

## Frailty in middle age is associated with frailty status and race-specific changes to the transcriptome

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### ABSTRACT

Frailty is an aging-associated syndrome resulting from diminished capacity to respond to stressors and is a significant risk factor for disability and mortality. Although frailty is usually studied in old age, it is present in mid-life. Given the increases in mortality statistics among middle-aged Americans, understanding molecular drivers of frailty in a younger, diverse cohort may facilitate identifying pathways for early intervention. We analyzed frailty-associated, genome-wide transcriptional changes in middle-aged blacks and whites. Next generation RNA sequencing was completed using total RNA from peripheral blood mononuclear cells (n = 16). We analyzed differential gene expression patterns and completed a parametric analysis of gene set enrichment (PAGE). Differential gene expression was validated using RT-qPCR (n = 52). We identified 5,082 genes differentially expressed with frailty. Frailty altered gene expression patterns and biological pathways differently in blacks and whites, including pathways related to inflammation and immunity. The validation study showed a significant two-way interaction between frailty, race, and expression of the cytokine *IL1B* and the transcription factor *EGR1*. The glucose transporter, *SLC2A6*, the neutrophil receptor, *FCGR3B*, and the accessory protein, *C17orf56*, were decreased with frailty. These results suggest that there may be demographic dependent, divergent biological pathways underlying frailty in middle-aged adults.

### INTRODUCTION

Frailty is a clinical syndrome that has been defined by several different assessments as a loss of physiological reserve, thus hindering recovery from endogenous and exogenous stressors [1-3]. Frail individuals have increased risk for several adverse outcomes including: falls, disability, complications following surgery, and premature mortality [4-7]. The most recent data finds that the overall prevalence of frailty in adults 65 years old and older is approximately 15% [8]. In the United States, the prevalence of frailty in the elderly is highest

in women, racial/ethnic minorities, and individuals at lower incomes [8-10].

While frailty has been primarily examined as a clinical entity of the aged, frailty can occur in adults 45 – 64 years old. We have previously shown in a longitudinal cohort study of blacks and whites in Baltimore that frailty prevalence among these individuals is approximately 7% in adults 35-44 years old and over 13% in whites between the ages of 45-54 years old [10]. Other studies in young to middle-aged diverse cohorts, show that frailty, grip strength, and low appendicular

skeletal muscle mass are associated with poor health outcomes [10-12]. Frailty, because of its link to risk for mortality, is an increasingly important entity to study in younger cohorts in light of the increase mid-life mortality among Americans across racial and ethnic groups [13]. With an expected increase in the US 45 – 64 year old population by 15% by 2060, it is imperative to identify functional biological markers of frailty to identify potential interventions that could aid in ameliorating the phenotype.

Identifying a single operational definition for frailty in a population has, thus far, resulted in close to 30 different assessments [14]. The Cardiovascular Health Study (CHS)/Fried Index [3] is a popular and well-validated assessment that characterizes frailty by phenotype based on the presence of: shrinking (unintentional weight loss of  $\geq 10$  pounds by direct measurement of weight), weakness, poor endurance and energy (self reported), slowness (time to walk 15 feet), and low physical activity (weighted score of kilocalories expended per week). Although seminal to the field of frailty research, diagnosing frailty using the CHS frail phenotype requires an in person physical with techniques that are not typically available to primary care physicians. The International Academy on Nutrition and Aging FRAIL scale is an easily administered questionnaire [9] that has been validated in community based, racially diverse populations consisting of middle-aged adults [9, 10, 15]. Most clinical and molecular studies assessing frailty utilizing the CHS index and have focused on older, largely white cohorts.

Complementary to diagnosing frailty based on phenotypic changes is to identify biomarkers for frailty. Potential dysregulated pathways associated with frailty include: inflammation, apoptosis, calcium homeostasis, neuronal signaling (central nervous system and peripheral nervous system), hormone regulation, and gene expression/transcriptional regulation [16]. Although characterized as a chronic state of inflammation [17], circulating cytokine concentrations vary amongst frail populations which is a reflection of the complexity of the syndrome that could be attributed to genetic variability and participant demographics [17]. Thus, examining gene expression profiles can serve as a promising molecular pathway to investigate frailty. The Vitality 90+ study [18], a longitudinal study that focuses on longevity in the oldest old, is the largest study to date to examine frailty-associated changes to the transcriptome of nonagenarians. However, the focus of this study was to examine transcriptional changes in the context of survival and mortality and was not necessarily focused on frailty-associated changes. [18].

Previous studies do not examine whether there are differences in the underlying biological processes associated with the frail phenotype in the context of race and younger age groups. In this study, we have chosen to examine frailty-associated, genome-wide transcriptional changes in frail and non-frail middle-aged blacks and whites. This will permit us to either confirm that racially diverse middle-aged individuals with frailty have similar gene expression profiles as older European ancestry adults from previously published work [18] or to identify novel gene expression profiles that may be specific for younger or non-European ancestry individuals. We hypothesize that gene expression is influenced by frailty status and demographic characteristics including race.

## RESULTS

### Frailty-associated global changes to gene expression

The overall study design and RNA sequencing and analysis workflow are shown in Figure 1. We classified frailty in blacks and whites in the RNA sequencing and validation cohorts (Figure 1A) utilizing the FRAIL scale. To identify genome-wide transcriptional changes associated with frailty in middle-aged adults, we isolated total RNA from peripheral blood mononuclear cells (PBMCs) from 16 non-frail, pre-frail/frail blacks and whites between the ages of 45-49 years old. (Table 1A). We performed next generation RNA sequencing and used TopHat to align the sequences to human genome NCBI build Version 38 (Figure 1B). The percentage of mapped reads ranged between 66-92% and the total mapped reads ranged between 14 and 44 million. RNA-seq data was analyzed as shown in Figure 1B.

Frailty was associated with differential expression of 5,028 genes (Figure 2A; Supplementary Table 1). When stratifying by race, as displayed in the Venn diagrams, 124 genes in blacks, 396 in whites, and 109 overlapping genes between blacks and whites were significantly and differentially expressed in the context of frailty (Figure 2B). Genes significantly different between non-frail and frail blacks and whites are listed in Supplementary Tables 2 and 3, respectively. When comparing the number of genes that were higher in abundance in frail individuals, we identified 139 genes in blacks, 53 genes in whites, and 18 overlapping genes between blacks and whites (Figure 2C). When comparing the number of genes with lower abundance in frail individuals, we identified 51 genes in blacks, 409 genes in whites, and 25 overlapping in blacks and whites (Figure 2D).

To identify pathways associated with frailty in blacks and whites, we used the quantile normalized Fragments

Per Kilobase of transcript per Million mapped reads (FPKM) to calculate Z-scores [19, 20] (Figure 1B). The Z-scores were transformed (natural logarithm) and used to calculate Z-ratios that were imputed into PAGE analysis to identify relevant biological processes. We identified enriched gene ontology (GO) sets associated

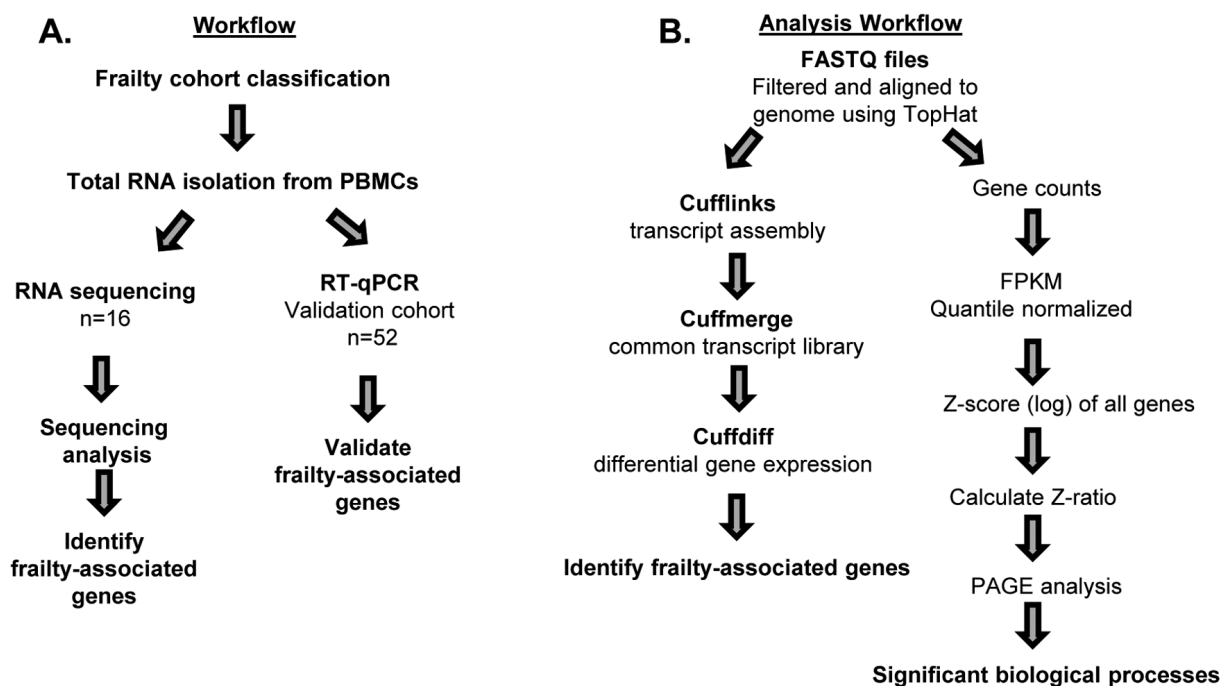
with biological processes comparing non-frail and frail blacks (Figure 3) and whites (Figure 4). Importantly, there were fewer pathways identified in blacks when compared to whites. The most enriched pathways in frail blacks were fever, immune response, inflammatory response, chemotaxis, and negative regulation of hor-

**Table 1. Demographic information for frailty cohorts.**

<b>A</b>		<b>RNA sequencing cohort</b>	
	<b>Non-frail</b>	<b>Pre-frail/Frail</b>	
n	8	8	
Age (mean (sd))	48.09 (1.21)	47.85 (1.84)	
Sex = Women (%)	4 (50.0)	4 (50.0)	
Race = White (%)	4 (50.0)	4 (50.0)	
PovStat = Below (%)	2 (25.0)	4 (50.0)	

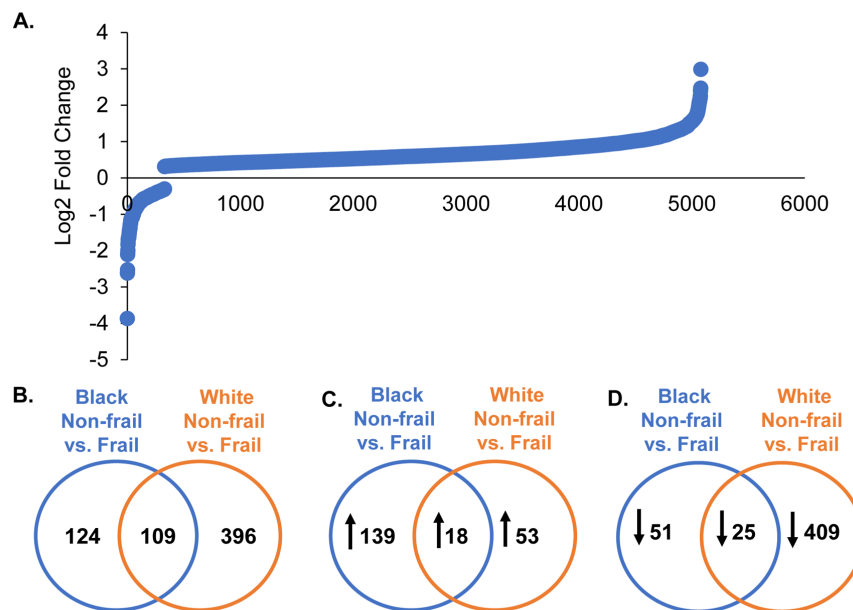
<b>B</b>		<b>Validation cohort</b>			
		<b>B:Non-frail</b>	<b>W:Non-frail</b>	<b>B:Frail</b>	<b>W:Frail</b>
n		13	13	13	13
Age (mean (sd))		47.51 (1.59)	47.23 (1.26)	47.04 (1.62)	47.58 (1.80)
Sex = Women (%)		7 (53.8)	6 (46.2)	7 (53.8)	6 (46.2)
PovStat = Below (%)		6 (46.2)	3 (23.1)	8 (61.5)	5 (38.5)



**Figure 1. Workflow and schematic representation of RNA sequencing and RT-qPCR analysis.** Overview of study design for RNA sequencing (n=16) and RT-qPCR in validation cohort (n=52) (A), and RNA sequencing analysis for alignment and identification of frailty-associated genes (B).

hormone secretion. The most downregulated pathways in frail blacks were oxygen transport, phosphate transport, sensory perception of taste, cell matrix adhesion,

and induction of an organ. Conversely, in frail whites, the most enriched pathways were sensory perception of taste, tRNA processing, detection of chemical



**Figure 2. Global gene expression changes by frailty and race.** Total RNA was isolated from PBMCs from non-frail and frail blacks and whites (n=16). Differential gene expression was assessed using RNA sequencing. The graph shows log<sub>2</sub> fold change of genes significantly altered with frailty (5,082 genes) (A). A list of all these genes can be found in Supplementary Table 1. Venn diagrams of the total number of significant differentially expressed genes in blacks and whites with frailty (B). Significantly increased (C; up arrow) and decreased (D; down arrow) genes in blacks and whites with frailty.

**Table 2. Frailty-associated gene ontology terms with overlapping relationships in blacks and whites.**

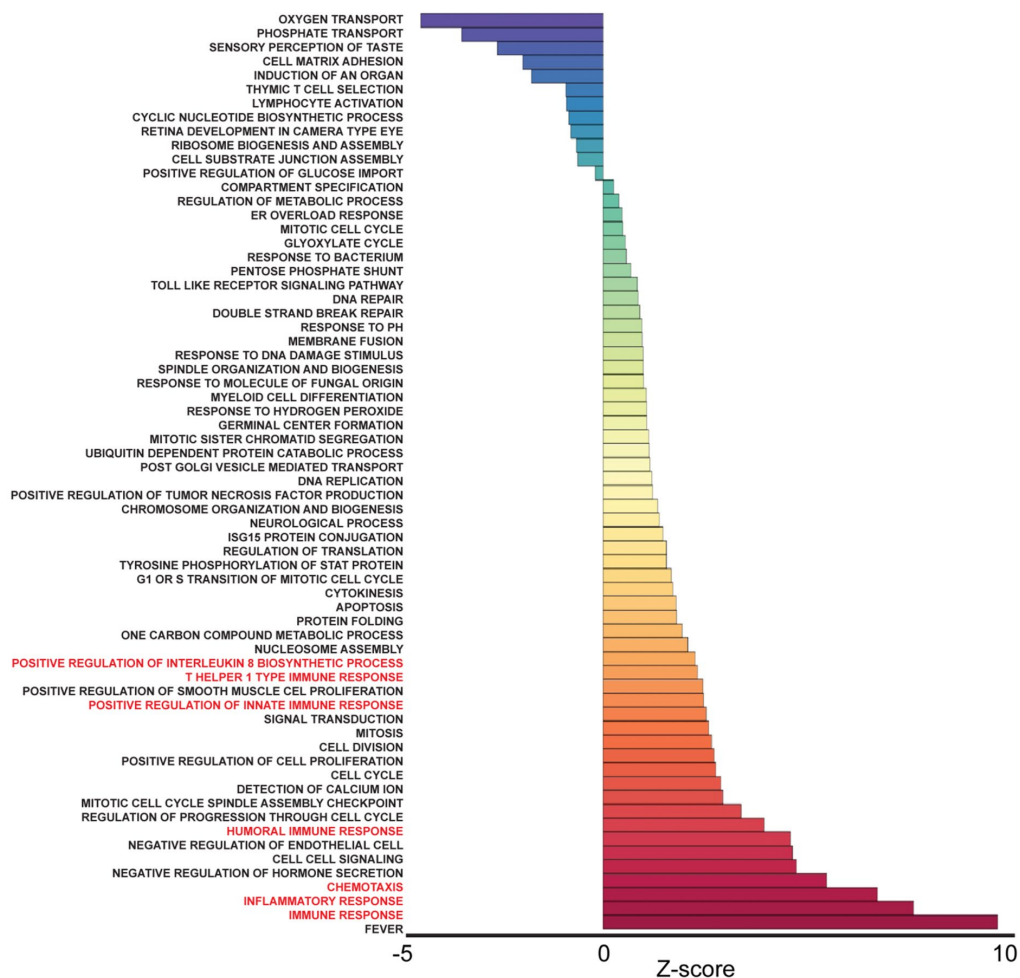
blacks	Gene Ontology Term	whites
9.05	CHEMOKINE ACTIVITY	-6.70
7.11	IMMUNE RESPONSE	-5.73
6.29	INTERLEUKIN 1 RECEPTOR BINDING	-4.98
6.28	INFLAMMATORY RESPONSE	-7.32
6.25	CYTOKINE ACTIVITY	-6.47
5.12	CHEMOTAXIS	7.08
4.42	NEGATIVE REGULATION OF HORMONE SECRETION	-4.18
4.34	CELL CELL SIGNALING	-5.41
3.69	HUMORAL IMMUNE RESPONSE	-2.87
3.16	REGULATION OF PROGRESSION THROUGH CELL CYCLE	-2.98
2.54	POSITIVE REGULATION OF CELL PROLIFERATION	-3.46
2.36	SIGNAL TRANSDUCTION	-4.62
2.17	T HELPER 1 TYPE IMMUNE RESPONSE	-3.21
2.12	NUCLEOSOME	-3.04
1.94	NUCLEOSOME ASSEMBLY	-3.33
1.91	PROTEIN BINDING	-4.36
1.68	APOPTOSIS	-3.52
-1.84	CELL MATRIX ADHESION	-2.38
-2.42	SENSORY PERCEPTION OF TASTE	2.62

Gene ontology Z-scores for non-frail versus frail blacks or whites are indicated.

stimulus involved in sensory perception of bitter taste, response to acidic pH, and mRNA transport. The most down-regulated pathways in frail whites were inflammatory response, chemotaxis, immune response, cell-cell signaling, and positive regulation of ossification. We highlighted GO terms in red that were associated with inflammation, as the pathway Z-scores for frailty varied greatly between blacks and whites (Table 2). This suggests that inflammatory pathways could be a driver for racial differences in frailty. There were 19 overlapping pathways comparing blacks to whites, however most of the pathway Z-scores were in opposite directions, only 2 were in the same direction: chemotaxis and cell matrix adhesion (Table 2). The complete list of biological processes, stratified by race, can be found in Supplementary Tables 4 and 5.

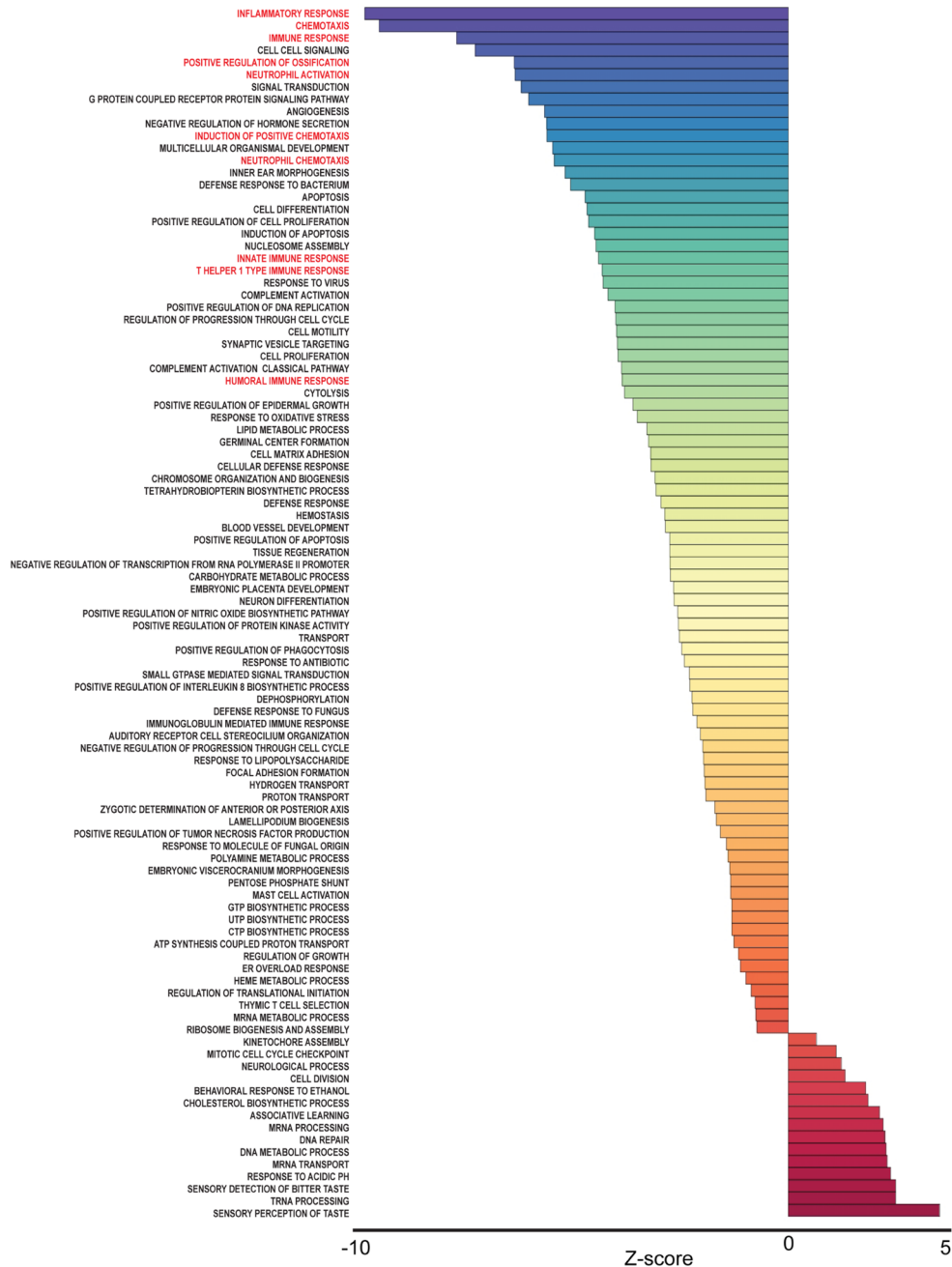
## Interaction network analysis

To visualize functional connections between frailty-associated genes, we used protein-protein interaction analysis as a complement to the PAGE analysis [21]. The significant, differentially expressed, frailty-associated genes referenced in Figure 2B were imputed into the STRING database. In blacks, we identified 2 functional clusters, inflammation and signaling: G protein coupled receptor (GPCR) and transcription factor (TF) signaling (Figure 5A). In whites, we identified 3 functional clusters, inflammation, chemokines, and signaling: G protein coupled receptor (GPCR) and receptor tyrosine kinase (RTK) signaling (Figure 5B). The analysis yielded different, frailty-associated protein-protein interaction networks for blacks and whites.



**Figure 3. Frailty-associated biological pathways in blacks.** Differentially expressed genes between non-frail and frail blacks were imputed into Parametric Analysis of Gene Set Enrichment (PAGE) analysis. Significantly changed gene sets associated with biological processes, organized by Z-score, are shown here. GO terms associated with inflammation and immune response are highlighted in red.





**Figure 4. Frailty-associated biological pathways in whites.** Differentially expressed genes between non-frail and frail whites were imputed into Parametric Analysis of Gene Set Enrichment (PAGE) analysis. Significantly changed gene sets, associated with biological processes, organized by Z-score, are shown here. GO terms associated with inflammation and immune response are highlighted in red.

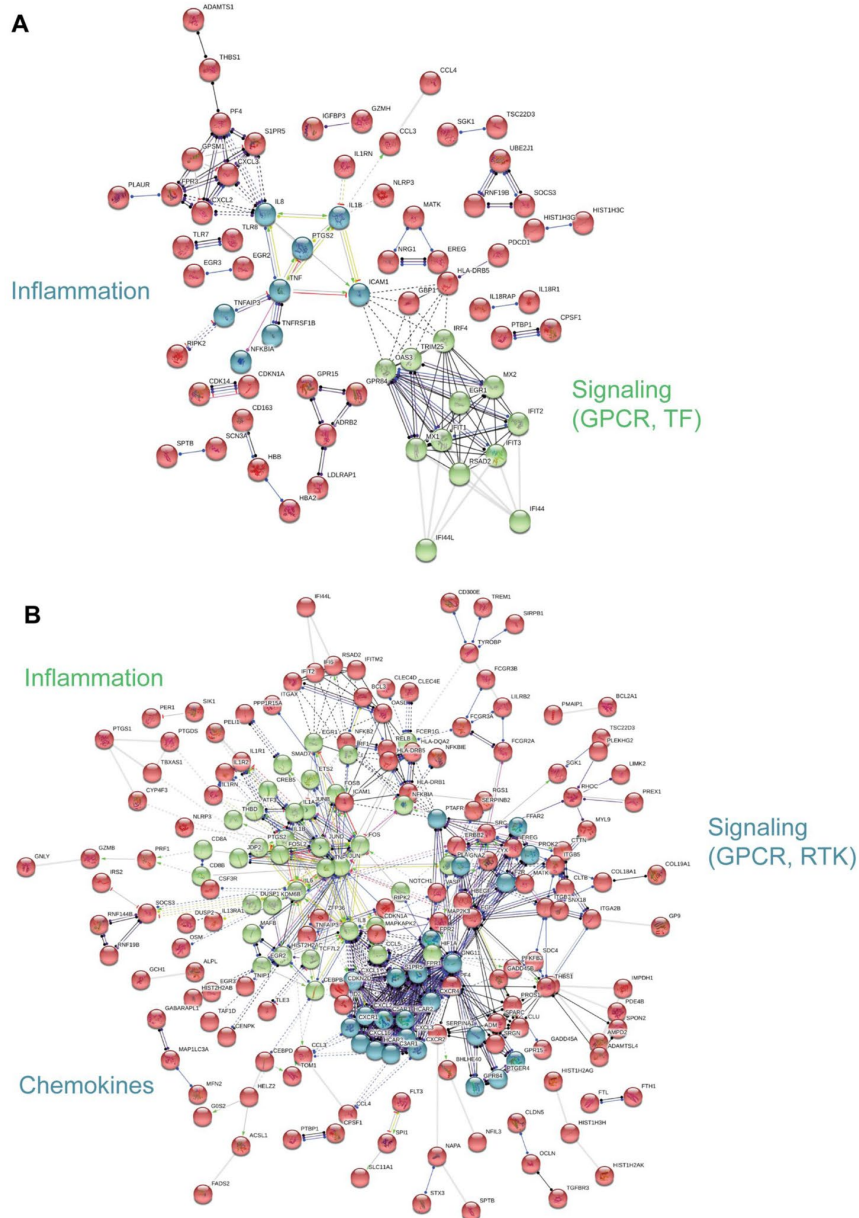
## Gene expression changes associated with frailty and race

We designed a validation cohort to increase our sample size and to confirm our results using RT-qPCR. In our validation cohort (Table 1B), we increased our sample size to 52, including 14 participants from the RNA se-

quencing cohort. We selected genes based on the following criteria: pathways of interest, a significant log<sub>2</sub> fold change of  $\pm 3$ , and the presence within functional clusters from network analysis (Figure 5). In addition, we chose genes from the Vitality 90+ study, which is a longitudinal study of successful aging in nonagenarians in Finland [18]. Previously, gene expres-

sion was examined in this cohort in the context of survival and mortality. Among the individuals examined were frail individuals. We reanalyzed this data set to identify frailty-associated genes and found 3 genes associated with frailty (*FAM116B*, *SLC2A6*, and *C17orf56*). Therefore, we included these genes in our data set.

Gene specific primers were designed and are listed in Supplementary Table 6. Of the 36 genes (*TNF*, *SLC2A6*, *RARA*, *OSM*, *LRCH3*, *IL15RA*, *IL6*, *IL1B*, *HBB*, *FCGR3B*, *FAM116B*, *CXCR1*, *CXCL1*, *CALCA*, *C17orf56*, *PF4*, *CXCL3*, *FPR3*, *CXCL2*, *PTGS2*, *ICAM1*, *GBP1*, *IRF4*, *TRIM25*, *OAS3*, *EGR1*, *IFIT1*, *IFIT3*, *RSAD2*, *IFI44*, *IFI44L*, *NOTCH1*, *CDKN1A*,



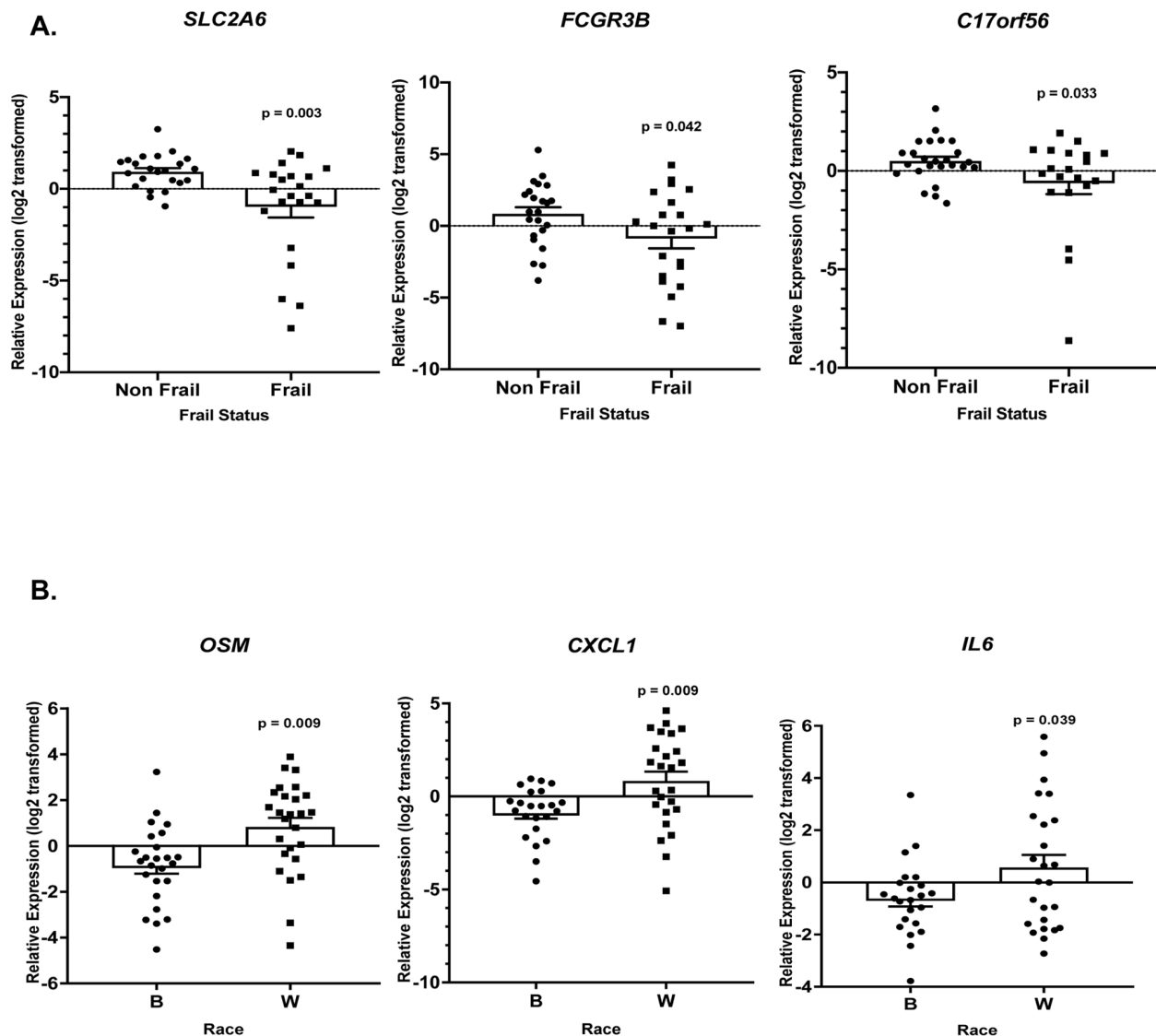
**Figure 5. Interaction network analysis of frailty-associated differential gene expression.** The interaction network for significant, differentially expressed protein coding genes with frailty in blacks (A) and whites (B) is shown. Network nodes represent proteins and lines (edges) represent protein-protein interactions. The solid lines represent direct interactions between proteins, dashed lines represent indirect interactions between proteins, grey lines represent putative protein interactions. The line colors represent the molecular action type: green (activation), dark blue (binding), black (reaction), red (inhibition), purple (catalysis), yellow (transcriptional regulation). The action effect is represented by the shape at the end of the line: arrow head (positive), perpendicular line (negative), dot (unspecified). The prominent functional clusters in blacks and whites are indicated.

*CCL5*, *MAPKAPK2*, *FPR2*) we observed statistically significant changes in the expression of 8 genes. Frailty was associated with significantly lower levels of solute carrier family 2, facilitated glucose transporter member 6 (*SLC2A6*), Fc fragment of IgG receptor IIIb (*FCGR3B*), and TEPSIN, adaptor related protein complex 4 accessory protein (*C17orf56*) (Figure 6A). Significantly higher levels of oncostatin M (*OSM*), C-X-C motif chemokine ligand 1 (*CXCL1*), and interleukin 6 (*IL6*) (Figure 6B) were identified in whites when compared to blacks, independent of frailty status which was not significantly associated with these genes.

We also identified a significant two-way interaction between frailty and race for the expression of interleukin 1 beta (*IL1B*) and early growth response 1 (*EGRI*) (Figure 7). Sex was not a significant factor in any of the models.

### Correlation of *IL6* and *IL1B* gene expression with serum levels

To examine the relationship between *IL6* and *IL1B* gene expression and circulating cytokine levels, we measured serum IL6 and IL1 $\beta$  by ELISA. We did not identify a



**Figure 6. Frailty and race-associated changes in gene expression in the validation cohort.** Total RNA was isolated from PBMCs from non-frail and frail blacks and whites in the validation cohort (Table 1B; n=52). Gene expression was analyzed using RT-qPCR with gene specific primers (Refer to Supplementary Table 5). The scatter plots show the relative expression (log2 transformed) in non-frail vs frail (A) and blacks (B) vs whites (W) in this same cohort (B). The open bars represent the mean and error bars show standard error of the mean. Significance was determined using linear regression models on the log2 transformed values.



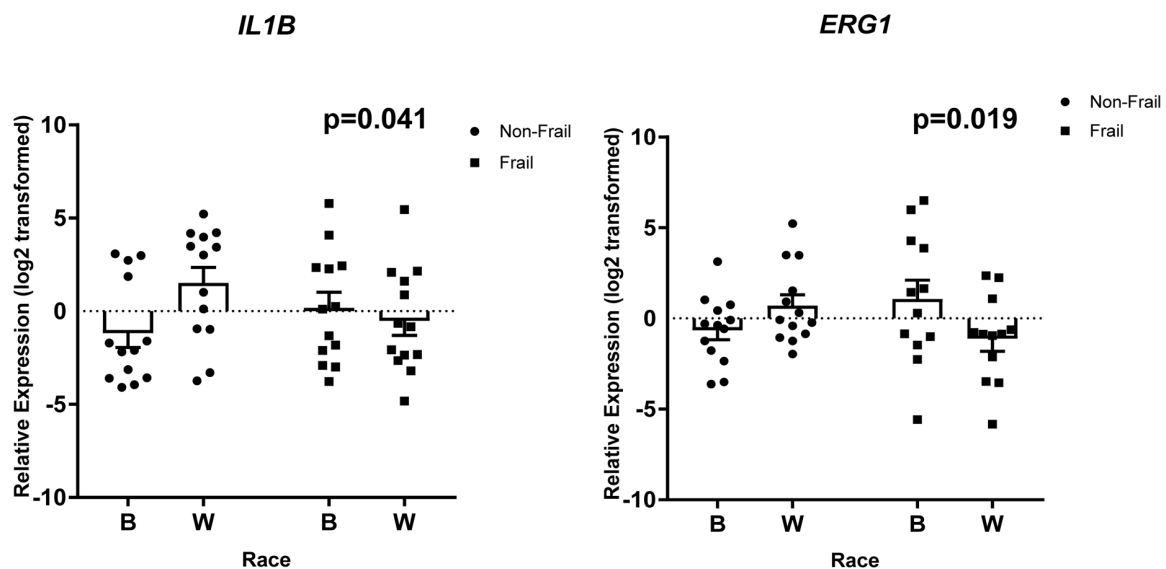
significant correlation between circulating cytokine levels and gene expression of *IL6* ( $r = -0.05$ ;  $p = 0.76$ ) or *IL1B* ( $r = -0.25$ ;  $p = 0.08$ ).

## DISCUSSION

In this present study, we have examined the transcriptome of non-frail versus frail middle-aged, community dwelling blacks and whites. Using RNA-seq, we identified over 5,000 differentially expressed genes associated with frailty. There were a larger number of genes differentially expressed in the context of frailty among whites when compared to blacks with a small number of genes that overlapped between the groups. However, there were more genes whose expression was increased among frail blacks when compared to frail whites. In contrast, there were more genes whose expression was decreased among frail whites when compared to frail blacks. Pathway analysis of these differentially expressed genes identified enriched gene ontology sets associated with biological processes; in blacks the most upregulated frailty associated biologic pathways were those associated with chemotaxis, inflammatory and immune response. In contrast, those same pathways were the most down-regulated among frail whites. While there were 19 overlapping pathways between blacks and whites, the directional pattern of these pathways was different. Using RT-qPCR, we validated expression patterns in genes that

had a significant log2 fold change in expression, genes that were in functional clusters from our network analysis, genes that were in pathways of interest, or genes that we identified as frail associated and differentially expressed in the literature. Among the 36 genes studied, we identified 8 genes whose expression was influenced by frailty, race or the interaction of frailty and race. These included: solute carrier family 2, facilitated glucose transporter member 6 (*SLC2A6*), Fc fragment of IgG receptor IIIb (*FCGR3B*), and TEPSIN, adaptor related protein complex 4 accessory protein (*C17orf56*) oncostatin M (*OSM*), C-X-C motif chemokine ligand 1 (*CXCL1*), interleukin 6 (*IL6*), interleukin 1 beta (*IL1B*) and early growth response 1 (*EGRI*).

Previous work has been done to examine gene expression in frailty. Given that our cohort is middle-aged and diverse, it is noteworthy that we have identified such a large number of genes that are differentially expressed with frailty. This is also important in the context of other studies examining the transcriptome of frailty. Although there are few studies examining the transcriptome of frailty, as part of the Vitality study, gene expression was analyzed in the context of developing a mortality-predicting signature. Frailty status was included as a variable in the model, but gene expression was not analyzed based on frailty status. We reanalyzed these data to identify frailty-



**Figure 7. Frailty-associated changes in gene expression with race.** Total RNA was isolated from PBMCs from non-frail and frail blacks and whites in the validation cohort ( $n=52$ ). Gene expression was analyzed using RT-qPCR with gene specific primers. The scatter plots show the relative expression (log2 transformed) in non-frail and frail blacks (B) and whites (W). The open bars represent the mean and error bars show standard error of the mean. There is a significant two-way interaction between frailty status and race for *IL1B* ( $p=0.041$ ) and *EGR1* ( $p=0.019$ ). Significance was determined using linear regression models on the log2 transformed values.

associated genes and included these genes in our validation gene set (*SLC2A6*, *FAM116B*, and *C17orf56*). Not only were these genes significantly associated with frailty in the European ancestry, elderly, frail in the Vitality study, they were also significantly associated with frailty in our cohort of middle-aged blacks and whites, suggesting that these genes may have important roles in frailty regardless of age or race. El Assar et al. [22] examined gene expression in 350 individuals of European ancestry, non-frail and frail, who were 65 years old and older within the Toledo Study of Healthy Aging, a part of the Frailomic Initiative [22]. In this study, the expression of 21 genes associated with aging or the response to oxidative stress were examined in the context of frailty. We also examined expression of these genes in our cohort and identified significant differential expression within our RNA sequencing cohort of four genes of the 21 genes reported by the Toledo Study investigators, *TXNRD1*, *HMOX2*, *PTGS2*, and *EGLN3*. However, we did not further examine gene expression of *TXNRD1*, *HMOX2*, and *EGLN3* in the validation cohort because the log<sub>2</sub> fold change was less than 1, thus not meeting our selection criteria. However, *PTGS2* was one of the putative frailty-associated genes selected in the Toledo Study and met our criteria for validation. However, there were no differences in *PTGS2* levels across frailty and race groups in our cohort. The failure to replicate the Toledo findings may be related to differences in the characteristics between the 2 cohorts. The Toledo Study Cohort is substantially older with a mean age of 76.5 years for the overall cohort and 83.0 years for frail participants. The Toledo cohort is a non-diverse European ancestry group and importantly only 22% of the 350 participants are frail. The HANDLS cohort is approximately 36 years younger, consists of blacks and whites, and importantly is balanced for percentage of frail individuals. Another group examined gene expression in robust, pre-frail and frail individuals in the Singapore Longitudinal Study of Aging in response to influenza vaccination [23]. Microarray of peripheral blood mononuclear cells prior to vaccination showed no gene expression differences between the robust, pre-frail or frail participants. Influenza vaccination altered gene expression, however, there were no significant differences between groups that exceeded two-fold differential expression.

Race influenced the transcriptional profiles in our cohort. In our RNA sequencing analysis and cohort, we observed significant gene expression differences between non-frail and frail blacks and whites. There were a larger number of differentially expressed genes associated with frailty in whites when compared to blacks (Figure 2B). The most robust differences were in genes that were more abundant in frail, white

individuals compared to non-frail individuals. Many of these genes are significantly more abundant only in whites and not in blacks. The parametric analysis of gene set enrichment (PAGE) and network analyses in the context of frailty showed that the enriched biological processes in pre-frail/frail, middle-aged blacks are associated with immune response, inflammatory response, and chemotaxis (Figure 3), which is consistent with the idea that frailty is a chronic state of inflammation that adversely impacts several organ systems [17]. Interestingly, the opposite pattern was observed in whites in that biological pathways associated with immune response, inflammatory response, and chemotaxis were diminished in pre-frail/frail middle-aged whites (Figure 4) which is consistent with racial differences associated with inflammation-related processes [24]. Enriched biological processes in pre-frail/frail whites are sensory perception of taste, tRNA processing, and sensory detection of bitter taste (Figure 4). Although decreased smell and taste perception is associated with frailty in an elderly Japanese population [25], our data suggest that these processes are also impacted in middle-aged, frail whites. Collectively, these data suggest that there are differing molecular signatures for frailty between blacks and whites. This may aid in identifying the underlying differences that may explain the frailty prevalence differences between blacks and whites under the age of 50 [10].

Our RT-qPCR validation study in an expanded cohort of non-frail and frail individuals focused on the 36 genes that we found were significantly changed with frailty status, race or race by frailty in our cohort, and that we found by reanalysis of data from the Vitality 90+ study [18]. The three genes we validated from the Vitality study were *SLC2A6*, *FAM116B*, and *C17orf56*. *SLC2A6* encodes for a recently identified solute carrier family 2 facilitated glucose transporter member 6 and is highly expressed in lymphocytes; however, the physiological substrate has yet to be identified [26]. *SLC2A6* is a member of class III glucose transporters and possesses dileucine motif that facilitates its translocation to organelle membranes. This suggests that *SLC2A6* could facilitate glucose transport across intracellular organelles and warrants further investigation in the context of frailty. Increased *SLC2A6* levels were found in frail nonagenarians [18], but in our validation cohort, we found lower levels of *SLC2A6* in frail, middle-aged individuals. These differences could be attributed to racial homogeneity and advanced age of the Vitality cohort in contrast to ours.

Decreased levels of *FCGR3B* were associated with frail individuals in our validation cohort. *FCGR3B* encodes for a membrane bound receptor that is important for

calcium mobilization and neutrophil degranulation. Dysregulation of calcium homeostasis is a hallmark of aging and aging-related diseases [16] while dysregulated neutrophil degranulation is a feature of several inflammatory diseases [27]. Therefore, it is interesting to hypothesize that lower levels of FCGR3B may contribute to frailty through dysregulation of calcium homeostasis and through inflammation, both well-established contributors to the frailty phenotype.

*C17orf56* encodes for an accessory protein that is a part of a protein complex that plays an important role in endocytosis and clathrin and non-clathrin vesicle formation [28, 29]. Here, we found that *C17orf56* levels were lower in frail individuals which is contrary to what was observed with frailty in the Vitality 90+ non-agenarian cohort. A hallmark of aging is loss of proteostasis [30]. Maintaining protein homeostasis is mediated, in part by endocytosis [31], making it interesting to speculate that dysregulation of proteostasis may occur in younger frail individuals. Future work lies in experimentally testing this idea.

In addition to validating gene expression patterns of frailty-associated genes identified in the Vitality 90+ and Toledo studies, we selected genes (*OSM*, *CXCL1*, and *IL6*) that encode cytokines that were found in biological pathways we identified in our PAGE analysis (Table 2). Oncostatin M (*OSM*) is a diverse cytokine that has recently been identified as a member of the interleukin 6 (IL6) subfamily and also stimulates IL6 production [32]. The chemokine (C-X-C motif) ligand 1 (*CXCL1*) has a role in inflammation and neutrophil recruitment [33]. Elevated levels of IL6, a pro-inflammatory cytokine [34], have been detected in old, frail cohorts and have been considered a potential frailty biomarker [35]. Interestingly, increased expression of *OSM*, *CXCL1*, *IL6* were not associated with frailty in our cohort. However, race was the driver for increased expression of all three genes in whites when compared to blacks. These data suggest that previously identified markers of frailty may not be appropriate markers for frailty in middle-aged adults or among blacks cohorts.

We also observed interactions between race, frail status, and expression of interleukin 1 beta (*IL1B*) and the early growth response 1 (*EGRI*) genes. We observed that frail whites have lower levels of both *IL1B* and *EGRI* compared to non-frail whites. Interestingly, this observation was only in whites, as expression of *IL1B* and *EGRI* are increased with frailty in blacks. *IL1B* is an important mediator of the inflammatory response and fever induction [36]. *EGRI*, however, has been investigated in the central nervous system as it is a transcription factor that is required for differentiation,

associated with neuroplasticity [37], and synaptic exocytosis [38]. Although neither gene has been previously studied in frailty, and the functional role of *EGRI* has not been extensively investigated in peripheral blood cells, the results from this study indicate that these genes may be novel biomarkers of frailty in younger cohorts.

This current study builds upon our understanding of frailty at the molecular level as we examined the transcriptome of middle-aged blacks and whites. Interestingly, the results from the RNA sequencing, PAGE analysis, and interaction network analysis indicate that race is a driver for the changes that we see in the transcriptional profile of frail, middle-aged adults. This is important considering that we found previously in HANDLS that frailty prevalence in adults under 50 is greater in whites than blacks [10].

Our study is limited by the sample size, however, similar sample sizes have previously been reported [39-42]. The strengths of the study are the use of next generation sequencing combined with pathway analysis and RT-qPCR validation in a diverse, community-based cohort.

Frailty is a risk factor for disability and mortality. Previous clinical and epidemiologic work in frailty, ours and others, highlights the need to clinically identify frailty earlier in the lifespan. The current work suggests that it is imperative to study the molecular aspects of frailty prior to old age to enable the identification of early molecular drivers of frailty that may aid in intervention to prevent adverse outcomes.

## METHODS

### Study participants and frailty assessment

Participants are from the Healthy Aging in Neighborhoods of Diversity across the Life Span (HANDLS) study of the National Institute on Aging Intramural Research Program (NIA IRP), National Institutes of Health. HANDLS is an epidemiologic, longitudinal study in which age-related health disparities are examined in the context of behavioral, psychosocial, and environmental influences [43]. The HANDLS cohort includes 3720 white and black residents of Baltimore, Maryland between the ages of 30-64 at baseline. HANDLS has been approved by the Institutional Review Board of the National Institute on Environmental Health Sciences and all participants provided written, informed consent. Participants within the RNA sequencing (n = 16) and validation cohorts (n = 52; 14 overlap with the RNA sequencing cohort) were stratified across sex, race, frailty status, and were

**Table 3. Comorbid illnesses in frail blacks and whites in the validation cohort.**

	Blacks	Whites	p value
n	13	13	
Diabetes = Yes (%)	7 (53.8)	2 (15.4)	0.10
Hypertension = Yes (%)	10 (76.9)	7 (53.8)	0.41
Myocardial Infarction = Yes (%)*	0 (100.0)	0 (100.0)	1
Congestive Heart Failure = Yes (%)*	0 (100.0)	0 (100.0)	1
Angina = Yes (%)*	2 (16.7)	2 (16.7)	1
Asthma = Yes (%)*	2 (16.7)	4 (33.3)	0.64
Stroke = Yes (%)*	0 (0.0)	0 (0.0)	1
Kidney Disease = Yes (%)*	0 (0.0)	2 (16.7)	0.46
Cancer = Yes (%)*	0 (0.0)	2 (16.7)	0.46
Chronic Lung Disease = Yes (%)*	2 (16.7)	4 (33.3)	0.64
Arthritis= Yes (%)*	5 (41.7)	4 (33.3)	1
Chronic Diseases (mean (sd))*	2.17 (1.75)	2.25 (1.60)	0.90

\*Information for these illnesses were missing from one black and one white individual. Fisher's exact test was used to analyze differences for categorical variables and Student's t-test was used for the continuous variable.

between 45-49 years old (Table 1 A and B). FRAIL scores for the different domains were the same for blacks and whites (Supplementary Table 7). Additionally, when stratifying based on the types of illnesses within the illness domain, there were no differences between blacks and whites (Table 3).

Frailty was assessed previously [10] using the FRAIL scale [9] with adaptations for the loss of weight domain [10, 44]. We assessed loss of weight from responses to item two of the Center for Epidemiologic Studies Depression scale (CES-D) [45]. Weight loss was considered present when participants responded occasionally (3-4 days a week) or mostly (5-7 days a week) to the following question: Over the past week did you not feel like eating or have a poor appetite? The International Academy on Nutrition and Aging FRAIL scale consists of five domains: fatigue, resistance, ambulation, illnesses, and loss of weight. The frail score ranges from 0 - 5, in which one point can be received for each component. A score of 0 is non-frail, 1-2 is pre-frail, and 3-5 is frail. In the RNA sequencing cohort, 8 participants were non-frail, 2 were pre-frail, and 6 were frail.

### Next generation sequencing

Peripheral blood mononuclear cells (PBMCs) were isolated from fasting blood samples and stored at -80°C

[46]. Total RNA was isolated using TRIzol® (Life Technologies) according to the manufacturer's instructions with the addition of a DNase treatment and overnight precipitation. Samples were resuspended in 20 µl RNase-free water and frozen at -80°C until further use. Next generation RNA-seq was performed at the Johns Hopkins University Deep Sequencing and Microarray Core Facility. Libraries were prepared with the TruSeq stranded total RNA with Ribo-Zero Gold kit (RS-122-2301). The libraries were multiplexed into 4 plex per pool and sequenced on Illumina HiSeq 2500 and the associated Illumina RTA software (Version number 1.18.66) was used to process the images and generate base-calls to perform the primary analysis. The FASTQ file was then used for sequence input for alignment to the human genome NCBI build v38 using TopHat version 2.21 (Figure 1B). Transcripts were assembled using Cufflinks version 2.2.1, Cuffmerge version 2.2.1 and differential gene expression was determined using Cuffdiff version 2.2.1. Significance was determined using the q-value (FDR adjusted p-value using Benjamini-Hochberg correction for multiple-testing) less than 0.05 and also log2 fold change > 0.58 or < -0.58. RNA-seq data can be accessed at GEO (Accession number: GSE129534). All genes significantly associated with frailty are listed in Supplementary Table 1. Supplementary Tables 2 and 3 list genes significantly altered by frailty in blacks and whites, respectively.



Quantile normalized FPKM values were used to calculate Z-scores (log transformed). Z-ratios were then obtained and imputed into PAGE analysis to analyze gene ontology (GO) terms (Figure 1B) [47]. Significance was based on a false discovery rate of  $\leq 0.30$ ,  $p \leq 0.05$ , and at least three genes for that significant gene set. In order to visualize functional interactions between significant, differentially expressed genes, we used the Search Tool for the Retrieval of Interacting Genes (STRING) [21, 48]. The interactions were analyzed according to the highest confidence score (0.900) clustered using k-means clustering and disconnected nodes were removed.

### Reverse transcription and real-time, quantitative PCR

Total RNA was isolated from PBMCs as described above. 500  $\mu\text{g}$  of total RNA was reverse transcribed into cDNA using random hexamers and Superscript II Reverse Transcriptase (Invitrogen). Reactions were performed with 2X SYBR Green Master Mix and gene-specific primers (Supplement Table 6). Reverse transcription and quantitative real-time PCR (RT-qPCR) reactions were performed on a 7900HT Fast Real-Time PCR System according to the manufacturer's protocol. mRNA levels were normalized to the average of *GAPDH* and *ACTB*. Gene expression was calculated using the  $2^{-\Delta\Delta C_t}$  method [49].

