1.45E-235	0.500519979	0.285	0.127	8.89E-231	2.24E+00	spermatogonia	LINC00865
GORASP2	0	0.500484669	0.521	0.323	0	1.613003096	spermatid	GORASP2
MIDN1	2.09E-12	0.500359237	0.333	0.198	1.28E-07	1.68E+00	macrophages	MIDN
RBMX	1.09E-51	0.500332288	0.464	0.183	6.69E-47	2.54E+00	endotheliocyte	RBMX
HEXB	5.28E-265	0.500305652	0.244	0.033	3.24E-260	7.39E+00	Leydig_cells	HEXB
IFT88	4.65E-271	0.5002982	0.631	0.471	2.85E-266	1.34E+00	spermatogonia	IFT88
KIF18A	0	0.500276839	0.746	0.185	0	4.032432432	spermatocyte	KIF18A



FNDC11	2.39E-189	0.500137001	0.274	0.133	1.47E-184	2.06E+00	spermatid	FNDC11
PPIC	4.81E-182	0.500071288	0.329	0.082	2.95E-177	4.01E+00	Leydig_cells	PPIC

## logFC&gt;1

	p_val	avg_logFC	pct.1	pct.2	p_val_adj	P1/P2	cluster	gene
MGP	0	3.032405707	0.913	0.157	0	5.815286624	endotheliocyte	MGP
B2M	0	2.972316038	0.985	0.242	0	4.070247934	endotheliocyte	B2M
SELE	0	2.915731036	0.598	0.009	0	66.44444444	endotheliocyte	SELE
SPARCL1	0	2.836369742	0.96	0.155	0	6.193548387	endotheliocyte	SPARCL1
TM4SF1	0	2.568463225	0.921	0.073	0	12.61643836	endotheliocyte	TM4SF1
HLA-E	0	2.505912549	0.72	0.079	0	9.113924051	endotheliocyte	HLA-E
TMSB4X	3.33E-302	2.476110042	0.975	0.329	2.05E-297	2.96E+00	endotheliocyte	TMSB4X
VWF	0	2.37655757	0.878	0.037	0	23.72972973	endotheliocyte	VWF
IFI27	0	2.352623412	0.903	0.123	0	7.341463415	endotheliocyte	IFI27
CAV1	0	2.318789327	0.906	0.094	0	9.638297872	endotheliocyte	CAV1
TXNIP	0	2.318291856	0.913	0.163	0	5.601226994	endotheliocyte	TXNIP
EMP1	0	2.28237729	0.866	0.049	0	17.67346939	endotheliocyte	EMP1
HLA-B	4.73E-184	2.279582731	0.72	0.246	2.90E-179	2.93E+00	endotheliocyte	HLA-B
GNG11	0	2.268270205	0.841	0.044	0	19.11363636	endotheliocyte	GNG11
CCL2	0	2.228119092	0.603	0.038	0	15.86842105	endotheliocyte	CCL2
FN1	0	2.226875955	0.702	0.077	0	9.116883117	endotheliocyte	FN1
VIM	1.14E-253	2.189873203	0.983	0.444	7.01E-249	2.21E+00	endotheliocyte	VIM
HLA-C	3.12E-244	2.17739278	0.705	0.17	1.91E-239	4.15E+00	endotheliocyte	HLA-C
RPL10	4.34E-256	2.116374222	0.96	0.357	2.66E-251	2.69E+00	endotheliocyte	RPL10
CLDN5	0	2.102463603	0.663	0.013	0	51	endotheliocyte	CLDN5
HLA.E	1.19E-56	2.087502422	0.241	0.06	7.33E-52	4.02E+00	endotheliocyte	HLA.E
GSN	0	2.062933943	0.94	0.205	0	4.585365854	endotheliocyte	GSN
A2M	0	2.048504704	0.873	0.103	0	8.475728155	endotheliocyte	A2M
IER2	0	2.024419461	0.916	0.168	0	5.452380952	endotheliocyte	IER2
SOCS3	0	2.00066955	0.878	0.115	0	7.634782609	endotheliocyte	SOCS3
KLF2	0	1.990784025	0.861	0.158	0	5.449367089	endotheliocyte	KLF2
NFKBIA	0	1.987110308	0.886	0.204	0	4.343137255	endotheliocyte	NFKBIA
CXCL2	0	1.935127587	0.63	0.041	0	15.36585366	endotheliocyte	CXCL2
IER3	0	1.919546682	0.782	0.099	0	7.898989899	endotheliocyte	IER3
ZFP36	6.38E-304	1.907966106	0.918	0.234	3.92E-299	3.92E+00	endotheliocyte	ZFP36
GADD45B	0	1.890745135	0.906	0.182	0	4.978021978	endotheliocyte	GADD45B
ID1	0	1.857995236	0.685	0.064	0	10.703125	endotheliocyte	ID1
CD74	0	1.842981435	0.898	0.067	0	13.40298507	endotheliocyte	CD74
HLA-A	9.30E-139	1.834798312	0.712	0.303	5.70E-134	2.35E+00	endotheliocyte	HLA-A
JUNB	6.60E-250	1.834618804	0.955	0.34	4.05E-245	2.81E+00	endotheliocyte	JUNB
RPS4X	2.56E-245	1.830493807	0.95	0.34	1.57E-240	2.79E+00	endotheliocyte	RPS4X
IFITM3	0	1.797374488	0.918	0.187	0	4.909090909	endotheliocyte	IFITM3
TIMP3	0	1.796963116	0.868	0.167	0	5.19760479	endotheliocyte	TIMP3
MT2A	2.70E-259	1.792798492	0.839	0.224	1.65E-254	3.75E+00	endotheliocyte	MT2A
S100A6	0	1.790828899	0.854	0.122	0	7	endotheliocyte	S100A6
FOS	8.24E-241	1.767305581	0.931	0.304	5.06E-236	3.06E+00	endotheliocyte	FOS
NEAT1	2.98E-224	1.765348707	0.754	0.189	1.83E-219	3.99E+00	endotheliocyte	NEAT1
ZFP36L2	0	1.761071986	0.854	0.138	0	6.188405797	endotheliocyte	ZFP36L2
SNHG7	1.37E-304	1.72828593	0.794	0.177	8.43E-300	4.49E+00	endotheliocyte	SNHG7
EPAS1	0	1.712286748	0.779	0.074	0	10.52702703	endotheliocyte	EPAS1
CD34	0	1.682683964	0.801	0.057	0	14.05263158	endotheliocyte	CD34
PTRF	0	1.679371486	0.829	0.11	0	7.536363636	endotheliocyte	PTRF
TMSB10	2.08E-226	1.665554042	0.96	0.39	1.28E-221	2.46E+00	endotheliocyte	TMSB10
GADD45A	0	1.663365502	0.722	0.064	0	11.28125	endotheliocyte	GADD45A
IGFBP3	2.27E-93	1.660222572	0.166	0.019	1.39E-88	8.74E+00	endotheliocyte	IGFBP3
PTGS2	0	1.644212345	0.484	0.018	0	26.88888889	endotheliocyte	PTGS2
RHOB	9.58E-265	1.621925627	0.876	0.232	5.88E-260	3.78E+00	endotheliocyte	RHOB
RAMP2	0	1.609266282	0.759	0.065	0	11.67692308	endotheliocyte	RAMP2
TPT1	1.57E-192	1.599333585	0.983	0.857	9.61E-188	1.15E+00	endotheliocyte	TPT1
SAT1	5.88E-298	1.598305134	0.777	0.148	3.61E-293	5.25E+00	endotheliocyte	SAT1
IGFBP7	9.58E-229	1.59761725	0.906	0.278	5.88E-224	3.26E+00	endotheliocyte	IGFBP7
DUSP1	5.45E-301	1.595661545	0.829	0.176	3.34E-296	4.71E+00	endotheliocyte	DUSP1
SLC9A3R2	1.61E-207	1.594084037	0.672	0.17	9.86E-203	3.95E+00	endotheliocyte	SLC9A3R2
CDKN1A	7.69E-306	1.591861843	0.717	0.122	4.72E-301	5.88E+00	endotheliocyte	CDKN1A
MALAT1	2.34E-107	1.590765952	0.943	0.837	1.44E-102	1.13E+00	endotheliocyte	MALAT1
NUAK1	0	1.588474325	0.677	0.02	0	33.85	endotheliocyte	NUAK1
LRRFIP1	0	1.580697332	0.784	0.082	0	9.56097561	endotheliocyte	LRRFIP1
RPL39	4.76E-227	1.580445091	0.881	0.273	2.92E-222	3.23E+00	endotheliocyte	RPL39
IGFBP4	0	1.575891104	0.774	0.077	0	10.05194805	endotheliocyte	IGFBP4
CTGF	0	1.571751968	0.645	0.064	0	10.078125	endotheliocyte	CTGF
SOX17	0	1.568512826	0.663	0.041	0	16.17073171	endotheliocyte	SOX17
SRGN	0	1.557417248	0.752	0.044	0	17.09090909	endotheliocyte	SRGN
ID3	0	1.556311672	0.613	0.039	0	15.71794872	endotheliocyte	ID3
IFITM2	0	1.532415831	0.829	0.156	0	5.314102564	endotheliocyte	IFITM2
PRSS23	0	1.531088707	0.677	0.041	0	16.51219512	endotheliocyte	PRSS23
RPS8	3.04E-176	1.522572512	0.96	0.773	1.87E-171	1.24E+00	endotheliocyte	RPS8
RPL12	1.75E-150	1.520915214	0.923	0.631	1.08E-145	1.46E+00	endotheliocyte	RPL12

S100A10	5.16E-161	1.515633186	0.866	0.434	3.17E-156	2.00E+00	endotheliocyte	S100A10
PTMA1	7.39E-185	1.508545093	0.968	0.652	4.53E-180	1.48E+00	endotheliocyte	PTMA
LIFR	1.10E-269	1.497951787	0.739	0.163	6.73E-265	4.53E+00	endotheliocyte	LIFR
RPS3	1.70E-181	1.488256005	0.975	0.797	1.05E-176	1.22E+00	endotheliocyte	RPS3
CLEC14A	0	1.48514605	0.6	0.019	0	31.57894737	endotheliocyte	CLEC14A
HLA.A	4.32E-14	1.477683996	0.241	0.138	2.65E-09	1.75E+00	endotheliocyte	HLA.A
KCTD12	0	1.476527221	0.663	0.08	0	8.2875	endotheliocyte	KCTD12
BCAM	0	1.476318451	0.744	0.051	0	14.58823529	endotheliocyte	BCAM
RPL13A	2.53E-162	1.456023772	0.965	0.734	1.55E-157	1.31E+00	endotheliocyte	RPL13A
RBP7	0	1.452646007	0.66	0.074	0	8.918918919	endotheliocyte	RBP7
JUN	8.79E-203	1.452046428	0.935	0.362	5.39E-198	2.58E+00	endotheliocyte	JUN
RPL211	7.68E-181	1.451435767	0.955	0.47	4.71E-176	2.03E+00	endotheliocyte	RPL21
RPS18	5.00E-170	1.4492582	0.98	0.851	3.06E-165	1.15E+00	endotheliocyte	RPS18
SLC2A3	0	1.445875386	0.677	0.084	0	8.05952381	endotheliocyte	SLC2A3
NFIB	0	1.44290787	0.71	0.066	0	10.75757576	endotheliocyte	NFIB
RPS28	1.13E-146	1.441003683	0.913	0.606	6.93E-142	1.51E+00	endotheliocyte	RPS28
RPS22	1.89E-161	1.437454203	0.963	0.673	1.16E-156	1.43E+00	endotheliocyte	RPS2
HLA.B	1.20E-16	1.422786518	0.236	0.124	7.38E-12	1.90E+00	endotheliocyte	HLA.B
PTPRB	0	1.412004722	0.64	0.021	0	30.47619048	endotheliocyte	PTPRB
RPL10A	5.10E-158	1.410393523	0.931	0.659	3.13E-153	1.41E+00	endotheliocyte	RPL10A
FOSB	2.35E-209	1.403216114	0.933	0.335	1.44E-204	2.79E+00	endotheliocyte	FOSB
TNFSF10	0	1.39674005	0.682	0.018	0	37.88888889	endotheliocyte	TNFSF10
HLA.C	2.94E-36	1.39488016	0.231	0.076	1.80E-31	3.04E+00	endotheliocyte	HLA.C
HLA-DRA	0	1.392636751	0.618	0.021	0	29.42857143	endotheliocyte	HLA-DRA
HSPB1	3.82E-244	1.391730141	0.836	0.213	2.34E-239	3.92E+00	endotheliocyte	HSPB1
ANXA1	0	1.391355404	0.749	0.072	0	10.40277778	endotheliocyte	ANXA1
BTG2	0	1.39123906	0.759	0.123	0	6.170731707	endotheliocyte	BTG2
RAMP3	0	1.377249177	0.61	0.028	0	21.78571429	endotheliocyte	RAMP3
IFI16	0	1.371787643	0.712	0.076	0	9.368421053	endotheliocyte	IFI16
CEBPD	4.32E-284	1.368877259	0.655	0.105	2.65E-279	6.24E+00	endotheliocyte	CEBPD
ICAM1	0	1.368083735	0.524	0.043	0	12.18604651	endotheliocyte	ICAM1
STOM	2.03E-252	1.354424463	0.697	0.15	1.24E-247	4.65E+00	endotheliocyte	STOM
RPL26	4.33E-143	1.354420403	0.945	0.753	2.66E-138	1.25E+00	endotheliocyte	RPL26
EEF1A1	2.09E-183	1.35440274	0.99	0.924	1.28E-178	1.07E+00	endotheliocyte	EEF1A1
ACKR1	0	1.351787645	0.395	0.005	0	79	endotheliocyte	ACKR1
TAGLN2	1.29E-240	1.351247717	0.799	0.204	7.93E-236	3.92E+00	endotheliocyte	TAGLN2
RPS23	3.23E-169	1.351120301	0.98	0.827	1.98E-164	1.19E+00	endotheliocyte	RPS23
BHLHE40	0	1.350741753	0.64	0.043	0	14.88372093	endotheliocyte	BHLHE40
RPL41	2.18E-148	1.349520512	0.958	0.785	1.34E-143	1.22E+00	endotheliocyte	RPL41
PPP1R15A	9.34E-244	1.345625542	0.797	0.188	5.73E-239	4.24E+00	endotheliocyte	PPP1R15A
IRF1	1.55E-187	1.330295012	0.732	0.216	9.52E-183	3.39E+00	endotheliocyte	IRF1
BST2	0	1.33024352	0.749	0.105	0	7.133333333	endotheliocyte	BST2
RPL18A1	5.29E-152	1.326051032	0.888	0.411	3.24E-147	2.16E+00	endotheliocyte	RPL18A
RPL18	8.00E-144	1.321764054	0.916	0.569	4.91E-139	1.61E+00	endotheliocyte	RPL18
EGFL7	0	1.320021136	0.784	0.1	0	7.84	endotheliocyte	EGFL7
HLA-DRB1	5.24E-235	1.316840033	0.658	0.145	3.21E-230	4.54E+00	endotheliocyte	HLA-DRB1
GIMAP7	0	1.315428428	0.643	0.004	0	160.75	endotheliocyte	GIMAP7
RPL11	3.24E-159	1.306266067	0.973	0.824	1.99E-154	1.18E+00	endotheliocyte	RPL11
LIMS1	1.31E-150	1.300737009	0.7	0.255	8.05E-146	2.75E+00	endotheliocyte	LIMS1
ELK3	0	1.292120274	0.645	0.043	0	15	endotheliocyte	ELK3
EHD4	0	1.285877428	0.65	0.055	0	11.81818182	endotheliocyte	EHD4
SYNE2	2.96E-277	1.278477637	0.697	0.126	1.82E-272	5.53E+00	endotheliocyte	SYNE2
ETS2	0	1.274938294	0.65	0.058	0	11.20689655	endotheliocyte	ETS2
DUSP6	3.75E-276	1.27464422	0.546	0.077	2.30E-271	7.09E+00	endotheliocyte	DUSP6
RPS9	8.13E-170	1.266232601	0.975	0.836	4.99E-165	1.17E+00	endotheliocyte	RPS9
CCDC85B	9.56E-308	1.24600168	0.705	0.117	5.87E-303	6.03E+00	endotheliocyte	CCDC85B
C2CD4B	0	1.244780845	0.409	0.004	0	102.25	endotheliocyte	C2CD4B
TNFAIP3	5.83E-194	1.243957576	0.556	0.11	3.58E-189	5.05E+00	endotheliocyte	TNFAIP3
PECAM1	0	1.24388895	0.486	0.008	0	60.75	endotheliocyte	PECAM1
RPL3	1.27E-156	1.239728985	0.99	0.923	7.79E-152	1.07E+00	endotheliocyte	RPL3
GIMAP8	0	1.239721	0.563	0.003	0	187.6666667	endotheliocyte	GIMAP8
HEG1	0	1.237017124	0.591	0.051	0	11.58823529	endotheliocyte	HEG1
PALMD	2.16E-237	1.236144873	0.635	0.126	1.32E-232	5.04E+00	endotheliocyte	PALMD
MYL12A	7.01E-147	1.234017934	0.774	0.322	4.30E-142	2.40E+00	endotheliocyte	MYL12A
NFKBIZ	0	1.231870532	0.672	0.1	0	6.72	endotheliocyte	NFKBIZ
RPL23	5.65E-146	1.230244154	0.938	0.7	3.47E-141	1.34E+00	endotheliocyte	RPL23
PODXL	0	1.22848414	0.593	0.007	0	84.71428571	endotheliocyte	PODXL
RPS27A	2.97E-158	1.226920436	0.975	0.859	1.82E-153	1.14E+00	endotheliocyte	RPS27A
PTMS	6.62E-248	1.226505649	0.839	0.205	4.06E-243	4.09E+00	endotheliocyte	PTMS
HSPG2	0	1.221664378	0.593	0.052	0	11.40384615	endotheliocyte	HSPG2
ITM2A	0	1.220261336	0.675	0.069	0	9.782608696	endotheliocyte	ITM2A
JUND	1.61E-113	1.219003841	0.841	0.499	9.87E-109	1.69E+00	endotheliocyte	JUND
LMO2	0	1.218805381	0.563	0.021	0	26.80952381	endotheliocyte	LMO2
RDX1	7.26E-171	1.21233291	0.794	0.268	4.45E-166	2.96E+00	endotheliocyte	RDX
RPL36A	1.74E-203	1.208688033	0.64	0.133	1.07E-198	4.81E+00	endotheliocyte	RPL36A

RPS4Y1	4.15E-186	1.205525221	0.826	0.266	2.55E-181	3.11E+00	endothelicyte	RPS4Y1
RPL6	6.89E-130	1.205347275	0.908	0.681	4.23E-125	1.33E+00	endothelicyte	RPL6
RPS14	3.92E-143	1.203863428	0.96	0.829	2.40E-138	1.16E+00	endothelicyte	RPS14
RPLP1	2.68E-144	1.203377743	0.985	0.763	1.64E-139	1.29E+00	endothelicyte	RPLP1
RPL14	1.55E-127	1.200774612	0.901	0.642	9.52E-123	1.40E+00	endothelicyte	RPL14
THBD	0	1.200266433	0.561	0.042	0	13.35714286	endothelicyte	THBD
AHNAK	4.28E-255	1.198802743	0.772	0.163	2.63E-250	4.74E+00	endothelicyte	AHNAK
RPS171	4.88E-126	1.196227891	0.896	0.468	2.99E-121	1.91E+00	endothelicyte	RPS17
LMCD1	0	1.193926766	0.613	0.039	0	15.71794872	endothelicyte	LMCD1
RPL34	5.22E-117	1.192078927	0.98	0.905	3.20E-112	1.08E+00	endothelicyte	RPL34
CCNL1	3.18E-156	1.187100527	0.816	0.34	1.95E-151	2.40E+00	endothelicyte	CCNL1
IFIT3	0	1.186087643	0.516	0.024	0	21.5	endothelicyte	IFIT3
ESAM	0	1.18564561	0.618	0.014	0	44.14285714	endothelicyte	ESAM
RPL36	2.43E-118	1.185285758	0.903	0.699	1.49E-113	1.29E+00	endothelicyte	RPL36
CALCRL	0	1.181930641	0.6	0.006	0	100	endothelicyte	CALCRL
TGFBR2	0	1.180118694	0.573	0.023	0	24.91304348	endothelicyte	TGFBR2
F8	0	1.176540286	0.591	0.018	0	32.83333333	endothelicyte	F8
LDB2	0	1.176116554	0.623	0.026	0	23.96153846	endothelicyte	LDB2
ZFP36L1	1.13E-145	1.173945971	0.856	0.391	6.93E-141	2.19E+00	endothelicyte	ZFP36L1
RPS191	8.95E-140	1.16908061	0.958	0.756	5.49E-135	1.27E+00	endothelicyte	RPS19
IFI6	0	1.164181979	0.65	0.089	0	7.303370787	endothelicyte	IFI6
ADGRF5	0	1.162702155	0.516	0.036	0	14.33333333	endothelicyte	ADGRF5
GNB2L1	1.30E-74	1.160307049	0.712	0.468	8.00E-70	1.52E+00	endothelicyte	GNB2L1
EDN1	2.16E-219	1.158274387	0.308	0.029	1.32E-214	1.06E+01	endothelicyte	EDN1
RPL27A	4.26E-148	1.156193708	0.955	0.785	2.61E-143	1.22E+00	endothelicyte	RPL27A
RPL8	6.07E-148	1.153994163	0.953	0.854	3.72E-143	1.12E+00	endothelicyte	RPL8
TSPO	0	1.147741886	0.643	0.084	0	7.654761905	endothelicyte	TSPO
EFNB2	0	1.145925026	0.558	0.02	0	27.9	endothelicyte	EFNB2
RPL37	1.85E-159	1.145880837	0.97	0.803	1.13E-154	1.21E+00	endothelicyte	RPL37
SLC25A25	0	1.140283424	0.573	0.052	0	11.01923077	endothelicyte	SLC25A25
XAF1	0	1.139580375	0.581	0.039	0	14.8974359	endothelicyte	XAF1
LY6E	0	1.139393541	0.707	0.11	0	6.427272727	endothelicyte	LY6E
MT1E	0	1.132163828	0.546	0.061	0	8.950819672	endothelicyte	MT1E
EFNA1	0	1.128753745	0.529	0.014	0	37.78571429	endothelicyte	EFNA1
SNHG8	4.33E-140	1.12546591	0.747	0.303	2.65E-135	2.47E+00	endothelicyte	SNHG8
ACTN4	2.04E-220	1.122427637	0.69	0.156	1.25E-215	4.42E+00	endothelicyte	ACTN4
MMRN2	0	1.116377598	0.568	0.008	0	71	endothelicyte	MMRN2
GIMAP4	0	1.107603444	0.6	0.003	0	200	endothelicyte	GIMAP4
MTUS1	1.09E-228	1.098274234	0.625	0.124	6.66E-224	5.04E+00	endothelicyte	MTUS1
RPL9	1.96E-154	1.096096034	0.97	0.873	1.20E-149	1.11E+00	endothelicyte	RPL9
LMNA	1.88E-125	1.094074886	0.784	0.366	1.15E-120	2.14E+00	endothelicyte	LMNA
PDLIM1	7.68E-289	1.092850036	0.605	0.091	4.71E-284	6.65E+00	endothelicyte	PDLIM1
MYH9	1.64E-183	1.090737106	0.643	0.157	1.01E-178	4.10E+00	endothelicyte	MYH9
SDCBP	5.15E-183	1.090142545	0.687	0.185	3.16E-178	3.71E+00	endothelicyte	SDCBP
SDPR	0	1.087204731	0.444	0.038	0	11.68421053	endothelicyte	SDPR
SPTBN1	7.27E-147	1.083358676	0.789	0.298	4.46E-142	2.65E+00	endothelicyte	SPTBN1
FAM110D	0	1.082843095	0.469	0.002	0	234.5	endothelicyte	FAM110D
CD93	0	1.079894421	0.541	0.02	0	27.05	endothelicyte	CD93
ANXA2	4.03E-159	1.078539375	0.804	0.289	2.47E-154	2.78E+00	endothelicyte	ANXA2
KLF6	1.68E-139	1.074170322	0.752	0.285	1.03E-134	2.64E+00	endothelicyte	KLF6
CRHBP	0	1.073064069	0.449	0.006	0	74.83333333	endothelicyte	CRHBP
ADIRF	7.29E-223	1.070859829	0.645	0.124	4.47E-218	5.20E+00	endothelicyte	ADIRF
BTG1	1.20E-108	1.06954412	0.856	0.607	7.34E-104	1.41E+00	endothelicyte	BTG1
PNRC1	1.66E-123	1.068027613	0.801	0.392	1.02E-118	2.04E+00	endothelicyte	PNRC1
TM4SF18	0	1.063035687	0.491	0.006	0	81.83333333	endothelicyte	TM4SF18
NOSTRIN	1.47E-111	1.061846603	0.591	0.224	9.02E-107	2.64E+00	endothelicyte	NOSTRIN
TCF4	7.44E-127	1.061678617	0.749	0.328	4.56E-122	2.28E+00	endothelicyte	TCF4
NPDC1	0	1.061356035	0.6	0.068	0	8.823529412	endothelicyte	NPDC1
LDLR	2.99E-286	1.060730166	0.524	0.066	1.83E-281	7.94E+00	endothelicyte	LDLR
EMCN	0	1.056736333	0.553	0.003	0	184.3333333	endothelicyte	EMCN
ENG	0	1.055516562	0.744	0.101	0	7.366336634	endothelicyte	ENG
GIMAP1	0	1.053501648	0.551	0.002	0	275.5	endothelicyte	GIMAP1
ZFAS1	9.08E-129	1.051917456	0.692	0.262	5.57E-124	2.64E+00	endothelicyte	ZFAS1
SOX18	1.72E-120	1.051657828	0.524	0.155	1.06E-115	3.38E+00	endothelicyte	SOX18
ITM2B	4.16E-164	1.048151145	0.873	0.319	2.55E-159	2.74E+00	endothelicyte	ITM2B
RPL30	2.76E-147	1.047128415	0.973	0.877	1.70E-142	1.11E+00	endothelicyte	RPL30
FAM107A	1.24E-249	1.039817456	0.402	0.044	7.62E-245	9.14E+00	endothelicyte	FAM107A
FXD5	0	1.034307693	0.536	0.018	0	29.77777778	endothelicyte	FXD5
RPS15	3.39E-114	1.033851216	0.923	0.764	2.08E-109	1.21E+00	endothelicyte	RPS15
MSN	0	1.03352218	0.581	0.063	0	9.222222222	endothelicyte	MSN
ATF3	2.91E-216	1.032860886	0.615	0.112	1.79E-211	5.49E+00	endothelicyte	ATF3
PSMB8	0	1.032128952	0.6	0.029	0	20.68965517	endothelicyte	PSMB8
AP1S2	2.26E-279	1.030190651	0.618	0.095	1.39E-274	6.51E+00	endothelicyte	AP1S2
LGALS3	1.88E-190	1.02952398	0.754	0.201	1.15E-185	3.75E+00	endothelicyte	LGALS3
RPS3A	8.20E-154	1.026736208	0.98	0.897	5.03E-149	1.09E+00	endothelicyte	RPS3A

ADGRL4	1.39E-162	1.02468763	0.625	0.181	8.51E-158	3.45E+00	endotheliocyte	ADGRL4
RPS261	6.14E-69	1.022765567	0.744	0.535	3.77E-64	1.39E+00	endotheliocyte	RPS26
RPL24	2.87E-112	1.022623662	0.908	0.741	1.76E-107	1.23E+00	endotheliocyte	RPL24
PSMB9	0	1.020254656	0.573	0.03	0	19.1	endotheliocyte	PSMB9
RPL10P3	3.41E-46	1.020006728	0.211	0.053	2.09E-41	3.98E+00	endotheliocyte	RPL10P3
RPL32	2.77E-126	1.01894042	0.975	0.888	1.70E-121	1.10E+00	endotheliocyte	RPL32
RPS15A	3.50E-114	1.017035504	0.931	0.784	2.15E-109	1.19E+00	endotheliocyte	RPS15A
MIDN	1.95E-153	1.01627105	0.66	0.192	1.20E-148	3.44E+00	endotheliocyte	MIDN
CYYR1	0	1.015893623	0.558	0.004	0	139.5	endotheliocyte	CYYR1
ADAMTS1	4.25E-192	1.014250233	0.506	0.085	2.61E-187	5.95E+00	endotheliocyte	ADAMTS1
TSPAN7	0	1.012181941	0.531	0.007	0	75.85714286	endotheliocyte	TSPAN7
RPL22	6.06E-113	1.008194445	0.881	0.645	3.72E-108	1.37E+00	endotheliocyte	RPL22
POSTN	0	1.004912143	0.342	0.003	0	114	endotheliocyte	POSTN
HSPA1A	1.20E-103	1.004122044	0.762	0.357	7.36E-99	2.13E+00	endotheliocyte	HSPA1A
IL33	0	1.003027906	0.514	0.016	0	32.125	endotheliocyte	IL33
TACC1	2.95E-147	1.001437169	0.67	0.204	1.81E-142	3.28E+00	endotheliocyte	TACC1
RNASE1	1.92E-286	1.000831211	0.752	0.133	1.18E-281	5.65E+00	endotheliocyte	RNASE1
RPL19	1.86E-126	1.000741153	0.978	0.837	1.14E-121	1.17E+00	endotheliocyte	RPL19
DCN	0	3.633166533	0.98	0.12	0	8.166666667	Leydig_cells	DCN
CFD	0	3.521249703	0.894	0.057	0	15.68421053	Leydig_cells	CFD
PTGDS	0	2.849301788	0.991	0.666	0	1.487987988	Leydig_cells	PTGDS
PLPP3	0	2.56828911	0.899	0.089	0	10.1011236	Leydig_cells	PLPP3
SFRP1	0	2.343317747	0.822	0.073	0	11.26027397	Leydig_cells	SFRP1
ZFP362	0	2.314730368	0.867	0.217	0	3.995391705	Leydig_cells	ZFP36
IGF1	0	2.3134078	0.836	0.054	0	15.48148148	Leydig_cells	IGF1
COL1A2	0	2.277689388	0.915	0.151	0	6.059602649	Leydig_cells	COL1A2
COL1A1	0	2.271752036	0.862	0.099	0	8.707070707	Leydig_cells	COL1A1
IGF21	0	2.247648276	0.816	0.04	0	20.4	Leydig_cells	IGF2
IGFBP71	0	2.236594021	0.976	0.257	0	3.79766537	Leydig_cells	IGFBP7
LTBP4	0	2.231985259	0.92	0.127	0	7.244094488	Leydig_cells	LTBP4
FOS2	0	2.227875991	0.924	0.286	0	3.230769231	Leydig_cells	FOS
O2-Jun	0	2.221026079	0.928	0.346	0	2.682080925	Leydig_cells	JUN
VIM2	0	2.212831794	0.98	0.429	0	2.284382284	Leydig_cells	VIM
DLK1	0	2.144193788	0.479	0.103	0	4.650485437	Leydig_cells	DLK1
SOCS32	0	2.109417199	0.717	0.1	0	7.17	Leydig_cells	SOCS3
SERPINF1	0	2.098932582	0.889	0.118	0	7.533898305	Leydig_cells	SERPINF1
C1S	0	2.079599276	0.864	0.072	0	12	Leydig_cells	C1S
FOSB2	0	2.06296444	0.859	0.321	0	2.676012461	Leydig_cells	FOSB
APOE	0	2.020922295	0.65	0.17	0	3.823529412	Leydig_cells	APOE
ITM2B2	0	1.97121108	0.933	0.3	0	3.11	Leydig_cells	ITM2B
S100A62	0	1.970358765	0.823	0.103	0	7.990291262	Leydig_cells	S100A6
C1R	0	1.96359901	0.808	0.058	0	13.93103448	Leydig_cells	C1R
COL6A2	0	1.94354344	0.865	0.092	0	9.402173913	Leydig_cells	COL6A2
JUNB2	0	1.94322526	0.905	0.325	0	2.784615385	Leydig_cells	JUNB
ZFP36L12	0	1.926547445	0.861	0.378	0	2.277777778	Leydig_cells	ZFP36L1
PI16	0	1.892281796	0.603	0.042	0	14.35714286	Leydig_cells	PI16
INSL3	0	1.846744554	0.461	0.098	0	4.704081633	Leydig_cells	INSL3
EGR12	0	1.837154908	0.815	0.239	0	3.410041841	Leydig_cells	EGR1
CILP	0	1.837022426	0.715	0.022	0	32.5	Leydig_cells	CILP
MGP1	0	1.83331472	0.883	0.137	0	6.445255474	Leydig_cells	MGP
APOD	0	1.829458666	0.685	0.066	0	10.37878788	Leydig_cells	APOD
CD632	0	1.821037911	0.899	0.266	0	3.379699248	Leydig_cells	CD63
WISP2	0	1.820496705	0.648	0.031	0	20.90322581	Leydig_cells	WISP2
COL3A1	0	1.813938597	0.712	0.151	0	4.715231788	Leydig_cells	COL3A1
GSN2	0	1.81272577	0.762	0.192	0	3.96875	Leydig_cells	GSN
PLAC9	0	1.797889685	0.686	0.061	0	11.24590164	Leydig_cells	PLAC9
FTL2	0	1.77469336	0.943	0.51	0	1.849019608	Leydig_cells	FTL
IFITM32	0	1.771424231	0.908	0.167	0	5.437125749	Leydig_cells	IFITM3
ADAMTS11	0	1.750058172	0.62	0.068	0	9.117647059	Leydig_cells	ADAMTS1
RPL102	0	1.747415614	0.942	0.34	0	2.770588235	Leydig_cells	RPL10
MEG3	0	1.737314393	0.677	0.161	0	4.204968944	Leydig_cells	MEG3
SERPING11	0	1.720103438	0.766	0.089	0	8.606741573	Leydig_cells	SERPING1
CRISPLD2	0	1.714912078	0.699	0.099	0	7.060606061	Leydig_cells	CRISPLD2
PENK	1.06E-278	1.713390984	0.82	0.512	6.48E-274	1.60E+00	Leydig_cells	PENK
AHNAK2	0	1.704105564	0.78	0.146	0	5.342465753	Leydig_cells	AHNAK
COL6A1	0	1.702048661	0.786	0.092	0	8.543478261	Leydig_cells	COL6A1
SEPP11	0	1.69815959	0.808	0.079	0	10.2278481	Leydig_cells	SEPP1
SERPINE2	0	1.693013509	0.783	0.147	0	5.326530612	Leydig_cells	SERPINE2
B2M2	0	1.687255989	0.957	0.222	0	4.310810811	Leydig_cells	B2M
ANXA22	0	1.68348754	0.853	0.272	0	3.136029412	Leydig_cells	ANXA2
COL6A3	0	1.674790312	0.697	0.054	0	12.90740741	Leydig_cells	COL6A3
TIMP11	0	1.652399069	0.807	0.14	0	5.764285714	Leydig_cells	TIMP1
COL15A11	0	1.649542125	0.677	0.106	0	6.386792453	Leydig_cells	COL15A1
H19	0	1.647882654	0.282	0.024	0	11.75	Leydig_cells	H19
ISLR1	0	1.639036081	0.651	0.05	0	13.02	Leydig_cells	ISLR

NR2F21	0	1.629218716	0.784	0.143	0	5.482517483	Leydig_cells	NR2F2
ANGPTL1	0	1.618041373	0.708	0.034	0	20.82352941	Leydig_cells	ANGPTL1
MALAT12	6.12E-263	1.608386613	0.965	0.833	3.76E-258	1.16E+00	Leydig_cells	MALAT1
KLF22	0	1.590872697	0.711	0.145	0	4.903448276	Leydig_cells	KLF2
ITM2A1	0	1.582789536	0.643	0.053	0	12.13207547	Leydig_cells	ITM2A
RHOB2	0	1.56337796	0.756	0.219	0	3.452054795	Leydig_cells	RHOB
LGALS3BP	0	1.562681949	0.763	0.091	0	8.384615385	Leydig_cells	LGALS3BP
LUM	0	1.554177451	0.389	0.022	0	17.68181818	Leydig_cells	LUM
OSR2	0	1.549235359	0.727	0.088	0	8.261363636	Leydig_cells	OSR2
IGFBP6	0	1.54130405	0.487	0.08	0	6.0875	Leydig_cells	IGFBP6
KLF42	2.04E-278	1.512084854	0.782	0.475	1.25E-273	1.65E+00	Leydig_cells	KLF4
IGFBP5	0	1.502298436	0.455	0.055	0	8.272727273	Leydig_cells	IGFBP5
HSPB6	0	1.499121561	0.63	0.186	0	3.387096774	Leydig_cells	HSPB6
CD811	0	1.471679064	0.801	0.296	0	2.706081081	Leydig_cells	CD81
PLTP	0	1.461885923	0.669	0.147	0	4.551020408	Leydig_cells	PLTP
TM4SF11	0	1.460147987	0.658	0.061	0	10.78688525	Leydig_cells	TM4SF1
TIMP2	0	1.454563942	0.836	0.406	0	2.0591133	Leydig_cells	TIMP2
IFITM22	0	1.454348133	0.751	0.14	0	5.364285714	Leydig_cells	IFITM2
EPHX1	0	1.448227669	0.69	0.108	0	6.388888889	Leydig_cells	EPHX1
RPS82	0	1.445120856	0.969	0.768	0	1.26171875	Leydig_cells	RPS8
SPTBN11	0	1.444462024	0.778	0.284	0	2.73943662	Leydig_cells	SPTBN1
SCARA5	0	1.440846036	0.526	0.01	0	52.6	Leydig_cells	SCARA5
GADD45B2	0	1.424966152	0.757	0.168	0	4.505952381	Leydig_cells	GADD45B
BTG22	0	1.422159044	0.64	0.11	0	5.818181818	Leydig_cells	BTG2
LGALS31	0	1.417108574	0.732	0.186	0	3.935483871	Leydig_cells	LGALS3
RPL13A2	0	1.416247622	0.964	0.728	0	1.324175824	Leydig_cells	RPL13A
PPP1R15A2	0	1.414998163	0.714	0.175	0	4.08	Leydig_cells	PPP1R15A
TXNIP2	0	1.412937748	0.752	0.149	0	5.046979866	Leydig_cells	TXNIP
ZFP36L22	0	1.409230687	0.713	0.123	0	5.796747967	Leydig_cells	ZFP36L2
MMP2	0	1.405332911	0.661	0.162	0	4.080246914	Leydig_cells	MMP2
CPE	0	1.379853041	0.77	0.189	0	4.074074074	Leydig_cells	CPE
C7	0	1.368174787	0.295	0.011	0	26.81818182	Leydig_cells	C7
ENTPD2	0	1.364122544	0.518	0.022	0	23.54545455	Leydig_cells	ENTPD2
PNRC12	0	1.349104446	0.778	0.382	0	2.036649215	Leydig_cells	PNRC1
PTMS1	0	1.344447913	0.74	0.192	0	3.854166667	Leydig_cells	PTMS
FSTL1	0	1.340600374	0.604	0.061	0	9.901639344	Leydig_cells	FSTL1
CD991	0	1.339447115	0.789	0.171	0	4.614035088	Leydig_cells	CD99
EBF1	0	1.335977501	0.631	0.115	0	5.486956522	Leydig_cells	EBF1
CST31	0	1.331722646	0.938	0.409	0	2.293398533	Leydig_cells	CST3
CALD1	0	1.331094016	0.842	0.213	0	3.953051643	Leydig_cells	CALD1
ADIRF1	0	1.325742108	0.714	0.106	0	6.735849057	Leydig_cells	ADIRF
GSTP12	0	1.319459543	0.735	0.149	0	4.932885906	Leydig_cells	GSTP1
ATF32	0	1.312104382	0.522	0.102	0	5.117647059	Leydig_cells	ATF3
TIMP31	0	1.311838552	0.755	0.152	0	4.967105263	Leydig_cells	TIMP3
S100A41	0	1.310276366	0.48	0.035	0	13.71428571	Leydig_cells	S100A4
EID11	0	1.305455822	0.843	0.345	0	2.443478261	Leydig_cells	EID1
RPL392	0	1.304145175	0.8	0.26	0	3.076923077	Leydig_cells	RPL39
TSHZ2	0	1.303066271	0.66	0.086	0	7.674418605	Leydig_cells	TSHZ2
CFH1	0	1.302363733	0.61	0.043	0	14.18604651	Leydig_cells	CFH
PTN	5.32E-262	1.297309654	0.503	0.155	3.26E-257	3.25E+00	Leydig_cells	PTN
SSPN	0	1.293939362	0.644	0.073	0	8.821917808	Leydig_cells	SSPN
NBL1	0	1.289352515	0.591	0.078	0	7.576923077	Leydig_cells	NBL1
NEAT12	0	1.288207192	0.617	0.179	0	3.446927374	Leydig_cells	NEAT1
RPS4X2	0	1.285791953	0.896	0.325	0	2.756923077	Leydig_cells	RPS4X
IFI271	0	1.284828615	0.605	0.114	0	5.307017544	Leydig_cells	IFI27
BST22	0	1.28426785	0.695	0.089	0	7.808988764	Leydig_cells	BST2
LGALS1	0	1.283581267	0.74	0.185	0	4	Leydig_cells	LGALS1
PMP22	0	1.272207885	0.653	0.139	0	4.697841727	Leydig_cells	PMP22
PTCH2	0	1.271239363	0.507	0.067	0	7.567164179	Leydig_cells	PTCH2
CEBPD2	0	1.25924178	0.556	0.094	0	5.914893617	Leydig_cells	CEBPD
PSAP1	0	1.256614059	0.863	0.43	0	2.006976744	Leydig_cells	PSAP
OGN	0	1.250605492	0.598	0.056	0	10.67857143	Leydig_cells	OGN
ALDH1A3	0	1.248845245	0.515	0.033	0	15.60606061	Leydig_cells	ALDH1A3
ABCA8	0	1.239065723	0.603	0.134	0	4.5	Leydig_cells	ABCA8
IER22	0	1.238948174	0.686	0.157	0	4.369426752	Leydig_cells	IER2
FCGRT2	0	1.235643671	0.671	0.174	0	3.856321839	Leydig_cells	FCGRT
TUBA1A2	0	1.22293584	0.688	0.183	0	3.759562842	Leydig_cells	TUBA1A
KLF62	1.21E-261	1.205402406	0.655	0.276	7.43E-257	2.37E+00	Leydig_cells	KLF6
KRT13	1.24E-295	1.204452982	0.323	0.054	7.62E-291	5.98E+00	Leydig_cells	KRT13
RPL10A2	0	1.199634424	0.916	0.652	0	1.404907975	Leydig_cells	RPL10A
RPL122	5.07E-301	1.199054977	0.886	0.625	3.11E-296	1.42E+00	Leydig_cells	RPL12
MYC1	0	1.194609979	0.531	0.051	0	10.41176471	Leydig_cells	MYC
FN11	0	1.188320298	0.567	0.065	0	8.723076923	Leydig_cells	FN1
NEGR1	0	1.184893907	0.519	0.036	0	14.41666667	Leydig_cells	NEGR1
RPL232	0	1.184259527	0.909	0.694	0	1.309798271	Leydig_cells	RPL23



