Diversity of satellite glia in sympathetic and sensory ganglia

Aurelia A Mapps[1,3], Michael B Thomsen[1,2,3], Erica Boehm[1], Haiqing Zhao[1], Samer Hattar[2], and Rejji Kuruvilla[1,*]

[1]Department of Biology, Johns Hopkins University, 3400 N. Charles St, 200 Mudd Hall, Baltimore, Maryland 21218, USA

[2]Section on Light and Circadian Rhythms (SLCR), National Institute of Mental Health, NIH, Bethesda, Maryland 20892, USA

[3]These authors contributed equally

*Corresponding author and lead contact:

Rejji Kuruvilla

rkuruvilla@jhu.edu

Running Title: Molecular heterogeneity of satellite glia

ABSTRACT

Satellite glia are the major glial type found in ganglia of the peripheral nervous system and wrap around cell bodies of sympathetic and sensory neurons that are very diverse. Other than their close physical association with peripheral neurons, little is known about this glial population. Here, we performed single cell RNA sequencing analysis and identified five different populations of satellite glia from sympathetic and sensory ganglia. We identified three shared populations of satellite glia enriched in immune-response genes, immediate-early genes and ion channels/ECM-interactors, respectively. Sensory- and sympathetic-specific satellite glia are differentially enriched for modulators of lipid synthesis and metabolism. Sensory glia are also specifically enriched for genes involved in glutamate turnover. Further, satellite glia and Schwann cells can be distinguished by unique transcriptional signatures. This study reveals remarkable heterogeneity of satellite glia in the peripheral nervous system.

INTRODUCTION

In the peripheral nervous system, the sensory arm is essential for transducing a wide variety of environmental stimuli from the outside world to the central nervous system, while the sympathetic division relays motor commands from the central nervous system to diverse peripheral organs/tissues to mobilize the “fight or flight” response and maintain body homeostasis in response to a continuously changing environment (Goldstein, 2013; Marmigere and Ernfors, 2007; Usoskin et al., 2015). Sympathetic and sensory neurons residing in their respective peripheral ganglia are remarkably diverse with respect to morphological, molecular, and electrophysiological properties, consistent with their distinct functions (Ernsberger et al., 2020; Liu and Ma, 2011). In addition to primary neurons, sympathetic and sensory ganglia contain two major glial cell types, satellite glia and Schwann cells, which are closely associated with their neuronal neighbors and influence a wide range of neuronal functions (Hanani and Spray, 2020; Jessen and Mirsky, 2005). While the diversity of neurons in sympathetic versus sensory ganglia is well-appreciated, it remains unknown if there are molecular differences between the associated glial cell types, particularly the satellite glia, that reflect ganglion-specific functions.

Satellite glial and Schwann cells are both derived from multipotent neural crest precursors during development (Jessen and Mirsky, 2005). Satellite glial cells wrap tightly around neuronal cell bodies, whereas Schwann cells ensheath axonal processes of peripheral neurons (Hanani and Spray, 2020; Pannese, 1981). While Schwann cells have been intensely investigated, and have well-documented roles in myelination, axon regeneration, and providing trophic and metabolic support to neurons (Jessen and Mirsky, 2005; Monk et al., 2015), the understanding of satellite glia has lagged far behind. Satellite glia have a unique architecture in that they form ring-like structures that completely wrap around individual neuronal cell bodies, with each neuron and associated satellite glia thought to form discrete structural and functional units (Hanani and Spray,

2020; Pannese, 1981). This intimate physical association implies that satellite glia can be critical regulators of neuronal connectivity, activity, homeostasis, and repair. Indeed, it has been proposed that satellite glia modulate ionic and neurotransmitter concentrations, promote neuronal morphogenesis during development, regulate synaptic transmission, and engulf dying neurons (Avraham et al., 2020; Enes et al., 2020; Hanani and Spray, 2020; Wu et al., 2009). However, knowledge about satellite glia functions, specifically *in vivo*, has been scarce. Several recent studies in sensory ganglia have suggested that satellite glia regulate chronic pain through modulating neuronal hyper-excitability and promote axon regeneration after peripheral nerve injury (Avraham et al., 2020; Kim et al., 2016).

Satellite glia wrap around sensory and sympathetic neurons, which are molecularly, functionally, and morphologically divergent populations. Sympathetic neurons, which are primarily noradrenergic, innervate peripheral organs and tissues to control various autonomic functions, including cardiac output, body temperature, regulation of blood glucose levels, and immune functions under basal conditions and in response to external stressors (Goldstein, 2013). Sensory neurons relay information about mechano-sensation, pain and temperature from the periphery to the brain (Liu and Ma, 2011; Usoskin et al., 2015). Morphologically, sympathetic neurons have an axon and multiple dendritic processes and form synapses with preganglionic neurons, whereas sensory neuron cell bodies extend a pseudo-unipolar axon which bifurcates to extend into the brain and periphery, respectively. In a key difference from sensory ganglia, satellite glia envelop the dendrites and synapses of neurons, in addition to cell bodies in sympathetic ganglia (Hanani, 2010). Despite the intimate association of satellite glial cells with peripheral neurons, there have been few investigations of whether differences exist in satellite glial cells from distinct peripheral ganglia.

Here, we utilized single cell transcriptome profiling and single molecule fluorescence *in situ* hybridization to comprehensively characterize satellite glial cell diversity in sensory and sympathetic ganglia. Our results reveal five types of satellite glia, including sensory-specific satellite glia, sympathetic-specific satellite glia, and three populations that are present in both ganglia. Sensory- and sympathetic-specific satellite glia are differentially enriched for modulators of lipid metabolism. Sensory glia are specifically enriched for genes involved in glutamate turnover, consistent with their association to glutamatergic neurons. We identify three populations of satellite glia that are present in both ganglia, each featuring enrichment of functionally distinct pathways, including immune-response genes, immediate-early genes, and ion channels/ECM-interactors, respectively. We also show that Schwann cells can be distinguished from satellite glia by hundreds of uniquely expressed genes. By providing a transcriptional atlas for satellite glia classification, this study reveals remarkable diversity in satellite glia across the peripheral nervous system and suggests that satellite glia are transcriptionally tuned to the functions of their respective ganglia.

RESULTS

Cell types in sympathetic and sensory ganglia

We prepared single cell suspensions from sympathetic (superior cervical ganglion, SCG) and sensory (dorsal root ganglion, DRG) ganglia from young adult mice and performed droplet-based high-throughput single cell RNA sequencing using the Drop-Seq protocol (Macosko et al., 2015) (**Figures S1A-B**). The Drop-Seq procedure was validated by 98.75% separation efficacy of mixed human and mouse cells (**Figure S1B**). Following quality control filtering, we obtained a total of 21,524 high quality single cell transcriptomes (13,435 SCG; 8,089 DRG) that were used as input for unsupervised clustering and dimensionality reduction with the Seurat package (**Figure 1A**).

This analysis identified numerous transcriptionally distinct cell populations divided between sensory and sympathetic tissues (**Figure 1B**). Major cell types of the peripheral nervous system were separated into nine large clusters based on the expression of canonical marker genes: satellite glial cells (*Plp1*, *Fabp7*), Schwann cells (*Plp1*, *Ncmap*), sympathetic neurons (*Snap25*, *Th*), sensory neurons (*Snap25*, *Calca*), vascular endothelial cells (*Ly6c1*), macrophages (*C1qb*), T-cells (*Trb2*), fibroblasts (*Dcn*), and mural cells (*Rgs5*) (**Figure 1C**) (Saunders et al., 2018; Vanlandewijck et al., 2018; Zeisel et al., 2018). Thus, our methodology is robust enough to isolate all known cell types from sympathetic and sensory ganglia.

We extracted sensory and sympathetic neurons and performed unsupervised clustering to identify cell type diversity contained within each class (**Figures 1D-E**). Within stellate and thoracic sympathetic ganglia, seven neuron types have been described to date, including five noradrenergic and two cholinergic populations (Furlan et al., 2016; Zeisel et al., 2018). Among SCG neurons, we identified all previously described five noradrenergic populations delineated by the expression of markers including *Th, Rarres1*, *Gfra2*, *Gfra3*, *Npy*, and *Enc1* (**Figures 1D and S2A**) (Furlan et al., 2016). However, we were unable to identify any cholinergic neurons, suggesting that cholinergic neurons are scarce in the SCG. Up to seventeen neuron types have been identified in sensory ganglia based on transcriptional profiles, and they are divided into three categories: peptidergic (8), non-peptidergic (6), and neurofilament-enriched (3) (Usoskin et al., 2015; Zeisel et al., 2018). We identified 12 types of sensory neurons corresponding to all three major categories including peptidergic (*Foxp2*, *Adcyap1*, *Mrgpra3*), non-peptidergic (*Th*, *Mrgprd*, *Nppb*), and neurofilament-enriched (*Nefh*, *Palm3*, *Trapp3cl*) (**Figures 1E and S2B**). In summary, our analyses of neuronal cell types from sensory and sympathetic ganglia are consistent with previous reports of neuronal diversity in the peripheral nervous system (Furlan et al., 2016; Usoskin et al., 2015; Zeisel et al., 2018).

Non-neuronal/non glial cell types in peripheral ganglia

Non-neuronal cells were identified based on known gene expression signatures including vascular endothelial cells (*Ly6c1*, *Flt1*, *Cldn5*), mural cells (*Rgs5*, *Vtn*), fibroblasts (*Dcn, Lum*), T cells (*Trbc2*), macrophages (*C1qb*, *Ctss*), and epithelial cells (*Kl*, *Krt18*) (Zeisel et al., 2018) (**Figures 1C, 1F and S1C**). Epithelial cells and T-cells were found primarily in sympathetic samples, which may reflect a dissection artifact since these cell types reside outside of peripheral ganglia (**Figure 1G**). Pericytes, vascular smooth muscle cells, and macrophages showed limited or no differential gene expression between tissue of origin. We observed differences in gene expression between endothelial cells derived from sensory and sympathetic ganglia (**Figure 1G**), which may underlie observed differences in their vascular permeability (Kiernan, 1996).

Further, we identified a small cluster of cells that express several mitotic machinery components, including *Top2a* and *Mki67* **(Figures 1F and S1C-D)**. Within this small cluster, we identified subsets of cells that contain gene expression signatures corresponding to T-cells, endothelial cells, erythrocytes, and satellite glial cells (**Figure S1D**). These results suggest that a subpopulation of satellite glia retain proliferative capacity in adult ganglia.

Satellite glia and Schwann cells have distinct transcriptional signatures

Progress in understanding satellite glia functions has been hampered by the fact that they share many genetic markers with Schwann cells (Britsch et al., 2001; Hanani, 2010; Shi et al., 2008). While there are several genes that can be used to label satellite glial cells (e.g., *Glul, Gfap, S100b, Gja1, Plp1, Kcnj10*), most of these genes are also expressed in Schwann cells and/or other glial cell types in the central nervous system, most notably astrocytes (Hanani and Spray, 2020). To overcome this hurdle and isolate specific transcripts and functional pathways that distinguish

these glial cell types, we independently clustered all glial cells (**Figures 2A-B**) and identified >450 genes that were differentially expressed ($p<10^{-50}$) between Schwann cells and satellite glia (**Figure 2C, Table S1**). We found that the strongest and most significantly enriched transcript among satellite glial cells was fatty acid binding protein 7 (*Fabp7*) **(Figure 2C)**, a fatty acid transporter that was previously identified as a marker of satellite glia (Avraham et al., 2020; Kurtz et al., 1994). In addition to *Fabp7*, satellite glia expressed high levels of genes associated with fatty acid synthesis including *ApoE*, an apolipoprotein which carries lipids and cholesterols to neurons, as well as *Dbi*, acyl-coA binding protein that regulates synapses**, (Table S1),** (Bouyakdan et al., 2019; Holtzman et al., 2012; Ioannou et al., 2019). Schwann cells were enriched for *Ncmap* (non-compact myelin associated protein) **(Figure 2C)**, a glycoprotein that is found in myelin of the peripheral nervous system which is localized to paranodal regions flanking nodes of Ranvier (Ryu et al., 2008). *Ncmap* and other genes involved in myelination (*Mag, Mog*) were uniformly expressed within the Schwann cell cluster **(Table S1)**, suggesting that we primarily isolated myelinating Schwann cells.

Schwann cells are readily separated from satellite glia in sensory ganglia, consistent with recent studies (Avraham et al., 2020). Due to their scarcity in sympathetic ganglia, Schwann cells could only be differentiated from satellite glia when we performed an integrated analysis with sensory ganglia **(Figures 2A-B)** (Satija et al., 2015; Stuart et al., 2019). These results suggest that Schwann cells are prevalent in sensory, but not sympathetic ganglia, a difference that may have important functional implications for modulation of neuronal connectivity, activity, and repair in these two systems.

To identify functional pathways that distinguish satellite glia and Schwann cells, we performed gene ontology analysis of all significantly enriched genes within each group (**Figures 2D-E and Table S1**). Satellite glia were enriched for genes associated with fatty acid metabolism

including chaperone proteins (*Fabp5, Fabp7*), elongases (*Elovl2, Elovl5*), desaturases (*Fads1, Fads2, Fads6, Scd1, Scd2*), and fatty acid synthase, *Fasn* **(Figure 2D, Table S1)**. Furthermore, satellite glia specifically expressed genes involved in mitochondrial beta-oxidation (*Acaa2, Acadl, Acadm, Acsbg1, Eci1*) **(Figure 2D, Table S1)**, which produces energy from fatty acids (Barber and Raben, 2019). Schwann cells were strongly enriched for genes involved in myelination (**Figure 2E**), including genes specific for sphingolipid synthesis (*Fa2h, Samd8, Sptlc2, Ugt8a*) (**Table S1**), which are abundant myelin components in both central and peripheral nervous systems (Giussani et al., 2021). Schwann cells also expressed fatty acid elongase genes (*Elovl1, Elovl7*) that were distinct from those expressed in satellite glia (**Table S1**). Combined, these data suggest that lipid synthesis in satellite glia and Schwann cell is specialized for neuronal compartments contacted by glial cells.

Satellite glia uniquely ensheathe cell bodies of peripheral neurons, while Schwann cells tightly wrap around axons, yet it is unknown if these contacts are driven by distinct cell adhesion molecules. We found that satellite glia were specifically enriched for 46 cell adhesion molecules, including known neuron-glia interactors (*Atp1b2, Ncam1, Chl1, Cadm1, Cadm2, and Cdh10*), and two genes (*Fbln5, Vcam1*) involved in endothelial cell adhesion (Albig and Schiemann, 2004; Batiuk et al., 2020; Hillenbrand et al., 1999; Kokovay et al., 2012; Sukhanov et al., 2021) (**Figure 2D and Table S1)**. Some of the cell adhesion molecules (*Cadm2, Cdh10, Chl1, Megf10, Tnc*) have known roles in regulating synapse formation, neurite outgrowth, and axon pathfinding (Batiuk et al., 2020; Chung et al., 2013; Frei et al., 2014; Joester and Faissner, 2001). Interestingly, some cell adhesion genes (*Chl1, Ncam1, Postn*) expressed in satellite glia are upregulated in Schwann cells in response to neuronal injury (Allard et al., 2018; Zhang et al., 2000).