### IL6 and IL1 $\beta$ enzyme-linked immunosorbent assays

IL6 and IL1 $\beta$  levels were measured in serum following the manufacturer's guidelines (Quantikine ELISA Human IL1 $\beta$ /IL-1F2 and Human IL-6; R&D systems). Optical density was measured using the SpectraMax M2 system (Molecular Devices) along with SoftMax Pro (Version 7). IL6 and IL1 $\beta$  concentrations were calculated according to the respective standards. Log transformed values were used to examine the correlation between serum and PBMC mRNA levels using Pearson's correlation.

### Statistical approach

The balanced design across sex, race and frailty status for the validation cohort provided 84% power to detect differences in relative expression that accounted for 15% of the total variance. Linear regression models were used to examine the relationship of mRNA levels with frailty status and race. Models were built using forward and backward selection to assess possible interactions among the variables. Log transformations (base 2) were applied for non-normally distributed variables. The association between frailty domains and race were determined using Fisher's exact tests.

Analyses were performed using R [50]. A p-value less than 0.05 was considered to be statistically significant.

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### CONFLICTS OF INTEREST

The authors declare that they do not have conflicts of interest.

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### REFERENCES

1. Chen X, Mao G, Leng SX. Frailty syndrome: an overview. *Clin Interv Aging*. 2014; 9:433–41. <https://doi.org/10.2147/CIA.S45300> PMID:24672230
2. Morley JE. Frailty and sarcopenia in elderly. *Wien Klin Wochenschr*. 2016 (Suppl 7); 128:439–45. <https://doi.org/10.1007/s00508-016-1087-5> PMID:27670855
3. Fried LP, Tangen CM, Walston J, Newman AB, Hirsch C, Gottdiener J, Seeman T, Tracy R, Kop WJ, Burke G, McBurnie MA, and Cardiovascular Health Study Collaborative Research Group. Frailty in older adults: evidence for a phenotype. *J Gerontol A Biol Sci Med Sci*. 2001; 56:M146–56. <https://doi.org/10.1093/gerona/56.3.M146> PMID:11253156
4. Xue QL, Walston JD, Fried LP, Beamer BA. Prediction of risk of falling, physical disability, and frailty by rate of decline in grip strength: the women's health and aging study. *Arch Intern Med*. 2011; 171:1119–21. <https://doi.org/10.1001/archinternmed.2011.252> PMID:21709116
5. Ensrud KE, Ewing SK, Taylor BC, Fink HA, Stone KL, Cauley JA, Tracy JK, Hochberg MC, Rodondi N, Cawthon PM, and Study of Osteoporotic Fractures Research Group. Frailty and risk of falls, fracture, and mortality in older women: the study of osteoporotic fractures. *J*



- Gerontol A Biol Sci Med Sci. 2007; 62:744–51.  
<https://doi.org/10.1093/gerona/62.7.744>  
PMID:17634322
6. Makary MA, Segev DL, Pronovost PJ, Syin D, Bandeen-Roche K, Patel P, Takenaga R, Devgan L, Holzmueller CG, Tian J, Fried LP. Frailty as a predictor of surgical outcomes in older patients. *J Am Coll Surg*. 2010; 210:901–08.  
<https://doi.org/10.1016/j.jamcollsurg.2010.01.028>  
PMID:20510798
  7. McAdams-DeMarco MA, Suresh S, Law A, Salter ML, Gimenez LF, Jaar BG, Walston JD, Segev DL. Frailty and falls among adult patients undergoing chronic hemodialysis: a prospective cohort study. *BMC Nephrol*. 2013; 14:224.  
<https://doi.org/10.1186/1471-2369-14-224>  
PMID:24131569
  8. Bandeen-Roche K, Seplaki CL, Huang J, Buta B, Kalyani RR, Varadhan R, Xue QL, Walston JD, Kasper JD. Frailty in Older Adults: A Nationally Representative Profile in the United States. *J Gerontol A Biol Sci Med Sci*. 2015; 70:1427–34.  
<https://doi.org/10.1093/gerona/glv133>  
PMID:26297656
  9. Morley JE, Malmstrom TK, Miller DK. A simple frailty questionnaire (FRAIL) predicts outcomes in middle aged African Americans. *J Nutr Health Aging*. 2012; 16:601–08. <https://doi.org/10.1007/s12603-012-0084-2> PMID:22836700
  10. Griffin FR, Mode NA, Ejiogu N, Zonderman AB, Evans MK. Frailty in a racially and socioeconomically diverse sample of middle-aged Americans in Baltimore. *PLoS One*. 2018; 13:e0195637.  
<https://doi.org/10.1371/journal.pone.0195637>  
PMID:29634767
  11. Malmstrom TK, Miller DK, Herning MM, Morley JE. Low appendicular skeletal muscle mass (ASM) with limited mobility and poor health outcomes in middle-aged African Americans. *J Cachexia Sarcopenia Muscle*. 2013; 4:179–86.  
<https://doi.org/10.1007/s13539-013-0106-x>  
PMID:23532635
  12. Thorpe RJ, Simonsick E, Zonderman A, Evans MK. Association between Race, Household Income and Grip Strength in Middle- and Older-Aged Adults. *Ethn Dis*. 2016; 26:493–500.  
<https://doi.org/10.18865/ed.26.4.493>  
PMID:27773976
  13. Woolf SH, Chapman DA, Buchanich JM, Bobby KJ, Zimmerman EB, Blackburn SM. Changes in midlife death rates across racial and ethnic groups in the United States: systematic analysis of vital statistics. *BMJ*. 2018; 362:k3096.  
<https://doi.org/10.1136/bmj.k3096> PMID:30111554
  14. Dent E, Kowal P, Hoogendijk EO. Frailty measurement in research and clinical practice: A review. *Eur J Intern Med*. 2016; 31:3–10.  
<https://doi.org/10.1016/j.ejim.2016.03.007>  
PMID:27039014
  15. Woo J, Yu R, Wong M, Yeung F, Wong M, Lum C. Frailty Screening in the Community Using the FRAIL Scale. *J Am Med Dir Assoc*. 2015; 16:412–19.  
<https://doi.org/10.1016/j.jamda.2015.01.087>  
PMID:25732832
  16. Cardoso AL, Fernandes A, Aguilar-Pimentel JA, de Angelis MH, Guedes JR, Brito MA, Ortolano S, Pani G, Athanasopoulou S, Gonos ES, Schosserer M, Grillari J, Peterson P, et al. Towards frailty biomarkers: candidates from genes and pathways regulated in aging and age-related diseases. *Ageing Res Rev*. 2018; 47:214–77. <https://doi.org/10.1016/j.arr.2018.07.004>  
PMID:30071357
  17. Ferrucci L, Fabbri E. Inflammageing: chronic inflammation in ageing, cardiovascular disease, and frailty. *Nat Rev Cardiol*. 2018; 15:505–22.  
<https://doi.org/10.1038/s41569-018-0064-2>  
PMID:30065258
  18. Jylhävä J, Raitanen J, Marttila S, Hervonen A, Jylhä M, Hurme M. Identification of a prognostic signature for old-age mortality by integrating genome-wide transcriptomic data with the conventional predictors: the Vitality 90+ Study. *BMC Med Genomics*. 2014; 7:54. <https://doi.org/10.1186/1755-8794-7-54>  
PMID:25213707
  19. Cheadle C, Cho-Chung YS, Becker KG, Vawter MP. Application of z-score transformation to Affymetrix data. *Appl Bioinformatics*. 2003; 2:209–17.  
PMID:15130792
  20. Cheadle C, Vawter MP, Freed WJ, Becker KG. Analysis of microarray data using Z score transformation. *J Mol Diagn*. 2003; 5:73–81.  
[https://doi.org/10.1016/S1525-1578\(10\)60455-2](https://doi.org/10.1016/S1525-1578(10)60455-2)  
PMID:12707371
  21. Szklarczyk D, Franceschini A, Kuhn M, Simonovic M, Roth A, Minguéz P, Doerks T, Stark M, Müller J, Bork P, Jensen LJ, von Mering C. The STRING database in 2011: functional interaction networks of proteins, globally integrated and scored. *Nucleic Acids Res*. 2011; 39:D561–68.  
<https://doi.org/10.1093/nar/gkq973> PMID:21045058
  22. El Assar M, Angulo J, Carnicero JA, Walter S, García-García FJ, López-Hernández E, Sánchez-Puelles JM, Rodríguez-Mañas L. Frailty Is Associated with Lower Expression of Genes Involved in Cellular Response to

- Stress: Results from the Toledo Study for Healthy Aging. *J Am Med Dir Assoc.* 2017; 18:734.e1–7. <https://doi.org/10.1016/j.jamda.2017.04.019> PMID:28647579
23. Narang V, Lu Y, Tan C, Camous XF, Nyunt SZ, Carre C, Mok EW, Wong G, Maurer-Stroh S, Abel B, Burdin N, Poidinger M, Tambyah PA, et al. Influenza Vaccine-Induced Antibody Responses Are Not Impaired by Frailty in the Community-Dwelling Elderly With Natural Influenza Exposure. *Front Immunol.* 2018; 9:2465. <https://doi.org/10.3389/fimmu.2018.02465> PMID:30405641
24. Miller MA, Cappuccio FP. Ethnicity and inflammatory pathways - implications for vascular disease, vascular risk and therapeutic intervention. *Curr Med Chem.* 2007; 14:1409–25. <https://doi.org/10.2174/092986707780831131> PMID:17584053
25. Somekawa S, Mine T, Ono K, Hayashi N, Obuchi S, Yoshida H, Kawai H, Fujiwara Y, Hirano H, Kojima M, Ihara K, Kim H. Relationship between Sensory Perception and Frailty in a Community-Dwelling Elderly Population. *J Nutr Health Aging.* 2017; 21:710–14. <https://doi.org/10.1007/s12603-016-0836-5> PMID:28537337
26. Vrhovac I, Breljak D, Sabolic I. Glucose transporters in the mammalian blood cells. *Period Biol.* 2014; 116:131–38.
27. Lacy P. Mechanisms of degranulation in neutrophils. *Allergy Asthma Clin Immunol.* 2006; 2:98–108. <https://doi.org/10.1186/1710-1492-2-3-98> PMID:20525154
28. Takatsu H, Futatsumori M, Yoshino K, Yoshida Y, Shin HW, Nakayama K. Similar subunit interactions contribute to assembly of clathrin adaptor complexes and COPI complex: analysis using yeast three-hybrid system. *Biochem Biophys Res Commun.* 2001; 284:1083–89. <https://doi.org/10.1006/bbrc.2001.5081> PMID:11409905
29. Hirst J, Bright NA, Rous B, Robinson MS. Characterization of a fourth adaptor-related protein complex. *Mol Biol Cell.* 1999; 10:2787–802. <https://doi.org/10.1091/mbc.10.8.2787> PMID:10436028
30. López-Otín C, Blasco MA, Partridge L, Serrano M, Kroemer G. The hallmarks of aging. *Cell.* 2013; 153:1194–217. <https://doi.org/10.1016/j.cell.2013.05.039> PMID:23746838
31. Jackson MP, Hewitt EW. Cellular proteostasis: degradation of misfolded proteins by lysosomes. *Essays Biochem.* 2016; 60:173–80. <https://doi.org/10.1042/EBC20160005> PMID:27744333
32. M. T. A. M. (2003). Oncostatin M, a multifunctional cytokine. *Reviews of Physiology, Biochemistry, and Pharmacology*: Springer, Berlin, Heidelberg), pp. 39–52.
33. Kobayashi Y. The role of chemokines in neutrophil biology. *Front Biosci.* 2008; 13:2400–07. <https://doi.org/10.2741/2853> PMID:17981721
34. Scheller J, Chalaris A, Schmidt-Arras D, Rose-John S. The pro- and anti-inflammatory properties of the cytokine interleukin-6. *Biochim Biophys Acta.* 2011; 1813:878–88. <https://doi.org/10.1016/j.bbamcr.2011.01.034> PMID:21296109
35. Li H, Manwani B, Leng SX. Frailty, inflammation, and immunity. *Aging Dis.* 2011; 2:466–73. PMID:22396895
36. Lopez-Castejon G, Brough D. Understanding the mechanism of IL-1 $\beta$  secretion. *Cytokine Growth Factor Rev.* 2011; 22:189–95. <https://doi.org/10.1016/j.cytogfr.2011.10.001> PMID:22019906
37. Knapska E, Kaczmarek L. A gene for neuronal plasticity in the mammalian brain: Zif268/Egr-1/NGFI-A/Krox-24/TIS8/ZENK? *Prog Neurobiol.* 2004; 74:183–211. <https://doi.org/10.1016/j.pneurobio.2004.05.007> PMID:15556287
38. Petersohn D, Thiel G. Role of zinc-finger proteins Sp1 and zif268/egr-1 in transcriptional regulation of the human synaptobrevin II gene. *Eur J Biochem.* 1996; 239:827–34. <https://doi.org/10.1111/j.1432-1033.1996.0827u.x> PMID:8774732
39. Dluzen DF, Noren Hooten N, De S, Wood WH 3rd, Zhang Y, Becker KG, Zonderman AB, Tanaka T, Ferrucci L, Evans MK. Extracellular RNA profiles with human age. *Aging Cell.* 2018; 17:e12785. <https://doi.org/10.1111/acer.12785> PMID:29797538
40. Heyer EE, Deveson IW, Wooi D, Selinger CI, Lyons RJ, Hayes VM, O’Toole SA, Ballinger ML, Gill D, Thomas DM, Mercer TR, Blackburn J. Diagnosis of fusion genes using targeted RNA sequencing. *Nat Commun.* 2019; 10:1388. <https://doi.org/10.1038/s41467-019-09374-9> PMID:30918253
41. Soreq L, Salomonis N, Guffanti A, Bergman H, Israel Z, Soreq H. Whole transcriptome RNA sequencing data from blood leukocytes derived from Parkinson’s

- disease patients prior to and following deep brain stimulation treatment. *Genom Data*. 2014; 3:57–60.  
<https://doi.org/10.1016/j.gdata.2014.11.009>  
PMID:[26484149](https://pubmed.ncbi.nlm.nih.gov/26484149/)
42. Gogliotti RG, Fisher NM, Stansley BJ, Jones CK, Lindsley CW, Conn PJ, Niswender CM. Total RNA Sequencing of Rett Syndrome Autopsy Samples Identifies the M<sub>4</sub> Muscarinic Receptor as a Novel Therapeutic Target. *J Pharmacol Exp Ther*. 2018; 365:291–300.  
<https://doi.org/10.1124/jpet.117.246991>  
PMID:[29523700](https://pubmed.ncbi.nlm.nih.gov/29523700/)
43. Evans MK, Lepkowski JM, Powe NR, LaVeist T, Kuczmarski MF, Zonderman AB. Healthy aging in neighborhoods of diversity across the life span (HANDLS): overcoming barriers to implementing a longitudinal, epidemiologic, urban study of health, race, and socioeconomic status. *Ethn Dis*. 2010; 20:267–75. PMID:[20828101](https://pubmed.ncbi.nlm.nih.gov/20828101/)
44. Theou O, Brothers TD, Mitnitski A, Rockwood K. Operationalization of frailty using eight commonly used scales and comparison of their ability to predict all-cause mortality. *J Am Geriatr Soc*. 2013; 61:1537–51.  
<https://doi.org/10.1111/jgs.12420> PMID:[24028357](https://pubmed.ncbi.nlm.nih.gov/24028357/)
45. Radloff LS. The CES-D Scale: A Self-Report Depression Scale for Research in the General Population. *Appl Psychol Meas*. 1977; 1:385–401.  
<https://doi.org/10.1177/014662167700100306>
46. Noren Hooten N, Abdelmohsen K, Gorospe M, Ejiogu N, Zonderman AB, Evans MK. microRNA expression patterns reveal differential expression of target genes with age. *PLoS One*. 2010; 5:e10724.  
<https://doi.org/10.1371/journal.pone.0010724>  
PMID:[20505758](https://pubmed.ncbi.nlm.nih.gov/20505758/)
47. Noren Hooten N, Fitzpatrick M, Wood WH 3rd, De S, Ejiogu N, Zhang Y, Mattison JA, Becker KG, Zonderman AB, Evans MK. Age-related changes in microRNA levels in serum. *Aging (Albany NY)*. 2013; 5:725–40. <https://doi.org/10.18632/aging.100603>  
PMID:[24088671](https://pubmed.ncbi.nlm.nih.gov/24088671/)
48. Szklarczyk D, Morris JH, Cook H, Kuhn M, Wyder S, Simonovic M, Santos A, Doncheva NT, Roth A, Bork P, Jensen LJ, von Mering C. The STRING database in 2017: quality-controlled protein-protein association networks, made broadly accessible. *Nucleic Acids Res*. 2017; 45:D362–68.  
<https://doi.org/10.1093/nar/gkw937> PMID:[27924014](https://pubmed.ncbi.nlm.nih.gov/27924014/)
49. Livak KJ, Schmittgen TD. Analysis of relative gene expression data using real-time quantitative PCR and the 2<sup>-</sup>( $\Delta\Delta C(T)$ ) Method. *Methods*. 2001; 25:402–08. <https://doi.org/10.1006/meth.2001.1262>  
PMID:[11846609](https://pubmed.ncbi.nlm.nih.gov/11846609/)
50. Team RC. 2018. R: A Language and Environment for Statistical Computing. Vienna, Austria.

## **SUPPLEMENTARY MATERIAL**

Please browse the Full Text version to see data of Supplementary Tables:

**Supplementary Table 1.** Genes significantly different between non-frail and frail individuals.

**Supplementary Table 2.** Genes significantly different between non-frail and frail blacks.

**Supplementary Table 3.** Genes significantly different between non-frail and frail whites.

**Supplementary Table 4.** Significant frailty-associated biological processes in blacks.

**Supplementary Table 5.** Significant frailty-associated biological processes in whites.

**Supplementary Table 6.** Primer Sequences for RT-qPCR Validation.

**Supplementary Table 7.** FRAIL scores among frail individuals in the validation cohort

Supplementary Table 1. Genes significantly different between non-frail and frail individuals.

Gene name	log <sub>2</sub> (fold change)	p value	q value
<i>HP</i>	2.98	0.0004	0.00220905
<i>LOC100505550</i>	2.47	0.00035	0.00197564
<i>LOC100505530</i>	2.44	5.00E-05	0.000370102
<i>FAM154B</i>	2.39	5.00E-05	0.000370102
<i>DNLZ</i>	2.25	5.00E-05	0.000370102
<i>LOC100506006</i>	2.25	0.0183	0.0497157
<i>CDKN3</i>	2.19	5.00E-05	0.000370102
<i>CRYBB2</i>	2.18	0.00095	0.00452522
<i>SNORD116-1</i>	2.17	0.01465	0.0414577
<i>LOC100506686</i>	2.15	0.00085	0.00413749
<i>CROCCP2</i>	2.14	5.00E-05	0.000370102
<i>PPP1R14A</i>	2.11	0.0002	0.00123235
<i>CDRT15P1</i>	2.11	5.00E-05	0.000370102
<i>PTRH2</i>	2.09	5.00E-05	0.000370102
<i>MYOM2</i>	2.08	5.00E-05	0.000370102
<i>LOC100506596</i>	2.07	0.001	0.00472422
<i>HIST1H3G</i>	2.04	5.00E-05	0.000370102
<i>EXOSC4</i>	2.03	5.00E-05	0.000370102
<i>GRAPL</i>	1.99	0.00105	0.0049133
<i>CHMP2A</i>	1.97	5.00E-05	0.000370102
<i>CAHM</i>	1.96	5.00E-05	0.000370102
<i>LOC729732</i>	1.95	5.00E-05	0.000370102
<i>LOC100507111</i>	1.93	5.00E-05	0.000370102
<i>SSSCA1</i>	1.90	5.00E-05	0.000370102
<i>AKR1C3</i>	1.86	5.00E-05	0.000370102
<i>CBR3</i>	1.85	5.00E-05	0.000370102
<i>AP1S1</i>	1.84	5.00E-05	0.000370102
<i>TXLNG2P</i>	1.83	5.00E-05	0.000370102
<i>LOC100652935</i>	1.83	5.00E-05	0.000370102
<i>LOC387895</i>	1.82	5.00E-05	0.000370102
<i>CHCHD1</i>	1.79	5.00E-05	0.000370102
<i>HEATR7A</i>	1.78	5.00E-05	0.000370102
<i>LOC100507258</i>	1.76	5.00E-05	0.000370102
<i>USE1</i>	1.76	5.00E-05	0.000370102
<i>LOC100652913</i>	1.76	5.00E-05	0.000370102
<i>OBFC2B</i>	1.74	5.00E-05	0.000370102
<i>RAB34</i>	1.74	5.00E-05	0.000370102
<i>THOC6</i>	1.74	5.00E-05	0.000370102
<i>CCDC144A</i>	1.74	5.00E-05	0.000370102
<i>RLN2</i>	1.73	0.0042	0.0152456
<i>HRASLS2</i>	1.72	0.00735	0.0237424
<i>EP400NL</i>	1.72	5.00E-05	0.000370102
<i>CARD17</i>	1.70	0.0015	0.00662132
<i>C1orf31</i>	1.70	5.00E-05	0.000370102
<i>MYL6B</i>	1.69	5.00E-05	0.000370102
<i>EIF4E2</i>	1.68	5.00E-05	0.000370102
<i>C11orf67</i>	1.68	5.00E-05	0.000370102
<i>NDUFS6</i>	1.67	5.00E-05	0.000370102
<i>LOC100505622</i>	1.67	5.00E-05	0.000370102
<i>LOC100505737</i>	1.66	0.00025	0.00149761
<i>RPL23</i>	1.66	5.00E-05	0.000370102
<i>CCDC12</i>	1.65	5.00E-05	0.000370102
<i>JOSD2</i>	1.65	5.00E-05	0.000370102
<i>GPR55</i>	1.65	5.00E-05	0.000370102
<i>OCLAD2</i>	1.64	5.00E-05	0.000370102
<i>HP07349</i>	1.64	0.00115	0.00529146
<i>LOC100128420</i>	1.63	0.0029	0.0112429
<i>TOMM6</i>	1.63	5.00E-05	0.000370102
<i>RPS4Y1</i>	1.63	5.00E-05	0.000370102
<i>CLEC1B</i>	1.62	5.00E-05	0.000370102
<i>TMEM204</i>	1.61	5.00E-05	0.000370102
<i>TNNT1</i>	1.61	5.00E-05	0.000370102
<i>MTRNR2L9</i>	1.61	0.0004	0.00220905
<i>LOC388796</i>	1.61	5.00E-05	0.000370102
<i>HERC2P10</i>	1.61	5.00E-05	0.000370102
<i>LIN7B</i>	1.60	0.00035	0.00197564
<i>ELMO3</i>	1.59	5.00E-05	0.000370102
<i>SNHG7</i>	1.59	5.00E-05	0.000370102
<i>SNRPA1</i>	1.59	5.00E-05	0.000370102
<i>FAM24B</i>	1.59	5.00E-05	0.000370102
<i>MICA</i>	1.59	5.00E-05	0.000370102
<i>EEF1DP3</i>	1.58	5.00E-05	0.000370102
<i>LOC100505613</i>	1.58	0.0004	0.00220905
<i>HIST1H2AJ</i>	1.58	5.00E-05	0.000370102
<i>IFI30</i>	1.57	5.00E-05	0.000370102
<i>C3orf35</i>	1.56	5.00E-05	0.000370102
<i>EEF1D</i>	1.56	5.00E-05	0.000370102
<i>C19orf59</i>	1.56	5.00E-05	0.000370102
<i>TMEM223</i>	1.55	5.00E-05	0.000370102
<i>C12orf45</i>	1.55	5.00E-05	0.000370102
<i>ELOF1</i>	1.55	5.00E-05	0.000370102
<i>DBI</i>	1.55	5.00E-05	0.000370102
<i>LOC100509780</i>	1.55	0.0162	0.0451127
<i>LOC285326</i>	1.54	0.0097	0.029574
<i>C2orf74</i>	1.54	5.00E-05	0.000370102
<i>LOC100506159</i>	1.53	0.0079	0.0251945
<i>ATP5E</i>	1.53	5.00E-05	0.000370102
<i>RNU11</i>	1.53	5.00E-05	0.000370102
<i>SPAG16</i>	1.53	5.00E-05	0.000370102
<i>S100Z</i>	1.52	5.00E-05	0.000370102
<i>INGX</i>	1.52	5.00E-05	0.000370102



IGJ	1.52	5.00E-05	0.000370102
PTGDS	1.52	5.00E-05	0.000370102
LOC606724	1.51	5.00E-05	0.000370102
TRMT112	1.51	5.00E-05	0.000370102
FAM81B	1.51	0.00025	0.00149761
LOC100131234	1.51	5.00E-05	0.000370102
LOC100505899	1.50	5.00E-05	0.000370102
ASRGL1	1.50	5.00E-05	0.000370102
SNORA57	1.50	5.00E-05	0.000370102
DCXR	1.50	5.00E-05	0.000370102
LOC100132111	1.50	5.00E-05	0.000370102
C12orf65	1.50	5.00E-05	0.000370102
SNRNP70	1.50	5.00E-05	0.000370102
LOC401847	1.49	0.0102	0.030792
SULT1A1	1.48	5.00E-05	0.000370102
CYB5A	1.47	5.00E-05	0.000370102
MTRNR2L10	1.47	5.00E-05	0.000370102
TMEM150B	1.47	5.00E-05	0.000370102
STX4	1.46	5.00E-05	0.000370102
CD82	1.46	5.00E-05	0.000370102
RNASE2	1.46	5.00E-05	0.000370102
MRPL27	1.45	5.00E-05	0.000370102
NBPF9	1.45	5.00E-05	0.000370102
LOC100506538	1.45	0.00055	0.00288713
AIFM1	1.44	5.00E-05	0.000370102
H1F0	1.43	5.00E-05	0.000370102
CFDP1	1.43	5.00E-05	0.000370102
LOC100294406	1.43	0.0066	0.0217998
PFDN2	1.43	0.0004	0.00220905
ZNF622	1.43	5.00E-05	0.000370102
RBP5	1.42	5.00E-05	0.000370102
NAPRT1	1.42	5.00E-05	0.000370102
LOC653720	1.42	0.01065	0.0319268
PFDN6	1.42	5.00E-05	0.000370102
MCEE	1.42	5.00E-05	0.000370102
IFT27	1.41	5.00E-05	0.000370102
GPR15	1.41	5.00E-05	0.000370102
TRAPPC6A	1.41	5.00E-05	0.000370102
CYC1	1.41	5.00E-05	0.000370102
SCARNA9	1.41	5.00E-05	0.000370102
HNRNPA1	1.41	5.00E-05	0.000370102
KLHL14	1.41	5.00E-05	0.000370102
SURF2	1.41	5.00E-05	0.000370102
LOC100652736	1.40	5.00E-05	0.000370102
SNORD116-20	1.40	0.01295	0.0375327
LOC100506804	1.40	0.0002	0.00123235
CNTNAP2	1.40	5.00E-05	0.000370102
MTRNR2L6	1.40	5.00E-05	0.000370102
RNU6ATAC	1.39	5.00E-05	0.000370102
IFI27L1	1.39	0.0002	0.00123235
EPST11	1.39	5.00E-05	0.000370102
HIST1H4J	1.39	5.00E-05	0.000370102
NBR2	1.39	5.00E-05	0.000370102
PPA1	1.39	5.00E-05	0.000370102
LOC642826	1.38	5.00E-05	0.000370102
RTP4	1.38	5.00E-05	0.000370102
HSPE1	1.38	0.0011	0.00510741
C11orf75	1.38	5.00E-05	0.000370102
AUH	1.38	5.00E-05	0.000370102
MT1E	1.38	0.0014	0.006256
C3orf54	1.38	5.00E-05	0.000370102
MTRNR2L3	1.37	0.0037	0.013764
LOC100652802	1.37	0.0003	0.00173314
SNORA44	1.37	0.004	0.0146702
TMSB4X	1.37	0.0039	0.0143876
PDCD6	1.37	5.00E-05	0.000370102
GPATCH4	1.37	5.00E-05	0.000370102
HDAC3	1.36	5.00E-05	0.000370102
RPS2P32	1.36	5.00E-05	0.000370102
NKAP	1.36	5.00E-05	0.000370102
HIST1H2AI	1.36	5.00E-05	0.000370102
LOC100652999	1.36	5.00E-05	0.000370102
SCPEP1	1.36	5.00E-05	0.000370102
HIST1H3H	1.36	5.00E-05	0.000370102
PMVK	1.35	5.00E-05	0.000370102
C11orf71	1.35	5.00E-05	0.000370102
SDF2L1	1.35	5.00E-05	0.000370102
PLTP	1.35	0.0013	0.00587193
LOC100130938	1.35	0.00155	0.00680283
EMP3	1.34	5.00E-05	0.000370102
TMEM18	1.34	5.00E-05	0.000370102
C20orf196	1.34	5.00E-05	0.000370102
WASH1	1.34	5.00E-05	0.000370102
RPS21	1.34	5.00E-05	0.000370102
CBR1	1.33	5.00E-05	0.000370102
NEU1	1.33	5.00E-05	0.000370102
LOC100134868	1.33	5.00E-05	0.000370102
TSNARE1	1.33	5.00E-05	0.000370102
AARS	1.33	5.00E-05	0.000370102
GGCT	1.33	5.00E-05	0.000370102
LOC100652920	1.33	5.00E-05	0.000370102
MS4A4E	1.33	5.00E-05	0.000370102
RNF217	1.33	5.00E-05	0.000370102

GPS2	1.33	5.00E-05	0.000370102
MGC72080	1.33	5.00E-05	0.000370102
SPHK1	1.33	5.00E-05	0.000370102
ZBTB25	1.33	5.00E-05	0.000370102
SCARNA16	1.32	5.00E-05	0.000370102
ARL6IP4	1.32	5.00E-05	0.000370102
C6orf108	1.32	5.00E-05	0.000370102
MEAI	1.32	5.00E-05	0.000370102
C16orf61	1.32	5.00E-05	0.000370102
C20orf134	1.32	0.0089	0.0276795
MRPL51	1.32	5.00E-05	0.000370102
FXYD6	1.32	5.00E-05	0.000370102
LOC100507474	1.31	0.0133	0.0383376
LOC100507071	1.31	0.0013	0.00587193
LOC100507375	1.31	0.0005	0.00266422
SCARNA1	1.31	0.00135	0.00606006
PHF5A	1.31	5.00E-05	0.000370102
FCER1A	1.31	5.00E-05	0.000370102
PSMD6	1.31	5.00E-05	0.000370102
RPLP1	1.31	5.00E-05	0.000370102
RPS2	1.30	5.00E-05	0.000370102
SQRDL	1.30	5.00E-05	0.000370102
RAN	1.30	5.00E-05	0.000370102
HIST1H4K	1.30	5.00E-05	0.000370102
IFT46	1.30	5.00E-05	0.000370102
CCT3	1.30	5.00E-05	0.000370102
RPL36AL	1.30	5.00E-05	0.000370102
LOC100134229	1.30	5.00E-05	0.000370102
DDX39A	1.30	5.00E-05	0.000370102
PTTG1	1.29	5.00E-05	0.000370102
RPL35	1.29	5.00E-05	0.000370102
LINC00324	1.29	5.00E-05	0.000370102
TNFRSF17	1.29	5.00E-05	0.000370102
C19orf60	1.29	5.00E-05	0.000370102
CAMTA1	1.29	5.00E-05	0.000370102
SI00A12	1.29	5.00E-05	0.000370102
GPN3	1.29	5.00E-05	0.000370102
C7orf36	1.29	5.00E-05	0.000370102
NANS	1.29	0.001	0.00472422
C17orf90	1.29	5.00E-05	0.000370102
SNORA54	1.28	5.00E-05	0.000370102
LOC100506057	1.28	0.0001	0.000684367
TXN	1.28	5.00E-05	0.000370102
C6orf48	1.28	5.00E-05	0.000370102
HTRA4	1.28	5.00E-05	0.000370102
GMPPB	1.28	5.00E-05	0.000370102
STRA13	1.28	5.00E-05	0.000370102
MRPS33	1.27	5.00E-05	0.000370102
HNRNPM	1.27	5.00E-05	0.000370102
RPL8	1.27	5.00E-05	0.000370102
RPF2	1.27	5.00E-05	0.000370102
RPL26L1	1.27	5.00E-05	0.000370102
LOC284440	1.27	5.00E-05	0.000370102
HIST1H4I	1.27	0.00335	0.0126566
LOC339902	1.26	5.00E-05	0.000370102
UCN	1.26	0.015	0.042292
HIST1H3J	1.26	5.00E-05	0.000370102
LOC100132707	1.26	5.00E-05	0.000370102
IMMP1L	1.26	0.0013	0.00587193
LOC100507025	1.26	0.0002	0.00123235
HIST1H2AG	1.26	5.00E-05	0.000370102
NBPF14	1.26	5.00E-05	0.000370102
HINT2	1.26	5.00E-05	0.000370102
TUFM	1.26	5.00E-05	0.000370102
TADA2A	1.26	5.00E-05	0.000370102
EXOSC9	1.26	5.00E-05	0.000370102
LOC100507013	1.25	0.0026	0.0103266
CCT4	1.25	5.00E-05	0.000370102
RASSF8	1.25	5.00E-05	0.000370102
IFI27L2	1.25	5.00E-05	0.000370102
LOC100507306	1.25	5.00E-05	0.000370102
LOC100652944	1.24	5.00E-05	0.000370102
MST1	1.24	5.00E-05	0.000370102
MVD	1.24	5.00E-05	0.000370102
IMPDH1	1.24	5.00E-05	0.000370102
STUB1	1.24	5.00E-05	0.000370102
TFIP11	1.24	5.00E-05	0.000370102
IRF2	1.24	5.00E-05	0.000370102
PRMT1	1.24	5.00E-05	0.000370102
NRF1	1.24	5.00E-05	0.000370102
LOC389607	1.23	0.0003	0.00173314
LOC100507377	1.23	0.00025	0.00149761
PIN4	1.23	5.00E-05	0.000370102
VPS29	1.23	5.00E-05	0.000370102
SNORA61	1.23	5.00E-05	0.000370102
NUDCD2	1.23	5.00E-05	0.000370102
SNORD116-15	1.23	0.00475	0.0168214
NDUFB1	1.23	5.00E-05	0.000370102
C1orf216	1.23	5.00E-05	0.000370102
MARCH8	1.22	5.00E-05	0.000370102
RUVBL1	1.22	5.00E-05	0.000370102
SNAPC5	1.22	0.001	0.00472422
BREA2	1.22	5.00E-05	0.000370102

CLEC12B	1.22	5.00E-05	0.000370102
HNRNP1L2	1.22	5.00E-05	0.000370102
C14orf80	1.21	5.00E-05	0.000370102
SUOX	1.21	5.00E-05	0.000370102
NUDT1	1.21	5.00E-05	0.000370102
GALK2	1.21	5.00E-05	0.000370102
BEX2	1.21	5.00E-05	0.000370102
MRPL18	1.21	5.00E-05	0.000370102
MBD3	1.21	5.00E-05	0.000370102
NPIPL2	1.21	5.00E-05	0.000370102
EML6	1.20	5.00E-05	0.000370102
C11orf80	1.20	5.00E-05	0.000370102
PSMG1	1.20	5.00E-05	0.000370102
AKAP8L	1.20	5.00E-05	0.000370102
ERAL1	1.20	5.00E-05	0.000370102
UBC	1.20	5.00E-05	0.000370102
MRPL46	1.20	5.00E-05	0.000370102
AMT	1.19	5.00E-05	0.000370102
FIZ1	1.19	5.00E-05	0.000370102
SNORD116-24	1.19	0.00355	0.0132884
HHLA3	1.19	5.00E-05	0.000370102
SNORA81	1.19	0.00115	0.00529146
ALDH8A1	1.19	5.00E-05	0.000370102
UBL7	1.19	5.00E-05	0.000370102
MRPL42P5	1.19	0.00075	0.00374051
BCAS2	1.19	5.00E-05	0.000370102
GCAT	1.19	5.00E-05	0.000370102
HIST1H2AC	1.19	5.00E-05	0.000370102
TNNI2	1.18	0.00015	0.000969761
NSUN5P2	1.18	0.00055	0.00288713
IMPDH2	1.18	5.00E-05	0.000370102
LOC100506032	1.18	0.00025	0.00149761
RNMTL1	1.18	0.0003	0.00173314
TRIP13	1.18	5.00E-05	0.000370102
OSBP10	1.18	5.00E-05	0.000370102
LOC100129935	1.18	5.00E-05	0.000370102
SEC61B	1.18	5.00E-05	0.000370102
WIPI1	1.18	5.00E-05	0.000370102
NSMCE2	1.18	5.00E-05	0.000370102
SNORD94	1.18	0.00025	0.00149761
POLR3A	1.18	5.00E-05	0.000370102
MZT2A	1.18	5.00E-05	0.000370102
MFSB9	1.18	5.00E-05	0.000370102
NSRP1	1.18	5.00E-05	0.000370102
ZNHIT1	1.18	5.00E-05	0.000370102
TRAF3IP3	1.17	5.00E-05	0.000370102
PSMC3IP	1.17	0.0003	0.00173314
GAPDH	1.17	5.00E-05	0.000370102
PREB	1.17	5.00E-05	0.000370102
GALK1	1.17	5.00E-05	0.000370102
FBXW4	1.17	5.00E-05	0.000370102
LOC340515	1.17	5.00E-05	0.000370102
CHMP6	1.17	5.00E-05	0.000370102
LOC100287896	1.17	0.0001	0.000684367
IL18	1.17	5.00E-05	0.000370102
SERPINH1	1.17	5.00E-05	0.000370102
FAM173A	1.17	5.00E-05	0.000370102
RPL7	1.17	5.00E-05	0.000370102
LINC00467	1.16	0.00175	0.00749457
AGPAT2	1.16	5.00E-05	0.000370102
CSTB	1.16	5.00E-05	0.000370102
FABP5	1.16	5.00E-05	0.000370102
GSTK1	1.16	5.00E-05	0.000370102
ASGR2	1.16	5.00E-05	0.000370102
ETFA	1.16	5.00E-05	0.000370102
BOLA3	1.16	5.00E-05	0.000370102
SNORA78	1.16	0.00029	0.0112429
HIST1H1E	1.16	5.00E-05	0.000370102
LOC100652733	1.16	5.00E-05	0.000370102
METTL19	1.15	5.00E-05	0.000370102
LOC100630918	1.15	5.00E-05	0.000370102
LOC100132774	1.15	0.00375	0.0139274
RBM26-AS1	1.15	5.00E-05	0.000370102
LOC100652945	1.15	0.00045	0.0161224
PRMT7	1.15	5.00E-05	0.000370102
RNF31	1.14	5.00E-05	0.000370102
SI00A8	1.14	5.00E-05	0.000370102
DTYMK	1.14	5.00E-05	0.000370102
PTRH1	1.14	0.0003	0.00173314
WDR27	1.14	5.00E-05	0.000370102
PVRL3	1.14	0.00015	0.000969761
PIN1	1.14	5.00E-05	0.000370102
NEIL3	1.14	5.00E-05	0.000370102
PHF10	1.14	5.00E-05	0.000370102
GGH	1.13	0.00069	0.0226066
MCCC1	1.13	5.00E-05	0.000370102
BMS1P4	1.13	5.00E-05	0.000370102
CCNB1	1.13	0.00015	0.000969761
SPIN2B	1.13	0.00035	0.00197564
LOC100289341	1.13	5.00E-05	0.000370102
BATF	1.13	5.00E-05	0.000370102
SHFM1	1.13	5.00E-05	0.000370102
RPLP0	1.13	5.00E-05	0.000370102

THG1L	1.13	5.00E-05	0.000370102
LOC389634	1.13	5.00E-05	0.000370102
PIGP	1.13	5.00E-05	0.000370102
CCL28	1.13	5.00E-05	0.000370102
KIR2DL3	1.13	0.00085	0.00413749
PIGX	1.12	5.00E-05	0.000370102
LOC100653018	1.12	0.01745	0.0479354
NUBP1	1.12	5.00E-05	0.000370102
PNOC	1.12	5.00E-05	0.000370102
BUB1	1.12	5.00E-05	0.000370102
LOC728755	1.12	5.00E-05	0.000370102
LOC100507286	1.12	0.0085	0.0266944
HVCN1	1.12	5.00E-05	0.000370102
HIST2H3D	1.12	5.00E-05	0.000370102
RNU12	1.12	5.00E-05	0.000370102
NDUFAF1	1.12	5.00E-05	0.000370102
TCPI	1.12	5.00E-05	0.000370102
NPHP3-ACAD11	1.12	0.0069	0.0226066
VCP	1.11	5.00E-05	0.000370102
FAM156A	1.11	5.00E-05	0.000370102
HIST1H2AL	1.11	5.00E-05	0.000370102
GADD45A	1.11	5.00E-05	0.000370102
IMMT	1.11	5.00E-05	0.000370102
TXN2	1.11	5.00E-05	0.000370102
PDRG1	1.11	5.00E-05	0.000370102
C17orf49	1.11	0.00055	0.00288713
TRIM3	1.11	5.00E-05	0.000370102
LOC96610	1.11	5.00E-05	0.000370102
BBS4	1.11	5.00E-05	0.000370102
C15orf57	1.11	5.00E-05	0.000370102
METTL2B	1.11	5.00E-05	0.000370102
C7orf55	1.11	5.00E-05	0.000370102
C6orf164	1.11	0.00055	0.00288713
DNAJB2	1.11	5.00E-05	0.000370102
AGA	1.11	5.00E-05	0.000370102
PNKD	1.10	0.009	0.0279338
HCG26	1.10	5.00E-05	0.000370102
LOC642424	1.10	0.0081	0.0256897
CCT6P1	1.10	0.0011	0.00510741
LOC100652993	1.10	0.003	0.0115753
RUSC2	1.10	5.00E-05	0.000370102
GALT	1.10	5.00E-05	0.000370102
LOC100507540	1.10	0.004	0.0146702
C9orf37	1.10	0.00055	0.00288713
DHRS1	1.10	5.00E-05	0.000370102
MRPS17	1.10	5.00E-05	0.000370102
LOC100506459	1.10	5.00E-05	0.000370102
MED7	1.10	5.00E-05	0.000370102
RAB1B	1.10	5.00E-05	0.000370102
UBXN2A	1.10	5.00E-05	0.000370102
DAPK3	1.10	5.00E-05	0.000370102
HAUS8	1.10	5.00E-05	0.000370102
FDX1L	1.10	0.0002	0.00123235
RRAGA	1.10	5.00E-05	0.000370102
FOLR3	1.10	0.00035	0.00197564
RPS5	1.09	5.00E-05	0.000370102
DDX11	1.09	5.00E-05	0.000370102
BLYRB	1.09	5.00E-05	0.000370102
SWAP70	1.09	5.00E-05	0.000370102
PROCA1	1.09	0.0005	0.00266422
CCDC159	1.09	5.00E-05	0.000370102
PDIA5	1.09	5.00E-05	0.000370102
BST2	1.09	5.00E-05	0.000370102
LOC100132273	1.09	5.00E-05	0.000370102
PHPT1	1.08	5.00E-05	0.000370102
PSMB9	1.08	5.00E-05	0.000370102
DIS3L	1.08	5.00E-05	0.000370102
SEC11A	1.08	5.00E-05	0.000370102
SFXN5	1.08	5.00E-05	0.000370102
RUNDC1	1.08	5.00E-05	0.000370102
EIF2B2	1.08	5.00E-05	0.000370102
FAHD1	1.08	5.00E-05	0.000370102
UXT	1.08	5.00E-05	0.000370102
PATE2	1.08	5.00E-05	0.000370102
FIS1	1.08	5.00E-05	0.000370102
MOSPD2	1.08	5.00E-05	0.000370102
KRTCAP2	1.08	5.00E-05	0.000370102
FARSA	1.08	5.00E-05	0.000370102
TTC23	1.08	5.00E-05	0.000370102
CDK8	1.08	5.00E-05	0.000370102
CCDC88B	1.08	5.00E-05	0.000370102
MARK3	1.08	5.00E-05	0.000370102
AVPR2	1.08	5.00E-05	0.000370102
AP2M1	1.07	5.00E-05	0.000370102
SHANK2-AS3	1.07	5.00E-05	0.000370102
LOC729041	1.07	0.00875	0.0272622
NPM3	1.07	5.00E-05	0.000370102
HIST1H1B	1.07	5.00E-05	0.000370102
LOC100506079	1.07	0.00255	0.0101573
OAF	1.07	5.00E-05	0.000370102
CCDC30	1.07	5.00E-05	0.000370102
FTL	1.07	5.00E-05	0.000370102
FUZ	1.07	0.01655	0.0458374

LOC100652818	1.07	5.00E-05	0.000370102
C1orf123	1.07	5.00E-05	0.000370102
RBMX2	1.07	5.00E-05	0.000370102
STX8	1.07	5.00E-05	0.000370102
TMED9	1.07	5.00E-05	0.000370102
TRIM7	1.07	0.00265	0.0104829
SRP14	1.06	5.00E-05	0.000370102
KCTD21	1.06	5.00E-05	0.000370102
DHRS7B	1.06	5.00E-05	0.000370102
SUCLA2	1.06	5.00E-05	0.000370102
RPS11	1.06	5.00E-05	0.000370102
HSD17B8	1.06	5.00E-05	0.000370102
TMEM9	1.06	5.00E-05	0.000370102
UBB	1.06	5.00E-05	0.000370102
CIRH1A	1.06	5.00E-05	0.000370102
SUCLG1	1.06	5.00E-05	0.000370102
GRWD1	1.06	5.00E-05	0.000370102
LOC100506877	1.06	0.00015	0.000969761
FXD7	1.06	0.0017	0.0073397
RPS7	1.06	5.00E-05	0.000370102
SNORD13	1.06	5.00E-05	0.000370102
VSTM1	1.06	5.00E-05	0.000370102
RPS16	1.06	5.00E-05	0.000370102
C4orf52	1.05	5.00E-05	0.000370102
HIST1H2BE	1.05	5.00E-05	0.000370102
TOMM5	1.05	5.00E-05	0.000370102
HIST1H2AH	1.05	5.00E-05	0.000370102
NOSIP	1.05	5.00E-05	0.000370102
HSD17B1	1.05	0.0005	0.00266422
LOC100506620	1.05	5.00E-05	0.000370102
FOXP3	1.05	0.00755	0.0242409
HOMER2	1.05	0.0001	0.000684367
FLJ14186	1.05	5.00E-05	0.000370102
ZCCHC17	1.05	5.00E-05	0.000370102
LOC100506678	1.05	0.00325	0.012343
DNAJC19	1.05	5.00E-05	0.000370102
ZGPAT	1.05	5.00E-05	0.000370102
NRG1	1.05	5.00E-05	0.000370102
HINFP	1.05	5.00E-05	0.000370102
SNX22	1.05	0.00375	0.0139274
COPS6	1.05	5.00E-05	0.000370102
LILRB2	1.05	5.00E-05	0.000370102
SLC2A5	1.04	0.00055	0.00288713
CPSP4	1.04	0.00395	0.0145332
PARP2	1.04	5.00E-05	0.000370102
WDR54	1.04	5.00E-05	0.000370102
CCNB1IP1	1.04	5.00E-05	0.000370102
STAC3	1.04	5.00E-05	0.000370102
PSMB3	1.04	5.00E-05	0.000370102
PHF7	1.04	5.00E-05	0.000370102
RPP40	1.04	0.00195	0.00817589
LDHB	1.04	5.00E-05	0.000370102
ZNF1-AS1	1.04	0.00285	0.0111021
CLIP2	1.04	5.00E-05	0.000370102
APITD1	1.04	0.01595	0.0445244
EIF2AK3	1.04	5.00E-05	0.000370102
LOC283693	1.04	5.00E-05	0.000370102
ZNF114	1.04	0.0001	0.000684367
FILIP1L	1.04	0.00015	0.000969761
PPM1N	1.04	0.00015	0.000969761
CENPBD1	1.04	0.00015	0.000969761
HLA-DQA2	1.04	5.00E-05	0.000370102
LOC256880	1.04	0.00035	0.00197564
C10orf58	1.04	5.00E-05	0.000370102
LOC100290566	1.04	5.00E-05	0.000370102
PAAF1	1.04	5.00E-05	0.000370102
TOR2A	1.04	0.00045	0.00244023
RPL23A	1.04	5.00E-05	0.000370102
SNORD17	1.04	5.00E-05	0.000370102
C14orf184	1.03	5.00E-05	0.000370102
PSME2	1.03	5.00E-05	0.000370102
MTIF	1.03	0.0077	0.0246708
MPZL2	1.03	0.0003	0.00173314
LOC388789	1.03	5.00E-05	0.000370102
RUSC1	1.03	0.00395	0.0145332
ANKLE1	1.03	5.00E-05	0.000370102
RPL36	1.03	5.00E-05	0.000370102
SMARCAL1	1.03	5.00E-05	0.000370102
C15orf24	1.03	5.00E-05	0.000370102
RMI2	1.03	0.00305	0.0117288
DHRS7	1.03	5.00E-05	0.000370102
CHPT1	1.03	5.00E-05	0.000370102
LOC283922	1.03	5.00E-05	0.000370102
AGAP3	1.03	5.00E-05	0.000370102
TRAPPC5	1.03	5.00E-05	0.000370102
COX4I1	1.03	5.00E-05	0.000370102
STMN3	1.03	5.00E-05	0.000370102
ANXA5	1.03	5.00E-05	0.000370102
RPL3	1.03	5.00E-05	0.000370102
TMLHE	1.03	5.00E-05	0.000370102
LOC150381	1.03	5.00E-05	0.000370102
AGMAT	1.03	0.00015	0.000969761
GSDMD	1.03	5.00E-05	0.000370102



PSMG3	1.03	5.00E-05	0.000370102
COX7C	1.03	5.00E-05	0.000370102
C19orf10	1.02	5.00E-05	0.000370102
SRRM5	1.02	0.00695	0.0227164
ZNF221	1.02	0.00015	0.000969761
CNR2	1.02	5.00E-05	0.000370102
NXXL2	1.02	5.00E-05	0.000370102
MORN3	1.02	5.00E-05	0.000370102
MRPL34	1.02	5.00E-05	0.000370102
CFL1P1	1.02	0.0003	0.00173314
KCNG1	1.02	0.0007	0.00351914
TEX9	1.02	0.002	0.00833736
ACOT8	1.02	5.00E-05	0.000370102
ATAD3C	1.02	5.00E-05	0.000370102
DUSP28	1.02	5.00E-05	0.000370102
ERGIC3	1.02	5.00E-05	0.000370102
JUP	1.02	5.00E-05	0.000370102
ANKRD36B	1.02	5.00E-05	0.000370102
ASB8	1.02	5.00E-05	0.000370102
NDUFA12	1.02	5.00E-05	0.000370102
RNF113A	1.02	5.00E-05	0.000370102
AKR1A1	1.02	5.00E-05	0.000370102
YME1L1	1.02	5.00E-05	0.000370102
ZNF692	1.02	5.00E-05	0.000370102
ZNF319	1.02	5.00E-05	0.000370102
NOP16	1.02	5.00E-05	0.000370102
DYNLRB1	1.02	5.00E-05	0.000370102
C3orf37	1.02	5.00E-05	0.000370102
NMRAL1	1.02	5.00E-05	0.000370102
HIST2H2AC	1.01	5.00E-05	0.000370102
MRPL52	1.01	5.00E-05	0.000370102
DCDC2B	1.01	0.00025	0.00149761
IL32	1.01	5.00E-05	0.000370102
GLI4	1.01	5.00E-05	0.000370102
C9orf95	1.01	5.00E-05	0.000370102
FAIM	1.01	5.00E-05	0.000370102
PSMB7	1.01	0.0009	0.00433496
LOC728622	1.01	0.00045	0.00244023
PLA2G4A	1.01	5.00E-05	0.000370102
FAM190A	1.01	5.00E-05	0.000370102
TM7SF2	1.01	5.00E-05	0.000370102
PLA2G4C	1.01	0.0007	0.00351914
GMCL1	1.01	5.00E-05	0.000370102
PPP2R2D	1.01	5.00E-05	0.000370102
APTX	1.01	5.00E-05	0.000370102
INE2	1.01	0.0022	0.00900772
STOML1	1.01	0.0002	0.00123235
ANKRD36	1.01	5.00E-05	0.000370102
PDZD9	1.01	0.00015	0.000969761
LOC100130458	1.01	0.00055	0.00288713
SSNA1	1.01	5.00E-05	0.000370102
MANBAL	1.01	5.00E-05	0.000370102
A2MP1	1.01	5.00E-05	0.000370102
CEP78	1.00	5.00E-05	0.000370102
LINC00410	1.00	5.00E-05	0.000370102
MRFAP1	1.00	5.00E-05	0.000370102
PCCA	1.00	5.00E-05	0.000370102
NOP56	1.00	5.00E-05	0.000370102
CCDC72	1.00	5.00E-05	0.000370102
VAMP5	1.00	5.00E-05	0.000370102
SNORA40	1.00	0.0003	0.00173314
LSG1	1.00	5.00E-05	0.000370102
LOC100506071	1.00	0.00085	0.00413749
DDX28	1.00	5.00E-05	0.000370102
NOXA1	1.00	5.00E-05	0.000370102
ZNF90	1.00	0.00035	0.00197564
CLEC12A	1.00	5.00E-05	0.000370102
TRIM61	1.00	0.0027	0.010638
ZNF444	1.00	5.00E-05	0.000370102
STX10	1.00	5.00E-05	0.000370102
ASGR1	0.99	5.00E-05	0.000370102
KIF16B	0.99	5.00E-05	0.000370102
WDR83	0.99	0.01725	0.0474521
LOC644634	0.99	0.0093	0.0286521
NDUFB4	0.99	5.00E-05	0.000370102
C7orf25	0.99	5.00E-05	0.000370102
LRCH3	0.99	5.00E-05	0.000370102
LOC100507427	0.99	0.0003	0.00173314
PMF1	0.99	5.00E-05	0.000370102
CAPN3	0.99	5.00E-05	0.000370102
LENG1	0.99	0.00035	0.00197564
PP1G	0.99	5.00E-05	0.000370102
ZNF718	0.99	5.00E-05	0.000370102
MDH1	0.99	5.00E-05	0.000370102
ARHGAP11B	0.99	0.01515	0.0426364
NIPSNAP1	0.99	5.00E-05	0.000370102
WBSR22	0.99	5.00E-05	0.000370102
CTNBL1	0.99	5.00E-05	0.000370102
MFSD7	0.99	0.00015	0.000969761
LYSMD2	0.99	5.00E-05	0.000370102
RNU105A	0.99	0.0019	0.0080003
PSMD4	0.99	5.00E-05	0.000370102
KCTD5	0.99	5.00E-05	0.000370102