FBN1	0	1.179613801	0.555	0.108	0	5.138888889	Leydig_cells	FBN1
ABLIM1	6.07E-273	1.179025351	0.652	0.271	3.72E-268	2.41E+00	Leydig_cells	ABLIM1
RPL412	0	1.175891233	0.955	0.78	0	1.224358974	Leydig_cells	RPL41
MT2A1	4.88E-225	1.171968753	0.567	0.218	2.99E-220	2.60E+00	Leydig_cells	MT2A
NFIA	0	1.164439691	0.643	0.197	0	3.263959391	Leydig_cells	NFIA
EEF1A12	0	1.159985046	0.987	0.922	0	1.070498915	Leydig_cells	EEF1A1
JUND2	1.12E-217	1.153840877	0.781	0.492	6.87E-213	1.59E+00	Leydig_cells	JUND
PTRF1	0	1.153538591	0.612	0.099	0	6.181818182	Leydig_cells	PTRF
EGFR	0	1.146376351	0.506	0.049	0	10.32653061	Leydig_cells	EGFR
TUBB1	0	1.144316889	0.715	0.23	0	3.108695652	Leydig_cells	TUBB
FBLN5	0	1.140763631	0.529	0.078	0	6.782051282	Leydig_cells	FBLN5
APP1	0	1.140695341	0.75	0.328	0	2.286585366	Leydig_cells	APP
HSPA1B2	0	1.139868601	0.607	0.178	0	3.41011236	Leydig_cells	HSPA1B
RARRES2	0	1.137315346	0.565	0.065	0	8.692307692	Leydig_cells	RARRES2
THY1	0	1.134395018	0.453	0.025	0	18.12	Leydig_cells	THY1
PDGFRA	0	1.12484676	0.526	0.049	0	10.73469388	Leydig_cells	PDGFRA
EMP32	0	1.123233358	0.59	0.146	0	4.04109589	Leydig_cells	EMP3
MAF1	0	1.122772721	0.529	0.056	0	9.446428571	Leydig_cells	MAF
PCOLCE	0	1.119615693	0.503	0.101	0	4.98019802	Leydig_cells	PCOLCE
RP5.1052M9.12	2.32E-57	1.114761138	0.35	0.202	1.43E-52	1.73E+00	Leydig_cells	RP5.1052M9.1
FLRT2	0	1.113798876	0.523	0.046	0	11.36956522	Leydig_cells	FLRT2
GSTM5	0	1.112910242	0.47	0.058	0	8.103448276	Leydig_cells	GSTM5
DPEP1	0	1.10689794	0.568	0.153	0	3.712418301	Leydig_cells	DPEP1
C11orf96	0	1.104558804	0.705	0.258	0	2.73255814	Leydig_cells	C11orf96
DPT	0	1.103779379	0.454	0.029	0	15.65517241	Leydig_cells	DPT
FTH12	0	1.102735229	0.969	0.712	0	1.360955056	Leydig_cells	FTH1
LRP11	0	1.102180729	0.562	0.064	0	8.78125	Leydig_cells	LRP1
DUSP12	0	1.102081439	0.65	0.166	0	3.915662651	Leydig_cells	DUSP1
PRRX1	1.55E-264	1.09886664	0.75	0.393	9.48E-260	1.91E+00	Leydig_cells	PRRX1
SNED1	0	1.098710445	0.494	0.041	0	12.04878049	Leydig_cells	SNED1
ECM2	0	1.095150564	0.514	0.044	0	11.68181818	Leydig_cells	ECM2
RPL10P32	5.78E-275	1.094791612	0.287	0.046	3.54E-270	6.24E+00	Leydig_cells	RPL10P3
FXVD6	0	1.093906174	0.595	0.093	0	6.397849462	Leydig_cells	FXVD6
RPL18A3	1.84E-260	1.093560693	0.803	0.401	1.13E-255	2.00E+00	Leydig_cells	RPL18A
ACTB2	0	1.093308235	0.925	0.572	0	1.617132867	Leydig_cells	ACTB
HHIP	0	1.092075877	0.468	0.015	0	31.2	Leydig_cells	HHIP
RPS182	0	1.090066004	0.973	0.848	0	1.14740566	Leydig_cells	RPS18
PKDCC	0	1.079063574	0.435	0.044	0	9.886363636	Leydig_cells	PKDCC
SPARCL11	0	1.076576176	0.784	0.14	0	5.6	Leydig_cells	SPARCL1
NUCKS11	1.36E-267	1.074297792	0.742	0.387	8.35E-263	1.92E+00	Leydig_cells	NUCKS1
MT-ATP62	2.97E-88	1.072513754	0.61	0.427	1.82E-83	1.43E+00	Leydig_cells	MT-ATP6
RPL182	1.10E-268	1.067955012	0.875	0.56	6.76E-264	1.56E+00	Leydig_cells	RPL18
SFRP4	0	1.067575362	0.382	0.04	0	9.55	Leydig_cells	SFRP4
LY6E1	0	1.057105587	0.562	0.1	0	5.62	Leydig_cells	LY6E
TMSB4X2	0	1.054390109	0.908	0.314	0	2.891719745	Leydig_cells	TMSB4X
MYADM1	1.27E-212	1.052694682	0.546	0.21	7.81E-208	2.60E+00	Leydig_cells	MYADM
NDRG2	0	1.050426519	0.497	0.063	0	7.888888889	Leydig_cells	NDRG2
KCTD122	0	1.048578006	0.51	0.071	0	7.183098592	Leydig_cells	KCTD12
FBLN2	0	1.047158475	0.504	0.071	0	7.098591549	Leydig_cells	FBLN2
LMNA2	2.60E-267	1.046743052	0.726	0.357	1.60E-262	2.03E+00	Leydig_cells	LMNA
RHOBTB3	0	1.046622568	0.575	0.121	0	4.752066116	Leydig_cells	RHOBTB3
DAB22	0	1.04620679	0.492	0.033	0	14.90909091	Leydig_cells	DAB2
TPT12	0	1.045331013	0.975	0.854	0	1.141686183	Leydig_cells	TPT1
ARX	0	1.042068175	0.451	0.032	0	14.09375	Leydig_cells	ARX
ENG1	0	1.04088765	0.636	0.087	0	7.310344828	Leydig_cells	ENG
CLEC3B	0	1.038076697	0.485	0.085	0	5.705882353	Leydig_cells	CLEC3B
NFKBIA2	0	1.036400864	0.676	0.194	0	3.484536082	Leydig_cells	NFKBIA
PPIB	9.65E-237	1.035017928	0.627	0.279	5.92E-232	2.25E+00	Leydig_cells	PPIB
MT-CYB2	3.40E-101	1.034136896	0.608	0.389	2.09E-96	1.56E+00	Leydig_cells	MT-CYB
PRDX21	0	1.031716599	0.585	0.09	0	6.5	Leydig_cells	PRDX2
EMP11	0	1.030902574	0.436	0.045	0	9.688888889	Leydig_cells	EMP1
HLA-A2	4.62E-139	1.023656583	0.548	0.298	2.83E-134	1.84E+00	Leydig_cells	HLA-A
FGFR11	0	1.021635475	0.538	0.118	0	4.559322034	Leydig_cells	FGFR1
RPLP12	0	1.019549611	0.966	0.758	0	1.274406332	Leydig_cells	RPLP1
MT-ND32	2.02E-108	1.014141965	0.601	0.365	1.24E-103	1.65E+00	Leydig_cells	MT-ND3
LHFP	5.36E-242	1.012497173	0.547	0.202	3.29E-237	2.71E+00	Leydig_cells	LHFP
CAV11	0	1.008787582	0.601	0.084	0	7.154761905	Leydig_cells	CAV1
GADD45G	0	1.008432318	0.429	0.064	0	6.703125	Leydig_cells	GADD45G
LEPROT1	0	1.008343201	0.574	0.156	0	3.679487179	Leydig_cells	LEPROT
NRK	0	1.004504364	0.415	0.016	0	25.9375	Leydig_cells	NRK
RPL213	4.73E-299	1.002446263	0.905	0.459	2.90E-294	1.97E+00	Leydig_cells	RPL21
CD741	0	4.589360307	0.939	0.07	0	13.41428571	macrophages	CD74
CXCL8	0	4.335967189	0.842	0.024	0	35.08333333	macrophages	CXCL8
HLA.DRA	0	4.081392803	0.552	0.018	0	30.66666667	macrophages	HLA.DRA
CCL3L3	0	4.004574474	0.811	0.023	0	35.26086957	macrophages	CCL3L3

CCL4L2	0	3.863038733	0.811	0.017	0	47.70588235	macrophages	CCL4L2
IL1B	0	3.839781479	0.788	0.015	0	52.53333333	macrophages	IL1B
CCL3	0	3.810209385	0.788	0.011	0	71.63636364	macrophages	CCL3
HLA-DRA1	6.35E-294	3.715834332	0.384	0.026	3.90E-289	1.48E+01	macrophages	HLA-DRA
HLA.DRB11	0	3.378041701	0.556	0.051	0	10.90196078	macrophages	HLA.DRB1
SRGN1	0	3.360395466	0.889	0.046	0	19.32608696	macrophages	SRGN
CCL4	0	3.278722374	0.731	0.056	0	13.05357143	macrophages	CCL4
CXCL31	0	3.207505116	0.71	0.024	0	29.58333333	macrophages	CXCL3
HLA.DPA1	0	3.111717823	0.539	0.008	0	67.375	macrophages	HLA.DPA1
RGS1	0	3.005160059	0.768	0.005	0	153.6	macrophages	RGS1
CXCL21	0	3.001068413	0.774	0.042	0	18.42857143	macrophages	CXCL2
GPR183	0	2.983887021	0.781	0.006	0	130.1666667	macrophages	GPR183
TNFAIP31	0	2.95978865	0.815	0.109	0	7.47706422	macrophages	TNFAIP3
NFKBIA1	2.75E-242	2.859832344	0.855	0.207	1.69E-237	4.13E+00	macrophages	NFKBIA
CD83	0	2.835161206	0.828	0.063	0	13.14285714	macrophages	CD83
HLA.DQA1	0	2.811853558	0.508	0.004	0	127	macrophages	HLA.DQA1
HLA.DPB11	1.78E-213	2.806914001	0.357	0.032	1.09E-208	1.12E+01	macrophages	HLA.DPB1
KLF61	7.89E-195	2.760582322	0.865	0.285	4.84E-190	3.04E+00	macrophages	KLF6
HLA-DPA11	8.53E-263	2.737647298	0.347	0.024	5.23E-258	1.45E+01	macrophages	HLA-DPA1
HLA.DPB1	0	2.69855066	0.542	0.005	0	108.4	macrophages	HLA.DPB1
HLA.DRB11	1.36E-34	2.696634654	0.357	0.15	8.33E-30	2.38E+00	macrophages	HLA.DRB1
HLA.DRB5	0	2.678477625	0.471	0.015	0	31.4	macrophages	HLA.DRB5
NLRP3	0	2.634359563	0.7	0.007	0	100	macrophages	NLRP3
B2M1	1.20E-272	2.609591997	0.963	0.245	7.35E-268	3.93E+00	macrophages	B2M
HLA.DQB1	0	2.528569358	0.502	0.021	0	23.9047619	macrophages	HLA.DQB1
FTL1	1.08E-161	2.470003802	0.963	0.523	6.62E-157	1.84E+00	macrophages	FTL
ANXA11	0	2.42010897	0.724	0.075	0	9.653333333	macrophages	ANXA1
NR4A21	1.15E-295	2.413191552	0.811	0.143	7.05E-291	5.67E+00	macrophages	NR4A2
TYROBP	0	2.409168261	0.815	0.004	0	203.75	macrophages	TYROBP
C1QA	0	2.381767492	0.68	0.002	0	340	macrophages	C1QA
C5AR1	0	2.38172501	0.633	0.017	0	37.23529412	macrophages	C5AR1
NFKBIZ1	0	2.361850579	0.801	0.101	0	7.930693069	macrophages	NFKBIZ
FTH1P10	7.89E-99	2.315698459	0.539	0.158	4.84E-94	3.41E+00	macrophages	FTH1P10
SAT11	6.92E-271	2.294417693	0.815	0.15	4.24E-266	5.43E+00	macrophages	SAT1
IER31	2.18E-255	2.287986297	0.68	0.103	1.34E-250	6.60E+00	macrophages	IER3
TMSB4X1	1.10E-194	2.264526486	0.949	0.332	6.72E-190	2.86E+00	macrophages	TMSB4X
BCL2A1	0	2.257895857	0.599	0.015	0	39.93333333	macrophages	BCL2A1
RGS2	2.38E-220	2.2522595	0.694	0.133	1.46E-215	5.22E+00	macrophages	RGS2
PLAUR	0	2.248061266	0.714	0.024	0	29.75	macrophages	PLAUR
S100A4	0	2.188441483	0.724	0.046	0	15.73913043	macrophages	S100A4
LYZ	0	2.184696671	0.653	0.003	0	217.6666667	macrophages	LYZ
FTH1	8.89E-143	2.140501428	0.98	0.72	5.45E-138	1.36E+00	macrophages	FTH1
MS4A6A	0	2.135819205	0.724	0.005	0	144.8	macrophages	MS4A6A
HLA.E1	1.22E-269	2.104158287	0.532	0.058	7.47E-265	9.17E+00	macrophages	HLA.E
DUSP11	1.27E-202	2.093974562	0.781	0.18	7.79E-198	4.34E+00	macrophages	DUSP1
SGK1	1.79E-177	2.061884473	0.7	0.173	1.10E-172	4.05E+00	macrophages	SGK1
C1QB	0	2.056014741	0.556	0.002	0	278	macrophages	C1QB
C1QC	0	2.051554057	0.552	0.002	0	276	macrophages	C1QC
HLA.B1	1.14E-127	2.04643206	0.532	0.121	7.02E-123	4.40E+00	macrophages	HLA.B
LAPTM5	0	2.033019968	0.684	0.007	0	97.71428571	macrophages	LAPTM5
SEPP1	3.86E-105	2.031029956	0.471	0.106	2.37E-100	4.44E+00	macrophages	SEPP1
PLEK	0	2.028361081	0.65	0.012	0	54.16666667	macrophages	PLEK
CD14	0	2.017035062	0.613	0.01	0	61.3	macrophages	CD14
FCER1A	0	2.015355891	0.438	0.002	0	219	macrophages	FCER1A
CST3	5.11E-164	1.982393292	0.963	0.426	3.13E-159	2.26E+00	macrophages	CST3
FCER1G	0	1.979915598	0.613	0.005	0	122.6	macrophages	FCER1G
HLA.DQA1	0	1.979835595	0.337	0.003	0	112.3333333	macrophages	HLA-DQA1
ID21	7.33E-256	1.975583075	0.717	0.119	4.50E-251	6.03E+00	macrophages	ID2
PPP1R15A1	3.57E-203	1.963287413	0.798	0.191	2.19E-198	4.18E+00	macrophages	PPP1R15A
AIF1	0	1.938875441	0.657	0.002	0	328.5	macrophages	AIF1
HLA.DRB51	7.74E-56	1.915584107	0.313	0.081	4.75E-51	3.86E+00	macrophages	HLA.DRB5
CXCR4	0	1.868015577	0.451	0.012	0	37.58333333	macrophages	CXCR4
NR4A3	0	1.806387654	0.549	0.031	0	17.70967742	macrophages	NR4A3
HLA-DQB1	4.81E-274	1.804545277	0.32	0.019	2.95E-269	1.68E+01	macrophages	HLA-DQB1
NAMPT1	8.62E-183	1.793723594	0.68	0.148	5.29E-178	4.59E+00	macrophages	NAMPT
ZFP36L21	3.80E-194	1.787303812	0.707	0.142	2.33E-189	4.98E+00	macrophages	ZFP36L2
MAFB	1.53E-305	1.77791731	0.572	0.06	9.41E-301	9.53E+00	macrophages	MAFB
CTSS	0	1.771926579	0.657	0.019	0	34.57894737	macrophages	CTSS
NR4A1	8.02E-128	1.726285447	0.758	0.256	4.92E-123	2.96E+00	macrophages	NR4A1
ZFP361	8.31E-187	1.723357055	0.869	0.237	5.09E-182	3.67E+00	macrophages	ZFP36
FCGR2A	0	1.722879297	0.643	0.045	0	14.28888889	macrophages	FCGR2A
HLA.A1	3.29E-105	1.700070092	0.522	0.135	2.02E-100	3.87E+00	macrophages	HLA.A
PNRC11	1.56E-128	1.698288589	0.852	0.393	9.56E-124	2.17E+00	macrophages	PNRC1
HSPA1A1	1.21E-65	1.694760997	0.694	0.36	7.42E-61	1.93E+00	macrophages	HSPA1A
ITGB2	0	1.692615818	0.616	0.003	0	205.3333333	macrophages	ITGB2

TSC22D31	2.25E-153	1.69126961	0.626	0.142	1.38E-148	4.41E+00	macrophages	TSC22D3
PTGS21	0	1.68912041	0.488	0.02	0	24.4	macrophages	PTGS2
CD163	0	1.675680789	0.572	0.023	0	24.86956522	macrophages	CD163
FOSB1	3.10E-136	1.667658354	0.875	0.338	1.90E-131	2.59E+00	macrophages	FOSB
FGL2	0	1.643122658	0.586	0.055	0	10.65454545	macrophages	FGL2
CEBPD1	9.08E-183	1.620356599	0.603	0.108	5.57E-178	5.58E+00	macrophages	CEBPD
NEAT11	3.80E-84	1.61752173	0.599	0.193	2.33E-79	3.10E+00	macrophages	NEAT1
MCL11	6.55E-108	1.609226058	0.865	0.526	4.02E-103	1.64E+00	macrophages	MCL1
PTPRC	0	1.598383553	0.569	0.014	0	40.64285714	macrophages	PTPRC
CSF1R	0	1.576215485	0.545	0.026	0	20.96153846	macrophages	CSF1R
MS4A7	0	1.56799413	0.535	0.006	0	89.16666667	macrophages	MS4A7
CYBA	0	1.553744983	0.529	0.035	0	15.11428571	macrophages	CYBA
P2RY13	0	1.548824962	0.458	0.001	0	458	macrophages	P2RY13
DUSP61	3.33E-125	1.54804193	0.438	0.08	2.04E-120	5.48E+00	macrophages	DUSP6
BTG11	9.83E-71	1.546449127	0.798	0.609	6.03E-66	1.31E+00	macrophages	BTG1
STK17B	2.01E-121	1.543343985	0.582	0.157	1.24E-116	3.71E+00	macrophages	STK17B
FOS1	2.20E-119	1.54216855	0.835	0.308	1.35E-114	2.71E+00	macrophages	FOS
CLEC7A	0	1.531270952	0.549	0.006	0	91.5	macrophages	CLEC7A
HLA.C1	4.11E-123	1.528681743	0.421	0.074	2.52E-118	5.69E+00	macrophages	HLA.C
ACTB1	3.64E-106	1.509246123	0.926	0.583	2.23E-101	1.59E+00	macrophages	ACTB
CCL21	1.52E-57	1.493944747	0.236	0.044	9.32E-53	5.36E+00	macrophages	CCL2
PDE4B	0	1.490090213	0.498	0.043	0	11.58139535	macrophages	PDE4B
PMAIP1	3.56E-241	1.485698813	0.418	0.038	2.18E-236	1.10E+01	macrophages	PMAIP1
CTSB	3.02E-91	1.481805526	0.606	0.215	1.85E-86	2.82E+00	macrophages	CTSB
DUSP2	3.79E-274	1.480870762	0.492	0.047	2.32E-269	1.05E+01	macrophages	DUSP2
OTUD1	1.21E-105	1.477728232	0.539	0.147	7.40E-101	3.67E+00	macrophages	OTUD1
TPT11	1.71E-118	1.466023672	0.976	0.858	1.05E-113	1.14E+00	macrophages	TPT1
IER51	9.30E-132	1.456255253	0.566	0.131	5.71E-127	4.32E+00	macrophages	IER5
ETS21	3.39E-271	1.448159374	0.552	0.062	2.08E-266	8.90E+00	macrophages	ETS2
SMAP2	3.10E-92	1.43918841	0.593	0.21	1.90E-87	2.82E+00	macrophages	SMAP2
MT.ND51	5.47E-38	1.429534216	0.559	0.315	3.35E-33	1.77E+00	macrophages	MT.ND5
ZFP36L11	8.41E-76	1.429311507	0.744	0.394	5.16E-71	1.89E+00	macrophages	ZFP36L1
HERPUD1	6.16E-62	1.428363921	0.657	0.364	3.78E-57	1.80E+00	macrophages	HERPUD1
ICAM11	3.79E-277	1.417728326	0.488	0.046	2.33E-272	1.06E+01	macrophages	ICAM1
ALOX5AP	0	1.416322288	0.508	0.019	0	26.73684211	macrophages	ALOX5AP
VSIG4	0	1.409376174	0.512	0.023	0	22.26086957	macrophages	VSIG4
F13A1	2.09E-302	1.409151797	0.451	0.036	1.28E-297	1.25E+01	macrophages	F13A1
CDKN1A1	1.34E-141	1.406740432	0.589	0.126	8.24E-137	4.67E+00	macrophages	CDKN1A
CLEC10A	0	1.404909148	0.471	0.003	0	157	macrophages	CLEC10A
GPX1	1.31E-82	1.402103083	0.721	0.355	8.01E-78	2.03E+00	macrophages	GPX1
PSAP	7.38E-86	1.394293098	0.828	0.444	4.53E-81	1.86E+00	macrophages	PSAP
PDK41	1.53E-36	1.393845721	0.29	0.093	9.38E-32	3.12E+00	macrophages	PDK4
OLR1	7.97E-143	1.390540871	0.401	0.059	4.89E-138	6.80E+00	macrophages	OLR1
TNF	0	1.38956989	0.32	0.004	0	80	macrophages	TNF
CYBB	0	1.38168933	0.448	0.002	0	224	macrophages	CYBB
MARCKS1	1.60E-81	1.37776138	0.623	0.254	9.79E-77	2.45E+00	macrophages	MARCKS
ATF31	1.77E-142	1.369860206	0.569	0.114	1.09E-137	4.99E+00	macrophages	ATF3
FCGR2B	0	1.369614344	0.444	0.008	0	55.5	macrophages	FCGR2B
IER21	4.99E-106	1.368906945	0.63	0.175	3.06E-101	3.60E+00	macrophages	IER2
TMSB101	1.15E-137	1.366977128	0.933	0.392	7.03E-133	2.38E+00	macrophages	TMSB10
MRC1	6.31E-150	1.365404231	0.458	0.075	3.87E-145	6.11E+00	macrophages	MRC1
MALAT11	2.20E-63	1.362323653	0.963	0.837	1.35E-58	1.15E+00	macrophages	MALAT1
ITM2B1	1.25E-123	1.339999335	0.852	0.321	7.64E-119	2.65E+00	macrophages	ITM2B
GLIPR1	8.17E-133	1.337599202	0.539	0.12	5.01E-128	4.49E+00	macrophages	GLIPR1
FXD51	0	1.336513124	0.502	0.021	0	23.9047619	macrophages	FXD5
OGFRL1	0	1.331495733	0.498	0.025	0	19.92	macrophages	OGFRL1
RNASE11	3.80E-29	1.329476076	0.347	0.14	2.33E-24	2.48E+00	macrophages	RNASE1
CDH1	9.49E-229	1.325930629	0.34	0.026	5.82E-224	1.31E+01	macrophages	CDH1
VIM1	6.53E-101	1.324606416	0.879	0.448	4.01E-96	1.96E+00	macrophages	VIM
HLA-B1	1.04E-14	1.312680896	0.374	0.252	6.35E-10	1.48E+00	macrophages	HLA-B
RHOB1	2.17E-91	1.312235456	0.673	0.237	1.33E-86	2.84E+00	macrophages	RHOB
HCLS1	0	1.307447331	0.488	0.008	0	61	macrophages	HCLS1
EMP31	2.41E-106	1.295256119	0.572	0.16	1.48E-101	3.58E+00	macrophages	EMP3
KLF41	5.09E-61	1.293740014	0.747	0.485	3.12E-56	1.54E+00	macrophages	KLF4
LST1	0	1.290623757	0.441	0.009	0	49	macrophages	LST1
RPL101	5.21E-120	1.28489913	0.909	0.36	3.20E-115	2.53E+00	macrophages	RPL10
FCGR3A	0	1.279150227	0.377	0.001	0	377	macrophages	FCGR3A
RPL10P31	1.05E-148	1.278221674	0.391	0.052	6.41E-144	7.52E+00	macrophages	RPL10P3
HCST	0	1.271441825	0.451	0.014	0	32.21428571	macrophages	HCST
CSRNP11	7.34E-93	1.261188603	0.576	0.179	4.50E-88	3.22E+00	macrophages	CSRNP1
RNASET2	1.43E-107	1.2589285	0.519	0.132	8.80E-103	3.93E+00	macrophages	RNASET2
RP5.1052M9.11	4.27E-45	1.257838867	0.478	0.205	2.62E-40	2.33E+00	macrophages	RP5.1052M9.1
REL1	5.34E-124	1.255264715	0.508	0.11	3.27E-119	4.62E+00	macrophages	REL
B3GNT5	3.40E-72	1.248591621	0.418	0.118	2.08E-67	3.54E+00	macrophages	B3GNT5
ARHGDI1	2.12E-292	1.241598905	0.441	0.035	1.30E-287	1.26E+01	macrophages	ARHGDI1

MSR1	0	1.235968556	0.431	0.019	0	22.68421053	macrophages	MSR1
IL13RA1	1.01E-133	1.230880475	0.519	0.106	6.20E-129	4.90E+00	macrophages	IL13RA1
HLA.DMA	0	1.228475842	0.32	0.005	0	64	macrophages	HLA.DMA
GADD45B1	2.09E-146	1.224017416	0.744	0.187	1.28E-141	3.98E+00	macrophages	GADD45B
HSPA1B1	8.07E-40	1.223239002	0.451	0.193	4.95E-35	2.34E+00	macrophages	HSPA1B
MT.CYB1	3.90E-35	1.221395734	0.572	0.332	2.39E-30	1.72E+00	macrophages	MT.CYB
FOLR2	0	1.2137189	0.35	0.004	0	87.5	macrophages	FOLR2
TXNIP1	1.04E-77	1.212123425	0.549	0.171	6.37E-73	3.21E+00	macrophages	TXNIP
RPL231	3.94E-87	1.208457675	0.902	0.701	2.42E-82	1.29E+00	macrophages	RPL23
RPL391	1.92E-93	1.207891526	0.747	0.277	1.18E-88	2.70E+00	macrophages	RPL39
JUND1	2.09E-83	1.200498675	0.838	0.501	1.28E-78	1.67E+00	macrophages	JUND
TGFBI	0	1.200070857	0.397	0.011	0	36.09090909	macrophages	TGFBI
JUNB1	4.50E-91	1.195959706	0.798	0.345	2.76E-86	2.31E+00	macrophages	JUNB
LRRFIP11	1.25E-137	1.195598727	0.485	0.089	7.68E-133	5.45E+00	macrophages	LRRFIP1
IRS2	1.05E-52	1.192648196	0.448	0.169	6.44E-48	2.65E+00	macrophages	IRS2
HLA.DMB	0	1.187721201	0.286	0.001	0	286	macrophages	HLA.DMB
LINC00936	9.95E-195	1.186434555	0.38	0.039	6.10E-190	9.74E+00	macrophages	LINC00936
HLA-C1	1.06E-19	1.181879096	0.337	0.176	6.48E-15	1.91E+00	macrophages	HLA-C
RILPL21	1.50E-112	1.179874574	0.397	0.072	9.18E-108	5.51E+00	macrophages	RILPL2
CXCL1	1.41E-169	1.175899616	0.131	0.005	8.68E-165	2.62E+01	macrophages	CXCL1
NPC21	2.73E-58	1.172006432	0.721	0.443	1.67E-53	1.63E+00	macrophages	NPC2
CD69	0	1.159219656	0.306	0.006	0	51	macrophages	CD69
PFKFB3	5.42E-106	1.159028221	0.306	0.045	3.32E-101	6.80E+00	macrophages	PFKFB3
FCGRT1	1.24E-74	1.158606508	0.545	0.191	7.63E-70	2.85E+00	macrophages	FCGRT
AHNAK1	6.44E-95	1.154433345	0.586	0.168	3.95E-90	3.49E+00	macrophages	AHNAK
HLA-DQA2	0	1.153724242	0.276	0.004	0	69	macrophages	HLA-DQA2
CFLAR1	3.76E-54	1.151379353	0.556	0.263	2.31E-49	2.11E+00	macrophages	CFLAR
ZEB2	1.20E-139	1.146153985	0.458	0.078	7.38E-135	5.87E+00	macrophages	ZEB2
HLA-DMA1	4.12E-261	1.142501509	0.283	0.015	2.53E-256	1.89E+01	macrophages	HLA-DMA
MAF	2.71E-125	1.140666247	0.424	0.072	1.66E-120	5.89E+00	macrophages	MAF
MNDA	0	1.138192234	0.391	0.008	0	48.875	macrophages	MNDA
TRIB1	3.14E-247	1.130242553	0.34	0.024	1.92E-242	1.42E+01	macrophages	TRIB1
FYB	1.58E-141	1.124619129	0.414	0.064	9.68E-137	6.47E+00	macrophages	FYB
ARPC1B1	9.06E-137	1.123996042	0.444	0.074	5.56E-132	6.00E+00	macrophages	ARPC1B
PTGER4	7.49E-113	1.117167741	0.397	0.073	4.60E-108	5.44E+00	macrophages	PTGER4
KDM6B	2.97E-51	1.116676153	0.512	0.226	1.82E-46	2.27E+00	macrophages	KDM6B
VEGFA	1.42E-268	1.115361063	0.34	0.022	8.72E-264	1.55E+01	macrophages	VEGFA
MAP3K81	3.01E-291	1.114324377	0.391	0.027	1.85E-286	1.45E+01	macrophages	MAP3K8
CD37	3.34E-91	1.106878886	0.505	0.138	2.05E-86	3.66E+00	macrophages	CD37
ZFAND51	1.96E-28	1.098211777	0.63	0.485	1.20E-23	1.30E+00	macrophages	ZFAND5
HLA-E1	5.82E-57	1.094720724	0.333	0.086	3.57E-52	3.87E+00	macrophages	HLA-E
NFKB1	1.85E-104	1.094193086	0.391	0.074	1.13E-99	5.28E+00	macrophages	NFKB1
SOD21	1.42E-31	1.086753643	0.623	0.5	8.71E-27	1.25E+00	macrophages	SOD2
MSN1	4.79E-159	1.085204053	0.455	0.067	2.94E-154	6.79E+00	macrophages	MSN
RASGEF1B	0	1.085114794	0.384	0.017	0	22.58823529	macrophages	RASGEF1B
MBNL11	3.37E-102	1.084749967	0.458	0.101	2.07E-97	4.53E+00	macrophages	MBNL1
GRN1	5.57E-91	1.079813361	0.505	0.132	3.41E-86	3.83E+00	macrophages	GRN
DAB21	7.00E-97	1.076804717	0.313	0.049	4.29E-92	6.39E+00	macrophages	DAB2
LMNA1	7.34E-34	1.076404098	0.582	0.37	4.50E-29	1.57E+00	macrophages	LMNA
ELF11	5.22E-96	1.071064385	0.458	0.108	3.20E-91	4.24E+00	macrophages	ELF1
CH25H	0	1.069550119	0.209	0.005	0	41.8	macrophages	CH25H
IQGAP11	2.63E-64	1.067154355	0.492	0.17	1.61E-59	2.89E+00	macrophages	IQGAP1
CD4	6.77E-216	1.062656913	0.34	0.028	4.16E-211	1.21E+01	macrophages	CD4
PTMA2	5.03E-90	1.061424259	0.953	0.653	3.08E-85	1.46E+00	macrophages	PTMA
C1orf162	9.66E-91	1.05429294	0.418	0.096	5.92E-86	4.35E+00	macrophages	C1orf162
CHMP1B	4.13E-21	1.049897432	0.391	0.224	2.53E-16	1.75E+00	macrophages	CHMP1B
DUSP51	5.01E-74	1.04882617	0.38	0.091	3.07E-69	4.18E+00	macrophages	DUSP5
LYN	0	1.046890537	0.367	0.021	0	17.47619048	macrophages	LYN
CX3CR1	0	1.046613869	0.323	0.004	0	80.75	macrophages	CX3CR1
KCTD121	4.53E-119	1.04279207	0.455	0.085	2.78E-114	5.35E+00	macrophages	KCTD12
RNASE6	0	1.042400322	0.327	0.001	0	327	macrophages	RNASE6
COTL1	9.74E-88	1.036862638	0.387	0.083	5.97E-83	4.66E+00	macrophages	COTL1
MT.ND31	4.14E-30	1.033896358	0.576	0.368	2.54E-25	1.57E+00	macrophages	MT.ND3
MT.ND21	2.40E-27	1.033648193	0.572	0.383	1.47E-22	1.49E+00	macrophages	MT.ND2
BHLHE41	1.57E-98	1.022881543	0.269	0.037	9.65E-94	7.27E+00	macrophages	BHLHE41
STAB1	5.77E-255	1.022603988	0.273	0.015	3.54E-250	1.82E+01	macrophages	STAB1
RPL34P181	3.53E-31	1.022001268	0.421	0.205	2.17E-26	2.05E+00	macrophages	RPL34P18
FTH1P20	2.68E-96	1.017249901	0.276	0.04	1.64E-91	6.90E+00	macrophages	FTH1P20
RP11.475C16.1	9.68E-28	1.010966217	0.384	0.186	5.94E-23	2.06E+00	macrophages	RP11.475C16.1
C10orf54	8.50E-269	1.010034347	0.337	0.021	5.22E-264	1.60E+01	macrophages	C10orf54
PTPRE	0	1.008611499	0.354	0.018	0	19.66666667	macrophages	PTPRE
IL10RA	0	1.001586335	0.35	0.002	0	175	macrophages	IL10RA
TPSB2	7.87E-60	3.477935867	0.34	0.02	4.83E-55	1.70E+01	mastocyte	TPSB2
TPSAB1	0	2.561304711	0.3	0.002	0	150	mastocyte	TPSAB1
CD691	7.98E-38	2.357795113	0.18	0.009	4.90E-33	2.00E+01	mastocyte	CD69

ANXA14	0.005486279	1.668256773	0.18	0.083	1	2.168674699	mastocyte	ANXA1
CPA3	0	1.451265788	0.24	0.001	0	240	mastocyte	CPA3
CTSG	1.27E-16	1.380507768	0.2	0.024	7.78E-12	8.33E+00	mastocyte	CTSG
MS4A2	1.02E-90	1.078382808	0.18	0.004	6.24E-86	4.50E+01	mastocyte	MS4A2
PTGDS1	0	2.844915854	0.979	0.664	0	1.47439759	PTM_cells	PTGDS
ACTA2	0	2.784577725	0.912	0.149	0	6.120805369	PTM_cells	ACTA2
IGFBP72	0	2.623014649	0.957	0.253	0	3.782608696	PTM_cells	IGFBP7
APOE1	0	2.44562663	0.795	0.159	0	5	PTM_cells	APOE
MYH11	0	2.388047245	0.894	0.161	0	5.552795031	PTM_cells	MYH11
TMSB4X3	0	2.229472121	0.946	0.307	0	3.081433225	PTM_cells	TMSB4X
FHL21	0	2.204024482	0.816	0.079	0	10.32911392	PTM_cells	FHL2
MYL9	0	2.197610697	0.85	0.128	0	6.640625	PTM_cells	MYL9
TPM2	0	2.160595245	0.846	0.115	0	7.356521739	PTM_cells	TPM2
ENG2	0	2.132021529	0.848	0.072	0	11.77777778	PTM_cells	ENG
TIMP32	0	2.040137855	0.861	0.142	0	6.063380282	PTM_cells	TIMP3
TAGLN	0	1.97718524	0.816	0.109	0	7.486238532	PTM_cells	TAGLN
TIMP12	0	1.925981891	0.816	0.135	0	6.044444444	PTM_cells	TIMP1
AEBP11	0	1.919894138	0.806	0.058	0	13.89655172	PTM_cells	AEBP1
O3-Jun	0	1.882398457	0.853	0.346	0	2.465317919	PTM_cells	JUN
KRT17	0	1.882168871	0.448	0.008	0	56	PTM_cells	KRT17
SPARCL12	0	1.881156274	0.893	0.13	0	6.869230769	PTM_cells	SPARCL1
SMOC21	0	1.832348459	0.797	0.053	0	15.03773585	PTM_cells	SMOC2
MALAT13	5.19E-267	1.821771164	0.916	0.834	3.18E-262	1.10E+00	PTM_cells	MALAT1
DPEP11	0	1.81505935	0.757	0.14	0	5.407142857	PTM_cells	DPEP1
CALD11	0	1.809779788	0.874	0.206	0	4.242718447	PTM_cells	CALD1
BGN	0	1.771590992	0.749	0.058	0	12.9137931	PTM_cells	BGN
SPARC2	0	1.756558311	0.875	0.217	0	4.032258065	PTM_cells	SPARC
TCEAL41	0	1.749241869	0.807	0.161	0	5.01242236	PTM_cells	TCEAL4
NEAT13	0	1.725348958	0.65	0.174	0	3.735632184	PTM_cells	NEAT1
NR2F22	0	1.720345429	0.794	0.137	0	5.795620438	PTM_cells	NR2F2
RPL103	0	1.691891036	0.926	0.337	0	2.747774481	PTM_cells	RPL10
MEG31	0	1.679783919	0.607	0.161	0	3.770186335	PTM_cells	MEG3
FOS3	0	1.663146346	0.856	0.285	0	3.003508772	PTM_cells	FOS
OSR21	0	1.65191603	0.753	0.082	0	9.182926829	PTM_cells	OSR2
C11orf961	0	1.650661529	0.778	0.251	0	3.099601594	PTM_cells	C11orf96
MYLK	0	1.632184269	0.761	0.168	0	4.529761905	PTM_cells	MYLK
LGALS11	0	1.628234752	0.821	0.177	0	4.638418079	PTM_cells	LGALS1
TPM1	0	1.626326199	0.788	0.177	0	4.451977401	PTM_cells	TPM1
MYL62	0	1.607100452	0.928	0.651	0	1.425499232	PTM_cells	MYL6
JUNB3	0	1.587374251	0.842	0.324	0	2.598765432	PTM_cells	JUNB
MGP2	0	1.577268781	0.859	0.133	0	6.458646617	PTM_cells	MGP
ITM2B3	0	1.553774535	0.864	0.299	0	2.889632107	PTM_cells	ITM2B
COL15A12	0	1.534470703	0.738	0.099	0	7.454545455	PTM_cells	COL15A1
TIMP21	0	1.50552163	0.847	0.402	0	2.106965174	PTM_cells	TIMP2
CYR611	0	1.494852645	0.66	0.089	0	7.415730337	PTM_cells	CYR61
TNS11	0	1.489337695	0.732	0.074	0	9.891891892	PTM_cells	TNS1
FTL3	0	1.488618109	0.905	0.509	0	1.777996071	PTM_cells	FTL
MMP21	0	1.477476529	0.747	0.154	0	4.850649351	PTM_cells	MMP2
FOSB3	0	1.472847267	0.782	0.321	0	2.436137072	PTM_cells	FOSB
PTMS2	0	1.466560039	0.795	0.185	0	4.297297297	PTM_cells	PTMS
RPS4X3	0	1.46348975	0.898	0.321	0	2.797507788	PTM_cells	RPS4X
FBLN51	0	1.451601023	0.708	0.065	0	10.89230769	PTM_cells	FBLN5
TSHZ21	0	1.438153166	0.699	0.079	0	8.848101266	PTM_cells	TSHZ2
MFAP4	0	1.435472167	0.63	0.026	0	24.23076923	PTM_cells	MFAP4
CD633	0	1.422326647	0.847	0.264	0	3.208333333	PTM_cells	CD63
LAMC31	0	1.417035348	0.684	0.043	0	15.90697674	PTM_cells	LAMC3
APOD1	0	1.416653808	0.667	0.062	0	10.75806452	PTM_cells	APOD
CPE1	0	1.387968129	0.777	0.185	0	4.2	PTM_cells	CPE
ACTB3	0	1.387559715	0.907	0.57	0	1.59122807	PTM_cells	ACTB
MAGED21	0	1.383574062	0.74	0.11	0	6.727272727	PTM_cells	MAGED2
EGR13	0	1.383257295	0.743	0.239	0	3.108786611	PTM_cells	EGR1
RPL13A3	0	1.375600855	0.939	0.727	0	1.291609354	PTM_cells	RPL13A
KRT131	0	1.370775087	0.447	0.045	0	9.933333333	PTM_cells	KRT13
BST23	0	1.357673225	0.73	0.083	0	8.795180723	PTM_cells	BST2
IGFBP61	0	1.339127437	0.632	0.07	0	9.028571429	PTM_cells	IGFBP6
ITGB11	0	1.331735709	0.788	0.187	0	4.213903743	PTM_cells	ITGB1
NUPR11	0	1.330807205	0.724	0.109	0	6.642201835	PTM_cells	NUPR1
TPM42	0	1.311770479	0.725	0.213	0	3.403755869	PTM_cells	TPM4
MT-ND52	0	1.310106634	0.735	0.275	0	2.672727273	PTM_cells	MT-ND5
IER23	0	1.300509018	0.664	0.155	0	4.283870968	PTM_cells	IER2
ZFP36L13	0	1.288427536	0.805	0.377	0	2.135278515	PTM_cells	ZFP36L1
RPS83	0	1.285029456	0.928	0.768	0	1.208333333	PTM_cells	RPS8
RASD1	0	1.279059136	0.591	0.045	0	13.13333333	PTM_cells	RASD1
RPL10A3	0	1.274242792	0.902	0.651	0	1.385560676	PTM_cells	RPL10A
F3	0	1.273254602	0.637	0.052	0	12.25	PTM_cells	F3

VCAN1	0	1.268032218	0.595	0.046	0	12.93478261	PTM_cells	VCAN
SFRP41	0	1.261199306	0.58	0.027	0	21.48148148	PTM_cells	SFRP4
LTBP41	0	1.246337763	0.778	0.129	0	6.031007752	PTM_cells	LTBP4
ABLIM11	0	1.243445053	0.716	0.265	0	2.701886792	PTM_cells	ABLIM1
EEF1A13	0	1.237807136	0.978	0.922	0	1.060737527	PTM_cells	EEF1A1
COL1A11	0	1.236660109	0.701	0.102	0	6.87254902	PTM_cells	COL1A1
FLNA1	0	1.225571219	0.733	0.088	0	8.329545455	PTM_cells	FLNA
MT-CYB3	1.43E-296	1.221267892	0.786	0.378	8.77E-292	2.08E+00	PTM_cells	MT-CYB
GADD45B3	0	1.21634598	0.716	0.166	0	4.313253012	PTM_cells	GADD45B
MT-ATP63	4.01E-266	1.215399622	0.789	0.417	2.46E-261	1.89E+00	PTM_cells	MT-ATP6
RPL123	0	1.211985459	0.881	0.623	0	1.414125201	PTM_cells	RPL12
IFITM33	0	1.205168587	0.811	0.166	0	4.885542169	PTM_cells	IFITM3
GSTP13	0	1.200474621	0.738	0.145	0	5.089655172	PTM_cells	GSTP1
DPYSL31	0	1.193359995	0.625	0.092	0	6.793478261	PTM_cells	DPYSL3
HSPB12	0	1.190156823	0.722	0.196	0	3.683673469	PTM_cells	HSPB1
ZFP36L23	0	1.190114711	0.682	0.121	0	5.636363636	PTM_cells	ZFP36L2
COL1A21	0	1.189935716	0.76	0.153	0	4.967320261	PTM_cells	COL1A2
PEMT	0	1.187249853	0.61	0.082	0	7.43902439	PTM_cells	PEMT
COL6A21	0	1.183977619	0.739	0.093	0	7.946236559	PTM_cells	COL6A2
RPL183	0	1.174511111	0.881	0.558	0	1.578853047	PTM_cells	RPL18
RPL393	0	1.172845435	0.794	0.256	0	3.1015625	PTM_cells	RPL39
GSN3	0	1.167628153	0.75	0.188	0	3.989361702	PTM_cells	GSN
PLAC91	0	1.163432819	0.606	0.061	0	9.93442623	PTM_cells	PLAC9
IGFBP21	0	1.16320792	0.538	0.115	0	4.67826087	PTM_cells	IGFBP2
SPTBN12	0	1.158599439	0.764	0.281	0	2.71886121	PTM_cells	SPTBN1
CTGF1	0	1.155092412	0.483	0.051	0	9.470588235	PTM_cells	CTGF
RPL214	0	1.153922848	0.912	0.455	0	2.004395604	PTM_cells	RPL21
SSPN1	0	1.146466351	0.653	0.069	0	9.463768116	PTM_cells	SSPN
VIM3	0	1.145861632	0.912	0.429	0	2.125874126	PTM_cells	VIM
RPLP13	0	1.143913491	0.948	0.757	0	1.252311757	PTM_cells	RPLP1
NGFRAP11	0	1.143372496	0.617	0.115	0	5.365217391	PTM_cells	NGFRAP1
DCN1	0	1.142679619	0.842	0.121	0	6.958677686	PTM_cells	DCN
RHOB3	0	1.13366186	0.724	0.217	0	3.33640553	PTM_cells	RHOB
RPL18A4	0	1.130735533	0.85	0.396	0	2.146464646	PTM_cells	RPL18A
NR4A12	2.27E-301	1.126275614	0.634	0.242	1.39E-296	2.62E+00	PTM_cells	NR4A1
ZFP363	0	1.125799009	0.75	0.218	0	3.440366972	PTM_cells	ZFP36
PRDX22	0	1.123196057	0.646	0.083	0	7.78313253	PTM_cells	PRDX2
B2M3	0	1.12120889	0.888	0.22	0	4.036363636	PTM_cells	B2M
RPL413	0	1.114402186	0.93	0.78	0	1.192307692	PTM_cells	RPL41
CSRP1	0	1.112255012	0.613	0.092	0	6.663043478	PTM_cells	CSRP1
RPL63	0	1.108946256	0.891	0.673	0	1.323922734	PTM_cells	RPL6
EID12	0	1.105594623	0.78	0.345	0	2.260869565	PTM_cells	EID1
S100A63	0	1.104436364	0.691	0.105	0	6.580952381	PTM_cells	S100A6
PRPS21	0	1.103260502	0.609	0.071	0	8.577464789	PTM_cells	PRPS2
PPIB1	0	1.100648308	0.695	0.273	0	2.545787546	PTM_cells	PPIB
DUSP13	0	1.093369603	0.671	0.161	0	4.167701863	PTM_cells	DUSP1
C1S1	0	1.093098148	0.681	0.076	0	8.960526316	PTM_cells	C1S
CRISPLD21	0	1.092630202	0.612	0.1	0	6.12	PTM_cells	CRISPLD2
SERPINF11	0	1.089352973	0.698	0.122	0	5.721311475	PTM_cells	SERPINF1
NEXN	0	1.086496872	0.584	0.09	0	6.488888889	PTM_cells	NEXN
COL3A11	0	1.076415256	0.637	0.151	0	4.218543046	PTM_cells	COL3A1
MT-ND43	7.73E-266	1.073596272	0.788	0.4	4.74E-261	1.97E+00	PTM_cells	MT-ND4
CAV12	0	1.072208093	0.671	0.077	0	8.714285714	PTM_cells	CAV1
NDUFA4	4.82E-267	1.067132426	0.787	0.513	2.95E-262	1.53E+00	PTM_cells	NDUFA4
KANK21	0	1.061919045	0.591	0.053	0	11.1509434	PTM_cells	KANK2
CD992	0	1.059604266	0.742	0.169	0	4.390532544	PTM_cells	CD99
AHNAK3	0	1.059266749	0.696	0.145	0	4.8	PTM_cells	AHNAK
PTCH11	0	1.059134645	0.601	0.175	0	3.434285714	PTM_cells	PTCH1
OGN1	0	1.057936178	0.607	0.052	0	11.67307692	PTM_cells	OGN
CST32	0	1.056127669	0.859	0.41	0	2.095121951	PTM_cells	CST3
MORF4L21	0	1.056018973	0.696	0.3	0	2.32	PTM_cells	MORF4L2
PTRF2	0	1.055697097	0.671	0.092	0	7.293478261	PTM_cells	PTRF
LGALS3BP1	0	1.042971349	0.663	0.091	0	7.285714286	PTM_cells	LGALS3BP
FXYD61	0	1.04226348	0.647	0.087	0	7.436781609	PTM_cells	FXYD6
BTG23	0	1.042177003	0.581	0.11	0	5.281818182	PTM_cells	BTG2
KLF23	0	1.039536757	0.622	0.145	0	4.289655172	PTM_cells	KLF2
PLPP31	0	1.037803952	0.671	0.095	0	7.063157895	PTM_cells	PLPP3
IFI63	0	1.036257666	0.609	0.071	0	8.577464789	PTM_cells	IFI6
CD812	0	1.035122196	0.706	0.298	0	2.369127517	PTM_cells	CD81
NUCKS12	8.03E-301	1.031307733	0.741	0.385	4.93E-296	1.92E+00	PTM_cells	NUCKS1
DSTN	0	1.026075228	0.84	0.547	0	1.535648995	PTM_cells	DSTN
NPTX2	0	1.022276962	0.564	0.109	0	5.174311927	PTM_cells	NPTX2
PPP1R14A1	0	1.019924142	0.634	0.127	0	4.992125984	PTM_cells	PPP1R14A
CCNL13	4.77E-201	1.013492155	0.627	0.333	2.92E-196	1.88E+00	PTM_cells	CCNL1
PPP1R15A3	0	1.012865435	0.674	0.173	0	3.895953757	PTM_cells	PPP1R15A