Satellite glia also expressed specific integrin proteins (*Itga7, Itgav, Itgb3*), collagen proteins (*Col14a1, Col16a1, Col28a1*), and other genes involved in extracellular matrix (ECM) binding **(Figure 2D and Table S1)**. The enrichment of ECM-related cell adhesion molecules is consistent with a role for satellite glia in maintaining a healthy and organized neuronal microenvironment in peripheral ganglia. Compared to satellite glia, Schwann cells expressed 29 unique cell adhesion molecules, including genes involved in myelination (*Mag, Mog, Nfasc, Mpdz*), cell-cell adhesion (*Cadm3, Ctnna3*), and cell-ECM adhesion (Cd9, Cd47), as well as several specific integrin proteins (*Itga6, Itgb1, Itgb4, Itgb5*) (**Figure 2E**, **Table S1**).

Finally, we confirmed the specificity of expression of the satellite glia marker, *Fabp7*, and the Schwann cell marker, *Ncmap,* in sympathetic and sensory ganglia using RNAscope single molecule Fluorescence *in situ* Hybridization (smFISH) (**Figures 2F-K**). Consistent with the sequencing analysis (**Figures 2A-C**), *Fabp7* was enriched in both sympathetic and sensory ganglia (**Figures 2F and 2I**), while *Ncmap* was abundant in sensory ganglia (**Figure 2G**), but not detected in sympathetic ganglia (**Figure 2J**).

Transcriptional heterogeneity of satellite glia

Satellite glia could be separated into five transcriptionally distinct populations, when analyzed independent of all other cell types (**Figures 3A-B**). Satellite glia are differentiated into individual clusters specific to sensory or sympathetic ganglia, or three shared clusters which are distinguished by enriched expression of immediate early genes (“IEG”), immune response genes (“Immune response”), or cell adhesion and extracellular matrix-related genes (“General resident”).

<u>Sensory satellite glia</u>

Consistent with their association to glutamatergic neurons, one of the strongest marker genes of sensory satellite glia was the excitatory amino acid transporter *Slc1a3* (**Figures 3C and S3A-B**). *Slc1a3* is an established glutamate transporter that acts to uptake excess glutamate from the extracellular space (Kanai and Hediger, 2004). Other enriched glutamatergic machinery in sensory satellite glia included *Slc1a4*, glutamate/neutral amino acid transporter (Kanai and Hediger, 2004), *Phgdh*, an enzyme in serine biosynthesis which influences glutamate receptor activity (Neame et al., 2019), and *Glul*, a glutamine synthetase which catalyzes the conversion of glutamate to glutamine (Rose et al., 2013) (**Figure 3C**). *Glul* mRNA is also found in non-glial cell types in the sensory ganglia, as previously reported (Avraham et al., 2020).

In addition to glutamate-associated genes, we also found striking enrichment of *Gja1*, a gap junction protein that mediates sensory neuron coupling and chronic pain in response to injury (Kim et al., 2016); *Ednrb* endothelin receptor B, which is involved in Schwann cell maturation and myelination (Brennan et al., 2000; Swire et al., 2019); and *Mlc1*, a putative membrane protein of unknown function that has been linked to a neurological disorder, megalencephalic leukoencephalopathy (Schmitt et al., 2003) (**Figure 3C**). Using smFISH, we confirmed that *Mlc1* transcript is more enriched in sensory satellite glia compared to sympathetic glia (**Figures 4A-B**). The most specific and highly expressed marker of sensory satellite glia was the proteoglycan, *Bcan* (Brevican), a structural component of the brain ECM which has been implicated in regulating neurite outgrowth, glioma cell motility, synaptic plasticity, and axon regeneration (Frischknecht and Seidenbecher, 2012) (**Figure 3C**). Of note, astrocyte-derived brevican inhibits outgrowth in cultured cerebellar granule neurons in the brain (Yamada et al., 1997). Since sensory satellite glia inhibit neurite outgrowth in neuron-glia co-cultures (De Koninck et al., 1993) and sensory neurons do not bear dendritic processes, it is tempting to speculate that satellite glia-derived Brevican may play a specific role in suppressing dendrite morphogenesis in sensory ganglia.

Notably, sensory satellite glia were enriched in transcripts associated with cholesterol biosynthesis and turnover including *Hmgcr, Fdps*, *Cyp51*, and *Insig1* (Li et al., 2021; Luo et al.,

2020) (**Figure 3C**). The enrichment of cholesterol synthetic machinery in sensory ganglia suggests a greater need for exogenously supplied lipids than in sympathetic ganglia. Altogether, we identified genes in sensory satellite glia that are involved in neuronal maintenance, signal transduction, and neurotransmission.

Sympathetic satellite glia

We found few transcripts that are unique to sympathetic satellite glia. Among the few enriched transcripts within sympathetic satellite glia, we detected components of fatty acid biosynthesis, activation, beta-oxidation, and lipoprotein uptake/metabolism, including *Scd2, Acsbg1*, *Naaa*, and *Lipg* (McCoy et al., 2002; Miyazaki et al., 2005; Pei et al., 2003) (**Figure 3C**). Using smFISH we confirmed that one of these genes, *Lipg* (endothelial lipase G), was enriched in sympathetic glia (**Figures 4C-D and S3C-D**). Although, sympathetic satellite glia are in direct contact with cholinergic synapses between pre- and post-ganglionic neurons (Hanani, 2010), we were unable to identify transcripts involved in cholinergic neurotransmission, in contrast to the specific glutamatergic neurotransmission-related transcripts detected in sensory ganglia.

General resident satellite glia

General resident satellite glia were found in both sensory and sympathetic ganglia and were distinguished by the expression of many genes related to ECM interactions. These genes included collagen proteins (*Col1a1, Col1a2, Col3a1, Col5a1, Col18a1*), integrins (*Itga1, Itga6, Itgb4*), two extracellular annexin proteins (*Anxa1, Anxa5*), and the proteoglycan *Hspg2* (**Figure 3C**). In addition to ECM-related transcripts, this cluster also featured the ion channel genes, *Scn7a* and *Kcna1* (**Figure 3C**), which are likely key players in the regulation of extracellular ion concentrations. Interestingly, mutations in two genes, *Kcna1* and *Hspg2*, have been linked to aberrant neuronal excitability and peripheral neuropathies (Bangratz et al., 2012; Browne et al.,

1994), though these effects have been primarily attributed to their expression in neurons or Schwann cells (Bangratz et al., 2012; Browne et al., 1994).

Annexin A1 and A5 (*Anxa1 and Anxa5*), which were enriched in the General resident glial population (**Figure 3C**), are members of the Annexin family of Ca^{2+}- and phospholipid-regulated proteins that mediate membrane trafficking events (Gerke et al., 2005). Anxa5 binds with high affinity to phosphatidylserine expressed on the surface of apoptotic cells (Koopman et al., 1994). In the DRG, satellite glia precursors, and not the canonical macrophages, are responsible for clearing neuronal corpses during naturally occurring cell death (Wu et al., 2009), raising the possibility that the General resident satellite glial population performs this function in both sensory and sympathetic ganglia. Further, *Anxa1* is upregulated in sensory ganglia in response to inflammation and attenuates nociceptive responses (Chen et al., 2014). Using smFISH, we detected *Anxa1* expression in a subset of satellite glial cells in both sensory and sympathetic ganglia (**Figures 4E-F and S3E-F**), suggesting that this population may have a general role in anti-inflammatory responses.

Immediate early gene-expressing satellite glia

A shared population of satellite glia between sensory and sympathetic ganglia expressed many classical immediate early genes, including *Egr1, Cyr61, Fos*, *Jun*, *Junb*, and *Hspa1a* (**Figure 3C**). The upregulation of immediate early genes is a hallmark of neuronal activity (Guzowski et al., 2005), and in some cases of neuronal injury (Arthur-Farraj et al., 2012). In particular, satellite glia up-regulate c-Fos and c-Jun immediately after sciatic nerve injury (Soares et al., 2001). We observed satellite glia-specific *Egr1* expression in both sensory and sympathetic ganglia using smFISH (**Figures 4G-H, S3G-H)**. Detection of *Egr1* in ganglia by smFISH suggests that IEG-expressing satellite glia are present under physiological conditions, and are not a result of dissociation-induced up-regulation in the course of isolating cells for sequencing.

Immune-responsive satellite glia

A separate shared cluster of satellite glia was demarcated by the specific expression of a cohort of guanylate binding proteins (*Gbp2, Gbp3, Gbp7*) and related interferon-inducible GTPases (*Igtp, Iigp1, Irgm1, Irgm2, Gm4951*), which have established roles in intracellular defense against pathogens (Ngo and Man, 2017; Tretina et al., 2019) (**Figure 3C**). The enrichment of these transcripts, in addition to other interferon-inducible genes (*Irf1, Ifit1, Ifit3*) (**Figure 3C**) that have anti-viral properties (Fensterl and Sen, 2015), suggests that this population defends against viral and bacterial pathogens. Further, these cluster was also enriched for transcription factors *Irf1* and *Stat1* (**Figure 3C**), which are induced by interferon B signaling (Tretina et al., 2019). Strikingly, we found that Immune-responsive satellite glia were disproportionately enriched in sympathetic ganglia (**Figures 4I-J, S3I-J**), in contrast to the other two shared clusters of satellite glia that were more evenly distributed between both ganglia. We used smFISH to validate one of the genes, *Ifit3*, and found that *Ifit3*-positive satellite glia were indeed more abundant in sympathetic ganglia (**Figures 4I-J, S3I-J**). Interestingly, we noticed that *Ifit3*$^{+}$ satellite glial cells were concentrated in specific regions within the SCG (**Figure S3J**). These findings suggest that despite the presence of resident macrophages (Pirzgalska et al., 2017), satellite glia are primed to defend the peripheral nervous system against bacterial or viral infections.

DISCUSSION

In this study, we describe a high-resolution transcriptional comparison of glial cell types between functionally and anatomically distinct ganglia in the peripheral nervous system. Compared to the well-characterized diversity in neuronal populations in peripheral ganglia, little is known about the cellular and molecular diversity of satellite glia that are intimately associated with cell bodies of peripheral neurons. Our analysis reveals five molecularly defined satellite glial cell types (**Figure 4K**), provides a rich resource of gene expression in satellite glia and Schwann cells, and suggests that satellite glia are transcriptionally tuned to their resident ganglia.

Our analyses revealed that satellite glia in sensory and sympathetic ganglia exhibit similarities, but also significant differences in gene expression, which may reflect ganglia-specific functions. Both sensory and sympathetic satellite glial cells express >70 genes involved in fatty acid/cholesterol synthesis and metabolism, including highly expressed transcripts such as *ApoE, Fabp7, and Fasn*. In general, neurons are inefficient in lipid synthesis, and rely on the uptake of lipids from extrinsic sources (Pfrieger and Ungerer, 2011). Thus, satellite glia may be an important source for the production and release of lipids to their neuronal neighbors. In the mouse brain, astrocyte-derived ApoE regulates neuronal cholesterol biosynthesis and epigenetic mechanisms to promote memory consolidation (Li et al., 2021). *Fabp7* deletion in mice elicits deficits in pre-pulse inhibition, dendrite complexity, and spine density (Bruce et al., 2017; Ebrahimi et al., 2016; Watanabe et al., 2007). Loss of *Fasn* in sensory satellite glia impairs axonal regeneration following injury (Avraham et al., 2020). Together, these results imply critical functions for peripheral satellite glia in regulating neuronal metabolism, epigenetic states, morphology, synaptic function, and nerve repair, through lipid-mediated communication. However, we also observed differences in the lipid pathways that were enriched in sensory *versus* sympathetic satellite glia, suggesting specialized functions within each ganglia. Sensory satellite glia were specifically enriched in genes associated with cholesterol biosynthesis, important for maintenance of neuronal processes, myelination, vesicle formation, and synaptic transmission (Barber and Raben, 2019; Dietschy and Turley, 2004). The majority of cholesterol (~70-80%) in the adult brain is in myelin sheaths that insulate axons (Dietschy and Turley, 2004). Since sensory, but not sympathetic ganglia, contain myelinating Schwann cells which are primarily engaged in membrane synthesis, it is likely that sensory satellite glia provide an additional source for extrinsic cholesterol supply. Consistent with this notion, a substantial fraction of lipids for CNS myelin formation is contributed by astrocytes in addition to the canonical role of oligodendrocytes (Camargo et al., 2017).

Within sensory satellite glia, we also observed specific enrichment of genes involved in glutamate uptake and recycling, consistent with the presence of glutamatergic neurons in sensory, but not sympathetic ganglia. We also observed enriched expression of Connexin 43 (*Gja1*), which is up-regulated following injury in sensory satellite glia and promotes gap junction-mediated coupling between adjacent neurons, a form of neuronal plasticity that contributes to neuropathic pain (Kim et al., 2016). Compared to sensory satellite glia, we found fewer transcripts specific to sympathetic satellite glia, and none that were obviously involved in regulation of cholinergic neurotransmission. Sympathetic satellite glia were largely distinguished by genes involved in fatty acid biosynthesis and metabolism, e.g., *Scd2*, *Acsbg1*, and *Lipg*, which could be play a role in supplying building blocks for dendrite and synapse morphogenesis, as well as modulate neurotransmission in sympathetic ganglia.

Our work is consistent with recent transcriptional studies of satellite glial cells (Avraham et al., 2020; Tasdemir-Yilmaz et al., 2020; van Weperen et al., 2021). However, we expand the repertoire of sensory satellite glial cell markers, and reveal new clusters of shared satellite glial cells that are present in functionally disparate peripheral ganglia. Specifically, we define general resident, IEG-expressing, and immune-responsive satellite glia populations and we confirmed the expression of markers by smFISH. One of the shared satellite glial cell types contains signatures of immune responsiveness, including interferon-induced transcripts and genes involved in antiviral defense (Ngo and Man, 2017; Tretina et al., 2019). Although shared, these glia were more abundant in sympathetic ganglia and may have a specific role in protecting peripheral neurons against viral or bacterial pathogens. Notably, while we focused on the SCG, it remains unclear whether the 5 identified sympathetic satellite glial sub-types exist across the entire sympathetic chain, or if each ganglion has its own unique set of glial populations. A recent analysis of the stellate ganglion identified 5 satellite glial populations, including a subtype enriched for *Kcna1* and *Scn7a* (van Weperen et al., 2021), which corresponds well with the General resident satellite glia in our data, as well as a subtype enriched for genes involved in “interferon signaling”,

which is similar to the immune-response satellite glia revealed by our analysis. Additionally, the authors noted a population of satellite glia which expressed high levels of immediate early genes, though it was excluded from their analysis. Thus, the 3 shared populations of satellite glia that we identified may be present throughout the sympathetic chain ganglia.