ABHD12	0.99	0.00135	0.00606006
PRICKLE3	0.99	5.00E-05	0.000370102
LOC284804	0.99	0.0006	0.0030954
ZNF696	0.99	5.00E-05	0.000370102
PDE6D	0.99	5.00E-05	0.000370102
RARRES3	0.99	5.00E-05	0.000370102
CXCR5	0.98	0.0024	0.00965179
ZMYND19	0.98	5.00E-05	0.000370102
INVS	0.98	5.00E-05	0.000370102
ATG7	0.98	5.00E-05	0.000370102
CEP104	0.98	5.00E-05	0.000370102
LOC162632	0.98	5.00E-05	0.000370102
PML	0.98	5.00E-05	0.000370102
ZNF593	0.98	0.00025	0.00149761
GNL3	0.98	5.00E-05	0.000370102
RPL41	0.98	0.00015	0.000969761
OAZ1	0.98	5.00E-05	0.000370102
ATP1F1	0.98	5.00E-05	0.000370102
ALS2CR12	0.98	5.00E-05	0.000370102
SETMAR	0.98	5.00E-05	0.000370102
POLR1C	0.98	5.00E-05	0.000370102
VDAC3	0.98	5.00E-05	0.000370102
BCAP31	0.98	5.00E-05	0.000370102
LOC254128	0.98	0.0083	0.0261855
NAIP	0.98	5.00E-05	0.000370102
TM2D3	0.98	5.00E-05	0.000370102
TMEM187	0.98	0.00255	0.0101573
SIGLEC10	0.98	5.00E-05	0.000370102
SP110	0.98	5.00E-05	0.000370102
TMEM14A	0.97	0.0009	0.00433496
BTF3	0.97	5.00E-05	0.000370102
URGCP	0.97	5.00E-05	0.000370102
FBXL14	0.97	5.00E-05	0.000370102
MLF1IP	0.97	0.005	0.0175356
ARL16	0.97	5.00E-05	0.000370102
POLD1	0.97	5.00E-05	0.000370102
PGP	0.97	5.00E-05	0.000370102
C12orf42	0.97	0.0008	0.00394564
FADS3	0.97	5.00E-05	0.000370102
MYH11	0.97	0.0009	0.00433496
SNF8	0.97	5.00E-05	0.000370102
USP4	0.97	5.00E-05	0.000370102
UGGT2	0.97	5.00E-05	0.000370102
CCDC104	0.97	5.00E-05	0.000370102
ALDOC	0.97	5.00E-05	0.000370102
LRRC2	0.97	5.00E-05	0.000370102
CDKN2AIP	0.97	5.00E-05	0.000370102
ASF1B	0.97	0.0001	0.000684367
LOC100652765	0.97	0.0001	0.000684367
GPN1	0.97	0.0052	0.0180989
GLT8D1	0.96	0.00205	0.00849189
CDK5RAP3	0.96	5.00E-05	0.000370102
ANKRD19P	0.96	0.0001	0.000684367
TRIP6	0.96	0.0002	0.00123235
DDX24	0.96	5.00E-05	0.000370102
LEO1	0.96	5.00E-05	0.000370102
FCRL2	0.96	5.00E-05	0.000370102
PPP4R1L	0.96	5.00E-05	0.000370102
LOC100506047	0.96	0.01455	0.041234
MRM1	0.96	0.0001	0.000684367
LOC440993	0.96	0.0004	0.00220905
LOC100506295	0.96	0.00025	0.00149761
CARHSP1	0.96	5.00E-05	0.000370102
RABL5	0.96	5.00E-05	0.000370102
GPKOW	0.96	5.00E-05	0.000370102
AKT1	0.96	5.00E-05	0.000370102
IGFBP3	0.96	0.0001	0.000684367
LOC650623	0.96	5.00E-05	0.000370102
FITM2	0.96	0.003	0.0115753
RUVBL2	0.96	5.00E-05	0.000370102
HIST1H4C	0.96	5.00E-05	0.000370102
HIST1H3C	0.96	5.00E-05	0.000370102
EIF2B4	0.96	5.00E-05	0.000370102
ITPR1	0.95	5.00E-05	0.000370102
HIST1H2BK	0.95	5.00E-05	0.000370102
GTPBP8	0.95	5.00E-05	0.000370102
LOC100129480	0.95	0.0007	0.00351914
STK32C	0.95	5.00E-05	0.000370102
LOC642131	0.95	5.00E-05	0.000370102
C15orf58	0.95	0.00235	0.0094978
EIF3G	0.95	5.00E-05	0.000370102
COMM3-BM11	0.95	0.00875	0.0272622
C10orf128	0.95	0.0022	0.00900772
HLA-DQB2	0.95	0.00075	0.00374051
RNU4-1	0.95	5.00E-05	0.000370102
NCRUPAR	0.95	0.00055	0.00288713
CDC16	0.95	5.00E-05	0.000370102
TMEM109	0.95	5.00E-05	0.000370102
CEBPZ	0.95	5.00E-05	0.000370102
RPL23AP7	0.95	0.0005	0.00266422
SUV39H1	0.95	5.00E-05	0.000370102
PAFAH1B3	0.95	0.00015	0.000969761
CHMP1A	0.95	5.00E-05	0.000370102

LOC100132356	0.95	5.00E-05	0.000370102
SSR2	0.95	5.00E-05	0.000370102
LOC100505716	0.95	0.018	0.0490941
LPAR1	0.95	0.00025	0.00149761
C5orf55	0.95	0.0002	0.00123235
NDUFA1	0.95	5.00E-05	0.000370102
EXOSC2	0.95	5.00E-05	0.000370102
NOB1	0.95	5.00E-05	0.000370102
RRAS	0.95	5.00E-05	0.000370102
RPS12	0.95	5.00E-05	0.000370102
ZNRF2P1	0.95	0.0005	0.00266422
DCTPP1	0.95	0.0001	0.000684367
GLS2	0.94	0.0083	0.0261855
YIPF1	0.94	5.00E-05	0.000370102
NAAA	0.94	5.00E-05	0.000370102
MOC52	0.94	5.00E-05	0.000370102
LILRB1	0.94	5.00E-05	0.000370102
OSTF1	0.94	5.00E-05	0.000370102
DUS3L	0.94	5.00E-05	0.000370102
METTL3	0.94	5.00E-05	0.000370102
MRPL32	0.94	5.00E-05	0.000370102
HSPA14	0.94	5.00E-05	0.000370102
GLRX2	0.94	0.0006	0.0030954
HIST1H4H	0.94	5.00E-05	0.000370102
ATP6V1H	0.94	5.00E-05	0.000370102
C9orf21	0.94	5.00E-05	0.000370102
LOC728769	0.94	5.00E-05	0.000370102
SGOL2	0.94	5.00E-05	0.000370102
CNDP2	0.94	5.00E-05	0.000370102
ICAM3	0.94	5.00E-05	0.000370102
C8orf59	0.94	5.00E-05	0.000370102
HIP1R	0.94	5.00E-05	0.000370102
CCDC75	0.94	5.00E-05	0.000370102
GPR35	0.94	5.00E-05	0.000370102
RBM14-RBM4	0.94	0.0064	0.0212819
NSUN3	0.94	0.0001	0.000684367
PLA2G7	0.94	0.0001	0.000684367
CCDC7	0.94	5.00E-05	0.000370102
SNTN	0.94	0.00405	0.0148221
NBEA	0.94	5.00E-05	0.000370102
CRYBB2P1	0.94	5.00E-05	0.000370102
TNIP3	0.94	0.00045	0.00244023
ZNF860	0.94	0.00235	0.0094978
VMP1	0.94	5.00E-05	0.000370102
CENPQ	0.94	0.0007	0.00351914
RAB24	0.93	5.00E-05	0.000370102
ZNF667	0.93	5.00E-05	0.000370102
MITD1	0.93	5.00E-05	0.000370102
MX1	0.93	5.00E-05	0.000370102
ERICH1	0.93	5.00E-05	0.000370102
LTB	0.93	5.00E-05	0.000370102
MADD	0.93	5.00E-05	0.000370102
LOC100505675	0.93	0.0116	0.0342462
NDUFA3	0.93	5.00E-05	0.000370102
KRI1	0.93	5.00E-05	0.000370102
CDA	0.93	0.00015	0.000969761
RHOC	0.93	5.00E-05	0.000370102
ACAA1	0.93	5.00E-05	0.000370102
MTIF2	0.93	5.00E-05	0.000370102
RUNDC2C	0.93	5.00E-05	0.000370102
ANKMY2	0.93	5.00E-05	0.000370102
SPECC1L	0.93	5.00E-05	0.000370102
CCBL1	0.93	5.00E-05	0.000370102
NASP	0.93	5.00E-05	0.000370102
RNF26	0.93	5.00E-05	0.000370102
TPM4	0.93	5.00E-05	0.000370102
CCDC154	0.93	0.00085	0.00413749
C7orf59	0.93	5.00E-05	0.000370102
DNAAF2	0.93	5.00E-05	0.000370102
HIST3H2A	0.93	0.00125	0.0056721
MGC21881	0.93	5.00E-05	0.000370102
CRIP3	0.93	0.01555	0.0435665
SEPHS2	0.93	5.00E-05	0.000370102
HIST1H2BB	0.93	5.00E-05	0.000370102
MTRNR2L4	0.93	5.00E-05	0.000370102
C1orf220	0.92	5.00E-05	0.000370102
TUT1	0.92	5.00E-05	0.000370102
TMEM102	0.92	5.00E-05	0.000370102
KIR3DL2	0.92	0.00135	0.00606006
TMEM111	0.92	5.00E-05	0.000370102
PNRC2	0.92	5.00E-05	0.000370102
C1orf50	0.92	0.0001	0.000684367
HLA-E	0.92	5.00E-05	0.000370102
HLA-F	0.92	5.00E-05	0.000370102
LOC100652939	0.92	5.00E-05	0.000370102
CATSPER2	0.92	0.00095	0.00452522
LOC386758	0.92	0.00205	0.00849189
GCHFR	0.92	5.00E-05	0.000370102
LRR1	0.92	0.0001	0.000684367
EXOC3	0.92	5.00E-05	0.000370102
SEMA4B	0.92	5.00E-05	0.000370102
TRUB2	0.92	5.00E-05	0.000370102
CAMK4	0.92	5.00E-05	0.000370102

MYL10	0.92	0.0026	0.0103266
GTPBP3	0.92	5.00E-05	0.000370102
RALB	0.92	5.00E-05	0.000370102
WRNIP1	0.92	5.00E-05	0.000370102
RNF41	0.92	5.00E-05	0.000370102
FAM207A	0.92	0.00055	0.00288713
MORF4L1	0.92	5.00E-05	0.000370102
CCDC28B	0.92	0.01335	0.0384335
SURF1	0.92	5.00E-05	0.000370102
SLC7A7	0.92	5.00E-05	0.000370102
RRP1	0.91	5.00E-05	0.000370102
ZNF404	0.91	0.0065	0.0215521
DCHS1	0.91	5.00E-05	0.000370102
CARKD	0.91	5.00E-05	0.000370102
TIPIN	0.91	0.0011	0.00510741
TOP2A	0.91	5.00E-05	0.000370102
PITPNC1	0.91	5.00E-05	0.000370102
KIAA0895L	0.91	0.0003	0.00173314
ARRDC1	0.91	5.00E-05	0.000370102
TXNDC5	0.91	0.00615	0.0206598
LOC100499405	0.91	5.00E-05	0.000370102
LOC100133207	0.91	5.00E-05	0.000370102
LSM4	0.91	5.00E-05	0.000370102
LRRC6	0.91	0.0014	0.006256
PARP9	0.91	0.00025	0.00149761
NUDT9	0.91	5.00E-05	0.000370102
ZNF30	0.91	5.00E-05	0.000370102
TRIM11	0.91	5.00E-05	0.000370102
REL	0.91	5.00E-05	0.000370102
MTCP1NB	0.91	0.0006	0.0030954
BEX5	0.91	0.00685	0.0224801
SLC26A1	0.91	0.00805	0.0255723
CLTA	0.91	5.00E-05	0.000370102
GZMM	0.91	5.00E-05	0.000370102
GPR37L1	0.91	5.00E-05	0.000370102
TIMMDC1	0.91	5.00E-05	0.000370102
MRPS5	0.91	5.00E-05	0.000370102
FASTK	0.91	5.00E-05	0.000370102
CHP2	0.90	5.00E-05	0.000370102
DNAJC17	0.90	0.00025	0.00149761
LINC00092	0.90	5.00E-05	0.000370102
LOC285972	0.90	5.00E-05	0.000370102
ZNF415	0.90	0.0004	0.00220905
C1QL3	0.90	0.0001	0.000684367
MRPL41	0.90	5.00E-05	0.000370102
UTP11L	0.90	5.00E-05	0.000370102
RPL4	0.90	5.00E-05	0.000370102
TMEM134	0.90	5.00E-05	0.000370102
SNORA53	0.90	5.00E-05	0.000370102
UQCC	0.90	5.00E-05	0.000370102
LOC100506860	0.90	5.00E-05	0.000370102
MPG	0.90	5.00E-05	0.000370102
RPS15	0.90	5.00E-05	0.000370102
RMND1	0.90	5.00E-05	0.000370102
POLE2	0.90	0.0051	0.0178229
DNAJC22	0.90	5.00E-05	0.000370102
LOC653061	0.90	5.00E-05	0.000370102
PRPF19	0.90	5.00E-05	0.000370102
C10orf137	0.90	5.00E-05	0.000370102
RPP38	0.90	5.00E-05	0.000370102
DCTD	0.90	5.00E-05	0.000370102
SRP19	0.90	0.00275	0.0107826
DSTN	0.90	5.00E-05	0.000370102
GTF2F2	0.90	5.00E-05	0.000370102
AIM2	0.90	5.00E-05	0.000370102
ARL6	0.90	0.002	0.00833736
SLC27A3	0.90	5.00E-05	0.000370102
PIGG	0.90	0.00045	0.00244023
ATAT1	0.90	0.00015	0.000969761
CD19	0.90	5.00E-05	0.000370102
ZNF354A	0.90	5.00E-05	0.000370102
USP18	0.90	0.00215	0.00882659
ZNF330	0.90	5.00E-05	0.000370102
HIST1H3I	0.90	5.00E-05	0.000370102
NUTF2	0.90	0.0007	0.00351914
CMBL	0.89	5.00E-05	0.000370102
ESRRA	0.89	0.0002	0.00123235
LOC100652740	0.89	0.0182	0.0495221
APOL1	0.89	5.00E-05	0.000370102
CRIM1	0.89	5.00E-05	0.000370102
VAV2	0.89	5.00E-05	0.000370102
NUP133	0.89	5.00E-05	0.000370102
ACTG1	0.89	5.00E-05	0.000370102
RPS3	0.89	5.00E-05	0.000370102
LOC100507331	0.89	0.00275	0.0107826
KIFC3	0.89	0.0002	0.00123235
GYPC	0.89	5.00E-05	0.000370102
CBLN3	0.89	0.00225	0.00917702
ZDHHHC24	0.89	5.00E-05	0.000370102
POLR3K	0.89	0.00025	0.00149761
NDUFS5	0.89	5.00E-05	0.000370102
SNORA8	0.89	5.00E-05	0.000370102
THAP11	0.89	0.00045	0.00244023

DDAH2	0.89	5.00E-05	0.000370102
LSM1	0.89	5.00E-05	0.000370102
DDX54	0.89	5.00E-05	0.000370102
ATP5S	0.89	5.00E-05	0.000370102
FAM176B	0.89	0.0019	0.0080003
STX12	0.89	5.00E-05	0.000370102
ATF6	0.89	5.00E-05	0.000370102
ACTR5	0.89	5.00E-05	0.000370102
C15orf40	0.89	0.00015	0.000969761
FNBP4	0.89	5.00E-05	0.000370102
SLC27A1	0.89	5.00E-05	0.000370102
RAB42	0.89	5.00E-05	0.000370102
CCT6P3	0.89	5.00E-05	0.000370102
BLNK	0.89	5.00E-05	0.000370102
TRIM56	0.89	5.00E-05	0.000370102
CDR2	0.89	5.00E-05	0.000370102
LOC100126582	0.89	0.00525	0.0182453
CLEC16A	0.89	5.00E-05	0.000370102
SLC37A4	0.89	5.00E-05	0.000370102
CACYBP	0.88	5.00E-05	0.000370102
LOC400548	0.88	5.00E-05	0.000370102
CTSZ	0.88	5.00E-05	0.000370102
INTS12	0.88	5.00E-05	0.000370102
PP12719	0.88	0.00245	0.00981281
STRADA	0.88	5.00E-05	0.000370102
MAGI2-AS3	0.88	0.0067	0.0220666
UBXN1	0.88	5.00E-05	0.000370102
LOC389765	0.88	5.00E-05	0.000370102
TRIP4	0.88	5.00E-05	0.000370102
NOL12	0.88	5.00E-05	0.000370102
AIFM2	0.88	0.00045	0.00244023
PTPN6	0.88	5.00E-05	0.000370102
ATP6V1F	0.88	5.00E-05	0.000370102
CD300LB	0.88	5.00E-05	0.000370102
SUGT1	0.88	5.00E-05	0.000370102
COMMMD4	0.88	5.00E-05	0.000370102
LOC100131089	0.88	0.0036	0.0134537
OMA1	0.88	5.00E-05	0.000370102
BANP	0.88	5.00E-05	0.000370102
GFOD1	0.88	5.00E-05	0.000370102
LOC100131679	0.88	0.0012	0.00547584
WDR88	0.88	0.00605	0.0203685
CCR8	0.88	0.00545	0.0187748
ST6GALNAC4	0.88	5.00E-05	0.000370102
IRAK1	0.88	5.00E-05	0.000370102
TNFRSF13B	0.88	0.0028	0.0109351
LOC285103	0.88	0.00315	0.0120362
NCF1B	0.88	5.00E-05	0.000370102
LOC100506268	0.88	0.0148	0.0418221
SRP54	0.88	5.00E-05	0.000370102
DGCR6L	0.88	5.00E-05	0.000370102
LOC285740	0.88	5.00E-05	0.000370102
FLJ41757	0.88	0.0003	0.00173314
TRMT6	0.88	5.00E-05	0.000370102
ATP5O	0.88	5.00E-05	0.000370102
ACRC	0.88	5.00E-05	0.000370102
ARFIP2	0.88	0.00055	0.00288713
MAP2K6	0.88	5.00E-05	0.000370102
SNW1	0.88	5.00E-05	0.000370102
FAM195A	0.87	0.00015	0.000969761
PMM2	0.87	5.00E-05	0.000370102
TAGLN	0.87	5.00E-05	0.000370102
PCDH11Y	0.87	0.0001	0.000684367
PAX5	0.87	5.00E-05	0.000370102
CDK5	0.87	0.0002	0.00123235
STAB1	0.87	5.00E-05	0.000370102
CUTA	0.87	5.00E-05	0.000370102
UPP1	0.87	5.00E-05	0.000370102
ZSCAN29	0.87	5.00E-05	0.000370102
TRAPP9	0.87	5.00E-05	0.000370102
HIST1H3F	0.87	0.00015	0.000969761
WASH5P	0.87	5.00E-05	0.000370102
COX6B1	0.87	5.00E-05	0.000370102
PPP1R3F	0.87	5.00E-05	0.000370102
MTMR1	0.87	5.00E-05	0.000370102
DNAJC9	0.87	5.00E-05	0.000370102
LOC100506870	0.87	0.0021	0.00865223
C12orf62	0.87	5.00E-05	0.000370102
SLC25A5	0.87	5.00E-05	0.000370102
HSD17B7P2	0.87	0.0012	0.00547584
ASL	0.87	5.00E-05	0.000370102
PEX6	0.87	5.00E-05	0.000370102
RPL10A	0.87	5.00E-05	0.000370102
HIST3H2BB	0.87	0.0003	0.00173314
TTF1	0.87	5.00E-05	0.000370102
GIMAP5	0.87	0.00015	0.000969761
SMC6	0.86	5.00E-05	0.000370102
MTMR11	0.86	5.00E-05	0.000370102
BLK	0.86	5.00E-05	0.000370102
SNAPC1	0.86	5.00E-05	0.000370102
GSTP1	0.86	5.00E-05	0.000370102
NEK8	0.86	5.00E-05	0.000370102
CHCHD5	0.86	0.0007	0.00351914

NETO2	0.86	0.00045	0.00244023
FAM65C	0.86	5.00E-05	0.000370102
WNT7B	0.86	5.00E-05	0.000370102
TTC1	0.86	5.00E-05	0.000370102
C6orf115	0.86	5.00E-05	0.000370102
GPR172A	0.86	5.00E-05	0.000370102
MSMP	0.86	0.0101	0.030557
LYAR	0.86	5.00E-05	0.000370102
LRIG2	0.86	5.00E-05	0.000370102
C17orf88	0.86	0.0094	0.028915
EGLN3	0.86	0.00125	0.0056721
SELS	0.86	5.00E-05	0.000370102
C19orf43	0.86	5.00E-05	0.000370102
FEM1B	0.86	5.00E-05	0.000370102
ALAS1	0.86	5.00E-05	0.000370102
CENPE	0.86	5.00E-05	0.000370102
STX5	0.86	5.00E-05	0.000370102
USP33	0.86	5.00E-05	0.000370102
BYSL	0.86	5.00E-05	0.000370102
BCAS1	0.86	5.00E-05	0.000370102
SLFN14	0.86	0.0005	0.00266422
C5orf32	0.86	0.00115	0.00529146
ZNRD1	0.86	5.00E-05	0.000370102
WDR61	0.86	5.00E-05	0.000370102
HMBS	0.86	0.00175	0.00749457
SDHAP2	0.86	5.00E-05	0.000370102
CIB1	0.86	5.00E-05	0.000370102
NUBP2	0.86	5.00E-05	0.000370102
CCDC149	0.86	5.00E-05	0.000370102
STK19	0.86	0.00115	0.00529146
EIF4A2	0.86	0.0001	0.000684367
SCD5	0.86	5.00E-05	0.000370102
USMG5	0.86	5.00E-05	0.000370102
TNIP2	0.85	5.00E-05	0.000370102
ZNF789	0.85	5.00E-05	0.000370102
METTL13	0.85	5.00E-05	0.000370102
MYL6	0.85	5.00E-05	0.000370102
LILRA6	0.85	5.00E-05	0.000370102
PLD1	0.85	5.00E-05	0.000370102
SAMM50	0.85	5.00E-05	0.000370102
ST6GALNAC3	0.85	0.0088	0.027387
MED6	0.85	5.00E-05	0.000370102
FLYWCH2	0.85	5.00E-05	0.000370102
LNX1	0.85	0.00025	0.00149761
GMPR	0.85	0.00065	0.00331245
ZNF207	0.85	5.00E-05	0.000370102
ICT1	0.85	5.00E-05	0.000370102
EFHA2	0.85	0.0004	0.00220905
PPA2	0.85	5.00E-05	0.000370102
CA6	0.85	0.00165	0.00715969
RPL13P5	0.85	0.01725	0.0474521
BTBD1	0.85	5.00E-05	0.000370102
NDUFA13	0.85	5.00E-05	0.000370102
GOLIM4	0.85	5.00E-05	0.000370102
PTRHD1	0.85	0.011	0.0327624
APIP	0.85	0.00265	0.0104829
POLR2G	0.85	5.00E-05	0.000370102
ZDHHHC8P1	0.85	0.0001	0.000684367
NELL2	0.85	5.00E-05	0.000370102
SF3B4	0.85	5.00E-05	0.000370102
ZNF852	0.85	0.00015	0.000969761
TMEM156	0.85	5.00E-05	0.000370102
PISD	0.85	0.00285	0.0111021
CDKN2D	0.85	5.00E-05	0.000370102
CEP170	0.85	5.00E-05	0.000370102
HIBADH	0.85	5.00E-05	0.000370102
LOC100507535	0.85	5.00E-05	0.000370102
ZNF711	0.85	0.0002	0.00123235
HIRA	0.85	5.00E-05	0.000370102
SELPLG	0.85	5.00E-05	0.000370102
SIPA1	0.85	5.00E-05	0.000370102
PLEKHG7	0.85	0.00195	0.00817589
DENND2D	0.85	5.00E-05	0.000370102
TREML1	0.85	5.00E-05	0.000370102
DMAPI	0.85	5.00E-05	0.000370102
C1orf86	0.85	0.00535	0.0185182
LOC100289495	0.85	0.0008	0.00394564
CXorf40B	0.85	5.00E-05	0.000370102
TAF11	0.85	5.00E-05	0.000370102
KCNMB1	0.85	0.004	0.0146702
EIF4G2	0.85	5.00E-05	0.000370102
RBM10	0.84	5.00E-05	0.000370102
RGL1	0.84	0.00015	0.000969761
SNORD22	0.84	0.0011	0.00510741
ZNF496	0.84	5.00E-05	0.000370102
DCTN1	0.84	5.00E-05	0.000370102
PKP4	0.84	5.00E-05	0.000370102
LOC100132272	0.84	0.0029	0.0112429
HSDL2	0.84	5.00E-05	0.000370102
SLC2A8	0.84	0.00355	0.0132884
ERI2	0.84	0.0099	0.0300575
BICD1	0.84	0.0001	0.000684367
BUB3	0.84	5.00E-05	0.000370102

<i>KTNI</i>	0.84	5.00E-05	0.000370102
<i>GALNS</i>	0.84	5.00E-05	0.000370102
<i>SYNM</i>	0.84	0.0001	0.000684367
<i>ATP5L</i>	0.84	5.00E-05	0.000370102
<i>PDCD5</i>	0.84	5.00E-05	0.000370102
<i>ACTR3B</i>	0.84	0.0003	0.00173314
<i>CLPP</i>	0.84	5.00E-05	0.000370102
<i>LOC339803</i>	0.84	5.00E-05	0.000370102
<i>LOC100506990</i>	0.84	5.00E-05	0.000370102
<i>HDDC2</i>	0.84	5.00E-05	0.000370102
<i>SLC7A5P1</i>	0.84	0.0091	0.0281871
<i>AKR1E2</i>	0.84	0.002	0.00833736
<i>MTCH1</i>	0.84	5.00E-05	0.000370102
<i>POLR2F</i>	0.84	0.00015	0.000969761
<i>C20orf43</i>	0.84	5.00E-05	0.000370102
<i>RSRC1</i>	0.84	5.00E-05	0.000370102
<i>HDAC5</i>	0.84	5.00E-05	0.000370102
<i>SLC15A2</i>	0.84	5.00E-05	0.000370102
<i>CKAP4</i>	0.84	5.00E-05	0.000370102
<i>KIAA1609</i>	0.84	5.00E-05	0.000370102
<i>NEK5</i>	0.84	0.00015	0.000969761
<i>CD3D</i>	0.84	5.00E-05	0.000370102
<i>LOC100272216</i>	0.84	5.00E-05	0.000370102
<i>CCL5</i>	0.84	5.00E-05	0.000370102
<i>PDCD2L</i>	0.83	0.00345	0.0129704
<i>GSTO1</i>	0.83	5.00E-05	0.000370102
<i>MYPOP</i>	0.83	0.001	0.00472422
<i>FLJ42627</i>	0.83	5.00E-05	0.000370102
<i>AFG3L1P</i>	0.83	5.00E-05	0.000370102
<i>SRSF8</i>	0.83	5.00E-05	0.000370102
<i>DNASE1L3</i>	0.83	0.00525	0.0182453
<i>MAPK3</i>	0.83	0.0022	0.00900772
<i>IFT88</i>	0.83	5.00E-05	0.000370102
<i>CDC42BPB</i>	0.83	5.00E-05	0.000370102
<i>C12orf24</i>	0.83	0.00065	0.00331245
<i>LINC00402</i>	0.83	5.00E-05	0.000370102
<i>LSMD1</i>	0.83	0.00075	0.00374051
<i>ZNF302</i>	0.83	5.00E-05	0.000370102
<i>EPC1</i>	0.83	5.00E-05	0.000370102
<i>LINC00471</i>	0.83	0.01	0.0303077
<i>TRIT1</i>	0.83	5.00E-05	0.000370102
<i>POLDIP2</i>	0.83	5.00E-05	0.000370102
<i>SNX20</i>	0.83	5.00E-05	0.000370102
<i>ACP1</i>	0.83	5.00E-05	0.000370102
<i>LOC644656</i>	0.83	0.00095	0.00452522
<i>ATP5B</i>	0.83	5.00E-05	0.000370102
<i>EIF3A</i>	0.83	5.00E-05	0.000370102
<i>GZMA</i>	0.83	5.00E-05	0.000370102
<i>ZNF830</i>	0.83	5.00E-05	0.000370102
<i>NXF1</i>	0.83	5.00E-05	0.000370102
<i>LOC100128398</i>	0.83	0.0003	0.00173314
<i>HINT1</i>	0.83	5.00E-05	0.000370102
<i>RSAD1</i>	0.83	5.00E-05	0.000370102
<i>PTK6</i>	0.83	0.00015	0.000969761
<i>CLSTN3</i>	0.83	5.00E-05	0.000370102
<i>ZNF101</i>	0.83	5.00E-05	0.000370102
<i>NDC80</i>	0.83	0.00115	0.00529146
<i>HEATR3</i>	0.83	0.00275	0.0107826
<i>NGFRAP1</i>	0.83	5.00E-05	0.000370102
<i>TTC12</i>	0.83	5.00E-05	0.000370102
<i>RAB32</i>	0.83	5.00E-05	0.000370102
<i>TP53TG1</i>	0.82	0.0037	0.013764
<i>DNAJC4</i>	0.82	5.00E-05	0.000370102
<i>ZNF213</i>	0.82	5.00E-05	0.000370102
<i>KLRC2</i>	0.82	0.0003	0.00173314
<i>EXOC6B</i>	0.82	5.00E-05	0.000370102
<i>PXMP2</i>	0.82	0.01135	0.0336667
<i>ZNF638</i>	0.82	5.00E-05	0.000370102
<i>IARS2</i>	0.82	5.00E-05	0.000370102
<i>PRPF18</i>	0.82	5.00E-05	0.000370102
<i>PLEKHG6</i>	0.82	0.0009	0.00433496
<i>PRKCZ</i>	0.82	0.0067	0.0220666
<i>TP53BP1</i>	0.82	5.00E-05	0.000370102
<i>NBPF24</i>	0.82	0.0014	0.006256
<i>FHAD1</i>	0.82	0.0004	0.00220905
<i>ATRN</i>	0.82	5.00E-05	0.000370102
<i>GOLGA1</i>	0.82	5.00E-05	0.000370102
<i>D2HGDH</i>	0.82	5.00E-05	0.000370102
<i>BRC3</i>	0.82	5.00E-05	0.000370102
<i>APOL2</i>	0.82	5.00E-05	0.000370102
<i>ZNF226</i>	0.82	0.00015	0.000969761
<i>FAM86DP</i>	0.82	0.0016	0.00697345
<i>TRAPPC4</i>	0.82	5.00E-05	0.000370102
<i>RRAGC</i>	0.82	5.00E-05	0.000370102
<i>CNGB1</i>	0.82	0.00625	0.0209193
<i>LAP3</i>	0.82	5.00E-05	0.000370102
<i>MS4A6A</i>	0.82	5.00E-05	0.000370102
<i>TNFRSF13C</i>	0.82	5.00E-05	0.000370102
<i>ZFP42</i>	0.82	0.0014	0.00625599
<i>CEACAM22P</i>	0.82	5.00E-05	0.000370102
<i>OPN3</i>	0.82	0.0056	0.0191623
<i>HMBOX1</i>	0.82	5.00E-05	0.000370102
<i>KLHL17</i>	0.82	5.00E-05	0.000370102

HMGB2	0.82	5.00E-05	0.000370102
SIRT7	0.82	5.00E-05	0.000370102
KIAA1191	0.82	5.00E-05	0.000370102
C9orf156	0.82	5.00E-05	0.000370102
DTD1	0.82	5.00E-05	0.000370102
TLR10	0.82	5.00E-05	0.000370102
RPL15	0.81	5.00E-05	0.000370102
KCTD15	0.81	5.00E-05	0.000370102
TCHP	0.81	5.00E-05	0.000370102
RSF1	0.81	5.00E-05	0.000370102
LOC100507616	0.81	5.00E-05	0.000370102
MRPL53	0.81	5.00E-05	0.000370102
COX7B	0.81	5.00E-05	0.000370102
LOC100506066	0.81	0.01395	0.0398035
ANXA9	0.81	0.00185	0.00783523
UQCRH	0.81	5.00E-05	0.000370102
TOM1	0.81	5.00E-05	0.000370102
MRPS11	0.81	0.0001	0.000684367
CASC5	0.81	5.00E-05	0.000370102
FRMD3	0.81	0.0003	0.00173314
TSSC4	0.81	5.00E-05	0.000370102
MCM5	0.81	5.00E-05	0.000370102
ENO2	0.81	5.00E-05	0.000370102
SNORA76	0.81	0.0007	0.00351914
CD33	0.81	5.00E-05	0.000370102
FAM86C1	0.81	0.00415	0.0151158
PRMT2	0.81	5.00E-05	0.000370102
LOC100652901	0.81	5.00E-05	0.000370102
DNPEP	0.81	5.00E-05	0.000370102
GADD45GIP1	0.81	5.00E-05	0.000370102
PIGY	0.81	5.00E-05	0.000370102
ADK	0.81	5.00E-05	0.000370102
AICDA	0.81	0.00045	0.00244023
UNC50	0.81	5.00E-05	0.000370102
YARS2	0.81	5.00E-05	0.000370102
ARHGAP12	0.81	5.00E-05	0.000370102
UTP14C	0.81	5.00E-05	0.000370102
NIPAL3	0.81	5.00E-05	0.000370102
RGS20	0.81	0.00925	0.0285555
CHMP4A	0.81	5.00E-05	0.000370102
MGC12916	0.81	0.0011	0.00510741
TNFSF14	0.81	5.00E-05	0.000370102
LOC100132526	0.81	0.0005	0.00266422
NARF	0.81	5.00E-05	0.000370102
PRPF38A	0.81	5.00E-05	0.000370102
IL15RA	0.81	0.00065	0.00331245
PEX1	0.81	5.00E-05	0.000370102
HS6ST1	0.81	5.00E-05	0.000370102
VPS45	0.81	5.00E-05	0.000370102
NPM1	0.81	5.00E-05	0.000370102
C11orf31	0.81	0.00615	0.0206598
PINX1	0.81	0.00045	0.00244023
LYPLA2	0.81	5.00E-05	0.000370102
L3MBTL3	0.81	5.00E-05	0.000370102
TTC7A	0.81	5.00E-05	0.000370102
IFI35	0.80	5.00E-05	0.000370102
CIR1	0.80	5.00E-05	0.000370102
CD58	0.80	5.00E-05	0.000370102
IFT43	0.80	0.0078	0.0249564
LOC100507094	0.80	5.00E-05	0.000370102
MZT2B	0.80	0.0002	0.00123235
HCF1R1	0.80	0.01535	0.0431025
DLST	0.80	5.00E-05	0.000370102
GIMAP6	0.80	5.00E-05	0.000370102
C15orf44	0.80	5.00E-05	0.000370102
SLC37A2	0.80	5.00E-05	0.000370102
SFSWAP	0.80	5.00E-05	0.000370102
CORO1C	0.80	5.00E-05	0.000370102
CHMP5	0.80	5.00E-05	0.000370102
FLOT2	0.80	5.00E-05	0.000370102
UCHL3	0.80	5.00E-05	0.000370102
DAAM1	0.80	5.00E-05	0.000370102
MATL2963	0.80	0.00065	0.00331245
CHAF1A	0.80	5.00E-05	0.000370102
ANKRD64	0.80	0.0002	0.00123235
ZNF699	0.80	5.00E-05	0.000370102
FDXR	0.80	0.00355	0.0132884
SSBP4	0.80	5.00E-05	0.000370102
SPATA13	0.80	5.00E-05	0.000370102
LIME1	0.80	5.00E-05	0.000370102
CD3E	0.80	5.00E-05	0.000370102
UBASH3A	0.80	5.00E-05	0.000370102
CALB1	0.80	0.0038	0.0140866
TIMM8B	0.80	0.0128	0.0371682
SARNP	0.80	5.00E-05	0.000370102
NLRP2	0.80	0.0004	0.00220905
C7orf28B	0.80	0.0012	0.00547584
SCARB1	0.80	0.0051	0.0178229
RPL29	0.80	5.00E-05	0.000370102
RBM34	0.80	5.00E-05	0.000370102
WDR55	0.80	5.00E-05	0.000370102
LSM3	0.80	5.00E-05	0.000370102
LILRA1	0.80	5.00E-05	0.000370102



GPR44	0.80	0.00925	0.0285555
POLR2C	0.79	5.00E-05	0.000370102
LOC100509100	0.79	0.0015	0.00662132
RNF14	0.79	5.00E-05	0.000370102
LILRB4	0.79	5.00E-05	0.000370102
C10orf11	0.79	0.00335	0.0126566
MARCH3	0.79	0.0003	0.00173314
PYGM	0.79	0.00025	0.00149761
ZNF438	0.79	5.00E-05	0.000370102
IFT81	0.79	0.0042	0.0152456
LRRCC1	0.79	0.0001	0.000684367
DDX42	0.79	5.00E-05	0.000370102
NICN1	0.79	5.00E-05	0.000370102
CRIP2	0.79	0.0002	0.00123235
CCNF	0.79	0.0007	0.00351914
LAPTM5	0.79	5.00E-05	0.000370102
LDHAL6A	0.79	0.0037	0.013764
PSME1	0.79	5.00E-05	0.000370102
CD79B	0.79	5.00E-05	0.000370102
GBP1	0.79	5.00E-05	0.000370102
RHPN1	0.79	0.0001	0.000684367
PSMC5	0.79	0.0003	0.00173314
C12orf44	0.79	0.0001	0.000684367
DNAJC8	0.79	5.00E-05	0.000370102
USP39	0.79	5.00E-05	0.000370102
SLC43A1	0.79	0.0001	0.000684367
PAOX	0.79	0.00065	0.00331245
RPUSD4	0.79	5.00E-05	0.000370102
FERMT3	0.79	5.00E-05	0.000370102
SLTM	0.79	5.00E-05	0.000370102
C13orf27	0.79	0.01365	0.0391013
HLA-DRB1	0.79	5.00E-05	0.000370102
TUBGCP2	0.79	0.00305	0.0117288
HIST1H2BM	0.79	0.00045	0.00244023
AS3MT	0.79	0.01805	0.0492013
C6orf203	0.79	0.00065	0.00331245
PICK1	0.79	5.00E-05	0.000370102
REXO2	0.78	5.00E-05	0.000370102
NEK6	0.78	5.00E-05	0.000370102
POLR3C	0.78	5.00E-05	0.000370102
MYO1E	0.78	5.00E-05	0.000370102
SLC41A3	0.78	5.00E-05	0.000370102
C14orf64	0.78	0.00045	0.00244023
MNDA	0.78	5.00E-05	0.000370102
LOC100652927	0.78	5.00E-05	0.000370102
COPG	0.78	5.00E-05	0.000370102
C22orf28	0.78	5.00E-05	0.000370102
VRK2	0.78	5.00E-05	0.000370102
TNFAIP8L3	0.78	0.00105	0.0049133
CPEB3	0.78	5.00E-05	0.000370102
FCCGR2B	0.78	5.00E-05	0.000370102
GNAI5	0.78	5.00E-05	0.000370102
RGS3	0.78	5.00E-05	0.000370102
LOC100506259	0.78	0.001	0.00472422
LOC100129831	0.78	0.0052	0.0180989
NME7	0.78	0.0024	0.00965179
ROMO1	0.78	0.0063	0.0210458
ODC1	0.78	5.00E-05	0.000370102
GFOD2	0.78	0.0001	0.000684367
C20orf94	0.78	0.00045	0.00244023
POLR3GL	0.78	5.00E-05	0.000370102
BOD1	0.78	5.00E-05	0.000370102
CDKL1	0.78	0.00225	0.00917702
RWDD3	0.78	0.00325	0.012343
COPA	0.78	5.00E-05	0.000370102
PUS1	0.78	5.00E-05	0.000370102
GAMT	0.78	0.0073	0.0235975
FCRL3	0.78	5.00E-05	0.000370102
RPL39	0.78	5.00E-05	0.000370102
RAB40C	0.78	5.00E-05	0.000370102
TMCO6	0.78	0.00095	0.00452522
SLC31A2	0.78	5.00E-05	0.000370102
E2F3	0.78	5.00E-05	0.000370102
RAB39B	0.78	0.0001	0.000684367
ZNF77	0.78	0.00175	0.00749457
C1orf131	0.78	0.015	0.042292
KHDRBS2	0.78	0.0029	0.0112429
SEC14L4	0.78	0.00015	0.000969761
ADAP2	0.78	5.00E-05	0.000370102
LRP2BP	0.77	0.0053	0.0183682
CXorf65	0.77	0.00045	0.00244023
CEP89	0.77	0.0002	0.00123235
HSPA1A	0.77	5.00E-05	0.000370102
CCDC23	0.77	0.00755	0.0242409
LOC100507584	0.77	0.0011	0.00510741
RDH11	0.77	5.00E-05	0.000370102
ZNF619	0.77	5.00E-05	0.000370102
XAF1	0.77	5.00E-05	0.000370102
ARHGAP18	0.77	5.00E-05	0.000370102
BTBD	0.77	0.0006	0.0030954
TMIGD2	0.77	0.0001	0.000684367
LOC100132057	0.77	0.00215	0.00882659
CASP1	0.77	5.00E-05	0.000370102

PEX7	0.77	0.00535	0.0185182
TIRAP	0.77	5.00E-05	0.000370102
RSL1D1	0.77	5.00E-05	0.000370102
HDHD2	0.77	5.00E-05	0.000370102
KLC1	0.77	5.00E-05	0.000370102
RPS14	0.77	5.00E-05	0.000370102
HIST1H2BC	0.77	5.00E-05	0.000370102
NCK1	0.77	5.00E-05	0.000370102
MAGOH	0.77	0.0031	0.0118979
CD160	0.77	5.00E-05	0.000370102
GGNBP2	0.77	5.00E-05	0.000370102
ING2	0.77	0.001	0.00472422
CACNG8	0.77	5.00E-05	0.000370102
RG9MTD2	0.77	0.0009	0.00433496
RASSF6	0.77	0.0027	0.010638
SIGLEC7	0.77	0.0004	0.00220905
ELAC2	0.77	5.00E-05	0.000370102
BTBD8	0.77	0.01615	0.0450189
PVT1	0.77	5.00E-05	0.000370102
OSBPL1A	0.77	0.00025	0.00149761
KCNN2	0.77	0.0049	0.0172772
UBE2E1	0.77	5.00E-05	0.000370102
SNRPC	0.77	5.00E-05	0.000370102
THYN1	0.77	5.00E-05	0.000370102
GOLGA7B	0.77	0.0002	0.00123235
PYCARD	0.77	5.00E-05	0.000370102
LILRB3	0.77	5.00E-05	0.000370102
CCDC132	0.77	5.00E-05	0.000370102
C12orf41	0.77	5.00E-05	0.000370102
ABCF1	0.77	5.00E-05	0.000370102
FBXO18	0.77	5.00E-05	0.000370102
THAP8	0.77	0.01335	0.0384335
KBTBD11	0.77	5.00E-05	0.000370102
NDUFS1	0.77	5.00E-05	0.000370102
ADAT1	0.77	5.00E-05	0.000370102
OASI	0.77	5.00E-05	0.000370102
SNHG13	0.77	5.00E-05	0.000370102
MRPS21	0.76	5.00E-05	0.000370102
COX5B	0.76	5.00E-05	0.000370102
MVP	0.76	5.00E-05	0.000370102
MTERF	0.76	5.00E-05	0.000370102
DEAF1	0.76	0.0005	0.00266422
PEF1	0.76	5.00E-05	0.000370102
KIAA1107	0.76	5.00E-05	0.000370102
DMPK	0.76	5.00E-05	0.000370102
LOC100288432	0.76	0.00185	0.00783523
BLYRA	0.76	0.0001	0.000684367
TRIP10	0.76	0.0033	0.0125088
PFDN5	0.76	5.00E-05	0.000370102
AP4S1	0.76	0.0166	0.0459574
AVEN	0.76	0.00305	0.0117288
PDGFB	0.76	0.00555	0.0190242
DSG3	0.76	5.00E-05	0.000370102
SLBP	0.76	5.00E-05	0.000370102
DCAF8	0.76	5.00E-05	0.000370102
LOC100506036	0.76	0.0003	0.00173314
RABGAP1	0.76	5.00E-05	0.000370102
SHMT2	0.76	5.00E-05	0.000370102
HSP90B1	0.76	5.00E-05	0.000370102
ZNF276	0.76	5.00E-05	0.000370102
TBC1D10A	0.76	5.00E-05	0.000370102
ALG1L	0.76	0.00755	0.0242409
SYNGAP1	0.76	5.00E-05	0.000370102
SPCS1	0.76	0.00395	0.0145332
RPL21P44	0.76	0.0002	0.00123235
PCSK7	0.76	5.00E-05	0.000370102
PROM2	0.76	0.0002	0.00123235
ANKRD54	0.76	0.00045	0.00244023
KCNMB3	0.76	0.0004	0.00220905
LGALS8	0.76	0.00105	0.0049133
LOC154092	0.76	0.0041	0.0149693
JMJD8	0.76	5.00E-05	0.000370102
TMEM128	0.76	5.00E-05	0.000370102
KATNA1	0.76	5.00E-05	0.000370102
EDC4	0.76	5.00E-05	0.000370102
ANKRD62P1-PARP4P3	0.76	0.00265	0.0104829
LARP7	0.76	5.00E-05	0.000370102
ZC3H15	0.76	5.00E-05	0.000370102
OCLAD1	0.76	5.00E-05	0.000370102
COX7A2	0.76	5.00E-05	0.000370102
CCR4	0.76	5.00E-05	0.000370102
ATF4	0.75	5.00E-05	0.000370102
BHMT2	0.75	5.00E-05	0.000370102
AMPD3	0.75	5.00E-05	0.000370102
FEZ2	0.75	5.00E-05	0.000370102
RXFP4	0.75	0.0001	0.000684367
NDUFBS	0.75	5.00E-05	0.000370102
MANF	0.75	5.00E-05	0.000370102
C11orf30	0.75	5.00E-05	0.000370102
MZB1	0.75	0.00085	0.00413749
PON2	0.75	0.00085	0.00413749
RAPGEF6	0.75	5.00E-05	0.000370102
PLEKHG1	0.75	5.00E-05	0.000370102

LOC100506499	0.75	5.00E-05	0.000370102
RPL11	0.75	5.00E-05	0.000370102
TSTD1	0.75	0.00015	0.000969761
LOC100289230	0.75	5.00E-05	0.000370102
BCL11A	0.75	5.00E-05	0.000370102
ZNF544	0.75	5.00E-05	0.000370102
SRPRB	0.75	5.00E-05	0.000370102
EPPK1	0.75	5.00E-05	0.000370102
MAP4	0.75	5.00E-05	0.000370102
COP55	0.75	5.00E-05	0.000370102
UTP14A	0.75	5.00E-05	0.000370102
ZNF124	0.75	5.00E-05	0.000370102
RANGRF	0.75	0.00075	0.00374051
UQCR2	0.75	5.00E-05	0.000370102
RARS2	0.75	5.00E-05	0.000370102
CEP70	0.75	5.00E-05	0.000370102
FAM76A	0.75	5.00E-05	0.000370102
PGM5P2	0.75	5.00E-05	0.000370102
PP7080	0.75	5.00E-05	0.000370102
EPB41L4A-ASI	0.75	5.00E-05	0.000370102
LCP2	0.75	5.00E-05	0.000370102
COMT	0.75	5.00E-05	0.000370102
FAM127B	0.75	0.01155	0.0341424
MGST1	0.75	0.005	0.0175356
LOC286467	0.75	0.00175	0.00749457
KAT8	0.75	5.00E-05	0.000370102
CLU	0.75	5.00E-05	0.000370102
GOLGA2P5	0.75	5.00E-05	0.000370102
COMM7	0.75	5.00E-05	0.000370102
CASP4	0.75	5.00E-05	0.000370102
PYCR1	0.75	5.00E-05	0.000370102
DKFZP586I1420	0.75	5.00E-05	0.000370102
SORT1	0.75	5.00E-05	0.000370102
FAM82B	0.75	5.00E-05	0.000370102
NAPB	0.75	5.00E-05	0.000370102
TAF15	0.75	5.00E-05	0.000370102
TINF2	0.75	5.00E-05	0.000370102
GLRX3	0.75	5.00E-05	0.000370102
SMTNL1	0.74	0.00685	0.0224801
HPSE	0.74	5.00E-05	0.000370102
TAPT1	0.74	5.00E-05	0.000370102
RALA	0.74	5.00E-05	0.000370102
BBS12	0.74	0.00425	0.0153704
SP140	0.74	5.00E-05	0.000370102
CD72	0.74	0.002	0.00833736
LINC00327	0.74	0.00135	0.00606006
PSMC6	0.74	5.00E-05	0.000370102
C11orf68	0.74	5.00E-05	0.000370102
C6orf130	0.74	5.00E-05	0.000370102
SCAMP2	0.74	5.00E-05	0.000370102
CCDC148	0.74	0.00735	0.0237424
SRRM2	0.74	5.00E-05	0.000370102
LIX1	0.74	0.00045	0.00244023
STXBP4	0.74	5.00E-05	0.000370102
AAGAB	0.74	5.00E-05	0.000370102
HIST1H2BI	0.74	5.00E-05	0.000370102
FAM98B	0.74	0.00045	0.00244023
EXOSC10	0.74	5.00E-05	0.000370102
RRP8	0.74	5.00E-05	0.000370102
ABCC4	0.74	0.0001	0.000684367
ZNF233	0.74	0.0059	0.019961
C9orf93	0.74	0.0039	0.0143876
TSSC1	0.74	5.00E-05	0.000370102
LOC100506325	0.74	0.00115	0.00529146
PIGC	0.74	5.00E-05	0.000370102
TEC	0.74	5.00E-05	0.000370102
RAD51AP1	0.74	0.0102	0.030792
RNF34	0.74	5.00E-05	0.000370102
DAXX	0.74	5.00E-05	0.000370102
SPECC1	0.74	5.00E-05	0.000370102
NIPAL2	0.74	0.00105	0.0049133
PARM1	0.74	0.0006	0.0030954
ZNF816	0.74	0.00095	0.00452522
HSD17B7	0.74	0.00085	0.00413749
MIAT	0.74	5.00E-05	0.000370102
LOC100506051	0.74	0.0032	0.0121833
ADCK4	0.74	5.00E-05	0.000370102
MFS5	0.74	5.00E-05	0.000370102
MGC16275	0.74	0.0006	0.0030954
LOC100287314	0.73	0.0002	0.00123235
PRICKLE1	0.73	0.00085	0.00413749
SLC27A4	0.73	0.0001	0.000684367
SLC35A4	0.73	5.00E-05	0.000370102
SLC39A3	0.73	0.0004	0.00220905
SASH1	0.73	5.00E-05	0.000370102
NHP2	0.73	5.00E-05	0.000370102
LOC100505528	0.73	0.0126	0.0366802
SUSD1	0.73	5.00E-05	0.000370102
FBXL13	0.73	5.00E-05	0.000370102
NQO2	0.73	5.00E-05	0.000370102
SIGLEC6	0.73	0.00585	0.0198405
STAG3L3	0.73	0.0028	0.0109351
MAPK8	0.73	5.00E-05	0.000370102