NBL11	0	1.010804278	0.622	0.073	0	8.520547945	PTM_cells	NBL1
GNB2L12	1.73E-214	1.007792381	0.712	0.459	1.06E-209	1.55E+00	PTM_cells	GNB2L1
LAMB11	0	1.005567139	0.536	0.065	0	8.246153846	PTM_cells	LAMB1
LDHB1	0	1.005334421	0.688	0.198	0	3.474747475	PTM_cells	LDHB
SMOC1	0	1.00085494	0.543	0.057	0	9.526315789	PTM_cells	SMOC1
RNASE12	0	2.660771869	0.733	0.101	0	7.257425743	Sertoli_cells	RNASE1
APOA1	0	2.644927727	0.742	0.108	0	6.87037037	Sertoli_cells	APOA1
FATE1	0	2.547521129	0.81	0.068	0	11.91176471	Sertoli_cells	FATE1
DEFB119	0	2.498591255	0.761	0.117	0	6.504273504	Sertoli_cells	DEFB119
CLU1	3.66E-303	2.498270374	0.746	0.657	2.25E-298	1.14E+00	Sertoli_cells	CLU
TMSB104	0	2.468101568	0.913	0.363	0	2.515151515	Sertoli_cells	TMSB10
CITED1	0	2.439601543	0.786	0.066	0	11.90909091	Sertoli_cells	CITED1
MIR202HG	0	2.322044523	0.701	0.05	0	14.02	Sertoli_cells	MIR202HG
MT.RNR11	3.55E-43	2.321435368	0.346	0.279	2.18E-38	1.24E+00	Sertoli_cells	MT.RNR1
HMGNS	0	2.212928893	0.702	0.052	0	13.5	Sertoli_cells	HMGNS
COPE	0	1.883784461	0.839	0.567	0	1.479717813	Sertoli_cells	COPE
EPPIN	0	1.848749457	0.588	0.039	0	15.07692308	Sertoli_cells	EPPIN
GSTA1	0	1.840676848	0.652	0.061	0	10.68852459	Sertoli_cells	GSTA1
MT.RNR22	1.60E-14	1.813507951	0.351	0.375	9.79E-10	9.36E-01	Sertoli_cells	MT.RNR2
SERPINA5	0	1.764638177	0.56	0.17	0	3.294117647	Sertoli_cells	SERPINA5
BEX1	0	1.757474279	0.59	0.053	0	11.13207547	Sertoli_cells	BEX1
SCRG1	0	1.75498241	0.507	0.065	0	7.8	Sertoli_cells	SCRG1
CST33	0	1.751189061	0.753	0.41	0	1.836585366	Sertoli_cells	CST3
DEFB123	0	1.738069001	0.527	0.023	0	22.91304348	Sertoli_cells	DEFB123
ALDH1A11	0	1.702596773	0.629	0.096	0	6.552083333	Sertoli_cells	ALDH1A1
CLDN11	0	1.700853586	0.5	0.067	0	7.462686567	Sertoli_cells	CLDN11
TCEAL5	0	1.698754185	0.576	0.036	0	16	Sertoli_cells	TCEAL5
ISYNA1	2.21E-303	1.621428085	0.661	0.434	1.36E-298	1.52E+00	Sertoli_cells	ISYNA1
MT.ND32	4.08E-14	1.581382315	0.35	0.372	2.50E-09	9.41E-01	Sertoli_cells	MT.ND3
CST9L	0	1.544770258	0.46	0.017	0	27.05882353	Sertoli_cells	CST9L
HMGNS	0	1.533685687	0.614	0.243	0	2.526748971	Sertoli_cells	HMGNS
MGST33	0	1.51625884	0.651	0.211	0	3.085308057	Sertoli_cells	MGST3
MARCKSL12	0	1.5073979	0.654	0.196	0	3.336734694	Sertoli_cells	MARCKSL1
PEG10	0	1.490407065	0.529	0.101	0	5.237623762	Sertoli_cells	PEG10
MT.CO32	2.32E-22	1.488920089	0.349	0.327	1.42E-17	1.07E+00	Sertoli_cells	MT.CO3
NGFRAP12	1.15E-280	1.485560125	0.399	0.122	7.03E-276	3.27E+00	Sertoli_cells	NGFRAP1
HOPX	0	1.451890941	0.484	0.084	0	5.761904762	Sertoli_cells	HOPX
SAT12	0	1.451107325	0.61	0.126	0	4.841269841	Sertoli_cells	SAT1
MTND1P232	2.43E-12	1.439525281	0.349	0.376	1.49E-07	9.28E-01	Sertoli_cells	MTND1P23
SPARC4	9.95E-260	1.436070644	0.524	0.23	6.10E-255	2.28E+00	Sertoli_cells	SPARC
LINC00684	0	1.415452186	0.386	0.015	0	25.73333333	Sertoli_cells	LINC00684
MT.CO22	2.50E-20	1.410658165	0.349	0.335	1.53E-15	1.04E+00	Sertoli_cells	MT.CO2
PRND	0	1.396905497	0.417	0.017	0	24.52941176	Sertoli_cells	PRND
MTCO1P121	3.54E-72	1.370483263	0.345	0.212	2.17E-67	1.63E+00	Sertoli_cells	MTCO1P12
CALM13	0	1.359704812	0.829	0.684	0	1.211988304	Sertoli_cells	CALM1
ACTB5	2.36E-299	1.35488999	0.765	0.575	1.45E-294	1.33E+00	Sertoli_cells	ACTB
PPP1R14A3	0	1.325597017	0.518	0.127	0	4.078740157	Sertoli_cells	PPP1R14A
DCXR	0	1.325108304	0.499	0.104	0	4.798076923	Sertoli_cells	DCXR
TUBB4A	0	1.320673713	0.402	0.037	0	10.86486486	Sertoli_cells	TUBB4A
MYL6B	2.15E-296	1.304155256	0.742	0.594	1.32E-291	1.25E+00	Sertoli_cells	MYL6B
LGALS13	0	1.291021299	0.63	0.18	0	3.5	Sertoli_cells	LGALS1
CHGA	0	1.287143666	0.397	0.056	0	7.089285714	Sertoli_cells	CHGA
SMIM1	0	1.275539573	0.426	0.069	0	6.173913043	Sertoli_cells	SMIM1
SOX9	0	1.263175205	0.446	0.09	0	4.955555556	Sertoli_cells	SOX9
RPL395	0	1.260021219	0.694	0.254	0	2.732283465	Sertoli_cells	RPL39
SUSD3	0	1.257274357	0.407	0.021	0	19.38095238	Sertoli_cells	SUSD3
MT.TM	1.47E-266	1.243438174	0.282	0.062	9.00E-262	4.55E+00	Sertoli_cells	MT.TM
NUPR13	0	1.226627096	0.479	0.116	0	4.129310345	Sertoli_cells	NUPR1
RBP1	0	1.207582108	0.388	0.036	0	10.77777778	Sertoli_cells	RBP1
TAGLN23	0	1.200322266	0.521	0.192	0	2.713541667	Sertoli_cells	TAGLN2
BEX2	0	1.199662392	0.401	0.053	0	7.566037736	Sertoli_cells	BEX2
HPRT11	0	1.191150444	0.509	0.141	0	3.609929078	Sertoli_cells	HPRT1
FDXR	0	1.187755739	0.43	0.088	0	4.886363636	Sertoli_cells	FDXR
TCEAL2	0	1.186787409	0.396	0.034	0	11.64705882	Sertoli_cells	TCEAL2
MT-ND15	5.82E-41	1.182833515	0.488	0.406	3.57E-36	1.20E+00	Sertoli_cells	MT-ND1
06-Sep	0	1.18091148	0.414	0.054	0	7.666666667	Sertoli_cells	06-Sep
CCDC28B	0	1.171229551	0.4	0.07	0	5.714285714	Sertoli_cells	CCDC28B
PRDX6	2.40E-276	1.169927424	0.744	0.625	1.47E-271	1.19E+00	Sertoli_cells	PRDX6
SYNE22	4.83E-292	1.156232484	0.401	0.117	2.96E-287	3.43E+00	Sertoli_cells	SYNE2
AARD	6.23E-265	1.152473007	0.475	0.186	3.82E-260	2.55E+00	Sertoli_cells	AARD
SLC25A41	1.02E-204	1.144310993	0.436	0.191	6.25E-200	2.28E+00	Sertoli_cells	SLC25A4
RPL415	0	1.137756244	0.895	0.78	0	1.147435897	Sertoli_cells	RPL41
SMARCA11	0	1.130729821	0.455	0.116	0	3.922413793	Sertoli_cells	SMARCA1
MT.ND12	8.36E-09	1.130242518	0.351	0.381	0.000512786	0.921259843	Sertoli_cells	MT.ND1
GSTA2	0	1.12712618	0.352	0.014	0	25.14285714	Sertoli_cells	GSTA2

GMPR	0	1.115784926	0.399	0.096	0	4.15625	Sertoli_cells	GMPR
MT.CO12	6.59E-15	1.107295219	0.35	0.339	4.04E-10	1.03E+00	Sertoli_cells	MT.CO1
14-Sep	0	1.0985805	0.374	0.016	0	23.375	Sertoli_cells	14-Sep
EGR15	3.04E-68	1.090456843	0.386	0.255	1.87E-63	1.51E+00	Sertoli_cells	EGR1
SDC4	0	1.081637305	0.337	0.021	0	16.04761905	Sertoli_cells	SDC4
KIAA1210	0	1.081445973	0.36	0.018	0	20	Sertoli_cells	KIAA1210
MAP1B3	7.07E-241	1.076764263	0.416	0.146	4.34E-236	2.85E+00	Sertoli_cells	MAP1B
HSPA1A5	3.51E-19	1.074970248	0.369	0.363	2.15E-14	1.02E+00	Sertoli_cells	HSPA1A
SMIM10	0	1.067626117	0.372	0.048	0	7.75	Sertoli_cells	SMIM10
C4orf48	1.55E-31	1.058981249	0.327	0.267	9.54E-27	1.22E+00	Sertoli_cells	C4orf48
TMEM130	0	1.057319313	0.331	0.018	0	18.38888889	Sertoli_cells	TMEM130
SLC7A5	0	1.056590348	0.34	0.033	0	10.3030303	Sertoli_cells	SLC7A5
RPS4X5	0	1.05213984	0.81	0.318	0	2.547169811	Sertoli_cells	RPS4X
GAMT1	0	1.043945392	0.387	0.091	0	4.252747253	Sertoli_cells	GAMT
MYL64	8.73E-306	1.043650028	0.802	0.656	5.35E-301	1.22E+00	Sertoli_cells	MYL6
REEP1	2.75E-267	1.03873483	0.362	0.107	1.69E-262	3.38E+00	Sertoli_cells	REEP1
PEBP11	1.97E-275	1.035576138	0.767	0.595	1.21E-270	1.29E+00	Sertoli_cells	PEBP1
GATM1	2.60E-278	1.035510004	0.377	0.112	1.59E-273	3.37E+00	Sertoli_cells	GATM
HMGCS2	0	1.030449538	0.338	0.015	0	22.53333333	Sertoli_cells	HMGCS2
CD994	7.65E-229	1.022499757	0.468	0.178	4.69E-224	2.63E+00	Sertoli_cells	CD99
TSPYL2	2.24E-187	1.021694125	0.458	0.211	1.38E-182	2.17E+00	Sertoli_cells	TSPYL2
INHA	0	1.021314718	0.329	0.012	0	27.41666667	Sertoli_cells	INHA
CCDC85B3	0	1.020638822	0.405	0.106	0	3.820754717	Sertoli_cells	CCDC85B
TUBA1A5	7.71E-293	1.016199836	0.512	0.183	4.73E-288	2.80E+00	Sertoli_cells	TUBA1A
S100A161	0	1.015636066	0.343	0.049	0	7	Sertoli_cells	S100A16
BEX4	0	1.012726271	0.368	0.083	0	4.43373494	Sertoli_cells	BEX4
MT.CYB3	3.13E-15	1.009184391	0.348	0.334	1.92E-10	1.04E+00	Sertoli_cells	MT.CYB
MRO	0	1.002312532	0.336	0.011	0	30.54545455	Sertoli_cells	MRO
TNP1	0	2.014407028	0.998	0.985	0	1.01319797	spermatid	TNP1
PRM2	0	1.966700491	0.999	0.99	0	1.009090909	spermatid	PRM2
CCDC168	0	1.796779127	0.636	0.201	0	3.164179104	spermatid	CCDC168
AKAP4	0	1.711122018	0.779	0.364	0	2.14010989	spermatid	AKAP4
PRM1	0	1.688848862	0.997	0.974	0	1.023613963	spermatid	PRM1
LINC00919	0	1.681276077	0.76	0.417	0	1.822541966	spermatid	LINC00919
LELP1	0	1.668992653	0.939	0.81	0	1.159259259	spermatid	LELP1
FAM71A	0	1.667801309	0.714	0.252	0	2.833333333	spermatid	FAM71A
OAZ3	0	1.666256471	0.859	0.498	0	1.724899598	spermatid	OAZ3
SH3RF2	0	1.616578892	0.875	0.517	0	1.69245648	spermatid	SH3RF2
AC007557.1	0	1.600462347	0.88	0.575	0	1.530434783	spermatid	AC007557.1
HEMGN	0	1.555570117	0.762	0.286	0	2.664335664	spermatid	HEMGN
ODF1	0	1.546165614	0.691	0.436	0	1.584862385	spermatid	ODF1
HMGB4	0	1.542191119	0.986	0.879	0	1.121729238	spermatid	HMGB4
C10orf62	0	1.531866879	0.86	0.435	0	1.977011494	spermatid	C10orf62
TSSK6	0	1.525452937	0.762	0.309	0	2.466019417	spermatid	TSSK6
GSG1	0	1.503359612	0.909	0.591	0	1.538071066	spermatid	GSG1
FAM71B	0	1.491643784	0.683	0.159	0	4.295597484	spermatid	FAM71B
CCSER2	0	1.461843158	0.844	0.49	0	1.72244898	spermatid	CCSER2
C20orf141	0	1.445978799	0.804	0.319	0	2.520376176	spermatid	C20orf141
RNF151	0	1.442648281	0.822	0.446	0	1.843049327	spermatid	RNF151
SPATA42	0	1.439346913	0.814	0.365	0	2.230136986	spermatid	SPATA42
SAMD4A	0	1.433617656	0.834	0.421	0	1.980997625	spermatid	SAMD4A
GLUL	0	1.426578449	0.866	0.588	0	1.472789116	spermatid	GLUL
AKAP1	0	1.423981567	0.752	0.308	0	2.441558442	spermatid	AKAP1
SPATA3	0	1.414294077	0.804	0.374	0	2.14973262	spermatid	SPATA3
CABS1	0	1.404886202	0.813	0.34	0	2.391176471	spermatid	CABS1
TSPAN16	0	1.398377727	0.816	0.362	0	2.254143646	spermatid	TSPAN16
NUPR2	0	1.395640917	0.959	0.699	0	1.371959943	spermatid	NUPR2
IQCF2	0	1.37965009	0.78	0.347	0	2.247838617	spermatid	IQCF2
C2orf57	0	1.361834212	0.74	0.239	0	3.09623431	spermatid	C2orf57
TP53TG5	0	1.349539182	0.644	0.174	0	3.701149425	spermatid	TP53TG5
SMCP	0	1.323666409	0.944	0.668	0	1.413173653	spermatid	SMCP
GTSF1L	0	1.31813037	0.879	0.516	0	1.703488372	spermatid	GTSF1L
FSCN3	0	1.316819004	0.674	0.171	0	3.941520468	spermatid	FSCN3
PCP2	0	1.314857547	0.8	0.344	0	2.325581395	spermatid	PCP2
C20orf144	0	1.302913274	0.72	0.416	0	1.730769231	spermatid	C20orf144
IRGC	0	1.301348	0.828	0.423	0	1.957446809	spermatid	IRGC
CAPZA3	0	1.301324338	0.863	0.519	0	1.662813102	spermatid	CAPZA3
NFKBIB	0	1.300216717	0.729	0.321	0	2.271028037	spermatid	NFKBIB
CXCL16	0	1.293242388	0.808	0.417	0	1.93764988	spermatid	CXCL16
CLPB	0	1.29262138	0.84	0.464	0	1.810344828	spermatid	CLPB
FAM209A	0	1.291265643	0.751	0.423	0	1.775413712	spermatid	FAM209A
GAPDHS	0	1.288620756	0.879	0.495	0	1.775757576	spermatid	GAPDHS
CYLC2	0	1.286780758	0.875	0.485	0	1.804123711	spermatid	CYLC2
TPPP2	0	1.285266441	0.872	0.519	0	1.680154143	spermatid	TPPP2
CCDC91	0	1.280548747	0.902	0.606	0	1.488448845	spermatid	CCDC91

C17orf105	0	1.266197216	0.777	0.381	0	2.039370079	spermatid	C17orf105
ACTL7A	0	1.265786792	0.854	0.461	0	1.852494577	spermatid	ACTL7A
DCUN1D1	0	1.25862545	0.903	0.687	0	1.31441048	spermatid	DCUN1D1
IQCF1	0	1.25443413	0.795	0.396	0	2.007575758	spermatid	IQCF1
DNAJB8	0	1.250733728	0.787	0.339	0	2.321533923	spermatid	DNAJB8
UBQLN3	0	1.250221642	0.793	0.385	0	2.05974026	spermatid	UBQLN3
PRSS37	0	1.245352344	0.603	0.123	0	4.902439024	spermatid	PRSS37
ZNF683	0	1.24297888	0.684	0.183	0	3.737704918	spermatid	ZNF683
SPERT	0	1.240150959	0.758	0.306	0	2.477124183	spermatid	SPERT
HOOK1	0	1.238979543	0.778	0.44	0	1.768181818	spermatid	HOOK1
HBB	2.33E-08	1.224967452	0.043	0.03	0.001427552	1.433333333	spermatid	HBB
FAM71C	0	1.224579404	0.609	0.106	0	5.745283019	spermatid	FAM71C
IQCF3	0	1.222496065	0.8	0.371	0	2.156334232	spermatid	IQCF3
CRISP2	0	1.221798355	0.965	0.81	0	1.191358025	spermatid	CRISP2
LINC00608	0	1.220887859	0.744	0.269	0	2.765799257	spermatid	LINC00608
TSKS	0	1.214546708	0.787	0.392	0	2.007653061	spermatid	TSKS
LINC00238	0	1.214375803	0.373	0.088	0	4.238636364	spermatid	LINC00238
OXCT2	0	1.212432967	0.68	0.144	0	4.722222222	spermatid	OXCT2
C16orf82	0	1.210500513	0.789	0.391	0	2.017902813	spermatid	C16orf82
FAM187B	0	1.197135094	0.657	0.155	0	4.238709677	spermatid	FAM187B
FAM209B	0	1.193910109	0.737	0.434	0	1.698156682	spermatid	FAM209B
DNAJC4	0	1.193855079	0.786	0.385	0	2.041558442	spermatid	DNAJC4
FAM46C	0	1.193299674	0.761	0.376	0	2.02393617	spermatid	FAM46C
PROCA1	0	1.192182995	0.868	0.621	0	1.397745572	spermatid	PROCA1
HSPA1L	0	1.191018424	0.663	0.234	0	2.833333333	spermatid	HSPA1L
TSSK2	0	1.189296809	0.814	0.438	0	1.858447489	spermatid	TSSK2
H1FNT	0	1.186979413	0.867	0.488	0	1.776639344	spermatid	H1FNT
FAM71F1	0	1.184216604	0.778	0.391	0	1.989769821	spermatid	FAM71F1
SCP2D1	0	1.183189377	0.659	0.178	0	3.702247191	spermatid	SCP2D1
ACE	0	1.182582294	0.778	0.379	0	2.052770449	spermatid	ACE
SPATA12	0	1.179719401	0.692	0.174	0	3.977011494	spermatid	SPATA12
SMKR1	0	1.179708153	0.884	0.575	0	1.537391304	spermatid	SMKR1
LEMD1	0	1.179408494	0.76	0.324	0	2.345679012	spermatid	LEMD1
PRSS58	0	1.178982652	0.547	0.117	0	4.675213675	spermatid	PRSS58
OTUB2	0	1.176821516	0.67	0.233	0	2.875536481	spermatid	OTUB2
CLMN	0	1.175457952	0.66	0.26	0	2.538461538	spermatid	CLMN
TFAM	0	1.175301117	0.73	0.424	0	1.721698113	spermatid	TFAM
ACSBG2	0	1.173266981	0.778	0.383	0	2.031331593	spermatid	ACSBG2
ISG20L2	0	1.171852002	0.77	0.436	0	1.766055046	spermatid	ISG20L2
ACTL9	0	1.170685137	0.744	0.31	0	2.4	spermatid	ACTL9
SPATA18	0	1.169745379	0.755	0.349	0	2.163323782	spermatid	SPATA18
C10orf82	0	1.168513507	0.76	0.361	0	2.105263158	spermatid	C10orf82
C17orf74	0	1.16709969	0.681	0.186	0	3.661290323	spermatid	C17orf74
TEX35	0	1.16492325	0.771	0.386	0	1.997409326	spermatid	TEX35
C1orf100	0	1.159907695	0.655	0.256	0	2.55859375	spermatid	C1orf100
SPTY2D1.AS1	0	1.157466453	0.389	0.158	0	2.462025316	spermatid	SPTY2D1.AS1
ST6GALNAC2	0	1.155524459	0.74	0.333	0	2.222222222	spermatid	ST6GALNAC2
FNDC8	0	1.147612252	0.664	0.176	0	3.772727273	spermatid	FNDC8
FAM134B	0	1.146976817	0.734	0.275	0	2.669090909	spermatid	FAM134B
ACTRT2	0	1.143980063	0.839	0.435	0	1.928735632	spermatid	ACTRT2
CARHSP1	0	1.143749159	0.888	0.628	0	1.414012739	spermatid	CARHSP1
TMEM31	0	1.136454822	0.654	0.257	0	2.544747082	spermatid	TMEM31
TXNDC2	0	1.133497761	0.657	0.224	0	2.933035714	spermatid	TXNDC2
C10orf120	0	1.133141718	0.613	0.178	0	3.443820225	spermatid	C10orf120
CCDC70	0	1.131775041	0.805	0.374	0	2.152406417	spermatid	CCDC70
TEX37	0	1.1302264	0.631	0.159	0	3.968553459	spermatid	TEX37
TMEM191C	0	1.129825747	0.622	0.274	0	2.270072993	spermatid	TMEM191C
KIF2B	0	1.128023939	0.739	0.331	0	2.232628399	spermatid	KIF2B
TNP2	0	1.124094274	0.475	0.134	0	3.544776119	spermatid	TNP2
TEX38	0	1.123400653	0.903	0.531	0	1.700564972	spermatid	TEX38
SPATA20	0	1.12219738	0.78	0.399	0	1.954887218	spermatid	SPATA20
TUBA4A	0	1.121182489	0.657	0.188	0	3.494680851	spermatid	TUBA4A
FHL5	0	1.120662874	0.785	0.401	0	1.957605985	spermatid	FHL5
BANF2	0	1.119243498	0.708	0.273	0	2.593406593	spermatid	BANF2
TMCO5A	0	1.118417922	0.85	0.469	0	1.812366738	spermatid	TMCO5A
UBL4B	0	1.117262681	0.828	0.461	0	1.796095445	spermatid	UBL4B
LPIN1	0	1.116924348	0.708	0.326	0	2.171779141	spermatid	LPIN1
TRIM36	0	1.104152115	0.867	0.631	0	1.374009509	spermatid	TRIM36
IQGAP2	0	1.100035781	0.743	0.38	0	1.955263158	spermatid	IQGAP2
TSSK1B	0	1.096826745	0.743	0.321	0	2.314641745	spermatid	TSSK1B
EIF4E	0	1.095828168	0.771	0.492	0	1.567073171	spermatid	EIF4E
SPTY2D1-AS1	8.38E-277	1.095272159	0.506	0.437	5.14E-272	1.16E+00	spermatid	SPTY2D1-AS1
PHOSPHO1	0	1.085054286	0.592	0.162	0	3.654320988	spermatid	PHOSPHO1
C12orf54	0	1.08267786	0.674	0.291	0	2.316151203	spermatid	C12orf54
SPACA3	0	1.079896565	0.776	0.392	0	1.979591837	spermatid	SPACA3

CCDC185	0	1.07798541	0.573	0.164	0	3.493902439	spermatid	CCDC185
DNAJA4	0	1.075654541	0.775	0.451	0	1.718403548	spermatid	DNAJA4
CEP170	0	1.073410956	0.731	0.423	0	1.728132388	spermatid	CEP170
LINC01350	0	1.073018182	0.664	0.233	0	2.849785408	spermatid	LINC01350
C2orf88	0	1.070648098	0.72	0.449	0	1.603563474	spermatid	C2orf88
GLRX2	0	1.068347906	0.709	0.299	0	2.371237458	spermatid	GLRX2
NRDC	0	1.060098263	0.814	0.495	0	1.644444444	spermatid	NRDC
SPATA6	0	1.057958661	0.866	0.638	0	1.357366771	spermatid	SPATA6
FAM71E1	0	1.05581497	0.807	0.496	0	1.627016129	spermatid	FAM71E1
C9orf24	0	1.054342839	0.784	0.442	0	1.773755656	spermatid	C9orf24
RFPL3S	0	1.053985307	0.707	0.316	0	2.237341772	spermatid	RFPL3S
CCIN	0	1.053195229	0.671	0.3	0	2.236666667	spermatid	CCIN
PRH1	0	1.051672237	0.672	0.263	0	2.55513308	spermatid	PRH1
FAM205C	0	1.050278917	0.601	0.113	0	5.318584071	spermatid	FAM205C
TMEM210	0	1.049457505	0.678	0.292	0	2.321917808	spermatid	TMEM210
G2E3	0	1.048216538	0.66	0.373	0	1.769436997	spermatid	G2E3
SPATA19	0	1.047736381	0.727	0.34	0	2.138235294	spermatid	SPATA19
TMEM190	0	1.047224605	0.491	0.206	0	2.383495146	spermatid	TMEM190
C11orf71	0	1.046552538	0.835	0.614	0	1.359934853	spermatid	C11orf71
ERICH2	0	1.041688401	0.772	0.527	0	1.464895636	spermatid	ERICH2
TMCO2	0	1.040163302	0.815	0.489	0	1.666666667	spermatid	TMCO2
MORN3	0	1.034700594	0.653	0.196	0	3.331632653	spermatid	MORN3
CABYR	0	1.033688586	0.897	0.652	0	1.375766871	spermatid	CABYR
PAQR7	0	1.032503837	0.675	0.261	0	2.586206897	spermatid	PAQR7
MS4A14	0	1.030389573	0.687	0.311	0	2.209003215	spermatid	MS4A14
FAM81B	0	1.027835823	0.795	0.416	0	1.911057692	spermatid	FAM81B
TEX26	0	1.027535738	0.697	0.337	0	2.068249258	spermatid	TEX26
AKAP3	0	1.021670657	0.756	0.517	0	1.462282398	spermatid	AKAP3
PSMF1	0	1.015951532	0.837	0.676	0	1.23816568	spermatid	PSMF1
BPIFA3	0	1.014622394	0.739	0.342	0	2.160818713	spermatid	BPIFA3
DNAJC5B	0	1.01451615	0.763	0.376	0	2.029255319	spermatid	DNAJC5B
SMIM6	0	1.013627189	0.648	0.225	0	2.88	spermatid	SMIM6
CCNY	0	1.013412591	0.792	0.549	0	1.442622951	spermatid	CCNY
ODF2	0	1.013253795	0.921	0.774	0	1.189922481	spermatid	ODF2
FAM229A	0	1.010992348	0.769	0.506	0	1.519762846	spermatid	FAM229A
RNF133	0	1.005438836	0.663	0.198	0	3.348484848	spermatid	RNF133
EHD1	0	1.004966188	0.8	0.549	0	1.4571949	spermatid	EHD1
FBXO39	0	1.002765128	0.601	0.151	0	3.98013245	spermatid	FBXO39
RP5-1023B21.1	0	1.634303983	0.569	0.318	0	1.789308176	spermatocyte	RP5-1023B21.1
CCDC110	0	1.530789876	0.992	0.436	0	2.275229358	spermatocyte	CCDC110
TBPL1	0	1.489331899	0.978	0.427	0	2.290398126	spermatocyte	TBPL1
LDHC	0	1.387035444	0.996	0.581	0	1.714285714	spermatocyte	LDHC
PTTG1	0	1.380888361	0.988	0.456	0	2.166666667	spermatocyte	PTTG1
CCNA1	0	1.334787395	0.93	0.274	0	3.394160584	spermatocyte	CCNA1
DBF4	0	1.328710594	0.987	0.433	0	2.279445727	spermatocyte	DBF4
PPP3R2	0	1.318933981	0.975	0.452	0	2.157079646	spermatocyte	PPP3R2
PSMG1	0	1.277115783	0.983	0.471	0	2.087048832	spermatocyte	PSMG1
CETN1	0	1.274471716	0.991	0.574	0	1.726480836	spermatocyte	CETN1
ZMYND10	0	1.24013452	0.965	0.387	0	2.493540052	spermatocyte	ZMYND10
PRKCDBP	0	1.229797256	0.91	0.351	0	2.592592593	spermatocyte	PRKCDBP
LYAR	0	1.226779928	0.928	0.363	0	2.556473829	spermatocyte	LYAR
CCNB2	0	1.221245278	0.949	0.296	0	3.206081081	spermatocyte	CCNB2
SPINK2	0	1.219989303	0.993	0.697	0	1.424677188	spermatocyte	SPINK2
ANKRD7	0	1.212887063	0.998	0.755	0	1.321854305	spermatocyte	ANKRD7
LRWD1	0	1.210822523	0.992	0.541	0	1.833641405	spermatocyte	LRWD1
CCDC42	0	1.209718757	0.904	0.251	0	3.601593625	spermatocyte	CCDC42
SPATA16	0	1.208255861	0.958	0.263	0	3.642585551	spermatocyte	SPATA16
PBK	0	1.204109848	0.975	0.385	0	2.532467532	spermatocyte	PBK
MCHR2-AS1	0	1.20408534	0.565	0.199	0	2.83919598	spermatocyte	MCHR2-AS1
LINC01016	0	1.186592644	0.938	0.352	0	2.664772727	spermatocyte	LINC01016
CLGN	0	1.178703266	0.972	0.389	0	2.498714653	spermatocyte	CLGN
LYRM5	0	1.17442062	0.917	0.334	0	2.745508982	spermatocyte	LYRM5
CCDC173	0	1.172021164	0.991	0.48	0	2.064583333	spermatocyte	CCDC173
CCDC62	0	1.167739491	0.977	0.298	0	3.27852349	spermatocyte	CCDC62
AC004381.6	0	1.158955475	0.988	0.466	0	2.120171674	spermatocyte	AC004381.6
RP5.1023B21.1	0	1.149621915	0.379	0.108	0	3.509259259	spermatocyte	RP5.1023B21.1
SNRPC	0	1.148132833	0.952	0.416	0	2.288461538	spermatocyte	SNRPC
GTF2A2	0	1.144773243	0.989	0.683	0	1.448023426	spermatocyte	GTF2A2
SCCPDH	0	1.134084837	0.994	0.621	0	1.600644122	spermatocyte	SCCPDH
MNS1	0	1.127603544	0.976	0.389	0	2.508997429	spermatocyte	MNS1
GYG1	0	1.126662573	0.925	0.399	0	2.318295739	spermatocyte	GYG1
CCT6B	0	1.12148102	0.991	0.492	0	2.014227642	spermatocyte	CCT6B
GKAP1	0	1.115976427	0.994	0.672	0	1.479166667	spermatocyte	GKAP1
ZPBP	0	1.095913439	0.988	0.48	0	2.058333333	spermatocyte	ZPBP
PFN4	0	1.089152562	0.949	0.304	0	3.121710526	spermatocyte	PFN4

RP5-942I16.1	0	1.08874198	0.564	0.228	0	2.473684211	spermatocyte	RP5-942I16.1
GS1-259H13.2	0	1.08717613	0.565	0.233	0	2.424892704	spermatocyte	GS1-259H13.2
SPAG6	0	1.084254332	0.949	0.312	0	3.041666667	spermatocyte	SPAG6
NAA20	0	1.082432973	0.966	0.378	0	2.555555556	spermatocyte	NAA20
HDGFL1	0	1.080174314	0.973	0.428	0	2.273364486	spermatocyte	HDGFL1
AURKA	0	1.07316644	0.757	0.173	0	4.375722543	spermatocyte	AURKA
FBXO25	0	1.068185589	0.984	0.514	0	1.914396887	spermatocyte	FBXO25
H2AFJ	0	1.067607145	0.996	0.767	0	1.298565841	spermatocyte	H2AFJ
ZBPB2	0	1.06633555	0.966	0.399	0	2.421052632	spermatocyte	ZBPB2
IZUMO4	0	1.061386838	0.991	0.669	0	1.481315396	spermatocyte	IZUMO4
APH1B	0	1.0569322	0.992	0.585	0	1.695726496	spermatocyte	APH1B
RGCC	0	1.055846454	0.762	0.125	0	6.096	spermatocyte	RGCC
ASRGL1	0	1.053407162	0.96	0.482	0	1.991701245	spermatocyte	ASRGL1
KIF9	0	1.037800678	0.969	0.428	0	2.264018692	spermatocyte	KIF9
NKAPL	0	1.037505588	0.946	0.301	0	3.142857143	spermatocyte	NKAPL
C7orf55	0	1.037277911	0.948	0.362	0	2.61878453	spermatocyte	C7orf55
C1orf56	0	1.025873417	0.976	0.401	0	2.433915212	spermatocyte	C1orf56
TEX40	0	1.018955035	0.581	0.515	0	1.12815534	spermatocyte	TEX40
TMIGD3	0	1.018641516	0.903	0.267	0	3.382022472	spermatocyte	TMIGD3
SPESP1	0	1.015116922	0.966	0.397	0	2.43324937	spermatocyte	SPESP1
ATPIF1	0	1.006656181	0.993	0.69	0	1.439130435	spermatocyte	ATPIF1
LCA5L	0	1.004122475	0.992	0.571	0	1.737302977	spermatocyte	LCA5L
CCDC83	0	1.003772754	0.925	0.289	0	3.200692042	spermatocyte	CCDC83
COPRS	0	1.002381556	0.983	0.61	0	1.61147541	spermatocyte	COPRS
HIST1H4C	0	2.137783371	0.648	0.133	0	4.872180451	spermatogonia	HIST1H4C
SMC3	0	1.868053418	0.779	0.316	0	2.465189873	spermatogonia	SMC3
TEX101	0	1.857390898	0.57	0.134	0	4.253731343	spermatogonia	TEX101
HIST1H2AA	0	1.668180323	0.533	0.153	0	3.483660131	spermatogonia	HIST1H2AA
TOP2A	0	1.665959043	0.693	0.239	0	2.89958159	spermatogonia	TOP2A
ZCWPW1	0	1.62844774	0.719	0.257	0	2.79766537	spermatogonia	ZCWPW1
SYCP3	0	1.576980764	0.685	0.256	0	2.67578125	spermatogonia	SYCP3
MT.CO1	2.09E-114	1.561129478	0.392	0.326	1.28E-109	1.20E+00	spermatogonia	MT.CO1
SMC1B	0	1.557804682	0.696	0.287	0	2.425087108	spermatogonia	SMC1B
SYCP1	7.74E-270	1.538625933	0.564	0.413	4.75E-265	1.37E+00	spermatogonia	SYCP1
HMGA1	0	1.520084631	0.532	0.088	0	6.045454545	spermatogonia	HMGA1
FMR1NB	0	1.491527206	0.533	0.089	0	5.988764045	spermatogonia	FMR1NB
TKTL1	0	1.462224641	0.531	0.157	0	3.382165605	spermatogonia	TKTL1
NASP	0	1.443823864	0.846	0.329	0	2.571428571	spermatogonia	NASP
MT.ND4	1.76E-71	1.399605175	0.392	0.37	1.08E-66	1.06E+00	spermatogonia	MT.ND4
MT.CO3	2.23E-120	1.377640511	0.391	0.312	1.37E-115	1.25E+00	spermatogonia	MT.CO3
MEIOB	0	1.367214554	0.466	0.131	0	3.557251908	spermatogonia	MEIOB
LY6K	0	1.341604732	0.545	0.062	0	8.790322581	spermatogonia	LY6K
WBSCR22	0	1.336204844	0.796	0.328	0	2.426829268	spermatogonia	WBSCR22
MTATP6P1	2.40E-276	1.321078481	0.379	0.196	1.47E-271	1.93E+00	spermatogonia	MTATP6P1
NCL	0	1.304811857	0.824	0.341	0	2.416422287	spermatogonia	NCL
RAD51AP2	0	1.299923917	0.272	0.09	0	3.022222222	spermatogonia	RAD51AP2
DNAJB6	0	1.296510678	0.805	0.458	0	1.757641921	spermatogonia	DNAJB6
MT.ATP6	3.33E-89	1.283571261	0.388	0.336	2.04E-84	1.15E+00	spermatogonia	MT.ATP6
MT.CO2	3.30E-105	1.276924687	0.388	0.321	2.03E-100	1.21E+00	spermatogonia	MT.CO2
HMGB2	0	1.27495277	0.776	0.327	0	2.373088685	spermatogonia	HMGB2
RPSA	0	1.266399682	0.804	0.571	0	1.408056042	spermatogonia	RPSA
HERC5	0	1.262448432	0.582	0.278	0	2.09352518	spermatogonia	HERC5
CCNI	0	1.250427457	0.797	0.479	0	1.66388309	spermatogonia	CCNI
HNRNPA2B1	0	1.227085764	0.905	0.628	0	1.441082803	spermatogonia	HNRNPA2B1
NAE1	0	1.221647953	0.67	0.082	0	8.170731707	spermatogonia	NAE1
MT-CO3	3.58E-167	1.215871175	0.533	0.452	2.20E-162	1.18E+00	spermatogonia	MT-CO3
DPEP3	0	1.21030811	0.583	0.132	0	4.416666667	spermatogonia	DPEP3
MT-CO2	3.30E-186	1.193011962	0.517	0.414	2.02E-181	1.25E+00	spermatogonia	MT-CO2
SCML1	0	1.191640523	0.421	0.197	0	2.137055838	spermatogonia	SCML1
MTCO1P12	0	1.177774832	0.379	0.177	0	2.141242938	spermatogonia	MTCO1P12
CASC5	0	1.164692089	0.68	0.222	0	3.063063063	spermatogonia	CASC5
BCAP31	0	1.16247561	0.57	0.14	0	4.071428571	spermatogonia	BCAP31
HORMAD1	0	1.152618246	0.632	0.404	0	1.564356436	spermatogonia	HORMAD1
PTGES3	0	1.139057468	0.824	0.451	0	1.827050998	spermatogonia	PTGES3
MT.ND1	2.65E-65	1.137872856	0.393	0.376	1.62E-60	1.05E+00	spermatogonia	MT.ND1
MT.ND5	2.91E-115	1.132683616	0.384	0.3	1.79E-110	1.28E+00	spermatogonia	MT.ND5
MT.ND2	1.91E-59	1.130186724	0.393	0.383	1.17E-54	1.03E+00	spermatogonia	MT.ND2
MT.CYB	8.29E-85	1.123525967	0.383	0.322	5.08E-80	1.19E+00	spermatogonia	MT.CYB
SPINT2	0	1.121256508	0.777	0.453	0	1.715231788	spermatogonia	SPINT2
HSP90AA1	0	1.11843778	0.983	0.844	0	1.164691943	spermatogonia	HSP90AA1
MT-CO1	2.21E-164	1.117629406	0.521	0.435	1.36E-159	1.20E+00	spermatogonia	MT-CO1
CKS2	0	1.114743437	0.804	0.373	0	2.155495979	spermatogonia	CKS2
HMGB1	0	1.111879515	0.765	0.493	0	1.551724138	spermatogonia	HMGB1
PSMD1	0	1.103137701	0.658	0.155	0	4.24516129	spermatogonia	PSMD1
VCX3B	0	1.102279442	0.486	0.115	0	4.226086957	spermatogonia	VCX3B

SMC4	0	1.100422665	0.749	0.352	0	2.127840909	spermatogonia	SMC4
VCX	0	1.099264382	0.472	0.13	0	3.630769231	spermatogonia	VCX
CBX1	0	1.091212379	0.716	0.232	0	3.086206897	spermatogonia	CBX1
RPS12	0	1.084612316	0.903	0.815	0	1.10797546	spermatogonia	RPS12
EIF1B	0	1.082792279	0.755	0.447	0	1.689038031	spermatogonia	EIF1B
RNPS1	0	1.077603043	0.711	0.21	0	3.385714286	spermatogonia	RNPS1
PAGE2B	0	1.063196385	0.497	0.111	0	4.477477477	spermatogonia	PAGE2B
HSP90AB1	0	1.057286621	0.899	0.669	0	1.343796712	spermatogonia	HSP90AB1
DAZL	0	1.05592653	0.687	0.333	0	2.063063063	spermatogonia	DAZL
DUT	0	1.046954035	0.715	0.355	0	2.014084507	spermatogonia	DUT
C5orf47	0	1.041277528	0.631	0.331	0	1.906344411	spermatogonia	C5orf47
PTMA	0	1.036705059	0.916	0.585	0	1.565811966	spermatogonia	PTMA
SRSF9	0	1.034963692	0.714	0.345	0	2.069565217	spermatogonia	SRSF9
PDIA3	0	1.031738156	0.771	0.354	0	2.177966102	spermatogonia	PDIA3
VCX2	0	1.026229305	0.433	0.147	0	2.945578231	spermatogonia	VCX2
BTG3	0	1.025921253	0.638	0.108	0	5.907407407	spermatogonia	BTG3
MTND1P23	1.39E-65	1.024623659	0.391	0.369	8.54E-61	1.06E+00	spermatogonia	MTND1P23
DDX24	0	1.024475448	0.871	0.566	0	1.538869258	spermatogonia	DDX24
CCT8	0	1.022678037	0.716	0.245	0	2.92244898	spermatogonia	CCT8
UBA2	0	1.015870229	0.745	0.326	0	2.285276074	spermatogonia	UBA2
RPN2	0	1.014072835	0.746	0.399	0	1.869674185	spermatogonia	RPN2
HNRNPA3	0	1.012438855	0.804	0.495	0	1.624242424	spermatogonia	HNRNPA3
CLSPN	0	1.008966061	0.372	0.06	0	6.2	spermatogonia	CLSPN
RCN2	0	1.007554328	0.655	0.319	0	2.053291536	spermatogonia	RCN2
CENPH	0	1.007126089	0.602	0.15	0	4.013333333	spermatogonia	CENPH
PRSS50	0	1.002496585	0.444	0.097	0	4.577319588	spermatogonia	PRSS50
B2M5	2.42E-37	3.127936516	0.947	0.252	1.48E-32	3.76E+00	T_cells	B2M
CCL5	0	3.112461415	0.763	0.006	0	127.1666667	T_cells	CCL5
CCL41	1.82E-31	2.931540681	0.5	0.063	1.12E-26	7.94E+00	T_cells	CCL4
IL32	1.25E-204	2.849971491	0.763	0.023	7.65E-200	3.32E+01	T_cells	IL32
S100A44	4.60E-90	2.651859632	0.763	0.053	2.82E-85	1.44E+01	T_cells	S100A4
NKG7	0	2.569689226	0.579	0.001	0	579	T_cells	NKG7
TMSB4X5	6.97E-31	2.505174793	0.974	0.338	4.28E-26	2.88E+00	T_cells	TMSB4X
GZMA	0	2.500833935	0.632	0.001	0	632	T_cells	GZMA
CXCR41	6.58E-213	2.451229727	0.658	0.016	4.04E-208	4.11E+01	T_cells	CXCR4
HLA-B2	6.07E-24	2.450813932	0.789	0.253	3.72E-19	3.12E+00	T_cells	HLA-B
HLA-C5	6.34E-30	2.402507709	0.763	0.177	3.89E-25	4.31E+00	T_cells	HLA-C
HLA-A4	8.43E-19	2.402281545	0.763	0.309	5.17E-14	2.47E+00	T_cells	HLA-A
MALAT15	5.11E-19	2.363279102	1	0.838	3.14E-14	1.19E+00	T_cells	MALAT1
CD52	0	2.301475966	0.684	0.004	0	171	T_cells	CD52
SRGN3	2.47E-99	2.157558697	0.816	0.054	1.52E-94	1.51E+01	T_cells	SRGN
CD692	0	2.124532088	0.684	0.008	0	85.5	T_cells	CD69
CD3D	0	2.102635672	0.632	0.006	0	105.3333333	T_cells	CD3D
CYBA1	2.88E-95	2.102251138	0.684	0.04	1.77E-90	1.71E+01	T_cells	CYBA
GZMK	1.43E-306	2.089078996	0.368	0.003	8.78E-302	1.23E+02	T_cells	GZMK
TRAC	2.02E-36	2.051321005	0.737	0.131	1.24E-31	5.63E+00	T_cells	TRAC
PTPRC1	2.01E-209	2.02977531	0.711	0.019	1.23E-204	3.74E+01	T_cells	PTPRC
SH3BGR32	3.64E-27	1.991738794	0.789	0.214	2.24E-22	3.69E+00	T_cells	SH3BGR3
RPL105	3.67E-23	1.978110654	0.921	0.365	2.25E-18	2.52E+00	T_cells	RPL10
CCL4L21	1.57E-29	1.965608683	0.316	0.026	9.62E-25	1.22E+01	T_cells	CCL4L2
CORO1A1	0	1.953718779	0.684	0.006	0	114	T_cells	CORO1A
CST7	0	1.923266112	0.658	0.001	0	658	T_cells	CST7
XCL2	0	1.918746763	0.211	0	0	#DIV/0!	T_cells	XCL2
ARL4C1	1.24E-121	1.918466635	0.579	0.022	7.61E-117	2.63E+01	T_cells	ARL4C
KLRB1	0	1.912911661	0.368	0	0	#DIV/0!	T_cells	KLRB1
GZMH	0	1.894872657	0.553	0.001	0	553	T_cells	GZMH
KLF65	2.27E-18	1.891645619	0.789	0.291	1.39E-13	2.71E+00	T_cells	KLF6
ARHGDI1	1.82E-83	1.889158055	0.632	0.039	1.12E-78	1.62E+01	T_cells	ARHGDI1
TSC2D35	3.31E-29	1.888917216	0.711	0.147	2.03E-24	4.84E+00	T_cells	TSC2D3
CD3E	2.03E-223	1.836331227	0.579	0.012	1.25E-218	4.83E+01	T_cells	CD3E
RPL396	1.99E-23	1.829596079	0.868	0.282	1.22E-18	3.08E+00	T_cells	RPL39
TNFAIP32	1.66E-22	1.806902056	0.579	0.117	1.02E-17	4.95E+00	T_cells	TNFAIP3
HLA-E3	5.70E-43	1.790127976	0.684	0.088	3.50E-38	7.77E+00	T_cells	HLA-E
ACTB6	8.33E-18	1.777603755	0.947	0.587	5.11E-13	1.61E+00	T_cells	ACTB
TRBC21	5.55E-44	1.762690812	0.474	0.041	3.40E-39	1.16E+01	T_cells	TRBC2
ANXA15	8.22E-50	1.755232064	0.711	0.082	5.04E-45	8.67E+00	T_cells	ANXA1
JUNB6	1.08E-19	1.746437116	0.895	0.349	6.65E-15	2.56E+00	T_cells	JUNB
PFN14	1.16E-11	1.677720232	0.737	0.409	7.12E-07	1.80E+00	T_cells	PFN1
HCST1	1.71E-161	1.644058887	0.605	0.018	1.05E-156	3.36E+01	T_cells	HCST
LAPTM51	4.32E-172	1.617072371	0.553	0.014	2.65E-167	3.95E+01	T_cells	LAPTM5
DUSP23	1.31E-42	1.585567918	0.526	0.051	8.06E-38	1.03E+01	T_cells	DUSP2
ZFP36L25	1.70E-24	1.556278636	0.684	0.148	1.05E-19	4.62E+00	T_cells	ZFP36L2
EMP34	8.22E-26	1.543161979	0.711	0.164	5.04E-21	4.34E+00	T_cells	EMP3
GZMM	0	1.528044205	0.5	0.005	0	100	T_cells	GZMM
RPL217	4.56E-16	1.517661792	0.921	0.477	2.80E-11	1.93E+00	T_cells	RPL21