In summary, we provide a resource for satellite glia in functionally distinct peripheral ganglia, which provides a framework for future investigations of ganglion-specific satellite glia populations during development, injury, and disease. The identification of new markers for satellite glia in sensory and sympathetic ganglia can be used to genetically target these cells for imaging, ablation, and optogenetic studies. Recent studies suggest that satellite glia could serve as important targets for interventions in chronic pain (Hanani and Spray, 2020; Kim et al., 2016; Xie et al., 2017) or heart disease, and the knowledge gained from this study can be used to generate relevant animal models to study human disease.

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QUANTIFICATION AND STATISTICAL ANALYSES

Information for statistical analyses for all experiments are provided in figure and table legends.

Acknowledgements: We thank all members of the Kuruvilla, Zhao, and Hattar labs for helpful comments on the project, and the NIMH Microarray Core Facility for providing library quality control and sequencing. This work was supported by NIH R01 awards, NS073751 and NS107342, to R.K., DC016065 and EY027202 to H.Z, and NIMH intramural research funds (ZIAMH002964) to S.H., a NSF GRFP award to A.M., and NIH Training grant T32GM007231 to the JHU CMDB graduate program for A.M, M.T, and E.B.

Author Contributions: A.M and M.T contributed to study design, investigations, data analyses, and writing and editing the manuscript. E.B. assisted with experiments. R.K, H.Z, and S.H contributed to writing/editing the manuscript and funding acquisition.

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FIGURE LEGENDS:

Figure 1. Cell type diversity in sensory and sympathetic ganglia

(A) UMAP of 21,524 single cells with major cell types highlighted

(B) UMAP as in (A) overlaid with ganglia of origin

(C) Dot plot showing differentially enriched genes for diverse cell types in peripheral ganglia. Dot size is proportional to the percentage of each cluster expressing the marker gene, and the color intensity is correlated with expression level.

(D and E) UMAP plots of sympathetic and sensory neurons following isolation and re-clustering. Clusters are highlighted with literature-defined names based on published gene expression patterns (Furlan et al., 2016, Zeisel et al., 2018)

(F) Non-neuronal and non-glial cell type clusters

(G) Same as in (F) overlaid with ganglia of origin

Figure 2. Comparison of Schwann cell and satellite glial cell transcriptional identity

(A) UMAP of glial cell populations in sensory and sympathetic tissue.

(B) Same as in (A) overlaid with ganglia of origin

(C) Volcano plot of all differentially expressed genes between Schwann cells and satellite glia (red dots: $p<10^{-50}$)

(D-E) Gene ontology and KEGG pathway analysis of satellite glia- and Schwann cell-enriched transcripts. Top 3 biological process terms, molecular function terms, and KEGG pathways are shown. Labels denote the number of genes identified in each category.

(F-H) smFISH of *Fabp7* and *Ncmap* mRNA in sensory ganglia

(I-K) smFISH of *Fabp7* and *Ncmap* mRNA in sympathetic ganglia

Scale bars are 100 μm and 15 μm (insets)

Figure 3. Transcriptional heterogeneity of satellite glial cells

(A) UMAP of satellite glial cell populations in sensory and sympathetic ganglia

(B) Same as in (A) overlaid with ganglia of origin

(C) Dot plots of satellite glial cell cluster marker genes and enriched transcripts. Dot size is proportional to the percentage of each cluster expressing the marker gene, and the color intensity is correlated with expression level.

Figure 4. Histological validation of satellite glial cell type markers

(A-B) UMAP expression plot of *Mlc1* mRNA in sensory (A) and sympathetic ganglia (B)

(A'-B'') smFISH of *Mlc1* (magenta) and *Kcnj10* (green) mRNA in sensory (A'-A'') and sympathetic (B'-B'') ganglia.

(C-D) UMAP expression plot of *Lipg* mRNA in sensory (C) and sympathetic ganglia (D)

(C'-D'') smFISH of *Lipg* (magenta) and *Fabp7* (green) mRNA in sensory (C'-C'') and sympathetic (D'-D'') ganglia.

(E-F) UMAP expression plot of *Anxa1* mRNA in sensory (E) and sympathetic ganglia (F)

(E'-F'') smFISH of *Anxa1* (magenta) and *Fabp7* (green) mRNA in sensory (E'-E'') and sympathetic (F'-F'') ganglia.

(G-H) UMAP expression plot of *Egr1* mRNA in sensory (G) and sympathetic ganglia (H)

(G'-H'') smFISH of *Egr1* (magenta) and *Kcnj10* (green) mRNA in sensory (G'-G'') and sympathetic (H'-H'') ganglia.

(I-J) UMAP expression plot of *Ifit3* mRNA in sensory (I) and sympathetic ganglia (J).

(I'-J'') smFISH of *Ifit3* (magenta) and *Kcnj10* (green) mRNA in sensory (I'-I'') and sympathetic (J'-J'') ganglia.

Yellow arrows indicate satellite glia positive for the gene of interest, while cyan arrows indicate satellite glia negative for the gene of interest

Scale bars are 15 μm.

(K) Transcriptional classification of sympathetic and sensory satellite glia subtypes.

Supplemental Figure S1. Drop-Seq workflow, validation, and marker genes, Related to Figure 1

(A) Workflow of Drop-seq single cell RNA sequencing

(B) Barnyard plot of mixed-species Drop-seq. NIH-3T3 (mouse) and HEK293 (human) cells sequenced in equal mixture results in 5/400 (1.25%) detectable cell-cell doublets.

(C) Dot plot of marker genes identified in non-neuronal and non-glial cells

(D) UMAP plot of proliferating cells within sensory and sympathetic ganglia (mTC1/2: T-cells, mErythro: erythrocytes, mEndo: endothelial cells, mSat: satellite glia)

Supplemental Figure S2. Heterogeneity of peripheral neurons, Related to Figure 2

(A) UMAP expression plots of subtypes of adrenergic sympathetic neurons

(B) UMAP expression plots of subtypes of peptidergic, non-peptidergic, and neurofilament-expressing sensory neurons

Supplemental Figure S3. Satellite glia heterogeneity between sympathetic and sensory ganglia, Related to Figure 3

(A-B) smFISH of *Slc1a3* mRNA in sensory (A) and sympathetic ganglia (B).

(C-D) smFISH of *Lipg* mRNA in sensory (C) and sympathetic ganglia (D).

(E-F) smFISH of *Anxa1* mRNA in sensory (E) and sympathetic ganglia (F).

(G-H) smFISH of *Egr1* mRNA in sensory (G) and sympathetic ganglia (H).

(I-J) smFISH of *Ifit3* mRNA in sensory (I) and sympathetic ganglia (J).

Scale bars are 100 μm.

STAR METHODS

KEY RESOURCES TABLE

REAGENT or RESOURCE	SOURCE	IDENTIFIER
RNAscope® Fluorescent Multiplex Assay	ACD	Cat# 320850
RNAscope® Probe-Fabp7	ACD	Cat# 414651
RNAscope® Probe-Ncmap-C2	ACD	Cat# 577231-C2
RNAscope® Probe-Kcnj10-C2	ACD	Cat# 458831-C2
RNAscope® Probe-Kcnj10-C3	ACD	Cat# 458831-C3
RNAscope® Probe-Mlc1	ACD	Cat# 516358
RNAscope® Probe-Lipg-C3	ACD	Cat# 492521-C3
RNAscope® Probe-Egr1	ACD	Cat# 423371
RNAscope® Probe-Ifit3	ACD	Cat# 420228
RNAscope® Probe-Anxa1-C2	ACD	Cat# 509299-C2
RNAscope® Probe-Slc1a3-C3	ACD	Cat# 430788-C3
RNAscope® Probe-Ifit1	ACD	Cat# 508259
RNAscope® Probe-Cyr61-C2	ACD	Cat# 429009-C2
Single cell dissociation reagents		
Papain Dissociation System	Worthington Biochemical Corporation	Cat# LK003176
Dulbecco's Modified Eagle Medium/Nutrient Mixture F-12	ThermoFisher Scientific	Cat# 11330057
Hanks' Balanced Salt Solution	ThermoFisher Scientific	Cat# 14175103
Hepes	Sigma-Aldrich	Cat# H3375-100G
Collagenase	Sigma-Aldrich	Cat# 11249002001
Glucose	Sigma-Aldrich	Cat# G8270-100G
Penicillin/streptomycin	ThermoFisher Scientific	Cat# 15140122
Experimental Models: Organisms/Strains		
C57Bl6 mice	Jackson Labs	Strain# 000664
Software and Algorithms		
ImageJ	N/A	https://imagej.nih.gov/ij/
ZEN2 (blue edition)	N/A	https://www.zeiss.com/microscopy/int/home.html
STAR (v2.4.2a)	Dobin et al., 2013	https://github.com/alexdobin/STAR
Drop-seq_tools-2.0.0	Macosko et al., 2015	https://github.com/broadinstitute/Drop-seq/releases
Seurat V3	Stuart et al., 2019	https://satijalab.org/seurat/
R	R Core Team	http://www.r-project.org/

Drop-Seq Reagents		
Nextera XT DNA Library Preparation Kit	Illumina	FC-131-1024
Agencourt AmpureXP Beads	Backman Coulter	A63880
Drop-seq beads - Barcoded Seq B	Chemgenes	Macosko-2011-10(V+)
PDMS co-flow microfluidic droplet generation device	FlowJEM	N/A
Drop-Seq reagents	Macosko et al., 2015	N/A
Deposited Data		
Raw and processed data files for Drop-Seq	NCBI Gene Expression Omnibus	GSE175421
Primers		
Template Switch Oligo (TSO) – 5'-AAGCAGTGGTATCAACGCAGAGTGAATrGrGrG-3'	Macosko et al., 2015	N/A
SMART PCR primer – 5'-AAGCAGTGGTATCAACGCAGAGT-3'	Macosko et al., 2015	
New-P5-SMART PCR hybrid oligo – 5'-AATGATACGGCGACCACCGAGATCTACACGCCTGTCCGCGGAAGCAGTGGTATCAACGCAGAGT*A*C-3'	Macosko et al., 2015	
Custom Read 1 primer – 5'-GCCTGTCCGCGGAAGCAGTGGTATCAACGCAGAGTAC-3'	Macosko et al., 2015	

CONTACT FOR REAGENT AND RESOURCE SHARING

Further information and requests for resources and reagents should be directed to and will be fulfilled by the Lead Contact, Rejji Kuruvilla.

EXPERIMENTAL MODEL AND SUBJECT DETAILS

MATERIALS & METHODS

Animal care and housing

Adult *C57Bl6* mice (stock no. 000664; Jackson Labs), aged between postnatal days P30-P45, were used for all experiments. Male and female mice were included in all experiments. Mice were housed under standard conditions with access to food and water *ad* libitum. All experimental procedures were performed in accordance with guidelines of the Animal Care and Use Committee of Johns Hopkins University.

Drop-Seq mixed species validation

HEK293 (human) and NIH-3T3 (mouse) cells were grown separately in culture until nearly confluent, then dissociated with Trypsin and resuspended to a concentration of approximately 50,000 cells/ml. An equal amount of mouse and human cells were combined in a single tube which was used as input to the Drop-Seq setup using the parameters described in the 'Drop-Seq single cell partitioning, library preparation' section below. For mixed species experiments, completed sequencing libraries were run on a MiSeq and reads were demultiplexed and aligned using the Drop-Seq Tools 1.0 pipeline. Barnyard plots for mixed species experiments were generated in R.

SCG/DRG tissue isolation and preparation of single cell suspensions

Dissections and single cell collections were performed between 9 a.m-2 p.m. Multiple sympathetic or sensory ganglia were pooled together for each round of Drop-Seq. Ganglia were incubated in 50 units Papain diluted in HBSS plus HEPES for 20 min at 37°C then washed with HBSS plus HEPES and incubated for an additional 20 min at 37°C with 1.5mg/mL collagenase in HBSS plus HEPES. Following the second incubation, ganglia were washed again and then suspended and triturated in DMEM AIR (DMEM F12 supplemented with 12.5mM glucose and 1U/ml penicillin/streptomycin). Cells were centrifuged and resuspended in fresh DMEM AIR.

Drop-Seq single cell partitioning, library preparation, and sequencing

Single cell suspensions were diluted to a concentration of 100 cells/μl and processed with the Drop-Seq protocol as previously described (Macosko et al., 2015). Flow rates for cells, beads, and oil were optimized for aquapel-treated PDMS devices purchased from FlowJem (cells and beads: 2,300 μl/hour, oil: 13,000 μl/hour). Up to two samples were processed in series, with single cell suspensions and stable emulsions held on ice until all collections were completed (no more

than 1 hour) before proceeding immediately with reverse transcription. cDNA amplification was performed using 4000 beads/reaction with a total of 15 cycles of PCR. Sequencing libraries were generated from amplified cDNA with the Illumina Nextera XT Library Prep kit and up to 6 libraries were multiplexed for sequencing on an Illumina NextSeq500 platform. Sequencing was performed by the NIMH Microarray Core Facility (Bethesda, MD).

Drop-Seq data preprocessing

Reads were demultiplexed and aligned to the mouse genome (mm10), and digital gene expression matrices were generated using the Drop-Seq Tools 2.0.0 pipeline (https://github.com/broadinstitute/Drop-seq/releases).

PCA, clustering, and differential gene expression analysis

Digital gene expression matrices for all samples were imported and processed with the Seurat package (Satija et al., 2015; Stuart et al., 2019). Cells containing fewer than 200 genes or greater than 7.5% mitochondrial gene content were removed prior to data normalization and scaling. Principal component analysis was used to identify major sources of variation within the dataset, and gene loadings within each PC were manually inspected to ensure the capture of biologically relevant signals. For the initial round of clustering, 20 PCs were included as input to clustering and dimensionality reduction, resulting in the identification of 9 major cell classes. Cell types were identified by the overlay of canonical marker genes. Following cell type identification, each major cluster was isolated and analyzed using iterative rounds of PCA to identify finer substructure among each class. Differential gene expression testing (Wilcox rank sum test) was used to identify cell type specific marker genes.

Gene Ontology analysis

Gene ontology (GO) analysis was performed using the Database for Annotation, Visualization and Integrated Discovery (DAVID) (Huang da et al., 2009).

Data and code availability

The accession number for raw and processed data from Drop-Seq experiments reported in this paper is GEO: GSE175421. Data from this study are available from the corresponding author upon request.