CCDC82	0.73	5.00E-05	0.000370102
COBLL1	0.73	5.00E-05	0.000370102
TRIM16L	0.73	0.0122	0.0357573
CYP2R1	0.73	0.0003	0.00173314
FAM165B	0.73	0.0006	0.0030954
EXOSC7	0.73	5.00E-05	0.000370102
LOC100507228	0.73	0.00555	0.0190242
LOC100505648	0.73	0.0001	0.000684367
METTL2A	0.73	5.00E-05	0.000370102
HOOK2	0.73	0.00145	0.00644393
ISCA2	0.73	5.00E-05	0.000370102
PARP3	0.73	0.0003	0.00173314
CHST6	0.73	5.00E-05	0.000370102
ADCK1	0.73	0.00295	0.0114047
CMAS	0.73	0.0001	0.000684367
ANKK1	0.73	0.00935	0.028774
ITGB3BP	0.73	0.00025	0.00149761
IFLTD1	0.73	0.01005	0.0304258
NBPF1	0.73	5.00E-05	0.000370102
SF3A3	0.73	5.00E-05	0.000370102
TYSND1	0.73	5.00E-05	0.000370102
LOC100506705	0.73	0.00025	0.00149761
C11orf73	0.73	0.00015	0.000969761
C20orf108	0.73	5.00E-05	0.000370102
NDUFAF2	0.73	0.00235	0.0094978
ZNF223	0.73	0.00395	0.0145332
NDUFAB1	0.73	0.0001	0.000684367
CNPPD1	0.73	5.00E-05	0.000370102
CCDC144B	0.73	5.00E-05	0.000370102
RNF170	0.73	5.00E-05	0.000370102
ZWINT	0.73	0.0103	0.0310531
P2RX7	0.73	5.00E-05	0.000370102
LACTB	0.73	5.00E-05	0.000370102
LONP1	0.73	5.00E-05	0.000370102
ZNF597	0.73	0.00155	0.00680283
EPHA10	0.73	0.00035	0.00197564
ANK3	0.73	5.00E-05	0.000370102
CXorf40A	0.73	0.0004	0.00220905
FAM58A	0.73	0.0002	0.00123235
PAQR3	0.73	5.00E-05	0.000370102
FDPSSL2A	0.73	0.0005	0.00266422
SLC2A6	0.73	5.00E-05	0.000370102
HNRNP11	0.72	5.00E-05	0.000370102
C8orf80	0.72	5.00E-05	0.000370102
ZNF28	0.72	5.00E-05	0.000370102
TMEM45B	0.72	0.00025	0.00149761
PEX11G	0.72	0.00235	0.0094978
TSG1	0.72	5.00E-05	0.000370102
FBXO38	0.72	5.00E-05	0.000370102
LOC100509263	0.72	0.0001	0.000684367
RAP1B	0.72	5.00E-05	0.000370102
LASIL	0.72	0.0001	0.000684367
CHTF8	0.72	5.00E-05	0.000370102
ZNF592	0.72	5.00E-05	0.000370102
RNASEH2A	0.72	0.0027	0.010638
OTUD6A	0.72	0.01105	0.0329042
SH3BP5	0.72	5.00E-05	0.000370102
SEC1	0.72	0.0165	0.0457081
CHTA	0.72	5.00E-05	0.000370102
LOC100233209	0.72	5.00E-05	0.000370102
FER	0.72	5.00E-05	0.000370102
PSMB5	0.72	0.0003	0.00173314
INF2	0.72	5.00E-05	0.000370102
WDR92	0.72	5.00E-05	0.000370102
SART1	0.72	5.00E-05	0.000370102
PP1L4	0.72	5.00E-05	0.000370102
TOR1B	0.72	5.00E-05	0.000370102
PTS	0.72	0.00205	0.00849189
CA2	0.72	5.00E-05	0.000370102
DNTTIP1	0.72	0.00015	0.000969761
GABPB2	0.72	5.00E-05	0.000370102
LOC100130231	0.72	0.00795	0.0253188
RPS26	0.72	5.00E-05	0.000370102
BLOC1S3	0.72	5.00E-05	0.000370102
LOC100128342	0.72	0.0004	0.00220905
SPTSSA	0.72	5.00E-05	0.000370102
WDR70	0.72	5.00E-05	0.000370102
ZNF23	0.72	5.00E-05	0.000370102
MAT2A	0.72	5.00E-05	0.000370102
PCCB	0.72	5.00E-05	0.000370102
IL23R	0.72	0.00275	0.0107826
CXCR7	0.72	0.0044	0.0158299
PCCGF1	0.72	0.0037	0.013764
MS4A14	0.72	5.00E-05	0.000370102
POLD3	0.72	5.00E-05	0.000370102
LOC284412	0.72	0.0086	0.0269471
MT2A	0.72	0.00085	0.00413749
ETAA1	0.72	5.00E-05	0.000370102
LOC100506855	0.72	0.0035	0.0131369
ZNF75A	0.72	5.00E-05	0.000370102
MLANA	0.72	5.00E-05	0.000370102
HERPUD1	0.72	5.00E-05	0.000370102
FANCC	0.72	0.0011	0.00510741

PKIG	0.72	0.0003	0.00173314
ADRM1	0.72	5.00E-05	0.000370102
LOC643837	0.72	0.0071	0.0231081
ZKSCAN5	0.72	5.00E-05	0.000370102
RFW3	0.71	5.00E-05	0.000370102
CACNB2	0.71	0.0001	0.000684367
LOC100652950	0.71	0.00475	0.0168214
URM1	0.71	5.00E-05	0.000370102
TFB2M	0.71	0.00015	0.000969761
PSAT1	0.71	0.01145	0.0338832
RNASEH1	0.71	5.00E-05	0.000370102
PPP5K1	0.71	5.00E-05	0.000370102
MAPKAPK5	0.71	0.00025	0.00149761
MRPL20	0.71	0.0003	0.00173314
PSMD11	0.71	5.00E-05	0.000370102
ZRANB3	0.71	0.00175	0.00749457
RDX	0.71	5.00E-05	0.000370102
ITGAE	0.71	0.00095	0.00452522
CD300LG	0.71	0.0003	0.00173314
FCN1	0.71	0.00025	0.00149761
MAML2	0.71	5.00E-05	0.000370102
FCRL6	0.71	5.00E-05	0.000370102
SLC19A1	0.71	0.0002	0.00123235
MAGEH1	0.71	0.00015	0.000969761
LOC644961	0.71	0.00445	0.0159764
LOC100506123	0.71	5.00E-05	0.000370102
ACAT1	0.71	5.00E-05	0.000370102
IKBIP	0.71	0.001	0.00472422
THOC4	0.71	5.00E-05	0.000370102
OXR1	0.71	5.00E-05	0.000370102
KATNAL2	0.71	0.002	0.00833736
PA2G4P4	0.71	0.00415	0.0151158
TYW3	0.71	5.00E-05	0.000370102
SKA2	0.71	0.00195	0.00817589
QTRT1	0.71	0.00035	0.00197564
TP53I3	0.71	0.00935	0.028774
MIR4461	0.71	0.00505	0.017675
UPF2	0.71	5.00E-05	0.000370102
FBXL15	0.71	0.0002	0.00123235
TPMT	0.71	5.00E-05	0.000370102
SNX25	0.71	0.0001	0.000684367
EXT2	0.71	5.00E-05	0.000370102
SPDYE7P	0.71	5.00E-05	0.000370102
ARHGEF10L	0.71	5.00E-05	0.000370102
C5orf13	0.71	0.01065	0.0319268
ARSB	0.71	0.0002	0.00123235
RNF214	0.71	0.00055	0.00288713
STAG3L1	0.71	5.00E-05	0.000370102
LOC100652805	0.71	0.0178	0.0486642
LPXN	0.71	5.00E-05	0.000370102
TRAF5	0.71	5.00E-05	0.000370102
USP47	0.71	5.00E-05	0.000370102
TNFAIP8L1	0.71	5.00E-05	0.000370102
TTC16	0.71	0.0079	0.0251945
OXSM	0.71	0.0073	0.0235975
LT44H	0.70	5.00E-05	0.000370102
BALAP3	0.70	0.0087	0.0271801
INPP5F	0.70	5.00E-05	0.000370102
FAM195B	0.70	0.0001	0.000684367
CLIC2	0.70	0.00335	0.0126566
NOM1	0.70	5.00E-05	0.000370102
LOC100527964	0.70	0.0005	0.00266422
FNTA	0.70	5.00E-05	0.000370102
USP44	0.70	0.00605	0.0203685
HK3	0.70	5.00E-05	0.000370102
TMPRSS3	0.70	0.01045	0.0314435
LOC145216	0.70	0.003	0.0115753
ZNF174	0.70	0.001	0.00472422
SMS	0.70	5.00E-05	0.000370102
SRSF2	0.70	5.00E-05	0.000370102
IFI16	0.70	5.00E-05	0.000370102
SCN3A	0.70	5.00E-05	0.000370102
GMDS	0.70	5.00E-05	0.000370102
PLK1S1	0.70	5.00E-05	0.000370102
PLA2G4E	0.70	0.0016	0.00697345
PPP4R2	0.70	5.00E-05	0.000370102
ANKRD39	0.70	0.00335	0.0126566
RB1	0.70	0.0004	0.00220905
DPM1	0.70	5.00E-05	0.000370102
COPE	0.70	5.00E-05	0.000370102
C21orf67	0.70	0.0037	0.013764
NAGK	0.70	5.00E-05	0.000370102
ID3	0.70	0.00045	0.00244023
YRDC	0.70	0.0008	0.00394564
MTHFD2	0.70	5.00E-05	0.000370102
SLC25A43	0.70	0.00035	0.00197564
NEURL4	0.70	5.00E-05	0.000370102
STXB2	0.70	5.00E-05	0.000370102
HN1L	0.70	5.00E-05	0.000370102
ATP1B3	0.70	0.00015	0.000969761
TMEM213	0.70	0.0001	0.000684367
ITIH5	0.70	5.00E-05	0.000370102
FUT1	0.70	0.00105	0.0049133

DUSP18	0.70	0.00015	0.000969761
DHX40	0.70	5.00E-05	0.000370102
LOC728554	0.70	0.0179	0.0488988
PYHIN1	0.70	5.00E-05	0.000370102
CD22	0.70	5.00E-05	0.000370102
WDR24	0.70	0.00015	0.000969761
BOP1	0.70	5.00E-05	0.000370102
FBXL12	0.70	0.00015	0.000969761
ZNF225	0.70	0.00009	0.00433496
CTSB	0.70	5.00E-05	0.000370102
EBF1	0.70	0.0001	0.000684367
NDUFB9	0.70	5.00E-05	0.000370102
MTBP	0.70	0.00009	0.00433496
SNORA43	0.70	0.00165	0.00715969
HRAS	0.70	0.002	0.00833736
LOC728888	0.70	0.00255	0.0101573
ARHGEF18	0.70	5.00E-05	0.000370102
REXO4	0.70	5.00E-05	0.000370102
LOC100507131	0.70	0.01195	0.0351066
HP09025	0.70	5.00E-05	0.000370102
DST	0.70	5.00E-05	0.000370102
RSPRY1	0.69	5.00E-05	0.000370102
TMEM229B	0.69	5.00E-05	0.000370102
SLU7	0.69	5.00E-05	0.000370102
TMEM106A	0.69	5.00E-05	0.000370102
SLC44A1	0.69	5.00E-05	0.000370102
TBRG4	0.69	5.00E-05	0.000370102
LOC648987	0.69	0.0001	0.000684367
RAB5C	0.69	5.00E-05	0.000370102
SLC25A20	0.69	5.00E-05	0.000370102
PLA2G15	0.69	0.001	0.00472422
ZNF18	0.69	0.0001	0.000684367
RBM26	0.69	5.00E-05	0.000370102
CCDC58	0.69	0.0036	0.0134537
MAP2K1	0.69	5.00E-05	0.000370102
PSMD8	0.69	5.00E-05	0.000370102
COMMD10	0.69	5.00E-05	0.000370102
CSTF2	0.69	0.0003	0.00173314
SMYD2	0.69	5.00E-05	0.000370102
CSF1	0.69	0.0072	0.0233564
SUGP2	0.69	5.00E-05	0.000370102
TBC1D1	0.69	5.00E-05	0.000370102
DGKH	0.69	5.00E-05	0.000370102
MYCBP	0.69	0.00035	0.00197564
CCT6A	0.69	5.00E-05	0.000370102
TIGD1	0.69	5.00E-05	0.000370102
SDCCAG3	0.69	5.00E-05	0.000370102
C8orf58	0.69	0.00185	0.00783523
LOC285954	0.69	0.0086	0.0269471
MUT	0.69	0.0003	0.00173314
SEMA7A	0.69	0.0029	0.0112429
SPATA7	0.69	0.00945	0.0290364
FAM82A1	0.69	0.0021	0.00865223
RPL32	0.69	5.00E-05	0.000370102
FBXO25	0.69	5.00E-05	0.000370102
SLC35B2	0.69	5.00E-05	0.000370102
SREBF1	0.69	0.0003	0.00173314
EPC2	0.69	5.00E-05	0.000370102
REV1	0.69	5.00E-05	0.000370102
XPO1	0.69	5.00E-05	0.000370102
HIST1H2AE	0.69	5.00E-05	0.000370102
LOC100288615	0.69	5.00E-05	0.000370102
ZNF662	0.69	0.0001	0.000684367
CPSF3L	0.69	5.00E-05	0.000370102
YPREB3	0.69	0.0035	0.0131369
TARS2	0.69	5.00E-05	0.000370102
PTPN18	0.69	5.00E-05	0.000370102
FBXO48	0.69	0.00235	0.0094978
SUPV3L1	0.69	5.00E-05	0.000370102
DISP1	0.69	0.0014	0.006256
PRPF6	0.69	5.00E-05	0.000370102
C11orf84	0.69	0.00165	0.00715969
CRYL1	0.69	0.00045	0.00244023
RNF220	0.69	5.00E-05	0.000370102
CCDC71	0.69	0.0001	0.000684367
RNF181	0.69	5.00E-05	0.000370102
HKDC1	0.69	0.00705	0.0229779
ACER2	0.69	0.0033	0.0125088
SMPD2	0.69	0.0034	0.0128069
FHL1	0.69	0.00025	0.00149761
COX6A1	0.69	5.00E-05	0.000370102
HSPA1B	0.69	0.0107	0.0320628
SNORA7B	0.69	0.0051	0.0178229
ILK	0.69	5.00E-05	0.000370102
RBM22	0.69	5.00E-05	0.000370102
KANK1	0.69	0.00015	0.000969761
ITGA2B	0.69	5.00E-05	0.000370102
NDUFV1	0.69	5.00E-05	0.000370102
ATP13A1	0.69	5.00E-05	0.000370102
EIF5B	0.69	5.00E-05	0.000370102
DNAJC7	0.69	0.0015	0.00662132
VILL	0.69	5.00E-05	0.000370102
SLC30A9	0.69	5.00E-05	0.000370102

GSS	0.69	5.00E-05	0.000370102
CDK7	0.69	0.00025	0.00149761
MAP3K9	0.68	0.0001	0.000684367
RCSD1	0.68	5.00E-05	0.000370102
ODF2L	0.68	5.00E-05	0.000370102
SRSF7	0.68	5.00E-05	0.000370102
ACLY	0.68	5.00E-05	0.000370102
LOC100506930	0.68	0.00035	0.00197564
FBXL18	0.68	5.00E-05	0.000370102
SNHG5	0.68	5.00E-05	0.000370102
FKBP2	0.68	0.0001	0.000684367
FAM106A	0.68	5.00E-05	0.000370102
PNISR	0.68	5.00E-05	0.000370102
LOC100506613	0.68	0.0009	0.00433496
ANKRD16	0.68	0.00025	0.00149761
INPP1	0.68	0.0052	0.0180989
NDUFA11	0.68	0.00015	0.000969761
PABPC1	0.68	5.00E-05	0.000370102
GINS4	0.68	0.0008	0.00394564
REEP5	0.68	5.00E-05	0.000370102
NOD1	0.68	5.00E-05	0.000370102
PTK2	0.68	0.0001	0.000684367
GGT7	0.68	5.00E-05	0.000370102
NAP1L6	0.68	0.00625	0.0209193
LOC728093	0.68	5.00E-05	0.000370102
KIAA0889	0.68	0.0002	0.00123235
TMEM140	0.68	0.0008	0.00394564
RPL26	0.68	5.00E-05	0.000370102
GEMIN4	0.68	5.00E-05	0.000370102
ANKRD10	0.68	5.00E-05	0.000370102
ICAM2	0.68	5.00E-05	0.000370102
HIST1H2BO	0.68	0.00075	0.00374051
EIF4A1	0.68	0.0165	0.0457081
C16orf45	0.68	0.0131	0.0379196
SLC35E3	0.68	0.00025	0.00149761
SLC46A2	0.68	0.00035	0.00197564
NUP12	0.68	5.00E-05	0.000370102
WDR45L	0.68	5.00E-05	0.000370102
PIGH	0.68	0.00015	0.000969761
RAB3GAP1	0.68	5.00E-05	0.000370102
DBNL	0.68	5.00E-05	0.000370102
CSNK2B	0.68	5.00E-05	0.000370102
HBXIP	0.68	0.0002	0.00123235
HOMER3	0.68	0.0006	0.0030954
RNF4	0.68	5.00E-05	0.000370102
TRNT1	0.68	5.00E-05	0.000370102
OLA1	0.68	5.00E-05	0.000370102
FAM48A	0.68	5.00E-05	0.000370102
RNY4	0.68	0.00085	0.00413749
BCAS3	0.68	5.00E-05	0.000370102
MRPL42	0.68	5.00E-05	0.000370102
ATP6V1E1	0.68	5.00E-05	0.000370102
UTRN	0.68	0.0001	0.000684367
TMEM130	0.68	0.00015	0.000969761
FGFR1OP2	0.68	5.00E-05	0.000370102
GCC2	0.68	5.00E-05	0.000370102
E2F2	0.68	0.0001	0.000684367
PFKP	0.68	5.00E-05	0.000370102
GPX4	0.68	5.00E-05	0.000370102
SNORA34	0.68	0.0146	0.0413247
MCM4	0.68	5.00E-05	0.000370102
ICOSLG	0.68	0.00085	0.00413749
KIAA1407	0.68	0.0001	0.000684367
PHF11	0.68	5.00E-05	0.000370102
NCOA6	0.68	5.00E-05	0.000370102
CLASRP	0.68	5.00E-05	0.000370102
OGFR	0.68	5.00E-05	0.000370102
C19orf40	0.67	0.01645	0.0456338
THOC2	0.67	5.00E-05	0.000370102
KLC4	0.67	0.0006	0.0030954
C20orf111	0.67	5.00E-05	0.000370102
WDR48	0.67	5.00E-05	0.000370102
WDR5	0.67	5.00E-05	0.000370102
OSGEP	0.67	0.0001	0.000684367
NCR1	0.67	0.0012	0.00547584
ARGLU1	0.67	5.00E-05	0.000370102
LTV1	0.67	5.00E-05	0.000370102
TCERG1	0.67	5.00E-05	0.000370102
RNF20	0.67	5.00E-05	0.000370102
MRPS22	0.67	5.00E-05	0.000370102
HIST1H2BF	0.67	5.00E-05	0.000370102
SNORA47	0.67	0.00425	0.0153704
CIDEB	0.67	0.0033	0.0125088
RPL5	0.67	5.00E-05	0.000370102
COPB1	0.67	5.00E-05	0.000370102
FBXO10	0.67	0.0015	0.00662132
LOC400986	0.67	5.00E-05	0.000370102
NPC2	0.67	5.00E-05	0.000370102
ZNF324B	0.67	0.0024	0.00965179
CDK14	0.67	5.00E-05	0.000370102
CD300E	0.67	5.00E-05	0.000370102
CD14	0.67	5.00E-05	0.000370102
SNAPC3	0.67	5.00E-05	0.000370102



GSDMB	0.67	0.0001	0.000684367
MTOR	0.67	5.00E-05	0.000370102
RNASEL	0.67	5.00E-05	0.000370102
AFF3	0.67	5.00E-05	0.000370102
EID2	0.67	0.00075	0.00374051
YEATS4	0.67	0.00035	0.00197564
MUC20	0.67	0.00055	0.00288713
CXXC1	0.67	5.00E-05	0.000370102
FKBP15	0.67	5.00E-05	0.000370102
RRP9	0.67	0.00115	0.00529146
UBA2	0.67	5.00E-05	0.000370102
EIF4H	0.67	5.00E-05	0.000370102
C5orf27	0.67	0.0114	0.0337787
MCM3	0.67	5.00E-05	0.000370102
STAR8	0.67	0.00185	0.00783523
ENO3	0.67	0.0095	0.0291511
PPWD1	0.67	5.00E-05	0.000370102
UTP23	0.67	5.00E-05	0.000370102
PSMB1	0.67	5.00E-05	0.000370102
C7orf49	0.67	0.0008	0.00394564
SIT1	0.67	5.00E-05	0.000370102
CTDSP2	0.67	5.00E-05	0.000370102
LRSAM1	0.67	5.00E-05	0.000370102
GTF3C5	0.67	5.00E-05	0.000370102
RBM23	0.67	5.00E-05	0.000370102
ANP32A	0.67	5.00E-05	0.000370102
TCPI1L1	0.67	0.00015	0.000969761
C15orf23	0.67	0.00265	0.0104829
EEF1B2	0.67	5.00E-05	0.000370102
TOP3B	0.67	5.00E-05	0.000370102
SPICE1	0.67	5.00E-05	0.000370102
CASP8AP2	0.67	5.00E-05	0.000370102
THRAP3	0.67	5.00E-05	0.000370102
C19orf25	0.67	0.0019	0.0080003
PMS2L2	0.67	0.0106	0.0318393
ELMOD1	0.67	0.0007	0.00351914
METTL8	0.67	0.0002	0.00123235
GEMIN6	0.67	0.0052	0.0180989
PLAC2	0.67	0.00245	0.00981281
KCNIP4	0.67	0.0123	0.035951
TAF5L	0.66	5.00E-05	0.000370102
MPPE1	0.66	5.00E-05	0.000370102
BRDT	0.66	0.00485	0.0171228
NDUFS8	0.66	5.00E-05	0.000370102
LMBRD1	0.66	5.00E-05	0.000370102
KLRF1	0.66	5.00E-05	0.000370102
FAR2	0.66	0.00315	0.0120362
PPIL1	0.66	0.00105	0.0049133
TMEM48	0.66	5.00E-05	0.000370102
CKS1B	0.66	0.00525	0.0182453
MAST4	0.66	5.00E-05	0.000370102
LINC00426	0.66	0.0028	0.0109351
RGS14	0.66	5.00E-05	0.000370102
HSD17B12	0.66	0.0002	0.00123235
LOC100506233	0.66	0.0042	0.0152456
U2AF1L4	0.66	0.00035	0.00197564
NUDT16	0.66	0.0062	0.0207822
RPL18A	0.66	5.00E-05	0.000370102
MTERFD2	0.66	0.0011	0.00510741
IKZF5	0.66	0.0001	0.000684367
C2orf56	0.66	5.00E-05	0.000370102
APOL3	0.66	5.00E-05	0.000370102
OASL	0.66	0.0003	0.00173314
RIPK1	0.66	5.00E-05	0.000370102
CCDC76	0.66	5.00E-05	0.000370102
TASP1	0.66	0.0002	0.00123235
PLD6	0.66	0.0003	0.00173314
EFTUD2	0.66	5.00E-05	0.000370102
SEPT14	0.66	0.0012	0.00547584
PHF14	0.66	5.00E-05	0.000370102
ABCF2	0.66	5.00E-05	0.000370102
CCDC111	0.66	0.005	0.0175356
TM2D2	0.66	0.0003	0.00173314
ANKRD30BP2	0.66	0.0018	0.00767295
P4HB	0.66	5.00E-05	0.000370102
NUMA1	0.66	0.0001	0.000684367
CLINT1	0.66	5.00E-05	0.000370102
BTG3	0.66	0.0028	0.0109351
ACO1	0.66	0.0001	0.000684367
PUF60	0.66	5.00E-05	0.000370102
MRPL35	0.66	0.0001	0.000684367
FAM115A	0.66	5.00E-05	0.000370102
HIST1H2BG	0.66	5.00E-05	0.000370102
ANKRD13A	0.66	5.00E-05	0.000370102
PTPN2	0.66	5.00E-05	0.000370102
ANKRD42	0.66	0.00355	0.0132884
UPF1	0.66	5.00E-05	0.000370102
DKC1	0.66	5.00E-05	0.000370102
C17orf79	0.66	0.01615	0.0450189
PSMA4	0.66	5.00E-05	0.000370102
FAM65A	0.66	5.00E-05	0.000370102
PARP10	0.66	5.00E-05	0.000370102
TTF2	0.66	5.00E-05	0.000370102

<i>C19orf20</i>	0.66	0.0054	0.0186351
<i>STK25</i>	0.66	5.00E-05	0.000370102
<i>TMEM87B</i>	0.66	5.00E-05	0.000370102
<i>NUP93</i>	0.66	5.00E-05	0.000370102
<i>PRDX4</i>	0.66	0.0036	0.0134537
<i>CCDC137</i>	0.66	5.00E-05	0.000370102
<i>TBCB</i>	0.66	5.00E-05	0.000370102
<i>TJAP1</i>	0.66	5.00E-05	0.000370102
<i>HIST1H3A</i>	0.66	0.00025	0.00149761
<i>HADH</i>	0.66	0.00065	0.00331245
<i>ZNF829</i>	0.66	0.002	0.00833736
<i>FXC1</i>	0.66	5.00E-05	0.000370102
<i>ACTL6A</i>	0.66	5.00E-05	0.000370102
<i>SF3B2</i>	0.66	5.00E-05	0.000370102
<i>HIST1H3B</i>	0.66	0.0023	0.00934227
<i>GEMIN8</i>	0.66	0.0001	0.000684367
<i>PVRL2</i>	0.66	0.0064	0.0212819
<i>SH3TC1</i>	0.66	5.00E-05	0.000370102
<i>TMED4</i>	0.66	5.00E-05	0.000370102
<i>FGFR2</i>	0.66	0.00175	0.00749457
<i>KIAA1377</i>	0.66	0.0004	0.00220905
<i>RAB31P</i>	0.66	5.00E-05	0.000370102
<i>TFEC</i>	0.65	5.00E-05	0.000370102
<i>CALM3</i>	0.65	5.00E-05	0.000370102
<i>LRRC57</i>	0.65	5.00E-05	0.000370102
<i>INTS7</i>	0.65	0.00215	0.00882659
<i>FBXO11</i>	0.65	0.00025	0.00149761
<i>NCL</i>	0.65	5.00E-05	0.000370102
<i>UCK1</i>	0.65	0.00615	0.0206598
<i>BCL7A</i>	0.65	5.00E-05	0.000370102
<i>TSPYL5</i>	0.65	0.00385	0.0142336
<i>ZNHIT2</i>	0.65	0.00425	0.0153704
<i>PARK7</i>	0.65	5.00E-05	0.000370102
<i>SDPR</i>	0.65	5.00E-05	0.000370102
<i>COL4A4</i>	0.65	0.00025	0.00149761
<i>RPL36A</i>	0.65	0.0001	0.000684367
<i>FAM18B1</i>	0.65	0.0018	0.00767295
<i>MMP17</i>	0.65	0.00525	0.0182453
<i>RLTPR</i>	0.65	5.00E-05	0.000370102
<i>GATC</i>	0.65	0.0005	0.00266422
<i>APIAR</i>	0.65	5.00E-05	0.000370102
<i>BABAM1</i>	0.65	5.00E-05	0.000370102
<i>TSPAN4</i>	0.65	0.00335	0.0126566
<i>MPHOSPH9</i>	0.65	5.00E-05	0.000370102
<i>AURKA</i>	0.65	0.0042	0.0152456
<i>SCFD1</i>	0.65	5.00E-05	0.000370102
<i>MZF1</i>	0.65	0.0006	0.0030954
<i>RANBP6</i>	0.65	5.00E-05	0.000370102
<i>GNB5</i>	0.65	5.00E-05	0.000370102
<i>DISC1</i>	0.65	0.01765	0.0483788
<i>ANKRD50</i>	0.65	0.00015	0.000969761
<i>CLPTMIL</i>	0.65	5.00E-05	0.000370102
<i>GSTM3</i>	0.65	0.0001	0.000684367
<i>FAM173B</i>	0.65	0.0024	0.00965179
<i>IER3</i>	0.65	0.0003	0.00173314
<i>RHBDD3</i>	0.65	0.01145	0.0338832
<i>FAM135A</i>	0.65	5.00E-05	0.000370102
<i>LGALS1</i>	0.65	5.00E-05	0.000370102
<i>LRRC45</i>	0.65	0.00085	0.00413749
<i>PTPRO</i>	0.65	0.0004	0.00220905
<i>TPD52</i>	0.65	5.00E-05	0.000370102
<i>HIPK3</i>	0.65	5.00E-05	0.000370102
<i>DLX6-AS1</i>	0.65	0.00385	0.0142336
<i>IKBKB</i>	0.65	5.00E-05	0.000370102
<i>TYROBP</i>	0.65	5.00E-05	0.000370102
<i>DRAP1</i>	0.65	5.00E-05	0.000370102
<i>NAT1</i>	0.65	0.00665	0.0219334
<i>LARS</i>	0.65	5.00E-05	0.000370102
<i>WDR13</i>	0.65	0.00015	0.000969761
<i>GBGT1</i>	0.65	0.00055	0.00288713
<i>AIMP1</i>	0.65	0.0016	0.00697345
<i>ADAM28</i>	0.65	5.00E-05	0.000370102
<i>SNX2</i>	0.65	5.00E-05	0.000370102
<i>FAM118A</i>	0.65	5.00E-05	0.000370102
<i>VP52</i>	0.65	5.00E-05	0.000370102
<i>CCDC17</i>	0.65	0.00125	0.0056721
<i>PRPF31</i>	0.65	5.00E-05	0.000370102
<i>CAST</i>	0.65	0.0081	0.0256897
<i>POLR1A</i>	0.65	5.00E-05	0.000370102
<i>MRPL17</i>	0.65	0.0003	0.00173314
<i>BST1</i>	0.65	0.0002	0.00123235
<i>PAR-SN,SNORD107</i>	0.65	5.00E-05	0.000370102
<i>GNG7</i>	0.65	5.00E-05	0.000370102
<i>RPS25</i>	0.65	0.00015	0.000969761
<i>ATP5G2</i>	0.65	5.00E-05	0.000370102
<i>CENPH</i>	0.65	0.00415	0.0151158
<i>PAPSS1</i>	0.65	5.00E-05	0.000370102
<i>MRPS26</i>	0.65	0.0002	0.00123235
<i>TSPAN32</i>	0.65	5.00E-05	0.000370102
<i>CRIPAK</i>	0.65	0.00095	0.00452522
<i>P14KB</i>	0.65	0.0003	0.00173314
<i>C10orf76</i>	0.65	5.00E-05	0.000370102
<i>CCDC56</i>	0.65	0.001	0.00472422

<i>FTSID2</i>	0.65	5.00E-05	0.000370102
<i>FAM161B</i>	0.64	0.0037	0.013764
<i>SCARF1</i>	0.64	0.0009	0.00433496
<i>PIKFYVE</i>	0.64	0.0002	0.00123235
<i>EED</i>	0.64	0.0001	0.000684367
<i>CEP135</i>	0.64	5.00E-05	0.000370102
<i>ATRIP</i>	0.64	0.0007	0.00351914
<i>THNSL1</i>	0.64	0.0015	0.00662132
<i>MYOM1</i>	0.64	0.00115	0.00529146
<i>YIPF2</i>	0.64	0.01425	0.0405337
<i>ANAPC16</i>	0.64	5.00E-05	0.000370102
<i>HERC4</i>	0.64	5.00E-05	0.000370102
<i>DHX8</i>	0.64	5.00E-05	0.000370102
<i>DGAT1</i>	0.64	0.00065	0.0031245
<i>ZNF69</i>	0.64	0.00975	0.0297067
<i>ATP6V1G1</i>	0.64	5.00E-05	0.000370102
<i>FRAT1</i>	0.64	0.0001	0.000684367
<i>GRIPAP1</i>	0.64	5.00E-05	0.000370102
<i>CEACAM8</i>	0.64	0.0032	0.0121833
<i>CCDC18</i>	0.64	5.00E-05	0.000370102
<i>IRF9</i>	0.64	5.00E-05	0.000370102
<i>RPL9</i>	0.64	0.0006	0.0030954
<i>MRPL24</i>	0.64	0.00035	0.00197564
<i>ACBD6</i>	0.64	5.00E-05	0.000370102
<i>TMEM144</i>	0.64	0.00925	0.0285555
<i>SNRPB</i>	0.64	5.00E-05	0.000370102
<i>ATAD3A</i>	0.64	0.00155	0.00680283
<i>NGLY1</i>	0.64	5.00E-05	0.000370102
<i>EIF3F</i>	0.64	5.00E-05	0.000370102
<i>ABHD11</i>	0.64	0.00055	0.00288713
<i>FAIM3</i>	0.64	5.00E-05	0.000370102
<i>DHODH</i>	0.64	0.00035	0.00197564
<i>RBM42</i>	0.64	5.00E-05	0.000370102
<i>USP36</i>	0.64	5.00E-05	0.000370102
<i>CTR9</i>	0.64	5.00E-05	0.000370102
<i>C18orf21</i>	0.64	0.0002	0.00123235
<i>DNM1L</i>	0.64	5.00E-05	0.000370102
<i>SLC35D2</i>	0.64	0.0001	0.000684367
<i>LOC100130581</i>	0.64	0.0002	0.00123235
<i>ASNA1</i>	0.64	5.00E-05	0.000370102
<i>GGT8P</i>	0.64	0.0126	0.0366802
<i>LCN10</i>	0.64	0.00915	0.0283165
<i>SUN1</i>	0.64	0.00035	0.00197564
<i>CCS</i>	0.64	0.00025	0.00149761
<i>ZNF485</i>	0.64	0.00455	0.0162846
<i>PTGER2</i>	0.64	5.00E-05	0.000370102
<i>ELOVL5</i>	0.64	0.0008	0.00394564
<i>RBPMS</i>	0.64	0.00295	0.0114047
<i>DHX58</i>	0.64	5.00E-05	0.000370102
<i>RNF187</i>	0.64	5.00E-05	0.000370102
<i>ZNF208</i>	0.64	0.0002	0.00123235
<i>UFC1</i>	0.64	5.00E-05	0.000370102
<i>RANBP10</i>	0.64	5.00E-05	0.000370102
<i>PREP</i>	0.64	5.00E-05	0.000370102
<i>SEC24A</i>	0.64	5.00E-05	0.000370102
<i>RBM45</i>	0.64	0.00035	0.00197564
<i>TMEM14B</i>	0.64	0.0001	0.000684367
<i>CD79A</i>	0.64	5.00E-05	0.000370102
<i>LOC283887</i>	0.64	0.01165	0.0343644
<i>CTSF</i>	0.64	0.00145	0.00644393
<i>ARGFX</i>	0.64	5.00E-05	0.000370102
<i>POU2F2</i>	0.64	5.00E-05	0.000370102
<i>TNFSF13</i>	0.64	0.0034	0.0128069
<i>DHTKD1</i>	0.64	5.00E-05	0.000370102
<i>LOC100506730</i>	0.64	0.00055	0.00288713
<i>SLC10A1</i>	0.64	0.00245	0.00981281
<i>TTC39C</i>	0.64	0.0023	0.00934227
<i>KIAA0125</i>	0.64	0.0001	0.000684367
<i>CDC123</i>	0.64	0.0007	0.00351914
<i>BTN2A3P</i>	0.64	0.009	0.0279338
<i>SSB</i>	0.64	0.0001	0.000684367
<i>R3HCC1</i>	0.64	0.00015	0.000969761
<i>MRPL11</i>	0.64	0.0004	0.00220905
<i>TOMM7</i>	0.64	5.00E-05	0.000370102
<i>LRRC37BP1</i>	0.64	5.00E-05	0.000370102
<i>PTPRK</i>	0.64	0.00025	0.00149761
<i>SLC22A15</i>	0.63	0.0002	0.00123235
<i>FAM105B</i>	0.63	5.00E-05	0.000370102
<i>MEGF6</i>	0.63	5.00E-05	0.000370102
<i>MSRB2</i>	0.63	0.00945	0.0290364
<i>ERCC1</i>	0.63	0.0006	0.0030954
<i>HGS</i>	0.63	5.00E-05	0.000370102
<i>ZC3H12B</i>	0.63	0.0002	0.00123235
<i>KCNAB1</i>	0.63	0.0017	0.0073397
<i>FAU</i>	0.63	5.00E-05	0.000370102
<i>RFC2</i>	0.63	0.0001	0.000684367
<i>C4orf42</i>	0.63	0.0001	0.000684367
<i>TRIM5</i>	0.63	0.0006	0.0030954
<i>BMPRI1A</i>	0.63	0.00025	0.00149761
<i>METTL23</i>	0.63	0.00015	0.000969761
<i>ZNF189</i>	0.63	5.00E-05	0.000370102
<i>NSDHL</i>	0.63	0.00695	0.0227164
<i>COMMD2</i>	0.63	5.00E-05	0.000370102

GPR155	0.63	5.00E-05	0.000370102
NDUFB11	0.63	5.00E-05	0.000370102
AD11	0.63	5.00E-05	0.000370102
C22orf32	0.63	0.0002	0.00123235
NELF	0.63	5.00E-05	0.000370102
MILR1	0.63	0.0017	0.0073397
CHST7	0.63	0.00275	0.0107826
DYRK1A	0.63	5.00E-05	0.000370102
APOOL	0.63	5.00E-05	0.000370102
LRRC37A4	0.63	0.00045	0.00244023
DENR	0.63	5.00E-05	0.000370102
AAAS	0.63	0.00015	0.000969761
AFTPH	0.63	5.00E-05	0.000370102
KCNE3	0.63	5.00E-05	0.000370102
NDRG2	0.63	0.0016	0.00697345
LYPLAL1	0.63	0.00015	0.000969761
NPRL2	0.63	0.0009	0.00433496
IFT3	0.63	0.0003	0.00173314
CMTM5	0.63	0.01775	0.0485563
NIPA2	0.63	5.00E-05	0.000370102
NOL7	0.63	5.00E-05	0.000370102
LRRC40	0.63	5.00E-05	0.000370102
HEBP2	0.63	5.00E-05	0.000370102
LOC100130954	0.63	0.01625	0.0452245
ZFYVE1	0.63	5.00E-05	0.000370102
CLDN16	0.63	0.01075	0.0321707
MLL5	0.63	5.00E-05	0.000370102
UTP6	0.63	5.00E-05	0.000370102
SIN3B	0.63	5.00E-05	0.000370102
LOC100499194	0.63	0.0145	0.0411092
C14orf49	0.63	5.00E-05	0.000370102
RNU4-2	0.63	0.00095	0.00452522
POLB	0.63	0.00055	0.00288713
CTSK	0.63	0.0011	0.00510741
RTN4	0.63	5.00E-05	0.000370102
CCDC141	0.63	5.00E-05	0.000370102
ACTN4	0.63	5.00E-05	0.000370102
HGSNAT	0.63	5.00E-05	0.000370102
ZNF563	0.63	0.0042	0.0152456
UNKL	0.63	0.008	0.0254487
GTF2H1	0.63	5.00E-05	0.000370102
FPR3	0.63	0.00415	0.0151158
LOC100129917	0.63	0.0038	0.0140866
UBE2Q2P1	0.63	0.0002	0.00123235
LOC653075	0.63	0.00125	0.0056721
HIST1H2AB	0.63	0.01295	0.0375327
GMEB1	0.63	5.00E-05	0.000370102
PPAPDC2	0.63	0.0003	0.00173314
FLVCR2	0.63	0.0003	0.00173314
ADAL	0.63	0.0176	0.0482897
ALKBH2	0.63	0.01365	0.0391013
DDRGK1	0.63	0.0001	0.000684367
EPB41L2	0.63	0.00015	0.000969761
TRIM16	0.63	0.01135	0.0336667
C8orf33	0.63	5.00E-05	0.000370102
SEPT8	0.63	0.00145	0.00644393
KCNQ5	0.63	0.00345	0.0129704
PSMA2	0.63	5.00E-05	0.000370102
ZNF570	0.63	0.0021	0.00865223
LOC100652786	0.63	0.0106	0.0318393
LOC100505549	0.63	0.0074	0.0238537
LOC642236	0.62	5.00E-05	0.000370102
DET1	0.62	0.00265	0.0104829
LOC100505937	0.62	0.0049	0.0172772
HSPBAP1	0.62	0.0001	0.000684367
ABHD8	0.62	0.00405	0.0148221
LIPE	0.62	0.00425	0.0153704
WDYHV1	0.62	0.0111	0.0330317
SI00A4	0.62	5.00E-05	0.000370102
PCDH9	0.62	5.00E-05	0.000370102
GMPR2	0.62	5.00E-05	0.000370102
GOLGA5	0.62	5.00E-05	0.000370102
FAM45A	0.62	0.00035	0.00197564
PSMD12	0.62	5.00E-05	0.000370102
ZNF74	0.62	0.00135	0.00606006
VAT1	0.62	5.00E-05	0.000370102
PDE4DIP	0.62	5.00E-05	0.000370102
HYAL2	0.62	0.01355	0.0388794
LAGE3	0.62	0.00415	0.0151158
NDUFC2	0.62	5.00E-05	0.000370102
STAT6	0.62	5.00E-05	0.000370102
FLJ43681	0.62	0.00165	0.00715969
FUNDC1	0.62	0.0069	0.0226066
MAPRE2	0.62	5.00E-05	0.000370102
ARHGDI4	0.62	5.00E-05	0.000370102
HOXB2	0.62	0.0113	0.0335617
UBLCP1	0.62	5.00E-05	0.000370102
UBA3	0.62	5.00E-05	0.000370102
GPR68	0.62	0.0003	0.00173314
PPARD	0.62	0.00015	0.000969761
ST3GAL6	0.62	0.0044	0.0158299
MLLT11	0.62	0.0121	0.0355019
FLJ31104	0.62	0.0021	0.00865223

METTL22	0.62	0.00065	0.00331245
NISCH	0.62	5.00E-05	0.000370102
CHRNA5	0.62	0.0024	0.00965179
HAX1	0.62	5.00E-05	0.000370102
MAPK13	0.62	0.00015	0.000969761
WDR5B	0.62	5.00E-05	0.000370102
HIST1H4F	0.62	5.00E-05	0.000370102
BTBD7	0.62	0.0004	0.00220905
UBE2E3	0.62	0.00055	0.00288713
MAGEB10	0.62	0.01055	0.0317098
CEPT1	0.62	0.0005	0.00266422
TRPV1	0.62	0.00425	0.0153704
CTNND1	0.62	0.0057	0.0194225
LPCAT4	0.62	0.0003	0.00173314
GAN	0.62	0.00045	0.00244023
VAV1	0.62	5.00E-05	0.000370102
ZNF791	0.62	5.00E-05	0.000370102
PRADC1	0.62	0.00925	0.0285555
SBK1	0.62	0.00025	0.00149761
BTN3A2	0.62	5.00E-05	0.000370102
CD28	0.62	5.00E-05	0.000370102
DBP	0.62	0.00015	0.000969761
KCNH8	0.62	0.0045	0.0161224
ECSIT	0.62	0.0002	0.00123235
SMARCD3	0.62	0.0002	0.00123235
IGANRP	0.62	0.01335	0.0384335
SNIP1	0.62	5.00E-05	0.000370102
KDMSD	0.62	0.001	0.00472422
TEX2	0.62	5.00E-05	0.000370102
F5	0.62	5.00E-05	0.000370102
NPRL3	0.62	0.01395	0.0398035
RNF115	0.62	5.00E-05	0.000370102
PRIM2	0.62	0.00135	0.00606006
CYB5D2	0.62	0.0015	0.00662132
LUC7L2	0.62	5.00E-05	0.000370102
ANAPC4	0.62	5.00E-05	0.000370102
ECHDC2	0.62	0.0006	0.0030954
CCDC90A	0.62	5.00E-05	0.000370102
DCAF11	0.62	5.00E-05	0.000370102
ZNF665	0.62	0.00085	0.00413749
SMYD4	0.62	5.00E-05	0.000370102
RPUSD3	0.61	0.0009	0.00433496
IL27RA	0.61	5.00E-05	0.000370102
UBE2V1	0.61	5.00E-05	0.000370102
SNORD89	0.61	5.00E-05	0.000370102
C3orf33	0.61	0.00425	0.0153704
SPRYD7	0.61	0.00185	0.00783523
RPL34	0.61	5.00E-05	0.000370102
LIG3	0.61	5.00E-05	0.000370102
GNPAT	0.61	0.00015	0.000969761
MAGED1	0.61	0.0001	0.000684367
ERCC3	0.61	5.00E-05	0.000370102
MARCH2	0.61	5.00E-05	0.000370102
CDIPT	0.61	5.00E-05	0.000370102
ZRSR2	0.61	0.0001	0.000684367
KLRC3	0.61	0.00135	0.00606006
NME2	0.61	0.00015	0.000969761
MESDC1	0.61	0.0001	0.000684367
ZSCAN12	0.61	0.00015	0.000969761
CD37	0.61	5.00E-05	0.000370102
SACM1L	0.61	5.00E-05	0.000370102
WHAMMP3	0.61	0.0001	0.000684367
DPAGT1	0.61	0.0005	0.00266422
ORC5	0.61	0.00105	0.0049133
SCAPER	0.61	5.00E-05	0.000370102
MED29	0.61	5.00E-05	0.000370102
ZNF594	0.61	0.0001	0.000684367
SEC24D	0.61	5.00E-05	0.000370102
EEA1	0.61	5.00E-05	0.000370102
C12orf23	0.61	5.00E-05	0.000370102
INMT	0.61	0.00075	0.00374051
FCGRT	0.61	0.0002	0.00123235
AGER	0.61	0.00035	0.00197564
EXOC1	0.61	5.00E-05	0.000370102
SPTLC2	0.61	5.00E-05	0.000370102
GAL3ST4	0.61	0.0058	0.0197146
CCDC57	0.61	5.00E-05	0.000370102
STX16	0.61	0.0003	0.00173314
FH	0.61	5.00E-05	0.000370102
PRDM2	0.61	5.00E-05	0.000370102
ST3GAL5	0.61	5.00E-05	0.000370102
B4GALT7	0.61	0.00085	0.00413749
IDO1	0.61	0.0109	0.0325419
C5orf25	0.61	0.0053	0.0183682
ZNF260	0.61	5.00E-05	0.000370102
RFPL1-AS1	0.61	0.0028	0.0109351
SRA1	0.61	5.00E-05	0.000370102
BMP2K	0.61	5.00E-05	0.000370102
SNX3	0.61	5.00E-05	0.000370102
STAT1	0.61	5.00E-05	0.000370102
BTK	0.61	5.00E-05	0.000370102
HDAC7	0.61	5.00E-05	0.000370102
RAD17	0.61	0.00275	0.0107826

RPL22	0.61	5.00E-05	0.000370102
CDC37	0.61	5.00E-05	0.000370102
HIP1	0.61	0.00015	0.000969761
KDM1A	0.61	5.00E-05	0.000370102
ZRANB1	0.61	5.00E-05	0.000370102
SH3BGRL	0.61	5.00E-05	0.000370102
UQCR11	0.61	5.00E-05	0.000370102
DYNLT1	0.61	5.00E-05	0.000370102
SRSF5	0.61	5.00E-05	0.000370102
ALG6	0.61	0.00015	0.000969761
ATF2	0.61	5.00E-05	0.000370102
LOC151475	0.61	0.00195	0.00817589
LOC100132077	0.61	0.00025	0.00149761
PSMD13	0.61	5.00E-05	0.000370102
QPCTL	0.61	0.0008	0.00394564
C21orf2	0.61	0.00015	0.000969761
SNX14	0.61	5.00E-05	0.000370102
TSR1	0.61	5.00E-05	0.000370102
COX8A	0.61	5.00E-05	0.000370102
CSNK1D	0.61	5.00E-05	0.000370102
DDT	0.61	0.00955	0.0292524
NAPEPLD	0.61	0.0042	0.0152456
HOTAIRM1	0.61	0.0101	0.030557
ATP8B1	0.61	0.00385	0.0142336
CEP57L1	0.61	0.0055	0.0188951
SS18L1	0.60	5.00E-05	0.000370102
MYOF	0.60	5.00E-05	0.000370102
ORAI3	0.60	0.0002	0.00123235
PSMD14	0.60	5.00E-05	0.000370102
SPON1	0.60	0.0026	0.0103266
MAGED2	0.60	5.00E-05	0.000370102
EID1	0.60	5.00E-05	0.000370102
BCAT2	0.60	0.0047	0.0166958
C11orf46	0.60	5.00E-05	0.000370102
MKKS	0.60	0.00055	0.00288713
FCRL5	0.60	5.00E-05	0.000370102
EAF2	0.60	0.0005	0.00266422
TBC1D10C	0.60	5.00E-05	0.000370102
BLOC1S2	0.60	5.00E-05	0.000370102
BAZ1A	0.60	5.00E-05	0.000370102
AMFR	0.60	5.00E-05	0.000370102
SLC3A2	0.60	5.00E-05	0.000370102
GTF2E1	0.60	0.0001	0.000684367
CCDC117	0.60	5.00E-05	0.000370102
LOC401397	0.60	0.0038	0.0140866
PPAPDC1B	0.60	0.0011	0.00510741
LMOD3	0.60	0.00115	0.00529146
LARS2	0.60	0.00015	0.000969761
ZNF607	0.60	0.004	0.0146702
ERCC2	0.60	0.00345	0.0129704
TLR7	0.60	0.00015	0.000969761
SKP2	0.60	0.0008	0.00394564
NTSE	0.60	0.00015	0.000969761
LOC284801	0.60	0.00015	0.000969761
SNHG8	0.60	0.00765	0.0245391
LAT	0.60	5.00E-05	0.000370102
IL4R	0.60	0.0006	0.0030954
AGFG2	0.60	5.00E-05	0.000370102
LOC100507316	0.60	0.01135	0.0336667
STIL	0.60	0.00425	0.0153704
ATP2A3	0.60	5.00E-05	0.000370102
SLC35E1	0.60	5.00E-05	0.000370102
TRAPP1	0.60	5.00E-05	0.000370102
HNRNPR	0.60	5.00E-05	0.000370102
PCYT1A	0.60	5.00E-05	0.000370102
PRR11	0.60	5.00E-05	0.000370102
CDC25B	0.60	5.00E-05	0.000370102
NDUFA7	0.60	0.0028	0.0109351
TCEAL4	0.60	0.0047	0.0166958
TRA2A	0.60	5.00E-05	0.000370102
SETBP1	0.60	0.00855	0.0268148
LOC643733	0.60	0.01215	0.0356259
PSPH	0.60	0.00125	0.0056721
FCCR3A	0.60	5.00E-05	0.000370102
KIAA1704	0.60	0.0002	0.00123235
LOC100506191	0.60	0.0003	0.00173314
TPCN1	0.60	5.00E-05	0.000370102
LOC100506936	0.60	0.0002	0.00123235
AZI2	0.60	0.0003	0.00173314
TMBIM4	0.60	5.00E-05	0.000370102
NGRN	0.60	5.00E-05	0.000370102
DENND5B	0.60	0.00015	0.000969761
ZNF271	0.60	5.00E-05	0.000370102
PTGIR	0.60	0.00715	0.0232324
PTPN9	0.60	5.00E-05	0.000370102
POP1	0.60	0.00495	0.0173956
DUSP3	0.60	5.00E-05	0.000370102
ATP5A1	0.60	0.0001	0.000684367
FAM193A	0.60	5.00E-05	0.000370102
PRDX1	0.60	0.00025	0.00149761
STOML2	0.60	0.0008	0.00394564
BTN2A2	0.60	0.00045	0.00244023
WDR6	0.60	0.00055	0.00288713