IFNG	0	1.504364458	0.368	0.001	0	368	T_cells	IFNG
CD2	1.02E-23	1.501039098	0.553	0.106	6.28E-19	5.22E+00	T_cells	CD2
CD48	0	1.497801254	0.632	0.008	0	79	T_cells	CD48
RPL416	8.15E-14	1.495896055	0.921	0.788	5.00E-09	1.17E+00	T_cells	RPL41
IL2RG	0	1.48786343	0.474	0.003	0	158	T_cells	IL2RG
GNLY	1.28E-214	1.480726354	0.184	0.001	7.83E-210	1.84E+02	T_cells	GNLY
RPL13A6	3.65E-18	1.468031727	1	0.737	2.24E-13	1.36E+00	T_cells	RPL13A
MYL12A4	2.42E-13	1.456235792	0.711	0.328	1.49E-08	2.17E+00	T_cells	MYL12A
CD742	1.97E-20	1.434664193	0.474	0.079	1.21E-15	6.00E+00	T_cells	CD74
LTB	1.74E-277	1.432012015	0.421	0.005	1.06E-272	8.42E+01	T_cells	LTB
RPS266	4.34E-10	1.412569382	0.789	0.538	2.66E-05	1.47E+00	T_cells	RPS26
RPL18A7	1.56E-11	1.40165442	0.789	0.418	9.59E-07	1.89E+00	T_cells	RPL18A
TMSB105	1.18E-19	1.400185494	0.921	0.398	7.22E-15	2.31E+00	T_cells	TMSB10
RPL27A6	9.07E-15	1.394399084	0.921	0.787	5.56E-10	1.17E+00	T_cells	RPL27A
BTG15	1.83E-10	1.382029935	0.789	0.611	1.12E-05	1.29E+00	T_cells	BTG1
CD3G	1.19E-294	1.379714706	0.526	0.007	7.30E-290	7.51E+01	T_cells	CD3G
RPL145	6.57E-13	1.379033981	0.868	0.646	4.03E-08	1.34E+00	T_cells	RPL14
PPP1R15A6	1.91E-17	1.378753511	0.684	0.197	1.17E-12	3.47E+00	T_cells	PPP1R15A
CLIC15	9.94E-07	1.378316125	0.5	0.265	0.060958577	1.886792453	T_cells	CLIC1
ARPC1B3	1.08E-30	1.373961659	0.553	0.078	6.64E-26	7.09E+00	T_cells	ARPC1B
ID23	1.53E-14	1.370770956	0.5	0.125	9.39E-10	4.00E+00	T_cells	ID2
RPL283	1.38E-13	1.352707575	0.895	0.823	8.48E-09	1.09E+00	T_cells	RPL28
MSN3	1.05E-30	1.351720793	0.526	0.071	6.41E-26	7.41E+00	T_cells	MSN
XCL1	6.18E-68	1.349978567	0.184	0.004	3.79E-63	4.60E+01	T_cells	XCL1
GMFG1	6.57E-35	1.345516303	0.553	0.071	4.03E-30	7.79E+00	T_cells	GMFG
NR4A22	7.40E-11	1.337340606	0.474	0.151	4.54E-06	3.14E+00	T_cells	NR4A2
FYB1	4.47E-33	1.334323851	0.526	0.067	2.74E-28	7.85E+00	T_cells	FYB
CD442	2.93E-15	1.331672981	0.447	0.099	1.80E-10	4.52E+00	T_cells	CD44
RPS196	3.89E-12	1.328646159	0.895	0.759	2.39E-07	1.18E+00	T_cells	RPS19
RPS220	4.54E-14	1.325915503	0.921	0.677	2.79E-09	1.36E+00	T_cells	RPS2
RPS36	5.75E-13	1.323831416	0.895	0.8	3.53E-08	1.12E+00	T_cells	RPS3
CD531	0	1.319877497	0.5	0.005	0	100	T_cells	CD53
FXYD52	1.81E-68	1.294808474	0.474	0.026	1.11E-63	1.82E+01	T_cells	FXYD5
STK4	2.64E-13	1.286063809	0.579	0.201	1.62E-08	2.88E+00	T_cells	STK4
RPS285	1.75E-09	1.285046059	0.789	0.61	0.000107272	1.293442623	T_cells	RPS28
MT-CYB6	6.75E-12	1.281276348	0.816	0.398	4.14E-07	2.05E+00	T_cells	MT-CYB
S100A65	4.17E-31	1.275479922	0.763	0.133	2.56E-26	5.74E+00	T_cells	S100A6
RPS146	7.30E-13	1.272070694	0.921	0.831	4.48E-08	1.11E+00	T_cells	RPS14
RPS4X6	8.88E-16	1.27201358	0.868	0.349	5.45E-11	2.49E+00	T_cells	RPS4X
ALOX5AP1	6.51E-51	1.26351435	0.395	0.024	3.99E-46	1.65E+01	T_cells	ALOX5AP
CTSW	4.34E-202	1.262777086	0.395	0.006	2.66E-197	6.58E+01	T_cells	CTSW
LCP12	6.35E-11	1.258957818	0.632	0.289	3.89E-06	2.19E+00	T_cells	LCP1
IDS3	1.10E-24	1.255607394	0.474	0.071	6.77E-20	6.68E+00	T_cells	IDS
ITGB21	7.06E-167	1.252912699	0.447	0.009	4.33E-162	4.97E+01	T_cells	ITGB2
MT-ATP66	2.93E-10	1.252203414	0.789	0.435	1.79E-05	1.81E+00	T_cells	MT-ATP6
RPS272	8.67E-09	1.250778346	0.921	0.823	0.000532164	1.119076549	T_cells	RPS27
RPS15A3	6.67E-14	1.246155998	0.947	0.786	4.09E-09	1.20E+00	T_cells	RPS15A
RPL23A4	4.15E-13	1.242524977	0.921	0.737	2.55E-08	1.25E+00	T_cells	RPL23A
DUSP16	1.97E-13	1.240001975	0.605	0.186	1.21E-08	3.25E+00	T_cells	DUSP1
CYTIP1	4.19E-150	1.236364779	0.526	0.014	2.57E-145	3.76E+01	T_cells	CYTIP
IFITM25	1.99E-14	1.228905612	0.579	0.165	1.22E-09	3.51E+00	T_cells	IFITM2
RPL186	9.57E-12	1.204897137	0.868	0.573	5.87E-07	1.51E+00	T_cells	RPL18
RPS186	1.84E-12	1.202952299	0.921	0.853	1.13E-07	1.08E+00	T_cells	RPS18
CFL13	3.29E-09	1.194860611	0.816	0.737	0.000201761	1.107191316	T_cells	CFL1
RPLP16	8.69E-13	1.186660214	0.947	0.766	5.33E-08	1.24E+00	T_cells	RPLP1
NFKBIA6	4.51E-10	1.178935348	0.579	0.214	2.77E-05	2.71E+00	T_cells	NFKBIA
HLA-F1	1.98E-31	1.171844426	0.474	0.057	1.21E-26	8.32E+00	T_cells	HLA-F
MT-CO25	6.73E-11	1.166591976	0.816	0.436	4.13E-06	1.87E+00	T_cells	MT-CO2
MT-CO16	8.77E-11	1.160332997	0.816	0.453	5.38E-06	1.80E+00	T_cells	MT-CO1
RPS27A5	5.41E-11	1.159704956	0.895	0.861	3.32E-06	1.04E+00	T_cells	RPS27A
RPS293	8.28E-16	1.158075908	0.947	0.886	5.08E-11	1.07E+00	T_cells	RPS29
TRGC2	2.46E-22	1.154485228	0.289	0.029	1.51E-17	9.97E+00	T_cells	TRGC2
RAC22	2.52E-274	1.150653777	0.421	0.005	1.54E-269	8.42E+01	T_cells	RAC2
PRF1	0	1.14859051	0.368	0	0	#DIV/0!	T_cells	PRF1
RPL115	1.06E-13	1.14537865	0.947	0.826	6.50E-09	1.15E+00	T_cells	RPL11
ITM2A3	3.83E-26	1.135321999	0.526	0.078	2.35E-21	6.74E+00	T_cells	ITM2A
RPL65	1.72E-12	1.134489377	0.895	0.684	1.06E-07	1.31E+00	T_cells	RPL6
MT-ND54	4.08E-12	1.12546542	0.763	0.297	2.50E-07	2.57E+00	T_cells	MT-ND5
RSRP11	7.31E-08	1.124193705	0.553	0.282	0.004481985	1.960992908	T_cells	RSRP1
GPR1831	3.86E-45	1.107271701	0.289	0.014	2.37E-40	2.06E+01	T_cells	GPR183
ICAM3	2.34E-15	1.107108716	0.395	0.078	1.43E-10	5.06E+00	T_cells	ICAM3
EEF1A16	2.55E-15	1.105122166	0.974	0.925	1.56E-10	1.05E+00	T_cells	EEF1A1
TXNIP4	1.94E-11	1.103300395	0.553	0.174	1.19E-06	3.18E+00	T_cells	TXNIP
RPL265	1.04E-11	1.100397856	0.895	0.755	6.40E-07	1.19E+00	T_cells	RPL26
GPSM31	4.77E-40	1.098674797	0.368	0.027	2.93E-35	1.36E+01	T_cells	GPSM3

RPL306	4.69E-15	1.092321233	0.947	0.879	2.87E-10	1.08E+00	T_cells	RPL30
RPL125	5.08E-09	1.091666505	0.816	0.635	0.000311604	1.28503937	T_cells	RPL12
SLC2A33	5.81E-12	1.082967705	0.395	0.093	3.56E-07	4.25E+00	T_cells	SLC2A3
MT-ND16	1.18E-09	1.061143185	0.789	0.411	7.27E-05	1.92E+00	T_cells	MT-ND1
RPL10A5	6.84E-11	1.054208494	0.868	0.663	4.20E-06	1.31E+00	T_cells	RPL10A
IL7R	1.60E-69	1.043591784	0.237	0.006	9.84E-65	3.95E+01	T_cells	IL7R
RPS155	3.56E-10	1.043189129	0.895	0.766	2.18E-05	1.17E+00	T_cells	RPS15
RPS85	3.63E-10	1.037475108	0.868	0.776	2.23E-05	1.12E+00	T_cells	RPS8
RGS101	1.04E-23	1.037099479	0.316	0.033	6.41E-19	9.58E+00	T_cells	RGS10
GLIPR11	2.73E-05	1.029972478	0.316	0.125	1	2.528	T_cells	GLIPR1
ARL6IP55	2.30E-08	1.029876999	0.5	0.205	0.001409505	2.43902439	T_cells	ARL6IP5
COTL11	1.35E-09	1.029777235	0.342	0.086	8.28E-05	3.98E+00	T_cells	COTL1
LEPROTL1	0.004685222	1.028536319	0.5	0.435	1	1.149425287	T_cells	LEPROTL1
CALM14	1.30E-06	1.026986507	0.737	0.693	0.079618984	1.063492063	T_cells	CALM1
RPL194	3.15E-11	1.025814503	0.921	0.839	1.93E-06	1.10E+00	T_cells	RPL19
ADGRE51	2.01E-34	1.024978124	0.316	0.023	1.23E-29	1.37E+01	T_cells	ADGRE5
MT-CO34	1.02E-09	1.023247521	0.816	0.47	6.25E-05	1.74E+00	T_cells	MT-CO3
LSP12	2.47E-33	1.022479894	0.368	0.031	1.52E-28	1.19E+01	T_cells	LSP1
HCLS11	5.37E-92	1.020180489	0.395	0.013	3.30E-87	3.04E+01	T_cells	HCLS1
RPS165	1.52E-09	1.0174571	0.842	0.757	9.34E-05	1.11E+00	T_cells	RPS16
LY6E3	1.92E-07	1.0165921	0.368	0.119	0.011757004	3.092436975	T_cells	LY6E
RPLP21	5.45E-10	1.016155388	0.947	0.835	3.34E-05	1.13E+00	T_cells	RPLP2
LCK	1.85E-85	1.01233322	0.289	0.008	1.13E-80	3.61E+01	T_cells	LCK
MT-ND36	4.47E-10	1.002094498	0.789	0.375	2.74E-05	2.10E+00	T_cells	MT-ND3
TAGLN1	0	3.6510815	0.941	0.129	0	7.294573643	VSM_cells	TAGLN
ADIRF2	0	3.248291087	0.877	0.118	0	7.43220339	VSM_cells	ADIRF
TPM21	0	2.99208043	0.909	0.137	0	6.635036496	VSM_cells	TPM2
MYH111	0	2.686007961	0.937	0.184	0	5.092391304	VSM_cells	MYH11
ACTA21	0	2.662911479	0.924	0.174	0	5.310344828	VSM_cells	ACTA2
GADD45B4	0	2.618912838	0.848	0.181	0	4.685082873	VSM_cells	GADD45B
MYL91	0	2.486523818	0.905	0.15	0	6.033333333	VSM_cells	MYL9
VIM4	1.40E-261	2.42576747	0.943	0.444	8.58E-257	2.12E+00	VSM_cells	VIM
CALD12	0	2.42188149	0.937	0.227	0	4.127753304	VSM_cells	CALD1
C11orf962	0	2.396933686	0.871	0.266	0	3.27443609	VSM_cells	C11orf96
IGFBP52	0	2.326690954	0.751	0.06	0	12.51666667	VSM_cells	IGFBP5
FLNA2	0	2.282760011	0.856	0.106	0	8.075471698	VSM_cells	FLNA
RERGL	0	2.273889949	0.715	0.013	0	55	VSM_cells	RERGL
MALAT14	1.04E-173	2.246974741	0.953	0.836	6.37E-169	1.14E+00	VSM_cells	MALAT1
DSTN1	3.21E-224	2.246848528	0.909	0.555	1.97E-219	1.64E+00	VSM_cells	DSTN
IER24	0	2.246074872	0.841	0.168	0	5.005952381	VSM_cells	IER2
RGS5	2.42E-140	2.175761577	0.467	0.123	1.48E-135	3.80E+00	VSM_cells	RGS5
MT2A3	1.90E-298	2.153642436	0.82	0.222	1.17E-293	3.69E+00	VSM_cells	MT2A
RGS162	0	2.108192889	0.457	0.051	0	8.960784314	VSM_cells	RGS16
MCAM	0	2.099309356	0.799	0.028	0	28.53571429	VSM_cells	MCAM
TPM11	0	1.97354633	0.833	0.195	0	4.271794872	VSM_cells	TPM1
RPL104	5.56E-256	1.950458101	0.92	0.356	3.41E-251	2.58E+00	VSM_cells	RPL10
MT-ATP64	5.46E-217	1.942218328	0.907	0.426	3.35E-212	2.13E+00	VSM_cells	MT-ATP6
RRAD	0	1.939779	0.693	0.049	0	14.14285714	VSM_cells	RRAD
SPARCL13	0	1.931795612	0.909	0.154	0	5.902597403	VSM_cells	SPARCL1
MT-ND14	1.23E-229	1.912284018	0.903	0.402	7.53E-225	2.25E+00	VSM_cells	MT-ND1
S100A64	0	1.893277911	0.708	0.123	0	5.756097561	VSM_cells	S100A6
PLN	0	1.870307559	0.759	0.176	0	4.3125	VSM_cells	PLN
MT-CYB4	4.36E-222	1.844598538	0.901	0.389	2.67E-217	2.32E+00	VSM_cells	MT-CYB
KLF24	0	1.843926231	0.782	0.158	0	4.949367089	VSM_cells	KLF2
MFGE81	0	1.811727984	0.82	0.08	0	10.25	VSM_cells	MFGE8
MT1E1	0	1.786292698	0.655	0.057	0	11.49122807	VSM_cells	MT1E
FOS4	5.79E-248	1.785533705	0.886	0.303	3.55E-243	2.92E+00	VSM_cells	FOS
MYL63	2.02E-191	1.77227303	0.911	0.661	1.24E-186	1.38E+00	VSM_cells	MYL6
ATF34	0	1.77145526	0.746	0.108	0	6.907407407	VSM_cells	ATF3
JUNB4	6.65E-234	1.761869585	0.888	0.34	4.08E-229	2.61E+00	VSM_cells	JUNB
CCL23	0	1.760798856	0.469	0.039	0	12.02564103	VSM_cells	CCL2
MT-ND34	1.19E-225	1.729594348	0.896	0.366	7.27E-221	2.45E+00	VSM_cells	MT-ND3
MT-ND53	4.85E-259	1.715428962	0.877	0.287	2.98E-254	3.06E+00	VSM_cells	MT-ND5
04-Jun	3.74E-209	1.707128986	0.882	0.362	2.29E-204	2.44E+00	VSM_cells	JUN
SELM3	1.20E-284	1.691482505	0.776	0.208	7.38E-280	3.73E+00	VSM_cells	SELM
MT1M1	0	1.67288586	0.666	0.025	0	26.64	VSM_cells	MT1M
RHOB4	6.45E-270	1.672568679	0.822	0.231	3.95E-265	3.56E+00	VSM_cells	RHOB
LBH	0	1.670013068	0.708	0.09	0	7.866666667	VSM_cells	LBH
ZFP364	3.05E-296	1.654008261	0.863	0.233	1.87E-291	3.70E+00	VSM_cells	ZFP36
MT-ND24	1.11E-215	1.635799339	0.905	0.404	6.82E-211	2.24E+00	VSM_cells	MT-ND2
LGALS12	0	1.603074074	0.839	0.197	0	4.258883249	VSM_cells	LGALS1
MT-ND44	7.99E-203	1.598543694	0.905	0.41	4.90E-198	2.21E+00	VSM_cells	MT-ND4
CSRP11	0	1.592800308	0.744	0.106	0	7.018867925	VSM_cells	CSRP1
SNCG1	0	1.587402931	0.611	0.025	0	24.44	VSM_cells	SNCG
IGFBP73	3.59E-287	1.582479946	0.928	0.276	2.20E-282	3.36E+00	VSM_cells	IGFBP7

CAV13	0	1.539492586	0.801	0.094	0	8.521276596	VSM_cells	CAV1
MT-CO14	3.32E-190	1.533203665	0.905	0.445	2.03E-185	2.03E+00	VSM_cells	MT-CO1
HSPB13	1.22E-270	1.526678344	0.803	0.212	7.45E-266	3.79E+00	VSM_cells	HSPB1
MYLK1	0	1.515664617	0.822	0.186	0	4.419354839	VSM_cells	MYLK
TMSB4X4	4.20E-229	1.509917426	0.886	0.329	2.58E-224	2.69E+00	VSM_cells	TMSB4X
BGN1	0	1.50937704	0.687	0.081	0	8.481481481	VSM_cells	BGN
MT-CO32	1.07E-182	1.505875222	0.907	0.462	6.58E-178	1.96E+00	VSM_cells	MT-CO3
LMOD11	0	1.493219633	0.693	0.046	0	15.06521739	VSM_cells	LMOD1
C10orf101	0	1.471562742	0.452	0.037	0	12.21621622	VSM_cells	C10orf10
TIMP33	0	1.444683249	0.841	0.165	0	5.096969697	VSM_cells	TIMP3
MGST32	2.11E-264	1.439959248	0.812	0.228	1.29E-259	3.56E+00	VSM_cells	MGST3
TINAGL11	0	1.4295101	0.662	0.013	0	50.92307692	VSM_cells	TINAGL1
RPL144	8.32E-147	1.425716837	0.865	0.642	5.11E-142	1.35E+00	VSM_cells	RPL14
DES	1.96E-265	1.420700284	0.524	0.084	1.20E-260	6.24E+00	VSM_cells	DES
ID32	0	1.416443405	0.567	0.038	0	14.92105263	VSM_cells	ID3
RPS4X4	1.63E-195	1.381236901	0.869	0.34	1.00E-190	2.56E+00	VSM_cells	RPS4X
NOTCH3	0	1.379725307	0.668	0.018	0	37.11111111	VSM_cells	NOTCH3
BTG24	1.23E-269	1.37294359	0.649	0.123	7.52E-265	5.28E+00	VSM_cells	BTG2
RPL184	5.38E-152	1.36810521	0.888	0.568	3.30E-147	1.56E+00	VSM_cells	RPL18
ACTB4	1.66E-162	1.366845273	0.905	0.581	1.02E-157	1.56E+00	VSM_cells	ACTB
CTGF2	3.62E-228	1.363185346	0.442	0.066	2.22E-223	6.70E+00	VSM_cells	CTGF
PTRF3	0	1.358473814	0.772	0.109	0	7.082568807	VSM_cells	PTRF
PTMA4	1.92E-167	1.356637446	0.924	0.652	1.18E-162	1.42E+00	VSM_cells	PTMA
RPLP14	1.54E-143	1.348521921	0.924	0.764	9.45E-139	1.21E+00	VSM_cells	RPLP1
SORBS2	0	1.342233682	0.617	0.028	0	22.03571429	VSM_cells	SORBS2
CD92	0	1.338313563	0.698	0.084	0	8.30952381	VSM_cells	CD9
NEAT14	5.28E-239	1.332646518	0.755	0.187	3.24E-234	4.04E+00	VSM_cells	NEAT1
EGR14	2.40E-217	1.325550068	0.814	0.254	1.47E-212	3.20E+00	VSM_cells	EGR1
MT-CO23	2.44E-173	1.324593726	0.903	0.428	1.49E-168	2.11E+00	VSM_cells	MT-CO2
SOD3	1.83E-195	1.324129	0.767	0.289	1.12E-190	2.65E+00	VSM_cells	SOD3
RPL10A4	2.95E-151	1.321086945	0.894	0.659	1.81E-146	1.36E+00	VSM_cells	RPL10A
RPL18A5	3.83E-157	1.319566143	0.85	0.41	2.35E-152	2.07E+00	VSM_cells	RPL18A
COL18A12	0	1.277780872	0.609	0.075	0	8.12	VSM_cells	COL18A1
NEXN1	0	1.258423458	0.632	0.105	0	6.019047619	VSM_cells	NEXN
TNS12	0	1.246947843	0.751	0.095	0	7.905263158	VSM_cells	TNS1
CD1512	0	1.24420552	0.66	0.094	0	7.021276596	VSM_cells	CD151
PPP1R14A2	4.18E-289	1.241178755	0.717	0.142	2.57E-284	5.05E+00	VSM_cells	PPP1R14A
GSTP14	6.70E-286	1.23242629	0.763	0.164	4.11E-281	4.65E+00	VSM_cells	GSTP1
RPL215	5.49E-163	1.232247051	0.903	0.47	3.37E-158	1.92E+00	VSM_cells	RPL21
BCAM1	0	1.232133082	0.649	0.051	0	12.7254902	VSM_cells	BCAM
FAM129A1	0	1.230336991	0.63	0.018	0	35	VSM_cells	FAM129A
RCAN2	1.69E-270	1.224882466	0.664	0.147	1.04E-265	4.52E+00	VSM_cells	RCAN2
EEF1A14	2.62E-158	1.222939536	0.966	0.924	1.61E-153	1.05E+00	VSM_cells	EEF1A1
HES4	0	1.219937221	0.605	0.032	0	18.90625	VSM_cells	HES4
CCND11	0	1.215994871	0.529	0.043	0	12.30232558	VSM_cells	CCND1
PPP1R12B	6.40E-226	1.208954869	0.655	0.168	3.93E-221	3.90E+00	VSM_cells	PPP1R12B
AC013461.1	2.16E-216	1.203757591	0.66	0.172	1.32E-211	3.84E+00	VSM_cells	AC013461.1
CRYAB1	3.65E-270	1.199983247	0.605	0.116	2.24E-265	5.22E+00	VSM_cells	CRYAB
FXVD12	0	1.197076002	0.632	0.044	0	14.36363636	VSM_cells	FXVD1
ZFH31	0	1.196508471	0.613	0.081	0	7.567901235	VSM_cells	ZFH3
JAG11	0	1.195251288	0.588	0.042	0	14	VSM_cells	JAG1
ACTN41	3.38E-235	1.191879921	0.655	0.155	2.07E-230	4.23E+00	VSM_cells	ACTN4
AHNAK4	1.54E-281	1.1877623	0.753	0.162	9.45E-277	4.65E+00	VSM_cells	AHNAK
NDUFA4L2	1.43E-226	1.184287472	0.368	0.048	8.78E-222	7.67E+00	VSM_cells	NDUFA4L2
NDUFA41	1.38E-128	1.180068949	0.827	0.521	8.45E-124	1.59E+00	VSM_cells	NDUFA4
NET1	3.46E-207	1.180000092	0.575	0.132	2.12E-202	4.36E+00	VSM_cells	NET1
ITGB12	2.14E-238	1.171453281	0.784	0.206	1.31E-233	3.81E+00	VSM_cells	ITGB1
B2M4	1.81E-278	1.169560139	0.899	0.241	1.11E-273	3.73E+00	VSM_cells	B2M
RPS84	5.10E-129	1.161458988	0.896	0.774	3.13E-124	1.16E+00	VSM_cells	RPS8
IRF14	1.00E-136	1.160449795	0.63	0.216	6.16E-132	2.92E+00	VSM_cells	IRF1
PTMS3	7.98E-247	1.158769228	0.786	0.204	4.89E-242	3.85E+00	VSM_cells	PTMS
GUCY1A3	0	1.155514646	0.575	0.008	0	71.875	VSM_cells	GUCY1A3
RPL64	1.70E-127	1.153207381	0.875	0.681	1.04E-122	1.28E+00	VSM_cells	RPL6
OGN2	4.60E-227	1.15111707	0.465	0.072	2.82E-222	6.46E+00	VSM_cells	OGN
SOCS34	8.01E-294	1.144648977	0.666	0.117	4.92E-289	5.69E+00	VSM_cells	SOCS3
NR2F23	9.59E-261	1.139787009	0.729	0.16	5.89E-256	4.56E+00	VSM_cells	NR2F2
ITGA8	0	1.135196677	0.564	0.004	0	141	VSM_cells	ITGA8
CRIM11	0	1.12687282	0.59	0.042	0	14.04761905	VSM_cells	CRIM1
MT-ND4L2	5.94E-225	1.121773447	0.715	0.176	3.65E-220	4.06E+00	VSM_cells	MT-ND4L
SLIT3	0	1.120347206	0.577	0.082	0	7.036585366	VSM_cells	SLIT3
ID4	2.73E-216	1.116524662	0.514	0.092	1.68E-211	5.59E+00	VSM_cells	ID4
CDKN1A3	4.48E-224	1.116099868	0.6	0.122	2.75E-219	4.92E+00	VSM_cells	CDKN1A
SH3BGR5	0	1.11067493	0.67	0.103	0	6.504854369	VSM_cells	SH3BGR
SYNPO21	0	1.104246504	0.598	0.051	0	11.7254902	VSM_cells	SYNPO2
SLC25A64	6.95E-242	1.10254489	0.755	0.186	4.26E-237	4.06E+00	VSM_cells	SLC25A6

SEPW11	1.69E-126	1.097504363	0.812	0.53	1.04E-121	1.53E+00	VSM_cells	SEPW1
KLF64	3.84E-167	1.097205163	0.759	0.283	2.36E-162	2.68E+00	VSM_cells	KLF6
RPS144	6.67E-138	1.096072503	0.941	0.829	4.09E-133	1.14E+00	VSM_cells	RPS14
CD634	1.92E-183	1.094631106	0.82	0.283	1.18E-178	2.90E+00	VSM_cells	CD63
NR4A13	2.32E-149	1.082498431	0.706	0.254	1.42E-144	2.78E+00	VSM_cells	NR4A1
ADAMTS13	5.72E-262	1.082095574	0.537	0.083	3.51E-257	6.47E+00	VSM_cells	ADAMTS1
TBX2	0	1.080376078	0.497	0.027	0	18.40740741	VSM_cells	TBX2
CRIP1	0	1.078837251	0.524	0.014	0	37.42857143	VSM_cells	CRIP1
CSRP2	2.77E-111	1.072080235	0.63	0.279	1.70E-106	2.26E+00	VSM_cells	CSRP2
PNRC14	1.60E-135	1.069628763	0.793	0.391	9.79E-131	2.03E+00	VSM_cells	PNRC1
MEF2C2	2.58E-219	1.058432719	0.619	0.147	1.58E-214	4.21E+00	VSM_cells	MEF2C
A2M2	3.32E-307	1.055802396	0.634	0.105	2.04E-302	6.04E+00	VSM_cells	A2M
RPL27A4	6.42E-123	1.051687049	0.89	0.785	3.94E-118	1.13E+00	VSM_cells	RPL27A
MSRB31	0	1.049305378	0.571	0.073	0	7.821917808	VSM_cells	MSRB3
CYR612	5.39E-237	1.044637345	0.588	0.109	3.31E-232	5.39E+00	VSM_cells	CYR61
RPS27A4	2.36E-131	1.044309363	0.926	0.86	1.45E-126	1.08E+00	VSM_cells	RPS27A
FN12	1.91E-195	1.041741419	0.457	0.079	1.17E-190	5.78E+00	VSM_cells	FN1
FOXC12	0	1.041595094	0.531	0.065	0	8.169230769	VSM_cells	FOXC1
RPL13A4	7.58E-118	1.040514976	0.892	0.735	4.65E-113	1.21E+00	VSM_cells	RPL13A
LMNA4	7.94E-132	1.038897531	0.757	0.365	4.87E-127	2.07E+00	VSM_cells	LMNA
PDLIM11	0	1.036461201	0.596	0.09	0	6.622222222	VSM_cells	PDLIM1
S100A42	8.23E-117	1.036205269	0.288	0.05	5.05E-112	5.76E+00	VSM_cells	S100A4
FRZB	0	1.035877879	0.516	0.025	0	20.64	VSM_cells	FRZB
CD441	1.38E-209	1.033103464	0.49	0.092	8.49E-205	5.33E+00	VSM_cells	CD44
PPP1R15A4	1.05E-191	1.033017617	0.702	0.188	6.46E-187	3.73E+00	VSM_cells	PPP1R15A
RPS164	2.64E-126	1.032377	0.899	0.755	1.62E-121	1.19E+00	VSM_cells	RPS16
RPL414	8.02E-129	1.030022165	0.915	0.785	4.92E-124	1.17E+00	VSM_cells	RPL41
UTRN1	3.26E-123	1.023377845	0.759	0.364	2.00E-118	2.09E+00	VSM_cells	UTRN
PPP1R12A	7.02E-104	1.020585394	0.759	0.474	4.31E-99	1.60E+00	VSM_cells	PPP1R12A
PDLIM31	0	1.014196211	0.564	0.05	0	11.28	VSM_cells	PDLIM3
RAMP1	0	1.013053663	0.469	0.019	0	24.68421053	VSM_cells	RAMP1
RPL243	1.70E-114	1.01116579	0.884	0.741	1.04E-109	1.19E+00	VSM_cells	RPL24
CPE2	7.54E-201	1.006625468	0.736	0.205	4.62E-196	3.59E+00	VSM_cells	CPE
NTRK21	0	1.005608146	0.531	0.027	0	19.66666667	VSM_cells	NTRK2
CCDC31	0	1.004779736	0.567	0.04	0	14.175	VSM_cells	CCDC3

Supplementary Table 2: DEGs between KS and OA SCs

logFC&gt;0.25

	p_val	avg_logFC	pct.1	pct.2	p_val_adj	CHRO	NXI GENE	MGI database
MIF	3.03E-103	1.671323685	0.84	0.234	1.35E-98	22	#N/A	#N/A
RPL36A	4.64E-100	1.637040069	0.821	0.203	2.06E-95	X	YES	#N/A
RPL17	1.98E-91	1.441726647	0.805	0.195	8.78E-87	18	#N/A	#N/A
RPS17	8.35E-95	1.372976856	0.943	0.443	3.71E-90	15	#N/A	#N/A
RPS21	3.87E-97	1.370619916	0.958	0.543	1.72E-92	20	#N/A	#N/A
RPL31	4.33E-92	1.283515584	0.969	0.581	1.92E-87	2	#N/A	#N/A
RPL41	3.92E-107	1.259251934	0.996	0.87	1.74E-102	12	#N/A	#N/A
ACTB	1.44E-93	1.249763766	0.989	0.671	6.42E-89	7	#N/A	MGI:3032619
PPDPF	6.76E-72	1.231577355	0.901	0.496	3.00E-67	20	#N/A	#N/A
MYL9	1.01E-66	1.142708652	0.847	0.348	4.51E-62	20	#N/A	#N/A
TMSB4X	1.78E-51	1.118016852	0.595	0.153	7.90E-47	X	YES	#N/A
HBA2	2.99E-17	1.115361017	0.107	0.009	1.33E-12	16	#N/A	#N/A
CD99	2.53E-42	1.113285902	0.706	0.277	1.12E-37	X	#N/A	#N/A
PFN1	6.90E-63	1.112166688	0.63	0.143	3.07E-58	17	#N/A	#N/A
UQCRQ	3.64E-51	1.106819589	0.779	0.338	1.62E-46	5	#N/A	#N/A
RPS29	7.93E-95	1.099929341	0.985	0.804	3.52E-90	14	#N/A	#N/A
RPL38	1.22E-90	1.08572825	0.973	0.752	5.44E-86	17	#N/A	MGI:1861228
SLC25A6	1.60E-60	1.069852721	0.771	0.27	7.10E-56	X	#N/A	#N/A
RPLP2	2.43E-86	1.065571463	0.985	0.721	1.08E-81	11	#N/A	#N/A
RPL39	2.36E-77	1.065287085	0.973	0.69	1.05E-72	X	YES	#N/A
RPS26	9.79E-66	1.060555127	0.92	0.562	4.35E-61	12	#N/A	#N/A
NDUFA11	6.30E-56	1.040904442	0.771	0.297	2.80E-51	19	#N/A	#N/A
MIR202HG	1.89E-55	1.030651325	0.947	0.63	8.41E-51	10	#N/A	#N/A
BEX1	2.66E-64	1.0296462	0.935	0.54	1.18E-59	X	YES	#N/A
EEF1A1	5.48E-112	1.025445711	0.996	0.942	2.44E-107	6	#N/A	#N/A
USMG5	3.05E-65	1.017202599	0.916	0.543	1.35E-60	10	#N/A	#N/A
G6PD	4.45E-48	1.01585106	0.702	0.247	1.98E-43	X	YES	#N/A
RPL37	1.47E-66	1.013673993	0.95	0.675	6.54E-62	5	#N/A	#N/A
RPS27	2.48E-91	1.009652287	0.985	0.882	1.10E-86	1	#N/A	#N/A
SPARC	2.77E-27	0.982972755	0.683	0.316	1.23E-22	5	#N/A	#N/A
RPL36	2.68E-72	0.982124693	0.973	0.728	1.19E-67	19	#N/A	#N/A
RPL13A	3.20E-88	0.973554384	0.989	0.823	1.42E-83	19	#N/A	#N/A
RPL23A	1.05E-75	0.968389705	0.977	0.716	4.67E-71	17	#N/A	#N/A
RPL27	4.62E-65	0.961842698	0.939	0.583	2.06E-60	17	#N/A	#N/A
PSAP	1.25E-33	0.961595755	0.473	0.137	5.54E-29	10	#N/A	MGI:3711720
IGFBP7	6.02E-58	0.96102484	0.561	0.108	2.68E-53	4	#N/A	MGI:5618913
GAPDH	7.58E-70	0.956463643	0.958	0.754	3.37E-65	12	#N/A	#N/A
RPS28	6.01E-70	0.942349959	0.95	0.702	2.67E-65	19	#N/A	#N/A
UQCR11	4.19E-45	0.941687216	0.767	0.315	1.86E-40	19	#N/A	#N/A
PHGDH	6.66E-50	0.941376556	0.443	0.077	2.96E-45	1	#N/A	#N/A
RPL27A	5.15E-72	0.934878761	0.969	0.707	2.29E-67	11	#N/A	#N/A
HNRNPA1	4.13E-51	0.931929057	0.859	0.411	1.84E-46	12	#N/A	#N/A
RHOC	5.69E-50	0.92820538	0.718	0.241	2.53E-45	1	#N/A	#N/A
B2M	3.04E-32	0.924334367	0.439	0.125	1.35E-27	15	#N/A	#N/A
FTH1	5.70E-85	0.924014117	0.996	0.866	2.53E-80	11	#N/A	#N/A
TIMP1	1.96E-27	0.923969914	0.683	0.332	8.73E-23	X	YES	MGI:3512125
RPL37A	3.39E-89	0.909324885	0.996	0.895	1.51E-84	2	#N/A	#N/A
GABARAP	1.41E-46	0.908014053	0.588	0.161	6.27E-42	17	#N/A	#N/A
HSPB1	1.67E-35	0.907080995	0.462	0.126	7.44E-31	7	#N/A	#N/A
SNHG25	9.38E-52	0.905878951	0.347	0.038	4.17E-47	17	#N/A	#N/A
RPS10	7.82E-62	0.90178014	0.954	0.671	3.48E-57	6	#N/A	#N/A
RPS20	1.33E-69	0.898300111	0.962	0.78	5.89E-65	8	#N/A	#N/A
INHA	2.22E-32	0.896370884	0.557	0.199	9.89E-28	2	#N/A	MGI:1857202
AKR1B1	1.22E-41	0.895356794	0.55	0.157	5.41E-37	7	#N/A	#N/A
PGAM1	1.66E-41	0.894123094	0.706	0.285	7.36E-37	10	#N/A	#N/A
NUTF2	9.83E-41	0.887659349	0.565	0.17	4.37E-36	16	#N/A	#N/A
RPL12	1.27E-48	0.887634262	0.866	0.446	5.66E-44	9	#N/A	#N/A
RPL4	1.01E-44	0.884582296	0.809	0.361	4.50E-40	15	#N/A	#N/A
RPL34	2.79E-64	0.881998434	0.977	0.707	1.24E-59	4	#N/A	#N/A
OST4	1.53E-47	0.881301797	0.851	0.414	6.79E-43	2	#N/A	#N/A
CLU	2.18E-20	0.878667873	0.927	0.641	9.68E-16	8	#N/A	#N/A
MT1X	1.79E-35	0.877204562	0.508	0.15	7.94E-31	16	#N/A	MGI:1857301
TUBA1A	3.68E-43	0.872613757	0.832	0.378	1.64E-38	12	#N/A	#N/A
COX7C	7.42E-52	0.869595504	0.92	0.616	3.30E-47	5	#N/A	#N/A
RPS19	2.20E-62	0.867005844	0.977	0.722	9.78E-58	19	#N/A	#N/A
MT2A	1.01E-28	0.863732426	0.469	0.148	4.48E-24	16	#N/A	#N/A
ATP5G2	1.24E-41	0.861054998	0.821	0.421	5.53E-37	12	#N/A	#N/A
RPL23	8.25E-49	0.857665476	0.905	0.553	3.67E-44	17	#N/A	#N/A
RPLP1	7.11E-91	0.855417297	1	0.927	3.16E-86	15	#N/A	MGI:6094829
COX8A	3.04E-42	0.852817531	0.802	0.395	1.35E-37	11	#N/A	#N/A
NDUFA1	2.13E-36	0.850860912	0.725	0.315	9.47E-32	X	YES	#N/A

TOMM7	3.08E-47	0.849277105	0.878	0.493	1.37E-42	7	#N/A	#N/A
PPIA	3.10E-45	0.84611697	0.851	0.455	1.38E-40	7	#N/A	#N/A
RPL18A	8.06E-65	0.83804246	0.977	0.695	3.58E-60	19	#N/A	#N/A
RPLP0	1.20E-50	0.835347202	0.916	0.585	5.33E-46	12	#N/A	#N/A
RPL21	3.73E-64	0.832620584	0.966	0.748	1.66E-59	13	#N/A	#N/A
SERPINA5	1.12E-24	0.831506491	0.733	0.383	5.00E-20	14	#N/A	MGI:2445835
NDUFS5	2.59E-37	0.827473661	0.786	0.387	1.15E-32	1	#N/A	#N/A
MYL6B	2.28E-45	0.823231169	0.924	0.702	1.02E-40	12	#N/A	#N/A
RPL28	3.52E-66	0.82058653	0.973	0.829	1.56E-61	19	#N/A	#N/A
IFITM2	1.18E-31	0.818917875	0.55	0.197	5.23E-27	11	#N/A	#N/A
S100A10	4.47E-45	0.818800032	0.893	0.582	1.99E-40	1	#N/A	#N/A
CFL1	6.81E-42	0.81707866	0.859	0.475	3.03E-37	11	#N/A	#N/A
RPS8	3.59E-52	0.8049048	0.935	0.681	1.60E-47	1	#N/A	#N/A
POLR2L	2.98E-34	0.802092589	0.737	0.35	1.32E-29	11	#N/A	#N/A
NDUFB1	4.47E-29	0.801335192	0.653	0.305	1.99E-24	14	#N/A	#N/A
DEFB119	2.83E-48	0.801312755	0.901	0.781	1.26E-43	20	#N/A	#N/A
RPS16	3.68E-52	0.801076893	0.958	0.668	1.64E-47	19	#N/A	#N/A
ATP5I	1.36E-35	0.799945423	0.771	0.381	6.04E-31	4	#N/A	#N/A
DLK1	2.46E-54	0.798389676	0.263	0.009	1.09E-49	14	#N/A	MGI:3640339
JUNB	6.36E-27	0.795814838	0.466	0.15	2.83E-22	19	#N/A	#N/A
DCN	3.47E-38	0.792318547	0.275	0.031	1.54E-33	12	#N/A	MGI:2153002
SERPINF1	7.79E-21	0.791202661	0.637	0.311	3.46E-16	17	#N/A	MGI:2664515
GSTA2	8.90E-28	0.789540446	0.641	0.303	3.95E-23	6	#N/A	#N/A
VDAC1	1.05E-35	0.781753361	0.618	0.215	4.68E-31	5	#N/A	#N/A
UQCRH	6.81E-32	0.777125988	0.767	0.389	3.03E-27	1	#N/A	#N/A
GSTA4	9.85E-34	0.77617235	0.508	0.152	4.38E-29	6	#N/A	#N/A
TRAPPC1	1.08E-30	0.77572979	0.599	0.234	4.79E-26	17	#N/A	#N/A
CSTB	1.82E-34	0.774741839	0.756	0.347	8.09E-30	21	#N/A	#N/A
TMSB10	4.22E-60	0.774197798	0.992	0.925	1.88E-55	2	#N/A	#N/A
RPSA	5.19E-42	0.773863984	0.836	0.402	2.31E-37	3	#N/A	#N/A
ALDOA	7.49E-35	0.771407593	0.664	0.26	3.33E-30	16	#N/A	#N/A
SNRPB	9.25E-34	0.770494688	0.569	0.201	4.11E-29	20	#N/A	#N/A
ACOT2	4.65E-40	0.758412902	0.328	0.049	2.07E-35	14	#N/A	#N/A
RPL6	1.49E-43	0.75714974	0.908	0.577	6.64E-39	12	#N/A	#N/A
FGFBP2	1.94E-50	0.754749278	0.26	0.012	8.61E-46	4	#N/A	#N/A
TXN2	3.45E-34	0.754102518	0.573	0.193	1.53E-29	22	#N/A	#N/A
ATP5E	6.37E-45	0.752647385	0.931	0.64	2.83E-40	20	#N/A	#N/A
MT1E	2.88E-29	0.751890533	0.237	0.034	1.28E-24	16	#N/A	#N/A
SMIM1	1.47E-34	0.75172365	0.782	0.386	6.55E-30	1	#N/A	#N/A
PCBP2	1.64E-34	0.751464582	0.63	0.233	7.28E-30	12	#N/A	#N/A
HIGD2A	2.76E-33	0.74966735	0.649	0.252	1.23E-28	5	#N/A	#N/A
PPP2R1A	3.62E-32	0.749391662	0.454	0.132	1.61E-27	19	#N/A	#N/A
KRTCAP2	2.40E-31	0.748823718	0.527	0.173	1.07E-26	1	#N/A	#N/A
COMMD6	2.05E-30	0.744867987	0.748	0.382	9.12E-26	13	#N/A	#N/A
ECH1	9.18E-29	0.742756683	0.702	0.335	4.08E-24	19	#N/A	#N/A
RPS25	1.72E-44	0.741829098	0.927	0.648	7.66E-40	11	#N/A	#N/A
RPS15A	1.60E-44	0.741196707	0.939	0.709	7.13E-40	16	#N/A	#N/A
IFITM3	7.96E-39	0.741082645	0.889	0.524	3.54E-34	11	#N/A	#N/A
MYL6	1.85E-52	0.740981273	0.969	0.741	8.20E-48	12	#N/A	#N/A
ENO1	6.13E-32	0.740065683	0.702	0.296	2.72E-27	1	#N/A	#N/A
ATP5C1	2.95E-31	0.739642839	0.744	0.362	1.31E-26	10	#N/A	#N/A
TFF3	1.00E-31	0.737294909	0.202	0.018	4.46E-27	21	#N/A	#N/A
RPS3	7.75E-61	0.735583603	0.977	0.824	3.44E-56	11	#N/A	#N/A
IL32	2.85E-26	0.734359904	0.156	0.012	1.27E-21	16	#N/A	#N/A
IFI27	2.99E-24	0.734239601	0.718	0.379	1.33E-19	14	#N/A	#N/A
AMH	2.02E-17	0.731951174	0.202	0.048	9.00E-13	19	#N/A	MGI:1857126
HNRNPA0	1.52E-34	0.731180035	0.485	0.137	6.74E-30	5	#N/A	#N/A
TMEM14C	7.15E-31	0.730041754	0.531	0.182	3.18E-26	6	#N/A	#N/A
S100A11	8.51E-28	0.729189565	0.725	0.366	3.78E-23	1	#N/A	MGI:2681771
VIM	2.61E-40	0.728523027	0.943	0.586	1.16E-35	10	#N/A	#N/A
ARF5	6.44E-30	0.72526148	0.401	0.106	2.86E-25	7	#N/A	#N/A
RPS27A	8.78E-51	0.724678728	0.962	0.77	3.90E-46	2	#N/A	#N/A
RPL10A	1.65E-39	0.718300982	0.901	0.567	7.31E-35	6	#N/A	#N/A
GSN	4.46E-37	0.714888846	0.374	0.074	1.98E-32	9	#N/A	MGI:2179509
BANF1	8.83E-34	0.711429244	0.576	0.197	3.92E-29	11	#N/A	#N/A
COX6A1	4.08E-28	0.710731329	0.756	0.398	1.82E-23	12	#N/A	#N/A
JUN	1.51E-22	0.70654198	0.431	0.146	6.70E-18	1	#N/A	#N/A
ATOX1	1.58E-25	0.706285214	0.634	0.287	7.01E-21	5	#N/A	#N/A
FOS	6.10E-29	0.703190007	0.527	0.167	2.71E-24	14	#N/A	MGI:1857171
SMIM4	3.64E-32	0.701459703	0.397	0.099	1.62E-27	3	#N/A	#N/A
TIMM8B	5.12E-26	0.701091033	0.676	0.331	2.28E-21	11	#N/A	#N/A
PSMA2	9.00E-31	0.699079752	0.622	0.241	4.00E-26	7	#N/A	#N/A
ANXA2	3.28E-27	0.696587716	0.618	0.266	1.46E-22	15	#N/A	#N/A
TRMT112	3.06E-27	0.696375633	0.729	0.372	1.36E-22	11	#N/A	#N/A
TUBB	1.85E-25	0.694913643	0.645	0.293	8.21E-21	6	#N/A	#N/A