RNAscope

Superior cervical ganglia and L3-L5 dorsal root ganglia were dissected from P30-45 *C57Bl6* mice, cryo-protected in 30% sucrose in PBS for one hour and embedded in OCT prior to being frozen at -80°C. Ganglia were cryo-sectioned at 14 µm and kept at -80°C until RNAscope was performed. Target mRNA was probed using RNAscope® Multiplex Fluorescent Reagent Kit v2 Assay. Tissues were incubated in fresh 4% paraformaldehyde for five minutes, washed twice in 1xPBS, and dehydrated with increasing concentrations of ethanol. Subsequently, the tissues were treated with hydrogen peroxide for 10 minutes and protease treatment for 15 minutes. The RNAscope assay was performed following the manufacturer's instructions. *Kcnj10* and *Fabp7* are two genes known to be specific to satellite glia and were used to identify subtypes of satellite glia (Hanani and Spray, 2020).

Figure 1

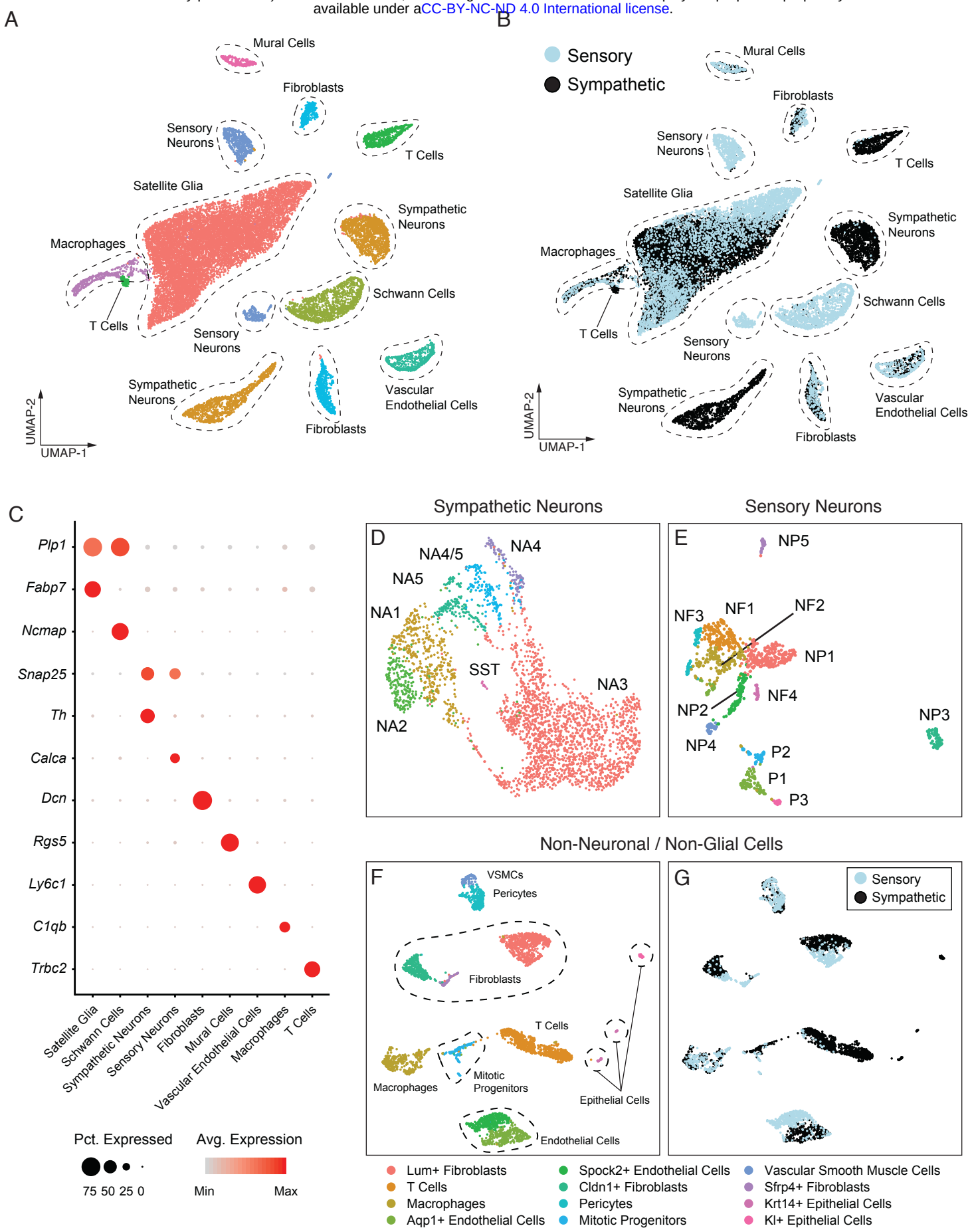
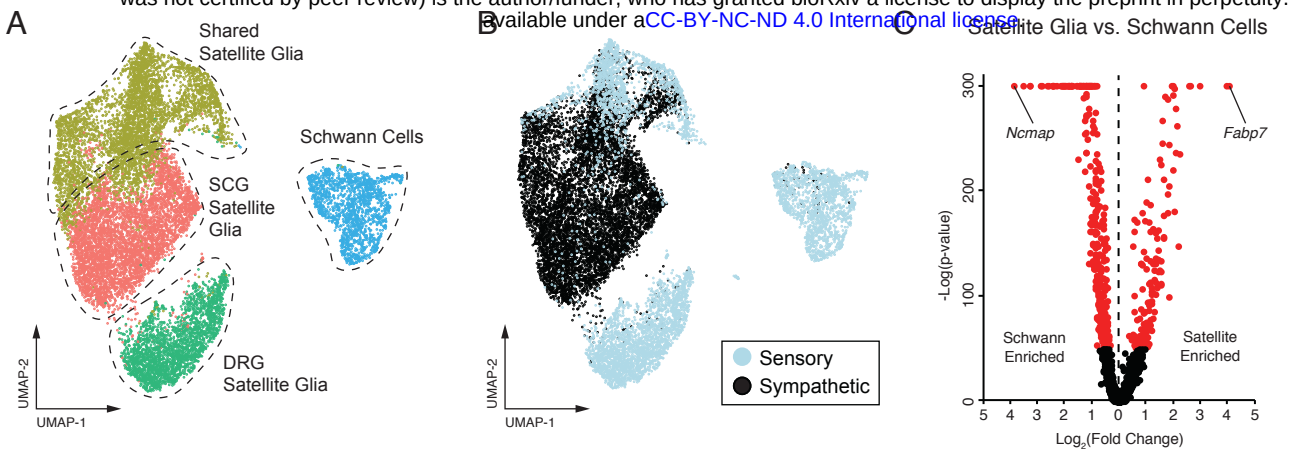
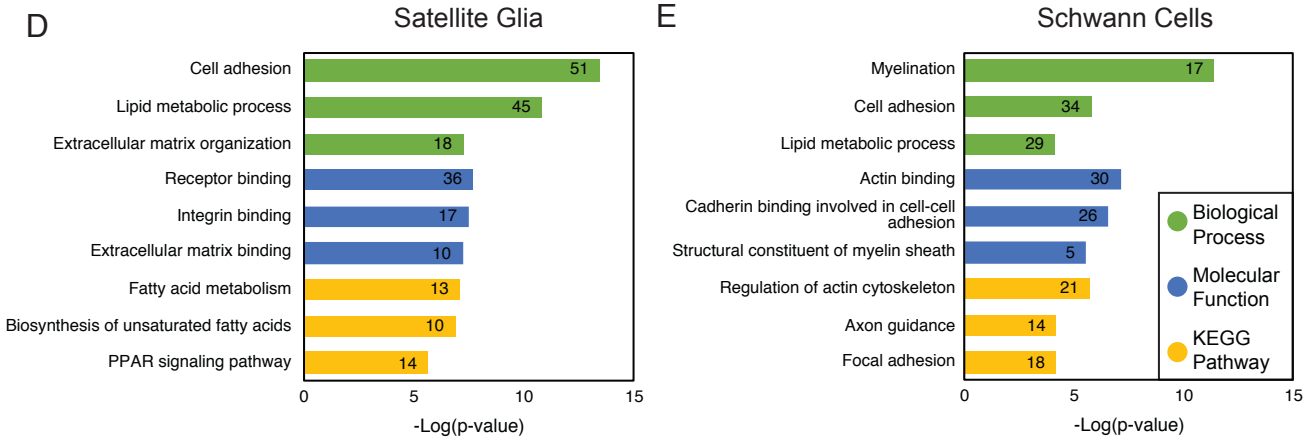