COX18	0.60	5.00E-05	0.000370102
GRAMD1B	0.60	0.00585	0.0198405
ADD2	0.60	0.00295	0.0114047
ISOC2	0.60	0.01725	0.0474521
COL19A1	0.60	5.00E-05	0.000370102
CNOT4	0.60	5.00E-05	0.000370102
ZNF135	0.60	0.01585	0.044308
NTSC	0.60	0.00175	0.00749457
SFT2D2	0.59	0.0003	0.00173314
SNX12	0.59	0.00675	0.0221942
FADS1	0.59	0.00015	0.000969761
AGAP1	0.59	0.00565	0.0192951
LOC100507602	0.59	0.006	0.0202249
LOC100652840	0.59	0.0041	0.0149693
CCBL2	0.59	0.0133	0.0383376
AXIN1	0.59	5.00E-05	0.000370102
GNB2	0.59	5.00E-05	0.000370102
IFT172	0.59	0.0009	0.00433496
RALBP1	0.59	5.00E-05	0.000370102
EIF31	0.59	5.00E-05	0.000370102
THAP7	0.59	0.0032	0.0121833
TRADD	0.59	5.00E-05	0.000370102
SSPN	0.59	0.01425	0.0405337
NUP88	0.59	0.0025	0.00999275
UCP3	0.59	0.0149	0.0420702
SON	0.59	5.00E-05	0.000370102
GGT6	0.59	0.0012	0.00547584
SEC63	0.59	5.00E-05	0.000370102
BMS1	0.59	5.00E-05	0.000370102
EIF1B	0.59	0.0013	0.00587193
SLC16A4	0.59	0.0008	0.00394564
SLC25A44	0.59	0.00015	0.000969761
OGDH	0.59	0.0001	0.000684367
CLUAP1	0.59	0.00035	0.00197564
TPST1	0.59	0.0148	0.0418221
NUP188	0.59	5.00E-05	0.000370102
CEP128	0.59	0.0002	0.00123235
SPATS2	0.59	0.00105	0.0049133
FMO5	0.59	0.0182	0.0495221
TONSL	0.59	0.00145	0.00644393
ADORA2A	0.59	0.0031	0.0118979
TMEM39B	0.59	0.00345	0.0129704
NIT2	0.59	0.00055	0.00288713
PKNOX1	0.59	0.0001	0.000684367
AHCYL1	0.59	5.00E-05	0.000370102
DDX47	0.59	0.00015	0.000969761
AEBP1	0.59	0.00315	0.0120362
METTL21B	0.59	0.0123	0.035951
POLR1E	0.59	0.00015	0.000969761
CRYZL1	0.59	0.0019	0.0080003
MSRB3	0.59	0.00125	0.0056721
SF3B14	0.59	0.00015	0.000969761
DHRS12	0.59	0.00165	0.00715969
SNORA25	0.59	0.01715	0.047243
ZNF354B	0.59	0.00055	0.00288713
HMOX1	0.59	5.00E-05	0.000370102
FGR	0.59	5.00E-05	0.000370102
PFKM	0.59	0.00115	0.00529146
GBP3	0.59	5.00E-05	0.000370102
GNE	0.59	5.00E-05	0.000370102
ACBD3	0.59	5.00E-05	0.000370102
METTL18	0.59	0.0022	0.00900772
TMEM59	0.59	5.00E-05	0.000370102
PFAS	0.59	0.00025	0.00149761
REPIN1	0.59	0.00015	0.000969761
CTC1	0.59	5.00E-05	0.000370102
DHCR24	0.59	0.00985	0.029932
YWHAG	0.59	5.00E-05	0.000370102
JMJD5	0.59	0.0018	0.00767295
KIAA0020	0.59	5.00E-05	0.000370102
CHFR	0.59	5.00E-05	0.000370102
ZMAT2	0.59	5.00E-05	0.000370102
ERO1L	0.59	5.00E-05	0.000370102
MACC1	0.59	0.00045	0.00244023
ZNF721	0.59	0.0006	0.0030954
TAF1A	0.59	0.0016	0.00697345
TMCO4	0.59	0.0001	0.000684367
DDX39B	0.59	5.00E-05	0.000370102
SUPT16H	0.59	5.00E-05	0.000370102
RIC8A	0.59	0.0005	0.00266422
ELMO2	0.59	5.00E-05	0.000370102
KCTD20	0.59	5.00E-05	0.000370102
LOC100505989	0.59	0.00895	0.0277974
ARMC10	0.59	0.0032	0.0121833
RPS6KB1	0.59	0.0001	0.000684367
ANXA4	0.59	0.00025	0.00149761
C1orf229	0.59	0.0119	0.0349896
USP16	0.59	5.00E-05	0.000370102
ZNF91	0.59	5.00E-05	0.000370102
RIN1	0.59	0.0058	0.0197146
PSMG2	0.59	0.00095	0.00452522
PABPC4	0.59	5.00E-05	0.000370102
GYLTL1B	0.59	0.0033	0.0125088

ATAD1	0.59	5.00E-05	0.000370102
SGCB	0.59	0.0013	0.00587193
IGBP1	0.59	5.00E-05	0.000370102
VDAC2	0.59	0.0001	0.000684367
LOC100216545	0.59	0.0001	0.000684367
NTPCR	0.59	0.0158	0.0441862
MTMR10	0.59	0.00035	0.00197564
BACE1	0.59	0.01095	0.0326558
EPHA4	0.59	5.00E-05	0.000370102
KIF11	0.59	0.00095	0.00452522
SLC1A4	0.59	0.0007	0.00351914
DIS3	0.59	0.00035	0.00197564
FXR2	0.59	0.00245	0.00981281
LY6E	0.59	5.00E-05	0.000370102
PARP15	0.59	5.00E-05	0.000370102
UTP3	0.59	5.00E-05	0.000370102
MBOAT1	0.59	5.00E-05	0.000370102
ZNF193	0.58	0.0073	0.0235975
C19orf54	0.58	0.0089	0.0276795
DPY30	0.58	0.00135	0.00606006
C12orf10	0.58	0.0011	0.00510741
FAM108B1	0.58	0.00045	0.00244023
MID1IP1	0.58	0.0001	0.000684367
UPK1B	0.58	0.0037	0.013764
GIN1	0.58	0.00135	0.00606006
TRMT11	0.58	0.00035	0.00197564
NOC3L	0.58	5.00E-05	0.000370102
PPOX	0.58	0.00175	0.00749457
HSP90AA1	0.58	5.00E-05	0.000370102
VAMP8	0.58	5.00E-05	0.000370102
KARS	0.58	5.00E-05	0.000370102
C1orf130	0.58	0.001	0.00472422
MASP2	0.58	0.0005	0.00266422
DNAJA1	0.58	5.00E-05	0.000370102
STAT2	0.58	5.00E-05	0.000370102
LOC100506634	0.58	5.00E-05	0.000370102
OST4	0.58	0.0001	0.000684367
MRPS35	0.58	5.00E-05	0.000370102
SEC23IP	0.58	5.00E-05	0.000370102
IQCE	0.58	0.00025	0.00149761
MTMR7	0.58	0.01765	0.0483788
SAP30	0.58	0.00335	0.0126566
TBC1D19	0.58	0.0026	0.0103266
USP48	0.58	5.00E-05	0.000370102
MLA3	0.58	0.0001	0.000684367
C22orf40	0.58	0.01355	0.0388794
FEM1A	0.58	5.00E-05	0.000370102
GGT1	0.58	0.0156	0.0436977
TRAPPC6B	0.58	5.00E-05	0.000370102
CROT	0.58	0.00325	0.012343
ASPHD2	0.58	0.0028	0.0109351
GOLM1	0.58	0.0002	0.00123235
GPHN	0.58	0.00255	0.0101573
PARP4	0.58	5.00E-05	0.000370102
INTS9	0.58	0.0004	0.00220905
ZMPSTE24	0.58	5.00E-05	0.000370102
GRIN3A	0.58	0.00255	0.0101573
ZNF322	0.58	0.00025	0.00149761
LINS	0.58	0.0001	0.000684367
SNX9	0.58	5.00E-05	0.000370102
MTAP	0.58	5.00E-05	0.000370102
SMC5	0.58	5.00E-05	0.000370102
ZNF434	0.58	0.0006	0.0030954
EDC3	0.58	0.0002	0.00123235
FLVCR1	0.58	5.00E-05	0.000370102
RFC3	0.58	0.00725	0.0234689
GTF2B	0.58	5.00E-05	0.000370102
CD1D	0.58	5.00E-05	0.000370102
TGS1	0.58	0.00015	0.000969761
ANXA2	0.58	5.00E-05	0.000370102
CARS	0.58	5.00E-05	0.000370102
RFTN1	0.58	5.00E-05	0.000370102
HACL1	0.58	5.00E-05	0.000370102
LINC00115	0.58	0.0062	0.0207822
SAMD9L	0.58	5.00E-05	0.000370102
RPS29	0.58	0.0001	0.000684367
STK10	0.58	5.00E-05	0.000370102
RPAP3	0.58	0.00025	0.00149761
CCDC47	0.58	5.00E-05	0.000370102
GEN1	0.58	0.0004	0.00220905
MCM2	0.58	0.00115	0.00529146
PMS2CL	0.58	0.011	0.0327624
LOC153684	0.58	0.0018	0.00767295
ZNF720	0.58	0.0014	0.006256
ELF2	0.58	5.00E-05	0.000370102
PYCR2	0.58	5.00E-05	0.000370102
ZNF37A	0.58	5.00E-05	0.000370102
CCDC65	0.58	0.0054	0.0186351
OSBPL11	0.57	5.00E-05	0.000370102
TERF1	0.57	0.0001	0.000684367
BSDC1	0.57	5.00E-05	0.000370102
NIN	0.57	0.0008	0.00394564
LOC441124	0.57	0.00125	0.0056721



STAP1	0.57	0.0007	0.00351914
UGCG	0.57	0.0002	0.00123235
C1orf162	0.57	5.00E-05	0.000370102
SYTL3	0.57	5.00E-05	0.000370102
MYEF2	0.57	0.0003	0.00173314
FBXO34	0.57	5.00E-05	0.000370102
LOC100507106	0.57	0.00365	0.0136184
ITGB2	0.57	0.00175	0.00749457
C8orf38	0.57	0.0055	0.0188951
ICAM4	0.57	0.01725	0.0474521
SMC3	0.57	5.00E-05	0.000370102
TMEM192	0.57	0.00015	0.000969761
SWT1	0.57	0.0072	0.0233564
GPRIN3	0.57	5.00E-05	0.000370102
GCNT2	0.57	0.0008	0.00394564
EXD3	0.57	0.0175	0.048044
POU2AF1	0.57	5.00E-05	0.000370102
ERP29	0.57	5.00E-05	0.000370102
SPIB	0.57	0.0003	0.00173314
TM9SF1	0.57	0.0005	0.00266422
FAM153C	0.57	0.01175	0.0345928
GATA2	0.57	0.00925	0.0285555
PSMD7	0.57	0.01575	0.0440732
LIN9	0.57	0.0113	0.0335617
RNF40	0.57	0.00035	0.00197564
ABHD6	0.57	0.0063	0.0210458
C22orf13	0.57	5.00E-05	0.000370102
UBE2L6	0.57	5.00E-05	0.000370102
LARP4B	0.57	5.00E-05	0.000370102
RBM41	0.57	0.00025	0.00149761
RNF11	0.57	5.00E-05	0.000370102
YPEL3	0.57	0.00105	0.0049133
SAP25	0.57	0.0013	0.00587193
HIST1H2AM	0.57	0.0003	0.00173314
ZNF280D	0.57	5.00E-05	0.000370102
EXOC4	0.57	0.00035	0.00197564
DPY19L2P2	0.57	5.00E-05	0.000370102
SULF2	0.57	5.00E-05	0.000370102
GPM6B	0.57	0.00745	0.0240036
METAP2	0.57	5.00E-05	0.000370102
FAM26F	0.57	0.00245	0.00981281
ABCY5	0.57	0.0079	0.0251945
TAF3	0.57	0.0003	0.00173314
DOCK11	0.57	0.00015	0.000969761
RTCD1	0.57	5.00E-05	0.000370102
SLC9A3R1	0.57	5.00E-05	0.000370102
ZFP62	0.57	5.00E-05	0.000370102
CYBB	0.57	0.00095	0.00452522
ZNF22	0.57	0.0003	0.00173314
COG6	0.57	0.0001	0.000684367
BICD2	0.57	5.00E-05	0.000370102
NMNAT1	0.57	0.0002	0.00123235
TARBP2	0.57	0.00725	0.0234689
ZNF768	0.57	0.00495	0.0173956
YIPF3	0.57	0.00025	0.00149761
ZWILCH	0.57	0.0066	0.0217998
NAA20	0.57	0.00115	0.00529146
KLHL12	0.57	0.0001	0.000684367
ITPK1	0.57	0.0001	0.000684367
AK5	0.57	0.00105	0.0049133
MORC4	0.57	0.00315	0.0120362
NOL8	0.57	0.00045	0.00244023
ZBTB26	0.57	0.00645	0.0214275
HMGCS1	0.57	5.00E-05	0.000370102
GIMAP7	0.57	5.00E-05	0.000370102
ZNF879	0.57	0.0054	0.0186351
TNFRSF14	0.57	5.00E-05	0.000370102
KLRF1	0.57	0.0005	0.00266422
PRELID1	0.57	0.0068	0.0223373
IKZF1	0.57	0.0005	0.00266422
UGT8	0.57	5.00E-05	0.000370102
TMT2	0.57	0.00015	0.000969761
SNAP23	0.56	5.00E-05	0.000370102
TMED8	0.56	0.0057	0.0194225
NCF1	0.56	0.0001	0.000684367
TBXA2R	0.56	0.0018	0.00767295
PPP2CB	0.56	0.00095	0.00452522
FAM73B	0.56	5.00E-05	0.000370102
MASTL	0.56	0.0004	0.00220905
PEX5	0.56	0.00115	0.00529146
NIF3L1	0.56	0.0008	0.00394564
CYTH1	0.56	5.00E-05	0.000370102
RINL	0.56	0.0001	0.000684367
AKIP1	0.56	0.002	0.00833736
C1orf63	0.56	5.00E-05	0.000370102
ZFP64	0.56	0.00035	0.00197564
VHL	0.56	5.00E-05	0.000370102
PPP1CC	0.56	5.00E-05	0.000370102
BCL7C	0.56	0.00185	0.00783523
WDR52	0.56	0.0028	0.0109351
ERLIN2	0.56	0.00095	0.00452522
RFC1	0.56	5.00E-05	0.000370102
RECQL	0.56	0.00055	0.00288713

CISH	0.56	0.0001	0.000684367
DRAM2	0.56	0.008	0.0254487
HPRT1	0.56	0.0098	0.0298261
LOC100128338	0.56	0.0023	0.00934227
DAGLB	0.56	0.00025	0.00149761
ZBTB24	0.56	0.00855	0.0268148
PTCD2	0.56	0.0149	0.0420702
FASTKD1	0.56	0.0006	0.0030954
NBR1	0.56	5.00E-05	0.000370102
MRE11A	0.56	0.0001	0.000684367
C7orf68	0.56	0.0029	0.0112429
COMMD1	0.56	0.00585	0.0198405
ATP11A	0.56	5.00E-05	0.000370102
SPATA5L1	0.56	0.00325	0.012343
IDH3B	0.56	5.00E-05	0.000370102
LOC100507347	0.56	0.00105	0.0049133
SLC25A46	0.56	5.00E-05	0.000370102
ARL8B	0.56	5.00E-05	0.000370102
ATXN3	0.56	0.0001	0.000684367
LOC284276	0.56	0.0095	0.0291511
HNRNPAB	0.56	0.0052	0.0180989
SP140L	0.56	5.00E-05	0.000370102
LPCAT3	0.56	0.0003	0.00173314
VPS28	0.56	0.0001	0.000684367
LATS1	0.56	5.00E-05	0.000370102
SYNJ2BP	0.56	0.00035	0.00197564
YIF1B	0.56	0.0021	0.00865223
RRAS2	0.56	0.00065	0.00331245
MSH6	0.56	0.0166	0.0459574
PRDX3	0.56	0.0001	0.000684367
MRPL23	0.56	0.00175	0.00749457
OAT	0.56	0.0004	0.00220905
DTHD1	0.56	0.0012	0.00547584
ZNF846	0.56	0.0041	0.0149693
MGMT	0.56	0.0064	0.0212819
PARP1	0.56	5.00E-05	0.000370102
LPIN2	0.56	5.00E-05	0.000370102
SLC14A1	0.56	0.002	0.00833736
PPPDE2	0.56	5.00E-05	0.000370102
ZNF175	0.56	0.00215	0.00882659
TXNDC9	0.56	0.0012	0.00547584
RTKN2	0.56	0.00085	0.00413749
ZNF84	0.56	5.00E-05	0.000370102
ATR	0.56	5.00E-05	0.000370102
TJP2	0.56	0.00035	0.00197564
GAK	0.55	5.00E-05	0.000370102
CD86	0.55	0.0002	0.00123235
MAEA	0.55	5.00E-05	0.000370102
EEF2	0.55	0.01085	0.0324067
NFE2L1	0.55	0.0001	0.000684367
LYRM7	0.55	5.00E-05	0.000370102
PRNP	0.55	0.0001	0.000684367
HCLS1	0.55	0.0001	0.000684367
FARP2	0.55	0.00275	0.0107826
IP6K1	0.55	0.00025	0.00149761
CD38	0.55	0.00565	0.0192951
NEIL2	0.55	0.00625	0.0209193
CCDC109B	0.55	0.0001	0.000684367
VDAC1	0.55	5.00E-05	0.000370102
MAGOHB	0.55	0.00105	0.0049133
NPTN	0.55	5.00E-05	0.000370102
CEP152	0.55	0.0003	0.00173314
EHMT1	0.55	0.0001	0.000684367
TRIAP1	0.55	0.0048	0.0169636
HIST1H2BH	0.55	0.00075	0.00374051
RCBTB2	0.55	5.00E-05	0.000370102
C1orf228	0.55	0.00715	0.0232324
CROCCP3	0.55	0.0001	0.000684367
MKS1	0.55	0.00845	0.0265797
JAK1	0.55	0.00035	0.00197564
VPS53	0.55	0.00225	0.00917702
TCTN3	0.55	0.00065	0.00331245
LMAN1	0.55	5.00E-05	0.000370102
DNAJC21	0.55	0.0001	0.000684367
PPHLN1	0.55	0.00025	0.00149761
ABHD10	0.55	0.00035	0.00197564
SPCS2	0.55	0.0015	0.00662132
ARMCX6	0.55	0.0032	0.0121833
SI00PBP	0.55	0.00875	0.0272622
KRBA2	0.55	0.00845	0.0265797
APEX1	0.55	5.00E-05	0.000370102
KIAA0748	0.55	0.00025	0.00149761
C18orf19	0.55	0.00095	0.00452522
WDR53	0.55	0.007	0.0228419
LIPA	0.55	5.00E-05	0.000370102
SRFBP1	0.55	0.00015	0.000969761
LOC202781	0.55	0.00235	0.0094978
EPN1	0.55	0.0002	0.00123235
RPP14	0.55	0.0003	0.00173314
RNY1	0.55	0.00015	0.000969761
GMPS	0.55	0.0001	0.000684367
SFT2D3	0.55	0.0003	0.00173314
YIF1A	0.55	0.00665	0.0219334

MIOS	0.55	5.00E-05	0.000370102
ZHX3	0.55	0.00015	0.000969761
SERINC1	0.55	5.00E-05	0.000370102
ZNF664	0.55	5.00E-05	0.000370102
ZBTB38	0.55	5.00E-05	0.000370102
CBWD2	0.55	0.0054	0.0186351
PIK3C2B	0.55	0.00015	0.000969761
GIT2	0.55	0.00035	0.00197564
ADRB2	0.55	5.00E-05	0.000370102
POLD2	0.55	0.00095	0.00452522
KIAA0528	0.55	5.00E-05	0.000370102
PDCD7	0.55	5.00E-05	0.000370102
IPO13	0.55	0.0007	0.00351914
DMXL1	0.55	5.00E-05	0.000370102
ZBTB22	0.55	0.0004	0.00220905
SNORA22	0.55	0.0134	0.0385292
DAPK1	0.55	5.00E-05	0.000370102
C1orf35	0.55	0.0042	0.0152456
ILF3	0.55	0.00015	0.000969761
TTC9	0.55	5.00E-05	0.000370102
TBP	0.55	0.00105	0.0049133
TRAP1	0.55	0.00295	0.0114047
IRF1	0.55	0.0013	0.00587193
CLTC	0.55	5.00E-05	0.000370102
DEK	0.55	5.00E-05	0.000370102
HLA-A	0.55	0.00365	0.0136184
CDC40	0.55	0.0001	0.000684367
LOC100506305	0.55	0.00595	0.020076
C1orf58	0.55	5.00E-05	0.000370102
SLC7A5P2	0.55	0.0004	0.00220905
UHRF1	0.55	0.00725	0.0234689
KIAA0913	0.55	0.0003	0.00173314
ARPC2	0.55	0.0001	0.000684367
LIAS	0.55	0.00145	0.00644393
ADAM9	0.55	0.00045	0.00244023
TPP1	0.55	5.00E-05	0.000370102
HNRNP43	0.55	5.00E-05	0.000370102
RAB37	0.55	0.0047	0.0166958
PTGIS	0.55	0.0023	0.00934227
MSH2	0.55	0.0002	0.00123235
GEMIN5	0.55	0.0003	0.00173314
SLC38A7	0.55	0.01025	0.0309294
BRK1	0.55	0.0001	0.000684367
KIAA1586	0.55	0.00055	0.00288713
NCOR1	0.55	0.0022	0.00900772
DNTTIP2	0.55	5.00E-05	0.000370102
PEA15	0.55	5.00E-05	0.000370102
ERCC4	0.55	0.0006	0.0030954
TTC3	0.55	0.0001	0.000684367
TNFRSF10A	0.55	0.0003	0.00173314
RAB7L1	0.55	5.00E-05	0.000370102
YARS	0.55	0.01405	0.0400309
FCRL1	0.54	0.0001	0.000684367
TBC1D2	0.54	0.0006	0.0030954
RPS19	0.54	0.0001	0.000684367
DCAF15	0.54	0.0002	0.00123235
BET1	0.54	0.0028	0.0109351
LOC100287792	0.54	0.01145	0.0338832
HNRNPU-AS1	0.54	5.00E-05	0.000370102
AIM1	0.54	0.0001	0.000684367
SMARCA2	0.54	0.0001	0.000684367
STMN1	0.54	0.0006	0.0030954
ACCS	0.54	0.004	0.0146702
PKM2	0.54	0.0002	0.00123235
ANKRD26	0.54	0.0002	0.00123235
FBXO40	0.54	0.00495	0.0173956
BAG4	0.54	0.00035	0.00197564
ZNF701	0.54	0.0006	0.0030954
MREG	0.54	0.00075	0.00374051
IRF8	0.54	5.00E-05	0.000370102
COG2	0.54	0.0001	0.000684367
XPO7	0.54	0.0001	0.000684367
DYNLL1	0.54	0.00055	0.00288713
SSBP2	0.54	0.00015	0.000969761
WDR75	0.54	5.00E-05	0.000370102
APOL4	0.54	0.0003	0.00173314
ARMCX3	0.54	0.0003	0.00173314
TRIB2	0.54	0.00055	0.00288713
BRE	0.54	0.00635	0.0211667
POLH	0.54	0.00145	0.00644393
PDSS2	0.54	0.00075	0.00374051
CGRRF1	0.54	0.0081	0.0256897
SLC24A1	0.54	0.0002	0.00123235
UBE2N	0.54	0.00015	0.000969761
ZNF141	0.54	0.0003	0.00173314
BRX1	0.54	0.00065	0.00331245
LSM2	0.54	0.0054	0.0186351
GNB4	0.54	5.00E-05	0.000370102
SSU72	0.54	0.0001	0.000684367
TCTN2	0.54	0.0064	0.0212819
LOC100507642	0.54	0.00855	0.0268148
KIAA1737	0.54	0.0002	0.00123235
CDV3	0.54	5.00E-05	0.000370102

KIFAP3	0.54	0.0004	0.00220905
AC1VR1	0.54	0.0011	0.00510741
C14orf149	0.54	0.0057	0.0194225
CDYL2	0.54	0.0046	0.0164252
RAD52	0.54	0.0008	0.00394564
KIAA1598	0.54	0.0003	0.00173314
TMEM126A	0.54	0.00695	0.0227164
PDE4C	0.54	0.0009	0.00433496
PORCN	0.54	0.01675	0.0462984
ZNF419	0.54	0.00635	0.0211667
ZNF828	0.54	0.0012	0.00547584
RNU5A-1	0.54	0.0001	0.000684367
TAF7	0.54	0.0001	0.000684367
RFX3	0.54	0.00185	0.00783523
TRIM52	0.54	0.0003	0.00173314
TAB3	0.54	0.0001	0.000684367
NECAP2	0.54	5.00E-05	0.000370102
CNIH	0.54	0.0008	0.00394564
MAK	0.54	0.0142	0.0404082
GALNT10	0.54	0.00025	0.00149761
EPS15L1	0.54	0.00025	0.00149761
COBRA1	0.54	0.0005	0.00266422
MAST2	0.54	0.00205	0.00849189
MAVS	0.54	5.00E-05	0.000370102
SNRPA	0.54	5.00E-05	0.000370102
MRPL19	0.54	0.0001	0.000684367
MPP6	0.54	0.0009	0.00433496
GTF2A2	0.54	0.0024	0.00965179
GPI	0.54	0.0001	0.000684367
C19orf39	0.54	0.00715	0.0232324
ST14	0.54	0.00095	0.00452522
SKIV2L2	0.54	0.0002	0.00123235
GLRX5	0.54	0.00355	0.0132884
SDCBP	0.54	5.00E-05	0.000370102
FAM168A	0.53	0.00115	0.00529146
LCMT2	0.53	0.00465	0.0165608
SNX11	0.53	0.0008	0.00394564
UQCRCQ	0.53	0.00105	0.0049133
QRSL1	0.53	0.00025	0.00149761
TP53I13	0.53	0.0007	0.00351914
TSG101	0.53	0.00025	0.00149761
LOC399744	0.53	0.00465	0.0165608
MTFR1	0.53	0.01135	0.0336667
RPL27A	0.53	0.0024	0.00965179
ARFGEF1	0.53	0.00015	0.000969761
MED27	0.53	0.0097	0.029574
ASCC2	0.53	0.0001	0.000684367
LARGE	0.53	0.0093	0.0286521
KIAA1033	0.53	5.00E-05	0.000370102
GM2A	0.53	5.00E-05	0.000370102
PLXDC2	0.53	0.0001	0.000684367
ELL2	0.53	0.00105	0.0049133
CPT1A	0.53	5.00E-05	0.000370102
CDYL	0.53	0.0002	0.00123235
SLA	0.53	0.0001	0.000684367
IL12RB2	0.53	0.0102	0.030792
HSH2D	0.53	5.00E-05	0.000370102
IDH2	0.53	0.00015	0.000969761
ERH	0.53	0.00035	0.00197564
PARG	0.53	0.00565	0.0192951
LDOC1L	0.53	0.0003	0.00173314
PPM1M	0.53	5.00E-05	0.000370102
PRMT5	0.53	0.00095	0.00452522
UBL5	0.53	0.00025	0.00149761
EPB41L3	0.53	0.00015	0.000969761
RAB5A	0.53	5.00E-05	0.000370102
PSMB10	0.53	5.00E-05	0.000370102
LINC00339	0.53	0.0116	0.0342462
RNF216	0.53	5.00E-05	0.000370102
NFYA	0.53	0.00055	0.00288713
LOC729737	0.53	0.00445	0.0159764
SRRM1	0.53	5.00E-05	0.000370102
ZDHHC6	0.53	0.0001	0.000684367
POLE3	0.53	0.00025	0.00149761
ZSCAN30	0.53	0.0172	0.0473618
TCF7	0.53	0.00035	0.00197564
ZNF470	0.53	0.0059	0.019961
MRPS31	0.53	0.0004	0.00220905
SPC25	0.53	0.00075	0.00374051
CCDC124	0.53	0.0027	0.010638
MFNG	0.53	5.00E-05	0.000370102
QRICH1	0.53	5.00E-05	0.000370102
C20orf29	0.53	0.00875	0.0272622
FAM65B	0.53	0.00375	0.0139274
LNX2	0.53	0.0002	0.00123235
HACE1	0.53	0.00075	0.00374051
ISPD	0.53	0.00785	0.0250814
NOMO1	0.53	0.00585	0.0198405
EIF2B1	0.53	5.00E-05	0.000370102
GUK1	0.53	0.0002	0.00123235
MOB2	0.53	0.00085	0.00413749
NSUN2	0.53	0.0002	0.00123235
LOC729915	0.53	0.0012	0.00547584

PSMA7	0.53	5.00E-05	0.000370102
MCTS1	0.53	5.00E-05	0.000370102
DCLRE1B	0.53	0.0076	0.02439
ETS1	0.53	0.004	0.0146702
ACTR3	0.53	0.0002	0.00123235
EVL	0.53	0.00025	0.00149761
ZFP106	0.53	0.0002	0.00123235
EIF1AY	0.53	0.01225	0.0358581
ZFC3H1	0.53	5.00E-05	0.000370102
IDH1	0.53	0.00095	0.00452522
HRH2	0.53	0.0013	0.00587193
LRRC16A	0.53	0.00185	0.00783523
FAF1	0.53	0.0002	0.00123235
PPP2R4	0.53	0.0003	0.00173314
TSPAN13	0.53	0.00335	0.0126566
XIAP	0.53	5.00E-05	0.000370102
FTO	0.53	0.0002	0.00123235
HEATR1	0.53	0.003	0.0115753
NFKB1	0.53	5.00E-05	0.000370102
LOC283875	0.53	0.0042	0.0152456
DAND5	0.53	0.00315	0.0120362
LMNB1	0.53	0.0006	0.0030954
ZNF274	0.53	0.0003	0.00173314
PCNA	0.53	0.00365	0.0136184
PUM1	0.52	0.0001	0.000684367
TDRD3	0.52	0.0001	0.000684367
LOC100287628	0.52	0.0118	0.0347177
C9orf69	0.52	0.00045	0.00244023
TRIM66	0.52	0.00015	0.000969761
RIC3	0.52	0.006	0.0202249
SNAP29	0.52	0.00015	0.000969761
NSMCE1	0.52	0.0017	0.0073397
CLK2	0.52	0.0002	0.00123235
ZNF546	0.52	0.00205	0.00849189
TSEN34	0.52	0.00265	0.0104829
ZNF513	0.52	0.0005	0.00266422
THAP6	0.52	0.00145	0.00644393
RASA3	0.52	0.0001	0.000684367
RTN3	0.52	0.0001	0.000684367
TNPO2	0.52	0.0003	0.00173314
MAPK14	0.52	0.0003	0.00173314
SIGLEC1	0.52	0.01665	0.0460681
TCEB1	0.52	0.0019	0.0080003
NUP43	0.52	0.0002	0.00123235
PHRF1	0.52	0.0001	0.000684367
ZNF283	0.52	0.0081	0.0256897
ARMC2	0.52	0.0175	0.048044
NUDT16L1	0.52	0.0028	0.0109351
LINC00342	0.52	0.0006	0.0030954
ECT2	0.52	0.01095	0.0326558
PTTG1IP	0.52	5.00E-05	0.000370102
IGFLR1	0.52	0.00045	0.00244023
ACACB	0.52	0.00035	0.00197564
PLBD1	0.52	0.00065	0.00331245
KIAA0100	0.52	0.00045	0.00244023
HCG18	0.52	0.00175	0.00749457
CEP19	0.52	0.00885	0.0275364
ANKRD44	0.52	0.00485	0.0171228
COQ5	0.52	0.00615	0.0206598
FOXJ3	0.52	5.00E-05	0.000370102
MB21D1	0.52	0.00265	0.0104829
RAB36	0.52	0.00595	0.020076
FAM107B	0.52	0.0001	0.000684367
E4F1	0.52	0.00065	0.00331245
PSMC1	0.52	0.0001	0.000684367
ZNF484	0.52	0.00035	0.00197564
HERC6	0.52	0.00045	0.00244023
UBQLN4	0.52	0.0007	0.00351914
NSUN5	0.52	0.00275	0.0107826
PNO1	0.52	0.0012	0.00547584
SPAG7	0.52	0.00075	0.00374051
AARSD1	0.52	0.0008	0.00394564
ZMYM3	0.52	0.00225	0.00917702
LMX1B	0.52	0.0054	0.0186351
MEGF9	0.52	0.0002	0.00123235
C3orf19	0.52	0.00035	0.00197564
NRIP3	0.52	0.0059	0.019961
RPTOR	0.52	5.00E-05	0.000370102
APAF1	0.52	0.00035	0.00197564
LYRM4	0.52	0.00725	0.0234689
ARL11	0.52	0.0017	0.0073397
THAP4	0.52	0.00965	0.0294606
MAN2A2	0.52	5.00E-05	0.000370102
ERAP2	0.52	0.00055	0.00288713
CCAR1	0.52	5.00E-05	0.000370102
C21orf62	0.52	0.0011	0.00510741
RINT1	0.52	0.0011	0.00510741
NUP54	0.52	0.0004	0.00220905
DZIP3	0.52	0.0007	0.00351914
MRPS9	0.52	0.00175	0.00749457
ZFHX3	0.52	0.00015	0.000969761
FIP1L1	0.52	0.00015	0.000969761
SLC50A1	0.52	0.00185	0.00783523

MTA3	0.52	0.0052	0.0180989
TAF1B	0.52	0.002	0.00833736
LCP1	0.52	0.00995	0.0301761
QSER1	0.52	0.0002	0.00123235
CHRNBI	0.52	0.0017	0.0073397
ISG15	0.52	0.00545	0.0187748
NCAM1	0.52	0.00285	0.0111021
ACBD4	0.52	0.00115	0.00529146
ZBTB17	0.52	0.00065	0.00331245
CLK4	0.52	0.0002	0.00123235
WRN	0.52	0.0004	0.00220905
MRPL38	0.52	0.00115	0.00529146
LAIR1	0.52	0.00015	0.000969761
FLJ3630	0.52	0.0029	0.0112429
NUS1	0.52	0.0001	0.000684367
ODF2	0.52	0.00065	0.00331245
ZNF532	0.52	0.0006	0.0030954
ZBTB80S	0.52	0.00265	0.0104829
VIPR1	0.51	0.00085	0.00413749
CASC3	0.51	0.0001	0.000684367
NDUFB10	0.51	0.00105	0.0049133
LAMP1	0.51	5.00E-05	0.000370102
SPG20	0.51	0.00045	0.00244023
STAC2	0.51	0.0056	0.0191623
C12orf11	0.51	0.00085	0.00413749
KIAA1109	0.51	0.0005	0.00266422
MAPK1	0.51	0.00465	0.0165608
RARS	0.51	0.00045	0.00244023
GP9	0.51	0.01365	0.0391013
ZFP41	0.51	0.004	0.0146702
GIGYF2	0.51	0.0003	0.00173314
RABEP2	0.51	0.00175	0.00749457
BASP1	0.51	0.00085	0.00413749
SMARCB1	0.51	0.0056	0.0191623
LIMA1	0.51	0.00245	0.00981281
NLRP12	0.51	0.0002	0.00123235
GNL2	0.51	0.0005	0.00266422
KATNB1	0.51	0.0024	0.00965179
MRPL15	0.51	0.00585	0.0198405
BRCA1	0.51	0.00675	0.0221942
RAD50	0.51	5.00E-05	0.000370102
DHX33	0.51	0.0023	0.00934227
CABP4	0.51	0.0012	0.00547584
PLD3	0.51	0.00015	0.000969761
CLPB	0.51	0.00115	0.00529146
ZNF266	0.51	0.00015	0.000969761
ITIH4	0.51	0.0015	0.00662132
CYTIP	0.51	0.0002	0.00123235
C19orf52	0.51	0.0063	0.0210458
LAMC1	0.51	0.00305	0.0117288
RFX5	0.51	0.0001	0.000684367
ZNF668	0.51	0.01145	0.0338832
SDHAP1	0.51	0.0071	0.0231081
STAT3	0.51	0.0002	0.00123235
TRMT1L	0.51	0.012	0.0352385
CLIC1	0.51	0.0002	0.00123235
HIST1H4B	0.51	0.00135	0.00606006
SLC37A3	0.51	0.0019	0.0080003
DOPEY2	0.51	0.00015	0.000969761
TMED2	0.51	0.0146	0.0413247
DDX1	0.51	0.00035	0.00197564
BCORL1	0.51	0.0074	0.0238537
YWHAE	0.51	0.00015	0.000969761
GUSBP11	0.51	0.0025	0.00999275
CPT2	0.51	0.0062	0.0207822
RAD18	0.51	0.00155	0.00680283
SDF4	0.51	0.00015	0.000969761
HERPUD2	0.51	0.0003	0.00173314
SETD2	0.51	0.00015	0.000969761
SARS	0.51	0.0002	0.00123235
SLC15A4	0.51	0.00015	0.000969761
PARD6G	0.51	0.0046	0.0164252
RRP7A	0.51	0.0002	0.00123235
OFD1	0.51	0.0001	0.000684367
NAT10	0.51	5.00E-05	0.000370102
C17orf80	0.51	0.0045	0.0161224
CENPF	0.51	0.0063	0.0210458
KIAA1456	0.51	0.0003	0.00173314
FASTKD2	0.51	0.00015	0.000969761
RRS1	0.51	0.00325	0.012343
LOC100506746	0.51	0.0108	0.0322783
APHIB	0.51	0.0006	0.0030954
MRPS16	0.51	0.0032	0.0121833
SLK	0.51	5.00E-05	0.000370102
DDOST	0.51	0.0002	0.00123235
CD200	0.51	0.00785	0.0250814
TCTA	0.51	0.0013	0.00587193
STIP1	0.51	0.00015	0.000969761
CEP68	0.51	0.0055	0.0188951
CLDND1	0.51	0.0002	0.00123235
ANKRD13D	0.51	0.00025	0.00149761
PIK3R2	0.51	0.002	0.00833736
CCNDBP1	0.51	0.0002	0.00123235

<i>GALC</i>	0.51	0.00045	0.00244023
<i>LOC646719</i>	0.51	0.0046	0.0164252
<i>PNN</i>	0.51	0.00025	0.00149761
<i>ATIC</i>	0.51	0.00395	0.0145332
<i>ARHGAP25</i>	0.51	0.0004	0.00220905
<i>TMEM63A</i>	0.51	0.00015	0.000969761
<i>ACAD10</i>	0.51	0.00055	0.00288713
<i>BTN3A3</i>	0.51	0.0001	0.000684367
<i>SUZ12</i>	0.51	0.0002	0.00123235
<i>PDXP</i>	0.51	0.011	0.0327624
<i>SLC2A4</i>	0.51	0.00145	0.00644393
<i>DGCR8</i>	0.51	0.00755	0.0242409
<i>GNAI2</i>	0.51	0.00065	0.00331245
<i>GIMAP8</i>	0.51	0.00015	0.000969761
<i>HELB</i>	0.51	0.00015	0.000969761
<i>HPCAL4</i>	0.51	0.00615	0.0206598
<i>FBXO9</i>	0.51	5.00E-05	0.000370102
<i>HCK</i>	0.51	0.0001	0.000684367
<i>PAPSS2</i>	0.51	0.00985	0.029932
<i>HSPH1</i>	0.50	0.0002	0.00123235
<i>RAP1A</i>	0.50	0.0003	0.00173314
<i>TSEN2</i>	0.50	0.00465	0.0165608
<i>PRPF39</i>	0.50	0.00255	0.0101573
<i>TSC22D1</i>	0.50	0.0034	0.0128069
<i>KIF1B</i>	0.50	0.0004	0.00220905
<i>FGD6</i>	0.50	0.00085	0.00413749
<i>TRAK2</i>	0.50	0.0003	0.00173314
<i>MTERFD1</i>	0.50	0.0112	0.0333077
<i>CC2D1A</i>	0.50	0.00125	0.0056721
<i>ZNF197</i>	0.50	0.00115	0.00529146
<i>NRBP2</i>	0.50	0.0032	0.0121833
<i>RABL3</i>	0.50	0.0006	0.0030954
<i>C6orf70</i>	0.50	0.00205	0.00849189
<i>STAR3NL</i>	0.50	0.0018	0.00767295
<i>TWF2</i>	0.50	0.0002	0.00123235
<i>SIPR4</i>	0.50	0.00015	0.000969761
<i>FAM101B</i>	0.50	0.0002	0.00123235
<i>UNC45A</i>	0.50	0.0033	0.0125088
<i>DTX2</i>	0.50	0.0173	0.0475517
<i>SLC22A23</i>	0.50	0.0072	0.0233564
<i>FBXO22</i>	0.50	0.01125	0.0334348
<i>MICAL3</i>	0.50	0.00075	0.00374051
<i>RPL38</i>	0.50	0.0004	0.00220905
<i>LST1</i>	0.50	0.0047	0.0166958
<i>ZBP1</i>	0.50	0.00195	0.00817589
<i>ATP1A1</i>	0.50	0.0006	0.0030954
<i>RBPJ</i>	0.50	0.00025	0.00149761
<i>ACSL6</i>	0.50	0.00045	0.00244023
<i>MAN1A1</i>	0.50	0.0007	0.00351914
<i>NSMCE4A</i>	0.50	0.00065	0.00331245
<i>KIAA0391</i>	0.50	0.0001	0.000684367
<i>POU5F1</i>	0.50	0.0035	0.0131369
<i>USP42</i>	0.50	0.00145	0.00644393
<i>RTN4IP1</i>	0.50	0.0096	0.0293534
<i>HDC</i>	0.50	0.0153	0.0430059
<i>CR2</i>	0.50	0.0045	0.0161224
<i>GOLPH3L</i>	0.50	0.0024	0.00965179
<i>MBD2</i>	0.50	0.00085	0.00413749
<i>RPS19BP1</i>	0.50	0.00275	0.0107826
<i>WSB2</i>	0.50	0.0007	0.00351914
<i>STK3</i>	0.50	0.00925	0.0285555
<i>HYOU1</i>	0.50	0.0001	0.000684367
<i>SIGMAR1</i>	0.50	0.00205	0.00849189
<i>TMEM38A</i>	0.50	0.00855	0.0268148
<i>GPAM</i>	0.50	0.0054	0.0186351
<i>EPB41</i>	0.50	0.0048	0.0169636
<i>WDR12</i>	0.50	0.00445	0.0159764
<i>NLRC4</i>	0.50	0.0019	0.0080003
<i>FAM179B</i>	0.50	0.0003	0.00173314
<i>LOC147804,ZNF761</i>	0.50	0.0055	0.0188951
<i>FAM200B</i>	0.50	0.002	0.00833736
<i>SAP130</i>	0.50	0.00065	0.00331245
<i>ATL3</i>	0.50	0.0004	0.00220905
<i>GRB2</i>	0.50	0.0001	0.000684367
<i>BSN-AS2</i>	0.50	0.00355	0.0132884
<i>PRPS1</i>	0.50	0.0008	0.00394564
<i>RSU1</i>	0.50	0.0005	0.00266422
<i>FCER2</i>	0.50	0.0012	0.00547584
<i>ZNF831</i>	0.50	0.00015	0.000969761
<i>RPGRIP1L</i>	0.50	0.0167	0.0461879
<i>FAM50A</i>	0.50	0.0009	0.00433496
<i>ZNF740</i>	0.50	0.00035	0.00197564
<i>WDR19</i>	0.50	0.0016	0.00697345
<i>RWDD4</i>	0.50	0.0012	0.00547584
<i>GNL3L</i>	0.50	0.00025	0.00149761
<i>TMEM203</i>	0.50	0.0029	0.0112429
<i>RBBP6</i>	0.50	0.0025	0.00999275
<i>ANKS3</i>	0.50	0.0127	0.0369245
<i>CRYBG3</i>	0.50	0.00475	0.0168214
<i>DDX10</i>	0.50	0.0004	0.00220905
<i>TLR4</i>	0.50	0.0004	0.00220905
<i>ABL2</i>	0.50	0.0042	0.0152456
<i>SYNE2</i>	0.50	0.0116	0.0342462

MORF4L2	0.50	0.0005	0.00266422
PLIN2	0.50	0.0007	0.00351914
KYNU	0.50	0.0017	0.0073397
ZDBF2	0.50	0.00075	0.00374051
ZNF680	0.50	0.0019	0.0080003
ADD3	0.50	0.00085	0.00413749
NEK9	0.50	5.00E-05	0.000370102
ACER3	0.50	0.00115	0.00529146
FTSJD1	0.50	0.0007	0.00351914
LOC100507033	0.50	0.00705	0.0229779
RPL21	0.50	0.0017	0.0073397
EFNB1	0.50	0.01705	0.0469769
LOC100379224	0.50	0.00095	0.00452522
SP100	0.50	0.0038	0.0140866
VPS26B	0.50	0.0004	0.00220905
RBBP9	0.50	0.00155	0.00680283
CHMP2B	0.50	0.0008	0.00394564
EPB41L4A	0.49	0.00245	0.00981281
DTX3L	0.49	0.0066	0.0217998
U2AF2	0.49	0.0003	0.00173314
LOC100505761	0.49	0.0155	0.0434706
SRPK2	0.49	0.0001	0.000684367
HLA-DMA	0.49	0.0002	0.00123235
PIAS2	0.49	0.00125	0.0056721
CEP192	0.49	0.0002	0.00123235
KIAA0947	0.49	0.00045	0.00244023
DNAJC18	0.49	0.0027	0.010638
CD68	0.49	0.00095	0.00452522
LZIC	0.49	0.00215	0.00882659
ERP44	0.49	0.0001	0.000684367
FMR1	0.49	0.00015	0.000969761
ATP8B2	0.49	0.00025	0.00149761
TOR1AIP2	0.49	0.00035	0.00197564
C18orf55	0.49	0.01765	0.0483788
GPRASP1	0.49	0.00235	0.0094978
ARL6IP1	0.49	5.00E-05	0.000370102
DNMT1	0.49	0.00025	0.00149761
CHD8	0.49	0.0005	0.00266422
PLCG1	0.49	0.00235	0.0094978
SAI1	0.49	0.00195	0.00817589
GLRX	0.49	0.0012	0.00547584
AMIGO1	0.49	0.00385	0.0142336
ADAM19	0.49	0.00015	0.000969761
FLNB	0.49	0.00035	0.00197564
ZNF446	0.49	0.01235	0.0360666
UBAP2	0.49	0.0001	0.000684367
AGPAT9	0.49	0.0073	0.0235975
C14orf105	0.49	0.0104	0.0313135
PTPLAD1	0.49	0.00155	0.00680283
PTPDC1	0.49	0.0133	0.0383376
TMEM168	0.49	0.0004	0.00220905
DAB2	0.49	0.0011	0.00510741
TYW1	0.49	0.00255	0.0101573
CASD1	0.49	0.0005	0.00266422
CENPJ	0.49	0.003	0.0115753
IL2RG	0.49	5.00E-05	0.000370102
MEFV	0.49	0.00015	0.000969761
RELL1	0.49	0.0082	0.0259294
GUF1	0.49	0.0002	0.00123235
LINC00341	0.49	0.00055	0.00288713
HIPK2	0.49	0.0007	0.00351914
DCLRE1A	0.49	0.00655	0.0216866
HSP90AB1	0.49	0.00065	0.00331245
WDR18	0.49	0.0132	0.038137
LOC100507110	0.49	0.014	0.0399214
FOXJ2	0.49	0.0006	0.0030954
TRIOBP	0.49	0.0044	0.0158299
HLA-DOB	0.49	0.0016	0.00697345
CYP20A1	0.49	0.00035	0.00197564
STAG3L4	0.49	0.0086	0.0269471
ZNF808	0.49	0.0006	0.0030954
LOC646851	0.49	0.00195	0.00817589
PIK3AP1	0.49	0.0004	0.00220905
FCHSD1	0.49	0.00045	0.00244023
CLEC2D	0.49	0.00075	0.00374051
MYB	0.49	0.01675	0.0462984
ZW10	0.49	0.0027	0.010638
TLR5	0.49	0.00275	0.0107826
SLC35E2	0.49	0.00425	0.0153704
KCTD9	0.49	0.0014	0.006256
COP57A	0.49	0.00315	0.0120362
OAS2	0.49	0.0007	0.00351914
PANX1	0.49	0.0026	0.0103266
CTSW	0.49	0.0018	0.00767295
SLC17A5	0.49	0.00215	0.00882659
CARS2	0.49	0.0003	0.00173314
LOC100507032	0.49	0.0034	0.0128069
GTF2H5	0.49	0.0023	0.00934227
ZNF204P	0.49	0.0075	0.0241309
HK1	0.49	0.0003	0.00173314
TAF8	0.49	0.00015	0.000969761
CHUK	0.49	0.00065	0.00331245
CD8B	0.49	0.00175	0.00749457



<i>LDHA</i>	0.49	0.00045	0.00244023
<i>SLC44A2</i>	0.49	0.00025	0.00149761
<i>LOC283070</i>	0.49	0.00255	0.0101573
<i>KCNE4</i>	0.49	0.01065	0.0319268
<i>C2orf3</i>	0.49	0.01345	0.0386327
<i>NDST2</i>	0.49	0.00015	0.000969761
<i>ZNF836</i>	0.49	0.0019	0.0080003
<i>CAP1</i>	0.49	0.0015	0.00662132
<i>C19orf2</i>	0.49	0.00015	0.000969761
<i>TBRG1</i>	0.49	0.00045	0.00244023
<i>VAPB</i>	0.49	0.0002	0.00123235
<i>XBP1</i>	0.49	0.00045	0.00244023
<i>ELP3</i>	0.48	0.0002	0.00123235
<i>DOK6</i>	0.48	0.0015	0.00662132
<i>COA5</i>	0.48	0.0009	0.00433496
<i>COQ4</i>	0.48	0.0043	0.0155147
<i>PDCL</i>	0.48	0.0015	0.00662132
<i>ELOVL1</i>	0.48	0.0011	0.00510741
<i>DNAB12</i>	0.48	0.00115	0.00529146
<i>NDUFS4</i>	0.48	0.0096	0.0293534
<i>TMEM129</i>	0.48	0.0023	0.00934227
<i>DAP3</i>	0.48	0.00035	0.00197564
<i>C17orf57</i>	0.48	0.00105	0.0049133
<i>ASPSCR1</i>	0.48	0.0046	0.0164252
<i>CYFIP1</i>	0.48	0.0009	0.00433496
<i>CPNE8</i>	0.48	0.00205	0.00849189
<i>RSBN1L</i>	0.48	0.0004	0.00220905
<i>BCAT1</i>	0.48	0.00505	0.017675
<i>CHM</i>	0.48	0.001	0.00472422
<i>ZNF767</i>	0.48	0.00165	0.00715969
<i>ISG20</i>	0.48	0.00075	0.00374051
<i>TBC1D23</i>	0.48	0.00055	0.00288713
<i>CD1C</i>	0.48	0.00675	0.0221942
<i>IGSF8</i>	0.48	0.00215	0.00882659
<i>SGOL1</i>	0.48	0.00895	0.0277974
<i>SLC25A25</i>	0.48	0.00165	0.00715969
<i>PIAS4</i>	0.48	0.00655	0.0216866
<i>RAD51B</i>	0.48	0.01445	0.0410011
<i>CRTAP</i>	0.48	0.00025	0.00149761
<i>HLA-DRB6</i>	0.48	0.00285	0.0111021
<i>FAM104A</i>	0.48	0.0062	0.0207822
<i>CCNL2</i>	0.48	0.00185	0.00783523
<i>GDE1</i>	0.48	0.0008	0.00394564
<i>PTPRCAP</i>	0.48	0.00035	0.00197564
<i>DRG1</i>	0.48	0.0014	0.006256
<i>ZNF394</i>	0.48	0.0001	0.000684367
<i>STAT5A</i>	0.48	0.00025	0.00149761
<i>CDC7</i>	0.48	0.012	0.0352385
<i>EPS15</i>	0.48	0.00035	0.00197564
<i>EIF2A</i>	0.48	0.0002	0.00123235
<i>HAUS6</i>	0.48	0.00045	0.00244023
<i>CDC26</i>	0.48	0.004	0.0146702
<i>PGM2L1</i>	0.48	0.00045	0.00244023
<i>BCCIP</i>	0.48	0.01815	0.0494348
<i>DGKZ</i>	0.48	0.0003	0.00173314
<i>ZNF251</i>	0.48	0.00345	0.0129704
<i>RPL30</i>	0.48	0.00445	0.0159764
<i>C1orf174</i>	0.48	0.00075	0.00374051
<i>SLC11A2</i>	0.48	0.00055	0.00288713
<i>PELI3</i>	0.48	0.0098	0.0298261
<i>MRPS10</i>	0.48	0.00085	0.00413749
<i>FAM175A</i>	0.48	0.00165	0.00715969
<i>KDSR</i>	0.48	0.00085	0.00413749
<i>ZNF235</i>	0.48	0.00465	0.0165608
<i>SIVA1</i>	0.48	0.0096	0.0293534
<i>EZH2</i>	0.48	0.00675	0.0221942
<i>PDCD10</i>	0.48	0.0007	0.00351914
<i>TMEM106C</i>	0.48	0.0085	0.0266944
<i>YWHAQ</i>	0.48	0.0004	0.00220905
<i>DLG3</i>	0.48	0.00575	0.0195687
<i>SDHA</i>	0.48	0.00035	0.00197564
<i>ITPR2</i>	0.48	0.0005	0.00266422
<i>KLRAQ1</i>	0.48	0.0006	0.0030954
<i>JAKMIP1</i>	0.48	0.00555	0.0190242
<i>MAT2B</i>	0.48	0.0004	0.00220905
<i>WDR20</i>	0.48	0.00125	0.0056721
<i>EHD4</i>	0.48	0.00115	0.00529146
<i>CEP290</i>	0.48	0.0009	0.00433496
<i>OXC1</i>	0.48	0.00055	0.00288713
<i>RNH1</i>	0.48	0.0005	0.00266422
<i>NAB1</i>	0.48	0.0009	0.00433496
<i>OTUB1</i>	0.48	0.0006	0.0030954
<i>SNX1</i>	0.48	0.00015	0.000969761
<i>LOC152217</i>	0.48	0.0094	0.028915
<i>ZAP70</i>	0.48	0.00065	0.00331245
<i>TNFRSF25</i>	0.48	0.00225	0.00917702
<i>DHDDS</i>	0.48	0.0016	0.00697345
<i>SKA1</i>	0.48	0.00445	0.0159764
<i>NCBP2</i>	0.48	0.0004	0.00220905
<i>ZNF471</i>	0.48	0.0005	0.00266422
<i>ARL13B</i>	0.48	0.01575	0.0440732
<i>FRA10AC1</i>	0.48	0.0018	0.00767295
<i>SLC12A9</i>	0.48	0.0002	0.00123235