TAGLN2	5.12E-30	0.694208205	0.782	0.402	2.28E-25	1	#N/A	#N/A
TMEM258	3.26E-28	0.693909416	0.641	0.272	1.45E-23	11	#N/A	#N/A
TPT1	4.14E-61	0.691959528	0.981	0.879	1.84E-56	13	#N/A	#N/A
GAMT	1.81E-25	0.691239683	0.718	0.372	8.04E-21	19	#N/A	MGI:3044282
RPL35A	6.06E-52	0.688752244	0.962	0.788	2.69E-47	3	#N/A	#N/A
RPL10	3.50E-39	0.688238186	0.943	0.691	1.56E-34	X	YES	#N/A
RPS23	3.74E-45	0.686944803	0.954	0.757	1.66E-40	5	#N/A	#N/A
DEFB123	1.75E-22	0.684021175	0.752	0.487	7.79E-18	20	#N/A	#N/A
CYP11A1	1.20E-30	0.681099943	0.332	0.071	5.32E-26	15	#N/A	MGI:2183813
ROMO1	2.22E-27	0.679173491	0.626	0.269	9.85E-23	20	#N/A	#N/A
CALM2	3.19E-43	0.678756877	0.947	0.732	1.42E-38	2	#N/A	#N/A
SCP2	2.39E-26	0.678362938	0.641	0.287	1.06E-21	1	#N/A	#N/A
NDUFA4	1.02E-34	0.67566102	0.901	0.59	4.52E-30	7	#N/A	#N/A
GSTM4	2.21E-33	0.674629819	0.309	0.054	9.84E-29	1	#N/A	#N/A
UBL5	5.71E-30	0.67115016	0.84	0.535	2.54E-25	19	#N/A	#N/A
SH3BGRL	7.03E-26	0.670893278	0.641	0.287	3.12E-21	X	#N/A	#N/A
RPS18	4.88E-57	0.669822472	0.992	0.895	2.17E-52	6	#N/A	#N/A
TMEM52	3.78E-21	0.669507664	0.366	0.121	1.68E-16	1	#N/A	#N/A
RPS4Y1	3.69E-25	0.6657033	0.725	0.386	1.64E-20	Y	#N/A	#N/A
MRPS6	1.34E-24	0.664368417	0.637	0.296	5.97E-20	21	#N/A	#N/A
RBM3	2.12E-26	0.664140478	0.515	0.187	9.42E-22	X	YES	#N/A
HIGD1A	2.02E-28	0.664016877	0.435	0.129	8.97E-24	3	#N/A	#N/A
TPI1	6.82E-27	0.663744231	0.79	0.453	3.03E-22	12	#N/A	#N/A
VAMP2	2.36E-28	0.66110497	0.511	0.174	1.05E-23	17	#N/A	#N/A
RPL26	1.36E-40	0.658048211	0.958	0.754	6.03E-36	17	#N/A	#N/A
RPS4X	2.24E-47	0.657160321	0.973	0.808	9.94E-43	X	#N/A	#N/A
SRP9	1.36E-28	0.656856801	0.641	0.266	6.03E-24	1	#N/A	#N/A
RBP1	1.36E-27	0.651569097	0.752	0.382	6.05E-23	3	#N/A	MGI:2181412
PET100	1.53E-24	0.651389048	0.462	0.164	6.80E-20	19	#N/A	#N/A
COX6C	1.41E-29	0.649766284	0.851	0.589	6.28E-25	8	#N/A	#N/A
ISYNA1	1.96E-27	0.649513261	0.847	0.513	8.72E-23	19	#N/A	#N/A
IFI27L2	1.78E-23	0.64813044	0.542	0.225	7.92E-19	14	#N/A	#N/A
DYNLRB1	1.21E-24	0.647366693	0.504	0.19	5.38E-20	20	#N/A	#N/A
CIRBP	4.99E-25	0.647243509	0.718	0.352	2.22E-20	19	#N/A	MGI:5432527
TUBA1B	5.71E-28	0.645771211	0.885	0.572	2.54E-23	12	#N/A	#N/A
UXT	1.20E-24	0.645173251	0.401	0.125	5.32E-20	X	YES	MGI:6159372
EGR1	3.56E-05	0.643507322	0.198	0.104	1	5	#N/A	MGI:5766183
SF3A2	1.42E-32	0.64318846	0.256	0.036	6.32E-28	19	#N/A	#N/A
TMA7	3.12E-32	0.641120824	0.882	0.631	1.39E-27	3	#N/A	#N/A
SLC25A5	1.32E-25	0.640143432	0.656	0.291	5.85E-21	X	YES	#N/A
SERF2	5.25E-35	0.6399982	0.931	0.669	2.33E-30	15	#N/A	#N/A
ZFP36	3.74E-18	0.63825895	0.271	0.078	1.66E-13	19	#N/A	#N/A
SRI	7.92E-23	0.637921488	0.485	0.188	3.52E-18	7	#N/A	#N/A
ETFA	3.10E-29	0.635707144	0.439	0.129	1.38E-24	15	#N/A	#N/A
SNHG19	1.04E-27	0.634026356	0.366	0.093	4.61E-23	16	#N/A	#N/A
ZFAS1	6.36E-26	0.634009392	0.504	0.185	2.83E-21	20	#N/A	#N/A
RPL5	9.26E-40	0.632022529	0.95	0.716	4.12E-35	1	#N/A	#N/A
MTHFS	5.33E-28	0.629499428	0.439	0.132	2.37E-23	15	#N/A	#N/A
RPL7	3.70E-32	0.629479092	0.885	0.629	1.64E-27	8	#N/A	#N/A
CNIH1	1.39E-22	0.628330707	0.355	0.108	6.20E-18	14	#N/A	#N/A
TAX1BP3	3.24E-24	0.626665291	0.359	0.102	1.44E-19	17	#N/A	#N/A
EMP3	2.06E-24	0.623374215	0.282	0.063	9.18E-20	19	#N/A	#N/A
FATE1	2.74E-38	0.621953552	0.981	0.793	1.22E-33	X	YES	#N/A
RPL9	1.06E-40	0.619131687	0.954	0.783	4.70E-36	4	#N/A	#N/A
NDUFB9	4.64E-25	0.617780468	0.771	0.464	2.06E-20	8	#N/A	#N/A
MYL12A	7.90E-23	0.617025951	0.683	0.335	3.51E-18	18	#N/A	#N/A
ARL6IP1	8.13E-22	0.616411532	0.595	0.272	3.61E-17	16	#N/A	#N/A
MRPL33	3.24E-21	0.613762422	0.641	0.319	1.44E-16	2	#N/A	#N/A
PRDX1	5.47E-23	0.612783365	0.779	0.46	2.43E-18	1	#N/A	#N/A
TSEN34	4.66E-27	0.61054319	0.607	0.234	2.07E-22	19	#N/A	#N/A
SNRPN	7.28E-23	0.608580143	0.523	0.213	3.24E-18	15	#N/A	#N/A
TIMM13	5.60E-24	0.608358075	0.515	0.197	2.49E-19	19	#N/A	MGI:6257582
FXVD6	1.71E-20	0.608320953	0.45	0.175	7.61E-16	11	#N/A	#N/A
CLDN11	6.45E-16	0.608011183	0.588	0.307	2.87E-11	3	#N/A	MA
YWHAE	1.11E-22	0.607256289	0.664	0.324	4.93E-18	17	#N/A	MGI:2667341
GSTA1	3.34E-35	0.607234638	0.927	0.686	1.49E-30	6	#N/A	#N/A
PRPS2	4.04E-22	0.606298607	0.565	0.25	1.80E-17	X	YES	#N/A
RPL14	6.09E-23	0.606004117	0.798	0.492	2.71E-18	3	#N/A	#N/A
TAF11	1.08E-18	0.605355382	0.401	0.157	4.80E-14	6	#N/A	#N/A
CTSV	1.31E-14	0.605349141	0.37	0.157	5.81E-10	9	#N/A	#N/A
ATP5B	9.16E-22	0.6035281	0.748	0.412	4.07E-17	12	#N/A	#N/A
RPS12	1.10E-44	0.600956898	0.973	0.825	4.87E-40	6	#N/A	#N/A
ATP5J2	1.19E-22	0.600920794	0.733	0.423	5.27E-18	7	#N/A	#N/A
SNRPE	1.23E-23	0.600345328	0.546	0.219	5.49E-19	1	#N/A	#N/A
SEC61G	3.73E-26	0.599208936	0.76	0.379	1.66E-21	7	#N/A	#N/A

RPS13	1.84E-36	0.598759019	0.962	0.753	8.20E-32	11	#N/A	#N/A
DYNLT1	1.66E-22	0.597722319	0.805	0.502	7.40E-18	6	#N/A	#N/A
COX5B	3.28E-28	0.595719214	0.855	0.557	1.46E-23	2	#N/A	#N/A
MRPL16	4.85E-24	0.595287429	0.534	0.211	2.16E-19	11	#N/A	#N/A
RPS15	3.86E-38	0.595198729	0.954	0.785	1.72E-33	19	#N/A	#N/A
PKM	7.46E-23	0.594860284	0.79	0.446	3.32E-18	15	#N/A	#N/A
COX7B	3.05E-22	0.594749846	0.565	0.246	1.36E-17	X	YES	#N/A
COX17	3.56E-19	0.594648909	0.504	0.221	1.58E-14	3	#N/A	#N/A
CHPF	2.49E-18	0.592661845	0.332	0.114	1.11E-13	2	#N/A	#N/A
APP	2.46E-12	0.592444217	0.275	0.106	1.09E-07	21	#N/A	MGI:2136847
GLO1	2.36E-24	0.591323016	0.427	0.139	1.05E-19	6	#N/A	#N/A
RPS5	1.88E-25	0.590502151	0.866	0.618	8.34E-21	19	#N/A	#N/A
SNHG8	6.90E-25	0.589998405	0.718	0.355	3.07E-20	4	#N/A	#N/A
CLIC1	1.25E-18	0.586147153	0.317	0.102	5.56E-14	6	#N/A	#N/A
LGALS1	1.87E-26	0.584342015	0.912	0.661	8.33E-22	22	#N/A	#N/A
SMIM10	6.31E-20	0.582262479	0.607	0.296	2.81E-15	X	YES	#N/A
PRAF2	1.26E-22	0.580754766	0.282	0.07	5.61E-18	X	YES	#N/A
CD151	8.72E-15	0.580502973	0.279	0.098	3.87E-10	11	#N/A	#N/A
PLP2	6.70E-23	0.580395525	0.263	0.061	2.98E-18	X	YES	#N/A
ABRACL	3.56E-19	0.580096773	0.615	0.308	1.58E-14	6	#N/A	#N/A
MTCH1	2.04E-21	0.579385551	0.576	0.256	9.06E-17	6	#N/A	#N/A
PSMA1	1.04E-19	0.578233645	0.435	0.168	4.61E-15	11	#N/A	#N/A
ATP5A1	8.27E-20	0.577862029	0.71	0.384	3.68E-15	18	#N/A	#N/A
NUDT10	7.49E-24	0.577627972	0.397	0.123	3.33E-19	X	YES	#N/A
ZYX	1.68E-19	0.576048345	0.374	0.135	7.46E-15	7	#N/A	#N/A
S100A16	2.66E-24	0.575746684	0.649	0.295	1.18E-19	1	#N/A	#N/A
COL1A2	1.47E-13	0.574875456	0.366	0.156	6.56E-09	7	#N/A	#N/A
POLR2G	2.07E-21	0.574150562	0.393	0.131	9.22E-17	11	#N/A	#N/A
CYB5R3	8.63E-22	0.574097198	0.569	0.25	3.84E-17	22	#N/A	#N/A
HIST1H1C	7.75E-12	0.574092583	0.317	0.137	3.45E-07	6	#N/A	#N/A
STAR	2.30E-23	0.57320758	0.5	0.187	1.02E-18	8	#N/A	MGI:2388706
CRYAB	2.72E-29	0.57216516	0.168	0.011	1.21E-24	11	#N/A	#N/A
BTF3	3.12E-22	0.572049289	0.794	0.447	1.39E-17	5	#N/A	MGI:3688730
BSG	3.46E-15	0.571977573	0.527	0.267	1.54E-10	19	#N/A	MA
TOMM34	7.65E-24	0.571812698	0.439	0.148	3.40E-19	20	#N/A	#N/A
TRIM55	4.15E-23	0.56966156	0.351	0.102	1.84E-18	8	#N/A	#N/A
DPM3	6.11E-24	0.56777086	0.385	0.119	2.72E-19	1	#N/A	MGI:5548565
ACTG1	3.12E-16	0.567262756	0.656	0.357	1.39E-11	17	#N/A	#N/A
NDUFB11	2.10E-25	0.566330458	0.683	0.312	9.35E-21	X	YES	#N/A
PPIB	1.46E-16	0.565886333	0.447	0.196	6.49E-12	15	#N/A	#N/A
RPL22	4.05E-28	0.565658235	0.897	0.611	1.80E-23	1	#N/A	#N/A
RAB7A	7.87E-19	0.565522469	0.405	0.154	3.50E-14	3	#N/A	#N/A
FAU	4.19E-34	0.564958802	0.947	0.758	1.86E-29	11	#N/A	#N/A
ATP6V1E1	5.47E-24	0.564901651	0.492	0.184	2.43E-19	22	#N/A	#N/A
CAPZA2	5.56E-24	0.564011666	0.473	0.169	2.47E-19	7	#N/A	#N/A
BAX	4.31E-20	0.562528673	0.294	0.082	1.92E-15	19	#N/A	MA
EIF4A1	2.36E-22	0.562368624	0.534	0.211	1.05E-17	17	#N/A	#N/A
EMC10	1.03E-17	0.560302759	0.321	0.11	4.56E-13	19	#N/A	MGI:5085894
NOP10	3.36E-22	0.558746377	0.565	0.241	1.49E-17	15	#N/A	#N/A
C4orf48	1.02E-19	0.558308449	0.737	0.43	4.52E-15	4	#N/A	#N/A
RPS3A	6.50E-40	0.556770738	0.977	0.83	2.89E-35	4	#N/A	#N/A
CDKN1A	2.34E-19	0.555048214	0.298	0.089	1.04E-14	6	#N/A	MGI:5695874
RPL35	5.54E-33	0.554946933	0.931	0.766	2.46E-28	9	#N/A	#N/A
DUSP1	1.80E-13	0.554888152	0.256	0.089	7.99E-09	5	#N/A	#N/A
SNCG	5.69E-25	0.553699731	0.13	0.007	2.53E-20	10	#N/A	#N/A
FKBP1A	2.78E-26	0.553685262	0.45	0.142	1.24E-21	20	#N/A	#N/A
EPHX1	2.26E-19	0.553142896	0.233	0.056	1.01E-14	1	#N/A	#N/A
SNRPG	2.84E-22	0.552485194	0.603	0.286	1.26E-17	2	#N/A	#N/A
SLC25A3	1.04E-21	0.551978274	0.63	0.29	4.63E-17	12	#N/A	MGI:5548483
ITM2B	1.57E-18	0.550796851	0.618	0.294	6.99E-14	13	#N/A	#N/A
NME1	4.18E-19	0.54967977	0.363	0.125	1.86E-14	17	#N/A	#N/A
C4orf3	1.18E-16	0.549257595	0.519	0.25	5.25E-12	4	#N/A	#N/A
TOMM5	2.87E-23	0.548421329	0.378	0.114	1.27E-18	9	#N/A	#N/A
PRNP	4.77E-15	0.54777109	0.298	0.107	2.12E-10	20	#N/A	#N/A
TSPO	1.06E-18	0.546860069	0.34	0.113	4.72E-14	22	#N/A	#N/A
EID1	1.65E-19	0.546846155	0.771	0.443	7.34E-15	15	#N/A	#N/A
CYB5A	1.78E-20	0.545738471	0.649	0.318	7.92E-16	18	#N/A	#N/A
NDUFS4	2.18E-20	0.544591439	0.504	0.207	9.69E-16	5	#N/A	#N/A
ATP5D	2.18E-18	0.543944125	0.679	0.365	9.69E-14	19	#N/A	#N/A
PSAT1	9.06E-24	0.542613182	0.302	0.074	4.03E-19	9	#N/A	#N/A
CST3	2.17E-17	0.542467667	0.897	0.654	9.66E-13	20	#N/A	MGI:5586715
AP2M1	1.66E-18	0.542403135	0.584	0.282	7.38E-14	3	#N/A	#N/A
ANAPC16	2.08E-19	0.541920078	0.569	0.262	9.23E-15	10	#N/A	#N/A
NAPA	1.01E-21	0.541878309	0.412	0.144	4.47E-17	19	#N/A	#N/A
C7orf50	9.38E-20	0.541546252	0.462	0.185	4.17E-15	7	#N/A	#N/A

BLOC1S1	1.23E-21	0.541121703	0.492	0.189	5.45E-17	12	#N/A	#N/A
RAC1	7.41E-20	0.54084215	0.546	0.242	3.30E-15	7	#N/A	#N/A
CITED2	4.02E-25	0.539810879	0.286	0.063	1.79E-20	6	#N/A	#N/A
FSCN1	2.09E-21	0.537288583	0.439	0.16	9.30E-17	7	#N/A	#N/A
PFN2	1.44E-23	0.536303286	0.298	0.073	6.39E-19	3	#N/A	#N/A
RPL18	2.46E-35	0.536244611	0.969	0.791	1.10E-30	19	#N/A	#N/A
POLE4	1.36E-16	0.535479772	0.439	0.188	6.04E-12	2	#N/A	MGI:5085645
RPL29	1.82E-27	0.534708015	0.927	0.739	8.09E-23	3	#N/A	MGI:3696667
RBBP7	6.95E-21	0.533717964	0.695	0.355	3.09E-16	X	#N/A	#N/A
TBCA	7.50E-18	0.533241044	0.683	0.371	3.33E-13	5	#N/A	#N/A
PRDX5	5.25E-21	0.532404264	0.721	0.377	2.33E-16	11	#N/A	#N/A
GPX3	3.50E-18	0.531875374	0.179	0.035	1.56E-13	5	#N/A	#N/A
RHOB	2.25E-18	0.5318292	0.279	0.081	9.99E-14	2	#N/A	#N/A
HPRT1	1.12E-17	0.529664927	0.748	0.462	4.97E-13	X	YES	MGI:3831277
NDUFA7	1.07E-19	0.529456891	0.351	0.114	4.75E-15	19	#N/A	#N/A
TBCB	1.82E-23	0.528649159	0.485	0.173	8.10E-19	19	#N/A	#N/A
RPS11	1.64E-29	0.527226579	0.939	0.766	7.29E-25	19	#N/A	#N/A
STRAP	3.25E-21	0.527032469	0.424	0.15	1.44E-16	12	#N/A	#N/A
OAZ1	9.77E-25	0.526877197	0.908	0.603	4.34E-20	19	#N/A	#N/A
MIR4458HG	3.72E-20	0.526060994	0.248	0.059	1.65E-15	5	#N/A	#N/A
RARRES2	3.24E-23	0.525761435	0.126	0.008	1.44E-18	7	#N/A	#N/A
MRFAP1	4.31E-19	0.525371763	0.706	0.389	1.92E-14	4	#N/A	#N/A
C7orf73	5.31E-17	0.524919035	0.672	0.379	2.36E-12	7	#N/A	#N/A
ANAPC13	4.17E-15	0.523962412	0.313	0.117	1.85E-10	3	#N/A	#N/A
PGLS	6.07E-22	0.523027931	0.359	0.109	2.70E-17	19	#N/A	#N/A
TCEAL8	2.21E-17	0.522670039	0.622	0.321	9.84E-13	X	YES	#N/A
UBE2E3	6.45E-22	0.522531637	0.519	0.206	2.87E-17	2	#N/A	#N/A
SMARCB1	2.94E-21	0.522229631	0.294	0.078	1.31E-16	22	#N/A	MGI:2388033
HMGCS2	2.28E-16	0.522051231	0.427	0.183	1.01E-11	1	#N/A	MGI:6416129
C19orf53	3.71E-16	0.521640212	0.515	0.245	1.65E-11	19	#N/A	#N/A
LGALS3BP	9.16E-12	0.52119749	0.244	0.092	4.07E-07	17	#N/A	#N/A
HMGN1	2.92E-19	0.521145463	0.718	0.38	1.30E-14	21	#N/A	#N/A
RAP1B	1.03E-16	0.521058619	0.439	0.188	4.60E-12	12	#N/A	MGI:3573929
CYR61	6.76E-05	0.520858252	0.115	0.05	1	1	#N/A	#N/A
OSTF1	9.35E-21	0.520729557	0.34	0.104	4.16E-16	9	#N/A	#N/A
ALDH1A1	2.99E-21	0.520057302	0.866	0.559	1.33E-16	9	#N/A	#N/A
MRPL24	4.41E-22	0.519948946	0.252	0.055	1.96E-17	1	#N/A	#N/A
CMAS	1.02E-16	0.5155785	0.656	0.356	4.53E-12	12	#N/A	#N/A
TXN	6.75E-20	0.514538757	0.481	0.194	3.00E-15	9	#N/A	#N/A
RPL22L1	2.64E-15	0.513712163	0.252	0.079	1.17E-10	3	#N/A	#N/A
ARF4	5.30E-19	0.513451676	0.649	0.315	2.36E-14	3	#N/A	#N/A
HNRNPDL	6.80E-20	0.512163047	0.481	0.193	3.02E-15	4	#N/A	#N/A
LGALS3	3.78E-15	0.51210717	0.679	0.414	1.68E-10	14	#N/A	#N/A
GNG5	7.80E-18	0.51146347	0.721	0.397	3.47E-13	1	#N/A	#N/A
RPL32	7.45E-33	0.511251563	0.947	0.87	3.31E-28	3	#N/A	#N/A
BEX2	3.93E-18	0.510970719	0.66	0.347	1.75E-13	X	YES	#N/A
SNRPD2	3.03E-18	0.51057216	0.645	0.34	1.35E-13	19	#N/A	#N/A
MDH2	1.09E-16	0.510413061	0.477	0.21	4.83E-12	7	#N/A	#N/A
S100A13	6.38E-13	0.510043278	0.328	0.136	2.84E-08	1	#N/A	#N/A
UNC119	3.37E-18	0.509541676	0.473	0.201	1.50E-13	17	#N/A	#N/A
NAP1L1	2.60E-18	0.508941593	0.672	0.355	1.16E-13	12	#N/A	#N/A
NDUFS3	2.77E-25	0.507973079	0.431	0.134	1.23E-20	11	#N/A	#N/A
TMEM14B	1.95E-21	0.507933945	0.542	0.229	8.66E-17	6	#N/A	#N/A
PPP1CA	2.46E-21	0.507065923	0.37	0.118	1.09E-16	11	#N/A	#N/A
BTG3	1.64E-21	0.506943222	0.55	0.231	7.27E-17	21	#N/A	#N/A
NOP16	4.62E-21	0.506438149	0.183	0.029	2.05E-16	5	#N/A	#N/A
EDF1	3.99E-18	0.500771927	0.718	0.409	1.77E-13	9	#N/A	#N/A
COX6B1	1.88E-18	0.500653052	0.649	0.323	8.38E-14	19	#N/A	#N/A
NUDT11	2.63E-19	0.500212558	0.584	0.269	1.17E-14	X	YES	#N/A
SDHC	7.96E-17	0.49880844	0.431	0.181	3.54E-12	1	#N/A	#N/A
LDHB	2.95E-18	0.498665605	0.748	0.426	1.31E-13	12	#N/A	#N/A
HMGN2	1.82E-18	0.497952498	0.664	0.336	8.08E-14	1	#N/A	#N/A
DAP	2.47E-18	0.49763722	0.21	0.047	1.10E-13	5	#N/A	#N/A
UQCRRFS1	2.07E-20	0.497504535	0.607	0.277	9.20E-16	19	#N/A	#N/A
GATM	2.75E-17	0.497383502	0.592	0.285	1.22E-12	15	#N/A	MGI:5465452
RBM42	3.87E-19	0.496829387	0.309	0.093	1.72E-14	19	#N/A	#N/A
SLIRP	1.03E-18	0.496637325	0.576	0.266	4.58E-14	14	#N/A	MGI:5538716
ESD	5.12E-17	0.495665069	0.416	0.167	2.27E-12	13	#N/A	#N/A
TRIP6	2.59E-18	0.495646851	0.294	0.089	1.15E-13	7	#N/A	#N/A
MGP	1.11E-22	0.495053342	0.206	0.034	4.93E-18	12	#N/A	#N/A
CYC1	3.87E-22	0.49498136	0.366	0.111	1.72E-17	8	#N/A	#N/A
UBTD1	4.13E-18	0.494929297	0.424	0.168	1.84E-13	10	#N/A	#N/A
RNASE1	3.57E-14	0.494832495	0.885	0.646	1.59E-09	14	#N/A	#N/A
RPL11	9.40E-27	0.494497051	0.931	0.738	4.18E-22	1	#N/A	#N/A
PDHA1	1.32E-20	0.494320138	0.275	0.071	5.88E-16	X	YES	MGI:2386703

NDFIP1	8.59E-18	0.49120646	0.466	0.193	3.82E-13	5	#N/A	#N/A
PEX2	1.39E-23	0.490984052	0.282	0.065	6.16E-19	8	#N/A	#N/A
DPM2	4.48E-19	0.490594494	0.275	0.077	1.99E-14	9	#N/A	#N/A
RPL30	8.64E-30	0.490522672	0.958	0.859	3.84E-25	8	#N/A	#N/A
IGFBP6	9.39E-27	0.490380294	0.164	0.013	4.18E-22	12	#N/A	#N/A
SDCBP	2.31E-18	0.489734795	0.439	0.171	1.03E-13	8	#N/A	#N/A
NDUFB7	1.90E-16	0.489660995	0.679	0.377	8.43E-12	19	#N/A	#N/A
DIABLO	8.99E-24	0.489252018	0.187	0.025	4.00E-19	12	#N/A	#N/A
SNRPF	2.08E-17	0.489050529	0.492	0.216	9.24E-13	12	#N/A	#N/A
HMG5	4.15E-17	0.488696023	0.824	0.624	1.84E-12	X	YES	#N/A
MAP3K13	2.38E-18	0.488314063	0.427	0.169	1.06E-13	3	#N/A	#N/A
ITM2C	1.18E-16	0.487871082	0.202	0.049	5.24E-12	2	#N/A	#N/A
CYB5R1	9.78E-14	0.487104282	0.206	0.061	4.35E-09	1	#N/A	#N/A
DCTN6	1.95E-18	0.486962166	0.355	0.121	8.67E-14	8	#N/A	#N/A
TTC8	1.25E-15	0.486882482	0.317	0.115	5.55E-11	14	#N/A	#N/A
GADD45A	1.23E-09	0.486755896	0.16	0.052	5.47E-05	1	#N/A	MGI:2182720
PSME1	1.14E-16	0.486568433	0.271	0.082	5.06E-12	14	#N/A	#N/A
SUPT4H1	5.99E-18	0.486297686	0.42	0.164	2.66E-13	17	#N/A	#N/A
PRDX3	3.41E-18	0.485641693	0.489	0.21	1.52E-13	10	#N/A	#N/A
PLIN3	3.99E-17	0.485378199	0.29	0.092	1.77E-12	19	#N/A	#N/A
BEX4	5.07E-16	0.485211706	0.595	0.307	2.25E-11	X	YES	#N/A
ATF7IP2	1.56E-16	0.484245201	0.656	0.357	6.93E-12	16	#N/A	#N/A
SPG21	4.13E-17	0.483235986	0.336	0.118	1.84E-12	15	#N/A	#N/A
MLF2	1.30E-18	0.48271088	0.477	0.196	5.77E-14	12	#N/A	#N/A
LY6E	3.69E-27	0.482564343	0.218	0.03	1.64E-22	8	#N/A	#N/A
NEDD8	4.92E-17	0.481168963	0.668	0.354	2.19E-12	14	#N/A	#N/A
TRAF4	6.04E-16	0.480754684	0.179	0.04	2.68E-11	17	#N/A	MGI:2182705
SNRPD1	4.48E-16	0.480653433	0.45	0.195	1.99E-11	18	#N/A	#N/A
SPAG7	1.53E-17	0.480609766	0.401	0.151	6.82E-13	17	#N/A	#N/A
MVP	1.49E-15	0.479845311	0.366	0.144	6.62E-11	16	#N/A	#N/A
FAM96B	1.47E-15	0.479324556	0.615	0.319	6.53E-11	16	#N/A	#N/A
PRDX6	7.38E-23	0.478868147	0.893	0.683	3.28E-18	1	#N/A	#N/A
ACYP2	1.08E-23	0.478842037	0.302	0.073	4.80E-19	2	#N/A	#N/A
COA3	1.43E-16	0.478703685	0.336	0.12	6.36E-12	17	#N/A	#N/A
TPGS1	8.70E-17	0.478151772	0.317	0.109	3.87E-12	19	#N/A	MGI:2388468
SRP14	2.94E-20	0.476846267	0.87	0.644	1.31E-15	15	#N/A	#N/A
WDR13	1.48E-14	0.47616831	0.225	0.067	6.57E-10	X	YES	#N/A
HNRNPK	8.78E-16	0.476084284	0.557	0.278	3.90E-11	9	#N/A	#N/A
PUF60	1.61E-19	0.475682124	0.37	0.126	7.14E-15	8	#N/A	#N/A
WDR83OS	5.08E-18	0.475639174	0.683	0.359	2.26E-13	19	#N/A	#N/A
MGST2	4.77E-14	0.475316516	0.466	0.214	2.12E-09	4	#N/A	#N/A
NME4	2.39E-18	0.475173975	0.397	0.147	1.06E-13	16	#N/A	#N/A
LAMTOR5	5.84E-17	0.474832602	0.573	0.277	2.59E-12	1	#N/A	#N/A
GRHPR	2.83E-15	0.474219495	0.553	0.282	1.26E-10	9	#N/A	#N/A
HIST1H4C	8.07E-16	0.471589526	0.397	0.162	3.59E-11	6	#N/A	#N/A
TIMM17B	5.72E-15	0.471545209	0.271	0.09	2.54E-10	X	YES	#N/A
SUMO2	1.05E-15	0.471519377	0.756	0.488	4.67E-11	17	#N/A	#N/A
CTSD	3.38E-11	0.471146469	0.309	0.135	1.50E-06	11	#N/A	#N/A
EIF3H	9.40E-18	0.471076005	0.607	0.291	4.18E-13	8	#N/A	MGI:5514383
SKP1	1.54E-22	0.470777367	0.889	0.621	6.84E-18	5	#N/A	#N/A
RPL19	4.63E-28	0.470639493	0.958	0.792	2.06E-23	17	#N/A	#N/A
TSC22D4	6.09E-17	0.470222055	0.366	0.136	2.71E-12	7	#N/A	#N/A
DAP3	8.39E-13	0.468894283	0.347	0.151	3.73E-08	1	#N/A	#N/A
RPS14	9.81E-34	0.468741576	1	0.872	4.36E-29	5	#N/A	#N/A
KDELRL1	3.59E-17	0.467886832	0.385	0.148	1.59E-12	19	#N/A	#N/A
EIF3L	2.04E-15	0.467536173	0.397	0.166	9.05E-11	22	#N/A	#N/A
CD9	9.36E-19	0.467381767	0.153	0.023	4.16E-14	12	#N/A	MGI:2180795
CTSC	9.78E-16	0.467048295	0.172	0.038	4.35E-11	11	#N/A	#N/A
CFD	2.68E-29	0.466726364	0.179	0.014	1.19E-24	19	#N/A	#N/A
MARCKSL1	1.83E-18	0.466098523	0.855	0.575	8.14E-14	1	#N/A	MGI:2176278
SUSD3	8.50E-13	0.464611241	0.641	0.373	3.78E-08	9	#N/A	#N/A
SNRPB2	1.18E-16	0.464458102	0.393	0.155	5.24E-12	20	#N/A	#N/A
NFKBIA	1.01E-10	0.464123603	0.294	0.126	4.50E-06	14	#N/A	#N/A
LSM7	1.90E-14	0.462962394	0.469	0.219	8.43E-10	19	#N/A	#N/A
EMD	1.40E-15	0.462333885	0.26	0.082	6.21E-11	X	YES	#N/A
ATP5G3	6.59E-17	0.461924149	0.672	0.355	2.93E-12	2	#N/A	#N/A
TMEM70	6.29E-14	0.461255841	0.374	0.161	2.80E-09	8	#N/A	#N/A
PFDN1	8.64E-18	0.460114856	0.378	0.137	3.84E-13	5	#N/A	#N/A
CHCHD2	1.18E-15	0.45973605	0.767	0.491	5.22E-11	7	#N/A	#N/A
RAC3	1.52E-16	0.457708195	0.256	0.076	6.74E-12	17	#N/A	#N/A
MYL12B	2.38E-16	0.457433151	0.817	0.567	1.06E-11	18	#N/A	#N/A
PYURF	2.42E-19	0.457328433	0.511	0.212	1.08E-14	4	#N/A	#N/A
MORF4L2	8.02E-16	0.456879813	0.531	0.25	3.57E-11	X	YES	#N/A
CD63	8.11E-14	0.456353262	0.729	0.421	3.60E-09	12	#N/A	#N/A
RPS9	1.81E-23	0.455858977	0.931	0.739	8.05E-19	19	#N/A	#N/A

PFKL	2.30E-14	0.455451645	0.42	0.187	1.02E-09	21	#N/A	#N/A
SSR3	3.28E-15	0.455235823	0.466	0.214	1.46E-10	3	#N/A	#N/A
SAT1	2.05E-15	0.454060616	0.798	0.49	9.13E-11	X	YES	MGI:3521903
GAS6	5.36E-11	0.453816907	0.393	0.192	2.38E-06	13	#N/A	#N/A
CKB	6.09E-16	0.453352235	0.844	0.633	2.71E-11	14	#N/A	#N/A
PRR13	1.23E-17	0.453201875	0.317	0.104	5.45E-13	12	#N/A	#N/A
RPS7	4.39E-21	0.452184778	0.901	0.656	1.95E-16	2	#N/A	#N/A
NDUFB8	9.59E-18	0.452179536	0.58	0.27	4.26E-13	10	#N/A	#N/A
KCTD13	9.28E-19	0.451480784	0.382	0.137	4.12E-14	16	#N/A	#N/A
MDH1	2.48E-15	0.450742567	0.538	0.266	1.10E-10	2	#N/A	#N/A
CALR	1.13E-10	0.44855578	0.324	0.15	5.01E-06	19	#N/A	#N/A
QSOX1	6.34E-07	0.448375037	0.191	0.087	0.028202422	1	#N/A	#N/A
GNB2	2.20E-15	0.448204118	0.424	0.184	9.76E-11	7	#N/A	#N/A
ACO2	3.34E-17	0.446964773	0.317	0.106	1.49E-12	22	#N/A	#N/A
NONO	5.73E-14	0.446774085	0.282	0.103	2.55E-09	X	YES	#N/A
MAGED1	3.84E-15	0.446642101	0.454	0.204	1.71E-10	X	YES	#N/A
RAB11B	1.91E-14	0.445561374	0.267	0.09	8.48E-10	19	#N/A	#N/A
EIF4A2	1.51E-13	0.445461435	0.622	0.334	6.73E-09	3	#N/A	#N/A
DKK3	5.12E-10	0.44408708	0.275	0.121	2.27E-05	11	#N/A	#N/A
SDHD	3.76E-12	0.444063792	0.302	0.121	1.67E-07	11	#N/A	#N/A
AP3S1	8.44E-16	0.443999038	0.473	0.21	3.75E-11	5	#N/A	#N/A
RPL8	4.96E-19	0.442664632	0.87	0.639	2.21E-14	8	#N/A	#N/A
TPM4	1.34E-14	0.44209604	0.374	0.154	5.96E-10	19	#N/A	#N/A
TMEM97	8.05E-16	0.439933438	0.412	0.169	3.58E-11	17	#N/A	MGI:5548577
MRPL4	1.35E-17	0.439889357	0.359	0.127	5.98E-13	19	#N/A	#N/A
ZFP36L2	2.36E-12	0.439659971	0.137	0.031	1.05E-07	2	#N/A	MGI:3578661
PSMA5	1.26E-14	0.439215237	0.427	0.189	5.59E-10	1	#N/A	#N/A
UQCRC2	4.00E-13	0.438394232	0.309	0.122	1.78E-08	16	#N/A	#N/A
SNAPIN	5.83E-17	0.438057682	0.271	0.081	2.59E-12	1	#N/A	#N/A
WFDC6	7.60E-16	0.437039337	0.336	0.123	3.38E-11	20	#N/A	#N/A
NPTN	3.44E-10	0.435459068	0.225	0.089	1.53E-05	15	#N/A	#N/A
EIF3I	1.96E-18	0.435353312	0.458	0.181	8.73E-14	1	#N/A	#N/A
UBE2L3	1.58E-15	0.434942239	0.546	0.263	7.04E-11	22	#N/A	#N/A
DHRS4L2	3.71E-13	0.434833944	0.26	0.09	1.65E-08	14	#N/A	#N/A
MRPL37	3.36E-15	0.43399933	0.267	0.087	1.50E-10	1	#N/A	#N/A
ATP5H	2.84E-16	0.433800148	0.511	0.235	1.26E-11	17	#N/A	#N/A
CETN2	1.68E-16	0.432882459	0.298	0.096	7.48E-12	X	YES	MGI:5634782
NDUFA6	3.99E-13	0.43114382	0.435	0.202	1.78E-08	22	#N/A	#N/A
JTB	1.48E-15	0.430890748	0.477	0.214	6.56E-11	1	#N/A	#N/A
PPIF	6.33E-16	0.429494547	0.489	0.217	2.81E-11	10	#N/A	#N/A
CFL2	3.04E-12	0.427836226	0.351	0.153	1.35E-07	14	#N/A	#N/A
CAMK1	2.82E-18	0.427015753	0.473	0.189	1.26E-13	3	#N/A	#N/A
ALDH9A1	2.88E-14	0.426654585	0.534	0.263	1.28E-09	1	#N/A	#N/A
GDI2	1.26E-16	0.425626059	0.389	0.151	5.61E-12	10	#N/A	#N/A
NINJ1	1.28E-13	0.42519045	0.363	0.152	5.69E-09	9	#N/A	#N/A
NPC2	1.18E-12	0.424432742	0.5	0.254	5.24E-08	14	#N/A	#N/A
PSMB5	1.65E-13	0.423228624	0.473	0.226	7.34E-09	14	#N/A	#N/A
C14orf2	3.27E-14	0.422977246	0.668	0.386	1.46E-09	14	#N/A	#N/A
MYH9	9.63E-20	0.421843642	0.115	0.008	4.28E-15	22	#N/A	#N/A
IMPDH2	2.90E-16	0.421641095	0.179	0.039	1.29E-11	3	#N/A	#N/A
PRELID1	8.83E-15	0.421623951	0.42	0.18	3.92E-10	5	#N/A	#N/A
CCDC28B	6.49E-12	0.420069075	0.588	0.341	2.89E-07	1	#N/A	#N/A
INSL3	7.84E-31	0.419256265	0.206	0.02	3.48E-26	19	#N/A	#N/A
UQCRC1	2.14E-12	0.418949679	0.347	0.151	9.51E-08	3	#N/A	#N/A
SNHG9	4.20E-10	0.418282938	0.187	0.065	1.87E-05	16	#N/A	#N/A
POLR2K	6.14E-15	0.416778968	0.416	0.175	2.73E-10	8	#N/A	#N/A
PPA1	1.07E-13	0.416770083	0.66	0.377	4.76E-09	10	#N/A	#N/A
DGUOK	1.33E-16	0.414629331	0.447	0.185	5.93E-12	2	#N/A	MGI:6111949
LLPH	1.57E-17	0.414271152	0.401	0.151	6.96E-13	12	#N/A	#N/A
BAD	9.63E-13	0.414243365	0.298	0.117	4.28E-08	11	#N/A	MGI:2675966
PNCK	4.65E-10	0.412613547	0.164	0.052	2.07E-05	X	YES	#N/A
ADIPOR1	3.87E-13	0.412382164	0.317	0.129	1.72E-08	1	#N/A	#N/A
DLD	5.20E-17	0.412292883	0.248	0.069	2.31E-12	7	#N/A	#N/A
RPL3	5.80E-28	0.411643561	0.992	0.911	2.58E-23	22	#N/A	#N/A
THEMIS2	4.62E-16	0.411303674	0.401	0.161	2.05E-11	1	#N/A	#N/A
ENSA	2.03E-14	0.411161333	0.233	0.071	9.02E-10	1	#N/A	#N/A
CAMTA1	3.03E-14	0.410913759	0.538	0.269	1.35E-09	1	#N/A	MGI:5637357
NR4A1	2.24E-07	0.41051078	0.134	0.047	0.009969976	12	#N/A	MGI:2182325
GOLGA7	2.80E-14	0.410162339	0.363	0.147	1.25E-09	8	#N/A	#N/A
MYLK	7.40E-14	0.409936483	0.405	0.177	3.29E-09	3	#N/A	#N/A
HIBADH	1.02E-10	0.409198627	0.271	0.112	4.55E-06	7	#N/A	#N/A
HNRNPC	4.27E-16	0.408380648	0.553	0.259	1.90E-11	14	#N/A	#N/A
FBL	2.71E-15	0.408353495	0.71	0.398	1.21E-10	19	#N/A	#N/A
CAPN5	9.76E-19	0.407955374	0.233	0.056	4.34E-14	11	#N/A	#N/A
PPP1R14A	4.75E-13	0.407465889	0.779	0.525	2.11E-08	19	#N/A	#N/A

DDX47	1.30E-26	0.407288646	0.145	0.008	5.78E-22	12	#N/A	#N/A
HMGB2	5.14E-13	0.406465228	0.462	0.222	2.29E-08	4	#N/A	MGI:2387671
CDC123	1.03E-19	0.406301749	0.282	0.076	4.56E-15	10	#N/A	#N/A
RHOG	2.38E-19	0.406286147	0.172	0.028	1.06E-14	11	#N/A	#N/A
CMTM3	8.54E-16	0.405903611	0.416	0.174	3.80E-11	16	#N/A	#N/A
COPE	2.04E-22	0.405889781	0.969	0.81	9.08E-18	19	#N/A	#N/A
EEF2	4.78E-14	0.405880006	0.756	0.441	2.13E-09	19	#N/A	#N/A
RGS5	1.54E-13	0.405371356	0.294	0.109	6.82E-09	1	#N/A	#N/A
AHSA1	1.02E-13	0.404174137	0.637	0.348	4.55E-09	14	#N/A	#N/A
SLC39A4	2.91E-15	0.40395955	0.202	0.052	1.29E-10	8	#N/A	MGI:5582434
STOML2	1.86E-12	0.403950407	0.37	0.165	8.29E-08	9	#N/A	MGI:4881090
ARPC4	7.14E-14	0.403649163	0.347	0.139	3.18E-09	3	#N/A	#N/A
CTNNB1	3.39E-13	0.403612735	0.248	0.086	1.51E-08	3	#N/A	MGI:3039783
PTS	2.18E-14	0.403569309	0.294	0.105	9.71E-10	11	#N/A	MGI:2669828
RAP1A	2.64E-14	0.403482963	0.263	0.088	1.17E-09	1	#N/A	#N/A
PAGR1	1.41E-19	0.403124204	0.13	0.013	6.25E-15	16	#N/A	#N/A
PES1	8.67E-15	0.402845666	0.206	0.056	3.85E-10	22	#N/A	#N/A
RBX1	1.03E-12	0.402125578	0.611	0.338	4.59E-08	22	#N/A	#N/A
MAPRE1	3.38E-12	0.401447198	0.397	0.185	1.50E-07	20	#N/A	#N/A
BCAP31	3.74E-11	0.401092146	0.313	0.137	1.66E-06	X	YES	#N/A
MALAT1	0.394724372	0.400718936	0.668	0.54	1	11	#N/A	#N/A
APOBEC3C	8.87E-12	0.400090964	0.378	0.177	3.94E-07	22	#N/A	#N/A
C18orf32	1.24E-22	0.399934562	0.313	0.08	5.50E-18	18	#N/A	#N/A
ST3GAL4	1.18E-11	0.399738699	0.279	0.111	5.23E-07	11	#N/A	#N/A
PARK7	2.10E-16	0.399550122	0.702	0.377	9.35E-12	1	#N/A	#N/A
PSME2	1.45E-11	0.397872123	0.282	0.113	6.46E-07	14	#N/A	#N/A
LINC00116	4.91E-12	0.397465091	0.309	0.127	2.18E-07	2	#N/A	#N/A
TGIF1	1.28E-16	0.396929458	0.263	0.078	5.68E-12	18	#N/A	MGI:3577049
SNX17	1.48E-15	0.396462948	0.294	0.099	6.57E-11	2	#N/A	#N/A
AP1S2	2.39E-11	0.396315036	0.382	0.184	1.06E-06	X	#N/A	#N/A
HSD17B3	8.53E-14	0.3961751	0.24	0.077	3.79E-09	9	#N/A	#N/A
JAM2	1.65E-10	0.396110806	0.332	0.154	7.33E-06	21	#N/A	#N/A
MBNL3	1.33E-15	0.396078299	0.519	0.244	5.92E-11	X	YES	#N/A
PPP1R16A	3.24E-08	0.395544046	0.294	0.142	0.001441614	8	#N/A	#N/A
ATP1A1	3.64E-08	0.395139906	0.37	0.198	0.00161976	1	#N/A	#N/A
PCBP1	1.43E-14	0.394415436	0.42	0.178	6.36E-10	2	#N/A	#N/A
SMARCE1	1.98E-11	0.393997047	0.237	0.088	8.81E-07	17	#N/A	#N/A
PTGES	3.52E-05	0.393325913	0.137	0.064	1	9	#N/A	#N/A
PLIN2	1.77E-09	0.392639564	0.298	0.138	7.85E-05	9	#N/A	MGI:3529131
GADD45GIP1	2.83E-13	0.392386886	0.424	0.191	1.26E-08	19	#N/A	#N/A
SRA1	3.72E-15	0.392164238	0.263	0.084	1.65E-10	5	#N/A	#N/A
UROD	1.61E-12	0.391926517	0.355	0.152	7.18E-08	1	#N/A	#N/A
UQCR10	3.26E-15	0.391260141	0.809	0.556	1.45E-10	22	#N/A	#N/A
SARNP	2.52E-16	0.390369161	0.214	0.054	1.12E-11	12	#N/A	#N/A
AKR7A2	8.45E-12	0.390363044	0.374	0.17	3.75E-07	1	#N/A	MGI:3527218
IER2	2.97E-11	0.390036922	0.16	0.044	1.32E-06	19	#N/A	#N/A
CSNK2B	2.18E-12	0.389654081	0.458	0.223	9.69E-08	6	#N/A	#N/A
UBB	1.00E-25	0.389165976	0.977	0.908	4.46E-21	17	#N/A	azoospermia
PCBD1	5.91E-15	0.388997388	0.473	0.212	2.63E-10	10	#N/A	#N/A
PRND	1.55E-07	0.388865829	0.359	0.202	0.006902883	20	#N/A	MGI:3047561
ARHGDI1A	3.36E-20	0.387667332	0.309	0.088	1.50E-15	17	#N/A	MGI:3613573
GPC1	1.21E-09	0.387477484	0.183	0.065	5.40E-05	2	#N/A	#N/A
U2AF2	8.66E-12	0.387141608	0.237	0.086	3.85E-07	19	#N/A	#N/A
NDUFS2	8.52E-18	0.386801302	0.447	0.176	3.79E-13	1	#N/A	#N/A
HSPA8	3.55E-10	0.386702504	0.595	0.338	1.58E-05	11	#N/A	#N/A
ETFB	1.81E-11	0.386579709	0.496	0.263	8.06E-07	19	#N/A	#N/A
ZBTB80S	1.20E-12	0.385915937	0.305	0.121	5.32E-08	1	#N/A	#N/A
VAT1	8.82E-12	0.385637789	0.309	0.129	3.92E-07	17	#N/A	#N/A
GSTP1	7.18E-13	0.385552204	0.351	0.147	3.19E-08	11	#N/A	#N/A
BEX5	1.24E-12	0.38528892	0.42	0.196	5.52E-08	X	YES	#N/A
AAMP	1.12E-13	0.384483457	0.305	0.115	4.99E-09	2	#N/A	#N/A
YWHAQ	2.94E-14	0.384312129	0.626	0.346	1.31E-09	2	#N/A	#N/A
RAB18	7.65E-13	0.384060653	0.366	0.159	3.40E-08	10	#N/A	MGI:5698701
HEBP1	1.48E-11	0.383894929	0.363	0.166	6.58E-07	12	#N/A	#N/A
RHOA	1.27E-14	0.383683971	0.469	0.212	5.65E-10	3	#N/A	#N/A
PERP	3.34E-07	0.383214727	0.141	0.053	0.014858401	6	#N/A	#N/A
DAPL1	7.58E-19	0.382065449	0.145	0.019	3.37E-14	2	#N/A	#N/A
BET1	5.45E-12	0.382061833	0.172	0.048	2.42E-07	7	#N/A	#N/A
SESN1	3.06E-08	0.381932508	0.363	0.197	0.001361305	6	#N/A	#N/A
ZNF428	1.83E-14	0.381128693	0.439	0.194	8.12E-10	19	#N/A	#N/A
EEF1B2	9.34E-13	0.380979668	0.84	0.586	4.15E-08	2	#N/A	#N/A
AP2S1	1.14E-11	0.380977101	0.653	0.391	5.05E-07	19	#N/A	MGI:5754583
TMEM167A	2.48E-14	0.380527856	0.366	0.15	1.10E-09	5	#N/A	#N/A
CDC37	1.41E-10	0.380226573	0.355	0.169	6.26E-06	19	#N/A	#N/A
NHP2	4.84E-09	0.380079261	0.359	0.181	0.000215346	5	#N/A	#N/A