Figure 2





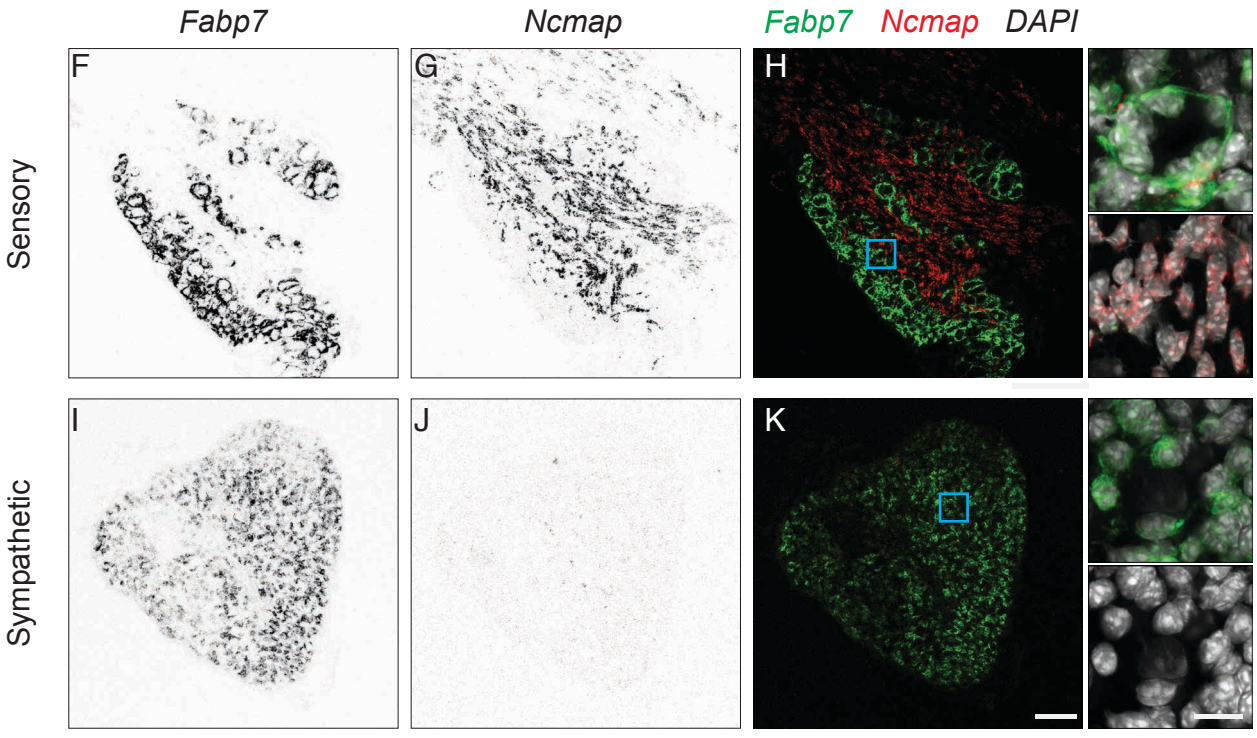


Figure 3

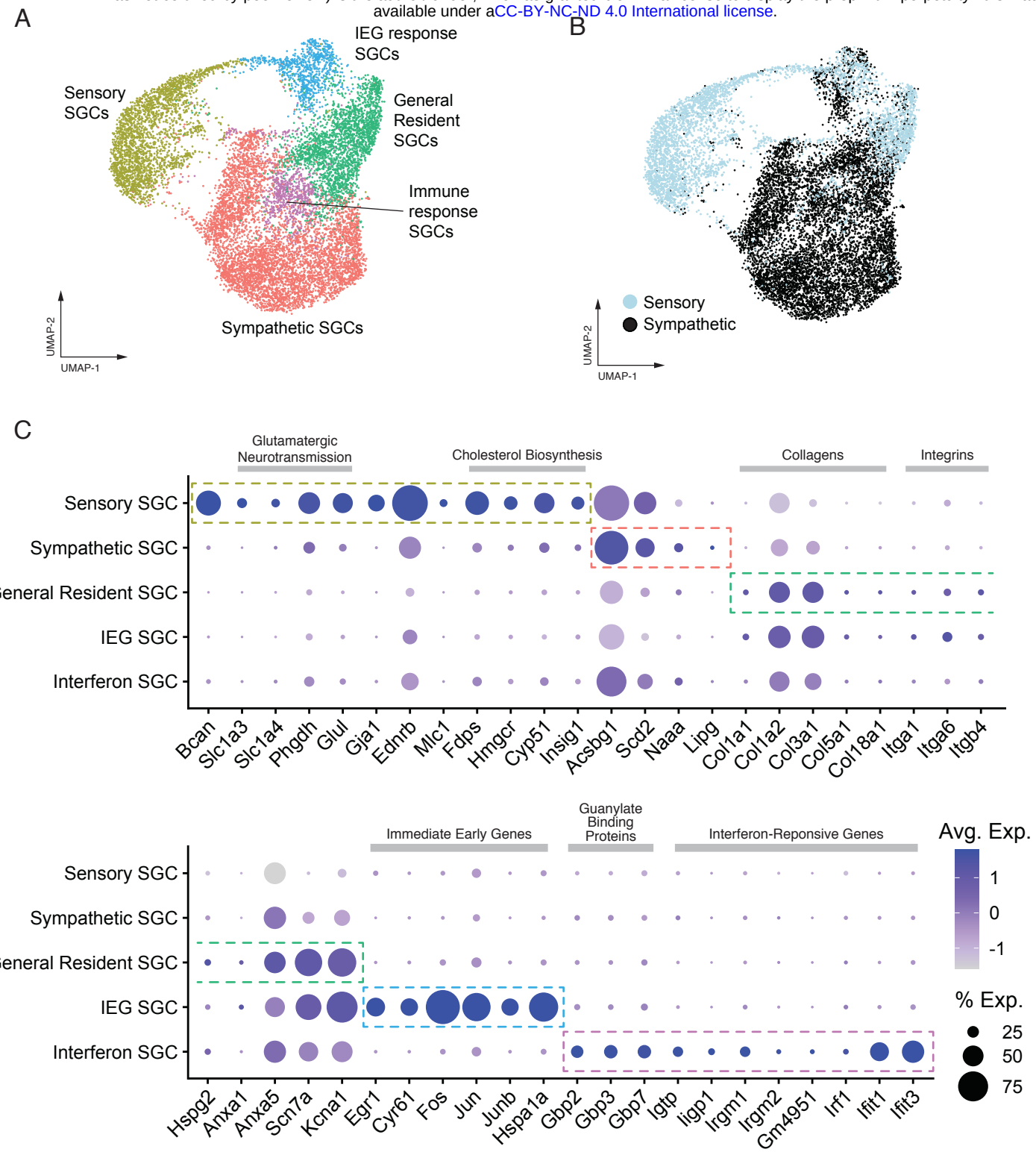


Figure 4

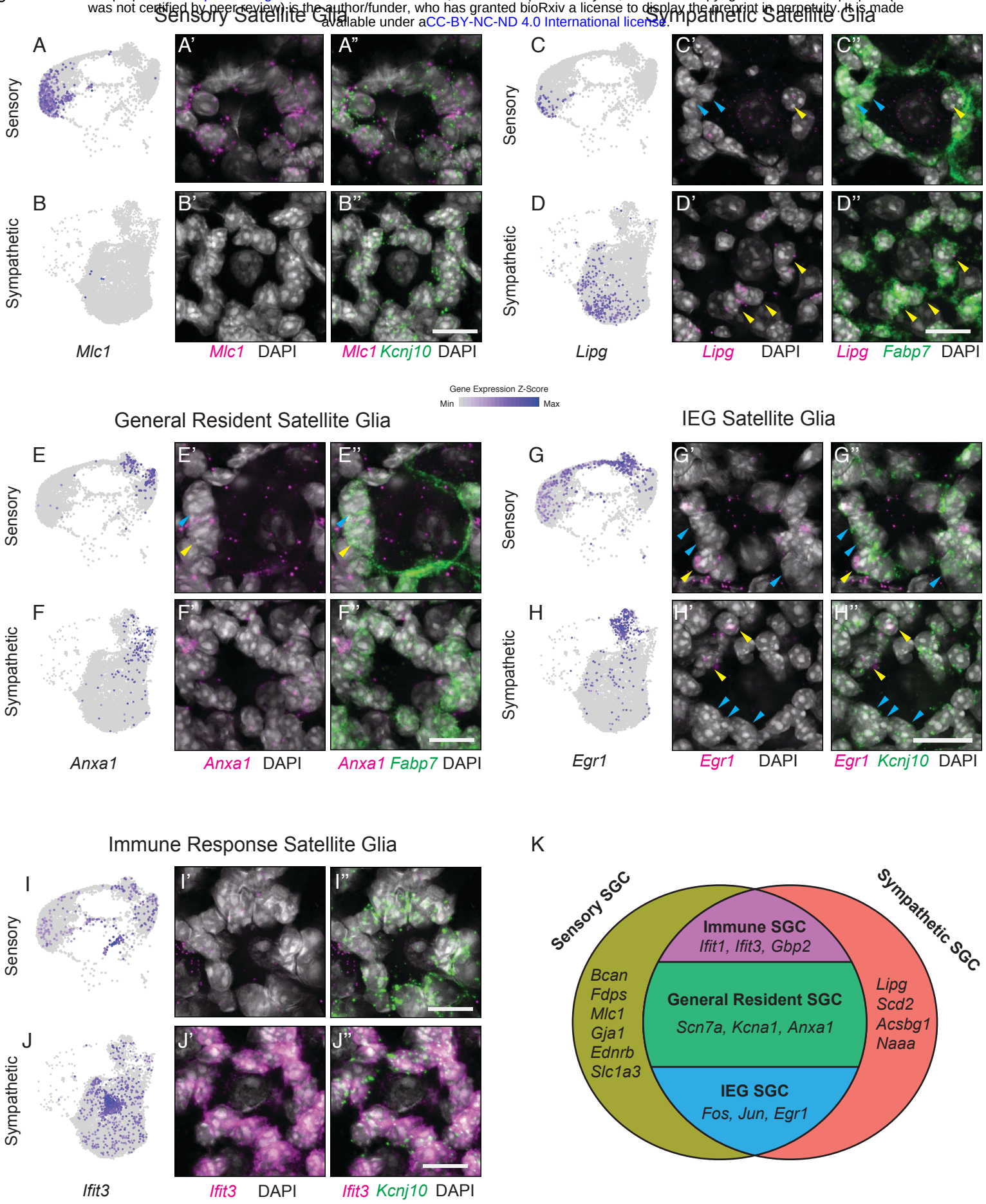
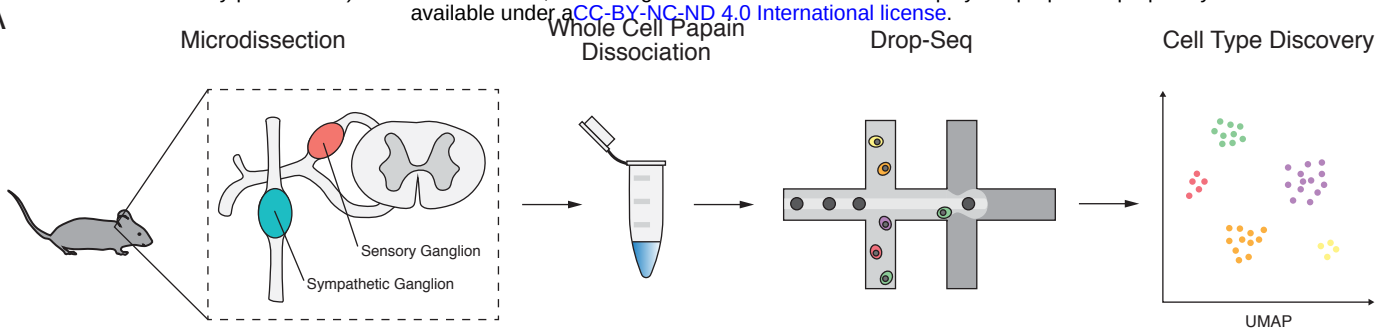
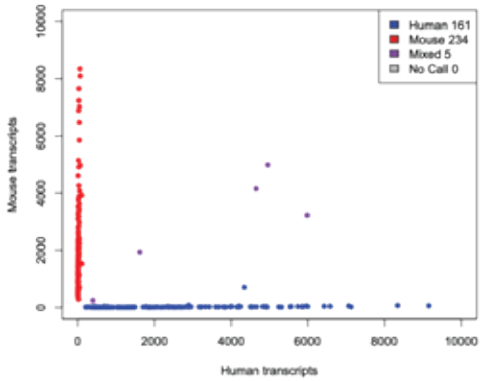


Figure S1

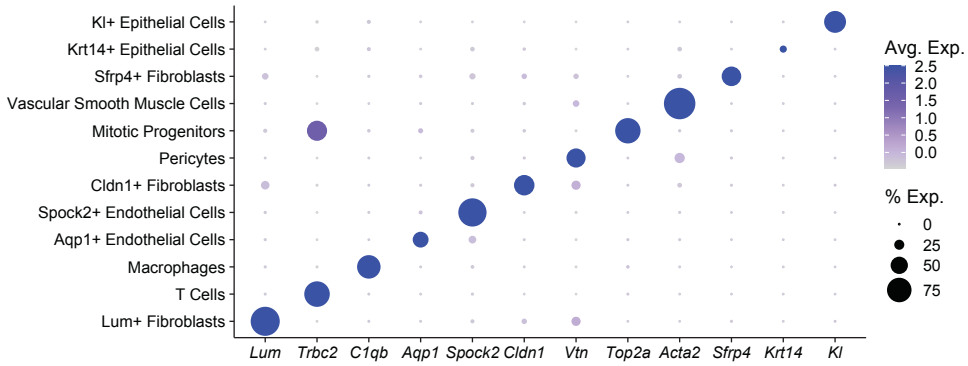
A



B



C



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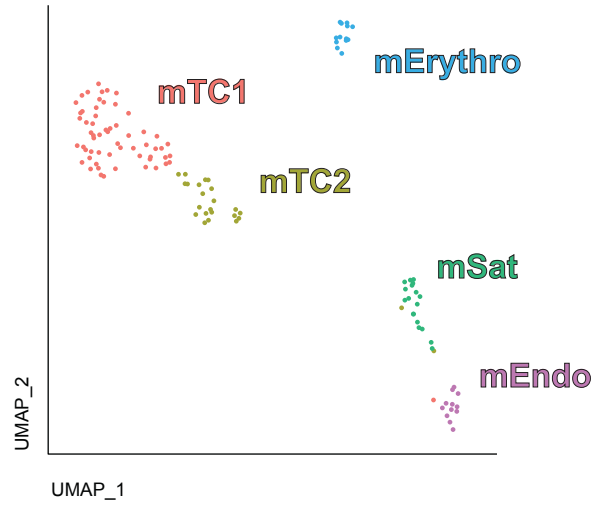


Figure S2

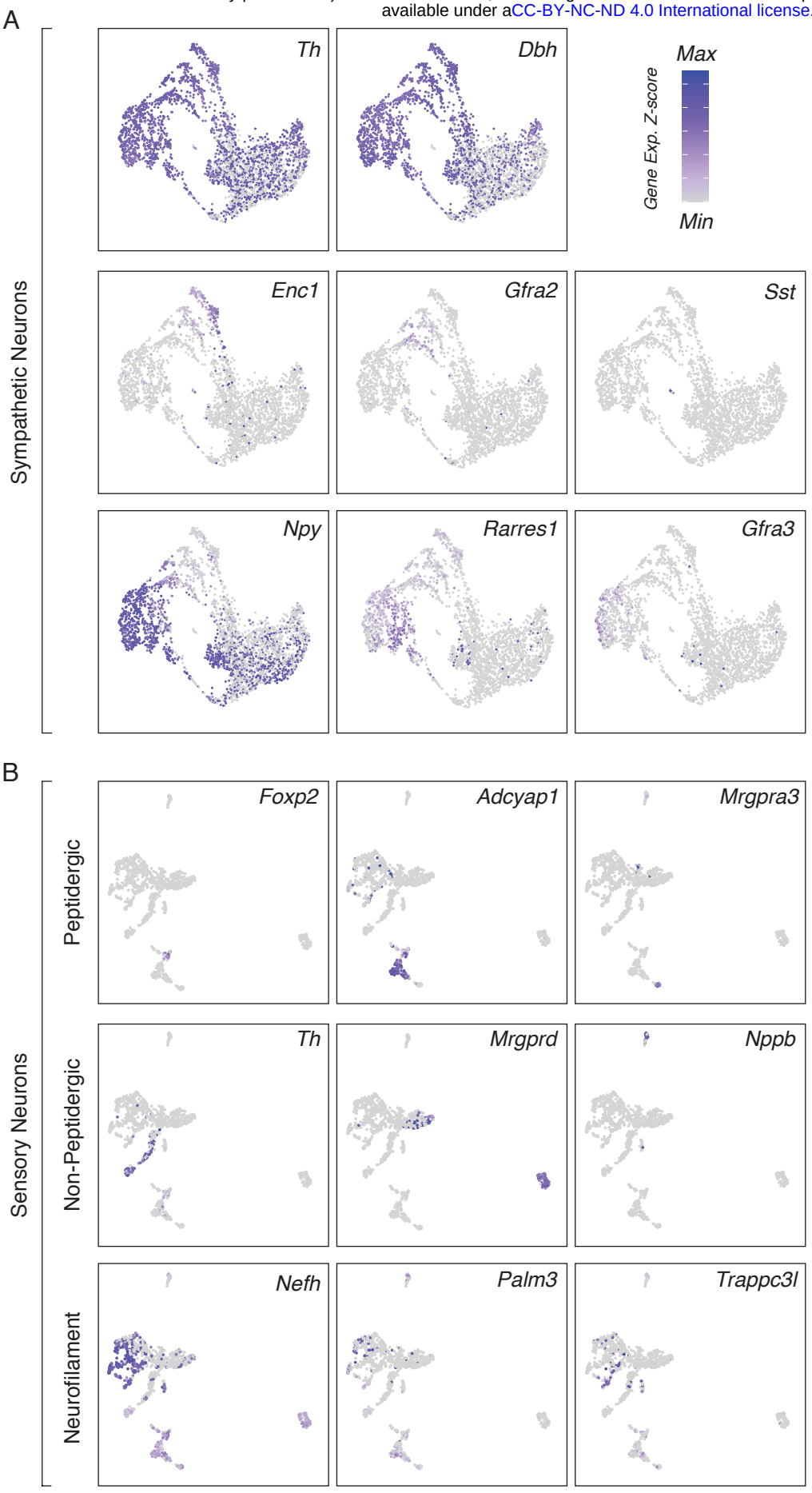
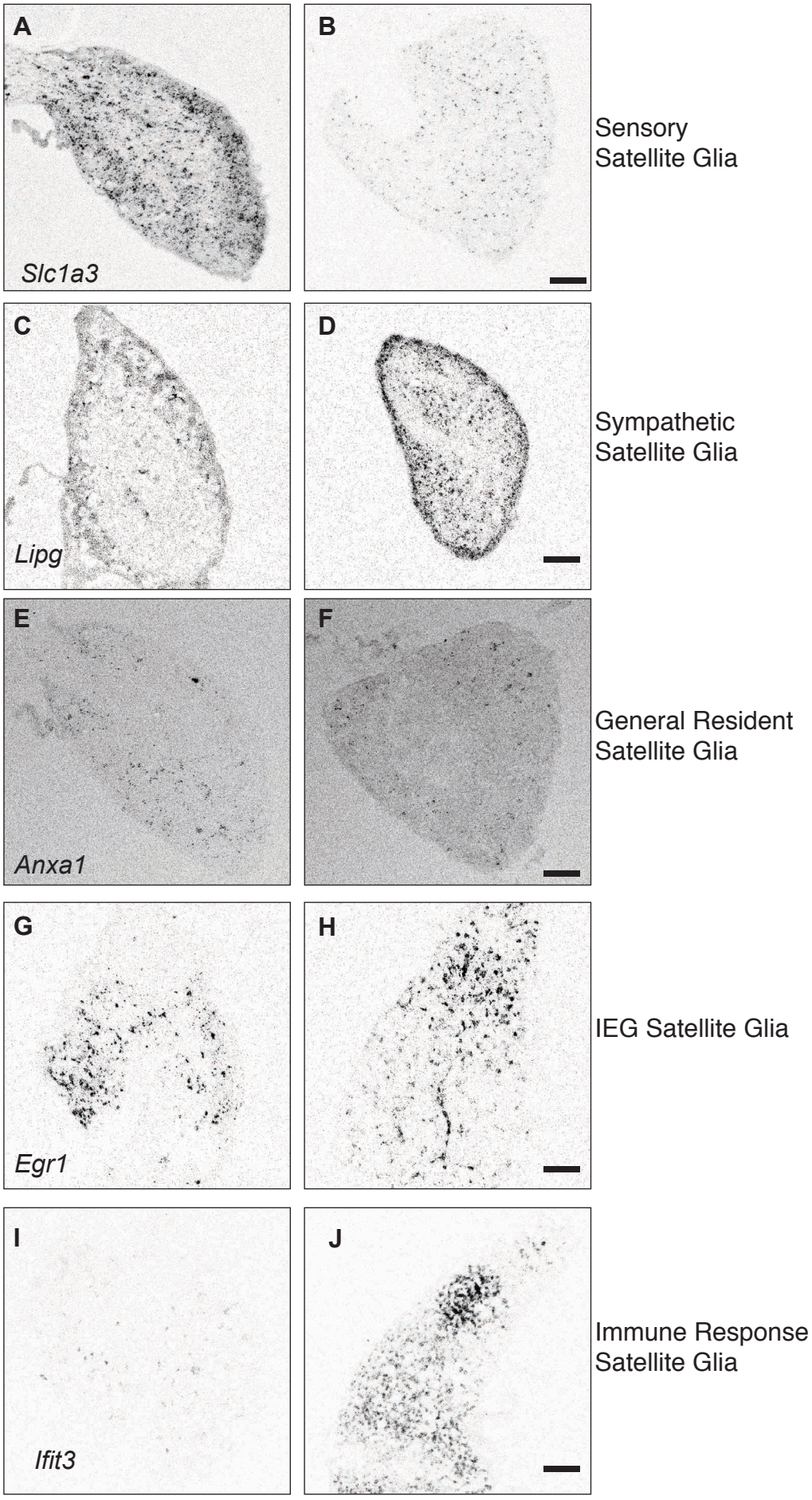