<i>IPO9</i>	0.48	0.0002	0.00123235
<i>FAM111A</i>	0.48	0.0002	0.00123235
<i>PPF1A1</i>	0.48	0.0008	0.00394564
<i>MAB21L3</i>	0.48	0.00135	0.00606006
<i>PRRT3</i>	0.48	0.0184	0.0499284
<i>USP9Y</i>	0.48	0.00965	0.0294606
<i>C22orf25</i>	0.48	0.00105	0.0049133
<i>GPR137B</i>	0.48	0.0062	0.0207822
<i>HNRNPD</i>	0.48	0.0003	0.00173314
<i>NFX1</i>	0.47	0.0003	0.00173314
<i>AGPAT5</i>	0.47	0.0011	0.00510741
<i>CLCN4</i>	0.47	0.01205	0.0353627
<i>PCGF3</i>	0.47	0.0002	0.00123235
<i>RABGGTB</i>	0.47	0.0007	0.00351914
<i>ICMT</i>	0.47	0.00245	0.00981281
<i>INTS10</i>	0.47	0.00025	0.00149761
<i>PIAS3</i>	0.47	0.0074	0.0238537
<i>SEC62</i>	0.47	0.00405	0.0148221
<i>ERC1</i>	0.47	0.0005	0.00266422
<i>LOC147727</i>	0.47	0.001	0.00472422
<i>BOD1L</i>	0.47	0.00045	0.00244023
<i>HHEX</i>	0.47	0.00115	0.00529146
<i>USP6NL</i>	0.47	0.0039	0.0143876
<i>MTRFIL</i>	0.47	0.0006	0.0030954
<i>SYT11</i>	0.47	0.00065	0.00331245
<i>RAB11FIP3</i>	0.47	0.0043	0.0155147
<i>MRPL43</i>	0.47	0.00915	0.0283165
<i>DCTN6</i>	0.47	0.0083	0.0261855
<i>POMGNT1</i>	0.47	0.00355	0.0132884
<i>PAPLN</i>	0.47	0.0091	0.0281871
<i>API5</i>	0.47	0.0007	0.00351914
<i>FOXK2</i>	0.47	0.0006	0.0030954
<i>STK39</i>	0.47	0.0005	0.00266422
<i>IRF4</i>	0.47	0.0007	0.00351914
<i>MAFG</i>	0.47	0.00305	0.0117288
<i>ZDHHC23</i>	0.47	0.0087	0.0271801
<i>ZFP90</i>	0.47	0.0004	0.00220905
<i>SMC1A</i>	0.47	0.00055	0.00288713
<i>N4BP2L2</i>	0.47	0.0036	0.0134537
<i>H AUS4</i>	0.47	0.00265	0.0104829
<i>LINC00265</i>	0.47	0.0159	0.0444118
<i>JAK2</i>	0.47	0.0004	0.00220905
<i>PPP2R3A</i>	0.47	0.00715	0.0232324
<i>AZ11</i>	0.47	0.0131	0.0379196
<i>KIAA1841</i>	0.47	0.0091	0.0281871
<i>TM9SF2</i>	0.47	0.0002	0.00123235
<i>PCF11</i>	0.47	0.0003	0.00173314
<i>PPRC1</i>	0.47	0.0012	0.00547584
<i>TMOD2</i>	0.47	0.0004	0.00220905
<i>IK</i>	0.47	0.00035	0.00197564
<i>ARHGGEF26-AS1</i>	0.47	0.00055	0.00288713
<i>LOC220729</i>	0.47	0.00415	0.0151158
<i>SMURF1</i>	0.47	0.0007	0.00351914
<i>ATG13</i>	0.47	0.0005	0.00266422
<i>PSTPIP2</i>	0.47	0.00035	0.00197564
<i>C2CD2L</i>	0.47	0.00205	0.00849189
<i>DOCK9</i>	0.47	0.0013	0.00587193
<i>KLF4</i>	0.47	0.00095	0.00452522
<i>TMEM188</i>	0.47	0.0027	0.010638
<i>C9orf100</i>	0.47	0.0053	0.0183682
<i>TRIM4</i>	0.47	0.00055	0.00288713
<i>IARS</i>	0.47	0.00055	0.00288713
<i>GHITM</i>	0.47	0.00035	0.00197564
<i>PER2</i>	0.47	0.001	0.00472422
<i>ZFP30</i>	0.47	0.00305	0.0117288
<i>SEC22A</i>	0.47	0.004	0.0146702
<i>USO1</i>	0.47	0.0003	0.00173314
<i>BAG5</i>	0.47	0.0003	0.00173314
<i>GORASP2</i>	0.47	0.0012	0.00547584
<i>C19orf35</i>	0.47	0.01115	0.0331734
<i>FAR1</i>	0.47	0.0005	0.00266422
<i>CPNE5</i>	0.47	0.0059	0.019961
<i>YIPF6</i>	0.47	0.001	0.00472422
<i>LETM1</i>	0.47	0.0006	0.0030954
<i>ZMYM1</i>	0.47	0.00155	0.00680283
<i>WDR67</i>	0.47	0.0013	0.00587193
<i>C11orf24</i>	0.47	0.0081	0.0256897
<i>ZNF641</i>	0.47	0.0007	0.00351914
<i>DKFZP434I0714</i>	0.47	0.00865	0.0270545
<i>ZNF32</i>	0.47	0.0069	0.0226066
<i>ZFAT</i>	0.47	0.0043	0.0155147
<i>CDK9</i>	0.47	0.0007	0.00351914
<i>MUS81</i>	0.47	0.00175	0.00749457
<i>RNF5</i>	0.47	0.01065	0.0319268
<i>TSPAN5</i>	0.47	0.01315	0.0380165
<i>TET1</i>	0.47	0.00725	0.0234689
<i>MPHOSPH8</i>	0.47	0.0002	0.00123235
<i>ZNF624</i>	0.47	0.00625	0.0209193
<i>HDAC1</i>	0.47	0.0004	0.00220905
<i>ITGB1BP1</i>	0.47	0.00445	0.0159764
<i>ARF6</i>	0.47	0.00065	0.00331245
<i>POLE</i>	0.47	0.0005	0.00266422
<i>LOC100506548</i>	0.47	0.0008	0.00394564

ANKRD17	0.47	0.0006	0.0030954
EZH1	0.47	0.0001	0.000684367
ZNF320	0.47	0.0017	0.0073397
DIMT1	0.47	0.0017	0.0073397
C2orf68	0.47	0.0004	0.00220905
LOC100131067	0.47	0.00905	0.0280638
TIMM23	0.47	0.01085	0.0324066
KLF7	0.47	0.0016	0.00697345
USP34	0.46	0.00795	0.0253188
TCF4	0.46	0.0005	0.00266422
RAP1GDS1	0.46	0.0007	0.00351914
YTHDF2	0.46	0.00055	0.00288713
ZFP14	0.46	0.0006	0.0030954
HAUS7	0.46	0.01795	0.0489868
PPIA	0.46	0.0011	0.00510741
ZNF554	0.46	0.0087	0.0271801
DDX26B	0.46	0.0005	0.00266422
UQCRC1	0.46	0.0008	0.00394564
TUBGCP5	0.46	0.00195	0.00817589
GNAS	0.46	0.00175	0.00749457
INCENP	0.46	0.00545	0.0187748
HSD17B10	0.46	0.0056	0.0191623
SH3GLB2	0.46	0.00065	0.00331245
LOC284865	0.46	0.01765	0.0483788
KBTBD12	0.46	0.004	0.0146702
PCM1	0.46	0.001	0.00472422
C11orf61	0.46	0.01515	0.0426364
TMEM212	0.46	0.0009	0.00433496
ATP6V0A1	0.46	0.0016	0.00697345
EML3	0.46	0.0006	0.0030954
EIF3B	0.46	0.0006	0.0030954
RAB3GAP2	0.46	0.0009	0.00433496
FAM73A	0.46	0.00035	0.00197564
FAM54B	0.46	0.01525	0.0428829
CYP1A2	0.46	0.0134	0.0385292
KLHL5	0.46	0.0002	0.00123235
CAMSAP2	0.46	0.0144	0.0408761
HMGXB4	0.46	0.00365	0.0136184
ARHGAP21	0.46	0.00045	0.00244023
NFATC2	0.46	0.00065	0.00331245
RNASET2	0.46	0.0004	0.00220905
ZNF880	0.46	0.01345	0.0386327
CRTAM	0.46	0.0052	0.0180989
ENOSF1	0.46	0.00385	0.0142336
ROCK2	0.46	0.0005	0.00266422
SELO	0.46	0.00475	0.0168214
LARP1B	0.46	0.0098	0.0298261
HARS	0.46	0.00065	0.00331245
KIAA0141	0.46	0.0006	0.0030954
C17orf81	0.46	0.0164	0.0455501
ZNF398	0.46	0.0007	0.00351914
SIGIRR	0.46	0.0007	0.00351914
HMGN3	0.46	0.0052	0.0180989
FAM123B	0.46	0.0055	0.0188951
NAE1	0.46	0.00135	0.00606006
TDP2	0.46	0.0015	0.00662132
EIF3L	0.46	0.00115	0.00529146
ETY3	0.46	0.0077	0.0246708
C1orf27	0.46	0.00245	0.00981281
UBE2Q2	0.46	0.0009	0.00433496
CTNNB1	0.46	0.00095	0.00452522
ZNF568	0.46	0.0117	0.0344897
DPH3	0.46	0.0066	0.0217998
CYFIP2	0.46	0.00215	0.00882659
BANK1	0.46	0.00085	0.00413749
RFK	0.46	0.00845	0.0265797
PDLIM5	0.46	0.00315	0.0120362
IBA57	0.46	0.0016	0.00697345
EML2	0.46	0.00515	0.0179703
POGLUT1	0.46	0.002	0.00833736
COPB2	0.46	0.0007	0.00351914
GATAD1	0.46	0.0005	0.00266422
MRPS30	0.46	0.00215	0.00882659
PSMD2	0.46	0.001	0.00472422
ARAP3	0.46	0.00625	0.0209193
PPP3CC	0.46	0.0042	0.0152456
ARL6IP5	0.46	0.00085	0.00413749
IL12RB1	0.46	0.001	0.00472422
POLR3F	0.46	0.01235	0.0360666
RCHY1	0.46	0.00205	0.00849189
KCNN4	0.46	0.0044	0.0158299
CCDC90B	0.46	0.00365	0.0136184
TGFB2	0.46	0.00085	0.00413749
RPS6KB2	0.46	0.00095	0.00452522
SORL1	0.46	0.00955	0.0292524
LRRC14	0.46	0.0111	0.0330317
FRMD4A	0.46	0.00955	0.0292524
STM1	0.46	0.00035	0.00197564
HMGCL	0.46	0.01495	0.0421941
ZNF254	0.46	0.00275	0.0107826
SH3BP5L	0.46	0.001	0.00472422
ASAP1	0.46	0.0011	0.00510741
SLC18A2	0.46	0.0099	0.0300575

CBFA2T3	0.46	0.01645	0.0456338
PLAG1	0.46	0.0068	0.0223373
ZBTB48	0.46	0.0027	0.010638
SETD5	0.46	0.0006	0.0030954
MED15	0.46	0.00045	0.00244023
PRPF4B	0.45	0.00095	0.00452522
ABCG1	0.45	0.0082	0.0259294
NBPF11	0.45	0.00205	0.00849189
FANCM	0.45	0.00445	0.0159764
LPAR2	0.45	0.0054	0.0186351
FUBP3	0.45	0.0011	0.00510741
MANEA	0.45	0.0057	0.0194225
MAGEF1	0.45	0.0145	0.0411092
TCEA3	0.45	0.01485	0.0419462
ZNF407	0.45	0.0008	0.00394564
MAPK1IP1L	0.45	0.0023	0.00934227
TAF4B	0.45	0.0027	0.010638
TXLNG	0.45	0.0014	0.006256
SCRN3	0.45	0.0066	0.0217998
RANBP1	0.45	0.00405	0.0148221
RIN2	0.45	0.00495	0.0173956
WDR35	0.45	0.00515	0.0179703
BCL2A1	0.45	0.01045	0.0314435
CTPS2	0.45	0.0134	0.0385292
CLN8	0.45	0.00205	0.00849189
ADCK3	0.45	0.0007	0.00351914
CCDC64	0.45	0.00295	0.0114047
ZSWIM6	0.45	0.00095	0.00452522
HAVCR2	0.45	0.0015	0.00662132
ITFG3	0.45	0.00595	0.020076
LOC643406	0.45	0.0009	0.00433496
ZBTB39	0.45	0.0028	0.0109351
NPL	0.45	0.009	0.0279338
STRADB	0.45	0.0059	0.019961
PRKCI	0.45	0.00195	0.00817589
NINJ1	0.45	0.0036	0.0134537
TLR8	0.45	0.00175	0.00749457
EXOG	0.45	0.0075	0.0241309
ACSS1	0.45	0.0011	0.00510741
PPDPF	0.45	0.0032	0.0121833
FLT3LG	0.45	0.00205	0.00849189
HIST1H4E	0.45	0.0009	0.00433496
SLC9A4	0.45	0.01435	0.0407761
PUM2	0.45	0.00055	0.00288713
TXNL1	0.45	0.0054	0.0186351
TTC37	0.45	0.00075	0.00374051
ATP13A2	0.45	0.00185	0.00783523
KIAA0430	0.45	0.0009	0.00433496
FLJ45340	0.45	0.0005	0.00266422
SLC46A1	0.45	0.00695	0.0227164
ZNF655	0.45	0.00515	0.0179703
COX5A	0.45	0.0044	0.0158299
WWC2	0.45	0.01455	0.041234
DERA	0.45	0.0093	0.0286521
CREB3L2	0.45	0.00085	0.00413749
KCTD18	0.45	0.00275	0.0107826
HSP90AB2P	0.45	0.0052	0.0180989
ZDHHC21	0.45	0.00095	0.00452522
KEAP1	0.45	0.0054	0.0186351
HIVEP1	0.45	0.001	0.00472422
ANKLE2	0.45	0.0008	0.00394564
DCTN3	0.45	0.0116	0.0342462
USP35	0.45	0.01265	0.0367947
TADA1	0.45	0.00595	0.020076
EXOSC3	0.45	0.00515	0.0179703
NMT2	0.45	0.00115	0.00529146
CCR2	0.45	0.0015	0.00662132
DDX50	0.45	0.00105	0.0049133
SEC31B	0.45	0.00155	0.00680283
MARVELD3	0.45	0.015	0.042292
OCLN	0.45	0.0055	0.0188951
TOB2	0.45	0.0008	0.00394564
BNIP3	0.45	0.01345	0.0386327
ZNF468	0.45	0.00405	0.0148221
FAM206A	0.45	0.0183	0.0497157
GLCC11	0.45	0.0012	0.00547584
KIAA0319L	0.45	0.00065	0.00331245
ZNF681	0.45	0.00305	0.0117288
SMARCD2	0.45	0.00065	0.00331245
ZNF815	0.45	0.0106	0.0318393
ARFGEF2	0.45	0.0005	0.00266422
FAM3C	0.45	0.00225	0.00917702
TRA2B	0.45	0.0006	0.0030954
BIRC3	0.45	0.0045	0.0161224
PPP1R11	0.45	0.0024	0.00965179
CPSF3	0.45	0.00185	0.00783523
ATP6V1A	0.45	0.00085	0.00413749
ATXN7L3	0.45	0.0008	0.00394564
VENTX	0.45	0.00815	0.0258127
NSUN6	0.45	0.0024	0.00965179
ID11	0.45	0.0042	0.0152456
FLJ31662	0.45	0.0083	0.0261855
NFXL1	0.45	0.006	0.0202249

MDM4	0.45	0.0029	0.0112429
FAM116A	0.45	0.001	0.00472422
FLII	0.44	0.0025	0.00999275
SOCS5	0.44	0.00505	0.017675
C2orf67	0.44	0.00915	0.0283165
Y5IG1	0.44	0.0043	0.0155147
SYK	0.44	0.00145	0.00644393
ZNF431	0.44	0.0015	0.00662132
COMMD8	0.44	0.0182	0.0495221
LOC100507321	0.44	0.00115	0.00529146
ZC3H8	0.44	0.01275	0.0370465
NLN	0.44	0.00205	0.00849189
TFCP2	0.44	0.0024	0.00965179
PHTF2	0.44	0.00195	0.00817589
TMEM127	0.44	0.00085	0.00413749
SOAT1	0.44	0.00065	0.00331245
C15orf17	0.44	0.00095	0.00452522
MTHFD1	0.44	0.0036	0.0134537
C10orf32	0.44	0.01065	0.0319268
HSPA5	0.44	0.0009	0.00433496
LOC439949	0.44	0.0014	0.006256
ARHGAP11A	0.44	0.01015	0.0306814
SETDB2	0.44	0.00125	0.0056721
ULK3	0.44	0.0015	0.00662132
PLXNA3	0.44	0.0041	0.0149693
ZNF44	0.44	0.00185	0.00783523
RPS6KC1	0.44	0.00205	0.00849189
YDJC	0.44	0.0102	0.030792
URB1	0.44	0.0017	0.0073397
SRPR	0.44	0.00245	0.00981281
PTPN11	0.44	0.00085	0.00413749
DHX37	0.44	0.00205	0.00849189
R3HDM1	0.44	0.00165	0.00715969
MARCH7	0.44	0.00105	0.0049133
ARHGAP5	0.44	0.00085	0.00413749
NUP50	0.44	0.00085	0.00413749
TIAM1	0.44	0.0006	0.0030954
MTMR12	0.44	0.00085	0.00413749
TTC19	0.44	0.0048	0.0169636
PDE6B	0.44	0.0155	0.0434706
SLC39A1	0.44	0.00365	0.0136184
ZNF569	0.44	0.0162	0.0451127
ESCO1	0.44	0.0012	0.00547584
DUSP10	0.44	0.00825	0.0260695
MMADHC	0.44	0.00175	0.00749457
WRAP73	0.44	0.01255	0.0365501
H3F3A	0.44	0.0015	0.00662132
NCOA2	0.44	0.0009	0.00433496
DDX49	0.44	0.0071	0.0231081
GLCE	0.44	0.01265	0.0367947
TRIM68	0.44	0.0079	0.0251945
HERC1	0.44	0.00405	0.0148221
LRRC59	0.44	0.0019	0.0080003
CLCN3	0.44	0.0009	0.00433496
FAM198B	0.44	0.00215	0.00882659
ZADH2	0.44	0.0021	0.00865223
RAB11FIP4	0.44	0.00105	0.0049133
NSL1	0.44	0.0006	0.0030954
GPR114	0.44	0.00505	0.017675
IFTS2	0.44	0.0163	0.0453362
CKAP2	0.44	0.00525	0.0182453
ALAD	0.44	0.00385	0.0142336
CHERP	0.44	0.00745	0.0240036
NLRC3	0.44	0.0008	0.00394564
ANKRD49	0.44	0.00175	0.00749457
GASS	0.44	0.00315	0.0120362
STOM	0.44	0.00095	0.00452522
CCNH	0.44	0.0018	0.00767295
ZNF841	0.44	0.00135	0.00606006
ENTPD1	0.44	0.00475	0.0168214
LUC7L3	0.44	0.0035	0.0131369
FKBP4	0.44	0.002	0.00833736
MAP2K2	0.44	0.00105	0.0049133
LIN54	0.44	0.0021	0.00865223
EMB	0.44	0.00205	0.00849189
TMUB1	0.44	0.01405	0.0400309
ZNF787	0.44	0.0108	0.0322783
UBN1	0.44	0.00095	0.00452522
LOC283663	0.44	0.00105	0.0049133
ANAPC5	0.44	0.001	0.00472422
TRIM44	0.44	0.0012	0.00547584
TTC17	0.44	0.0011	0.00510741
ARHGAP17	0.44	0.00175	0.00749457
AP1M1	0.44	0.00155	0.00680283
LEPREL4	0.44	0.01065	0.0319268
HLA-DQB1	0.44	0.00705	0.0229779
NADKD1	0.44	0.00725	0.0234689
RBBP5	0.44	0.0014	0.006256
THAP5	0.44	0.00235	0.0094978
ITPA	0.44	0.01365	0.0391013
MAP4K5	0.44	0.0012	0.00547584
RTF1	0.44	0.00125	0.0056721
LRRFIP1	0.44	0.0027	0.010638

SLC35E2B	0.44	0.00085	0.00413749
GSG1	0.43	0.00425	0.0153704
FOXN2	0.43	0.001	0.00472422
PLEKHB1	0.43	0.011	0.0327624
SIKE1	0.43	0.00095	0.00452522
EBAG9	0.43	0.0085	0.0266944
H2AFZ	0.43	0.0021	0.00865223
CNOT1	0.43	0.0048	0.0169636
DPHS	0.43	0.0052	0.0180989
LRMP	0.43	0.00135	0.00606006
CCDC142	0.43	0.0084	0.0264526
GNPNAT1	0.43	0.0033	0.0125088
TANK	0.43	0.01835	0.0498123
CCDC39	0.43	0.01035	0.0311766
LLPH	0.43	0.0097	0.029574
SMG8	0.43	0.00475	0.0168214
MEF2A	0.43	0.0013	0.00587193
PLCG2	0.43	0.00065	0.00331245
SCAND2	0.43	0.0021	0.00865223
GANC	0.43	0.0012	0.00547584
ZNF107	0.43	0.00085	0.00413749
SLC36A4	0.43	0.0129	0.037435
SLFN13	0.43	0.0017	0.0073397
CRLS1	0.43	0.0082	0.0259294
LUC7L	0.43	0.00235	0.0094978
FRG1	0.43	0.00475	0.0168214
UBN2	0.43	0.00105	0.0049133
ANKAR	0.43	0.00975	0.0297067
ZNF304	0.43	0.0102	0.030792
SLC9A7	0.43	0.0098	0.0298261
VPS72	0.43	0.00835	0.0263132
KLF8	0.43	0.00975	0.0297067
PSIP1	0.43	0.00345	0.0129704
CSTF1	0.43	0.00595	0.020076
YES1	0.43	0.00185	0.00783523
CD244	0.43	0.0021	0.00865223
TGOLN2	0.43	0.00285	0.0111021
ARHGAP24	0.43	0.0053	0.0183682
USF1	0.43	0.0012	0.00547584
DAZAP1	0.43	0.00145	0.00644393
RAP2A	0.43	0.00235	0.0094978
ZNF850	0.43	0.00195	0.00817589
UBE3A	0.43	0.00075	0.00374051
ZNF510	0.43	0.00175	0.00749457
TDG	0.43	0.00275	0.0107826
TREML2	0.43	0.0066	0.0217998
TXNDC16	0.43	0.0069	0.0226066
KIAA0930	0.43	0.0019	0.0080003
AIP	0.43	0.00105	0.0049133
TGFB1	0.43	0.0007	0.00351914
XYLT2	0.43	0.0039	0.0143876
ATP2C1	0.43	0.00785	0.0250814
AES	0.43	0.0024	0.00965179
UBA6	0.43	0.00145	0.00644393
ANXA7	0.43	0.00125	0.0056721
SLC4A5	0.43	0.00795	0.0253188
FLAD1	0.43	0.00495	0.0173956
MIS18BP1	0.43	0.00105	0.0049133
OPHN1	0.43	0.0016	0.00697345
PGAP1	0.43	0.00645	0.0214275
VEGFB	0.43	0.0178	0.0486642
N4BP1	0.43	0.00115	0.00529146
PSPC1	0.43	0.00095	0.00452522
SPTY2D1	0.43	0.0015	0.00662132
POMP	0.43	0.0075	0.0241309
PRDM15	0.43	0.0055	0.0188951
ZNF526	0.43	0.01245	0.0363125
NCOA4	0.43	0.00435	0.0156786
HS2ST1	0.43	0.0167	0.0461879
PSMB2	0.43	0.00235	0.0094978
FLJ32255	0.43	0.0031	0.0118979
ORMDL1	0.43	0.0082	0.0259294
ZNF776	0.43	0.00145	0.00644393
MARCH1	0.43	0.0019	0.0080003
GCNT1	0.43	0.00525	0.0182453
SDHD	0.43	0.0021	0.00865223
DPEP2	0.43	0.0029	0.0112429
ZNF672	0.43	0.00375	0.0139274
FBXL4	0.43	0.00285	0.0111021
WAC	0.43	0.00165	0.00715969
CTSH	0.43	0.0016	0.00697345
DNAB14	0.43	0.00155	0.00680283
ANKRD12	0.43	0.00305	0.0117288
CLTB	0.43	0.00945	0.0290364
SCRIB	0.43	0.0032	0.0121833
PKD1	0.43	0.00995	0.0301761
NOD2	0.43	0.00215	0.00882659
CLCC1	0.43	0.00155	0.00680283
UBR5	0.43	0.0024	0.00965179
TARBP1	0.43	0.0016	0.00697345
TMED7	0.43	0.0048	0.0169636
HMOX2	0.43	0.01195	0.0351066
SBN01	0.43	0.00125	0.0056721

CCR7	0.43	0.00225	0.00917702
MRPS14	0.43	0.0063	0.0210458
CASP10	0.43	0.0017	0.0073397
ATXN2	0.43	0.00185	0.00783523
SGTA	0.43	0.00675	0.0221942
RPL17	0.43	0.0146	0.0413247
FAM175B	0.43	0.005	0.0175356
ADRBK2	0.43	0.0011	0.00510741
SIDT2	0.43	0.0041	0.0149693
CHORDC1	0.43	0.00215	0.00882659
DIRC2	0.43	0.0066	0.0217998
ECD	0.43	0.0026	0.0103266
FBN2	0.43	0.00595	0.020076
ALKBH8	0.43	0.0057	0.0194225
ZNF140	0.43	0.0093	0.0286521
DGKG	0.43	0.01215	0.0356259
GLOD4	0.43	0.0083	0.0261855
MATK	0.43	0.00465	0.0165608
ZNF527	0.43	0.0047	0.0166958
DAP	0.43	0.0041	0.0149693
SRSF10	0.43	0.0021	0.00865223
SYNRG	0.43	0.0015	0.00662132
RBMX	0.43	0.0021	0.00865223
SERPINB1	0.43	0.0017	0.0073397
LOC202181	0.43	0.00495	0.0173956
NUCB2	0.42	0.00245	0.00981281
CYBRD1	0.42	0.0067	0.0220666
LTN1	0.42	0.0012	0.00547584
PNP	0.42	0.0022	0.00900772
SIPA1L1	0.42	0.0013	0.00587193
HIVEP2	0.42	0.0015	0.00662132
YKT6	0.42	0.0023	0.00934227
CTTN	0.42	0.0134	0.0385292
GADD45B	0.42	0.00335	0.0126566
PSMA1	0.42	0.0018	0.00767295
CNTLN	0.42	0.0099	0.0300575
UPF3A	0.42	0.00325	0.012343
PPP1R7	0.42	0.00355	0.0132884
UGDH	0.42	0.0122	0.0357573
DHX36	0.42	0.00145	0.00644393
SETDB1	0.42	0.01065	0.0319268
ZNF238	0.42	0.00135	0.00606006
TMX3	0.42	0.0015	0.00662132
KLRD1	0.42	0.00155	0.00680283
TLR1	0.42	0.00255	0.0101573
ZNF483	0.42	0.00505	0.017675
UPF3B	0.42	0.01205	0.0353627
ZNF33A	0.42	0.00135	0.00606006
ELF1	0.42	0.00275	0.0107826
SLC30A6	0.42	0.00255	0.0101573
ZNF445	0.42	0.00175	0.00749457
HIST4H4	0.42	0.00795	0.0253188
APIB1	0.42	0.00135	0.00606006
SYNCRIP	0.42	0.0059	0.019961
SLC8A1	0.42	0.00205	0.00849189
PDXDC1	0.42	0.00165	0.00715969
LOC100506710	0.42	0.00245	0.00981281
MED23	0.42	0.0024	0.00965179
AIDA	0.42	0.00115	0.00529146
LEM2	0.42	0.0026	0.0103266
PHACTR4	0.42	0.0016	0.00697345
ETFB	0.42	0.01795	0.0489868
PEX3	0.42	0.01025	0.0309294
USP28	0.42	0.00195	0.00817589
PDE8A	0.42	0.0041	0.0149693
APOBEC3A	0.42	0.01175	0.0345928
WWP1	0.42	0.00155	0.00680283
COX7A2L	0.42	0.00335	0.0126566
TRIM27	0.42	0.00145	0.00644393
TBC1D10B	0.42	0.0029	0.0112429
NHEJ1	0.42	0.0148	0.0418221
CLASP1	0.42	0.00165	0.00715969
BRP4L	0.42	0.01335	0.0384335
FURIN	0.42	0.00135	0.00606006
PDK1	0.42	0.0022	0.00900772
ZNF529	0.42	0.00395	0.0145332
FNIP1	0.42	0.00155	0.00680283
FAM21C	0.42	0.00335	0.0126566
RHOU	0.42	0.0053	0.0183682
CDK11B	0.42	0.01835	0.0498123
C2orf29	0.42	0.0018	0.00767295
KDMSA	0.42	0.00325	0.012343
CDC27	0.42	0.0043	0.0155147
BIN2	0.42	0.0038	0.0140866
ZNF24	0.42	0.00135	0.00606006
SSRP1	0.42	0.00205	0.00849189
GTF2H2B	0.42	0.00395	0.0145332
C11orf21	0.42	0.0019	0.0080003
SESTD1	0.42	0.00235	0.0094978
DTNBP1	0.42	0.01645	0.0456338
NKRF	0.42	0.0114	0.0337787
GNPDA1	0.42	0.01375	0.0393305
NVL	0.42	0.00395	0.0145332

<i>CXorf21</i>	0.42	0.01005	0.0304258
<i>C14orf126</i>	0.42	0.005	0.0175356
<i>TFDP1</i>	0.42	0.0042	0.0152456
<i>EIF2AK1</i>	0.42	0.0021	0.00865223
<i>NCF2</i>	0.42	0.00635	0.0211667
<i>SLC39A10</i>	0.42	0.0016	0.00697345
<i>TRPM7</i>	0.42	0.00235	0.0094978
<i>EFHC1</i>	0.42	0.0165	0.0457081
<i>MS4A7</i>	0.42	0.00315	0.0120362
<i>RAB2A</i>	0.42	0.0021	0.00865223
<i>GFCF1</i>	0.42	0.0079	0.0251945
<i>OTUD5</i>	0.42	0.0019	0.00800031
<i>AOAH</i>	0.42	0.00315	0.0120362
<i>LOC100652922</i>	0.42	0.0134	0.0385292
<i>RAC1</i>	0.42	0.00165	0.00715969
<i>ATP6V1C1</i>	0.42	0.002	0.00833736
<i>UBQLN1</i>	0.42	0.0014	0.006256
<i>CEP120</i>	0.42	0.0019	0.0080003
<i>SSI8</i>	0.42	0.0018	0.00767295
<i>PFKL</i>	0.42	0.00155	0.00680283
<i>USP1</i>	0.42	0.00185	0.00783523
<i>NCOA3</i>	0.42	0.00335	0.0126566
<i>METTL7A</i>	0.42	0.00145	0.00644393
<i>ZNF766</i>	0.42	0.00315	0.0120362
<i>KIF27</i>	0.42	0.01675	0.0462984
<i>ZC3H13</i>	0.42	0.0013	0.00587193
<i>STK38L</i>	0.42	0.0024	0.00965179
<i>ZNF134</i>	0.42	0.00815	0.0258127
<i>LBH</i>	0.42	0.0026	0.0103266
<i>SNRPD3</i>	0.42	0.0029	0.0112429
<i>PDE3B</i>	0.41	0.003	0.0115753
<i>CTDNEP1</i>	0.41	0.0059	0.019961
<i>NSF</i>	0.41	0.00205	0.00849189
<i>MCRS1</i>	0.41	0.00425	0.0153704
<i>RIF1</i>	0.41	0.0017	0.0073397
<i>TRAT1</i>	0.41	0.0023	0.00934227
<i>RASGRP2</i>	0.41	0.00175	0.00749457
<i>PDHX</i>	0.41	0.01775	0.0485563
<i>ACTR1A</i>	0.41	0.002	0.00833736
<i>STAG2</i>	0.41	0.00305	0.0117288
<i>MPP5</i>	0.41	0.00815	0.0258127
<i>DNAH1</i>	0.41	0.00155	0.00680283
<i>ASH1L</i>	0.41	0.00435	0.0156786
<i>CR1</i>	0.41	0.0027	0.010638
<i>NCLN</i>	0.41	0.00315	0.0120362
<i>EXOSC1</i>	0.41	0.0076	0.02439
<i>TMTCS</i>	0.41	0.0091	0.0281871
<i>RPUSD1</i>	0.41	0.0159	0.0444118
<i>TCF3</i>	0.41	0.00155	0.00680283
<i>RASSF5</i>	0.41	0.0024	0.00965179
<i>FAM20B</i>	0.41	0.0019	0.0080003
<i>SFXN1</i>	0.41	0.00265	0.0104829
<i>RGL2</i>	0.41	0.0032	0.0121833
<i>ALDH3A2</i>	0.41	0.0034	0.0128069
<i>POLR2L</i>	0.41	0.0144	0.0408761
<i>DHX16</i>	0.41	0.00555	0.0190242
<i>CAPN1</i>	0.41	0.00645	0.0214275
<i>ANXA6</i>	0.41	0.00535	0.0185182
<i>HLA-DMB</i>	0.41	0.002	0.00833736
<i>GPATCH8</i>	0.41	0.0018	0.00767295
<i>SLC23A2</i>	0.41	0.00185	0.00783523
<i>GRSF1</i>	0.41	0.00225	0.00917702
<i>METTL17</i>	0.41	0.004	0.0146702
<i>LRPPRC</i>	0.41	0.0017	0.0073397
<i>CCR5</i>	0.41	0.00995	0.0301761
<i>RNF185</i>	0.41	0.0066	0.0217998
<i>PRKCD</i>	0.41	0.0025	0.00999275
<i>ZNF76</i>	0.41	0.00575	0.0195687
<i>ATP10D</i>	0.41	0.00295	0.0114047
<i>COPS4</i>	0.41	0.00815	0.0258127
<i>EPHB6</i>	0.41	0.0063	0.0210458
<i>GOLGB1</i>	0.41	0.00295	0.0114047
<i>HOMER</i>	0.41	0.0135	0.0387602
<i>SURF6</i>	0.41	0.007	0.0228419
<i>TCOF1</i>	0.41	0.00285	0.0111021
<i>BAP1</i>	0.41	0.0022	0.00900772
<i>SCAND1</i>	0.41	0.01505	0.0423983
<i>CIAO1</i>	0.41	0.0016	0.00697345
<i>ZNF429</i>	0.41	0.0143	0.0406676
<i>PPP1R10</i>	0.41	0.00125	0.0056721
<i>PIK3CG</i>	0.41	0.00185	0.00783523
<i>HUS1</i>	0.41	0.00515	0.0179703
<i>GNG11</i>	0.41	0.00875	0.0272622
<i>SLC35C1</i>	0.41	0.01525	0.0428829
<i>BIN1</i>	0.41	0.0025	0.00999275
<i>KDMA4</i>	0.41	0.00545	0.0187748
<i>LCORL</i>	0.41	0.00895	0.0277974
<i>MICB</i>	0.41	0.0101	0.030557
<i>KCTD12</i>	0.41	0.0046	0.0164252
<i>SNX17</i>	0.41	0.00225	0.00917702
<i>SKP1</i>	0.41	0.00195	0.00817589
<i>FAM46A</i>	0.41	0.00305	0.0117288
<i>C12orf75</i>	0.41	0.00955	0.0292524



UBE2F	0.41	0.01235	0.0360666
PAQR8	0.41	0.0062	0.0207822
ZCCHC4	0.41	0.00795	0.0253188
LYST	0.41	0.00835	0.0263132
ARL5A	0.41	0.0023	0.00934227
HEATR6	0.41	0.00685	0.0224801
TEX10	0.41	0.0075	0.0241309
CHIC2	0.41	0.0103	0.0310531
ULK4	0.41	0.0155	0.0434706
IQSEC1	0.41	0.00385	0.0142336
ATP2A2	0.41	0.00375	0.0139274
LASP1	0.41	0.00235	0.0094978
NOLC1	0.41	0.0016	0.00697345
RHOT2	0.41	0.00235	0.0094978
TMEM43	0.41	0.0022	0.00900772
CD55	0.41	0.0025	0.00999275
NCN	0.41	0.0164	0.0455501
DROSHA	0.41	0.00395	0.0145332
SIRT5	0.41	0.0112	0.0333077
SGSM2	0.40	0.0027	0.010638
MDF1C	0.40	0.00265	0.0104829
ZBTB7A	0.40	0.00275	0.0107826
TXLNA	0.40	0.0019	0.0080003
NCKAP1L	0.40	0.0054	0.0186351
ICAIL	0.40	0.0065	0.0215521
PDCD2	0.40	0.0043	0.0155147
PCNT	0.40	0.0018	0.00767295
ZNF615	0.40	0.0161	0.0448977
RAB18	0.40	0.00295	0.0114047
WDR89	0.40	0.00775	0.0248137
DNM1P46	0.40	0.0061	0.0205218
MRPL16	0.40	0.0142	0.0404082
ARAP2	0.40	0.00385	0.0142336
CREB1	0.40	0.00225	0.00917702
FMN1	0.40	0.00955	0.0292524
TIMM50	0.40	0.0172	0.0473618
HK2	0.40	0.00375	0.0139274
SNRPD2	0.40	0.0043	0.0155147
ZMYM5	0.40	0.015	0.042292
SP1	0.40	0.00305	0.0117288
PNMA1	0.40	0.0084	0.0264526
ZNF37BP	0.40	0.002	0.00833736
HINT3	0.40	0.0065	0.0215521
GIMAP4	0.40	0.0047	0.0166958
CTBP2	0.40	0.00485	0.0171228
CBR4	0.40	0.00545	0.0187748
MAP4K4	0.40	0.003	0.0115753
FKBP14	0.40	0.0093	0.0286521
ZCRB1	0.40	0.0158	0.0441862
OGFOD1	0.40	0.0055	0.0188951
ACTR6	0.40	0.01645	0.0456338
KIAA0368	0.40	0.0029	0.0112429
APOL6	0.40	0.00505	0.017675
UBE2J2	0.40	0.0074	0.0238537
GATAD2B	0.40	0.00205	0.00849189
RTN1	0.40	0.01305	0.0377907
GSK3B	0.40	0.00235	0.0094978
ADO	0.40	0.0092	0.0284457
GTF3C3	0.40	0.0135	0.0387601
NBAS	0.40	0.0023	0.00934227
ICOS	0.40	0.008	0.0254487
ZNF426	0.40	0.0165	0.0457081
FCHO1	0.40	0.00395	0.0145332
USP45	0.40	0.00495	0.0173956
CDC34	0.40	0.01375	0.0393305
SERTAD2	0.40	0.0034	0.0128069
MYCL1	0.40	0.0163	0.0453362
LOC100506774	0.40	0.01595	0.0445244
CNOT2	0.40	0.00565	0.0192951
SLFN11	0.40	0.0039	0.0143876
GORASP1	0.40	0.0046	0.0164252
CTSA	0.40	0.00655	0.0216866
ZNF142	0.40	0.004	0.0146702
ARHGEF3	0.40	0.00285	0.0111021
CBX1	0.40	0.006	0.0202249
USP38	0.40	0.00285	0.0111021
PABPC1P2	0.40	0.0177	0.048458
SYPL1	0.40	0.0054	0.0186351
MIR600HG	0.40	0.00715	0.0232324
RNU5B-1	0.40	0.0032	0.0121833
IFIH1	0.40	0.00475	0.0168214
6IE3.4	0.40	0.0031	0.0118979
ISG20L2	0.40	0.00535	0.0185182
PPM1D	0.40	0.0088	0.027387
SMARCAD1	0.40	0.0028	0.0109351
GPR160	0.40	0.01625	0.0452245
ERII	0.40	0.0123	0.035951
KIAA1530	0.40	0.0057	0.0194225
SRRT	0.40	0.00265	0.0104829
TTYH3	0.40	0.005	0.0175356
ZC3H3	0.39	0.0137	0.0392038
SCAF11	0.39	0.00455	0.0162846
UBQLN2	0.39	0.0034	0.0128069

ABCF3	0.39	0.0047	0.0166958
C14orf133	0.39	0.01275	0.0370465
CCT8	0.39	0.0026	0.0103266
CDK11A	0.39	0.0096	0.0293534
TMEM181	0.39	0.00315	0.0120362
GJC1	0.39	0.016	0.0446549
PPM1G	0.39	0.0037	0.013764
ANKRD40	0.39	0.0043	0.0155147
CXorf23	0.39	0.0067	0.0220666
LAT2	0.39	0.00435	0.0156786
RASGRP3	0.39	0.00805	0.0255723
PAFAH1B1	0.39	0.00245	0.00981281
CTDP1	0.39	0.0055	0.0188951
KIAA0586	0.39	0.00305	0.0117288
C20orf194	0.39	0.00875	0.0272622
PPFIBP2	0.39	0.01145	0.0338832
ZNF786	0.39	0.0178	0.0486642
USP8	0.39	0.0037	0.013764
MS4A1	0.39	0.00875	0.0272622
LMBRD2	0.39	0.01075	0.0321707
RPS28	0.39	0.00345	0.0129704
PI4KB	0.39	0.0074	0.0238537
STXBP3	0.39	0.00425	0.0153704
PDDC1	0.39	0.0028	0.0109351
BCL9L	0.39	0.01775	0.0485563
VRK1	0.39	0.00665	0.0219334
PSME4	0.39	0.0033	0.0125088
ARFGAP3	0.39	0.00595	0.020076
EPT1	0.39	0.0047	0.0166958
UQCRB	0.39	0.00315	0.0120362
ZCCHC7	0.39	0.0031	0.0118979
ZBTB41	0.39	0.0051	0.0178229
TNFRSF10B	0.39	0.01175	0.0345928
DPP7	0.39	0.0032	0.0121833
LRCH4	0.39	0.0027	0.010638
PHF8	0.39	0.00565	0.0192951
HIST1H2AK	0.39	0.0183	0.0497157
NUDCD1	0.39	0.01755	0.0481621
FAM129C	0.39	0.0053	0.0183682
EXOSC6	0.39	0.00515	0.0179703
CC2D1B	0.39	0.00295	0.0114047
IF16	0.39	0.01795	0.0489868
ZNF506	0.39	0.0041	0.0149693
ABCC10	0.39	0.007	0.0228419
TLCD2	0.39	0.0067	0.0220666
PRMT3	0.39	0.0181	0.0493181
MED24	0.39	0.00755	0.0242409
GTPBP1	0.39	0.00325	0.012343
FBXO44	0.39	0.0133	0.0383376
TMEM19	0.39	0.0053	0.0183682
LDLR	0.39	0.00865	0.0270545
MEF2C	0.39	0.00415	0.0151158
GTF2I	0.39	0.00465	0.0165608
INADL	0.39	0.0034	0.0128069
KIAA1432	0.39	0.00445	0.0159764
WDR81	0.39	0.00465	0.0165608
MBD4	0.39	0.00405	0.0148221
KIDINS220	0.39	0.0037	0.013764
ZBTB11	0.39	0.0108	0.0322783
PRRC2C	0.39	0.01205	0.0353627
ERCC6	0.39	0.00845	0.0265797
NMI	0.39	0.00725	0.0234689
IL28RA	0.39	0.0151	0.0425304
KCNQ1OT1	0.39	0.00965	0.0294606
YEATS2	0.39	0.0029	0.0112429
CDK13	0.39	0.00455	0.0162846
RAB12	0.39	0.0092	0.0284457
KIF20B	0.39	0.0065	0.0215521
AIF1	0.39	0.0082	0.0259294
ANO6	0.39	0.0072	0.0233564
CRCP	0.39	0.005	0.0175356
RBAK	0.39	0.00405	0.0148221
NUP214	0.38	0.0069	0.0226066
VRK3	0.38	0.00965	0.0294606
PRKD2	0.38	0.00665	0.0219334
CRAMP1L	0.38	0.00555	0.0190242
ATP6V1B2	0.38	0.0048	0.0169636
ANKRD13C	0.38	0.0045	0.0161224
UBAC1	0.38	0.0139	0.0396773
TXNRD1	0.38	0.0082	0.0259294
ESF1	0.38	0.00865	0.0270545
RIPK3	0.38	0.01495	0.0421941
BDP1	0.38	0.0039	0.0143876
MTMR9	0.38	0.01325	0.0382574
ZNF845	0.38	0.00865	0.0270545
SZT2	0.38	0.0049	0.0172772
ORA12	0.38	0.0055	0.0188951
KIAA2026	0.38	0.00425	0.0153704
ARSA	0.38	0.0068	0.0223373
SKAP1	0.38	0.0064	0.0212819
RLIM	0.38	0.0051	0.0178229
TOR1A	0.38	0.01075	0.0321707
TGFBR1	0.38	0.00425	0.0153704

PGAM5	0.38	0.00865	0.0270545
FAM40A	0.38	0.0056	0.0191623
ATL2	0.38	0.00995	0.0301761
GABARAPL2	0.38	0.00825	0.0260695
CLMN	0.38	0.00475	0.0168214
ABCC9	0.38	0.00475	0.0168214
PPARGC1B	0.38	0.01085	0.0324067
NSA2	0.38	0.0038	0.0140866
ORC2	0.38	0.0062	0.0207822
RNASEH2B	0.38	0.0065	0.0215521
YTHDF3	0.38	0.00355	0.0132884
TNRC6A	0.38	0.0045	0.0161224
PITPNA	0.38	0.00785	0.0250814
C17orf75	0.38	0.00905	0.0280638
MED13L	0.38	0.0065	0.0215521
LRRRC37B	0.38	0.01645	0.0456338
PRKAB2	0.38	0.00625	0.0209193
HCG11	0.38	0.0093	0.0286521
HMG20B	0.38	0.01315	0.0380165
ZNF441	0.38	0.00875	0.0272622
GVINP1	0.38	0.00875	0.0272622
RNF146	0.38	0.00825	0.0260695
NCOA7	0.38	0.00545	0.0187748
LOC374443	0.38	0.00465	0.0165608
CD47	0.38	0.0074	0.0238537
DDX51	0.38	0.0056	0.0191623
TLL5	0.38	0.01155	0.0341424
ZNF263	0.38	0.0066	0.0217998
DUT	0.38	0.01075	0.0321707
GPR180	0.38	0.0146	0.0413247
DPP4	0.38	0.00545	0.0187748
ME2	0.38	0.0046	0.0164252
GRPEL2	0.38	0.00875	0.0272622
SLAH2	0.38	0.00855	0.0268148
XPA	0.38	0.01195	0.0351066
CHTOP	0.38	0.00695	0.0227164
NUP85	0.38	0.0092	0.0284457
TMEM33	0.38	0.00415	0.0151158
EMX2OS	0.38	0.0175	0.048044
MIB2	0.38	0.0123	0.035951
BRAF	0.38	0.00585	0.0198405
CHD7	0.38	0.0048	0.0169636
RNF6	0.38	0.0046	0.0164252
RPS6KA4	0.38	0.00865	0.0270545
TRPC4AP	0.38	0.00615	0.0206598
TLK2	0.38	0.00385	0.0142336
MR1	0.38	0.0058	0.0197146
PSEN1	0.38	0.00495	0.0173956
EPRS	0.38	0.0041	0.0149693
CCDC50	0.38	0.00725	0.0234689
B3GAT3	0.38	0.0173	0.0475517
LOC253039	0.38	0.00965	0.0294606
TRIM23	0.37	0.0173	0.0475517
OGFRL1	0.37	0.00635	0.0211667
NEDD8	0.37	0.00965	0.0294606
PHF20L1	0.37	0.01405	0.0400309
MOV10	0.37	0.0077	0.0246708
PIK3C3	0.37	0.0043	0.0155147
GARS	0.37	0.0057	0.0194225
ZNF335	0.37	0.00425	0.0153704
MYSM1	0.37	0.00325	0.012343
DIAPH2	0.37	0.00685	0.0224801
MIR143HG	0.37	0.0123	0.035951
ELF4	0.37	0.00455	0.0162846
MYL12A	0.37	0.0095	0.0291511
FBXO45	0.37	0.013	0.0376697
FAM96A	0.37	0.0162	0.0451127
TRIP11	0.37	0.00505	0.017675
ZNF143	0.37	0.00785	0.0250814
AMD1	0.37	0.0044	0.0158299
SRSF6	0.37	0.00665	0.0219334
LOC100506168	0.37	0.00945	0.0290364
MYO5A	0.37	0.0053	0.0183682
SERBP1	0.37	0.0071	0.0231081
CD4	0.37	0.00665	0.0219334
LPCAT1	0.37	0.0065	0.0215521
FBXO41	0.37	0.0177	0.048458
USP46	0.37	0.01445	0.0410011
PRKCE	0.37	0.01435	0.0407761
RBM15	0.37	0.00475	0.0168214
ABHD13	0.37	0.007	0.0228419
ZNF706	0.37	0.017	0.0468673
MMS22L	0.37	0.01315	0.0380165
CAPN2	0.37	0.00815	0.0258127
ZMYM4	0.37	0.0047	0.0166958
TRIM25	0.37	0.0064	0.0212819
HPS3	0.37	0.0085	0.0266944
ZNF460	0.37	0.0053	0.0183682
ZNF708	0.37	0.00645	0.0214275
TFRC	0.37	0.0059	0.019961
DDX18	0.37	0.0049	0.0172772
PRRC1	0.37	0.007	0.0228419
KRIT1	0.37	0.00585	0.0198405

ACSL4	0.37	0.00585	0.0198405
SENP6	0.37	0.0064	0.0212819
TECPR1	0.37	0.00555	0.0190242
GLG1	0.37	0.0096	0.0293534
AHCTF1	0.37	0.0069	0.0226066
CNOT7	0.37	0.00675	0.0221942
PLEKHO2	0.37	0.0061	0.0205218
KSR1	0.37	0.01435	0.0407761
KIF13A	0.37	0.01005	0.0304258
WNK1	0.37	0.01145	0.0338832
DHX38	0.37	0.00775	0.0248137
LAX1	0.37	0.0107	0.0320628
MAP7D1	0.37	0.0056	0.0191623
LRBA	0.37	0.01325	0.0382574
CDK2AP2	0.37	0.0169	0.0466289
C2CD3	0.37	0.0079	0.0251945
IFITM1	0.37	0.0061	0.0205218
LOC100289019	0.37	0.00835	0.0263132
PATZ1	0.37	0.0123	0.035951
RNF130	0.37	0.0088	0.027387
FRYL	0.37	0.0079	0.0251945
ZMYND11	0.37	0.0083	0.0261855
RAB3B	0.37	0.01825	0.0496288
UVRAG	0.37	0.00595	0.020076
R3HDM2	0.37	0.00595	0.020076
ORMDL3	0.37	0.00595	0.020076
RAD23B	0.37	0.0053	0.0183682
OXNAD1	0.37	0.0064	0.0212819
UNC119	0.37	0.01295	0.0375327
DAPP1	0.37	0.00555	0.0190242
OSBP	0.37	0.00635	0.0211667
AKR1B1	0.37	0.0168	0.0463808
RNGTT	0.37	0.0053	0.0183682
GABARAP	0.37	0.0062	0.0207822
NF2	0.37	0.0108	0.0322783
DPP8	0.36	0.00655	0.0216866
ZNF480	0.36	0.00805	0.0255723
CBFA2T2	0.36	0.00695	0.0227164
SEC22B	0.36	0.00635	0.0211667
PKD1P1	0.36	0.0063	0.0210458
XKR9	0.36	0.01175	0.0345928
ZNF512	0.36	0.0064	0.0212819
MBTPS1	0.36	0.0062	0.0207822
SENP5	0.36	0.00605	0.0203685
ZNF586	0.36	0.01405	0.0400309
TOMM70A	0.36	0.00695	0.0227164
PHF17	0.36	0.00635	0.0211667
SENP2	0.36	0.0113	0.0335617
HLA-H	0.36	0.00815	0.0258127
FGF5	0.36	0.01125	0.0334348
TRIP12	0.36	0.00835	0.0263132
PAPOLA	0.36	0.00635	0.0211667
SLAH1	0.36	0.01635	0.045457
ZNF800	0.36	0.00695	0.0227164
NAPG	0.36	0.00985	0.029932
PSMC4	0.36	0.01045	0.0314435
VPS39	0.36	0.0048	0.0169636
ALPK1	0.36	0.01315	0.0380165
HNRNPUL1	0.36	0.00775	0.0248137
APEH	0.36	0.0071	0.0231081
ZNF518B	0.36	0.0059	0.019961
FRS2	0.36	0.0124	0.036205
ANKRD27	0.36	0.00935	0.028774
STX6	0.36	0.0072	0.0233564
OS9	0.36	0.00875	0.0272622
NAGA	0.36	0.0086	0.0269471
FAM100B	0.36	0.0096	0.0293534
EIF5A	0.36	0.0074	0.0238537
RBM19	0.36	0.0081	0.0256897
RPA1	0.36	0.007	0.0228419
RIOK3	0.36	0.0072	0.0233564
PNPO	0.36	0.01515	0.0426364
HELZ	0.36	0.0108	0.0322783
C3orf17	0.36	0.00695	0.0227164
FLJ38717	0.36	0.0177	0.048458
WAPAL	0.36	0.0073	0.0235975
DICER1	0.36	0.0117	0.0344897
HEATR5A	0.36	0.00805	0.0255723
ZCCHC14	0.36	0.01555	0.0435665
TM9SF3	0.36	0.0059	0.019961
FAM63B	0.36	0.0118	0.0347177
ZNF609	0.36	0.00605	0.0203685
MAP7D3	0.36	0.0138	0.0394327
CERK	0.36	0.00715	0.0232324
VEZF1	0.36	0.0066	0.0217998
PIK3R4	0.36	0.0075	0.0241309
FUT11	0.36	0.017	0.0468673
BAZ1B	0.36	0.00695	0.0227164
FANCD2	0.36	0.0137	0.0392038
DPP9	0.36	0.0114	0.0337787
NUP155	0.36	0.01175	0.0345928
IMPAD1	0.36	0.0077	0.0246708
WDR7	0.36	0.00715	0.0232324