OSTC	4.70E-12	0.379860423	0.363	0.161	2.09E-07	4	#N/A	#N/A
PPP4C	4.31E-15	0.379667688	0.42	0.178	1.92E-10	16	#N/A	#N/A
PYM1	1.77E-15	0.379000391	0.305	0.105	7.86E-11	12	#N/A	#N/A
SQSTM1	3.91E-12	0.378590535	0.336	0.146	1.74E-07	5	#N/A	#N/A
GRN	7.29E-05	0.378526645	0.134	0.063	1	17	#N/A	MGI:3762618
ATP6V0D1	2.12E-12	0.37736121	0.221	0.073	9.44E-08	16	#N/A	MGI:5605751
C9orf16	1.54E-13	0.377057944	0.447	0.211	6.87E-09	9	#N/A	#N/A
HPS3	5.26E-14	0.376916317	0.195	0.053	2.34E-09	3	#N/A	#N/A
PSMA7	1.15E-13	0.375401572	0.664	0.366	5.12E-09	20	#N/A	#N/A
EIF2A	1.33E-10	0.374833228	0.179	0.058	5.93E-06	3	#N/A	#N/A
MAGED2	9.68E-11	0.374325794	0.435	0.221	4.30E-06	X	YES	#N/A
COPZ1	6.60E-13	0.374105824	0.233	0.077	2.93E-08	12	#N/A	#N/A
RABGGTB	1.17E-17	0.373978021	0.252	0.068	5.19E-13	1	#N/A	#N/A
H3F3A	1.65E-16	0.373479783	0.908	0.742	7.35E-12	1	#N/A	#N/A
CARD19	8.68E-12	0.372873698	0.347	0.152	3.86E-07	9	#N/A	#N/A
TMED2	7.32E-11	0.372823608	0.24	0.092	3.25E-06	12	#N/A	#N/A
PMF1	3.83E-11	0.372682707	0.16	0.045	1.70E-06	1	#N/A	#N/A
CNDP2	2.18E-13	0.372561091	0.172	0.043	9.69E-09	18	#N/A	#N/A
PLEKHB1	4.71E-20	0.371498692	0.206	0.04	2.10E-15	11	#N/A	#N/A
HHLA3	1.66E-13	0.371402392	0.176	0.044	7.36E-09	1	#N/A	#N/A
MID1IP1	3.19E-12	0.370248517	0.431	0.207	1.42E-07	X	YES	#N/A
POLR2F	3.36E-10	0.370154622	0.401	0.202	1.49E-05	22	#N/A	#N/A
GDI1	2.94E-15	0.369854603	0.218	0.06	1.31E-10	X	YES	#N/A
ATF4	1.76E-13	0.369824871	0.328	0.129	7.83E-09	22	#N/A	MGI:2445679
SLC3A2	8.72E-11	0.369798759	0.328	0.145	3.88E-06	11	#N/A	#N/A
TPD52L2	2.77E-08	0.369353313	0.187	0.074	0.001229609	20	#N/A	#N/A
TP53	2.96E-15	0.369094617	0.149	0.028	1.31E-10	17	#N/A	MGI:5523909
CYCS	2.36E-12	0.369090542	0.592	0.319	1.05E-07	7	#N/A	#N/A
VPS29	5.27E-12	0.368709306	0.355	0.158	2.34E-07	12	#N/A	#N/A
RRAGA	4.96E-15	0.367829817	0.267	0.087	2.21E-10	9	#N/A	#N/A
CTSA	1.44E-07	0.367609167	0.126	0.042	0.006383193	20	#N/A	#N/A
ATP5O	1.14E-13	0.367485581	0.607	0.331	5.05E-09	21	#N/A	#N/A
MANBAL	5.52E-13	0.367121934	0.21	0.064	2.46E-08	20	#N/A	#N/A
PEF1	5.36E-12	0.366703445	0.267	0.101	2.38E-07	1	#N/A	#N/A
EIF3M	6.36E-13	0.366586299	0.504	0.247	2.83E-08	11	#N/A	#N/A
HINT2	1.19E-10	0.36644583	0.355	0.165	5.30E-06	9	#N/A	#N/A
THNSL2	5.48E-14	0.366085485	0.237	0.074	2.44E-09	2	#N/A	#N/A
EEF1D	1.20E-12	0.365872051	0.66	0.368	5.34E-08	8	#N/A	#N/A
OCIAD1	3.60E-15	0.365749706	0.42	0.177	1.60E-10	4	#N/A	#N/A
SEC61B	2.87E-12	0.365694842	0.595	0.327	1.27E-07	9	#N/A	#N/A
HINT1	9.18E-10	0.365496912	0.706	0.492	4.08E-05	5	#N/A	#N/A
PSMA3	6.61E-10	0.365153396	0.424	0.216	2.94E-05	14	#N/A	#N/A
PSMD9	7.40E-17	0.364845665	0.256	0.072	3.29E-12	12	#N/A	#N/A
MRPS36	1.41E-12	0.364450698	0.412	0.187	6.26E-08	5	#N/A	#N/A
IKBKG	2.91E-12	0.364199275	0.179	0.051	1.29E-07	X	#N/A	MGI:3808877
COTL1	3.43E-13	0.364191353	0.16	0.039	1.52E-08	16	#N/A	#N/A
TSPYL1	5.59E-11	0.363086567	0.309	0.134	2.49E-06	6	#N/A	#N/A
TRIM16	3.09E-15	0.363021022	0.195	0.048	1.37E-10	17	#N/A	#N/A
MRPL53	2.83E-17	0.361475331	0.16	0.027	1.26E-12	2	#N/A	#N/A
SFT2D1	1.25E-09	0.361473016	0.271	0.12	5.58E-05	6	#N/A	#N/A
DECR2	1.88E-12	0.361213453	0.218	0.071	8.34E-08	16	#N/A	#N/A
APEX1	4.24E-17	0.361081913	0.244	0.066	1.88E-12	14	#N/A	MGI:1857955
ARF1	1.14E-13	0.360085753	0.634	0.335	5.07E-09	1	#N/A	#N/A
EIF6	3.97E-13	0.359080056	0.328	0.13	1.76E-08	20	#N/A	#N/A
MMP15	4.95E-08	0.358912988	0.168	0.065	0.002200314	16	#N/A	#N/A
ZNF580	9.06E-14	0.358838327	0.16	0.037	4.03E-09	19	#N/A	#N/A
CDC42EP1	2.71E-17	0.358703685	0.172	0.032	1.20E-12	22	#N/A	#N/A
FDXR	1.10E-11	0.358626772	0.542	0.291	4.89E-07	17	#N/A	#N/A
NDUFS8	2.07E-09	0.358370468	0.45	0.247	9.18E-05	11	#N/A	#N/A
C12orf57	2.32E-17	0.358241361	0.313	0.101	1.03E-12	12	#N/A	#N/A
SERTAD3	4.05E-12	0.358078879	0.141	0.033	1.80E-07	19	#N/A	#N/A
SSBP1	3.34E-13	0.357987252	0.584	0.309	1.48E-08	7	#N/A	#N/A
COX20	8.03E-11	0.357807397	0.37	0.174	3.57E-06	1	#N/A	#N/A
CHMP2A	4.61E-12	0.357190857	0.466	0.229	2.05E-07	19	#N/A	#N/A
PLCD1	5.72E-11	0.356115093	0.317	0.139	2.54E-06	3	#N/A	#N/A
DCXR	6.66E-09	0.356082766	0.603	0.396	0.000296094	17	#N/A	#N/A
SUMO1	5.34E-14	0.355807884	0.462	0.207	2.38E-09	2	#N/A	MGI:5708184
AIP	1.91E-12	0.355588437	0.206	0.064	8.51E-08	11	#N/A	#N/A
RPL24	1.79E-13	0.355033931	0.851	0.646	7.94E-09	3	#N/A	#N/A
MAGOH	3.61E-12	0.354841315	0.328	0.137	1.60E-07	1	#N/A	#N/A
KLF10	0.000220164	0.354736292	0.118	0.056	1	8	#N/A	#N/A
UQCRB	2.15E-09	0.354357531	0.721	0.507	9.56E-05	8	#N/A	#N/A
POLDIP2	1.01E-10	0.354224906	0.305	0.135	4.47E-06	17	#N/A	#N/A
NIPSNAP3A	1.16E-10	0.353626234	0.195	0.066	5.15E-06	9	#N/A	#N/A
IDH1	5.81E-12	0.353184253	0.405	0.189	2.58E-07	2	#N/A	#N/A

POP7	1.67E-13	0.353141387	0.237	0.075	7.40E-09	7	#N/A	#N/A
C20orf24	1.20E-10	0.352788936	0.302	0.13	5.35E-06	20	#N/A	#N/A
RAN	7.86E-12	0.352271529	0.66	0.392	3.49E-07	12	#N/A	#N/A
ASMTL	1.54E-14	0.352220542	0.172	0.04	6.83E-10	X	#N/A	#N/A
SDHAF2	9.36E-16	0.352218594	0.298	0.099	4.16E-11	11	#N/A	#N/A
MFGE8	5.10E-08	0.351893308	0.153	0.056	0.002266473	15	#N/A	MGI:3578644
RPS27L	1.82E-08	0.350898441	0.393	0.211	0.000807299	15	#N/A	#N/A
FAM96A	1.53E-13	0.350885505	0.183	0.048	6.82E-09	15	#N/A	#N/A
TMEM219	4.26E-12	0.350601303	0.531	0.278	1.89E-07	16	#N/A	#N/A
HMG20B	7.48E-13	0.350495949	0.225	0.073	3.32E-08	19	#N/A	#N/A
ISCU	1.38E-10	0.350035849	0.626	0.366	6.12E-06	12	#N/A	#N/A
APH1A	1.27E-10	0.349936276	0.214	0.077	5.65E-06	1	#N/A	#N/A
BOLA3	1.01E-12	0.349793324	0.332	0.136	4.48E-08	2	#N/A	#N/A
SOX2	1.19E-19	0.349771514	0.111	0.008	5.31E-15	3	#N/A	MGI:2449045
OTUB1	6.56E-10	0.348279366	0.237	0.096	2.92E-05	11	#N/A	#N/A
SLC25A4	1.21E-11	0.348208746	0.668	0.395	5.38E-07	4	#N/A	#N/A
MRPL23	1.97E-13	0.347907968	0.218	0.065	8.74E-09	11	#N/A	#N/A
SCAND1	8.08E-13	0.347359072	0.515	0.26	3.59E-08	20	#N/A	#N/A
ARL6IP4	2.61E-10	0.347231608	0.481	0.259	1.16E-05	12	#N/A	#N/A
TMEM106C	9.45E-13	0.346796822	0.271	0.099	4.20E-08	12	#N/A	#N/A
BIRC2	5.63E-12	0.346621115	0.24	0.086	2.50E-07	11	#N/A	MGI:5319370
PHYHIP	3.16E-11	0.34600421	0.172	0.052	1.41E-06	8	#N/A	#N/A
IER3IP1	3.23E-12	0.346002433	0.221	0.073	1.44E-07	18	#N/A	#N/A
DSTN	1.04E-10	0.34597071	0.668	0.411	4.64E-06	20	#N/A	#N/A
MRPS28	1.86E-16	0.345718136	0.229	0.06	8.29E-12	8	#N/A	#N/A
PDHB	4.95E-10	0.345530491	0.321	0.146	2.20E-05	3	#N/A	#N/A
PPIH	4.47E-12	0.345482898	0.172	0.048	1.99E-07	1	#N/A	#N/A
TMEM123	2.77E-08	0.345442591	0.324	0.165	0.001232317	11	#N/A	#N/A
C16orf91	5.58E-11	0.345267651	0.206	0.072	2.48E-06	16	#N/A	#N/A
FDFT1	5.52E-15	0.344862911	0.435	0.185	2.45E-10	8	#N/A	MGI:3579504
PTN	5.80E-07	0.343811677	0.385	0.223	0.025801364	7	#N/A	MGI:3053747
LSM3	1.49E-09	0.343472597	0.58	0.349	6.63E-05	3	#N/A	#N/A
TUBA1C	7.57E-10	0.34331472	0.267	0.114	3.36E-05	12	#N/A	#N/A
ATP6AP1	1.86E-06	0.343307598	0.198	0.095	0.082483045	X	YES	#N/A
MRPL38	1.16E-22	0.343111647	0.145	0.013	5.17E-18	17	#N/A	#N/A
PDLIM4	4.03E-17	0.342375338	0.103	0.008	1.79E-12	5	#N/A	#N/A
CDK16	6.25E-09	0.341665376	0.279	0.128	0.000277793	X	YES	MGI:5319210
MOCS2	1.78E-10	0.340787875	0.206	0.073	7.90E-06	5	#N/A	#N/A
NDUFA13	8.15E-10	0.340715244	0.786	0.567	3.62E-05	19	#N/A	#N/A
GOT2	7.11E-09	0.340525043	0.237	0.102	0.000316127	16	#N/A	#N/A
ANP32B	3.37E-12	0.340407347	0.279	0.106	1.50E-07	9	#N/A	#N/A
NTPCR	1.20E-11	0.339674019	0.229	0.08	5.32E-07	1	#N/A	#N/A
DYNC1I2	5.04E-11	0.339626845	0.366	0.169	2.24E-06	2	#N/A	#N/A
EIF3K	1.40E-10	0.339461425	0.435	0.218	6.22E-06	19	#N/A	#N/A
NPTX2	9.62E-15	0.338775458	0.13	0.022	4.27E-10	7	#N/A	#N/A
RALY	1.73E-12	0.338585903	0.309	0.123	7.69E-08	20	#N/A	#N/A
S100A6	1.08E-11	0.33807545	0.137	0.031	4.80E-07	1	#N/A	MGI:5692619
NFE2L2	3.01E-11	0.337619322	0.45	0.226	1.34E-06	2	#N/A	#N/A
PRCC	2.39E-12	0.336995129	0.176	0.049	1.06E-07	1	#N/A	#N/A
C11orf58	4.36E-13	0.336665947	0.561	0.286	1.94E-08	11	#N/A	#N/A
RAB1A	4.45E-11	0.33653056	0.401	0.19	1.98E-06	2	#N/A	#N/A
DCTN2	1.88E-12	0.335982754	0.24	0.081	8.38E-08	12	#N/A	#N/A
SNX4	9.03E-10	0.335766512	0.202	0.074	4.01E-05	3	#N/A	#N/A
PGRMC1	1.42E-09	0.335683074	0.179	0.063	6.29E-05	X	YES	MGI:5775088
GMPR	3.78E-10	0.335635278	0.588	0.34	1.68E-05	6	#N/A	#N/A
GSTO1	4.06E-15	0.335621438	0.221	0.06	1.81E-10	10	#N/A	#N/A
ADI1	4.17E-11	0.335074704	0.405	0.193	1.85E-06	2	#N/A	#N/A
CD59	8.17E-09	0.334486779	0.321	0.159	0.000363001	11	#N/A	MGI:2653298
DNAJC19	1.77E-11	0.334328879	0.324	0.139	7.86E-07	3	#N/A	#N/A
LSM5	1.66E-10	0.334043925	0.363	0.17	7.37E-06	7	#N/A	#N/A
IFT52	1.63E-09	0.333885484	0.233	0.092	7.26E-05	20	#N/A	#N/A
PGK1	3.08E-13	0.333760545	0.294	0.109	1.37E-08	X	YES	#N/A
DECR1	4.79E-11	0.333229733	0.527	0.283	2.13E-06	8	#N/A	#N/A
PCNP	1.00E-11	0.333204974	0.26	0.1	4.46E-07	3	#N/A	#N/A
IFI6	1.12E-10	0.33307732	0.24	0.093	4.99E-06	1	#N/A	#N/A
NDUFA5	3.36E-10	0.332523531	0.561	0.326	1.50E-05	7	#N/A	#N/A
RPS6	3.45E-14	0.332204254	0.958	0.826	1.53E-09	9	#N/A	#N/A
CUTA	6.20E-13	0.331805437	0.408	0.182	2.76E-08	6	#N/A	#N/A
TAF7	2.62E-10	0.331619507	0.542	0.296	1.16E-05	5	#N/A	#N/A
OCIAD2	1.66E-10	0.331615987	0.29	0.123	7.37E-06	4	#N/A	#N/A
TCF25	4.82E-09	0.33135927	0.439	0.238	0.000214144	16	#N/A	#N/A
TSTA3	8.51E-11	0.330541022	0.313	0.137	3.78E-06	8	#N/A	#N/A
KCNH2	1.31E-09	0.330414212	0.29	0.131	5.81E-05	7	#N/A	#N/A
ABHD4	2.47E-09	0.330150448	0.29	0.132	0.000109797	14	#N/A	#N/A
RNF181	4.54E-12	0.329815254	0.37	0.162	2.02E-07	2	#N/A	#N/A

MRPL12	2.42E-11	0.329435609	0.24	0.088	1.07E-06	17	#N/A	#N/A
NDUFV2	1.32E-11	0.32907948	0.622	0.355	5.87E-07	18	#N/A	#N/A
CLTA	2.70E-10	0.328962337	0.45	0.23	1.20E-05	9	#N/A	#N/A
PPP2CA	5.06E-13	0.328507808	0.321	0.128	2.25E-08	5	#N/A	azoospermia
SRSF2	4.40E-13	0.327640869	0.447	0.201	1.96E-08	17	#N/A	#N/A
PEBP1	4.34E-12	0.32731824	0.885	0.661	1.93E-07	12	#N/A	#N/A
POLR2J	1.15E-10	0.326847461	0.389	0.189	5.13E-06	7	#N/A	#N/A
CLNS1A	1.23E-08	0.326744213	0.275	0.128	0.000547612	11	#N/A	#N/A
PRMT1	1.56E-10	0.326352951	0.603	0.354	6.93E-06	19	#N/A	MGI:2448365
HPCAL1	1.88E-09	0.325850716	0.431	0.229	8.35E-05	2	#N/A	#N/A
DDB1	1.95E-08	0.324462144	0.279	0.134	0.000868848	11	#N/A	#N/A
MGAT2	3.40E-05	0.324200295	0.141	0.065	1	14	#N/A	MA
SMDT1	4.23E-12	0.324184812	0.385	0.171	1.88E-07	22	#N/A	#N/A
C17orf58	4.44E-11	0.323884494	0.137	0.034	1.98E-06	17	#N/A	#N/A
VPS25	5.14E-11	0.322768027	0.21	0.072	2.29E-06	17	#N/A	#N/A
FAM50A	5.26E-09	0.322485953	0.176	0.062	0.000233701	X	YES	#N/A
ACOT8	4.41E-15	0.322198317	0.179	0.041	1.96E-10	20	#N/A	#N/A
PHB2	3.60E-10	0.321353113	0.275	0.118	1.60E-05	12	#N/A	MGI:3574361
SHISA5	6.46E-11	0.319218773	0.21	0.073	2.87E-06	3	#N/A	#N/A
MINOS1	5.21E-11	0.31900747	0.492	0.255	2.32E-06	1	#N/A	#N/A
FEZ2	3.26E-11	0.318994276	0.416	0.199	1.45E-06	2	#N/A	#N/A
LAMTOR1	8.24E-12	0.318698805	0.397	0.184	3.66E-07	11	#N/A	#N/A
DDX41	4.27E-08	0.318341188	0.156	0.056	0.001897774	5	#N/A	#N/A
PEPD	4.95E-12	0.318320481	0.206	0.065	2.20E-07	19	#N/A	MGI:2683249
MRPL22	4.52E-10	0.318182075	0.42	0.214	2.01E-05	5	#N/A	#N/A
GGCT	1.10E-11	0.317960481	0.24	0.086	4.88E-07	7	#N/A	#N/A
HMG3	1.21E-09	0.317855908	0.817	0.605	5.39E-05	6	#N/A	#N/A
TM2D3	6.18E-07	0.317743271	0.149	0.058	0.027481231	15	#N/A	#N/A
TKT	2.97E-11	0.317719992	0.34	0.153	1.32E-06	3	#N/A	MGI:2671068
HSD17B10	1.56E-11	0.317549332	0.282	0.111	6.94E-07	X	YES	#N/A
ATP6V0B	2.90E-10	0.316818511	0.328	0.149	1.29E-05	1	#N/A	#N/A
APRT	7.90E-10	0.316616911	0.393	0.199	3.51E-05	16	#N/A	MGI:2429961
FRMD8	5.65E-08	0.316455864	0.134	0.044	0.002509911	11	#N/A	#N/A
RHEB	4.62E-11	0.3156519	0.324	0.139	2.05E-06	7	#N/A	#N/A
GNG7	2.10E-12	0.315538152	0.26	0.094	9.34E-08	19	#N/A	#N/A
ATP5J	8.21E-10	0.315535763	0.771	0.534	3.65E-05	21	#N/A	#N/A
PARVB	1.92E-08	0.315419378	0.118	0.034	0.00085352	22	#N/A	#N/A
RAB11A	3.16E-11	0.315409559	0.565	0.312	1.40E-06	15	#N/A	#N/A
NDUFC2	2.73E-10	0.314987274	0.557	0.31	1.21E-05	11	#N/A	#N/A
SUB1	5.19E-08	0.314790051	0.653	0.439	0.002307144	5	#N/A	MGI:6108891
RAF1	4.76E-09	0.313944127	0.149	0.048	0.000211587	3	#N/A	#N/A
TRUB2	1.26E-08	0.31385615	0.156	0.054	0.00055862	9	#N/A	#N/A
POLR2E	5.75E-13	0.313704109	0.282	0.104	2.55E-08	19	#N/A	#N/A
EIF4EBP1	2.08E-13	0.313479801	0.202	0.057	9.23E-09	8	#N/A	MGI:2177923
VKORC1	6.95E-10	0.313133073	0.324	0.15	3.09E-05	16	#N/A	#N/A
STXBP2	3.27E-09	0.312793326	0.225	0.092	0.000145523	19	#N/A	#N/A
EMC4	2.66E-13	0.312535061	0.309	0.119	1.18E-08	15	#N/A	#N/A
C1D	9.73E-10	0.312119471	0.294	0.13	4.32E-05	2	#N/A	#N/A
LSM1	6.64E-13	0.311531565	0.282	0.104	2.95E-08	8	#N/A	#N/A
GOS2	4.23E-08	0.311463098	0.328	0.169	0.001881227	1	#N/A	#N/A
DCTN3	2.32E-11	0.311413797	0.305	0.126	1.03E-06	9	#N/A	#N/A
ARL3	8.65E-12	0.311370131	0.393	0.183	3.85E-07	10	#N/A	#N/A
HSBP1	4.37E-09	0.311195922	0.656	0.418	0.000194093	16	#N/A	#N/A
MNDA	4.65E-08	0.310837982	0.214	0.09	0.002066997	1	#N/A	#N/A
RPL15	3.66E-15	0.310799963	0.973	0.879	1.63E-10	3	#N/A	#N/A
ERP29	7.11E-10	0.310401005	0.416	0.212	3.16E-05	12	#N/A	MGI:6342880
TMEM230	8.89E-13	0.309912246	0.408	0.181	3.95E-08	20	#N/A	#N/A
AP1S1	1.43E-12	0.309643058	0.271	0.099	6.34E-08	7	#N/A	#N/A
GLOD4	1.99E-08	0.309332972	0.218	0.09	0.000884428	17	#N/A	#N/A
MMP23B	2.22E-12	0.309275969	0.111	0.019	9.85E-08	1	#N/A	#N/A
CENPV	3.43E-07	0.309116878	0.366	0.203	0.015232125	17	#N/A	#N/A
SSR2	1.16E-08	0.30882991	0.271	0.123	0.000516572	1	#N/A	#N/A
DNAJB5	3.11E-14	0.308619465	0.164	0.037	1.38E-09	9	#N/A	#N/A
BTF3L4	1.31E-08	0.308494275	0.286	0.134	0.000583777	1	#N/A	#N/A
FAIM	1.34E-08	0.308245449	0.149	0.049	0.000594695	3	#N/A	#N/A
TFG	2.40E-10	0.307665824	0.336	0.153	1.07E-05	3	#N/A	#N/A
ADK	3.15E-09	0.307526705	0.256	0.111	0.000140201	10	#N/A	#N/A
EIF4G2	1.39E-09	0.307214618	0.622	0.365	6.17E-05	11	#N/A	#N/A
IL15RA	1.80E-13	0.307111121	0.137	0.027	8.00E-09	10	#N/A	#N/A
MRPL27	1.41E-11	0.305917218	0.324	0.137	6.27E-07	17	#N/A	#N/A
DAD1	2.46E-08	0.305840081	0.523	0.313	0.001092583	14	#N/A	#N/A
MGST3	1.23E-10	0.30583448	0.874	0.64	5.48E-06	1	#N/A	#N/A
STX4	2.16E-07	0.305630187	0.156	0.06	0.009604648	16	#N/A	#N/A
BABAM1	2.84E-08	0.305292054	0.172	0.064	0.00126112	19	#N/A	#N/A
DPYSL2	1.10E-12	0.305016768	0.107	0.017	4.88E-08	8	#N/A	#N/A

ATP6V1G1	4.20E-09	0.304933658	0.725	0.485	0.000186855	9	#N/A	#N/A
COX7A2L	1.70E-16	0.304826869	0.462	0.188	7.54E-12	2	#N/A	#N/A
ARMC10	1.01E-08	0.304679266	0.248	0.109	0.000447035	7	#N/A	#N/A
HADH	3.83E-12	0.304088276	0.332	0.139	1.70E-07	4	#N/A	#N/A
NDUFB4	4.77E-08	0.30341823	0.664	0.444	0.002121341	3	#N/A	#N/A
MRPL32	5.22E-09	0.303361823	0.305	0.145	0.000232116	7	#N/A	#N/A
DRAM2	5.18E-10	0.303030599	0.137	0.038	2.30E-05	1	#N/A	#N/A
CCNI	5.79E-11	0.302711888	0.5	0.258	2.58E-06	4	#N/A	#N/A
ATP5L	1.92E-08	0.302433333	0.698	0.49	0.000855202	11	#N/A	#N/A
NAA10	2.05E-10	0.302415472	0.195	0.067	9.11E-06	X	YES	#N/A
RAB5C	6.73E-11	0.302160682	0.321	0.139	2.99E-06	17	#N/A	#N/A
POLR3GL	5.56E-09	0.302103174	0.233	0.096	0.000247274	1	#N/A	#N/A
SLBP	1.39E-08	0.301252148	0.313	0.151	0.000616197	4	#N/A	#N/A
MRPS35	7.96E-11	0.300892357	0.26	0.102	3.54E-06	12	#N/A	#N/A
LSM8	3.88E-10	0.300861963	0.305	0.136	1.72E-05	7	#N/A	#N/A
CDKN2AIPNL	1.69E-10	0.300583307	0.305	0.131	7.50E-06	5	#N/A	#N/A
ARPC3	6.08E-10	0.300394435	0.641	0.382	2.70E-05	12	#N/A	#N/A
FARSA	1.36E-11	0.299918144	0.145	0.036	6.03E-07	19	#N/A	#N/A
CYP27A1	2.60E-05	0.29986069	0.111	0.044	1	2	#N/A	#N/A
SLC12A5	1.24E-13	0.299767717	0.13	0.024	5.52E-09	20	#N/A	#N/A
BDH2	1.27E-09	0.299005336	0.214	0.081	5.64E-05	4	#N/A	#N/A
SEC13	9.53E-08	0.298940997	0.198	0.084	0.004237323	3	#N/A	#N/A
SNRNP27	4.55E-11	0.298551355	0.214	0.074	2.02E-06	2	#N/A	#N/A
ISOC2	6.41E-12	0.298436581	0.302	0.121	2.85E-07	19	#N/A	#N/A
GADD45B	1.33E-08	0.297730202	0.229	0.095	0.000589741	19	#N/A	#N/A
PIN4	9.24E-11	0.297720861	0.214	0.075	4.11E-06	X	YES	#N/A
PLD3	2.61E-07	0.296676615	0.164	0.066	0.011599821	19	#N/A	#N/A
SERPINE2	0.00020487	0.296461996	0.179	0.099	1	2	#N/A	MGI:2387774
FAM213A	1.19E-08	0.29639881	0.462	0.26	0.000528345	10	#N/A	#N/A
TXNDC12	1.71E-08	0.295598794	0.16	0.056	0.00075905	1	#N/A	#N/A
HSPB8	9.57E-08	0.295128763	0.118	0.037	0.004252361	12	#N/A	#N/A
ANP32A	1.21E-08	0.294867671	0.218	0.09	0.000538691	15	#N/A	#N/A
CHMP4B	5.58E-13	0.294703642	0.324	0.127	2.48E-08	20	#N/A	#N/A
TMEM50A	1.62E-07	0.294100874	0.214	0.096	0.007216862	1	#N/A	#N/A
NBPF14	6.72E-08	0.294056403	0.111	0.032	0.002988325	1	#N/A	#N/A
AKT1S1	1.05E-13	0.294038122	0.153	0.033	4.65E-09	19	#N/A	#N/A
C8orf59	2.11E-07	0.293956695	0.305	0.159	0.00937774	8	#N/A	#N/A
ERH	5.67E-08	0.293939683	0.523	0.314	0.002519219	14	#N/A	#N/A
NAP1L3	7.44E-10	0.293890895	0.229	0.09	3.31E-05	X	#N/A	#N/A
DAXX	8.44E-08	0.293158293	0.156	0.058	0.00375217	6	#N/A	#N/A
OAT	1.35E-07	0.292625638	0.336	0.176	0.006011599	10	#N/A	#N/A
SEC11A	2.60E-11	0.292503772	0.424	0.204	1.16E-06	15	#N/A	#N/A
C6orf226	1.39E-14	0.292102347	0.206	0.055	6.19E-10	6	#N/A	#N/A
FXN	1.17E-12	0.291972293	0.21	0.064	5.19E-08	9	#N/A	#N/A
RNF5	5.25E-12	0.291227047	0.279	0.105	2.34E-07	6	#N/A	#N/A
ACTR10	4.57E-10	0.29097463	0.267	0.112	2.03E-05	14	#N/A	#N/A
TMEM134	4.92E-11	0.290864387	0.317	0.136	2.19E-06	11	#N/A	#N/A
VCP	6.12E-09	0.290697674	0.309	0.149	0.000271943	9	#N/A	#N/A
C17orf49	8.00E-14	0.290356797	0.118	0.019	3.56E-09	17	#N/A	#N/A
MRO	1.71E-08	0.290257163	0.42	0.229	0.000760757	18	#N/A	#N/A
AKIP1	1.32E-09	0.290253948	0.16	0.051	5.86E-05	11	#N/A	#N/A
PRDX2	2.62E-08	0.29015278	0.309	0.152	0.0011658	19	#N/A	#N/A
NGRN	3.54E-13	0.290109342	0.153	0.035	1.58E-08	15	#N/A	#N/A
ATG12	4.29E-09	0.289942793	0.206	0.08	0.000190776	5	#N/A	#N/A
PGM2	2.81E-09	0.289604222	0.164	0.055	0.000124957	4	#N/A	#N/A
TMEM14A	4.43E-08	0.289390324	0.191	0.076	0.001968834	6	#N/A	#N/A
DCTPP1	2.72E-09	0.289332204	0.183	0.065	0.000121011	16	#N/A	#N/A
RBBP4	2.48E-09	0.289091078	0.359	0.175	0.000110411	1	#N/A	#N/A
LRRC47	1.17E-11	0.288836928	0.137	0.032	5.20E-07	1	#N/A	#N/A
CDH2	4.49E-05	0.288165915	0.191	0.102	1	18	#N/A	#N/A
ANAPC5	1.85E-07	0.288056803	0.191	0.081	0.008223566	12	#N/A	#N/A
RNF2	1.19E-12	0.287874565	0.176	0.047	5.27E-08	1	#N/A	#N/A
CHMP4A	2.92E-09	0.287600744	0.225	0.09	0.000129756	14	#N/A	#N/A
ABCD1	4.50E-05	0.287123404	0.122	0.053	1	X	YES	MGI:1861771
UBE2I	6.35E-11	0.286923559	0.477	0.246	2.82E-06	16	#N/A	#N/A
GSR	7.80E-08	0.286843304	0.153	0.056	0.003468515	8	#N/A	#N/A
CTTN	1.74E-08	0.285657681	0.256	0.116	0.000774249	11	#N/A	MGI:4330257
WDR18	3.27E-10	0.285635625	0.183	0.06	1.46E-05	19	#N/A	#N/A
HSPA9	1.33E-11	0.285520546	0.447	0.215	5.93E-07	5	#N/A	#N/A
C8orf33	2.50E-07	0.285373276	0.172	0.07	0.01110215	8	#N/A	#N/A
USP11	2.50E-08	0.284872959	0.191	0.076	0.001112296	X	YES	MGI:6363163
LMCD1	7.06E-11	0.284643749	0.176	0.054	3.14E-06	3	#N/A	#N/A
SNX5	7.72E-08	0.284080524	0.168	0.064	0.003431101	20	#N/A	#N/A
NANS	7.56E-10	0.283924508	0.347	0.163	3.36E-05	9	#N/A	#N/A
EIF2AK1	1.63E-06	0.283843728	0.195	0.089	0.072312544	7	#N/A	#N/A

IL1A	4.27E-10	0.283761183	0.149	0.043	1.90E-05	2	#N/A	#N/A
UBE2E2	1.26E-11	0.283300805	0.218	0.073	5.62E-07	3	#N/A	#N/A
NECAP2	5.17E-11	0.282886228	0.256	0.1	2.30E-06	1	#N/A	#N/A
AXL	2.84E-05	0.282700857	0.13	0.056	1	19	#N/A	MA
ADH5	1.02E-09	0.282512474	0.508	0.272	4.52E-05	4	#N/A	#N/A
MED10	3.00E-11	0.282503677	0.351	0.156	1.33E-06	5	#N/A	#N/A
COPS8	2.42E-12	0.282061673	0.279	0.104	1.08E-07	2	#N/A	#N/A
GUK1	2.65E-07	0.281634979	0.718	0.517	0.011771148	1	#N/A	#N/A
EMG1	1.71E-09	0.281106677	0.183	0.064	7.61E-05	12	#N/A	#N/A
C14orf159	1.35E-07	0.281029599	0.153	0.056	0.005979249	14	#N/A	#N/A
SLC30A3	1.77E-09	0.280894659	0.195	0.072	7.87E-05	2	#N/A	#N/A
NPM1	1.93E-08	0.280862868	0.805	0.557	0.00085866	5	#N/A	#N/A
ZNF593	1.99E-08	0.280578253	0.191	0.074	0.000884817	1	#N/A	#N/A
SEC22B	2.91E-09	0.280382363	0.221	0.089	0.00012957	1	#N/A	#N/A
SNX7	4.75E-10	0.280309204	0.275	0.117	2.11E-05	1	#N/A	#N/A
CCS	4.23E-09	0.280140246	0.347	0.169	0.000187816	11	#N/A	MGI:2446505
MRPS34	3.44E-08	0.280114765	0.275	0.129	0.001529239	16	#N/A	#N/A
PSMB2	4.08E-10	0.280088748	0.286	0.122	1.81E-05	1	#N/A	#N/A
RPL36AL	7.82E-08	0.279635351	0.691	0.441	0.003474922	14	#N/A	#N/A
FAH	9.26E-07	0.27936821	0.229	0.11	0.041175044	15	#N/A	#N/A
COA6	7.80E-08	0.279286646	0.172	0.066	0.00346843	1	#N/A	MGI:6341938
NUBP1	5.93E-10	0.279180117	0.141	0.04	2.64E-05	16	#N/A	#N/A
LCMT1	1.05E-10	0.278964485	0.286	0.117	4.67E-06	16	#N/A	#N/A
MRPS12	2.61E-09	0.278934913	0.29	0.13	0.000116052	19	#N/A	#N/A
VAPA	1.42E-10	0.278892379	0.481	0.249	6.31E-06	18	#N/A	#N/A
POMT2	3.08E-07	0.278795741	0.153	0.059	0.013673358	14	#N/A	#N/A
TPMT	1.80E-10	0.278515143	0.244	0.095	8.02E-06	6	#N/A	#N/A
CISD2	1.33E-08	0.278233787	0.202	0.081	0.000593103	4	#N/A	#N/A
ARFRP1	1.72E-09	0.278101428	0.164	0.053	7.64E-05	20	#N/A	#N/A
TCEAL1	1.72E-07	0.277945058	0.156	0.059	0.007636501	X	YES	#N/A
HNRNPH2	5.06E-07	0.277917483	0.176	0.074	0.022487669	X	YES	#N/A
PHF5A	2.40E-07	0.276649309	0.115	0.036	0.010654378	22	#N/A	#N/A
NDUFB6	7.02E-08	0.276636721	0.569	0.357	0.003119842	9	#N/A	#N/A
CCDC124	9.89E-10	0.276585569	0.248	0.101	4.40E-05	19	#N/A	#N/A
TMEM11	8.18E-11	0.276293064	0.24	0.091	3.64E-06	17	#N/A	#N/A
VASP	4.69E-06	0.276216075	0.149	0.064	0.208509681	19	#N/A	#N/A
NDUFB3	2.88E-09	0.275922062	0.439	0.23	0.000128041	2	#N/A	#N/A
FABP6	2.78E-07	0.275319307	0.141	0.051	0.012360002	5	#N/A	#N/A
MED25	1.74E-05	0.275289349	0.168	0.08	0.77487217	19	#N/A	#N/A
CCDC106	1.14E-13	0.275062893	0.229	0.07	5.05E-09	19	#N/A	#N/A
CCT8	1.02E-09	0.274728441	0.385	0.194	4.54E-05	21	#N/A	#N/A
SMS	5.64E-11	0.274719666	0.103	0.019	2.51E-06	X	YES	MGI:4431547
C1orf53	4.21E-09	0.274435387	0.137	0.04	0.000187223	1	#N/A	#N/A
TMED10	2.08E-06	0.274323344	0.328	0.184	0.092434559	14	#N/A	MGI:5695918
C10orf10	8.84E-06	0.273905306	0.156	0.07	0.392835121	10	#N/A	#N/A
CSDC2	1.42E-07	0.272763413	0.202	0.088	0.006317433	22	#N/A	#N/A
ANXA11	4.52E-11	0.272479595	0.195	0.063	2.01E-06	10	#N/A	#N/A
DPY30	3.33E-08	0.272124531	0.275	0.127	0.001482201	2	#N/A	#N/A
PDCL3	3.56E-08	0.271916888	0.26	0.12	0.001581262	2	#N/A	#N/A
NUDT16L1	1.02E-06	0.271541425	0.187	0.082	0.045401564	16	#N/A	#N/A
ARMCX6	1.36E-06	0.270849842	0.179	0.079	0.060424214	X	YES	#N/A
TATDN1	2.98E-07	0.270502588	0.141	0.051	0.013226568	8	#N/A	#N/A
ZMAT2	7.83E-09	0.270483995	0.229	0.096	0.000348205	5	#N/A	#N/A
ZFAND5	3.56E-06	0.270446876	0.466	0.292	0.158242029	9	#N/A	#N/A
TRAPPC5	4.07E-11	0.270304936	0.111	0.022	1.81E-06	19	#N/A	#N/A
TPM3	4.18E-09	0.270295346	0.508	0.286	0.000185595	1	#N/A	#N/A
LAMTOR2	9.62E-10	0.270199688	0.344	0.163	4.28E-05	1	#N/A	#N/A
EXOSC7	3.56E-08	0.2701793	0.275	0.13	0.001581027	3	#N/A	#N/A
B4GALT1	1.98E-08	0.270062114	0.229	0.098	0.000878005	9	#N/A	MGI:2178779
APOBEC3G	2.12E-10	0.269876821	0.397	0.189	9.44E-06	22	#N/A	#N/A
CBWD1	7.32E-12	0.269780894	0.26	0.096	3.25E-07	9	#N/A	#N/A
FUNDC1	1.81E-10	0.269656621	0.271	0.109	8.06E-06	X	#N/A	#N/A
MSX2	3.15E-10	0.269567387	0.141	0.039	1.40E-05	5	#N/A	#N/A
TRAP1	5.64E-08	0.269472835	0.145	0.05	0.002507632	16	#N/A	#N/A
ELMSAN1	2.25E-05	0.269302033	0.103	0.04	1	14	#N/A	#N/A
CERS2	7.39E-09	0.268822829	0.156	0.053	0.000328517	1	#N/A	#N/A
COX16	6.26E-11	0.26865363	0.206	0.069	2.78E-06	14	#N/A	#N/A
ALDH1B1	9.13E-12	0.268546956	0.176	0.05	4.06E-07	9	#N/A	#N/A
SAT2	8.57E-07	0.268382882	0.508	0.307	0.038107286	17	#N/A	#N/A
LRRC41	3.63E-06	0.267837178	0.191	0.089	0.161444304	1	#N/A	#N/A
MRPS18C	6.42E-08	0.267578932	0.286	0.139	0.002851719	4	#N/A	#N/A
RNF13	0.000107262	0.267098026	0.156	0.079	1	3	#N/A	#N/A
FUS	5.72E-07	0.267026102	0.309	0.161	0.025429099	16	#N/A	azoospermia
FNTB	3.28E-07	0.266904702	0.145	0.054	0.014598919	14	#N/A	#N/A
NACA	6.19E-09	0.266839106	0.878	0.688	0.000275053	12	#N/A	#N/A