Figure S3



supplemental-file-1.xlsx Title: Gene expression comparison between satellite glia and Sch

		"log fold-chage of the average expression between the two groups. Positive values indicate that the gene is more highly expressed in the first group"	The percentage of Schwann cells where the gene is detected
gene name	p_val	avg_logFC	pct.1
Ncmap	0	3.828223946	0.893
Mpz	0	3.486413073	0.998
Pmp22	0	3.236088711	0.994
Prx	0	3.214040785	0.833
Fam178b	0	2.85511375	0.684
Pllp	0	2.778886011	0.703
Cldn19	0	2.597359036	0.651
Mbp	0	2.558737941	0.988
Ugt8a	0	2.409491244	0.603
Secisbp2l	0	2.389800272	0.833
Ogn	0	2.385169342	0.688
Mfap5	0	2.337695301	0.408
Cdkn1a	0	2.254879576	0.804
Fa2h	0	2.091401864	0.5
Drp2	0	2.070034692	0.454
Fxyd6	0	2.025850096	0.59
Mlip	0	2.008161641	0.47
Slc36a2	0	1.989800606	0.428
Dusp15	0	1.955104429	0.436
Emid1	0	1.944339616	0.385
Bcas1	0	1.911598297	0.462
Spp1	0	1.83497662	0.217
Ecscr	0	1.820200113	0.373
Pmp2	0	1.802859181	0.207
Rasal2	0	1.782229496	0.511
Cav1	0	1.752950719	0.359
Fxyd3	0	1.705895945	0.477
Smtn	0	1.705409171	0.452
Mras	0	1.688035232	0.404
Mag	0	1.687394432	0.499
Gldn	0	1.638641659	0.324

Sept3	0	1.524339628	0.306
Kcnk1	0	1.496884866	0.296
B230206H07Rik	0	1.421100147	0.254
Arhgap19	0	1.408248028	0.276
Cdkn1b	0	1.407156704	0.553
Cadm3	0	1.394204063	0.319
Fut8	0	1.373745255	0.339
Srgn	0	1.367364499	0.218
Limch1	0	1.337507078	0.644
Kras	0	1.326204647	0.344
Pou3f1	0	1.294953558	0.26
Sult1a1	0	1.267702324	0.364
Gypc	0	1.263119614	0.254
Nfasc	0	1.239327838	0.238
Mal	0	1.208631524	0.812
Elovl7	0	1.177896886	0.235
Egr2	0	1.175260186	0.213
Filip1	0	1.167361735	0.202
Cd9	0	1.156527031	0.959
Eif1	0	1.101426172	0.836
Cnp	0	1.092190171	0.839
Stxbp6	0	1.070459658	0.186
Cryab	0	1.065345027	0.936
Gjb1	0	1.044081873	0.182
Sema5a	0	1.038374127	0.187
2610034M16Rik	0	0.996741545	0.15
Frzb	0	0.990925909	0.167
Mme	0	0.977428576	0.17
Ndrg1	0	0.967644401	0.885
Fgf7	0	0.941371773	0.152
H2-DMa	0	0.936362002	0.158
Sgk1	0	0.884140594	0.158
Ddn	0	0.870527747	0.14
H2-DMb1	0	0.786715952	0.124
Vim	0	-0.961604723	0.702
Dbi	0	-1.988860681	0.707
Rarres2	0	-2.062672158	0.124
Ptn	0	-2.623190206	0.03
Cst3	0	-2.671885039	0.415
Sparcl1	0	-3.035195601	0.047
Apoe	0	-4.037064531	0.363
Fabp7	0	-4.094720155	0.081
Mboat1	3.96E-305	0.823536495	0.134

Abca8a	8.08E-299	-2.095257488	0.045
Tmem134	4.45E-293	1.183218234	0.44
Ifitm3	1.66E-291	-2.039774525	0.05
Ptpre	2.55E-290	1.165519996	0.364
Ttyh1	2.95E-290	-1.740952208	0.146
Neat1	5.45E-289	1.272518567	0.548
Id3	8.66E-289	-1.825184353	0.135
Fgf1	9.50E-280	1.076345293	0.279
Mmd2	1.21E-279	-2.145557323	0.015
Mob3b	3.85E-275	0.792617836	0.134
Gnai1	1.67E-274	1.08583965	0.402
Utrn	2.72E-273	1.154058354	0.505
Metrnl	8.32E-272	1.140732574	0.308
Atp1b3	3.93E-268	1.222871974	0.503
Vat1l	5.90E-268	0.929832185	0.189
Lpar1	2.14E-267	-1.656116688	0.136
Nr4a2	8.53E-263	0.907294374	0.188
Ednrb	9.90E-263	-2.172569675	0.05
Tjp2	1.70E-260	0.866586858	0.169
Cav2	1.28E-256	0.932985335	0.193
Plekha4	3.26E-256	1.147840558	0.584
Rasgef1a	1.24E-255	0.773047952	0.111
Elovl1	3.92E-255	1.226408804	0.484
Qk	1.99E-250	1.100298111	0.68
Marcks	5.24E-246	-1.644063016	0.14
Matn2	3.89E-245	-1.915087783	0.083
Entpd2	6.41E-238	-2.163933106	0.008
Adam10	6.70E-238	1.177173402	0.491
Smco3	1.93E-237	1.168827895	0.299
B3galt2	3.37E-236	0.757029697	0.124
Sfrp1	1.49E-235	-2.289652991	0.016
Prdx6	4.13E-231	-1.564289986	0.154
Fos	9.90E-231	1.476961927	0.406
Plcb1	3.41E-229	0.840596497	0.133
9530059O14Rik	9.02E-227	0.711313939	0.106
H2-K1	5.60E-226	-1.576881208	0.118
Nrbp2	9.30E-225	1.002996539	0.222
D430041D05Rik	7.40E-224	0.645936846	0.096
Igfbp4	8.46E-221	-2.054881879	0.006
Usp6nl	1.11E-220	0.809823277	0.162
Malat1	4.11E-220	0.838583307	0.949
Mt3	9.97E-220	1.210551204	0.293
Spint1	5.71E-219	0.597523567	0.082

Carns1	1.43E-213	0.83440858	0.157
H2-D1	4.40E-212	-1.123786441	0.204
Scg3	7.10E-212	-1.703932318	0.048
Il16	6.86E-211	0.637799904	0.094
Plekha7	8.07E-211	0.814354223	0.155
Frmd3	1.63E-207	0.803806771	0.164
Fam81a	1.13E-206	0.711313484	0.092
Lrrtm1	5.17E-206	-1.878427471	0.013
Osbpl1a	1.07E-205	1.049518879	0.396
Ypel2	3.21E-202	0.633615142	0.121
Tspan17	2.75E-200	0.934957368	0.271
Prrg3	6.40E-198	0.81026434	0.17
Acsbg1	1.49E-197	-1.844291347	0.01
Aif1l	3.97E-194	1.020292954	0.252
Sbspon	9.55E-193	0.779177434	0.356
Auts2	1.50E-192	0.912206827	0.182
Cnn3	7.89E-191	-1.054920083	0.363
Npepl1	4.68E-189	0.891851455	0.251
Gpr37l1	2.78E-188	-1.196165185	0.24
Ptpdc1	2.34E-187	0.785536742	0.167
Chrdl1	1.12E-186	0.648278549	0.1
Gatm	2.34E-185	0.715839736	0.838
St8sia5	4.16E-185	0.465037322	0.069
Fth1	4.15E-183	0.776477335	0.958
Igfbp7	5.64E-181	-2.099611877	0.016
Efhd1	8.05E-181	0.793422139	0.25
Fscn1	1.12E-180	0.810462333	0.202
Slc43a3	1.29E-180	-1.820885534	0.011
Prnp	1.69E-179	-0.914165583	0.527
Efcc1	9.67E-179	0.522461057	0.07
Aldoc	8.46E-178	-1.713341845	0.039
Tmem189	7.45E-177	0.853539818	0.186
Cd55	2.05E-176	0.851803629	0.175
Tiparp	6.67E-176	0.933525504	0.197
Rnf7	1.03E-175	0.972079498	0.514
Sptlc2	1.17E-175	0.811164644	0.194
Chn2	1.11E-173	0.497896763	0.081
Itm2b	1.67E-173	-0.620380996	0.764
Itm2a	2.37E-173	0.913546946	0.511
Atp1a2	4.65E-173	-1.004080999	0.281
Sema6c	7.88E-173	0.559267239	0.075
Fosb	1.93E-172	0.939844651	0.125
Ybx1	3.31E-172	0.849803004	0.72

Stmn1	1.39E-171	0.952801503	0.346
Gnas	7.70E-171	-0.69485387	0.661
Gsn	1.18E-170	-1.168745152	0.364
Junb	3.86E-170	1.013247084	0.239
Ppm1l	7.29E-170	0.837198275	0.235
Myo1b	2.15E-169	0.588809915	0.094
1810011O10Rik	6.70E-169	0.606063567	0.088
Lox	6.93E-169	0.523188188	0.068
4930506M07Rik	8.35E-169	0.802228374	0.137
Plekhb1	1.15E-168	0.841059227	0.7
Mapk8ip1	2.11E-168	0.987183221	0.287
Atxn1	2.78E-167	0.659926997	0.105
Ndrg2	2.96E-165	-1.287857397	0.171
Rnf128	1.25E-164	0.544669758	0.084
Cald1	4.06E-163	-1.485081473	0.052
Gpm6a	1.13E-162	0.967562983	0.229
Itga6	2.03E-162	0.857223077	0.343
Gas2l3	2.27E-162	0.839726792	0.332
Gpm6b	3.61E-162	-0.634599432	0.672
Sdc4	4.79E-162	-1.190698711	0.207
Dhcr24	9.85E-162	1.017968667	0.385
Scd1	1.40E-160	-1.408533859	0.151
Dynll1	1.65E-160	0.749943229	0.754
Fryl	2.40E-159	0.832936318	0.179
S1pr3	1.40E-157	-1.707565584	0.012
Tmcc3	1.80E-156	0.635581506	0.103
Mapre2	2.13E-156	-1.460880397	0.056
Fbln2	3.38E-156	-1.679840224	0.019
Kdr	6.32E-156	0.43797467	0.072
Otop1	3.16E-154	0.46823519	0.059
Sptb	2.23E-151	0.449573929	0.057
Kif1a	5.88E-151	0.898612448	0.294
Kazn	9.32E-151	0.512345573	0.072
Zfyve19	1.11E-150	0.751851219	0.148
Shc4	5.17E-150	0.912865971	0.278
Scn7a	2.00E-148	-2.224497652	0.024
B2m	3.49E-148	-0.581244976	0.742
Dock9	1.07E-147	0.700158537	0.119
Spon2	2.56E-147	0.427101684	0.075
St6gal1	3.22E-147	0.794591143	0.237
Csrp2	1.17E-146	0.830813183	0.121
Casq1	1.57E-146	0.379407298	0.06
Klrb1a	2.10E-146	0.41377226	0.06

Vit	6.36E-145	0.463065449	0.066
Tspan7	2.56E-144	-1.492412478	0.024
Sostdc1	4.02E-143	-0.979931831	0.355
Cuedc2	3.52E-142	0.993765166	0.454
Gadd45b	3.97E-141	0.644869332	0.085
Setd8	1.47E-140	0.812151611	0.239
Mpp6	6.35E-140	0.821532747	0.158
Rimklb	2.21E-139	0.584299715	0.089
P2ry2	5.41E-139	0.55961093	0.098
Vwa1	3.33E-137	-1.065727096	0.299
Ccdc37	6.96E-137	0.782717425	0.176
Ntrk2	1.29E-136	-1.420308966	0.027
Emp3	8.35E-136	-1.44547425	0.029
Pdlim4	2.66E-135	-1.481770594	0.024
Chst2	4.99E-135	0.411216723	0.059
Aspa	2.87E-134	-1.181199564	0.159
Bace2	4.78E-134	0.525421173	0.085
Slc35f1	5.95E-134	-1.5796562	0.025
Maf	1.06E-133	0.910777564	0.474
Aatk	1.08E-133	0.834621919	0.473
Abhd12	1.38E-133	0.805681346	0.293
Sertad1	3.70E-133	0.779536798	0.198
Clstn1	1.23E-132	0.853208993	0.287
Arpc1b	3.96E-132	-0.874207803	0.422
Abca2	5.39E-132	0.73934783	0.14
Peli2	6.97E-132	0.852026383	0.198
Slc9a3r1	1.51E-131	-1.380928324	0.07
Rhoc	3.19E-131	-1.31496504	0.085
Cmtm5	3.39E-131	-0.862340408	0.377
Hspa1a	3.42E-131	1.0476561	0.334
Glod4	5.92E-131	0.893281797	0.29
Fxyd1	8.08E-131	-0.905606477	0.367
Map6	4.49E-128	0.611932294	0.131
Nes	6.15E-127	0.849342352	0.199
Cers2	1.17E-126	0.851731081	0.412
Mlec	2.28E-126	0.794897919	0.265
Radil	2.81E-126	0.420706064	0.059
Tmod2	4.88E-126	-1.049658881	0.185
Htra1	1.15E-125	-1.555117865	0.007
Fbln5	1.35E-125	-1.365014364	0.106
Magi2	1.93E-124	0.629736278	0.106
Chl1	4.49E-124	-1.587354551	0.013
Ccnd1	1.21E-123	-1.491527388	0.014