ALCAM	0.36	0.01585	0.044308
DDX27	0.36	0.00595	0.020076
CCDC88A	0.36	0.0093	0.0286521
SMAP1	0.36	0.01545	0.0433657
UBA7	0.36	0.00725	0.0234689
ZNF281	0.35	0.0105	0.031587
SLC12A2	0.35	0.014	0.0399214
ITSN2	0.35	0.01075	0.0321707
CLCN7	0.35	0.0088	0.027387
LAMTOR3	0.35	0.0154	0.0432341
ELL	0.35	0.0161	0.0448977
S100A6	0.35	0.01265	0.0367947
PIK3CB	0.35	0.01705	0.0469769
AMZ2	0.35	0.01705	0.0469769
RBM39	0.35	0.0168	0.0463808
ATP7A	0.35	0.0114	0.0337787
IL10RB	0.35	0.0091	0.0281871
ABHD16A	0.35	0.0183	0.0497157
MDM2	0.35	0.00755	0.0242409
KLHL6	0.35	0.0072	0.0233564
DCAF5	0.35	0.00805	0.0255723
PIK3C2A	0.35	0.0078	0.0249564
DYNLL2	0.35	0.0104	0.0313135
HSD17B11	0.35	0.0085	0.0266944
DEGS1	0.35	0.0096	0.0293534
UTP20	0.35	0.0097	0.029574
PNPT1	0.35	0.0085	0.0266944
FLOT1	0.35	0.01035	0.0311766
TMEM50A	0.35	0.01035	0.0311766
ZNF268	0.35	0.0155	0.0434706
NFATC1	0.35	0.0184	0.0499284
GTPBP10	0.35	0.00895	0.0277974
CAPRN2	0.35	0.0125	0.0364352
DENND4C	0.35	0.0078	0.0249564
UNC93B1	0.35	0.00955	0.0292524
DYRK2	0.35	0.00855	0.0268148
JARID2	0.35	0.0092	0.0284457
CD247	0.35	0.00895	0.0277974
GLYR1	0.35	0.00735	0.0237424
MED16	0.35	0.01555	0.0435665
FAM160A2	0.35	0.01175	0.0345928
USP7	0.35	0.01	0.0303077
SAE1	0.35	0.0133	0.0383376
MTCH2	0.35	0.01785	0.0487815
ZNF587	0.35	0.0075	0.0241309
ARID2	0.35	0.00755	0.0242409
GLUD1	0.35	0.00865	0.0270545
QARS	0.35	0.0073	0.0235975
ZNF611	0.35	0.01725	0.0474521
WDR3	0.35	0.01635	0.045457
NUP107	0.35	0.00945	0.0290364
NBEAL1	0.35	0.01055	0.0317098
JHDM1D	0.35	0.0098	0.0298261
COPS2	0.35	0.0093	0.0286521
RPRD1A	0.35	0.0132	0.038137
ZNF43	0.35	0.0095	0.0291511
ADNP	0.35	0.0085	0.0266944
CDK5RAP2	0.35	0.00875	0.0272622
STX17	0.35	0.0074	0.0238537
NAA38	0.35	0.0082	0.0259294
ZDHHC20	0.35	0.00925	0.0285555
ZNF639	0.35	0.01225	0.0358581
CD96	0.35	0.01305	0.0377907
TMEM164	0.35	0.01	0.0303077
ABHD15	0.35	0.01335	0.0384335
ZFYVE20	0.35	0.01065	0.0319268
PDIA4	0.35	0.0146	0.0413247
AK2	0.35	0.00995	0.0301761
TCF25	0.35	0.00935	0.028774
CCDC93	0.35	0.00845	0.0265797
AGTPBP1	0.35	0.00915	0.0283165
CSGALNACT2	0.35	0.00955	0.0292524
PAR5	0.34	0.01335	0.0384335
HPS5	0.34	0.0139	0.0396773
KNTC1	0.34	0.0133	0.0383376
CCNT1	0.34	0.0125	0.0364352
ANXA1	0.34	0.0148	0.0418221
RFX7	0.34	0.0087	0.0271801
BAG6	0.34	0.00985	0.029932
HECTD1	0.34	0.0138	0.0394327
ARHGGEF40	0.34	0.0146	0.0413247
LMBR1	0.34	0.0109	0.0325419
SSF42	0.34	0.00865	0.0270545
FMNL3	0.34	0.0114	0.0337787
EFHA1	0.34	0.01315	0.0380165
PARVG	0.34	0.01285	0.0372977
PPT1	0.34	0.0138	0.0394327
UXS1	0.34	0.01245	0.0363125
VPS37B	0.34	0.01345	0.0386327
ZMYND8	0.34	0.01225	0.0358581
CBLL1	0.34	0.0123	0.035951
FRY	0.34	0.01275	0.0370465
TRIM65	0.34	0.0137	0.0392038

DIAPH1	0.34	0.0177	0.048458
UFL1	0.34	0.01005	0.0304258
IFNAR1	0.34	0.01015	0.0306814
ZDHHCS	0.34	0.0099	0.0300575
NFATC2IP	0.34	0.01075	0.0321707
BBS2	0.34	0.01295	0.0375327
SAR1A	0.34	0.01055	0.0317098
ICK	0.34	0.01525	0.0428829
AKAP10	0.34	0.0115	0.0340165
IFITM2	0.34	0.0139	0.0396773
FAM192A	0.34	0.01065	0.0319268
ZNF780B	0.34	0.01365	0.0391013
CHP	0.34	0.00985	0.029932
CUL1	0.34	0.01225	0.0358581
SMG5	0.34	0.0095	0.0291511
SEL1L3	0.34	0.014	0.0399214
PGAM1	0.34	0.0125	0.0364352
MIB1	0.34	0.0111	0.0330317
MAU2	0.34	0.0115	0.0340165
GALNT1	0.34	0.011	0.0327624
SMCR7L	0.34	0.0116	0.0342462
KHSRP	0.34	0.0138	0.0394327
C9orf5	0.34	0.01225	0.0358581
KAT7	0.34	0.01245	0.0363125
ITFG1	0.34	0.0165	0.0457081
TOPBP1	0.34	0.01295	0.0375327
DENN4A	0.34	0.0147	0.0415907
SOCS4	0.34	0.0133	0.0383376
MED28	0.33	0.01785	0.0487815
GSR	0.33	0.01435	0.0407761
UFM1	0.33	0.01015	0.0306814
HIST1H1D	0.33	0.0137	0.0392038
MFSD6	0.33	0.01255	0.0365501
KLHL24	0.33	0.01095	0.0326558
PEX2	0.33	0.0182	0.0495221
PARP12	0.33	0.01165	0.0343644
ARID4A	0.33	0.01195	0.0351066
FAM120B	0.33	0.0127	0.0369245
KDM4C	0.33	0.01165	0.0343644
NHLRC2	0.33	0.01575	0.0440732
MLL4	0.33	0.01185	0.0348574
LOC401320	0.33	0.0165	0.0457081
IBTK	0.33	0.01135	0.0336667
DDX21	0.33	0.01245	0.0363125
PACS1	0.33	0.0103	0.0310531
BECN1	0.33	0.01475	0.0417236
AGL	0.33	0.0144	0.0408761
LOC100506985	0.33	0.0162	0.0451127
BRD4	0.33	0.01235	0.0360666
CSNK1G2	0.33	0.01135	0.0336667
STYX	0.33	0.01355	0.0388794
REST	0.33	0.0117	0.0344897
SECISBP2	0.33	0.01265	0.0367947
C17orf85	0.33	0.01555	0.0435665
TET3	0.33	0.01305	0.0377907
ABCD2	0.33	0.0161	0.0448977
ALDH9A1	0.33	0.01575	0.0440732
NARG2	0.33	0.0137	0.0392038
ALOX5	0.33	0.0169	0.0466289
SEPI5	0.33	0.0139	0.0396773
CAND1	0.33	0.0128	0.0371682
CAPZA2	0.33	0.0132	0.038137
SH3KBP1	0.33	0.0144	0.0408761
FAM13B	0.33	0.0133	0.0383376
TMEM131	0.33	0.01225	0.0358581
RHBDF2	0.33	0.01835	0.0498123
SACS	0.33	0.0134	0.0385292
AKAP11	0.33	0.01515	0.0426364
SAR1B	0.33	0.01245	0.0363125
BTN2A1	0.33	0.0168	0.0463808
PSMD1	0.32	0.0158	0.0441862
CCDC91	0.32	0.0145	0.0411092
GLS	0.32	0.0142	0.0404082
C4orf41	0.32	0.0159	0.0444118
KLHL28	0.32	0.0183	0.0497157
DDX23	0.32	0.01365	0.0391013
CEP57	0.32	0.0142	0.0404082
DDHD1	0.32	0.0161	0.0448977
MXD4	0.32	0.01795	0.0489868
TNKS2	0.32	0.01505	0.0423983
GPR65	0.32	0.0164	0.0455501
CBX6	0.32	0.01765	0.0483788
MMS19	0.32	0.0159	0.0444118
SNX30	0.32	0.01525	0.0428829
PPP3CA	0.32	0.01555	0.0435665
DSTYK	0.32	0.0162	0.0451127
AGFG1	0.32	0.01775	0.0485563
ETF1	0.32	0.01535	0.0431025
TIAL1	0.32	0.0163	0.0453362
RAB11A	0.32	0.0164	0.0455501
IRGQ	0.32	0.0168	0.0463808
TAX1BP1	0.32	0.0164	0.0455501
ZZZ3	0.32	0.0168	0.0463808

EIF2S2	0.32	0.0165	0.0457081
TNFAIP8	0.32	0.01665	0.0460681
NDEL1	0.32	0.01805	0.0492013
SMC4	0.32	0.01805	0.0492013
PHACTR2	0.31	0.01625	0.0452245
BIRC2	0.31	0.017	0.0468673
PDPK1	0.31	0.01825	0.0496288
NRIP1	0.31	0.0173	0.0475517
ZNF737	0.31	0.01835	0.0498123
SH2B3	0.31	0.0182	0.0495221
UNC13D	-0.31	0.0177	0.048458
C9orf78	-0.31	0.018	0.0490941
SNX19	-0.32	0.015	0.042292
NADSYN1	-0.32	0.01595	0.0445244
TMEM167B	-0.32	0.018	0.0490941
XPO5	-0.32	0.01815	0.0494348
TIPARP	-0.33	0.0174	0.0478171
CAB39	-0.33	0.01255	0.0365501
SHISA5	-0.33	0.0148	0.0418221
BNIP3L	-0.33	0.01295	0.0375327
RNF167	-0.33	0.0145	0.0411092
INPP5K	-0.33	0.01665	0.0460681
MAF1	-0.33	0.0119	0.0349896
FAM49B	-0.33	0.01035	0.0311766
DENND3	-0.34	0.01325	0.0382574
RAC2	-0.34	0.01345	0.0386327
BROX	-0.34	0.01535	0.0431025
GALNT2	-0.34	0.01505	0.0423983
PIP4K2A	-0.34	0.0144	0.0408761
RNMT	-0.34	0.01095	0.0326558
PPP1R3B	-0.34	0.01825	0.0496288
UBE3C	-0.34	0.0108	0.0322783
ARHGAP15	-0.35	0.01005	0.0304258
NHP2L1	-0.35	0.0138	0.0394327
CBLB	-0.35	0.0083	0.0261855
HP1BP3	-0.35	0.0103	0.0310531
MFSD1	-0.35	0.0093	0.0286521
SYNGR2	-0.35	0.0087	0.0271801
PAIP2	-0.35	0.00935	0.028774
SCML4	-0.35	0.00795	0.0253188
ITGA5	-0.35	0.0068	0.0223373
RGS19	-0.36	0.0096	0.0293534
SHKBP1	-0.36	0.00575	0.0195687
LSP1	-0.36	0.01485	0.0419462
YPEL5	-0.36	0.0074	0.0238537
PPCS	-0.36	0.01645	0.0456338
SH3BGRL2	-0.36	0.01365	0.0391013
PTPN4	-0.36	0.0058	0.0197146
MGRN1	-0.36	0.01015	0.0306814
AGPAT6	-0.37	0.00485	0.0171228
CSF1R	-0.37	0.0064	0.0212819
ZYX	-0.37	0.00555	0.0190242
DPYSL2	-0.38	0.00495	0.0173956
SLX4	-0.38	0.01575	0.0440732
OAZ2	-0.38	0.01165	0.0343644
GLUL	-0.38	0.0102	0.030792
DVL2	-0.38	0.01365	0.0391013
CORO7	-0.38	0.0057	0.0194225
F11R	-0.38	0.00555	0.0190242
MAFB	-0.38	0.011	0.0327624
SYNJ2	-0.38	0.00705	0.0229779
TUBA1B	-0.38	0.00635	0.0211667
TLE3	-0.38	0.00565	0.0192951
NRGN	-0.39	0.00655	0.0216866
DOK2	-0.39	0.0038	0.0140866
B4GALT1	-0.39	0.00295	0.0114047
DNAJC1	-0.39	0.01285	0.0372977
TSPO	-0.39	0.007	0.0228419
TRIB1	-0.39	0.01055	0.0317098
ENOX2	-0.39	0.0169	0.0466289
SNX18	-0.39	0.0067	0.0220666
B4GALT5	-0.39	0.0044	0.0158299
NCF4	-0.39	0.00835	0.0263132
POR	-0.39	0.01535	0.0431025
ACOT9	-0.39	0.008	0.0254487
ESYT1	-0.40	0.00415	0.0151158
MAN2B1	-0.40	0.0034	0.0128069
C12orf57	-0.40	0.00535	0.0185182
RP42	-0.40	0.00385	0.0142336
NECAP1	-0.40	0.005	0.0175356
ABR	-0.40	0.0021	0.00865223
SAT1	-0.41	0.01095	0.0326558
TSPYL4	-0.41	0.0065	0.0215521
C19orf22	-0.41	0.00185	0.00783523
LAPTM4A	-0.41	0.00495	0.0173956
PXN	-0.41	0.0016	0.00697345
TMX4	-0.41	0.0023	0.00934227
AHSA1	-0.42	0.00275	0.0107826
PIM3	-0.42	0.00505	0.017675
SLC36A2	-0.42	0.01315	0.0380165
PLEKHM1	-0.43	0.00275	0.0107826
NDUFA6	-0.43	0.0034	0.0128069
MYO1F	-0.43	0.0042	0.0152456

ARL4C	-0.43	0.0019	0.0080003
SLC11A1	-0.43	0.00165	0.00715969
RPLP2	-0.43	0.00765	0.0245391
AKAP13	-0.43	0.01385	0.0395673
TUBB1	-0.44	0.0034	0.0128069
PTAFR	-0.44	0.00155	0.00680283
RRP12	-0.44	0.0028	0.0109351
TARP	-0.44	0.0012	0.00547584
MSN	-0.44	0.00905	0.0280638
TBL3	-0.44	0.0079	0.0251945
MEI1	-0.44	0.0097	0.029574
HN1	-0.44	0.00315	0.0120362
ZNF259	-0.45	0.0018	0.00767295
RASGEF1B	-0.45	0.00495	0.0173956
C3AR1	-0.45	0.00565	0.0192951
CSRNPI	-0.45	0.0032	0.0121833
PLK3	-0.45	0.0077	0.0246708
EBNA1BP2	-0.45	0.008	0.0254487
MEDR	-0.46	0.00675	0.0221942
FRAT2	-0.46	0.00175	0.00749457
COL18A1	-0.46	0.0029	0.0112429
VARS	-0.46	0.0016	0.00697345
ITGAX	-0.46	0.00075	0.00374051
RNF166	-0.46	0.0009	0.00433496
MYO19	-0.46	0.0116	0.0342462
REPS2	-0.46	0.0039	0.0143876
C7orf26	-0.46	0.00265	0.0104829
POLR2D	-0.47	0.00265	0.0104829
ZMYM6NB	-0.47	0.0128	0.0371682
MAPKAPK2	-0.47	0.0005	0.00266422
SLC9A7P1	-0.47	0.0142	0.0404082
HLA-L	-0.47	0.00125	0.0056721
NOP10	-0.47	0.00225	0.00917702
MXD1	-0.47	0.00255	0.0101573
ARL5B	-0.47	0.00255	0.0101573
LGALS1	-0.47	0.00575	0.0195687
KLRB1	-0.48	0.00175	0.00749457
MBP	-0.48	0.0004	0.00220905
FAM53B	-0.48	0.0006	0.0030954
RARA	-0.48	0.0006	0.0030954
C9orf46	-0.48	0.01795	0.0489868
BRAT1	-0.49	0.00065	0.00331245
GBF1	-0.49	0.0003	0.00173314
FCCR2C	-0.49	0.01755	0.0481621
LDLRAP1	-0.49	0.0004	0.00220905
ATP6V0B	-0.49	0.0007	0.00351914
ABCC3	-0.49	0.0047	0.0166958
SLC12A7	-0.50	0.0005	0.00266422
RAB35	-0.50	0.0005	0.00266422
GIPC1	-0.50	0.0095	0.0291511
ZBTB9	-0.50	0.0181	0.0493181
PGLS	-0.50	0.00085	0.00413749
EMD	-0.50	0.00185	0.00783523
MYADM	-0.50	0.00035	0.00197564
MRGPRX3	-0.50	0.01535	0.0431025
ADAM8	-0.50	0.0057	0.0194225
GTF3C1	-0.51	0.00015	0.000969761
EXOSC5	-0.51	0.0177	0.048458
RAPGEF1	-0.51	5.00E-05	0.000370102
EREG	-0.51	0.0118	0.0347177
GBA	-0.51	0.0035	0.0131369
PRSS23	-0.52	0.0021	0.00865223
PMAIP1	-0.52	0.0037	0.013764
GCC1	-0.52	0.0002	0.00123235
NR4A2	-0.52	0.0153	0.0430059
IL18R1	-0.53	0.0009	0.00433496
OSM	-0.53	0.0168	0.0463808
CD300A	-0.53	0.00015	0.000969761
NR4A1	-0.53	0.00565	0.0192951
CERS4	-0.54	0.00185	0.00783523
TMEM170A	-0.54	0.0058	0.0197146
SVTL	-0.54	5.00E-05	0.000370102
CD7	-0.54	5.00E-05	0.000370102
UBAP1	-0.54	0.0002	0.00123235
SH2D2A	-0.54	0.0016	0.00697345
CXCR4	-0.54	0.0008	0.00394564
C1orf21	-0.54	0.00025	0.00149761
IFRD1	-0.54	0.00035	0.00197564
KDEL1	-0.55	0.0003	0.00173314
PARL	-0.55	0.0002	0.00123235
MBOAT7	-0.55	0.00025	0.00149761
EDEM2	-0.55	0.0004	0.00220905
CD8A	-0.55	5.00E-05	0.000370102
IKBKG	-0.56	0.01215	0.0356259
APOBEC3C	-0.56	0.0002	0.00123235
TCIRG1	-0.56	5.00E-05	0.000370102
DUSP8	-0.56	0.0141	0.040165
CASS4	-0.56	0.00355	0.0132884
CD83	-0.56	0.0088	0.027387
LOC100288778	-0.56	0.0046	0.0164252
TUBA1C	-0.56	0.0035	0.0131369
GTF2H4	-0.56	0.00985	0.029932
PATL2	-0.56	0.00015	0.000969761



EFHD2	-0.57	5.00E-05	0.000370102
PI4KAP1	-0.57	0.0029	0.0112429
MED9	-0.57	0.0045	0.0161224
GUSBP1	-0.57	0.0039	0.0143876
RABAC1	-0.57	0.00045	0.00244023
MRAS	-0.57	0.0097	0.029574
NKG7	-0.58	5.00E-05	0.000370102
C9orf142	-0.58	5.00E-05	0.000370102
THBS3	-0.58	0.00225	0.00917702
SOCS3	-0.58	0.00015	0.000969761
TP53INP2	-0.58	0.00655	0.0216866
CCL4	-0.58	0.0063	0.0210458
ITPR1P	-0.58	0.0003	0.00173314
GZMK	-0.59	5.00E-05	0.000370102
TMEM219	-0.59	5.00E-05	0.000370102
NAT6	-0.60	0.01255	0.0365501
BBC3	-0.60	0.00315	0.0120362
PHLDB2	-0.60	0.0051	0.0178229
SMUG1	-0.61	0.00465	0.0165608
POLM	-0.61	5.00E-05	0.000370102
SLA2	-0.61	0.0081	0.0256897
PER1	-0.61	5.00E-05	0.000370102
L3MBTL2	-0.61	0.00015	0.000969761
CD151	-0.62	0.0003	0.00173314
FCGR3B	-0.62	0.0023	0.00934227
FLJ36644	-0.62	0.00985	0.029932
MSR1	-0.62	0.00755	0.0242409
CSF3R	-0.62	0.0004	0.00220905
GATSL3	-0.64	0.00905	0.0280638
SSR4	-0.64	0.0005	0.00266422
VASH1	-0.64	5.00E-05	0.000370102
PILRA	-0.65	5.00E-05	0.000370102
FADS2	-0.65	0.0016	0.00697345
SLC7A5	-0.65	0.0002	0.00123235
RPL35A	-0.65	5.00E-05	0.000370102
EMR3	-0.65	0.00105	0.0049133
TMEM176B	-0.66	0.00965	0.0294606
APRT	-0.66	5.00E-05	0.000370102
SELK	-0.66	0.00045	0.00244023
LOC100652815	-0.67	0.01155	0.0341424
PROK2	-0.67	0.00335	0.0126566
KDM6B	-0.67	5.00E-05	0.000370102
LGR6	-0.67	0.0019	0.0080003
AQP9	-0.68	5.00E-05	0.000370102
BHLHE40	-0.68	5.00E-05	0.000370102
RAP1GAP2	-0.68	5.00E-05	0.000370102
SGK1	-0.68	0.00015	0.000969761
C1orf38	-0.69	5.00E-05	0.000370102
PHOSPHO1	-0.69	0.00065	0.00331245
ERMN	-0.70	0.00015	0.000969761
TOP1MT	-0.70	0.0001	0.000684367
FOS	-0.70	0.00055	0.00288713
FAM179A	-0.70	0.0049	0.0172772
UPK3B	-0.70	0.0031	0.0118979
CXCR2	-0.71	5.00E-05	0.000370102
TBX21	-0.71	5.00E-05	0.000370102
FSTL1	-0.72	0.00435	0.0156786
GZMH	-0.72	5.00E-05	0.000370102
ATG2A	-0.73	5.00E-05	0.000370102
GRASP	-0.75	0.00125	0.0056721
TNFAIP3	-0.75	0.00585	0.0198405
MPZL3	-0.75	0.0008	0.00394564
ZDHHC12	-0.75	0.00015	0.000969761
IL8	-0.75	0.00705	0.0229779
GPR56	-0.76	5.00E-05	0.000370102
RPL13AP6	-0.77	0.00605	0.0203685
IRS2	-0.78	5.00E-05	0.000370102
IL1RN	-0.79	0.0001	0.000684367
ZDHHC18	-0.79	5.00E-05	0.000370102
LOC100506418	-0.79	0.00955	0.0292524
NUDT2	-0.80	0.0002	0.00123235
ZNF683	-0.80	0.0004	0.00220905
HSPA7	-0.80	5.00E-05	0.000370102
DYDC1	-0.81	0.00045	0.00244023
IL18RAP	-0.81	5.00E-05	0.000370102
KPTN	-0.82	0.0084	0.0264526
AATK	-0.82	0.0021	0.00865223
PTCRA	-0.83	0.00495	0.0173956
CXCL2	-0.83	0.0027	0.010638
PDZD4	-0.84	5.00E-05	0.000370102
KIR3DL1	-0.85	0.0026	0.0103266
ABCA2	-0.86	5.00E-05	0.000370102
TREM1	-0.86	5.00E-05	0.000370102
ACSL1	-0.86	0.00015	0.000969761
HCAR3	-0.87	0.0029	0.0112429
RAB11FIP5	-0.87	5.00E-05	0.000370102
METRNL	-0.87	5.00E-05	0.000370102
HSPA6	-0.87	5.00E-05	0.000370102
TSC22D3	-0.88	5.00E-05	0.000370102
TMEM88	-0.90	0.01125	0.0334348
SLC25A29	-0.91	5.00E-05	0.000370102
FOSB	-0.91	5.00E-05	0.000370102
IL1B	-0.92	0.01505	0.0423983

<i>FGFBP2</i>	-0.92	5.00E-05	0.000370102
<i>HCST</i>	-0.93	5.00E-05	0.000370102
<i>SLC45A4</i>	-0.94	5.00E-05	0.000370102
<i>B3GNT7</i>	-0.94	0.0002	0.00123235
<i>VNN3</i>	-0.96	0.0003	0.00173314
<i>PFKFB3</i>	-0.99	5.00E-05	0.000370102
<i>LOC100131176</i>	-1.00	0.00755	0.0242409
<i>LOC388210</i>	-1.00	0.00895	0.0277974
<i>HCAR2</i>	-1.00	0.00495	0.0173956
<i>KCNJ15</i>	-1.01	0.00025	0.00149761
<i>CXCL3</i>	-1.03	0.00475	0.0168214
<i>LOC100286793</i>	-1.03	0.00015	0.000969761
<i>RETN</i>	-1.03	0.00575	0.0195687
<i>CST7</i>	-1.06	5.00E-05	0.000370102
<i>LYPD2</i>	-1.07	0.00805	0.0255723
<i>KIR2DS4</i>	-1.08	0.0014	0.006256
<i>KCNJ2</i>	-1.08	5.00E-05	0.000370102
<i>LOC100652800</i>	-1.09	5.00E-05	0.000370102
<i>APOEC3H</i>	-1.09	0.0014	0.006256
<i>MGAM</i>	-1.09	5.00E-05	0.000370102
<i>RGS1</i>	-1.10	0.0004	0.00220905
<i>MGC23284</i>	-1.11	0.017	0.0468673
<i>CCNJL</i>	-1.11	5.00E-05	0.000370102
<i>OR2B11</i>	-1.12	0.00225	0.00917702
<i>GPR77</i>	-1.12	5.00E-05	0.000370102
<i>LOC100128340</i>	-1.13	0.00105	0.0049133
<i>LOC100652892</i>	-1.13	0.0071	0.0231081
<i>NAMPT</i>	-1.14	5.00E-05	0.000370102
<i>LOC100293962</i>	-1.17	0.002	0.00833736
<i>SOX13</i>	-1.17	5.00E-05	0.000370102
<i>SIGLECP3</i>	-1.18	5.00E-05	0.000370102
<i>DDIT4</i>	-1.25	5.00E-05	0.000370102
<i>GSTT1</i>	-1.26	0.00075	0.00374051
<i>EGR3</i>	-1.27	5.00E-05	0.000370102
<i>CMTM2</i>	-1.28	0.00785	0.0250814
<i>HBA1</i>	-1.30	0.00195	0.00817589
<i>MMP25</i>	-1.38	5.00E-05	0.000370102
<i>G0S2</i>	-1.39	5.00E-05	0.000370102
<i>MMP9</i>	-1.40	0.00245	0.00981281
<i>SNORD3A</i>	-1.40	5.00E-05	0.000370102
<i>CLDND2</i>	-1.44	0.0001	0.000684367
<i>LOC729040</i>	-1.44	0.00175	0.00749457
<i>LOC100505994</i>	-1.46	5.00E-05	0.000370102
<i>CXCL1</i>	-1.52	5.00E-05	0.000370102
<i>TNFRSF10C</i>	-1.52	5.00E-05	0.000370102
<i>C15orf48</i>	-1.56	0.01745	0.0479354
<i>MME</i>	-1.61	5.00E-05	0.000370102
<i>SI00P</i>	-1.64	0.00145	0.00644393
<i>KRT23</i>	-1.65	5.00E-05	0.000370102
<i>CYP4F3</i>	-1.66	0.00095	0.00452522
<i>GPR97</i>	-1.66	5.00E-05	0.000370102
<i>HBA2</i>	-1.70	5.00E-05	0.000370102
<i>PTGS2</i>	-1.70	5.00E-05	0.000370102
<i>LOC100507103</i>	-1.80	0.0031	0.0118979
<i>CXCR1</i>	-1.84	5.00E-05	0.000370102
<i>IL1R2</i>	-1.99	5.00E-05	0.000370102
<i>IL1A</i>	-2.06	5.00E-05	0.000370102
<i>ASTL</i>	-2.11	5.00E-05	0.000370102
<i>UTS2</i>	-2.53	5.00E-05	0.000370102
<i>ALPL</i>	-2.62	5.00E-05	0.000370102
<i>MIR373</i>	-3.87	0.0179	0.0488988
<i>MIR3939</i>	-6.05	0.0055	0.0188951

Supplementary Table 2. Genes significantly different between non-frail and frail blacks.

Gene Name	log2(fold change)	p value	q value
TRNW	12.80	5.00E-05	0.00529016
AMH	5.31	5.00E-05	0.00529016
COMT	4.30	5.00E-05	0.00529016
FLJ36644	3.99	5.00E-05	0.00529016
IL1B	3.91	5.00E-05	0.00529016
CXCL3	3.63	0.0003	0.0225201
CCL3	3.54	5.00E-05	0.00529016
RAB11FIP4	3.32	5.00E-05	0.00529016
LOC100506248	3.12	0.0004	0.0279937
CXCL2	2.86	5.00E-05	0.00529016
IL8	2.76	5.00E-05	0.00529016
TNF	2.64	5.00E-05	0.00529016
TRAPPC4	2.60	5.00E-05	0.00529016
AEBP1	2.58	5.00E-05	0.00529016
GPR84	2.41	0.00085	0.0490191
SIGLEC1	2.40	5.00E-05	0.00529016
FAM154B	2.37	5.00E-05	0.00529016
MTRNR2L9	2.32	5.00E-05	0.00529016
UNC119B	2.18	5.00E-05	0.00529016
IFI44L	2.04	5.00E-05	0.00529016
IL1RN	1.99	5.00E-05	0.00529016
IGJ	1.98	5.00E-05	0.00529016
OR2B11	1.91	0.00055	0.0362272
THBS1	1.88	5.00E-05	0.00529016
IER3	1.87	5.00E-05	0.00529016
MTRNR2L1	1.80	5.00E-05	0.00529016
KLHL14	1.80	5.00E-05	0.00529016
CCL4	1.80	5.00E-05	0.00529016
JUP	1.79	5.00E-05	0.00529016
TNFRSF17	1.66	5.00E-05	0.00529016
EREG	1.66	5.00E-05	0.00529016
CD83	1.61	5.00E-05	0.00529016
FPR3	1.53	5.00E-05	0.00529016
EGR1	1.50	5.00E-05	0.00529016
NFKBIA	1.49	0.00025	0.019306
C11orf10	1.49	5.00E-05	0.00529016
MTRNR2L8	1.43	5.00E-05	0.00529016
CLEC4D	1.42	5.00E-05	0.00529016
LOC100289290	1.39	0.00085	0.0490191
RNU6ATAC	1.35	5.00E-05	0.00529016
NLRP2	1.34	0.0001	0.00933125
NLRP3	1.34	0.0001	0.00933125
ATF3	1.33	0.0002	0.0163866
PTGS2	1.30	5.00E-05	0.00529016
CES1	1.27	5.00E-05	0.00529016
SNORA40	1.27	0.00025	0.019306
IGLL1	1.27	5.00E-05	0.00529016
ICAM1	1.23	5.00E-05	0.00529016
SCN3A	1.23	5.00E-05	0.00529016
BCAT1	1.23	5.00E-05	0.00529016
PPP1R15A	1.23	0.0001	0.00933125
MZB1	1.20	5.00E-05	0.00529016
EGR2	1.19	5.00E-05	0.00529016
IFIT1	1.18	5.00E-05	0.00529016
CD38	1.16	5.00E-05	0.00529016
GPR15	1.13	5.00E-05	0.00529016
FCRL5	1.13	5.00E-05	0.00529016
SMPDL3A	1.12	0.00035	0.0256992
EGR3	1.12	0.0002	0.0163866
SNORD13	1.10	5.00E-05	0.00529016
RNU11	1.07	5.00E-05	0.00529016
HIST1H3G	1.06	0.0008	0.0465351
C9orf7	1.06	5.00E-05	0.00529016
TDRD9	1.05	0.00065	0.0408133
LOC100652818	1.05	5.00E-05	0.00529016
FAM118A	1.05	5.00E-05	0.00529016
IFI44	1.04	5.00E-05	0.00529016
H1F0	1.03	5.00E-05	0.00529016
PLAUR	1.02	5.00E-05	0.00529016
BCL2A1	1.01	5.00E-05	0.00529016
COBLL1	1.01	5.00E-05	0.00529016
TNFAIP3	1.00	0.0008	0.0465351
CRISPLD2	0.99	5.00E-05	0.00529016
NRG1	0.98	0.00065	0.0408133
LOC642131	0.97	5.00E-05	0.00529016
CMPK2	0.97	0.0001	0.00933125
KCNJ2	0.97	0.0001	0.00933125
G0S2	0.97	0.0005	0.0334254

<i>IFIT3</i>	0.96	5.00E-05	0.00529016
<i>LOC96610</i>	0.96	5.00E-05	0.00529016
<i>MX1</i>	0.95	5.00E-05	0.00529016
<i>FCRL2</i>	0.94	5.00E-05	0.00529016
<i>SI00A12</i>	0.94	5.00E-05	0.00529016
<i>HIST1H3C</i>	0.94	0.0004	0.0279937
<i>PP1F</i>	0.92	5.00E-05	0.00529016
<i>CYorf15A</i>	0.92	0.0002	0.0163866
<i>RNU4-1</i>	0.91	5.00E-05	0.00529016
<i>RSAD2</i>	0.90	5.00E-05	0.00529016
<i>LOC100652939</i>	0.90	5.00E-05	0.00529016
<i>ACCS</i>	0.89	0.00025	0.019306
<i>FCGR2B</i>	0.89	0.0002	0.0163866
<i>SNORA8</i>	0.88	5.00E-05	0.00529016
<i>LILRB4</i>	0.87	5.00E-05	0.00529016
<i>LOC338758</i>	0.87	5.00E-05	0.00529016
<i>OAS3</i>	0.87	5.00E-05	0.00529016
<i>HLA-DQB1</i>	0.86	5.00E-05	0.00529016
<i>NINJ1</i>	0.85	5.00E-05	0.00529016
<i>CSTA</i>	0.82	5.00E-05	0.00529016
<i>GM2A</i>	0.82	5.00E-05	0.00529016
<i>CPNE5</i>	0.82	0.0001	0.00933125
<i>C22orf37</i>	0.80	0.00055	0.0362272
<i>RNU12</i>	0.80	5.00E-05	0.00529016
<i>ALDH1A1</i>	0.79	0.00065	0.0408133
<i>MARCKS</i>	0.79	5.00E-05	0.00529016
<i>SGK1</i>	0.79	0.0002	0.0163866
<i>FAM190A</i>	0.79	0.00065	0.0408133
<i>CD163</i>	0.78	5.00E-05	0.00529016
<i>GCNT2</i>	0.78	0.00015	0.013348
<i>SOD2</i>	0.76	0.0003	0.0225201
<i>KLF10</i>	0.76	5.00E-05	0.00529016
<i>DUSP2</i>	0.76	0.00065	0.0408133
<i>POU2AF1</i>	0.76	0.0001	0.00933125
<i>ARL5B</i>	0.75	0.0001	0.00933125
<i>FAM46C</i>	0.75	0.0001	0.00933125
<i>DENND5B</i>	0.74	0.00015	0.013348
<i>SI00A8</i>	0.74	5.00E-05	0.00529016
<i>CDKN1A</i>	0.74	0.00015	0.013348
<i>GAB1</i>	0.73	0.00025	0.019306
<i>PIM3</i>	0.73	5.00E-05	0.00529016
<i>RIPK2</i>	0.73	0.00025	0.019306
<i>PLBD1</i>	0.72	5.00E-05	0.00529016
<i>FCRL1</i>	0.72	5.00E-05	0.00529016
<i>PF4</i>	0.70	0.0002	0.0163866
<i>LOC100288615</i>	0.70	5.00E-05	0.00529016
<i>RNF19B</i>	0.70	0.0001	0.00933125
<i>ELL2</i>	0.69	0.0007	0.0427541
<i>BTG2</i>	0.69	0.0005	0.0334254
<i>ITM2C</i>	0.68	0.00075	0.04479
<i>PDE4B</i>	0.68	0.0001	0.00933125
<i>SASH1</i>	0.68	0.0006	0.0387606
<i>IRF4</i>	0.67	0.0001	0.00933125
<i>BANK1</i>	0.67	5.00E-05	0.00529016
<i>SNORD89</i>	0.67	0.00025	0.019306
<i>KIAA0125</i>	0.67	0.0003	0.0225201
<i>MNDA</i>	0.66	5.00E-05	0.00529016
<i>CLIC4</i>	0.66	0.0001	0.00933125
<i>TNFAIP2</i>	0.66	0.0007	0.0427541
<i>FAM198B</i>	0.65	5.00E-05	0.00529016
<i>IFIT2</i>	0.65	0.0007	0.0427541
<i>GBP1</i>	0.64	0.0002	0.0163866
<i>CDK14</i>	0.64	0.00075	0.04479
<i>ADAM28</i>	0.63	0.0004	0.0279937
<i>UBE2J1</i>	0.62	0.00015	0.013348
<i>SOCS3</i>	0.62	0.0008	0.0465351
<i>LTA4H</i>	0.61	0.00025	0.019306
<i>TLR8</i>	0.61	5.00E-05	0.00529016
<i>MS4A1</i>	0.59	0.00065	0.0408133
<i>GAPT</i>	0.59	0.0005	0.0334254
<i>TNS3</i>	0.59	0.0004	0.0279938
<i>TLR7</i>	0.59	0.00035	0.0256992
<i>CD1D</i>	0.59	0.0007	0.0427541
<i>IL13RA1</i>	0.59	0.0004	0.0279937
<i>TCF4</i>	0.58	0.00055	0.0362272
<i>LAP3</i>	0.57	0.0006	0.0387606
<i>RGS18</i>	0.56	0.0005	0.0334254
<i>MEGF9</i>	0.56	0.00045	0.0311683
<i>MX2</i>	0.56	0.0008	0.0465351
<i>LDLRAP1</i>	-0.57	0.0002	0.0163866

<i>GYPC</i>	-0.60	0.0004	0.0279937
<i>CD6</i>	-0.61	5.00E-05	0.00529016
<i>LOC100506776</i>	-0.61	0.0008	0.0465351
<i>SAMD3</i>	-0.61	0.0006	0.0387606
<i>TBX21</i>	-0.61	0.00045	0.0311683
<i>ST6GALNAC6</i>	-0.61	0.0005	0.0334254
<i>OBSCN</i>	-0.62	0.00025	0.019306
<i>LTBP4</i>	-0.63	0.0004	0.0279937
<i>GPR56</i>	-0.65	0.0001	0.00933125
<i>SIPR5</i>	-0.66	0.00035	0.0256992
<i>SEMA4C</i>	-0.67	0.00075	0.04479
<i>TOB1</i>	-0.67	0.00035	0.0256992
<i>MYBL1</i>	-0.67	5.00E-05	0.00529016
<i>ADRB2</i>	-0.68	5.00E-05	0.00529016
<i>IL18RAP</i>	-0.70	5.00E-05	0.00529016
<i>TGFBR3</i>	-0.70	5.00E-05	0.00529016
<i>PRSS23</i>	-0.70	0.0002	0.0163866
<i>FMN1</i>	-0.73	0.0001	0.00933125
<i>LMNA</i>	-0.74	0.0007	0.0427541
<i>CYB561</i>	-0.74	0.0005	0.0334254
<i>SPTB</i>	-0.74	0.00025	0.019306
<i>TSPAN2</i>	-0.75	0.0008	0.0465351
<i>ABCA2</i>	-0.76	5.00E-05	0.00529016
<i>IL18R1</i>	-0.76	0.00025	0.019306
<i>TARP</i>	-0.77	5.00E-05	0.00529016
<i>PDZD4</i>	-0.77	5.00E-05	0.00529016
<i>TSC22D3</i>	-0.78	5.00E-05	0.00529016
<i>MATK</i>	-0.79	5.00E-05	0.00529016
<i>NKG7</i>	-0.80	5.00E-05	0.00529016
<i>FCRL6</i>	-0.81	5.00E-05	0.00529016
<i>PTP4A3</i>	-0.82	0.00015	0.013348
<i>RPS26</i>	-0.82	5.00E-05	0.00529016
<i>C1orf21</i>	-0.85	5.00E-05	0.00529016
<i>MGAM</i>	-0.86	5.00E-05	0.00529016
<i>HLA-DRB5</i>	-0.87	5.00E-05	0.00529016
<i>SLC25A29</i>	-0.87	0.0002	0.0163866
<i>SIGLECP3</i>	-0.89	0.0007	0.0427541
<i>MXRA7</i>	-0.89	5.00E-05	0.00529016
<i>PI4KAP1</i>	-0.90	0.0001	0.00933125
<i>LGR6</i>	-0.91	0.0004	0.0279937
<i>TNFRSF1B</i>	-0.91	5.00E-05	0.00529016
<i>NPDC1</i>	-0.92	0.0004	0.0279937
<i>DDIT4</i>	-0.92	5.00E-05	0.00529016
<i>PI16</i>	-0.97	0.0005	0.0334254
<i>KRT73</i>	-0.98	0.0006	0.0387606
<i>AGAP1</i>	-0.98	0.0001	0.00933125
<i>GZMH</i>	-1.00	5.00E-05	0.00529016
<i>CCDC163P</i>	-1.02	0.00075	0.04479
<i>TNFRSF10C</i>	-1.02	5.00E-05	0.00529016
<i>ADAMTS1</i>	-1.04	0.0003	0.0225201
<i>SOX13</i>	-1.04	0.0003	0.0225201
<i>HSPA7</i>	-1.05	5.00E-05	0.00529016
<i>REXO1</i>	-1.06	0.0002	0.0163866
<i>B3GAT1</i>	-1.08	5.00E-05	0.00529016
<i>TRIM25</i>	-1.11	5.00E-05	0.00529016
<i>RAB11FIP5</i>	-1.14	5.00E-05	0.00529016
<i>IGFBP3</i>	-1.14	5.00E-05	0.00529016
<i>ADAM23</i>	-1.14	0.0002	0.0163866
<i>PDCD1</i>	-1.16	0.0002	0.0163866
<i>GPSM1</i>	-1.17	0.00075	0.04479
<i>CFH</i>	-1.22	5.00E-05	0.00529016
<i>FCGR3B</i>	-1.31	5.00E-05	0.00529016
<i>TPPP</i>	-1.34	5.00E-05	0.00529016
<i>ALPL</i>	-1.51	0.00015	0.013348
<i>HBA2</i>	-1.66	0.00015	0.013348
<i>TMEM176B</i>	-1.75	5.00E-05	0.00529016
<i>IL5RA</i>	-1.87	5.00E-05	0.00529016
<i>CPSF1</i>	-1.89	5.00E-05	0.00529016
<i>ANKRD54</i>	-2.04	5.00E-05	0.00529016
<i>HBB</i>	-2.05	5.00E-05	0.00529016
<i>LOC284454,MIR24-2</i>	-2.22	5.00E-05	0.00529016
<i>UTS2</i>	-2.43	5.00E-05	0.00529016
<i>PTBP1</i>	-2.70	5.00E-05	0.00529016
<i>DGCR8</i>	-3.61	5.00E-05	0.00529016
<i>SNORD3A</i>	-4.60	5.00E-05	0.00529016

Supplementary Table 3. Genes significantly different between non-frail and frail whites.

Gene	log2(fold change)	p value	q value
AEBP1	5.98317	5.00E-05	0.00245985
AMH	5.71542	5.00E-05	0.00245985
ERBB2	4.24854	5.00E-05	0.00245985
MIR4763,MIRLET7A3,MIRLET7B,MIRLET7BHG	4.00493	5.00E-05	0.00245985
UNC119B	3.65355	5.00E-05	0.00245985
MTRNR2L9	2.18883	5.00E-05	0.00245985
HPS1	1.9481	5.00E-05	0.00245985
MTRNR2L1	1.87721	5.00E-05	0.00245985
FAM154B	1.77876	0.0001	0.00458503
FOLR3	1.73086	0.0003	0.0117558
TNNT1	1.64987	0.00035	0.01348
CA6	1.57742	5.00E-05	0.00245985
KRT72	1.44704	5.00E-05	0.00245985
SNORA40	1.43005	0.0002	0.00832099
DACT1	1.36058	5.00E-05	0.00245985
RNU6ATAC	1.31689	5.00E-05	0.00245985
LOC100507616	1.30876	5.00E-05	0.00245985
CNTNAP2	1.28962	5.00E-05	0.00245985
REREP3	1.27635	0.0014	0.0399831
FABP5	1.24627	0.00065	0.0221263
KRT73	1.19903	5.00E-05	0.00245985
FMN1	1.18708	5.00E-05	0.00245985
CISH	1.17063	5.00E-05	0.00245985
MTRNR2L8	1.14631	5.00E-05	0.00245985
LOC440993	1.12858	0.0012	0.0357086
NT5E	1.06864	5.00E-05	0.00245985
SNORA54	1.05193	0.0006	0.0208454
WHSC2	1.04318	5.00E-05	0.00245985
SLC16A10	1.02234	0.00135	0.0388017
HLA-DQA2	1.01559	5.00E-05	0.00245985
EML6	1.00706	5.00E-05	0.00245985
C6orf105	0.999176	5.00E-05	0.00245985
CPSF1	0.992687	5.00E-05	0.00245985
GPR15	0.973676	5.00E-05	0.00245985
PRICKLE1	0.954485	0.0012	0.0357086
EP400NL	0.938059	0.0002	0.00832099
LOC650623	0.930077	0.00015	0.00650161
SNORA76	0.929328	0.00115	0.0346027
RNU4-1	0.922844	5.00E-05	0.00245985
RNU12	0.901783	5.00E-05	0.00245985
PIKAP1	0.884524	0.00055	0.0194593
NBPF9	0.879116	0.00045	0.0164837
SNORA8	0.878662	0.0001	0.00458503
NBEA	0.878446	0.00015	0.00650161
LOC162632	0.874605	0.0017	0.0459238
SLC15A2	0.844711	5.00E-05	0.00245985
LRRN3	0.836425	0.0001	0.00458503
C1orf152	0.829103	0.0001	0.00458503
ZNF718	0.820493	0.0013	0.0378488
TUFM	0.806042	5.00E-05	0.00245985
CENPK	0.805953	0.0007	0.0231843
SNORD13	0.805937	5.00E-05	0.00245985
OCLN	0.783572	0.00015	0.00650161
PLAG1	0.782314	0.0004	0.0149363
TCL1A	0.738497	0.0004	0.0149363
RASGRP3	0.734101	0.0003	0.0117558
PTPRO	0.728351	0.0012	0.0357086
CCDC141	0.724157	5.00E-05	0.00245985
FRMD4A	0.713336	0.00145	0.0407208
FCRL1	0.708813	0.00015	0.00650161
GTF2H2B	0.692932	0.00015	0.00650161
LOC100652939	0.684037	0.0007	0.0231843
ZNF594	0.678565	0.0009	0.0285459
CROCCP2	0.66771	0.0009	0.0285459
ZNF736	0.662866	0.00105	0.0320952
COL19A1	0.641193	0.0004	0.0149363
BACH2	0.634072	0.00025	0.0101201
BANK1	0.626179	0.00035	0.01348
LOC439949	0.610573	0.00065	0.0221263
RNU11	0.600592	0.0007	0.0231843
TSHZ2	0.598667	0.00145	0.0407208
BTLA	0.588512	0.0009	0.0285459
SIGIRR	-0.539808	0.0017	0.0459238
IMPDH1	-0.548524	0.00145	0.0407208
APOBR	-0.556014	0.0017	0.0459238
TBX21	-0.558306	0.0018	0.0483347
HIST2H2AC	-0.564998	0.00065	0.0221263
LIPA	-0.565464	0.0016	0.0438374
CAMKK2	-0.568426	0.0016	0.0438374
H1FX	-0.572889	0.0013	0.0378488
MAPKAPK2	-0.578235	0.00115	0.0346027
ZYX	-0.578547	0.0014	0.039983
FAM46C	-0.581099	0.0008	0.025799
MFN2	-0.58379	0.00095	0.0297814
GSN	-0.584548	0.00185	0.0492846

F2R	-0.585837	0.0013	0.0378488
C20orf3	-0.585884	0.0007	0.0231843
TNIP1	-0.590673	0.00065	0.0221263
C21orf7	-0.591272	0.00125	0.0367102
TARP	-0.592918	0.0007	0.0231843
ARID5A	-0.594893	0.0016	0.0438374
NOTCH1	-0.595797	0.0008	0.025799
PRR5L	-0.597101	0.00145	0.0407208
CD300E	-0.599644	0.001	0.0311316
DNAJB1	-0.600065	0.00105	0.0320952
NADK	-0.600068	0.00105	0.0320952
RAP1GAP2	-0.601155	0.00055	0.0194593
ITM2A	-0.604095	0.00095	0.0297814
MPP1	-0.604142	0.00105	0.0320952
LITAF	-0.608532	0.0004	0.0149363
PLEKHO2	-0.608595	0.00085	0.027281
MYO1F	-0.610406	0.0011	0.0333964
HIST1H2AG	-0.610493	0.0018	0.0483347
SH3BGL2	-0.611986	0.0015	0.0418634
GADD45B	-0.614096	0.00105	0.0320952
AZIN1	-0.615401	0.00095	0.0297814
OSBPL5	-0.615809	0.00145	0.0407208
HIST2H2AB	-0.615963	0.00135	0.0388017
ABHD5	-0.616432	0.00125	0.0367102
LIMK2	-0.617251	0.00055	0.0194593
ERGIC1	-0.618493	0.00055	0.0194593
FCER1G	-0.620643	0.0012	0.0357086
NFKB2	-0.621743	0.00035	0.01348
EHD1	-0.622427	0.0007	0.0231843
CST3	-0.623232	0.00135	0.0388017
NAPA	-0.62393	0.00165	0.0450243
GCA	-0.625512	0.00075	0.0245985
CDK11A	-0.626328	0.0013	0.0378488
DKFZp761E198	-0.626533	0.00055	0.0194593
FCGR3A	-0.633547	0.0011	0.0333964
JUN	-0.633621	0.0016	0.0438374
RGS18	-0.63678	0.00045	0.0164837
PILRA	-0.636984	0.00155	0.0429918
VNN2	-0.638085	0.00075	0.0245985
RNF149	-0.638647	0.0003	0.0117558
ITGAX	-0.639829	0.00045	0.0164837
ABTB1	-0.640658	0.00025	0.0101201
LOC100507006	-0.644611	0.0017	0.0459238
GCH1	-0.645039	0.0008	0.025799
IL13RA1	-0.650259	0.00045	0.0164837
MAP2K3	-0.654861	0.00025	0.0101201
C1orf21	-0.655537	0.00105	0.0320952
RHOC	-0.657203	0.0004	0.0149363
RNF24	-0.65939	0.00065	0.0221263
CLTB	-0.659534	0.0018	0.0483347
RRP12	-0.659731	0.00045	0.0164837
PRIC285	-0.662948	0.0003	0.0117558
NCF1C	-0.663354	0.00145	0.0407208
PREX1	-0.664152	0.0003	0.0117558
GZMM	-0.664718	0.0009	0.0285459
TBXAS1	-0.665635	0.00025	0.0101201
ITPK1	-0.666321	0.0003	0.0117558
ITGB3	-0.666816	0.0005	0.0180697
SPATA20	-0.667545	0.00125	0.0367102
TTC38	-0.667774	0.0014	0.039983
CD8A	-0.671184	0.0002	0.00832099
PLEKHG2	-0.671389	0.00025	0.0101201
FCGR2A	-0.671798	0.0003	0.0117558
AMPD2	-0.672252	0.00015	0.00650161
CDKN2D	-0.672618	0.00065	0.0221263
SPI1	-0.673618	0.00015	0.00650161
FRAT2	-0.674067	0.0005	0.0180697
ODF3B	-0.682894	0.0011	0.0333964
JUND	-0.686771	0.00015	0.00650161
HIST1H2AK	-0.686881	0.00075	0.0245985
TECPR2	-0.689347	0.00145	0.0407208
CD8B	-0.690383	0.0006	0.0208454
EMR2	-0.692077	0.0002	0.00832099
AGTRAP	-0.692745	0.00065	0.0221263
MFAP3L	-0.693554	0.0004	0.0149363
PLEKHG3	-0.697574	0.00035	0.01348
SMAD7	-0.698351	0.00105	0.0320952
RELB	-0.698921	0.00055	0.0194593
ABCA2	-0.700226	0.00165	0.0450243
STX3	-0.700427	0.0001	0.00458503
SCAND1	-0.701543	0.00125	0.0367102
VASP	-0.701673	0.0002	0.00832099
TOM1	-0.703088	0.00015	0.00650161
CHST15	-0.703268	0.0004	0.0149363
EFHD2	-0.703516	5.00E-05	0.00245985
GZMB	-0.704623	0.00015	0.00650161
SNX18	-0.705508	0.0002	0.00832099