HCFC1R1	9.25E-10	0.266453133	0.202	0.073	4.11E-05	16	#N/A	#N/A
SMUG1	1.56E-08	0.266431303	0.111	0.029	0.000691588	12	#N/A	#N/A
P4HB	9.66E-05	0.265982618	0.13	0.06	1	17	#N/A	MGI:5692909
UBL7	1.61E-08	0.265969488	0.134	0.041	0.000715104	15	#N/A	#N/A
HNRNPH1	1.14E-07	0.265929236	0.225	0.101	0.005076648	5	#N/A	#N/A
C6orf48	1.46E-09	0.265741254	0.427	0.221	6.51E-05	6	#N/A	#N/A
TCEAL4	4.01E-10	0.265510131	0.527	0.283	1.78E-05	X	YES	#N/A
CCDC85B	3.60E-06	0.265487503	0.569	0.379	0.160127891	11	#N/A	#N/A
BLVRA	3.29E-10	0.265386872	0.202	0.072	1.46E-05	7	#N/A	#N/A
CBR1	1.65E-07	0.26479865	0.244	0.114	0.007322993	21	#N/A	#N/A
TOMM40	2.08E-08	0.264558064	0.179	0.069	0.000925954	19	#N/A	#N/A
BCAT2	4.13E-08	0.264326637	0.145	0.049	0.001837121	19	#N/A	#N/A
CCDC12	2.72E-13	0.264312664	0.294	0.108	1.21E-08	3	#N/A	#N/A
NXF3	1.11E-10	0.264090778	0.252	0.098	4.92E-06	X	YES	MGI:4950382
COX4I1	8.13E-08	0.263938409	0.748	0.519	0.003613369	16	#N/A	#N/A
MAGEB1	2.03E-10	0.263920807	0.176	0.056	9.02E-06	X	YES	#N/A
CCNDBP1	4.73E-09	0.263597872	0.195	0.073	0.000210112	15	#N/A	#N/A
CNP	1.17E-13	0.263417697	0.145	0.03	5.19E-09	17	#N/A	MGI:3051635
CD74	5.17E-14	0.263248637	0.111	0.016	2.30E-09	5	#N/A	#N/A
ATP6V0E1	1.91E-08	0.263167604	0.534	0.315	0.000848095	5	#N/A	#N/A
SORD	4.59E-08	0.262957979	0.134	0.043	0.002039129	15	#N/A	#N/A
ZNF771	3.33E-09	0.262878084	0.137	0.04	0.000147934	16	#N/A	#N/A
SHISA4	1.54E-08	0.262722204	0.118	0.033	0.000685169	1	#N/A	#N/A
WT1	3.45E-05	0.262410079	0.313	0.186	1	11	#N/A	MA
EZR	9.36E-09	0.262280429	0.347	0.171	0.000415897	6	#N/A	#N/A
C14orf119	2.04E-09	0.262268179	0.256	0.107	9.05E-05	14	#N/A	#N/A
FAM32A	5.62E-09	0.261917166	0.237	0.099	0.000249864	19	#N/A	#N/A
NFKBIL1	4.55E-08	0.261903765	0.153	0.054	0.002022024	6	#N/A	#N/A
TMEM256	1.11E-10	0.261124089	0.149	0.04	4.95E-06	17	#N/A	#N/A
TCEAL3	2.59E-09	0.260996201	0.412	0.211	0.000115139	X	YES	#N/A
COX14	6.58E-10	0.260209758	0.363	0.174	2.93E-05	12	#N/A	#N/A
ELK1	1.03E-11	0.259978252	0.244	0.087	4.57E-07	X	YES	MGI:3028871
GSS	4.67E-08	0.259321691	0.218	0.093	0.002076514	20	#N/A	#N/A
APOO	1.33E-09	0.259127073	0.134	0.037	5.91E-05	X	YES	#N/A
PPIE	3.05E-09	0.258988803	0.26	0.111	0.000135461	1	#N/A	#N/A
STAU1	1.45E-09	0.25879395	0.244	0.1	6.44E-05	20	#N/A	#N/A
OXA1L	8.45E-09	0.258426817	0.183	0.068	0.000375482	14	#N/A	#N/A
C1orf43	2.49E-11	0.258207149	0.347	0.154	1.11E-06	1	#N/A	#N/A
CA11	2.47E-08	0.257941535	0.103	0.026	0.001098455	19	#N/A	#N/A
TMCO1	2.41E-05	0.257896532	0.282	0.164	1	1	#N/A	MGI:5642374
COPS6	3.06E-10	0.257837091	0.37	0.175	1.36E-05	7	#N/A	#N/A
RPS24	2.10E-09	0.257415534	0.958	0.869	9.33E-05	10	#N/A	#N/A
AKR1A1	4.30E-07	0.257309102	0.145	0.055	0.019114008	1	#N/A	MGI:4239556
GABARAPL2	3.02E-10	0.256937964	0.569	0.312	1.34E-05	16	#N/A	#N/A
RPA3	1.26E-08	0.256688315	0.389	0.202	0.000561498	7	#N/A	#N/A
PDCD6	7.22E-10	0.256441741	0.408	0.206	3.21E-05	5	#N/A	#N/A
APOA1	6.37E-06	0.256350423	0.87	0.674	0.283090874	11	#N/A	#N/A
UBA1	6.24E-07	0.256319848	0.313	0.168	0.02774288	X	YES	#N/A
EIF3E	2.59E-08	0.256164444	0.489	0.277	0.001151748	8	#N/A	#N/A
PLA2G16	1.78E-06	0.256115776	0.748	0.519	0.079101411	11	#N/A	#N/A
RNH1	9.77E-09	0.256032688	0.363	0.184	0.000434221	11	#N/A	#N/A
KLHDC2	2.47E-05	0.255729033	0.198	0.101	1	14	#N/A	#N/A
B3GAT3	8.24E-05	0.255590901	0.141	0.068	1	11	#N/A	#N/A
LAPTM4A	8.36E-06	0.255261545	0.786	0.584	0.371719851	2	#N/A	#N/A
UBE2D1	4.26E-08	0.255248638	0.134	0.042	0.001893175	10	#N/A	#N/A
METTL9	7.54E-09	0.255015166	0.191	0.071	0.000335236	16	#N/A	#N/A
RPL7A	1.23E-08	0.254830923	0.935	0.837	0.000545029	9	#N/A	#N/A
NDUFV1	3.04E-10	0.254671843	0.363	0.171	1.35E-05	11	#N/A	#N/A
C12orf73	0.00048461	0.254448953	0.134	0.068	1	12	#N/A	#N/A
TMEM179B	9.58E-07	0.25413368	0.229	0.111	0.042571172	11	#N/A	#N/A
IDH3G	5.55E-07	0.253824554	0.263	0.131	0.024679612	X	YES	#N/A
TMEM147	1.65E-08	0.253708574	0.321	0.157	0.00073184	19	#N/A	#N/A
PGM3	1.23E-06	0.25368479	0.156	0.064	0.054763135	6	#N/A	MGI:3758644
NARS	0.000123029	0.253632749	0.172	0.089	1	18	#N/A	#N/A
SCRG1	1.85E-06	0.253182754	0.653	0.449	0.082043397	4	#N/A	#N/A
MXRA7	5.22E-07	0.252682503	0.233	0.111	0.023211744	17	#N/A	#N/A
SRSF3	1.20E-08	0.252557523	0.489	0.275	0.000533667	6	#N/A	#N/A
SOD1	3.11E-08	0.251047909	0.626	0.383	0.001383971	21	#N/A	MGI:1857873
PIM2	3.97E-12	0.250191254	0.118	0.023	1.76E-07	X	YES	#N/A
UBE2A	1.74E-06	0.250153466	0.187	0.084	0.077189388	X	YES	MGI:5488492
LPIN2	0.274993891	-0.250213732	0.092	0.112	1	18	#N/A	MGI:5513796
FAM13A	0.053605619	-0.251902195	0.084	0.123	1	4	#N/A	#N/A
GCC2	0.050078995	-0.25191356	0.073	0.111	1	2	#N/A	#N/A
PSMD12	0.757126961	-0.252175037	0.16	0.158	1	17	#N/A	#N/A
SNAPC3	0.069968396	-0.252231424	0.073	0.108	1	9	#N/A	#N/A



RRAS2	0.135619626	-0.252393139	0.08	0.108	1	11	#N/A
APPBP2	0.425467337	-0.25254473	0.16	0.171	1	17	#N/A
ODC1	0.613297536	-0.252875039	0.336	0.312	1	2	#N/A
GTF2A1	0.155023309	-0.253436834	0.076	0.103	1	14	#N/A
HIPK1	0.023702246	-0.253861824	0.069	0.115	1	1	#N/A
BOD1	0.175803099	-0.253955413	0.122	0.15	1	5	#N/A
USP16	0.996362948	-0.255135179	0.191	0.18	1	21	#N/A
ZFR	0.614862531	-0.25520191	0.13	0.135	1	5	#N/A
FAM60A	0.029148879	-0.25694203	0.065	0.108	1	12	#N/A
AZGP1	0.074809978	-0.257868714	0.069	0.103	1	7	#N/A
MMD	0.215906888	-0.258735919	0.088	0.111	1	17	#N/A
RSBN1L	0.035564841	-0.259202122	0.065	0.107	1	7	#N/A
C21orf91	0.699298321	-0.259327732	0.153	0.153	1	21	#N/A
TMEM205	0.798029449	-0.260168986	0.153	0.136	1	19	#N/A
SIRT1	0.076389185	-0.260306384	0.073	0.107	1	10	#N/A
MYO6	0.602262533	-0.260362981	0.134	0.137	1	6	#N/A
PTEN	0.166014102	-0.260396531	0.076	0.102	1	10	#N/A
ZNF711	0.749092421	-0.260609202	0.153	0.151	1	X	YES
AP1G1	0.02942118	-0.261108028	0.061	0.104	1	16	#N/A
ANKS1A	0.031732664	-0.261488448	0.073	0.116	1	6	#N/A
SRRM2	0.174628204	-0.261839288	0.122	0.15	1	16	#N/A
ZNF148	0.076746157	-0.262083752	0.084	0.121	1	3	#N/A
HERPUD2	0.116966872	-0.263014383	0.084	0.115	1	7	#N/A
NOL7	0.395179588	-0.263064744	0.221	0.181	1	6	#N/A
AKTIP	0.180667782	-0.263198576	0.084	0.109	1	16	#N/A
PPP2R1B	0.056226435	-0.264590009	0.065	0.101	1	11	#N/A
ATPAF1	0.293193576	-0.264681214	0.103	0.121	1	1	#N/A
PNN	0.009089312	-0.265491498	0.057	0.111	1	14	#N/A
MAPK6	0.063629704	-0.266130044	0.076	0.113	1	15	#N/A
RYBP	0.412279073	-0.266713636	0.095	0.108	1	3	#N/A
SRRT	0.104455513	-0.267257269	0.073	0.104	1	7	#N/A
KIFC3	0.166552633	-0.267405971	0.076	0.102	1	16	#N/A
CSDE1	0.491794732	-0.267453201	0.382	0.35	1	1	#N/A
UQCC2	0.798274133	-0.26782344	0.202	0.192	1	6	#N/A
FGD4	0.004708681	-0.268752641	0.069	0.131	1	12	#N/A
FSTL3	0.034143231	-0.270282689	0.065	0.105	1	19	#N/A
TUBB4B	0.0075169	-0.270482045	0.687	0.63	1	9	#N/A
WASF1	0.069614702	-0.270558934	0.076	0.112	1	6	#N/A
IK	0.596585343	-0.271450626	0.156	0.161	1	5	#N/A
MTPN	0.906468295	-0.271780057	0.26	0.236	1	7	#N/A
PHF20L1	0.010036206	-0.272290641	0.057	0.109	1	8	#N/A
BPTF	0.498910548	-0.272599318	0.187	0.193	1	17	#N/A
BCLAF1	0.549213811	-0.273304215	0.149	0.153	1	6	#N/A
WNK3	0.218102923	-0.273747756	0.141	0.165	1	X	YES
GINM1	0.022270749	-0.27482681	0.107	0.16	1	6	#N/A
HNRNPU	0.567592188	-0.275507384	0.24	0.234	1	1	#N/A
SRP54	0.322207873	-0.276121314	0.195	0.207	1	14	#N/A
IQCG	0.109538878	-0.276346898	0.084	0.116	1	3	#N/A
KPNA4	0.133286066	-0.277446321	0.103	0.133	1	3	#N/A
SH3BP5	0.60965253	-0.278293709	0.26	0.25	1	3	#N/A
ZC3H11A	0.128469977	-0.279697506	0.076	0.105	1	1	#N/A
KIAA1217	0.003440004	-0.280954546	0.046	0.103	1	10	#N/A
NUFIP2	0.010748096	-0.282747173	0.057	0.108	1	17	#N/A
EXOC5	0.047352218	-0.282933737	0.069	0.107	1	14	#N/A
TTC3	0.108422385	-0.28348968	0.126	0.161	1	21	#N/A
MLEC	0.061631888	-0.285198117	0.13	0.172	1	12	#N/A
RNF19A	0.156556782	-0.285276581	0.115	0.143	1	8	#N/A
BCAT1	0.132185473	-0.287556525	0.115	0.145	1	12	#N/A
RPS2	2.96E-06	-0.287828476	0.809	0.801	0.131504419	16	#N/A
TMBIM4	0.327502469	-0.288020937	0.218	0.23	1	12	#N/A
PALLD	0.017397675	-0.29157493	0.099	0.154	1	4	#N/A
SETD3	0.384235727	-0.291668832	0.13	0.144	1	14	#N/A
ZRANB2	0.312545554	-0.291729855	0.137	0.154	1	1	#N/A
KPNA3	0.798492794	-0.292215343	0.141	0.138	1	13	#N/A
SMC4	0.231847033	-0.292997978	0.111	0.133	1	3	#N/A
CCT5	0.48354076	-0.293836608	0.176	0.183	1	5	#N/A
ACAT1	0.920547017	-0.294257767	0.187	0.17	1	11	#N/A
SARAF	0.407472833	-0.294759209	0.302	0.29	1	8	#N/A
AHCTF1	0.005050889	-0.295054454	0.05	0.105	1	1	#N/A
DCAF10	0.051876945	-0.295439401	0.065	0.102	1	9	#N/A
ZCRB1	0.616803866	-0.295853461	0.424	0.376	1	12	#N/A
NF1	0.025601484	-0.296219967	0.065	0.109	1	17	#N/A
NUP58	0.159487009	-0.296401276	0.084	0.11	1	13	#N/A
WNK1	0.116910078	-0.29754044	0.168	0.199	1	12	#N/A
RPRD1A	0.282491546	-0.298109701	0.126	0.146	1	18	#N/A

CIR1	0.88447502	-0.298310337	0.153	0.141	1	2	#N/A
ETNK1	0.027324577	-0.299367466	0.08	0.127	1	12	#N/A
PEG10	0.386379606	-0.299420402	0.45	0.395	1	7	#N/A
ARHGAP5	0.105365116	-0.301684183	0.118	0.151	1	14	#N/A
AKAP13	0.017551574	-0.30170217	0.076	0.126	1	15	#N/A
TOP1	0.345091702	-0.30172914	0.172	0.185	1	20	#N/A
CALD1	0.201225451	-0.303740828	0.321	0.317	1	7	#N/A
PPP1R11	0.172202572	-0.308514439	0.095	0.121	1	6	#N/A
SMC6	0.019342698	-0.309051606	0.08	0.13	1	2	#N/A
PPP1R14B	0.056088511	-0.309245729	0.065	0.101	1	11	#N/A
DYNC1H1	0.054996192	-0.309785314	0.095	0.136	1	14	#N/A
TRAPPC2L	0.542942164	-0.310904451	0.156	0.16	1	16	#N/A
MED21	0.161947698	-0.311238874	0.126	0.154	1	12	#N/A
SYNCRIP	0.031735241	-0.311884807	0.092	0.137	1	6	#N/A
UTP18	0.14014597	-0.312408412	0.08	0.107	1	17	#N/A
BAZ2B	0.007455688	-0.313832098	0.057	0.111	1	2	#N/A
SPTAN1	0.204107583	-0.313877084	0.126	0.149	1	9	#N/A
MAP4	0.134762985	-0.314826794	0.137	0.167	1	3	#N/A
CSNK1D	0.555865104	-0.315038561	0.172	0.173	1	17	#N/A
UBE2H	0.232934209	-0.315163397	0.179	0.199	1	7	#N/A
SPIN1	0.208146324	-0.315627699	0.107	0.13	1	9	#N/A
ARAP2	0.013273236	-0.316279329	0.065	0.115	1	4	#N/A
DDX39A	0.217636152	-0.318328032	0.084	0.105	1	19	#N/A
FOPNL	0.090808507	-0.318552378	0.115	0.15	1	16	#N/A
H2AFV	0.313692959	-0.319821293	0.149	0.165	1	7	#N/A
PDCD5	0.818970454	-0.321329817	0.389	0.337	1	19	#N/A
DNPEP	0.006735146	-0.322724899	0.061	0.118	1	2	#N/A
PDXDC1	0.132109271	-0.325156471	0.076	0.104	1	16	#N/A
STX8	0.611188439	-0.325501743	0.229	0.221	1	17	#N/A
TUBG1	0.349417247	-0.32631442	0.176	0.185	1	17	#N/A
SAR1B	0.396658675	-0.326976827	0.122	0.136	1	5	#N/A
FAM192A	0.081753	-0.327518641	0.095	0.131	1	16	#N/A
TMBIM6	0.030054809	-0.327729729	0.336	0.369	1	12	#N/A
LSM4	0.637592562	-0.328391948	0.302	0.277	1	19	#N/A
TAF9	0.172898527	-0.328419511	0.233	0.251	1	5	#N/A
KATNA1	0.099310232	-0.330351903	0.095	0.128	1	6	#N/A
KTN1	0.075013265	-0.330372229	0.24	0.272	1	14	#N/A
SOD2	0.004888256	-0.332426415	0.061	0.12	1	6	#N/A
GOSR2	0.717448432	-0.333122833	0.156	0.153	1	17	#N/A
UBE2M	0.105489388	-0.334351782	0.126	0.158	1	19	#N/A
MACF1	0.004473171	-0.334381677	0.053	0.11	1	1	#N/A
PIK3C2A	0.019266948	-0.334488199	0.088	0.138	1	11	#N/A
SERBP1	0.271657825	-0.335887697	0.363	0.346	1	1	#N/A
SRSF9	0.264669556	-0.336676022	0.485	0.422	1	12	#N/A
TCEA2	0.009510129	-0.337464625	0.103	0.163	1	20	#N/A
ROCK1	0.004236971	-0.337509551	0.046	0.101	1	18	#N/A
SEC14L1	0.385676872	-0.340004042	0.24	0.24	1	17	#N/A
KMT2C	0.006390018	-0.340872214	0.069	0.125	1	7	#N/A
ADSS	0.102222752	-0.341122796	0.115	0.148	1	1	#N/A
SNF8	0.402793465	-0.342304061	0.141	0.152	1	17	#N/A
RCOR3	0.016700641	-0.343323463	0.065	0.112	1	1	#N/A
LSM12	0.068431033	-0.343623654	0.111	0.148	1	17	#N/A
BOD1L1	0.005325229	-0.344300181	0.099	0.165	1	4	#N/A
ZPR1	0.190083505	-0.346017963	0.095	0.119	1	11	#N/A
ZBTB20	0.005793582	-0.346139485	0.073	0.132	1	3	#N/A
ABCF1	0.057944689	-0.346443852	0.084	0.121	1	6	#N/A
PHF20	0.037849333	-0.346862557	0.092	0.135	1	20	#N/A
EIF5	0.153985986	-0.346924397	0.305	0.312	1	14	#N/A
ZNF451	0.006296177	-0.346967367	0.065	0.121	1	6	#N/A
TEX30	0.06053651	-0.347510796	0.145	0.185	1	13	#N/A
SFPQ	0.120218116	-0.348064488	0.156	0.184	1	1	#N/A
CDC5L	0.224601069	-0.348877546	0.172	0.189	1	6	#N/A
DYNLT3	0.077063769	-0.349743957	0.099	0.135	1	X	YES
UBFD1	0.008992516	-0.350465734	0.08	0.136	1	16	#N/A
DCAF5	0.017295042	-0.351404702	0.069	0.117	1	14	#N/A
C2orf74	0.836592553	-0.35149085	0.176	0.165	1	2	#N/A
PRRC2C	0.055534405	-0.353736375	0.149	0.187	1	1	#N/A
ZNHIT3	0.174555106	-0.355656803	0.153	0.178	1	17	#N/A
REST	0.049026656	-0.358952094	0.084	0.123	1	4	#N/A
RB1CC1	0.000111736	-0.359178011	0.027	0.102	1	8	#N/A
MORC4	0.003676527	-0.35931953	0.057	0.116	1	X	YES
PINK1	0.008211067	-0.360223471	0.08	0.137	1	1	#N/A
BCAP29	0.057456018	-0.36026037	0.122	0.162	1	7	#N/A
CAPRIN1	0.068805541	-0.362329677	0.153	0.191	1	11	#N/A
SPAG9	0.095305992	-0.362548958	0.107	0.14	1	17	#N/A

PTP4A2	0.156274083	-0.362613059	0.206	0.225	1	1	#N/A
PAPOLA	0.044633589	-0.363404782	0.252	0.289	1	14	#N/A
ZNF106	0.032660113	-0.364551954	0.145	0.19	1	15	#N/A
KDM5B	0.019945879	-0.36512164	0.107	0.158	1	1	#N/A
ANKRD12	0.036497821	-0.366390675	0.095	0.138	1	18	#N/A
FUNDC2	0.217697078	-0.368153139	0.24	0.249	1	X	YES
TROVE2	0.016066578	-0.368825431	0.13	0.185	1	1	#N/A
THUMPD3	0.035298688	-0.369162603	0.084	0.127	1	3	#N/A
OXR1	0.047847578	-0.369294271	0.111	0.153	1	8	#N/A
ZNF706	0.358840067	-0.369449494	0.282	0.275	1	8	#N/A
SMAP1	0.011065244	-0.371212048	0.088	0.143	1	6	#N/A
DIAPH2	0.117258111	-0.371907329	0.122	0.152	1	X	YES
MAP1B	0.047411727	-0.372801348	0.198	0.233	1	5	#N/A
C11orf1	0.405702989	-0.374478651	0.244	0.241	1	11	#N/A
MTCH2	0.482002114	-0.374872716	0.198	0.198	1	11	#N/A
DDX3X	0.030700812	-0.37654614	0.118	0.165	1	X	#N/A
UBE2R2	0.166265307	-0.379380969	0.191	0.21	1	9	#N/A
EIF3A	0.037681388	-0.381983131	0.122	0.166	1	10	#N/A
GHITM	0.017502382	-0.382628555	0.523	0.485	1	10	#N/A
AGPAT3	0.004189818	-0.386893583	0.05	0.105	1	21	#N/A
RANBP2	0.001450551	-0.387281297	0.046	0.109	1	2	#N/A
UTRN	0.00023618	-0.388575207	0.038	0.113	1	6	#N/A
EIF4G3	0.002424181	-0.388595808	0.061	0.124	1	1	#N/A
STK11	0.009864759	-0.389786861	0.076	0.13	1	19	#N/A
MRPL36	0.343120745	-0.390093783	0.26	0.258	1	5	#N/A
WAPL	0.01865873	-0.390639948	0.095	0.145	1	10	#N/A
MYO9A	2.96E-05	-0.39193415	0.027	0.11	1	15	#N/A
GSPT1	0.001353803	-0.393060991	0.069	0.139	1	16	#N/A
MRPL51	0.010464356	-0.394047625	0.527	0.508	1	12	#N/A
PPP1R12A	0.285970658	-0.39708007	0.149	0.164	1	12	#N/A
TPGS2	0.010487415	-0.402583143	0.122	0.183	1	18	#N/A
FRMD6	0.004414022	-0.404115316	0.057	0.114	1	14	#N/A
SBNO1	0.000270501	-0.405569772	0.046	0.122	1	12	#N/A
SECISBP2	0.007518057	-0.409397165	0.08	0.137	1	9	#N/A
TSPYL5	0.00313426	-0.410092563	0.065	0.126	1	8	#N/A
ATMIN	0.000471019	-0.412064122	0.046	0.118	1	16	#N/A
EPB41L2	0.00393853	-0.412619364	0.099	0.165	1	6	#N/A
STK35	0.006908875	-0.412869108	0.053	0.105	1	20	#N/A
ATP5S	0.040251832	-0.413258022	0.069	0.107	1	14	#N/A
C14orf28	0.000916794	-0.415601491	0.038	0.103	1	14	#N/A
SLC25A33	0.007127876	-0.415898945	0.069	0.124	1	1	#N/A
RANBP9	0.006630354	-0.417614448	0.057	0.11	1	6	#N/A
LZIC	0.003714727	-0.418101558	0.061	0.121	1	1	#N/A
QKI	0.048325274	-0.418424167	0.244	0.272	1	6	#N/A
CCDC186	0.00374483	-0.418474877	0.08	0.143	1	10	#N/A
DYNC1L1I2	0.001035611	-0.420259719	0.05	0.117	1	16	#N/A
DNAJB9	0.010127482	-0.423650563	0.057	0.106	1	7	#N/A
RER1	0.035675189	-0.426337756	0.202	0.243	1	1	#N/A
HLTF	0.012202094	-0.42797589	0.248	0.297	1	3	#N/A
CITED4	0.01160391	-0.430406162	0.118	0.172	1	1	#N/A
NBR1	0.008971191	-0.431428513	0.092	0.148	1	17	#N/A
GPI	0.023021874	-0.434438408	0.069	0.113	1	19	#N/A
CFAP97	0.00133191	-0.436223105	0.073	0.143	1	4	#N/A
PAIP2	0.014256895	-0.436887145	0.508	0.488	1	5	#N/A
REG3G	0.000154865	-0.440150013	0.073	0.16	1	2	#N/A
AHI1	0.006206586	-0.442596687	0.073	0.13	1	6	#N/A
JAK1	0.001002572	-0.442958655	0.053	0.121	1	1	#N/A
USP7	0.000360226	-0.443983746	0.061	0.138	1	16	#N/A
AASDHPPT	0.020233052	-0.444306274	0.122	0.172	1	11	#N/A
MRPL42	0.028859294	-0.447785107	0.099	0.145	1	12	#N/A
POLR2I	0.035941376	-0.448340451	0.37	0.378	1	19	#N/A
WIPI2	0.049718857	-0.448870791	0.179	0.216	1	7	#N/A
SNAP29	0.003619827	-0.449190957	0.103	0.169	1	22	#N/A
ARID2	0.00127767	-0.450934602	0.065	0.135	1	12	#N/A
STK40	0.003140041	-0.451529316	0.092	0.157	1	1	#N/A
DNAJC2	0.000346855	-0.453363721	0.046	0.121	1	7	#N/A
BAZ1A	0.03321844	-0.456010832	0.16	0.204	1	14	#N/A
SOCS7	8.47E-05	-0.456394051	0.031	0.107	1	17	#N/A
GIGYF2	0.003165941	-0.459222819	0.08	0.144	1	2	#N/A
KIF2A	1.91E-05	-0.45970341	0.027	0.113	0.848496141	5	#N/A
CANX	0.000119084	-0.460817691	0.088	0.183	1	5	#N/A
CREB1	0.000194613	-0.460973183	0.042	0.119	1	2	#N/A
PSMC5	0.028776288	-0.463058051	0.271	0.303	1	17	#N/A
C6orf89	5.64E-05	-0.463342965	0.046	0.133	1	6	#N/A
PSMA4	0.009872866	-0.464398998	0.275	0.317	1	15	#N/A

VPS53	3.35E-06	-0.465532359	0.023	0.119	0.148975054	17	#N/A
MED7	0.023849933	-0.472364039	0.088	0.133	1	5	#N/A
CCDC34	0.00560928	-0.472538043	0.103	0.166	1	11	#N/A
TRAPPC12	1.93E-05	-0.474212489	0.05	0.148	0.85749118	2	#N/A
URI1	0.00721538	-0.475272489	0.103	0.161	1	19	#N/A
SUN1	1.62E-05	-0.480834504	0.038	0.132	0.721796205	7	#N/A
RORA	0.001886619	-0.482830119	0.122	0.193	1	15	#N/A
CCT2	0.007124528	-0.487139226	0.248	0.302	1	12	#N/A
PCMT1	0.042578414	-0.487719278	0.317	0.332	1	6	#N/A
SYNE2	0.022634425	-0.489279503	0.134	0.181	1	14	#N/A
DHX36	0.008436984	-0.492554088	0.198	0.251	1	3	#N/A
LYRM1	0.00049807	-0.494949285	0.061	0.136	1	16	#N/A
NLK	0.000172344	-0.495829398	0.034	0.108	1	17	#N/A
THAP5	4.16E-05	-0.498440368	0.073	0.171	1	7	#N/A
CCDC57	6.77E-06	-0.499825128	0.023	0.114	0.300733841	17	#N/A
AGFG1	2.11E-05	-0.502384732	0.031	0.117	0.938673003	2	#N/A
ARID4B	9.15E-05	-0.502451719	0.073	0.164	1	1	#N/A
CWC15	0.010892165	-0.503260557	0.317	0.345	1	11	#N/A
ID4	0.003114853	-0.512221788	0.141	0.206	1	6	#N/A
YJEFN3	1.92E-06	-0.512283888	0.011	0.103	0.085127668	19	#N/A
UBL3	0.019233015	-0.51245282	0.16	0.207	1	13	#N/A
PABPC1	0.000151567	-0.512718453	0.412	0.455	1	8	#N/A
SYCE3	3.46E-06	-0.517717631	0.015	0.105	0.153976155	22	#N/A
EEF2KMT	0.000147039	-0.519188591	0.031	0.103	1	16	#N/A
CCK	6.10E-08	-0.52101868	0.008	0.118	0.002711426	3	#N/A
CHPT1	2.19E-06	-0.521935494	0.027	0.127	0.097270627	12	#N/A
NAA38	0.003576492	-0.524364733	0.225	0.287	1	17	#N/A
HABP4	5.17E-05	-0.526401758	0.034	0.116	1	9	#N/A
BACE1	5.11E-06	-0.527557388	0.023	0.115	0.227367456	11	#N/A
TXNL4A	0.002377515	-0.529336769	0.149	0.218	1	18	#N/A
RAD17	0.000133708	-0.52956578	0.05	0.13	1	5	#N/A
DDX3Y	0.003418666	-0.529997513	0.095	0.159	1	Y	#N/A
SLAIN2	2.20E-07	-0.531262112	0.011	0.116	0.009777367	4	#N/A
EHBP1	2.81E-05	-0.534057284	0.027	0.109	1	2	#N/A
CCDC90B	0.003780353	-0.535845686	0.26	0.311	1	11	#N/A
CCDC88A	1.11E-05	-0.545850619	0.057	0.16	0.494837465	2	#N/A
HMOX2	0.000438496	-0.548305872	0.118	0.203	1	16	#N/A
ATP6V1A	0.001241527	-0.548844351	0.08	0.151	1	3	#N/A
C4orf36	5.19E-08	-0.550053758	0.004	0.111	0.002305343	4	#N/A
RAD23B	0.000937666	-0.554216561	0.153	0.23	1	9	#N/A
TRIP12	0.000159371	-0.555405096	0.069	0.153	1	2	#N/A
DESI2	1.01E-05	-0.555908236	0.065	0.169	0.44729994	1	#N/A
CNN1	2.86E-06	-0.559805234	0.027	0.125	0.12730653	19	#N/A
DGCR6	4.27E-06	-0.564107218	0.019	0.109	0.189711363	22	#N/A
MRPL41	6.96E-05	-0.564282362	0.137	0.238	1	9	#N/A
HSP90AA1	4.27E-07	-0.56476345	0.595	0.6	0.018985347	14	#N/A
LRRD1	1.23E-07	-0.565002802	0.008	0.114	0.005456008	7	#N/A
C1QTNF3	1.62E-06	-0.569392274	0.011	0.104	0.072232275	5	#N/A
FHL1	2.58E-06	-0.571881353	0.031	0.131	0.114535957	X	YES
CA2	5.79E-05	-0.575141477	0.038	0.121	1	8	#N/A
FAM71F2	2.75E-07	-0.576510727	0.004	0.101	0.012234163	7	#N/A
RBL2	1.81E-06	-0.581511772	0.027	0.127	0.080343172	16	#N/A
TNFAIP8L1	5.21E-08	-0.583702737	0.011	0.126	0.002315082	19	#N/A
RNF168	1.12E-05	-0.584474727	0.027	0.115	0.496259087	3	#N/A
LYL1	1.19E-07	-0.589429567	0.011	0.12	0.005276261	19	#N/A
UBXN4	0.000309657	-0.593600053	0.202	0.286	1	2	#N/A
GMPS	0.00010457	-0.594917114	0.115	0.209	1	3	#N/A
ACP1	3.14E-05	-0.599637699	0.397	0.458	1	2	#N/A
CDHR2	1.06E-08	-0.610524633	0	0.114	0.000471547	5	#N/A
MSTO1	1.68E-07	-0.6107142	0.019	0.131	0.00745382	1	#N/A
PSORS1C1	2.09E-08	-0.620021986	0.004	0.117	0.000928487	6	#N/A
TUBA3D	2.83E-07	-0.623128299	0.011	0.114	0.01256926	2	#N/A
GNAS	3.22E-10	-0.626154279	0.477	0.572	1.43E-05	20	#N/A
LARP1B	5.95E-07	-0.631334799	0.023	0.129	0.026465043	4	#N/A
RIBC1	2.64E-08	-0.631628367	0	0.108	0.001171583	X	#N/A
GLIPR1L2	9.51E-08	-0.636545215	0.004	0.107	0.004228299	12	#N/A
YWHAZ	3.85E-06	-0.638013367	0.332	0.427	0.170978343	8	#N/A
GLRX5	2.20E-06	-0.645357845	0.252	0.366	0.097972753	14	#N/A
KHDRBS3	2.68E-06	-0.649117873	0.092	0.21	0.11921951	8	#N/A
HIP1	9.93E-08	-0.651267207	0.015	0.127	0.004415863	7	#N/A
FAM76B	4.50E-08	-0.652350614	0.023	0.145	0.001999779	11	#N/A
UBE2J1	1.56E-05	-0.65453323	0.103	0.209	0.695086401	6	#N/A
HYPM	1.95E-08	-0.65542152	0	0.11	0.000865674	X	YES
FLJ27354	2.23E-06	-0.656051213	0.053	0.164	0.099014051	1	#N/A
NOL10	6.00E-07	-0.665891307	0.019	0.121	0.026656036	2	#N/A

TMEM53	6.78E-09	-0.66704471	0.008	0.132	0.000301599	1	#N/A
DNAJC21	1.17E-06	-0.66941647	0.069	0.186	0.052114269	5	#N/A
RAB21	1.13E-06	-0.673876853	0.073	0.193	0.050038157	12	#N/A
METAP1	0.000150598	-0.675162442	0.115	0.203	1	4	#N/A
ACAP1	4.25E-05	-0.683423036	0.103	0.201	1	17	#N/A
DGCR6L	7.90E-05	-0.685158513	0.26	0.341	1	22	#N/A
MRGBP	1.62E-08	-0.686051284	0.042	0.18	0.000719337	20	#N/A
GSKIP	4.43E-07	-0.688836888	0.034	0.147	0.019703752	14	#N/A
PARD6A	1.95E-07	-0.688841276	0.011	0.116	0.008672097	16	#N/A
ZNF91	2.83E-07	-0.689835878	0.053	0.176	0.012591831	19	#N/A
SURF2	1.78E-06	-0.701116757	0.092	0.211	0.079259553	9	#N/A
SYPL1	5.61E-08	-0.703708406	0.107	0.255	0.002491992	7	#N/A
UBTD2	1.43E-07	-0.705296005	0.05	0.175	0.0063406	5	#N/A
PAQR7	1.93E-06	-0.705373003	0.164	0.288	0.085852107	1	#N/A
LPP	2.22E-07	-0.710341614	0.088	0.221	0.009872936	3	#N/A
C15orf48	3.46E-08	-0.710947433	0.011	0.127	0.001538103	15	#N/A
SRPK1	2.99E-09	-0.720319594	0.023	0.161	0.00013275	6	#N/A
GOLM1	5.05E-09	-0.722509724	0.008	0.133	0.000224599	9	#N/A
BZW1	4.77E-09	-0.725530465	0.42	0.513	0.000212185	2	#N/A
LSM14B	3.24E-09	-0.728263014	0.023	0.16	0.000143979	20	#N/A
EFHD2	1.47E-07	-0.731722191	0.29	0.402	0.006553754	1	#N/A
SBDS	5.13E-06	-0.732088416	0.256	0.356	0.227967374	7	#N/A
GOLGA4	1.73E-07	-0.735801707	0.073	0.202	0.007694417	3	#N/A
LURAP1	2.39E-09	-0.741541286	0.004	0.13	0.000106434	1	#N/A
LYPLA1	4.32E-07	-0.751053658	0.263	0.378	0.019192199	8	#N/A
TPR	6.46E-08	-0.763962997	0.069	0.204	0.00287086	1	#N/A
PCM1	1.25E-07	-0.7664025	0.053	0.181	0.005566523	8	#N/A
LRRFIP2	5.21E-08	-0.768059316	0.042	0.169	0.002316503	3	#N/A
CSNK2A2	1.01E-10	-0.769279495	0.023	0.18	4.48E-06	16	#N/A
ZFAND3	1.34E-06	-0.784689842	0.16	0.281	0.059518815	6	#N/A
C5orf52	1.20E-10	-0.807297139	0.004	0.148	5.32E-06	5	#N/A
UBE2S	1.09E-08	-0.814206878	0.126	0.277	0.000482723	19	#N/A
CDC34	2.32E-11	-0.814795502	0.034	0.208	1.03E-06	19	#N/A
CENPU	4.94E-10	-0.818260166	0.023	0.17	2.20E-05	4	#N/A
MIR193BHG	1.99E-10	-0.818675853	0.004	0.145	8.83E-06	16	#N/A
ATP1B3	3.42E-09	-0.820270581	0.05	0.198	0.000152107	3	#N/A
BRI3	3.81E-10	-0.828211854	0.149	0.323	1.69E-05	7	#N/A
CDV3	4.71E-09	-0.832071805	0.149	0.304	0.000209473	3	#N/A
MZT2B	3.36E-15	-0.836934685	0.385	0.548	1.49E-10	2	#N/A
FXR1	1.92E-10	-0.838746639	0.191	0.366	8.53E-06	3	#N/A
MAP2K2	1.38E-09	-0.840975744	0.08	0.243	6.13E-05	19	#N/A
AKAP14	1.43E-11	-0.846386342	0.011	0.175	6.36E-07	X	YES
EIF4H	1.63E-10	-0.848383596	0.137	0.318	7.25E-06	7	#N/A
CTAG2	4.55E-11	-0.858834075	0	0.147	2.02E-06	X	YES
SPATA8	3.02E-11	-0.866210618	0.015	0.175	1.34E-06	15	#N/A
RPL39L	4.13E-09	-0.86802526	0.103	0.26	0.000183719	3	#N/A
AKIRIN1	1.53E-11	-0.868355448	0.294	0.457	6.82E-07	1	#N/A
MEX3D	1.57E-11	-0.88008399	0.031	0.202	7.00E-07	19	#N/A
DDX4	3.93E-12	-0.887476601	0.008	0.174	1.75E-07	5	#N/A
AKAP12	1.87E-10	-0.899768438	0.168	0.338	8.32E-06	6	#N/A
COX8C	7.63E-14	-0.968006575	0.008	0.196	3.39E-09	14	#N/A
SPATA22	1.87E-14	-0.992093615	0.015	0.216	8.31E-10	17	#N/A
TUBA3C	1.61E-13	-1.009931024	0.023	0.216	7.17E-09	13	#N/A
HIST1H2AA	2.31E-15	-1.030077128	0.004	0.209	1.03E-10	6	#N/A
PRKAR2A	6.95E-16	-1.074657101	0.015	0.233	3.09E-11	3	#N/A
COPRS	5.22E-16	-1.136428068	0.08	0.315	2.32E-11	17	#N/A
BAG1	1.22E-21	-1.167388369	0.237	0.508	5.43E-17	9	#N/A
CRNDE	3.63E-20	-1.195177687	0.023	0.295	1.61E-15	16	#N/A
PGP	4.98E-19	-1.229070865	0.153	0.419	2.22E-14	16	#N/A
DYNLL2	5.77E-21	-1.282115547	0.092	0.38	2.56E-16	17	#N/A

## logFC&gt;0.5

	p_val	avg_logFC	pct.1	pct.2	p_val_adj	CHRO	NXI GENE	MGI database
MIF	3.03E-103	1.671323685	0.84	0.234	1.35E-98	22	#N/A	#N/A
RPL36A	4.64E-100	1.637040069	0.821	0.203	2.06E-95	X	YES	#N/A
RPL17	1.98E-91	1.441726647	0.805	0.195	8.78E-87	18	#N/A	#N/A
RPS17	8.35E-95	1.372976856	0.943	0.443	3.71E-90	15	#N/A	#N/A
RPS21	3.87E-97	1.370619916	0.958	0.543	1.72E-92	20	#N/A	#N/A
RPL31	4.33E-92	1.283515584	0.969	0.581	1.92E-87	2	#N/A	#N/A
RPL41	3.92E-107	1.259251934	0.996	0.87	1.74E-102	12	#N/A	#N/A
ACTB	1.44E-93	1.249763766	0.989	0.671	6.42E-89	7	#N/A	MGI:3032619
PPDPF	6.76E-72	1.231577355	0.901	0.496	3.00E-67	20	#N/A	#N/A
MYL9	1.01E-66	1.142708652	0.847	0.348	4.51E-62	20	#N/A	#N/A
TMSB4X	1.78E-51	1.118016852	0.595	0.153	7.90E-47	X	YES	#N/A
HBA2	2.99E-17	1.115361017	0.107	0.009	1.33E-12	16	#N/A	#N/A
CD99	2.53E-42	1.113285902	0.706	0.277	1.12E-37	X	#N/A	#N/A
PFN1	6.90E-63	1.112166688	0.63	0.143	3.07E-58	17	#N/A	#N/A
UQCRQ	3.64E-51	1.106819589	0.779	0.338	1.62E-46	5	#N/A	#N/A
RPS29	7.93E-95	1.099929341	0.985	0.804	3.52E-90	14	#N/A	#N/A
RPL38	1.22E-90	1.08572825	0.973	0.752	5.44E-86	17	#N/A	MGI:1861228
SLC25A6	1.60E-60	1.069852721	0.771	0.27	7.10E-56	X	#N/A	#N/A
RPLP2	2.43E-86	1.065571463	0.985	0.721	1.08E-81	11	#N/A	#N/A
RPL39	2.36E-77	1.065287085	0.973	0.69	1.05E-72	X	YES	#N/A
RPS26	9.79E-66	1.060555127	0.92	0.562	4.35E-61	12	#N/A	#N/A
NDUFA11	6.30E-56	1.040904442	0.771	0.297	2.80E-51	19	#N/A	#N/A
MIR202HG	1.89E-55	1.030651325	0.947	0.63	8.41E-51	10	#N/A	#N/A
BEX1	2.66E-64	1.0296462	0.935	0.54	1.18E-59	X	YES	#N/A
EEF1A1	5.48E-112	1.025445711	0.996	0.942	2.44E-107	6	#N/A	#N/A
USMG5	3.05E-65	1.017202599	0.916	0.543	1.35E-60	10	#N/A	#N/A
G6PD	4.45E-48	1.01585106	0.702	0.247	1.98E-43	X	YES	#N/A
RPL37	1.47E-66	1.013673993	0.95	0.675	6.54E-62	5	#N/A	#N/A
RPS27	2.48E-91	1.009652287	0.985	0.882	1.10E-86	1	#N/A	#N/A
SPARC	2.77E-27	0.982972755	0.683	0.316	1.23E-22	5	#N/A	#N/A
RPL36	2.68E-72	0.982124693	0.973	0.728	1.19E-67	19	#N/A	#N/A
RPL13A	3.20E-88	0.973554384	0.989	0.823	1.42E-83	19	#N/A	#N/A
RPL23A	1.05E-75	0.968389705	0.977	0.716	4.67E-71	17	#N/A	#N/A
RPL27	4.62E-65	0.961842698	0.939	0.583	2.06E-60	17	#N/A	#N/A
PSAP	1.25E-33	0.961595755	0.473	0.137	5.54E-29	10	#N/A	MGI:3711720
IGFBP7	6.02E-58	0.96102484	0.561	0.108	2.68E-53	4	#N/A	MGI:5618913
GAPDH	7.58E-70	0.956463643	0.958	0.754	3.37E-65	12	#N/A	#N/A
RPS28	6.01E-70	0.942349959	0.95	0.702	2.67E-65	19	#N/A	#N/A
UQCR11	4.19E-45	0.941687216	0.767	0.315	1.86E-40	19	#N/A	#N/A
PHGDH	6.66E-50	0.941376556	0.443	0.077	2.96E-45	1	#N/A	#N/A
RPL27A	5.15E-72	0.934878761	0.969	0.707	2.29E-67	11	#N/A	#N/A
HNRNPA1	4.13E-51	0.931929057	0.859	0.411	1.84E-46	12	#N/A	#N/A
RHOC	5.69E-50	0.92820538	0.718	0.241	2.53E-45	1	#N/A	#N/A
B2M	3.04E-32	0.924334367	0.439	0.125	1.35E-27	15	#N/A	#N/A
FTH1	5.70E-85	0.924014117	0.996	0.866	2.53E-80	11	#N/A	#N/A
TIMP1	1.96E-27	0.923969914	0.683	0.332	8.73E-23	X	YES	MGI:3512125
RPL37A	3.39E-89	0.909324885	0.996	0.895	1.51E-84	2	#N/A	#N/A
GABARAP	1.41E-46	0.908014053	0.588	0.161	6.27E-42	17	#N/A	#N/A
HSPB1	1.67E-35	0.907080995	0.462	0.126	7.44E-31	7	#N/A	#N/A
SNHG25	9.38E-52	0.905878951	0.347	0.038	4.17E-47	17	#N/A	#N/A
RPS10	7.82E-62	0.90178014	0.954	0.671	3.48E-57	6	#N/A	#N/A
RPS20	1.33E-69	0.898300111	0.962	0.78	5.89E-65	8	#N/A	#N/A
INHA	2.22E-32	0.896370884	0.557	0.199	9.89E-28	2	#N/A	MGI:1857202
AKR1B1	1.22E-41	0.895356794	0.55	0.157	5.41E-37	7	#N/A	#N/A
PGAM1	1.66E-41	0.894123094	0.706	0.285	7.36E-37	10	#N/A	#N/A
NUTF2	9.83E-41	0.887659349	0.565	0.17	4.37E-36	16	#N/A	#N/A
RPL12	1.27E-48	0.887634262	0.866	0.446	5.66E-44	9	#N/A	#N/A
RPL4	1.01E-44	0.884582296	0.809	0.361	4.50E-40	15	#N/A	#N/A
RPL34	2.79E-64	0.881998434	0.977	0.707	1.24E-59	4	#N/A	#N/A
OST4	1.53E-47	0.881301797	0.851	0.414	6.79E-43	2	#N/A	#N/A
CLU	2.18E-20	0.878667873	0.927	0.641	9.68E-16	8	#N/A	#N/A
MT1X	1.79E-35	0.877204562	0.508	0.15	7.94E-31	16	#N/A	MGI:1857301
TUBA1A	3.68E-43	0.872613757	0.832	0.378	1.64E-38	12	#N/A	#N/A
COX7C	7.42E-52	0.869595504	0.92	0.616	3.30E-47	5	#N/A	#N/A
RPS19	2.20E-62	0.867005844	0.977	0.722	9.78E-58	19	#N/A	#N/A
MT2A	1.01E-28	0.863732426	0.469	0.148	4.48E-24	16	#N/A	#N/A
ATP5G2	1.24E-41	0.861054998	0.821	0.421	5.53E-37	12	#N/A	#N/A
RPL23	8.25E-49	0.857665476	0.905	0.553	3.67E-44	17	#N/A	#N/A
RPLP1	7.11E-91	0.855417297	1	0.927	3.16E-86	15	#N/A	MGI:6094829
COX8A	3.04E-42	0.852817531	0.802	0.395	1.35E-37	11	#N/A	#N/A
NDUFA1	2.13E-36	0.850860912	0.725	0.315	9.47E-32	X	YES	#N/A
TOMM7	3.08E-47	0.849277105	0.878	0.493	1.37E-42	7	#N/A	#N/A
PPIA	3.10E-45	0.84611697	0.851	0.455	1.38E-40	7	#N/A	#N/A
RPL18A	8.06E-65	0.83804246	0.977	0.695	3.58E-60	19	#N/A	#N/A