Tagln	1.09E-120	0.677146731	0.109
Arhgap24	1.33E-120	0.673686999	0.168
Stk39	1.46E-120	0.726539348	0.154
Ivns1abp	8.11E-120	0.751471777	0.341
Lzts2	2.68E-118	0.771745263	0.2
Cmbl	4.35E-118	0.571081691	0.113
Plekhf1	5.59E-118	0.507850285	0.087
Nkain4	4.76E-117	-1.362045469	0.014
Serpind1	8.87E-117	0.440205354	0.075
Pdlim2	1.27E-116	0.611076827	0.133
Deb1	7.63E-115	0.835379457	0.298
Cadm1	1.86E-114	-1.222628983	0.084
Ptprz1	3.01E-113	-1.39885335	0.002
Pacs2	6.38E-113	0.656541996	0.146
Add3	9.97E-113	-1.141665111	0.12
Lect1	1.19E-112	-1.575605859	0.013
Dclk3	6.81E-112	0.493347645	0.085
Postn	2.48E-111	-1.577900987	0.008
Gng2	5.84E-111	0.764698318	0.438
Hspb2	7.26E-111	0.679466154	0.218
Slc3a2	2.04E-110	0.824630559	0.376
Nav1	6.20E-110	0.516433763	0.12
Clcn2	9.67E-110	0.549271373	0.119
Mmgt2	3.80E-109	0.703819843	0.127
Lysmd2	4.48E-109	-1.237995787	0.047
Depdc7	5.29E-109	0.710776037	0.155
Elmo1	8.86E-109	0.511287405	0.088
Sema4g	1.51E-108	0.356742714	0.057
Mpdz	1.60E-108	0.782477969	0.238
Cp	3.59E-108	-1.437630488	0.008
Ccser2	2.08E-107	0.800850459	0.4
Sh3bp5	2.91E-107	0.765724028	0.314
Ifi27	3.14E-107	-0.892829526	0.202
Ak5	3.82E-106	0.467015545	0.075
Elovl5	6.49E-105	-1.24466557	0.03
Tnfaip8l1	6.24E-104	0.556689516	0.08
Sccpdh	2.07E-103	0.736898774	0.261
Wnt6	2.66E-103	-1.322170509	0.008
Prss35	6.39E-103	-1.274901581	0.029
Fam129a	7.99E-103	-1.382324069	0.004
Nek1	3.08E-101	0.742835718	0.341
Faah	7.56E-101	0.497998583	0.084
Calm1	9.43E-101	-0.588168792	0.573

Prss12	6.99E-100	0.623673191	0.192
Ifi27l2a	2.91E-99	-1.890223377	0.009
Swap70	1.09E-98	0.600843823	0.109
Nrep	4.60E-97	0.655310426	0.165
Mapre3	5.66E-97	0.67473229	0.148
Tspan18	1.11E-96	-1.262982775	0.006
Disp1	1.67E-96	0.383914962	0.065
Cd82	1.37E-95	0.683710035	0.199
Kif19a	4.12E-95	0.474824407	0.069
Gprc5b	7.98E-95	0.671877012	0.24
Gpx1	8.71E-95	-1.122801532	0.148
Oat	3.50E-94	-1.151088029	0.07
Ncam1	4.86E-94	-1.227158949	0.015
Trim2	8.75E-94	-1.15351478	0.07
Jam3	1.02E-93	0.723108946	0.441
Ppap2a	1.14E-93	0.590776093	0.192
Ramp2	2.73E-93	-1.260235722	0.005
Ostf1	3.91E-92	0.695185417	0.271
Kcnj10	5.24E-92	-1.152992381	0.022
Fnbp1	1.90E-91	0.547772214	0.116
Pip4k2a	2.21E-91	0.502509804	0.114
Fam53b	2.73E-91	0.435311457	0.061
Ttc9	7.61E-90	0.448104202	0.093
Far1	1.20E-89	0.662206066	0.191
Itpkb	5.72E-89	0.500264924	0.101
Crtc3	1.09E-88	0.520981015	0.108
Reep5	1.31E-88	0.673696832	0.361
Sfrp5	3.32E-88	-0.842451568	0.431
Lsamp	1.56E-87	-1.178154473	0.009
Ckb	1.80E-86	-0.619168688	0.511
Cyp2j9	4.38E-86	-1.023407818	0.148
Sema4c	6.01E-86	0.598136617	0.091
Col3a1	6.05E-86	-1.345106101	0.11
Shroom2	2.07E-85	0.546392913	0.135
Lipa	1.35E-84	0.491557275	0.127
Slc9a3r2	1.91E-84	0.581319593	0.172
S100a16	2.94E-84	-0.955637729	0.171
Rhot1	4.62E-84	0.59680786	0.144
Reln	7.19E-82	0.641610754	0.139
Egr1	2.72E-81	0.759446135	0.188
Ank	2.84E-81	0.659390488	0.216
Slc25a1	4.25E-81	0.628957174	0.3
Baz1a	4.73E-81	0.394788709	0.055

Pea15a	5.03E-81	0.704637017	0.517
Zdhhc8	1.43E-80	0.51122078	0.106
Alad	2.20E-80	0.632402842	0.168
Ankrd12	9.94E-80	0.748140683	0.301
Hmgcs2	3.13E-79	-0.803717406	0.225
Abca8b	3.67E-79	-1.287573941	0.012
Ctsl	1.89E-78	-0.723229561	0.29
Fyn	2.86E-78	0.684581729	0.226
Spag9	4.82E-78	0.694524118	0.278
Lcorl	5.64E-78	0.499155465	0.087
Pmepa1	6.68E-78	-1.1930354	0.019
Ssr1	4.71E-77	0.618267561	0.291
Sept11	1.70E-76	0.667998706	0.205
Arxes2	2.51E-76	0.356878373	0.059
Cdkn1c	4.31E-76	0.55435511	0.065
Adamtsl5	9.67E-76	0.524927766	0.115
Rbp1	9.78E-76	-1.047240985	0.019
Stx6	1.32E-75	0.606511193	0.165
Kdelr3	2.65E-75	0.583527942	0.165
Limk2	4.18E-75	0.479555283	0.1
Kif13b	2.77E-74	0.409095184	0.055
Cdh11	3.15E-74	-0.978611092	0.024
Ston1	3.45E-74	0.450698426	0.107
Trib2	9.07E-74	0.530422238	0.094
Fmn2	6.68E-73	0.394331852	0.066
F3	8.51E-73	-1.201551484	0.004
Fmo1	2.27E-72	-0.986140893	0.002
Slc48a1	3.63E-72	0.555463547	0.198
Chp2	7.12E-72	0.678861002	0.207
Car14	9.71E-72	0.533457426	0.088
Ptprf	2.62E-71	0.621149928	0.264
Serhl	2.97E-71	0.551305324	0.131
Osbpl5	1.07E-70	0.437122847	0.091
Efemp1	3.95E-70	-1.133731462	0.007
Prkca	8.68E-70	0.422717296	0.1
Fabp5	1.03E-69	-0.87916945	0.139
Capg	3.45E-69	0.534884998	0.286
Atp1b2	4.11E-69	-1.015133138	0.032
Cdc42ep3	5.03E-69	0.485740581	0.228
Ndfip2	8.54E-69	0.617418487	0.342
Otud7b	1.01E-68	0.573067669	0.159
Nefm	1.03E-68	0.716254241	0.309
Bzw2	1.09E-68	0.654454701	0.193

Cerk	1.13E-68	0.406074282	0.063
Ctnnal1	3.38E-68	0.6608009	0.345
Rxrg	5.01E-68	-1.242960078	0.001
Arhgap10	7.19E-68	0.379459327	0.061
Myl9	9.32E-68	0.622508502	0.259
Dusp1	1.05E-67	0.520117082	0.074
Mgll	1.13E-67	0.556306328	0.313
Gfra1	1.48E-67	0.476746898	0.102
Pdrg1	2.19E-67	0.587163216	0.266
Ece1	5.77E-67	-0.957373192	0.041
Mest	5.84E-67	-1.038198679	0.005
Gmfb	6.02E-67	0.643854804	0.276
Ak3	1.38E-66	0.574030275	0.228
Gjc3	1.81E-66	0.515938371	0.435
Gas5	4.20E-66	0.540486086	0.447
Psmb8	6.95E-66	-0.954113354	0.032
Ftl1	1.02E-65	0.612853182	0.547
Plekha1	2.38E-65	0.528787103	0.114
Col1a2	2.90E-65	0.440598137	0.643
Bicd1	1.05E-64	0.539991874	0.147
Prr15	1.09E-64	0.400601683	0.076
Epb4.1l2	1.29E-64	0.590938948	0.315
Kif5b	1.29E-64	0.60900864	0.473
Laptm4a	3.06E-64	-0.553611169	0.427
Npdc1	3.74E-64	-0.927509743	0.092
Rab2a	4.72E-64	0.580614378	0.339
Baiap2	6.79E-64	0.491150536	0.108
Atp1a1	1.26E-63	0.594229101	0.182
Sptbn1	1.60E-63	-0.61088774	0.426
Itm2c	1.93E-63	-0.796093272	0.152
Timp3	3.78E-63	-0.419259381	0.668
Btg2	4.53E-63	0.594379886	0.097
Mical3	7.42E-63	0.543025995	0.128
Dag1	8.80E-63	0.549789832	0.318
Lgi4	8.91E-63	-0.93993397	0.112
Sema3b	9.77E-63	0.542670337	0.579
Enho	1.10E-62	-0.938626831	0.008
Ado	1.89E-62	0.317231673	0.073
Hsp90b1	2.84E-62	-0.543181915	0.556
Myo9a	5.83E-62	0.506946868	0.121
Rap1gds1	6.08E-62	0.441128734	0.143
Ehd4	1.04E-61	0.543258537	0.131
S100a6	1.39E-61	0.408434397	0.784

Gpt2	1.53E-61	-1.081093893	0.033
Egfl7	1.95E-61	0.321307854	0.06
Bcan	2.00E-61	-0.963452793	0.008
Mapk3	3.25E-61	0.621755595	0.289
Mmp14	7.51E-61	-0.896307715	0.024
Lurap1	2.48E-60	0.37511547	0.073
Bsg	2.52E-60	-0.650920589	0.355
Fam101a	2.77E-60	-1.073980197	0.008
Tmem2	1.11E-59	0.325137882	0.053
Rnf122	1.59E-59	0.407127623	0.079
Hsdl2	2.19E-59	-0.833434295	0.099
Calr	3.11E-59	-0.678078801	0.333
Kank4	5.93E-59	0.468148515	0.091
Zfp36l1	6.52E-59	-0.951578434	0.03
Cd63	9.26E-59	-0.498868381	0.46
Crebl2	1.12E-58	0.439457858	0.069
Plekhg2	1.87E-58	0.477025076	0.088
Sorbs2	3.40E-58	-1.009909515	0.014
Anxa5	6.00E-58	-0.646501381	0.353
Calm2	8.95E-58	0.462338792	0.586
Tmsb10	9.60E-58	0.560600494	0.251
Tmem245	9.91E-58	0.537775476	0.129
Clmn	1.28E-57	0.350347761	0.084
Zfp276	2.56E-57	0.428618776	0.086
Gstm5	1.48E-56	-0.907752181	0.078
Cotl1	1.88E-56	-0.878743694	0.064
L1cam	1.96E-56	-1.07357983	0.01
Kcnn4	2.57E-56	-0.830843165	0.003
Mxd4	3.30E-56	0.478896997	0.317
Cd151	3.79E-56	0.53287821	0.356
Utp11l	4.83E-56	0.508240202	0.241
Mdk	5.51E-56	-0.847148988	0.007
Lgals3	3.41E-55	-1.166797707	0.004
Tpd52	4.76E-55	0.475973312	0.151
Fam19a5	5.79E-55	-0.87748619	0.033
Gstm1	6.36E-55	-0.873519094	0.036
Sdc2	6.67E-55	-0.839027295	0.032
Slc4a4	9.89E-55	-0.81295834	0.027
Samd8	1.05E-54	0.455433425	0.131
Sox2	1.31E-54	-0.879446916	0.019
Tmem50a	1.39E-54	0.385546934	0.713
Cpd	1.66E-54	0.442265356	0.112
Sirt2	2.38E-54	0.545661415	0.467

Lbh	3.08E-54	-1.043523548	0.008
Apod	5.26E-54	0.770307566	0.376
Hey2	5.41E-54	-0.803270812	0.008
Gas7	1.21E-53	-0.987732576	0.048
Ppib	1.27E-53	-0.632626485	0.295
Kcna1	1.60E-53	0.263187134	0.665
Lhfpl2	1.80E-53	-0.984514024	0.016
Errfi1	2.27E-53	0.357657119	0.067
G0s2	2.56E-53	-1.105570501	0.034
Gsta4	1.03E-52	-0.806225296	0.02
Slc20a2	1.19E-52	0.452177274	0.083
Psph	2.09E-52	-0.782542393	0.068
Col28a1	3.32E-52	-0.752507792	0.172
Serpinh1	7.04E-52	-0.645500713	0.358
Hspa1b	1.07E-51	0.379695979	0.096
Pdcd6ip	1.11E-51	0.537838497	0.164
Atp1b1	1.23E-51	-0.802375172	0.065
Vldlr	1.45E-51	-0.862725967	0.032
Ralbp1	2.11E-51	0.524975914	0.326
0610007N19Rik	2.63E-51	0.497184452	0.127
Myh14	3.83E-51	0.368936568	0.072
Gpr155	1.48E-50	0.334044067	0.061
Naaa	2.12E-50	-0.928129334	0.014
Dusp26	3.36E-50	0.501751502	0.124
Hid1	4.57E-50	0.412945045	0.091
Adam23	4.59E-50	-1.017242833	0.013
Cd47	5.56E-50	0.499574206	0.328
Spg20	6.52E-50	0.442778228	0.14
Ddah2	1.16E-49	-0.808635553	0.102
Gpr56	1.85E-49	-0.804601404	0.024
Arpc5	2.49E-49	0.444567315	0.457
Cyb5r3	2.90E-49	0.666670172	0.36
Ctnnd2	6.42E-49	-0.7380486	0.007
Ppp1r14c	8.96E-49	-0.71415875	0.077
Lrrc4c	1.01E-48	-0.807383495	0.027
Col23a1	1.91E-48	0.523271288	0.129
Cux1	2.39E-48	0.492831862	0.183
Snx1	2.60E-48	-0.823809492	0.073
Lmo1	3.61E-48	0.495308152	0.14
Acot1	4.30E-48	-0.821000574	0.035
Rlbp1	8.73E-48	-0.747658853	0.004
Tmem38b	1.15E-47	0.336054965	0.066
Sorbs3	2.45E-47	0.450383881	0.114