TSC22D3	-0.706005	0.00015	0.00650161
IRF1	-0.706755	0.0005	0.0180697
NRGN	-0.70724	5.00E-05	0.00245985
SDPR	-0.707486	0.00015	0.00650161
BHLHE40	-0.71009	5.00E-05	0.00245985
CST7	-0.710774	5.00E-05	0.00245985
EMR1	-0.715434	0.0008	0.025799
IFI44L	-0.717494	0.0007	0.0231843
COTL1	-0.719354	0.0003	0.0117558
COL18A1	-0.723038	0.0004	0.0149363
DENND3	-0.725174	5.00E-05	0.00245985
FTL	-0.72644	0.00185	0.0492846
PTGSI	-0.728254	5.00E-05	0.00245985
ADAMTSL4	-0.730111	5.00E-05	0.00245985
TYROBP	-0.730502	0.0002	0.00832099
C15orf39	-0.731733	0.0001	0.00458503
NFAM1	-0.731872	5.00E-05	0.00245985
NCF1B	-0.732841	0.0004	0.0149363
CD163	-0.733958	0.00015	0.00650161
GNAZ	-0.739268	0.0007	0.0231843
MGLL	-0.742905	0.00105	0.0320952
SIRPB1	-0.744098	0.00025	0.0101201
CTTN	-0.746074	0.0006	0.0208454
MARCH3	-0.746631	0.0002	0.00832099
SEPX1	-0.74768	0.00135	0.0388017
HIF1A	-0.750909	0.0001	0.00458503
FLT3	-0.751164	0.00135	0.0388017
SRC	-0.756943	0.00035	0.01348
RSAD2	-0.758299	0.00115	0.0346027
SLC11A1	-0.759381	5.00E-05	0.00245985
OTUD1	-0.759813	5.00E-05	0.00245985
OBFC2A	-0.764497	5.00E-05	0.00245985
TGFBR3	-0.765161	5.00E-05	0.00245985
CREB5	-0.765905	5.00E-05	0.00245985
PTAFR	-0.768154	5.00E-05	0.00245985
CCL5	-0.771942	5.00E-05	0.00245985
SLC16A3	-0.775253	5.00E-05	0.00245985
IER5	-0.775541	5.00E-05	0.00245985
CEBPD	-0.776525	5.00E-05	0.00245985
C19orf38	-0.777975	0.0002	0.00832099
SPARC	-0.782152	0.001	0.0311316
CLU	-0.783414	0.0001	0.00458503
CD300A	-0.786441	0.0001	0.00458503
PRF1	-0.788914	5.00E-05	0.00245985
HAL	-0.789031	0.0008	0.025799
ITGB5	-0.790787	0.00135	0.0388017
JDP2	-0.793714	0.0008	0.025799
FAM129A	-0.796288	5.00E-05	0.00245985
B4GALT5	-0.798627	5.00E-05	0.00245985
ZBTB10	-0.807437	5.00E-05	0.00245985
SLC2A3	-0.807785	5.00E-05	0.00245985
TMCC3	-0.807823	5.00E-05	0.00245985
IFI6	-0.808566	0.0001	0.00458503
LOC728054	-0.808642	0.00145	0.0407208
TLE3	-0.810758	5.00E-05	0.00245985
MAP3K8	-0.812393	5.00E-05	0.00245985
CXCL16	-0.815871	0.0005	0.0180697
HIST1H3H	-0.817427	5.00E-05	0.00245985
PTPRM	-0.824972	0.0001	0.00458503
DOCK5	-0.825277	5.00E-05	0.00245985
IFRD1	-0.825829	5.00E-05	0.00245985
GPR56	-0.82589	5.00E-05	0.00245985
SPTB	-0.826565	0.0001	0.00458503
CXCR4	-0.827369	0.00015	0.00650161
LILRA5	-0.833371	5.00E-05	0.00245985
GRINA	-0.835849	5.00E-05	0.00245985
FADS2	-0.836559	0.0007	0.0231843
HLA-DRB1	-0.836652	5.00E-05	0.00245985
RILPL2	-0.837551	5.00E-05	0.00245985
PDLIM7	-0.83962	0.00095	0.0297814
LOC541471	-0.844532	0.00185	0.0492846
FCAR	-0.844597	5.00E-05	0.00245985
ID2	-0.84551	5.00E-05	0.00245985
GNLY	-0.846426	5.00E-05	0.00245985
SPON2	-0.850538	0.0008	0.025799
PHOSPHO1	-0.854668	0.0006	0.0208454
MATK	-0.861324	5.00E-05	0.00245985
TCF7L2	-0.862385	5.00E-05	0.00245985
GNG11	-0.863832	5.00E-05	0.00245985
LILRB2	-0.865006	5.00E-05	0.00245985
LOC400499	-0.866372	0.0006	0.0208454
PALLD	-0.867468	0.00065	0.0221263
NLRP6	-0.870504	0.0005	0.0180697
DUSP5	-0.874804	5.00E-05	0.00245985
BTG2	-0.875173	5.00E-05	0.00245985
BCAT1	-0.875455	0.0001	0.00458503
ZDHHC18	-0.877412	5.00E-05	0.00245985



ITGA2B	-0.878434	5.00E-05	0.00245985
MBOAT7	-0.879354	5.00E-05	0.00245985
MRV11	-0.879411	0.0004	0.0149363
FTH1	-0.882373	0.0001	0.00458503
SIGLEC1	-0.883562	0.00025	0.0101201
SECTM1	-0.884063	5.00E-05	0.00245985
ACRBP	-0.884304	0.0006	0.0208454
SLC43A2	-0.884992	5.00E-05	0.00245985
BTG3	-0.885367	0.0016	0.0438374
NID1	-0.887394	0.0001	0.00458503
GPR77	-0.888526	0.0015	0.0418634
CHST2	-0.891148	5.00E-05	0.00245985
IER2	-0.893021	5.00E-05	0.00245985
CLEC4D	-0.898942	0.0001	0.00458503
MAFF	-0.908246	0.0001	0.00458503
ARMCS	-0.912491	0.0003	0.0117558
FOSL2	-0.915084	5.00E-05	0.00245985
C3AR1	-0.923029	5.00E-05	0.00245985
ATG2A	-0.923674	5.00E-05	0.00245985
IL1R1	-0.925829	0.00155	0.0429918
SIGLEC5	-0.9279	0.0015	0.0418634
EGF	-0.928335	0.00055	0.0194593
SRGN	-0.939868	5.00E-05	0.00245985
CDKN1C	-0.940197	0.00045	0.0164837
MIDN	-0.941438	5.00E-05	0.00245985
FAM20C	-0.942118	0.00155	0.0429918
PROS1	-0.942487	0.0009	0.0285459
PTGER4	-0.94597	5.00E-05	0.00245985
DYSF	-0.946338	5.00E-05	0.00245985
SIRPA	-0.949646	5.00E-05	0.00245985
KIFC3	-0.951003	0.0017	0.0459238
SIPA1L2	-0.952432	5.00E-05	0.00245985
EMR3	-0.95765	5.00E-05	0.00245985
HLA-DRB5	-0.959842	5.00E-05	0.00245985
SLC15A3	-0.959952	5.00E-05	0.00245985
SLC7A5	-0.961018	0.00025	0.0101201
B3GNT8	-0.973506	0.00125	0.0367102
SERPINA1	-0.975406	5.00E-05	0.00245985
MZT2A	-0.977289	5.00E-05	0.00245985
HLA-L	-0.977625	5.00E-05	0.00245985
CD69	-0.984031	5.00E-05	0.00245985
FCRL6	-0.985412	5.00E-05	0.00245985
PTBP1	-0.989988	0.0001	0.00458503
CSF2RB	-0.99525	5.00E-05	0.00245985
CRISPLD2	-0.998223	5.00E-05	0.00245985
MYL9	-1.00492	5.00E-05	0.00245985
GABARAPL1	-1.00564	5.00E-05	0.00245985
NKG7	-1.00987	5.00E-05	0.00245985
GP9	-1.01389	0.00015	0.00650161
STX11	-1.01426	5.00E-05	0.00245985
FGFBP2	-1.01472	5.00E-05	0.00245985
NFKBIE	-1.01608	5.00E-05	0.00245985
GLUL	-1.0165	5.00E-05	0.00245985
CYP27A1	-1.0181	5.00E-05	0.00245985
SRXN1	-1.02319	5.00E-05	0.00245985
DOCK4	-1.02848	0.00015	0.00650161
PDZD4	-1.03092	5.00E-05	0.00245985
GLT1D1	-1.03733	5.00E-05	0.00245985
RGS2	-1.03886	5.00E-05	0.00245985
APOBEC3A	-1.04005	5.00E-05	0.00245985
BCL6	-1.04337	5.00E-05	0.00245985
TP53INP2	-1.04698	5.00E-05	0.00245985
S1PR5	-1.04889	5.00E-05	0.00245985
PELI1	-1.04927	5.00E-05	0.00245985
SOCS3	-1.05022	5.00E-05	0.00245985
FPR2	-1.0544	5.00E-05	0.00245985
PPIF	-1.05623	5.00E-05	0.00245985
GRASP	-1.0565	0.0003	0.0117558
GADD45A	-1.05727	0.0016	0.0438374
PMAIP1	-1.0577	5.00E-05	0.00245985
DAPK2	-1.06323	0.00125	0.0367102
C22orf37	-1.0641	5.00E-05	0.00245985
SLC45A4	-1.06433	5.00E-05	0.00245985
LOC338758	-1.0725	5.00E-05	0.00245985
LGR6	-1.0751	0.0002	0.00832099
SLC9A7P1	-1.07552	5.00E-05	0.00245985
MARCKS	-1.08114	5.00E-05	0.00245985
OASL	-1.08254	5.00E-05	0.00245985
JUNB	-1.09341	5.00E-05	0.00245985
IER3	-1.09488	5.00E-05	0.00245985
ARL5B	-1.09528	5.00E-05	0.00245985
GFI1B	-1.09546	5.00E-05	0.00245985
CDC42EP2	-1.09962	5.00E-05	0.00245985
SAMSN1	-1.10082	5.00E-05	0.00245985
KDM6B	-1.10252	5.00E-05	0.00245985
PDE4B	-1.10385	5.00E-05	0.00245985
CSF3R	-1.10737	5.00E-05	0.00245985

RNF144B	-1.11084	5.00E-05	0.00245985
SLC2A6	-1.1142	5.00E-05	0.00245985
NPDC1	-1.11563	5.00E-05	0.00245985
IRS2	-1.12038	5.00E-05	0.00245985
LOC731424	-1.13449	0.00035	0.01348
PLEK	-1.13561	5.00E-05	0.00245985
BASP1	-1.14346	5.00E-05	0.00245985
FOS	-1.14428	5.00E-05	0.00245985
LOC100652940	-1.14924	5.00E-05	0.00245985
THBD	-1.15473	0.0001	0.00458503
IFITM2	-1.1648	5.00E-05	0.00245985
CDKN1A	-1.16519	5.00E-05	0.00245985
TMEM42	-1.16962	0.0007	0.0231843
SAT1	-1.17162	5.00E-05	0.00245985
PRSS23	-1.17988	5.00E-05	0.00245985
DSC2	-1.17993	0.00015	0.00650161
FAM55C,NFKBIZ	-1.17998	5.00E-05	0.00245985
LIPN	-1.18044	0.001	0.0311316
C1orf183	-1.18362	0.00095	0.0297814
B3GNT7	-1.19602	5.00E-05	0.00245985
DUSP1	-1.1966	5.00E-05	0.00245985
LOC100506115	-1.19784	5.00E-05	0.00245985
C15orf54	-1.20839	0.0004	0.0149363
C5AR1	-1.22177	5.00E-05	0.00245985
ITPRIP	-1.22602	5.00E-05	0.00245985
TNFAIP2	-1.23083	5.00E-05	0.00245985
SLC25A37	-1.24975	5.00E-05	0.00245985
TRIB1	-1.25048	5.00E-05	0.00245985
PROK2	-1.25232	0.0002	0.00832099
BCL3	-1.25891	5.00E-05	0.00245985
PF4	-1.27379	5.00E-05	0.00245985
FPR1	-1.28536	5.00E-05	0.00245985
MFS2A	-1.28718	5.00E-05	0.00245985
GP1BB,SEPT5	-1.28807	5.00E-05	0.00245985
IFIT2	-1.29344	5.00E-05	0.00245985
PER1	-1.29792	5.00E-05	0.00245985
SIK1	-1.29883	5.00E-05	0.00245985
NFKBIA	-1.29939	5.00E-05	0.00245985
BCL2A1	-1.30205	5.00E-05	0.00245985
SMPDL3A	-1.30288	5.00E-05	0.00245985
PIM3	-1.30304	5.00E-05	0.00245985
LIN7A	-1.31107	0.00045	0.0164837
HLA-H	-1.31414	5.00E-05	0.00245985
RASGEF1B	-1.31554	5.00E-05	0.00245985
EGR2	-1.31649	5.00E-05	0.00245985
C9orf7	-1.32314	5.00E-05	0.00245985
ZFP36	-1.3292	5.00E-05	0.00245985
CEBPB	-1.33236	5.00E-05	0.00245985
MAP1LC3A	-1.33306	0.00185	0.0492846
MAFB	-1.34308	5.00E-05	0.00245985
ZC3H12A	-1.38008	5.00E-05	0.00245985
SERPIN2	-1.4116	0.0012	0.0357086
STEAP4	-1.41378	5.00E-05	0.00245985
RNF19B	-1.42335	5.00E-05	0.00245985
SGK1	-1.43312	5.00E-05	0.00245985
GZMH	-1.45291	5.00E-05	0.00245985
LOC100652815	-1.45673	5.00E-05	0.00245985
AATK	-1.46059	5.00E-05	0.00245985
NFIL3	-1.4723	5.00E-05	0.00245985
LRG1	-1.4804	5.00E-05	0.00245985
LOC100506687	-1.48738	0.00055	0.0194593
NFKBID	-1.49037	5.00E-05	0.00245985
PTGDS	-1.49166	5.00E-05	0.00245985
PPP1R15A	-1.50826	5.00E-05	0.00245985
MYOM2	-1.51215	5.00E-05	0.00245985
APOBEC3B	-1.52047	0.0006	0.0208454
CLEC4E	-1.52576	5.00E-05	0.00245985
PLK3	-1.5258	5.00E-05	0.00245985
RAB20	-1.53731	5.00E-05	0.00245985
THBS1	-1.5403	5.00E-05	0.00245985
NINJ1	-1.5411	5.00E-05	0.00245985
CSRNP1	-1.54695	5.00E-05	0.00245985
TMEM176B	-1.55484	5.00E-05	0.00245985
RIPK2	-1.56357	5.00E-05	0.00245985
VNN3	-1.57235	5.00E-05	0.00245985
RAB11FIP4	-1.57616	5.00E-05	0.00245985
DDIT4	-1.58812	5.00E-05	0.00245985
ETS2	-1.61902	5.00E-05	0.00245985
MXD1	-1.62733	5.00E-05	0.00245985
GPR84	-1.63002	5.00E-05	0.00245985
SDC4	-1.64894	5.00E-05	0.00245985
CLDN5	-1.67803	0.0007	0.0231843
SOD2	-1.69341	5.00E-05	0.00245985
TREM1	-1.69423	5.00E-05	0.00245985
LOC100652892	-1.69869	0.00115	0.0346027
DGAT2	-1.73034	5.00E-05	0.00245985
PF4V1	-1.74859	5.00E-05	0.00245985

METRNL	-1.77641	5.00E-05	0.00245985
NLRP3	-1.8199	5.00E-05	0.00245985
HBEGF	-1.83463	5.00E-05	0.00245985
FLJ36644	-1.84135	5.00E-05	0.00245985
MMP25	-1.84302	5.00E-05	0.00245985
C22orf45	-1.85608	0.0002	0.00832099
PLIN5	-1.85765	5.00E-05	0.00245985
NR4A2	-1.87251	5.00E-05	0.00245985
RGS1	-1.87349	5.00E-05	0.00245985
EREG	-1.87403	5.00E-05	0.00245985
TNFAIP3	-1.88207	5.00E-05	0.00245985
TNF	-1.8935	5.00E-05	0.00245985
CXCR2	-1.90203	5.00E-05	0.00245985
LOC100507670	-1.90821	0.00025	0.0101201
PADI2	-1.916	5.00E-05	0.00245985
CCNJL	-1.94331	5.00E-05	0.00245985
FFAR2	-1.94728	5.00E-05	0.00245985
LOC729040	-1.94857	0.00075	0.0245985
BTBD19	-1.97688	5.00E-05	0.00245985
PLAUR	-2.00958	5.00E-05	0.00245985
TNFSF9	-2.02634	0.0002	0.00832099
KCNJ2	-2.04407	5.00E-05	0.00245985
CEACAM3	-2.07576	5.00E-05	0.00245985
CCL3	-2.0871	5.00E-05	0.00245985
LYPD2	-2.12082	0.0003	0.0117558
ATF3	-2.12117	5.00E-05	0.00245985
FOSB	-2.13172	5.00E-05	0.00245985
ACSL1	-2.19493	5.00E-05	0.00245985
LOC100505994	-2.20028	5.00E-05	0.00245985
PFKFB3	-2.20879	5.00E-05	0.00245985
CXCR1	-2.21633	5.00E-05	0.00245985
HCAR2	-2.2173	5.00E-05	0.00245985
KRT1	-2.24045	0.00085	0.027281
DUSP2	-2.25138	5.00E-05	0.00245985
CYP4F3	-2.25482	5.00E-05	0.00245985
ICAM1	-2.25999	5.00E-05	0.00245985
KCNJ15	-2.26437	5.00E-05	0.00245985
AQP9	-2.26934	5.00E-05	0.00245985
OSM	-2.34002	5.00E-05	0.00245985
CD83	-2.34694	5.00E-05	0.00245985
TNFRSF10C	-2.35836	5.00E-05	0.00245985
HCAR3	-2.36846	5.00E-05	0.00245985
NAMPT	-2.37293	5.00E-05	0.00245985
CXCL2	-2.445	5.00E-05	0.00245985
UPB1	-2.44936	5.00E-05	0.00245985
FCGR3B	-2.45999	5.00E-05	0.00245985
IL1R2	-2.46295	5.00E-05	0.00245985
IL1RN	-2.46816	5.00E-05	0.00245985
PTGS2	-2.4805	5.00E-05	0.00245985
NR4A1	-2.48252	5.00E-05	0.00245985
IL8	-2.48442	5.00E-05	0.00245985
EGR1	-2.51677	5.00E-05	0.00245985
MGAM	-2.52457	5.00E-05	0.00245985
ADM	-2.54429	5.00E-05	0.00245985
KRT23	-2.55147	0.0001	0.00458503
CCL4	-2.56319	5.00E-05	0.00245985
IL1B	-2.60381	5.00E-05	0.00245985
C11orf10	-2.65564	5.00E-05	0.00245985
TNFAIP6	-2.70309	5.00E-05	0.00245985
MME	-2.72979	5.00E-05	0.00245985
OR2B11	-2.90966	5.00E-05	0.00245985
CXCL3	-2.97085	5.00E-05	0.00245985
GPR97	-3.13921	5.00E-05	0.00245985
IL6	-3.22849	5.00E-05	0.00245985
C17orf91,MIR22	-3.29907	5.00E-05	0.00245985
CCL3L1	-3.37615	5.00E-05	0.00245985
CXCL1	-3.42006	5.00E-05	0.00245985
ASTL	-3.43181	5.00E-05	0.00245985
IL1A	-3.45093	5.00E-05	0.00245985
EGR3	-3.69517	5.00E-05	0.00245985
G0S2	-3.92543	5.00E-05	0.00245985
ALPL	-3.97648	5.00E-05	0.00245985
C7orf43	-4.71483	5.00E-05	0.00245985

Supplementary Table 4. Significant frailty-associated biological processes in blacks.

Gene Ontology Term	Annotation	NumGeneInSample	GOTerm	Z_Score
GO0015671 OXYGEN TRANSPORT	[GO0015671:(CLASS:biological_process)oxygen transport]The directed movement of oxygen (O2) into, out of, within or between	9		-4.18
GO0006817 PHOSPHATE TRANSPORT	[GO0006817:(CLASS:biological_process)phosphate transport]The directed movement of phosphate into, out of, within or betwee	57		-3.24
GO0050909 SENSORY PERCEPTION OF TASTE	[GO0050909:(CLASS:biological_process)sensory perception of taste]The series of events required for an organism to receive a	10		-2.42
GO0007160 CELL MATRIX ADHESION	[GO0007160:(CLASS:biological_process)cell-matrix adhesion]The binding of a cell to the extracellular matrix via adhesion molec	53		-1.84
GO0001759 INDUCTION OF AN ORGAN	[GO0001759:(CLASS:biological_process)induction of an organ]The close range interaction of two or more cells or tissues that ca	8		-1.64
GO0045061 THYMIC T CELL SELECTION	[GO0045061:(CLASS:biological_process)thymic T cell selection]The process of T cell selection that occurs in the thymus.	4		-0.85
GO0046649 LYMPHOCYTE ACTIVATION	[GO0046649:(CLASS:biological_process)lymphocyte activation]A change in morphology and behavior of a lymphocyte resulting f	4		-0.84
GO0009190 CYCLIC NUCLEOTIDE BIOSYNTHETIC PROCESS	[GO0009190:(CLASS:biological_process)cyclic nucleotide biosynthetic process]The chemical reactions and pathways resulting ir	13		-0.78
GO0060041 RETINA DEVELOPMENT IN CAMERA TYPE EYE	[GO0060041:(CLASS:biological_process)retina development in camera-type eye]The process whose specific outcome is the pro	4		-0.74
GO0042254 RIBOSOME BIOGENESIS AND ASSEMBLY	[GO0042254:(CLASS:biological_process)ribosome biogenesis and assembly]The process of the formation of the constituents of	84		-0.62
GO0007044 CELL SUBSTRATE JUNCTION ASSEMBLY	[GO0007044:(CLASS:biological_process)cell-substrate junction assembly]The assembly of abundant stress fibers, which help m	5		-0.58
GO0046326 POSITIVE REGULATION OF GLUCOSE IMPORT	[GO0046326:(CLASS:biological_process)positive regulation of glucose import]Any process that activates or increases the freque	3		-0.18
GO0007386 COMPARTMENT SPECIFICATION	[GO0007386:(CLASS:biological_process)compartment specification]The regionalization process by which embryonic segments a	3		0.24
GO0019222 REGULATION OF METABOLIC PROCESS	[GO0019222:(CLASS:biological_process)regulation of metabolic process]Any process that modulates the frequency, rate or exte	6		0.36
GO0006983 ER OVERLOAD RESPONSE	[GO0006983:(CLASS:biological_process)ER overload response]The series of molecular signals generated by the accumulation o	4		0.43
GO0000278 MITOTIC CELL CYCLE	[GO0000278:(CLASS:biological_process)mitotic cell cycle]Progression through the phases of the mitotic cell cycle, the most cor	6		0.45
GO0006097 GLYOXYLATE CYCLE	[GO0006097:(CLASS:biological_process)glyoxylate cycle]A modification of the TCA cycle occurring in some plants and microorg	3		0.51
GO0009617 RESPONSE TO BACTERIUM	[GO0009617:(CLASS:biological_process)response to bacterium]A change in state or activity of a cell or an organism (in terms of	8		0.53
GO0006098 PENTOSE PHOSPHATE SHUNT	[GO0006098:(CLASS:biological_process)pentose-phosphate shunt]The process by which glucose is oxidized, coupled to NADPH	7		0.64
GO0002224 TOLL LIKE RECEPTOR SIGNALING PATHWAY	[GO0002224:(CLASS:biological_process)toll-like receptor signaling pathway]Any series of molecular signals generated as a cons	4		0.78
GO0006281 DNA REPAIR	[GO0006281:(CLASS:biological_process)DNA repair]The process of restoring DNA after damage. Genomes are subject to dam;	183		0.80
GO0006302 DOUBLE STRAND BREAK REPAIR	[GO0006302:(CLASS:biological_process)double-strand break repair]The repair of double-strand breaks in DNA via homologous	16		0.84
GO0009268 RESPONSE TO PH	[GO0009268:(CLASS:biological_process)response to pH]A change in state or activity of a cell or an organism (in terms of mover	4		0.89
GO0006944 MEMBRANE FUSION	[GO0006944:(CLASS:biological_process)membrane fusion]The joining of two lipid bilayers to form a single membrane.	15		0.90
GO0006974 RESPONSE TO DNA DAMAGE STIMULUS	[GO0006974:(CLASS:biological_process)response to DNA damage stimulus]A change in state or activity of a cell or an organis	160		0.91
GO0007051 SPINDLE ORGANIZATION AND BIOGENESIS	[GO0007051:(CLASS:biological_process)spindle organization and biogenesis]A process that is carried out at the cellular level w/	10		0.92
GO0002238 RESPONSE TO MOLECULE OF FUNGAL ORIGIN	[GO0002238:(CLASS:biological_process)response to molecule of fungal origin]A change in state or activity of an organism (in ter	3		0.92
GO0030099 MYELOID CELL DIFFERENTIATION	[GO0030099:(CLASS:biological_process)myeloid cell differentiation]The process whereby a relatively unspecialized myeloid prec	12		0.99
GO0042542 RESPONSE TO HYDROGEN PEROXIDE	[GO0042542:(CLASS:biological_process)response to hydrogen peroxide]A change in state or activity of a cell or an organism (in	6		1.00
GO0002467 GERMINAL CENTER FORMATION	[GO0002467:(CLASS:biological_process)germinal center formation]The process by which germinal centers form. A germinal cer	3		1.00
GO0000070 MITOTIC SISTER CHROMATID SEGREGATION	[GO0000070:(CLASS:biological_process)mitotic sister chromatid segregation]The cell cycle process whereby replicated homolog	11		1.04
GO0006511 UBIQUITIN DEPENDENT PROTEIN CATABOLIC PR	[GO0006511:(CLASS:biological_process)ubiquitin-dependent protein catabolic process]The chemical reactions and pathways res	110		1.05
GO0006892 POST GOLGI VESICLE MEDIATED TRANSPORT	[GO0006892:(CLASS:biological_process)post-Golgi vesicle-mediated transport]The directed movement of substances from the t	5		1.07
GO0006260 DNA REPLICATION	[GO0006260:(CLASS:biological_process)DNA replication]The process whereby new strands of DNA are synthesized. The templ	116		1.11
GO0032760 POSITIVE REGULATION OF TUMOR NECROSIS FA	[GO0032760:(CLASS:biological_process)positive regulation of tumor necrosis factor production]Any process that activates or inc	7		1.13
GO0007001 CHROMOSOME ORGANIZATION AND BIOGENESIS	[GO0007001:(CLASS:biological_process)chromosome organization and biogenesis (sensu Eukaryota)]A process that is carried o	76		1.25
GO0050877 NEUROLOGICAL PROCESS	[GO0050877:(CLASS:biological_process)neurological process]The processes pertaining to the functions of the nervous system c	5		1.28
GO0032020 ISG15 PROTEIN CONJUGATION	[GO0032020:(CLASS:biological_process)ISG15-protein conjugation]The covalent addition to a protein of ISG15, a ubiquitin-like p	4		1.37
GO0006417 REGULATION OF TRANSLATION	[GO0006417:(CLASS:biological_process)regulation of translation]Any process that modulates the frequency, rate or extent of the	41		1.45
GO0007260 TYROSINE PHOSPHORYLATION OF STAT PROTEIN	[GO0007260:(CLASS:biological_process)tyrosine phosphorylation of STAT protein]The process of introducing a phosphate group	4		1.45
GO0000082 G1 OR S TRANSITION OF MITOTIC CELL CYCLE	[GO0000082:(CLASS:biological_process)G1/S transition of mitotic cell cycle]Progression from G1 phase to S phase of the mitoti	39		1.57
GO0000910 CYTOKINESIS	[GO0000910:(CLASS:biological_process)cytokinesis]A cellular process resulting in the division of the cytoplasm of a cell and its	33		1.60
GO0006915 APOPTOSIS	[GO0006915:(CLASS:biological_process)apoptosis]A form of programmed cell death induced by external or internal signals that	362		1.68
GO0006457 PROTEIN FOLDING	[GO0006457:(CLASS:biological_process)protein folding]The process of assisting in the covalent and noncovalent assembly of siii	191		1.69
GO0006730 ONE CARBON COMPOUND METABOLIC PROCESS	[GO0006730:(CLASS:biological_process)one-carbon compound metabolic process]The chemical reactions and pathways involvi	13		1.81
GO0006334 NUCLEOSOME ASSEMBLY	[GO0006334:(CLASS:biological_process)nucleosome assembly]The aggregation and bonding together of a nucleosome, the be	75		1.94
GO0045416 POSITIVE REGULATION OF INTERLEUKIN 8 BIO	[GO0045416:(CLASS:biological_process)positive regulation of interleukin-8 biosynthetic process]Any process that activates or in	4		2.11
GO0042088 T HELPER 1 TYPE IMMUNE RESPONSE	[GO0042088:(CLASS:biological_process)T-helper 1 type immune response]An immune response which is associated with resist	10		2.17
GO0048661 POSITIVE REGULATION OF SMOOTH MUSCLE CEL	[GO0048661:(CLASS:biological_process)positive regulation of smooth muscle cell proliferation]Any process that activates or incr	5		2.29
GO0045089 POSITIVE REGULATION OF INNATE IMMUNE RES	[GO0045089:(CLASS:biological_process)positive regulation of innate immune response]Any process that activates or increases	5		2.30
GO0007165 SIGNAL TRANSDUCTION	[GO0007165:(CLASS:biological_process)signal transduction]The cascade of processes by which a signal interacts with a recept	1004		2.36
GO0007067 MITOSIS	[GO0007067:(CLASS:biological_process)mitosis]Progression through mitosis, the division of the eukaryotic cell nucleus to produ	143		2.42
GO0051301 CELL DIVISION	[GO0051301:(CLASS:biological_process)cell division]The processes resulting in the physical partitioning and separation of a cell	194		2.49
GO0008284 POSITIVE REGULATION OF CELL PROLIFERATIO	[GO0008284:(CLASS:biological_process)positive regulation of cell proliferation]Any process that activates or increases the rate o	159		2.54
GO0007049 CELL CYCLE	[GO0007049:(CLASS:biological_process)cell cycle]The progression of biochemical and morphological phases and events that oc	418		2.58
GO0005513 DETECTION OF CALCIUM ION	[GO0005513:(CLASS:biological_process)detection of calcium ion]The series of events in which a calcium ion stimulus is receiver	3		2.69
GO0007094 MITOTIC CELL CYCLE SPINDLE ASSEMBLY CHEC	[GO0007094:(CLASS:biological_process)mitotic cell cycle spindle assembly checkpoint]A signal transduction based surveillance	9		2.74
GO0000074 REGULATION OF PROGRESSION THROUGH CELL C	[GO0000074:(CLASS:biological_process)regulation of progression through cell cycle]Any process that modulates the rate or exte	238		3.16
GO0006959 HUMORAL IMMUNE RESPONSE	[GO0006959:(CLASS:biological_process)humoral immune response]An immune response mediated through a body fluid.	30		3.69
GO0001937 NEGATIVE REGULATION OF ENDOTHELIAL CELL	[GO0001937:(CLASS:biological_process)negative regulation of endothelial cell proliferation]Any process that stops, prevents, or	4		4.29

GO0007267 CELL CELL SIGNALING	[GO0007267:(CLASS:biological_process)cell-cell signaling]Any process that mediates the transfer of information from one cell to	172	4.34
GO0046888 NEGATIVE REGULATION OF HORMONE SECRETION	[GO0046888:(CLASS:biological_process)negative regulation of hormone secretion]Any process that stops, prevents or reduces	6	4.42
GO0006935 CHEMOTAXIS	[GO0006935:(CLASS:biological_process)chemotaxis]The directed movement of a motile cell or organism, or the directed growth	85	5.12
GO0006954 INFLAMMATORY RESPONSE	[GO0006954:(CLASS:biological_process)inflammatory response]The immediate defensive reaction (by vertebrate tissue) to infec	161	6.28
GO0006955 IMMUNE RESPONSE	[GO0006955:(CLASS:biological_process)immune response]Any immune system process that functions in the calibrated respons	299	7.11
GO0001660 FEVER	[GO0001660:(CLASS:biological_process)fever]A rise in body temperature above the normal, often as a response to infection.	3	9.04

SupplementaryTable 5. Significant frailty-associated biological processes in whites.

Gene Ontology Term	Annotation	NumGeneInSample	GOTerm	Z_Score
GO0006954 INFLAMMATORY RESPONSE	[GO0006954:(CLASS:biological_process)inflammatory response]The i	166		-7.32
GO0006935 CHEMOTAXIS	[GO0006935:(CLASS:biological_process)chemotaxis]The directed mo	88		-7.08
GO0006955 IMMUNE RESPONSE	[GO0006955:(CLASS:biological_process)immune response]Any immu	306		-5.73
GO0007267 CELL CELL SIGNALING	[GO0007267:(CLASS:biological_process)cell-cell signaling]Any proces	183		-5.41
GO0045778 POSITIVE REGULATION OF OSSIFICATION	[GO0045778:(CLASS:biological_process)positive regulation of ossifica	3		-4.74
GO0042119 NEUTROPHIL ACTIVATION	[GO0042119:(CLASS:biological_process)neutrophil activation]The che	5		-4.72
GO0007165 SIGNAL TRANSDUCTION	[GO0007165:(CLASS:biological_process)signal transduction]The casc	1055		-4.62
GO0007186 G PROTEIN COUPLED RECEPTOR PROTEIN SIGNA	[GO0007186:(CLASS:biological_process)G-protein coupled receptor p	436		-4.49
GO0001525 ANGIOGENESIS	[GO0001525:(CLASS:biological_process)angiogenesis]Blood vessel fr	99		-4.22
GO0046888 NEGATIVE REGULATION OF HORMONE SECRETION	[GO0046888:(CLASS:biological_process)negative regulation of hormo	6		-4.18
GO0050930 INDUCTION OF POSITIVE CHEMOTAXIS	[GO0050930:(CLASS:biological_process)induction of positive chemot	9		-4.18
GO0007275 MULTICELLULAR ORGANISMAL DEVELOPMENT	[GO0007275:(CLASS:biological_process)multicellular organismal deve	711		-4.08
GO0030593 NEUTROPHIL CHEMOTAXIS	[GO0030593:(CLASS:biological_process)neutrophil chemotaxis]The d	18		-4.04
GO0042472 INNER EAR MORPHOGENESIS	[GO0042472:(CLASS:biological_process)inner ear morphogenesis]Th	34		-3.86
GO0042742 DEFENSE RESPONSE TO BACTERIUM	[GO0042742:(CLASS:biological_process)defense response to bacteri	35		-3.76
GO0006915 APOPTOSIS	[GO0006915:(CLASS:biological_process)apoptosis]A form of program	372		-3.52
GO0030154 CELL DIFFERENTIATION	[GO0030154:(CLASS:biological_process)cell differentiation]The proce	378		-3.49
GO0008284 POSITIVE REGULATION OF CELL PROLIFERATIO	[GO0008284:(CLASS:biological_process)positive regulation of cell pro	162		-3.46
GO0006917 INDUCTION OF APOPTOSIS	[GO0006917:(CLASS:biological_process)induction of apoptosis]A proc	91		-3.35
GO0006334 NUCLEOSOME ASSEMBLY	[GO0006334:(CLASS:biological_process)nucleosome assembly]The a	76		-3.33
GO0045087 INNATE IMMUNE RESPONSE	[GO0045087:(CLASS:biological_process)innate immune response]Inn	60		-3.28
GO0042088 T HELPER 1 TYPE IMMUNE RESPONSE	[GO0042088:(CLASS:biological_process)T-helper 1 type immune resp	10		-3.21
GO0009615 RESPONSE TO VIRUS	[GO0009615:(CLASS:biological_process)response to virus]A change i	51		-3.20
GO0006956 COMPLEMENT ACTIVATION	[GO0006956:(CLASS:biological_process)complement activation]Proce	20		-3.12
GO0045740 POSITIVE REGULATION OF DNA REPLICATION	[GO0045740:(CLASS:biological_process)positive regulation of DNA re	3		-3.00
GO0000074 REGULATION OF PROGRESSION THROUGH CELL C	[GO0000074:(CLASS:biological_process)regulation of progression thr	239		-2.98
GO0006928 CELL MOTILITY	[GO0006928:(CLASS:biological_process)cell motility]Any process invc	97		-2.97
GO0016080 SYNAPTIC VESICLE TARGETING	[GO0016080:(CLASS:biological_process)synaptic vesicle targeting]Th	3		-2.96
GO0008283 CELL PROLIFERATION	[GO0008283:(CLASS:biological_process)cell proliferation]The multipl	230		-2.95
GO0006958 COMPLEMENT ACTIVATION CLASSICAL PATHWAY	[GO0006958:(CLASS:biological_process)complement activation, class	17		-2.88
GO0006959 HUMORAL IMMUNE RESPONSE	[GO0006959:(CLASS:biological_process)humoral immune response]A	30		-2.87
GO0019835 CYTOLYSIS	[GO0019835:(CLASS:biological_process)cytolysis]The rupture of cell r	13		-2.83
GO0045741 POSITIVE REGULATION OF EPIDERMAL GROWTH	[GO0045741:(CLASS:biological_process)positive regulation of epiderr	5		-2.69
GO0006979 RESPONSE TO OXIDATIVE STRESS	[GO0006979:(CLASS:biological_process)response to oxidative stress]	55		-2.61
GO0006629 LIPID METABOLIC PROCESS	[GO0006629:(CLASS:biological_process)lipid metabolic process]The (	206		-2.44
GO0002467 GERMINAL CENTER FORMATION	[GO0002467:(CLASS:biological_process)germinal center formation]TT	3		-2.41
GO0007160 CELL MATRIX ADHESION	[GO0007160:(CLASS:biological_process)cell-matrix adhesion]The bin	54		-2.38
GO0006968 CELLULAR DEFENSE RESPONSE	[GO0006968:(CLASS:biological_process)cellular defense response]A	45		-2.37
GO0007001 CHROMOSOME ORGANIZATION AND BIOGENESIS (	[GO0007001:(CLASS:biological_process)chromosome organization ar	78		-2.31
GO0006729 TETRAHYDROBIOPTERIN BIOSYNTHETIC PROCESS	[GO0006729:(CLASS:biological_process)tetrahydrobiopterin biosynthe	8		-2.29
GO0006952 DEFENSE RESPONSE	[GO0006952:(CLASS:biological_process)defense response]Reactions	100		-2.20
GO0007599 HEMOSTASIS	[GO0007599:(CLASS:biological_process)hemostasis]The stopping of	10		-2.14
GO0001568 BLOOD VESSEL DEVELOPMENT	[GO0001568:(CLASS:biological_process)blood vessel development]TI	37		-2.12
GO0043065 POSITIVE REGULATION OF APOPTOSIS	[GO0043065:(CLASS:biological_process)positive regulation of apopto:	58		-2.05
GO0042246 TISSUE REGENERATION	[GO0042246:(CLASS:biological_process)tissue regeneration]The regr	5		-2.05
GO0000122 NEGATIVE REGULATION OF TRANSCRIPTION FROM RNA POLYMERASE II PROMOTER, (	[GO0000122:(CLASS:biological_process)negative regulation of transc	162		-2.04
GO0005975 CARBOHYDRATE METABOLIC PROCESS	[GO0005975:(CLASS:biological_process)carbohydrate metabolic proc	162		-2.04
GO0001892 EMBRYONIC PLACENTA DEVELOPMENT	[GO0001892:(CLASS:biological_process)embryonic placenta develop	12		-1.98
GO0030182 NEURON DIFFERENTIATION	[GO0030182:(CLASS:biological_process)neuron differentiation]The pr	32		-1.97
GO0045429 POSITIVE REGULATION OF NITRIC OXIDE BIOS	[GO0045429:(CLASS:biological_process)positive regulation of nitric o:	7		-1.92
GO0045860 POSITIVE REGULATION OF PROTEIN KINASE AC	[GO0045860:(CLASS:biological_process)positive regulation of protein	15		-1.90
GO0006810 TRANSPORT	[GO0006810:(CLASS:biological_process)transport]The directed move	1300		-1.89
GO0050766 POSITIVE REGULATION OF PHAGOCYTOSIS	[GO0050766:(CLASS:biological_process)positive regulation of phagoc	14		-1.85
GO0046677 RESPONSE TO ANTIBIOTIC	[GO0046677:(CLASS:biological_process)response to antibiotic]A char	6		-1.80
GO0007264 SMALL GTPASE MEDIATED SIGNAL TRANSDUCTIO	[GO0007264:(CLASS:biological_process)small GTPase mediated sigr	187		-1.71
GO0045416 POSITIVE REGULATION OF INTERLEUKIN 8 BIO	[GO0045416:(CLASS:biological_process)positive regulation of interleu	5		-1.70

GO0016311	DEPHOSPHORYLATION	[GO0016311:(CLASS:biological_process)dephosphorylation]The proc	71	-1.66
GO0050832	DEFENSE RESPONSE TO FUNGUS	[GO0050832:(CLASS:biological_process)defense response to fungus]	4	-1.65
GO0016064	IMMUNOGLOBULIN MEDIATED IMMUNE RESPONSE	[GO0016064:(CLASS:biological_process)immunoglobulin mediated irr	15	-1.58
GO0060088	AUDITORY RECEPTOR CELL STEREOCILIUM ORGA	[GO0060088:(CLASS:biological_process)auditory receptor cell stereoc	9	-1.53
GO0045786	NEGATIVE REGULATION OF PROGRESSION THROU	[GO0045786:(CLASS:biological_process)negative regulation of progre	105	-1.49
GO0032496	RESPONSE TO LIPOPOLYSACCHARIDE	[GO0032496:(CLASS:biological_process)response to lipopolysacchari	10	-1.47
GO0048041	FOCAL ADHESION FORMATION	[GO0048041:(CLASS:biological_process)focal adhesion formation]Est	13	-1.46
GO0006818	HYDROGEN TRANSPORT	[GO0006818:(CLASS:biological_process)hydrogen transport]The direc	9	-1.44
GO0015992	PROTON TRANSPORT	[GO0015992:(CLASS:biological_process)proton transport]The directec	52	-1.43
GO0007354	ZYGOTIC DETERMINATION OF ANTERIOR OR POSTERIOR AXIS, EMBRYO	[GO0007354:(CLASS:biological_process)zygotic determination of ante	3	-1.27
GO0030032	LAMELLIPODIUM BIOGENESIS	[GO0030032:(CLASS:biological_process)lamellipodium biogenesis]Fo	17	-1.25
GO0032760	POSITIVE REGULATION OF TUMOR NECROSIS FA	[GO0032760:(CLASS:biological_process)positive regulation of tumor r	7	-1.17
GO0002238	RESPONSE TO MOLECULE OF FUNGAL ORIGIN	[GO0002238:(CLASS:biological_process)response to molecule of fung	3	-1.08
GO0006595	POLYAMINE METABOLIC PROCESS	[GO0006595:(CLASS:biological_process)polyamine metabolic proces	4	-1.04
GO0048703	EMBRYONIC VISCEROCRANIUM MORPHOGENESIS	[GO0048703:(CLASS:biological_process)embryonic viscerocranium m	3	-1.01
GO0006098	PENTOSE PHOSPHATE SHUNT	[GO0006098:(CLASS:biological_process)pentose-phosphate shunt]Th	7	-1.00
GO0045576	MAST CELL ACTIVATION	[GO0045576:(CLASS:biological_process)mast cell activation]The char	5	-1.00
GO0006183	GTP BIOSYNTHETIC PROCESS	[GO0006183:(CLASS:biological_process)GTP biosynthetic process]Th	8	-0.98
GO0006228	UTP BIOSYNTHETIC PROCESS	[GO0006228:(CLASS:biological_process)UTP biosynthetic process]Th	8	-0.98
GO0006241	CTP BIOSYNTHETIC PROCESS	[GO0006241:(CLASS:biological_process)CTP biosynthetic process]Th	8	-0.98
GO0015986	ATP SYNTHESIS COUPLED PROTON TRANSPORT	[GO0015986:(CLASS:biological_process)ATP synthesis coupled proto	32	-0.94
GO0040008	REGULATION OF GROWTH	[GO0040008:(CLASS:biological_process)regulation of growth]Any pro	5	-0.86
GO0006983	ER OVERLOAD RESPONSE	[GO0006983:(CLASS:biological_process)ER overload response]The s	4	-0.83
GO0042168	HEME METABOLIC PROCESS	[GO0042168:(CLASS:biological_process)heme metabolic process]The	3	-0.74
GO0006446	REGULATION OF TRANSLATIONAL INITIATION	[GO0006446:(CLASS:biological_process)regulation of translational inil	18	-0.65
GO0045061	THYMIC T CELL SELECTION	[GO0045061:(CLASS:biological_process)thymic T cell selection]The p	4	-0.58
GO0016071	MRNA METABOLIC PROCESS	[GO0016071:(CLASS:biological_process)mRNA metabolic process]Th	23	-0.56
GO0042254	RIBOSOME BIOGENESIS AND ASSEMBLY	[GO0042254:(CLASS:biological_process)ribosome biogenesis and as	84	-0.54
GO0051382	KINETOCHORE ASSEMBLY	[GO0051382:(CLASS:biological_process)kinetochore assembly]The a	3	0.48
GO0007093	MITOTIC CELL CYCLE CHECKPOINT	[GO0007093:(CLASS:biological_process)mitotic cell cycle checkpoint]	9	0.83
GO0050877	NEUROLOGICAL PROCESS	[GO0050877:(CLASS:biological_process)neurological process]The pr	5	0.91
GO0051301	CELL DIVISION	[GO0051301:(CLASS:biological_process)cell division]The processes r	195	0.98
GO0048149	BEHAVIORAL RESPONSE TO ETHANOL	[GO0048149:(CLASS:biological_process)behavioral response to ethar	3	1.33
GO0006695	CHOLESTEROL BIOSYNTHETIC PROCESS	[GO0006695:(CLASS:biological_process)cholesterol biosynthetic proc	22	1.37
GO0008306	ASSOCIATIVE LEARNING	[GO0008306:(CLASS:biological_process)associative learning]Learnin	10	1.58
GO0006397	MRNA PROCESSING	[GO0006397:(CLASS:biological_process)mRNA processing]Any proce	196	1.64
GO0006281	DNA REPAIR	[GO0006281:(CLASS:biological_process)DNA repair]The process of r	184	1.67
GO0006259	DNA METABOLIC PROCESS	[GO0006259:(CLASS:biological_process)DNA metabolic process]The	32	1.68
GO0051028	MRNA TRANSPORT	[GO0051028:(CLASS:biological_process)mRNA transport]The directec	56	1.71
GO0009268	RESPONSE TO ACIDIC PH	[GO0009268:(CLASS:biological_process)response to pH]A change in	4	1.77
GO0001580	DETECTION OF CHEMICAL STIMULUS INVOLVED IN SENSORY PERCEPTION OF BITTER	[GO0001580:(CLASS:biological_process)detection of chemical stimult	4	1.85
GO0008033	TRNA PROCESSING	[GO0008033:(CLASS:biological_process)tRNA processing]The proces	50	1.85
GO0050909	SENSORY PERCEPTION OF TASTE	[GO0050909:(CLASS:biological_process)sensory perception of taste]T	11	2.62

**Supplementary Table 6. Primer Sequences for RT-qPCR Validation**

Gene	Forward Primers - Sequence	Reverse Primers - Sequence	Nucleotide ID
<i>C17orf56</i>	TTTCTACACCGGCTCCCGAT	CTGGTACAAGCTGTTCCCGT	<a href="#">NM_144679.2</a>
<i>CALCA</i>	ATCTAAGCGGTGCGGTAATC	CTTGTTGAAGTCCTGCGTGT	<a href="#">XM_017018284.1</a>
<i>CCL5</i>	GCTGTCATCCTCATTGCTACTG	TGGTGTAGAAATACTCCTTGATGTG	<a href="#">NM_001278736.1</a>
<i>CDKN1A</i>	AGGGGACAGCAGAGGAAG	GCGTTTGGAGTGGTAGAAATCTG	<a href="#">NM_001291549.1</a>
<i>CXCL1</i>	AACCGAAGTCATAGCCACAC	GTTGGATTTGTCAGTGTTCAGC	<a href="#">NM_001511.3</a>
<i>CXCL2</i>	CATCGAAAAGATGCTGAAAAATG	TTCAGGAACAGCCACCAATA	<a href="#">NM_002089.3</a>
<i>CXCL3</i>	AAGTGTGAATGTAAGGTCCCC	GTGCTCCCCTTGTTCAAGTATC	<a href="#">NM_002090.2</a>
<i>CXCR1</i>	TGGCACGTCATCGTGTTACC	GCCAGATCACCTTCCACACA	<a href="#">NM_000634.2</a>
<i>EGR1</i>	CTTCAACCCTCAGGCGGACA	GGAAAAGCGGCCAGTATAGGT	<a href="#">NM_001964.2</a>
<i>FAM116B</i>	GGGTCTCTACAGGCGGTTTT	ATCCAGGTCTCGATGTTCCGC	<a href="#">NM_001001794.3</a>
<i>FCGR3B</i>	GTAACACGAGGAAGGGCTCC	GCCTGGCTTGAGATGAGGTT	<a href="#">NM_001127596.1</a>
<i>FPR2</i>	AGTCTGCTGGCTACACTGTTC	TGGTAATGTGGCCGTGAAAGA	<a href="#">NM_001005738.1</a>
<i>FPR3</i>	AGGATCTAAGCTGGTGGTGT	GTGACTCCGTGGACTAGCA	<a href="#">NM_002030.4</a>
<i>GBP1</i>	GTGGAACGTGTGAAAGCTGA	CAACTGGACCCTGTCGTTCT	<a href="#">NM_002053.2</a>
<i>HBB</i>	GTGAACGTGGATGAAGTTGGTGGTGAG	TTGGACAGCAAGAAAGCGAGCTTAGTG	<a href="#">NM_000518.4</a>
<i>ICAM1</i>	GTGGTAGCAGCCGCAGTC	GGCTTGTGTGTTCCGTTTCA	<a href="#">NM_000201.2</a>
<i>IFI44</i>	CCACCGAGATGTCAGAAAGAG	TGGTACATGTGGCTTTGCTC	<a href="#">XM_011540516.3</a>
<i>IFI44L</i>	TATCACCAGCATAACCGAGC	CTGTCCTTCAGAGATGGAGA	<a href="#">XM_017000120.2</a>
<i>IFIT1</i>	GATCTCAGAGGAGCCTGGCTAA	TGATCATCACCATTTGTAATCATGG	<a href="#">NM_001548.4</a>
<i>IFIT3</i>	TCATGAGTGAGGTCACCAAG	CCTCGTTGTTACCATCTAGG	<a href="#">NM_001549.5</a>
<i>IL15RA</i>	CGCTGGGCTCAGCATCTC	AGCTGCTCTGCACACATGGA	<a href="#">NM_001351097.1</a>
<i>IL1B</i>	ACAGATGAAGTGCTCCTTCCA	GTCGGAGATTCGTAGCTGGAT	<a href="#">XM_017003988.1</a>
<i>IL6</i>	ATGAACTCCTTCTCCACAAGC	GTTTTCTGCCAGTGCCTCTTTG	<a href="#">XM_011515390.2</a>
<i>IRF4</i>	AGCGCATTTCAGTAAATGTAAACACAT	TCTTGTGTTCTGTAGACTGCCATCA	<a href="#">NM_001195286.1</a>
<i>LRCH3</i>	TCATGTGCGACCTCGATCTG	TGTCTGTCCACTGTGCTTAAC	<a href="#">NM_032773.3</a>
<i>MAPKAPK2</i>	CAGCAGTCCCGCAGTTC	CGAATTTCTCCTGGGTCCTC	<a href="#">XM_005273353.3</a>
<i>NOTCH1</i>	GAACCAATACAACCCTCTGC	AGCTCATCATCTGGGACAGG	<a href="#">NM_017617.5</a>
<i>OAS3</i>	CCGAAGTGTCTGGGCTGATCC	CCCATTCCCAGGTCCCATGTGG	<a href="#">XM_017019363.2</a>
<i>OSM</i>	GCCCAGGATTTGGAGAGGTCTGG	GCGATGGTAGCCATGCAGGAACCT	<a href="#">NM_001319108.1</a>
<i>PF4</i>	TTCTGCGCCTCACGCC	TGGGACGGACCTGG GAG	<a href="#">NM_001363352.1</a>
<i>PTGS2</i>	ATATGTTCTCCTGCCTACTGGAA	GCCCTTACGTTATTGCAGATG	<a href="#">NM_000963.3</a>
<i>RARA</i>	GGTGCCTCCCTACGCCTTCT	AGAGGGCAGGGAAGGTTTCC	<a href="#">NM_000964.3</a>
<i>RSAD2</i>	AGGTTCTGCAAAGTAGAGTTGC	GATCAGGCTTCCATTGCTC	<a href="#">NM_080657.4 Homo</a>
<i>SLC2A6</i>	CAGAGCAGCCGAGTATCGTG	AAACATGATGGCCGCTGAGA	<a href="#">NM_017585.3</a>
<i>TNF</i>	CCCAGGGACCTCTCTAATCA	AGCTGCCCTCAGCTTGGAG	<a href="#">NM_000594.3</a>
<i>TRIM25</i>	GTCTCTACCCAGAACAGTTTCC	ATCCAACACAGGCTGATTCC	<a href="#">NM_005082.4</a>



**Supplementary Table 7. FRAIL scores among frail individuals in the validation cohort**

	Blacks	Whites	p value
n	13	13	
Fatigue (mean (sd))	0.69 (0.48)	0.85 (0.38)	0.372
Resistance (mean (sd))	1.00 (0.00)	0.85 (0.38)	0.153
Ambulation (mean (sd))	0.92 (0.28)	0.92 (0.28)	1
Illness (mean (sd))	0.08 (0.29)	0.17 (0.39)	0.557
Loss of Weight (mean (sd))	0.46 (0.52)	0.54 (0.52)	0.709