RPLP0	1.20E-50	0.835347202	0.916	0.585	5.33E-46	12	#N/A	#N/A
RPL21	3.73E-64	0.832620584	0.966	0.748	1.66E-59	13	#N/A	#N/A
SERPINA5	1.12E-24	0.831506491	0.733	0.383	5.00E-20	14	#N/A	MGI:2445835
NDUFS5	2.59E-37	0.827473661	0.786	0.387	1.15E-32	1	#N/A	#N/A
MYL6B	2.28E-45	0.823231169	0.924	0.702	1.02E-40	12	#N/A	#N/A
RPL28	3.52E-66	0.82058653	0.973	0.829	1.56E-61	19	#N/A	#N/A
IFITM2	1.18E-31	0.818917875	0.55	0.197	5.23E-27	11	#N/A	#N/A
S100A10	4.47E-45	0.818800032	0.893	0.582	1.99E-40	1	#N/A	#N/A
CFL1	6.81E-42	0.81707866	0.859	0.475	3.03E-37	11	#N/A	#N/A
RPS8	3.59E-52	0.8049048	0.935	0.681	1.60E-47	1	#N/A	#N/A
POLR2L	2.98E-34	0.802092589	0.737	0.35	1.32E-29	11	#N/A	#N/A
NDUFB1	4.47E-29	0.801335192	0.653	0.305	1.99E-24	14	#N/A	#N/A
DEFB119	2.83E-48	0.801312755	0.901	0.781	1.26E-43	20	#N/A	#N/A
RPS16	3.68E-52	0.801076893	0.958	0.668	1.64E-47	19	#N/A	#N/A
ATP5I	1.36E-35	0.799945423	0.771	0.381	6.04E-31	4	#N/A	#N/A
DLK1	2.46E-54	0.798389676	0.263	0.009	1.09E-49	14	#N/A	MGI:3640339
JUNB	6.36E-27	0.795814838	0.466	0.15	2.83E-22	19	#N/A	#N/A
DCN	3.47E-38	0.792318547	0.275	0.031	1.54E-33	12	#N/A	MGI:2153002
SERPINF1	7.79E-21	0.791202661	0.637	0.311	3.46E-16	17	#N/A	MGI:2664515
GSTA2	8.90E-28	0.789540446	0.641	0.303	3.95E-23	6	#N/A	#N/A
VDAC1	1.05E-35	0.781753361	0.618	0.215	4.68E-31	5	#N/A	#N/A
UQCRH	6.81E-32	0.777125988	0.767	0.389	3.03E-27	1	#N/A	#N/A
GSTA4	9.85E-34	0.77617235	0.508	0.152	4.38E-29	6	#N/A	#N/A
TRAPPC1	1.08E-30	0.77572979	0.599	0.234	4.79E-26	17	#N/A	#N/A
CSTB	1.82E-34	0.774741839	0.756	0.347	8.09E-30	21	#N/A	#N/A
TMSB10	4.22E-60	0.774197798	0.992	0.925	1.88E-55	2	#N/A	#N/A
RPSA	5.19E-42	0.773863984	0.836	0.402	2.31E-37	3	#N/A	#N/A
ALDOA	7.49E-35	0.771407593	0.664	0.26	3.33E-30	16	#N/A	#N/A
SNRPB	9.25E-34	0.770494688	0.569	0.201	4.11E-29	20	#N/A	#N/A
ACOT2	4.65E-40	0.758412902	0.328	0.049	2.07E-35	14	#N/A	#N/A
RPL6	1.49E-43	0.75714974	0.908	0.577	6.64E-39	12	#N/A	#N/A
FGFBP2	1.94E-50	0.754749278	0.26	0.012	8.61E-46	4	#N/A	#N/A
TXN2	3.45E-34	0.754102518	0.573	0.193	1.53E-29	22	#N/A	#N/A
ATP5E	6.37E-45	0.752647385	0.931	0.64	2.83E-40	20	#N/A	#N/A
MT1E	2.88E-29	0.751890533	0.237	0.034	1.28E-24	16	#N/A	#N/A
SMIM1	1.47E-34	0.75172365	0.782	0.386	6.55E-30	1	#N/A	#N/A
PCBP2	1.64E-34	0.751464582	0.63	0.233	7.28E-30	12	#N/A	#N/A
HIGD2A	2.76E-33	0.74966735	0.649	0.252	1.23E-28	5	#N/A	#N/A
PPP2R1A	3.62E-32	0.749391662	0.454	0.132	1.61E-27	19	#N/A	#N/A
KRTCAP2	2.40E-31	0.748823718	0.527	0.173	1.07E-26	1	#N/A	#N/A
COMMD6	2.05E-30	0.744867987	0.748	0.382	9.12E-26	13	#N/A	#N/A
ECH1	9.18E-29	0.742756683	0.702	0.335	4.08E-24	19	#N/A	#N/A
RPS25	1.72E-44	0.741829098	0.927	0.648	7.66E-40	11	#N/A	#N/A
RPS15A	1.60E-44	0.741196707	0.939	0.709	7.13E-40	16	#N/A	#N/A
IFITM3	7.96E-39	0.741082645	0.889	0.524	3.54E-34	11	#N/A	#N/A
MYL6	1.85E-52	0.740981273	0.969	0.741	8.20E-48	12	#N/A	#N/A
ENO1	6.13E-32	0.740065683	0.702	0.296	2.72E-27	1	#N/A	#N/A
ATP5C1	2.95E-31	0.739642839	0.744	0.362	1.31E-26	10	#N/A	#N/A
TFF3	1.00E-31	0.737294909	0.202	0.018	4.46E-27	21	#N/A	#N/A
RPS3	7.75E-61	0.735583603	0.977	0.824	3.44E-56	11	#N/A	#N/A
IL32	2.85E-26	0.734359904	0.156	0.012	1.27E-21	16	#N/A	#N/A
IFI27	2.99E-24	0.734239601	0.718	0.379	1.33E-19	14	#N/A	#N/A
AMH	2.02E-17	0.731951174	0.202	0.048	9.00E-13	19	#N/A	MGI:1857126
HNRNPA0	1.52E-34	0.731180035	0.485	0.137	6.74E-30	5	#N/A	#N/A
TMEM14C	7.15E-31	0.730041754	0.531	0.182	3.18E-26	6	#N/A	#N/A
S100A11	8.51E-28	0.729189565	0.725	0.366	3.78E-23	1	#N/A	MGI:2681771
VIM	2.61E-40	0.728523027	0.943	0.586	1.16E-35	10	#N/A	#N/A
ARF5	6.44E-30	0.72526148	0.401	0.106	2.86E-25	7	#N/A	#N/A
RPS27A	8.78E-51	0.724678728	0.962	0.77	3.90E-46	2	#N/A	#N/A
RPL10A	1.65E-39	0.718300982	0.901	0.567	7.31E-35	6	#N/A	#N/A
GSN	4.46E-37	0.714888846	0.374	0.074	1.98E-32	9	#N/A	MGI:2179509
BANF1	8.83E-34	0.711429244	0.576	0.197	3.92E-29	11	#N/A	#N/A
COX6A1	4.08E-28	0.710731329	0.756	0.398	1.82E-23	12	#N/A	#N/A
JUN	1.51E-22	0.70654198	0.431	0.146	6.70E-18	1	#N/A	#N/A
ATOX1	1.58E-25	0.706285214	0.634	0.287	7.01E-21	5	#N/A	#N/A
FOS	6.10E-29	0.703190007	0.527	0.167	2.71E-24	14	#N/A	MGI:1857171
SMIM4	3.64E-32	0.701459703	0.397	0.099	1.62E-27	3	#N/A	#N/A
TIMM8B	5.12E-26	0.701091033	0.676	0.331	2.28E-21	11	#N/A	#N/A
PSMA2	9.00E-31	0.699079752	0.622	0.241	4.00E-26	7	#N/A	#N/A
ANXA2	3.28E-27	0.696587716	0.618	0.266	1.46E-22	15	#N/A	#N/A
TRMT112	3.06E-27	0.696375633	0.729	0.372	1.36E-22	11	#N/A	#N/A
TUBB	1.85E-25	0.694913643	0.645	0.293	8.21E-21	6	#N/A	#N/A
TAGLN2	5.12E-30	0.694208205	0.782	0.402	2.28E-25	1	#N/A	#N/A
TMEM258	3.26E-28	0.693909416	0.641	0.272	1.45E-23	11	#N/A	#N/A
TPT1	4.14E-61	0.691959528	0.981	0.879	1.84E-56	13	#N/A	#N/A

GAMT	1.81E-25	0.691239683	0.718	0.372	8.04E-21	19	#N/A	MGI:3044282
RPL35A	6.06E-52	0.688752244	0.962	0.788	2.69E-47	3	#N/A	#N/A
RPL10	3.50E-39	0.688238186	0.943	0.691	1.56E-34	X	YES	#N/A
RPS23	3.74E-45	0.686944803	0.954	0.757	1.66E-40	5	#N/A	#N/A
DEFB123	1.75E-22	0.684021175	0.752	0.487	7.79E-18	20	#N/A	#N/A
CYP11A1	1.20E-30	0.681099943	0.332	0.071	5.32E-26	15	#N/A	MGI:2183813
ROMO1	2.22E-27	0.679173491	0.626	0.269	9.85E-23	20	#N/A	#N/A
CALM2	3.19E-43	0.678756877	0.947	0.732	1.42E-38	2	#N/A	#N/A
SCP2	2.39E-26	0.678362938	0.641	0.287	1.06E-21	1	#N/A	#N/A
NDUFA4	1.02E-34	0.67566102	0.901	0.59	4.52E-30	7	#N/A	#N/A
GSTM4	2.21E-33	0.674629819	0.309	0.054	9.84E-29	1	#N/A	#N/A
UBL5	5.71E-30	0.67115016	0.84	0.535	2.54E-25	19	#N/A	#N/A
SH3BGR1	7.03E-26	0.670893278	0.641	0.287	3.12E-21	X	#N/A	#N/A
RPS18	4.88E-57	0.669822472	0.992	0.895	2.17E-52	6	#N/A	#N/A
TMEM52	3.78E-21	0.669507664	0.366	0.121	1.68E-16	1	#N/A	#N/A
RPS4Y1	3.69E-25	0.6657033	0.725	0.386	1.64E-20	Y	#N/A	#N/A
MRPS6	1.34E-24	0.664368417	0.637	0.296	5.97E-20	21	#N/A	#N/A
RBM3	2.12E-26	0.664140478	0.515	0.187	9.42E-22	X	YES	#N/A
HIGD1A	2.02E-28	0.664016877	0.435	0.129	8.97E-24	3	#N/A	#N/A
TPI1	6.82E-27	0.663744231	0.79	0.453	3.03E-22	12	#N/A	#N/A
VAMP2	2.36E-28	0.66110497	0.511	0.174	1.05E-23	17	#N/A	#N/A
RPL26	1.36E-40	0.658048211	0.958	0.754	6.03E-36	17	#N/A	#N/A
RPS4X	2.24E-47	0.657160321	0.973	0.808	9.94E-43	X	#N/A	#N/A
SRP9	1.36E-28	0.656856801	0.641	0.266	6.03E-24	1	#N/A	#N/A
RBP1	1.36E-27	0.651569097	0.752	0.382	6.05E-23	3	#N/A	MGI:2181412
PET100	1.53E-24	0.651389048	0.462	0.164	6.80E-20	19	#N/A	#N/A
COX6C	1.41E-29	0.649766284	0.851	0.589	6.28E-25	8	#N/A	#N/A
ISYNA1	1.96E-27	0.649513261	0.847	0.513	8.72E-23	19	#N/A	#N/A
IFI27L2	1.78E-23	0.64813044	0.542	0.225	7.92E-19	14	#N/A	#N/A
DYNLRB1	1.21E-24	0.647366693	0.504	0.19	5.38E-20	20	#N/A	#N/A
CIRBP	4.99E-25	0.647243509	0.718	0.352	2.22E-20	19	#N/A	MGI:5432527
TUBA1B	5.71E-28	0.645771211	0.885	0.572	2.54E-23	12	#N/A	#N/A
UXT	1.20E-24	0.645173251	0.401	0.125	5.32E-20	X	YES	MGI:6159372
EGR1	3.56E-05	0.643507322	0.198	0.104	1	5	#N/A	MGI:5766183
SF3A2	1.42E-32	0.64318846	0.256	0.036	6.32E-28	19	#N/A	#N/A
TMA7	3.12E-32	0.641120824	0.882	0.631	1.39E-27	3	#N/A	#N/A
SLC25A5	1.32E-25	0.640143432	0.656	0.291	5.85E-21	X	YES	#N/A
SERF2	5.25E-35	0.6399982	0.931	0.669	2.33E-30	15	#N/A	#N/A
ZFP36	3.74E-18	0.63825895	0.271	0.078	1.66E-13	19	#N/A	#N/A
SRI	7.92E-23	0.637921488	0.485	0.188	3.52E-18	7	#N/A	#N/A
ETFA	3.10E-29	0.635707144	0.439	0.129	1.38E-24	15	#N/A	#N/A
SNHG19	1.04E-27	0.634026356	0.366	0.093	4.61E-23	16	#N/A	#N/A
ZFAS1	6.36E-26	0.634009392	0.504	0.185	2.83E-21	20	#N/A	#N/A
RPL5	9.26E-40	0.632022529	0.95	0.716	4.12E-35	1	#N/A	#N/A
MTHFS	5.33E-28	0.629499428	0.439	0.132	2.37E-23	15	#N/A	#N/A
RPL7	3.70E-32	0.629479092	0.885	0.629	1.64E-27	8	#N/A	#N/A
CNIH1	1.39E-22	0.628330707	0.355	0.108	6.20E-18	14	#N/A	#N/A
TAX1BP3	3.24E-24	0.626665291	0.359	0.102	1.44E-19	17	#N/A	#N/A
EMP3	2.06E-24	0.623374215	0.282	0.063	9.18E-20	19	#N/A	#N/A
FATE1	2.74E-38	0.621953552	0.981	0.793	1.22E-33	X	YES	#N/A
RPL9	1.06E-40	0.619131687	0.954	0.783	4.70E-36	4	#N/A	#N/A
NDUFB9	4.64E-25	0.617780468	0.771	0.464	2.06E-20	8	#N/A	#N/A
MYL12A	7.90E-23	0.617025951	0.683	0.335	3.51E-18	18	#N/A	#N/A
ARL6IP1	8.13E-22	0.616411532	0.595	0.272	3.61E-17	16	#N/A	#N/A
MRPL33	3.24E-21	0.613762422	0.641	0.319	1.44E-16	2	#N/A	#N/A
PRDX1	5.47E-23	0.612783365	0.779	0.46	2.43E-18	1	#N/A	#N/A
TSEN34	4.66E-27	0.61054319	0.607	0.234	2.07E-22	19	#N/A	#N/A
SNRPN	7.28E-23	0.608580143	0.523	0.213	3.24E-18	15	#N/A	#N/A
TIMM13	5.60E-24	0.608358075	0.515	0.197	2.49E-19	19	#N/A	MGI:6257582
FXVD6	1.71E-20	0.608320953	0.45	0.175	7.61E-16	11	#N/A	#N/A
CLDN11	6.45E-16	0.608011183	0.588	0.307	2.87E-11	3	#N/A	MA
YWHAE	1.11E-22	0.607256289	0.664	0.324	4.93E-18	17	#N/A	MGI:2667341
GSTA1	3.34E-35	0.607234638	0.927	0.686	1.49E-30	6	#N/A	#N/A
PRPS2	4.04E-22	0.606298607	0.565	0.25	1.80E-17	X	YES	#N/A
RPL14	6.09E-23	0.606004117	0.798	0.492	2.71E-18	3	#N/A	#N/A
TAF11	1.08E-18	0.605355382	0.401	0.157	4.80E-14	6	#N/A	#N/A
CTSV	1.31E-14	0.605349141	0.37	0.157	5.81E-10	9	#N/A	#N/A
ATP5B	9.16E-22	0.6035281	0.748	0.412	4.07E-17	12	#N/A	#N/A
RPS12	1.10E-44	0.600956898	0.973	0.825	4.87E-40	6	#N/A	#N/A
ATP5J2	1.19E-22	0.600920794	0.733	0.423	5.27E-18	7	#N/A	#N/A
SNRPE	1.23E-23	0.600345328	0.546	0.219	5.49E-19	1	#N/A	#N/A
SEC61G	3.73E-26	0.599208936	0.76	0.379	1.66E-21	7	#N/A	#N/A
RPS13	1.84E-36	0.598759019	0.962	0.753	8.20E-32	11	#N/A	#N/A
DYNLT1	1.66E-22	0.597722319	0.805	0.502	7.40E-18	6	#N/A	#N/A
COX5B	3.28E-28	0.595719214	0.855	0.557	1.46E-23	2	#N/A	#N/A

MRPL16	4.85E-24	0.595287429	0.534	0.211	2.16E-19	11	#N/A	#N/A
RPS15	3.86E-38	0.595198729	0.954	0.785	1.72E-33	19	#N/A	#N/A
PKM	7.46E-23	0.594860284	0.79	0.446	3.32E-18	15	#N/A	#N/A
COX7B	3.05E-22	0.594749846	0.565	0.246	1.36E-17	X	YES	#N/A
COX17	3.56E-19	0.594648909	0.504	0.221	1.58E-14	3	#N/A	#N/A
CHPF	2.49E-18	0.592661845	0.332	0.114	1.11E-13	2	#N/A	#N/A
APP	2.46E-12	0.592444217	0.275	0.106	1.09E-07	21	#N/A	MGI:2136847
GLO1	2.36E-24	0.591323016	0.427	0.139	1.05E-19	6	#N/A	#N/A
RPS5	1.88E-25	0.590502151	0.866	0.618	8.34E-21	19	#N/A	#N/A
SNHG8	6.90E-25	0.589998405	0.718	0.355	3.07E-20	4	#N/A	#N/A
CLIC1	1.25E-18	0.586147153	0.317	0.102	5.56E-14	6	#N/A	#N/A
LGALS1	1.87E-26	0.584342015	0.912	0.661	8.33E-22	22	#N/A	#N/A
SMIM10	6.31E-20	0.582262479	0.607	0.296	2.81E-15	X	YES	#N/A
PRAF2	1.26E-22	0.580754766	0.282	0.07	5.61E-18	X	YES	#N/A
CD151	8.72E-15	0.580502973	0.279	0.098	3.87E-10	11	#N/A	#N/A
PLP2	6.70E-23	0.580395525	0.263	0.061	2.98E-18	X	YES	#N/A
ABRACL	3.56E-19	0.580096773	0.615	0.308	1.58E-14	6	#N/A	#N/A
MTCH1	2.04E-21	0.579385551	0.576	0.256	9.06E-17	6	#N/A	#N/A
PSMA1	1.04E-19	0.578233645	0.435	0.168	4.61E-15	11	#N/A	#N/A
ATP5A1	8.27E-20	0.577862029	0.71	0.384	3.68E-15	18	#N/A	#N/A
NUDT10	7.49E-24	0.577627972	0.397	0.123	3.33E-19	X	YES	#N/A
ZYX	1.68E-19	0.576048345	0.374	0.135	7.46E-15	7	#N/A	#N/A
S100A16	2.66E-24	0.575746684	0.649	0.295	1.18E-19	1	#N/A	#N/A
COL1A2	1.47E-13	0.574875456	0.366	0.156	6.56E-09	7	#N/A	#N/A
POLR2G	2.07E-21	0.574150562	0.393	0.131	9.22E-17	11	#N/A	#N/A
CYB5R3	8.63E-22	0.574097198	0.569	0.25	3.84E-17	22	#N/A	#N/A
HIST1H1C	7.75E-12	0.574092583	0.317	0.137	3.45E-07	6	#N/A	#N/A
STAR	2.30E-23	0.57320758	0.5	0.187	1.02E-18	8	#N/A	MGI:2388706
CRYAB	2.72E-29	0.57216516	0.168	0.011	1.21E-24	11	#N/A	#N/A
BTF3	3.12E-22	0.572049289	0.794	0.447	1.39E-17	5	#N/A	MGI:3688730
BSG	3.46E-15	0.571977573	0.527	0.267	1.54E-10	19	#N/A	MA
TOMM34	7.65E-24	0.571812698	0.439	0.148	3.40E-19	20	#N/A	#N/A
TRIM55	4.15E-23	0.56966156	0.351	0.102	1.84E-18	8	#N/A	#N/A
DPM3	6.11E-24	0.56777086	0.385	0.119	2.72E-19	1	#N/A	MGI:5548565
ACTG1	3.12E-16	0.567262756	0.656	0.357	1.39E-11	17	#N/A	#N/A
NDUFB11	2.10E-25	0.566330458	0.683	0.312	9.35E-21	X	YES	#N/A
PPIB	1.46E-16	0.565886333	0.447	0.196	6.49E-12	15	#N/A	#N/A
RPL22	4.05E-28	0.565658235	0.897	0.611	1.80E-23	1	#N/A	#N/A
RAB7A	7.87E-19	0.565522469	0.405	0.154	3.50E-14	3	#N/A	#N/A
FAU	4.19E-34	0.564958802	0.947	0.758	1.86E-29	11	#N/A	#N/A
ATP6V1E1	5.47E-24	0.564901651	0.492	0.184	2.43E-19	22	#N/A	#N/A
CAPZA2	5.56E-24	0.564011666	0.473	0.169	2.47E-19	7	#N/A	#N/A
BAX	4.31E-20	0.562528673	0.294	0.082	1.92E-15	19	#N/A	MA
EIF4A1	2.36E-22	0.562368624	0.534	0.211	1.05E-17	17	#N/A	#N/A
EMC10	1.03E-17	0.560302759	0.321	0.11	4.56E-13	19	#N/A	MGI:5085894
NOP10	3.36E-22	0.558746377	0.565	0.241	1.49E-17	15	#N/A	#N/A
C4orf48	1.02E-19	0.558308449	0.737	0.43	4.52E-15	4	#N/A	#N/A
RPS3A	6.50E-40	0.556770738	0.977	0.83	2.89E-35	4	#N/A	#N/A
CDKN1A	2.34E-19	0.555048214	0.298	0.089	1.04E-14	6	#N/A	MGI:5695874
RPL35	5.54E-33	0.554946933	0.931	0.766	2.46E-28	9	#N/A	#N/A
DUSP1	1.80E-13	0.554888152	0.256	0.089	7.99E-09	5	#N/A	#N/A
SNCG	5.69E-25	0.553699731	0.13	0.007	2.53E-20	10	#N/A	#N/A
FKBP1A	2.78E-26	0.553685262	0.45	0.142	1.24E-21	20	#N/A	#N/A
EPHX1	2.26E-19	0.553142896	0.233	0.056	1.01E-14	1	#N/A	#N/A
SNRPG	2.84E-22	0.552485194	0.603	0.286	1.26E-17	2	#N/A	#N/A
SLC25A3	1.04E-21	0.551978274	0.63	0.29	4.63E-17	12	#N/A	MGI:5548483
ITM2B	1.57E-18	0.550796851	0.618	0.294	6.99E-14	13	#N/A	#N/A
NME1	4.18E-19	0.54967977	0.363	0.125	1.86E-14	17	#N/A	#N/A
C4orf3	1.18E-16	0.549257595	0.519	0.25	5.25E-12	4	#N/A	#N/A
TOMM5	2.87E-23	0.548421329	0.378	0.114	1.27E-18	9	#N/A	#N/A
PRNP	4.77E-15	0.54777109	0.298	0.107	2.12E-10	20	#N/A	#N/A
TSPO	1.06E-18	0.546860069	0.34	0.113	4.72E-14	22	#N/A	#N/A
EID1	1.65E-19	0.546846155	0.771	0.443	7.34E-15	15	#N/A	#N/A
CYB5A	1.78E-20	0.545738471	0.649	0.318	7.92E-16	18	#N/A	#N/A
NDUFS4	2.18E-20	0.544591439	0.504	0.207	9.69E-16	5	#N/A	#N/A
ATP5D	2.18E-18	0.543944125	0.679	0.365	9.69E-14	19	#N/A	#N/A
PSAT1	9.06E-24	0.542613182	0.302	0.074	4.03E-19	9	#N/A	#N/A
CST3	2.17E-17	0.542467667	0.897	0.654	9.66E-13	20	#N/A	MGI:5586715
AP2M1	1.66E-18	0.542403135	0.584	0.282	7.38E-14	3	#N/A	#N/A
ANAPC16	2.08E-19	0.541920078	0.569	0.262	9.23E-15	10	#N/A	#N/A
NAPA	1.01E-21	0.541878309	0.412	0.144	4.47E-17	19	#N/A	#N/A
C7orf50	9.38E-20	0.541546252	0.462	0.185	4.17E-15	7	#N/A	#N/A
BLOC1S1	1.23E-21	0.541121703	0.492	0.189	5.45E-17	12	#N/A	#N/A
RAC1	7.41E-20	0.54084215	0.546	0.242	3.30E-15	7	#N/A	#N/A
CITED2	4.02E-25	0.539810879	0.286	0.063	1.79E-20	6	#N/A	#N/A

FSCN1	2.09E-21	0.537288583	0.439	0.16	9.30E-17	7	#N/A	#N/A
PFN2	1.44E-23	0.536303286	0.298	0.073	6.39E-19	3	#N/A	#N/A
RPL18	2.46E-35	0.536244611	0.969	0.791	1.10E-30	19	#N/A	#N/A
POLE4	1.36E-16	0.535479772	0.439	0.188	6.04E-12	2	#N/A	MGI:5085645
RPL29	1.82E-27	0.534708015	0.927	0.739	8.09E-23	3	#N/A	MGI:3696667
RBBP7	6.95E-21	0.533717964	0.695	0.355	3.09E-16	X	#N/A	#N/A
TBCA	7.50E-18	0.533241044	0.683	0.371	3.33E-13	5	#N/A	#N/A
PRDX5	5.25E-21	0.532404264	0.721	0.377	2.33E-16	11	#N/A	#N/A
GPX3	3.50E-18	0.531875374	0.179	0.035	1.56E-13	5	#N/A	#N/A
RHOB	2.25E-18	0.5318292	0.279	0.081	9.99E-14	2	#N/A	#N/A
HPRT1	1.12E-17	0.529664927	0.748	0.462	4.97E-13	X	YES	MGI:3831277
NDUFA7	1.07E-19	0.529456891	0.351	0.114	4.75E-15	19	#N/A	#N/A
TBCB	1.82E-23	0.528649159	0.485	0.173	8.10E-19	19	#N/A	#N/A
RPS11	1.64E-29	0.527226579	0.939	0.766	7.29E-25	19	#N/A	#N/A
STRAP	3.25E-21	0.527032469	0.424	0.15	1.44E-16	12	#N/A	#N/A
OAZ1	9.77E-25	0.526877197	0.908	0.603	4.34E-20	19	#N/A	#N/A
MIR4458HG	3.72E-20	0.526060994	0.248	0.059	1.65E-15	5	#N/A	#N/A
RARRES2	3.24E-23	0.525761435	0.126	0.008	1.44E-18	7	#N/A	#N/A
MRFAP1	4.31E-19	0.525371763	0.706	0.389	1.92E-14	4	#N/A	#N/A
C7orf73	5.31E-17	0.524919035	0.672	0.379	2.36E-12	7	#N/A	#N/A
ANAPC13	4.17E-15	0.523962412	0.313	0.117	1.85E-10	3	#N/A	#N/A
PGLS	6.07E-22	0.523027931	0.359	0.109	2.70E-17	19	#N/A	#N/A
TCEAL8	2.21E-17	0.522670039	0.622	0.321	9.84E-13	X	YES	#N/A
UBE2E3	6.45E-22	0.522531637	0.519	0.206	2.87E-17	2	#N/A	#N/A
SMARCB1	2.94E-21	0.522229631	0.294	0.078	1.31E-16	22	#N/A	MGI:2388033
HMGCS2	2.28E-16	0.522051231	0.427	0.183	1.01E-11	1	#N/A	MGI:6416129
C19orf53	3.71E-16	0.521640212	0.515	0.245	1.65E-11	19	#N/A	#N/A
LGALS3BP	9.16E-12	0.52119749	0.244	0.092	4.07E-07	17	#N/A	#N/A
HMG1	2.92E-19	0.521145463	0.718	0.38	1.30E-14	21	#N/A	#N/A
RAP1B	1.03E-16	0.521058619	0.439	0.188	4.60E-12	12	#N/A	MGI:3573929
CYR61	6.76E-05	0.520858252	0.115	0.05	1	1	#N/A	#N/A
OSTF1	9.35E-21	0.520729557	0.34	0.104	4.16E-16	9	#N/A	#N/A
ALDH1A1	2.99E-21	0.520057302	0.866	0.559	1.33E-16	9	#N/A	#N/A
MRPL24	4.41E-22	0.519948946	0.252	0.055	1.96E-17	1	#N/A	#N/A
CMAS	1.02E-16	0.5155785	0.656	0.356	4.53E-12	12	#N/A	#N/A
TXN	6.75E-20	0.514538757	0.481	0.194	3.00E-15	9	#N/A	#N/A
RPL22L1	2.64E-15	0.513712163	0.252	0.079	1.17E-10	3	#N/A	#N/A
ARF4	5.30E-19	0.513451676	0.649	0.315	2.36E-14	3	#N/A	#N/A
HNRNPDL	6.80E-20	0.512163047	0.481	0.193	3.02E-15	4	#N/A	#N/A
LGALS3	3.78E-15	0.51210717	0.679	0.414	1.68E-10	14	#N/A	#N/A
GNG5	7.80E-18	0.51146347	0.721	0.397	3.47E-13	1	#N/A	#N/A
RPL32	7.45E-33	0.511251563	0.947	0.87	3.31E-28	3	#N/A	#N/A
BEX2	3.93E-18	0.510970719	0.66	0.347	1.75E-13	X	YES	#N/A
SNRPD2	3.03E-18	0.51057216	0.645	0.34	1.35E-13	19	#N/A	#N/A
MDH2	1.09E-16	0.510413061	0.477	0.21	4.83E-12	7	#N/A	#N/A
S100A13	6.38E-13	0.510043278	0.328	0.136	2.84E-08	1	#N/A	#N/A
UNC119	3.37E-18	0.509541676	0.473	0.201	1.50E-13	17	#N/A	#N/A
NAP1L1	2.60E-18	0.508941593	0.672	0.355	1.16E-13	12	#N/A	#N/A
NDUFS3	2.77E-25	0.507973079	0.431	0.134	1.23E-20	11	#N/A	#N/A
TMEM14B	1.95E-21	0.507933945	0.542	0.229	8.66E-17	6	#N/A	#N/A
PPP1CA	2.46E-21	0.507065923	0.37	0.118	1.09E-16	11	#N/A	#N/A
BTG3	1.64E-21	0.506943222	0.55	0.231	7.27E-17	21	#N/A	#N/A
NOP16	4.62E-21	0.506438149	0.183	0.029	2.05E-16	5	#N/A	#N/A
EDF1	3.99E-18	0.500771927	0.718	0.409	1.77E-13	9	#N/A	#N/A
COX6B1	1.88E-18	0.500653052	0.649	0.323	8.38E-14	19	#N/A	#N/A
NUDT11	2.63E-19	0.500212558	0.584	0.269	1.17E-14	X	YES	#N/A
AGFG1	2.11E-05	-0.502384732	0.031	0.117	0.938673003	2	#N/A	#N/A
ARID4B	9.15E-05	-0.502451719	0.073	0.164	1	1	#N/A	#N/A
CWC15	0.010892165	-0.503260557	0.317	0.345	1	11	#N/A	#N/A
ID4	0.003114853	-0.512221788	0.141	0.206	1	6	#N/A	#N/A
YJEFN3	1.92E-06	-0.512283888	0.011	0.103	0.085127668	19	#N/A	#N/A
UBL3	0.019233015	-0.51245282	0.16	0.207	1	13	#N/A	#N/A
PABPC1	0.000151567	-0.512718453	0.412	0.455	1	8	#N/A	#N/A
SYCE3	3.46E-06	-0.517717631	0.015	0.105	0.153976155	22	#N/A	#N/A
EEF2KMT	0.000147039	-0.519188591	0.031	0.103	1	16	#N/A	#N/A
CCK	6.10E-08	-0.52101868	0.008	0.118	0.002711426	3	#N/A	#N/A
CHPT1	2.19E-06	-0.521935494	0.027	0.127	0.097270627	12	#N/A	#N/A
NAA38	0.003576492	-0.524364733	0.225	0.287	1	17	#N/A	#N/A
HABP4	5.17E-05	-0.526401758	0.034	0.116	1	9	#N/A	#N/A
BACE1	5.11E-06	-0.527557388	0.023	0.115	0.227367456	11	#N/A	#N/A
TXNL4A	0.002377515	-0.529336769	0.149	0.218	1	18	#N/A	#N/A
RAD17	0.000133708	-0.52956578	0.05	0.13	1	5	#N/A	#N/A
DDX3Y	0.003418666	-0.529997513	0.095	0.159	1	Y	#N/A	#N/A
SLAIN2	2.20E-07	-0.531262112	0.011	0.116	0.009777367	4	#N/A	#N/A
EHP1	2.81E-05	-0.534057284	0.027	0.109	1	2	#N/A	#N/A

CCDC90B	0.003780353	-0.535845686	0.26	0.311	1	11	#N/A
CCDC88A	1.11E-05	-0.545850619	0.057	0.16	0.494837465	2	#N/A
HMOX2	0.000438496	-0.548305872	0.118	0.203	1	16	#N/A
ATP6V1A	0.001241527	-0.548844351	0.08	0.151	1	3	#N/A
C4orf36	5.19E-08	-0.550053758	0.004	0.111	0.002305343	4	#N/A
RAD23B	0.000937666	-0.554216561	0.153	0.23	1	9	#N/A
TRIP12	0.000159371	-0.555405096	0.069	0.153	1	2	#N/A
DESI2	1.01E-05	-0.555908236	0.065	0.169	0.44729994	1	#N/A
CNN1	2.86E-06	-0.559805234	0.027	0.125	0.12730653	19	#N/A
DGCR6	4.27E-06	-0.564107218	0.019	0.109	0.189711363	22	#N/A
MRPL41	6.96E-05	-0.564282362	0.137	0.238	1	9	#N/A
HSP90AA1	4.27E-07	-0.56476345	0.595	0.6	0.018985347	14	#N/A
LRRD1	1.23E-07	-0.565002802	0.008	0.114	0.005456008	7	#N/A
C1QTNF3	1.62E-06	-0.569392274	0.011	0.104	0.072232275	5	#N/A
FHL1	2.58E-06	-0.571881353	0.031	0.131	0.114535957	X	YES
CA2	5.79E-05	-0.575141477	0.038	0.121	1	8	#N/A
FAM71F2	2.75E-07	-0.576510727	0.004	0.101	0.012234163	7	#N/A
RBL2	1.81E-06	-0.581511772	0.027	0.127	0.080343172	16	#N/A
TNFAIP8L1	5.21E-08	-0.583702737	0.011	0.126	0.002315082	19	#N/A
RNF168	1.12E-05	-0.584474727	0.027	0.115	0.496259087	3	#N/A
LYL1	1.19E-07	-0.589429567	0.011	0.12	0.005276261	19	#N/A
UBXN4	0.000309657	-0.593600053	0.202	0.286	1	2	#N/A
GMPS	0.00010457	-0.594917114	0.115	0.209	1	3	#N/A
ACP1	3.14E-05	-0.599637699	0.397	0.458	1	2	#N/A
CDHR2	1.06E-08	-0.610524633	0	0.114	0.000471547	5	#N/A
MSTO1	1.68E-07	-0.6107142	0.019	0.131	0.00745382	1	#N/A
PSORS1C1	2.09E-08	-0.620021986	0.004	0.117	0.000928487	6	#N/A
TUBA3D	2.83E-07	-0.623128299	0.011	0.114	0.01256926	2	#N/A
GNAS	3.22E-10	-0.626154279	0.477	0.572	1.43E-05	20	#N/A
LARP1B	5.95E-07	-0.631334799	0.023	0.129	0.026465043	4	#N/A
RIBC1	2.64E-08	-0.631628367	0	0.108	0.001171583	X	#N/A
GLIPR1L2	9.51E-08	-0.636545215	0.004	0.107	0.004228299	12	#N/A
YWHAZ	3.85E-06	-0.638013367	0.332	0.427	0.170978343	8	#N/A
GLRX5	2.20E-06	-0.645357845	0.252	0.366	0.097972753	14	#N/A
KHDRBS3	2.68E-06	-0.649117873	0.092	0.21	0.11921951	8	#N/A
HIP1	9.93E-08	-0.651267207	0.015	0.127	0.004415863	7	#N/A
FAM76B	4.50E-08	-0.652350614	0.023	0.145	0.001999779	11	#N/A
UBE2J1	1.56E-05	-0.65453323	0.103	0.209	0.695086401	6	#N/A
HYPM	1.95E-08	-0.65542152	0	0.11	0.000865674	X	YES
FLJ27354	2.23E-06	-0.656051213	0.053	0.164	0.099014051	1	#N/A
NOL10	6.00E-07	-0.665891307	0.019	0.121	0.026656036	2	#N/A
TMEM53	6.78E-09	-0.66704471	0.008	0.132	0.000301599	1	#N/A
DNAJC21	1.17E-06	-0.66941647	0.069	0.186	0.052114269	5	#N/A
RAB21	1.13E-06	-0.673876853	0.073	0.193	0.050038157	12	#N/A
METAP1	0.000150598	-0.675162442	0.115	0.203	1	4	#N/A
ACAP1	4.25E-05	-0.683423036	0.103	0.201	1	17	#N/A
DGCR6L	7.90E-05	-0.685158513	0.26	0.341	1	22	#N/A
MRGBP	1.62E-08	-0.686051284	0.042	0.18	0.000719337	20	#N/A
GSKIP	4.43E-07	-0.688836888	0.034	0.147	0.019703752	14	#N/A
PARD6A	1.95E-07	-0.688841276	0.011	0.116	0.008672097	16	#N/A
ZNF91	2.83E-07	-0.689835878	0.053	0.176	0.012591831	19	#N/A
SURF2	1.78E-06	-0.701116757	0.092	0.211	0.079259553	9	#N/A
SYPL1	5.61E-08	-0.703708406	0.107	0.255	0.002491992	7	#N/A
UBTD2	1.43E-07	-0.705296005	0.05	0.175	0.0063406	5	#N/A
PAQR7	1.93E-06	-0.705373003	0.164	0.288	0.085852107	1	#N/A
LPP	2.22E-07	-0.710341614	0.088	0.221	0.009872936	3	#N/A
C15orf48	3.46E-08	-0.710947433	0.011	0.127	0.001538103	15	#N/A
SRPK1	2.99E-09	-0.720319594	0.023	0.161	0.00013275	6	#N/A
GOLM1	5.05E-09	-0.722509724	0.008	0.133	0.000224599	9	#N/A
BZW1	4.77E-09	-0.725530465	0.42	0.513	0.000212185	2	#N/A
LSM14B	3.24E-09	-0.728263014	0.023	0.16	0.000143979	20	#N/A
EFHD2	1.47E-07	-0.731722191	0.29	0.402	0.006553754	1	#N/A
SBDS	5.13E-06	-0.732088416	0.256	0.356	0.227967374	7	#N/A
GOLGA4	1.73E-07	-0.735801707	0.073	0.202	0.007694417	3	#N/A
LURAP1	2.39E-09	-0.741541286	0.004	0.13	0.000106434	1	#N/A
LYPLA1	4.32E-07	-0.751053658	0.263	0.378	0.019192199	8	#N/A
TPR	6.46E-08	-0.763962997	0.069	0.204	0.00287086	1	#N/A
PCM1	1.25E-07	-0.7664025	0.053	0.181	0.005566523	8	#N/A
LRRFIP2	5.21E-08	-0.768059316	0.042	0.169	0.002316503	3	#N/A
CSNK2A2	1.01E-10	-0.769279495	0.023	0.18	4.48E-06	16	#N/A
ZFAND3	1.34E-06	-0.784689842	0.16	0.281	0.059518815	6	#N/A
C5orf52	1.20E-10	-0.807297139	0.004	0.148	5.32E-06	5	#N/A
UBE2S	1.09E-08	-0.814206878	0.126	0.277	0.000482723	19	#N/A
CDC34	2.32E-11	-0.814795502	0.034	0.208	1.03E-06	19	#N/A
CENPU	4.94E-10	-0.818260166	0.023	0.17	2.20E-05	4	#N/A

MIR193BHG	1.99E-10	-0.818675853	0.004	0.145	8.83E-06	16	#N/A
ATP1B3	3.42E-09	-0.820270581	0.05	0.198	0.000152107	3	#N/A
BRI3	3.81E-10	-0.828211854	0.149	0.323	1.69E-05	7	#N/A
CDV3	4.71E-09	-0.832071805	0.149	0.304	0.000209473	3	#N/A
MZT2B	3.36E-15	-0.836934685	0.385	0.548	1.49E-10	2	#N/A
FXR1	1.92E-10	-0.838746639	0.191	0.366	8.53E-06	3	#N/A
MAP2K2	1.38E-09	-0.840975744	0.08	0.243	6.13E-05	19	#N/A
AKAP14	1.43E-11	-0.846386342	0.011	0.175	6.36E-07	X	YES
EIF4H	1.63E-10	-0.848383596	0.137	0.318	7.25E-06	7	#N/A
CTAG2	4.55E-11	-0.858834075	0	0.147	2.02E-06	X	YES
SPATA8	3.02E-11	-0.866210618	0.015	0.175	1.34E-06	15	#N/A
RPL39L	4.13E-09	-0.86802526	0.103	0.26	0.000183719	3	#N/A
AKIRIN1	1.53E-11	-0.868355448	0.294	0.457	6.82E-07	1	#N/A
MEX3D	1.57E-11	-0.88008399	0.031	0.202	7.00E-07	19	#N/A
DDX4	3.93E-12	-0.887476601	0.008	0.174	1.75E-07	5	#N/A
AKAP12	1.87E-10	-0.899768438	0.168	0.338	8.32E-06	6	#N/A
COX8C	7.63E-14	-0.968006575	0.008	0.196	3.39E-09	14	#N/A
SPATA22	1.87E-14	-0.992093615	0.015	0.216	8.31E-10	17	#N/A
TUBA3C	1.61E-13	-1.009931024	0.023	0.216	7.17E-09	13	#N/A
HIST1H2AA	2.31E-15	-1.030077128	0.004	0.209	1.03E-10	6	#N/A
PRKAR2A	6.95E-16	-1.074657101	0.015	0.233	3.09E-11	3	#N/A
COPRS	5.22E-16	-1.136428068	0.08	0.315	2.32E-11	17	#N/A
BAG1	1.22E-21	-1.167388369	0.237	0.508	5.43E-17	9	#N/A
CRNDE	3.63E-20	-1.195177687	0.023	0.295	1.61E-15	16	#N/A
PGP	4.98E-19	-1.229070865	0.153	0.419	2.22E-14	16	#N/A
DYNLL2	5.77E-21	-1.282115547	0.092	0.38	2.56E-16	17	#N/A



## logFC&gt;1

	p_val	avg_logFC	pct.1	pct.2	p_val_adj	CHRO	NXI GENE	MGI database
MIF	3.03E-103	1.671323685	0.84	0.234	1.35E-98	22	#N/A	#N/A
RPL36A	4.64E-100	1.637040069	0.821	0.203	2.06E-95	X	YES	#N/A
RPL17	1.98E-91	1.441726647	0.805	0.195	8.78E-87	18	#N/A	#N/A
RPS17	8.35E-95	1.372976856	0.943	0.443	3.71E-90	15	#N/A	#N/A
RPS21	3.87E-97	1.370619916	0.958	0.543	1.72E-92	20	#N/A	#N/A
RPL31	4.33E-92	1.283515584	0.969	0.581	1.92E-87	2	#N/A	#N/A
RPL41	3.92E-107	1.259251934	0.996	0.87	1.74E-102	12	#N/A	#N/A
ACTB	1.44E-93	1.249763766	0.989	0.671	6.42E-89	7	#N/A	MGI:3032619
PPDPF	6.76E-72	1.231577355	0.901	0.496	3.00E-67	20	#N/A	#N/A
MYL9	1.01E-66	1.142708652	0.847	0.348	4.51E-62	20	#N/A	#N/A
TMSB4X	1.78E-51	1.118016852	0.595	0.153	7.90E-47	X	YES	#N/A
HBA2	2.99E-17	1.115361017	0.107	0.009	1.33E-12	16	#N/A	#N/A
CD99	2.53E-42	1.113285902	0.706	0.277	1.12E-37	X	#N/A	#N/A
PFN1	6.90E-63	1.112166688	0.63	0.143	3.07E-58	17	#N/A	#N/A
UQCRQ	3.64E-51	1.106819589	0.779	0.338	1.62E-46	5	#N/A	#N/A
RPS29	7.93E-95	1.099929341	0.985	0.804	3.52E-90	14	#N/A	#N/A
RPL38	1.22E-90	1.08572825	0.973	0.752	5.44E-86	17	#N/A	MGI:1861228
SLC25A6	1.60E-60	1.069852721	0.771	0.27	7.10E-56	X	#N/A	#N/A
RPLP2	2.43E-86	1.065571463	0.985	0.721	1.08E-81	11	#N/A	#N/A
RPL39	2.36E-77	1.065287085	0.973	0.69	1.05E-72	X	YES	#N/A
RPS26	9.79E-66	1.060555127	0.92	0.562	4.35E-61	12	#N/A	#N/A
NDUFA11	6.30E-56	1.040904442	0.771	0.297	2.80E-51	19	#N/A	#N/A
MIR202HG	1.89E-55	1.030651325	0.947	0.63	8.41E-51	10	#N/A	#N/A
BEX1	2.66E-64	1.0296462	0.935	0.54	1.18E-59	X	YES	#N/A
EEF1A1	5.48E-112	1.025445711	0.996	0.942	2.44E-107	6	#N/A	#N/A
USMG5	3.05E-65	1.017202599	0.916	0.543	1.35E-60	10	#N/A	#N/A
G6PD	4.45E-48	1.01585106	0.702	0.247	1.98E-43	X	YES	#N/A
RPL37	1.47E-66	1.013673993	0.95	0.675	6.54E-62	5	#N/A	#N/A
RPS27	2.48E-91	1.009652287	0.985	0.882	1.10E-86	1	#N/A	#N/A
TUBA3C	1.61E-13	-1.009931024	0.023	0.216	7.17E-09	13	#N/A	#N/A
HIST1H2AA	2.31E-15	-1.030077128	0.004	0.209	1.03E-10	6	#N/A	#N/A
PRKAR2A	6.95E-16	-1.074657101	0.015	0.233	3.09E-11	3	#N/A	#N/A
COPRS	5.22E-16	-1.136428068	0.08	0.315	2.32E-11	17	#N/A	#N/A
BAG1	1.22E-21	-1.167388369	0.237	0.508	5.43E-17	9	#N/A	#N/A
CRNDE	3.63E-20	-1.195177687	0.023	0.295	1.61E-15	16	#N/A	#N/A
PGP	4.98E-19	-1.229070865	0.153	0.419	2.22E-14	16	#N/A	#N/A
DYNLL2	5.77E-21	-1.282115547	0.092	0.38	2.56E-16	17	#N/A	#N/A