Klf2	3.12E-47	0.402786724	0.063
Nefl	3.80E-47	0.616532754	0.293
Slain2	3.90E-47	0.372800834	0.097
Zfand6	6.79E-47	-0.762185926	0.139
Sbf2	8.49E-47	0.464372032	0.102
Lims2	9.12E-47	0.347064257	0.091
Laptm4b	1.01E-46	-0.826088576	0.078
Actb	1.09E-46	-0.266301804	0.856
Capn2	1.14E-46	0.445531098	0.208
Nptn	1.51E-46	0.517649311	0.324
Cab39l	3.11E-46	0.403760705	0.216
Cyp2j6	3.61E-46	-0.70462644	0.195
Pik3ip1	3.81E-46	0.421541634	0.217
Fgfr1	4.55E-46	-0.734659633	0.042
Casp12	6.81E-46	-0.774060432	0.008
Hmgn3	7.05E-46	-0.723310319	0.146
Prdx5	8.14E-46	-0.643718993	0.179
Pdpn	9.78E-46	-0.664216129	0.005
Purb	1.04E-45	0.487138116	0.254
Enpp2	1.44E-45	0.353396762	0.07
Tesk2	1.59E-45	0.277216575	0.062
Csdc2	2.10E-45	-0.715058461	0.003
Sncg	2.24E-45	0.344365562	0.729
Polr3h	3.48E-45	-0.786550868	0.027
Pttg1ip	3.67E-45	0.450475111	0.34
Sema3c	4.39E-45	-0.912992373	0.01
Me1	4.57E-45	-0.751339108	0.072
Arl6ip1	6.03E-45	-0.56638165	0.336
Smpdl3a	6.54E-45	-0.78213359	0.035
Srsf5	9.27E-45	0.447341484	0.295
Pcbp4	1.04E-44	0.437468495	0.294
Col26a1	1.14E-44	0.233466545	0.058
Gulp1	1.38E-44	0.417604204	0.251
Cdc42ep2	1.70E-44	-0.73094811	0.025
Cyr61	4.73E-44	0.570122374	0.145
Csnk1g3	5.32E-44	0.38334441	0.089
Tuba1b	6.79E-44	0.454962499	0.498
Slc38a2	9.89E-44	0.468312766	0.159
Zfp280c	1.17E-43	0.38432007	0.061
Rhob	1.27E-43	0.37243775	0.099
Pmm1	2.37E-43	-0.657379648	0.099
Cpeb2	2.60E-43	0.445743405	0.082
Ephb6	2.92E-43	0.452413285	0.119

Spop	3.41E-43	0.531698945	0.303
Cpq	5.17E-43	-0.672130763	0.005
Rnd3	5.64E-43	-0.887388672	0.017
Zbtb20	7.13E-43	-0.793484578	0.124
Ubxn4	7.16E-43	0.499940931	0.369
Mobp	1.29E-42	0.416178603	0.053
Fbxo7	2.35E-42	-0.781881342	0.074
Evc2	3.23E-42	0.327393413	0.079
Iah1	4.08E-42	-0.800205259	0.084
Manf	4.18E-42	-0.812723844	0.096
Crlf3	4.98E-42	0.414285635	0.116
Rtkn	5.69E-42	0.436152862	0.243
Gm2115	6.88E-42	-0.773166438	0.004
Pcyt2	7.80E-42	0.572249782	0.226
Edil3	9.86E-42	-0.758307648	0.012
Serping1	1.77E-41	-0.852487066	0.031
Elovl6	1.94E-41	0.506261987	0.407
Calca	4.74E-41	0.580231118	0.106
Cd81	5.72E-41	-0.409643142	0.529
Tead1	7.76E-41	0.442864207	0.137
Rgcc	1.37E-40	-0.594134931	0.327
Iqsec1	1.61E-40	0.451382676	0.078
Ldhb	3.75E-40	0.36552092	0.633
Myl6	4.56E-40	0.500595882	0.368
Cltb	6.94E-40	0.457430755	0.326
Cap1	7.58E-40	0.435487068	0.2
Snx10	8.93E-40	-0.77125345	0.043
Palld	9.58E-40	-0.742229326	0.002
Slc1a5	1.51E-39	-0.673354501	0.057
Plce1	1.61E-39	-0.776267829	0.018
Bag5	1.75E-39	0.416487331	0.157
Sfxn1	2.76E-39	-0.625659778	0.005
Slc25a27	3.13E-39	0.230224049	0.052
Tagln2	3.19E-39	-0.820361221	0.088
Cd302	4.48E-39	-0.747742263	0.007
Dtd1	4.68E-39	0.402077369	0.107
Epas1	5.05E-39	-0.605934481	0.005
Galnt16	1.06E-38	0.328116133	0.078
Tubb2a	1.38E-38	0.382679528	0.173
Dad1	1.69E-38	-0.540593819	0.302
Crabp1	3.61E-38	-0.6912871	0.002
Dhrs1	4.80E-38	-0.700950642	0.1
Cfl2	6.05E-38	0.417213372	0.29

Arpc1a	9.47E-38	0.385907305	0.54
Mboat2	9.66E-38	-0.635937981	0.151
Cpeb1	1.12E-37	0.365579161	0.078
Iqgap1	1.17E-37	-0.787284008	0.05
Vdac2	2.42E-37	0.457105527	0.319
1110038B12Rik	4.72E-37	0.461422142	0.118
Ccdc13	5.60E-37	0.41646134	0.099
Alcam	5.75E-37	-0.806083464	0.015
Gpsm2	6.08E-37	-0.719166886	0.01
Kctd1	8.46E-37	-0.627998753	0.007
Prkcd	9.54E-37	0.407906153	0.109
Crip1	2.96E-36	-0.624444597	0.201
C4b	3.92E-36	-0.925920754	0.004
Comtd1	5.43E-36	0.396937268	0.08
Hspa5	5.82E-36	-0.560897725	0.321
Ctsk	6.04E-36	-0.584751872	0.007
mt-Nd5	6.43E-36	-0.425546289	0.517
Sfrs18	9.01E-36	0.415966577	0.39
Pim3	9.98E-36	0.253131599	0.057
Wsb2	1.02E-35	0.376740383	0.102
1810037I17Rik	1.05E-35	0.470336364	0.435
Ninj1	1.09E-35	-0.773712547	0.02
Gstt1	1.18E-35	-0.658349758	0.004
Mmp15	1.20E-35	0.33660432	0.135
Kif21a	1.67E-35	-0.545413718	0.219
Cmtm6	2.00E-35	0.320741831	0.099
Tex40	2.20E-35	-0.611484639	0.006
Gja1	2.88E-35	-0.534394644	0.003
Frmd6	3.17E-35	-0.730372136	0.016
Plscr2	4.36E-35	-0.728498489	0.024
Fbxo25	5.66E-35	0.344036579	0.096
Fam26e	1.14E-34	0.208231836	0.067
Gpr137b	1.28E-34	0.437239925	0.129
Son	1.89E-34	0.427009681	0.386
Camk2n1	2.56E-34	0.490581117	0.151
Cpne2	2.59E-34	-0.619786494	0.003
Sparc	2.80E-34	-0.174930045	0.969
Dhrs2	2.82E-34	-0.674254837	0.001
Sema6d	3.05E-34	0.432407674	0.091
Cnbp	3.58E-34	-0.498136275	0.31
Gap43	4.11E-34	-0.727981525	0.048
Psme1	4.59E-34	-0.646798876	0.051
Tmem176b	5.05E-34	-0.576577655	0.219

Rpl3	5.63E-34	0.439746178	0.308
Gm20417	6.09E-34	0.395746537	0.106
Mthfd2l	6.82E-34	0.308628629	0.057
Col16a1	1.14E-33	-0.714870059	0.02
S100b	1.19E-33	0.458409124	0.527
Mgat3	1.37E-33	0.39332183	0.116
Tex2	1.43E-33	0.406973517	0.1
Tkt	1.94E-33	0.44431025	0.313
Iqgap2	2.57E-33	-0.976440376	0.042
Eci2	3.05E-33	-0.68929932	0.087
Prdx2	3.21E-33	-0.520947226	0.216
Srpx	3.22E-33	-0.546780404	0.004
Caskin2	4.01E-33	0.401612927	0.142
Pdlim7	6.14E-33	0.383984035	0.118
Myo1c	6.18E-33	0.279544819	0.07
Dclk1	6.40E-33	-0.534298969	0.011
Snx7	7.63E-33	0.308959291	0.13
Sulf2	7.78E-33	-0.673677695	0.002
Car5b	8.51E-33	-0.603123481	0.004
Fzd3	9.13E-33	0.37486177	0.079
Kcna6	9.73E-33	-0.7043936	0.015
Hist3h2ba	1.19E-32	0.350854794	0.052
Ncam2	1.51E-32	-0.626141764	0.016
Ctsb	2.37E-32	-0.448297922	0.284
Stard5	3.00E-32	0.262966402	0.057
Col4a2	3.31E-32	0.29187748	0.195
Odc1	3.79E-32	0.343848826	0.079
Cpe	4.01E-32	-0.579989092	0.288
Rgl1	4.28E-32	-0.613994628	0.007
Mgst3	5.01E-32	0.361306024	0.258
Nedd4	5.78E-32	-0.557802626	0.171
Gabarapl1	5.82E-32	0.401112695	0.243
Shisa4	7.01E-32	-0.580959408	0.061
Bgn	8.79E-32	-0.665506475	0.02
Npy	1.07E-31	-0.812669559	0.006
Med13l	1.15E-31	0.37138241	0.067
Mgst1	1.29E-31	-0.562267889	0.048
Dkk3	1.31E-31	0.439885607	0.117
Nin	1.40E-31	0.241123512	0.052
Zfp36	1.42E-31	0.355157035	0.103
Tgfb2	1.46E-31	-0.663980384	0.004
Cox4i1	1.77E-31	-0.305806031	0.576
Tbxa2r	1.96E-31	0.201962404	0.056

Man1a2	2.13E-31	0.372423975	0.13
Dbndd2	2.23E-31	-0.549111471	0.008
Rnf215	2.46E-31	-0.632161143	0.026
Tbc1d10a	2.48E-31	-0.585144468	0.009
Cc2d1b	3.96E-31	0.295617308	0.058
Cyfip1	4.09E-31	0.419989271	0.278
Pcdh10	5.34E-31	-0.562109066	0.014
Pnn	7.71E-31	0.414292904	0.312
Eva1b	7.98E-31	0.292122637	0.145
Gng11	9.83E-31	-0.620742258	0.057
Cyp7b1	1.05E-30	0.295023812	0.072
Ahcy	1.20E-30	0.346735605	0.075
Itgb5	1.37E-30	0.318603425	0.071
D19Ertd737e	1.38E-30	0.390973784	0.146
Cdkn2c	1.66E-30	-0.70493649	0.016
Ppp1r9a	1.69E-30	0.450163949	0.201
Flnb	1.83E-30	0.287839589	0.072
Gpr126	2.10E-30	-0.660163281	0.077
Pex11a	2.29E-30	-0.525409346	0.011
Nr2f2	2.31E-30	-0.566585523	0.081
Fads1	2.42E-30	-0.585617879	0.162
H1f0	2.46E-30	0.420722207	0.266
Lmna	2.75E-30	0.372651703	0.293
Hspa12a	2.99E-30	0.36838288	0.311
Nefh	5.59E-30	0.499059238	0.14
Dnajb1	1.14E-29	0.430434709	0.112
Las1l	1.31E-29	0.438991528	0.16
App	1.44E-29	-0.361528438	0.515
mt-Nd1	1.59E-29	-0.210799277	0.832
Plat	1.79E-29	-0.72875721	0.014
Unc119b	1.86E-29	0.3087725	0.101
Lpin1	2.21E-29	0.285921189	0.056
Col1a1	3.31E-29	0.264872782	0.1
Lmo4	3.40E-29	-0.616047294	0.115
Hmgcr	3.44E-29	0.522829619	0.223
B230354K17Rik	3.89E-29	0.306296122	0.062
Pdia3	4.06E-29	-0.528957898	0.238
Clk1	4.40E-29	0.379228525	0.165
Gstk1	4.59E-29	-0.575081534	0.083
Syt1	4.91E-29	-0.753770147	0.013
Cxxc5	5.54E-29	0.270225024	0.165
2310022B05Rik	6.68E-29	-0.596440781	0.085
Cd44	6.93E-29	-0.60434097	0.005

Kif3c	1.24E-28	0.270836571	0.063
Tceal3	1.27E-28	-0.520444545	0.009
Rhobtb3	1.36E-28	0.365702936	0.222
Cdh19	1.44E-28	-0.770233205	0.017
Mvb12b	1.47E-28	0.314094232	0.122
Mapt	1.56E-28	-0.650160906	0.042
Cdh2	2.23E-28	-0.648603172	0.016
Acyp2	2.33E-28	-0.637350964	0.087
Cnppd1	2.84E-28	0.291138908	0.112
Dnajc17	4.58E-28	0.255759442	0.054
Zfp191	4.62E-28	-0.54103679	0.066
Mxra8	4.64E-28	-0.618455916	0.069
Notch1	8.63E-28	-0.6291216	0.017
Alpl	9.13E-28	-0.43646868	0.004
Gfra2	1.11E-27	-0.581295754	0.005
Psme2	1.12E-27	-0.476365316	0.098
Cplx2	1.16E-27	-0.622592509	0.026
Rab31	1.28E-27	-0.589969674	0.028
Tnc	1.55E-27	-0.635978808	0
Zcchc7	1.56E-27	0.369313902	0.098
Megf9	1.92E-27	0.30673264	0.299
Trim13	2.08E-27	0.260371215	0.087
Papss1	2.47E-27	0.347542148	0.257
Psmb2	2.98E-27	-0.491324	0.207
Cacng4	3.29E-27	-0.440818896	0.001
P2ry12	3.94E-27	-0.577980453	0.007
Rsph9	4.87E-27	-0.538006429	0.037
Xist	4.99E-27	0.445556955	0.18
Abhd4	5.14E-27	-0.553611852	0.188
Tacc1	5.99E-27	0.304762534	0.208
Prrg4	1.18E-26	0.275136351	0.063
Sdcbp	1.53E-26	-0.526089722	0.078
Cnpy2	1.58E-26	-0.576917575	0.116
Lgr5	1.76E-26	-0.454083002	0.002
Sipa1l1	1.76E-26	0.272436085	0.07
Socs3	1.99E-26	0.213004088	0.072
Dnajc7	2.04E-26	0.403873215	0.208
Th	2.05E-26	-0.663167118	0.007
Sh3pxd2b	2.13E-26	-0.514421183	0.013
Tjp1	2.52E-26	0.383988033	0.083
Prkcdbp	2.59E-26	0.332003921	0.398
Cd24a	2.70E-26	0.313402206	0.121
Fads2	2.92E-26	-0.505869938	0.013

Col11a1	3.17E-26	-0.536823476	0.005
Palmd	3.19E-26	0.233296176	0.069
Gal3st1	3.20E-26	0.286581505	0.142
Angpt2	3.73E-26	-0.556968071	0.049
Rnf13	3.88E-26	0.332385856	0.323
Asrgl1	4.70E-26	-0.519061606	0.151
Dock10	4.99E-26	0.312449532	0.061
Nudt4	5.07E-26	-0.595928176	0.052
Vmp1	6.71E-26	0.295212412	0.116
Rabgef1	7.25E-26	0.243714766	0.063
Zfp467	8.28E-26	-0.526502165	0.012
Mtus1	9.07E-26	0.202294305	0.059
Myl12a	9.51E-26	-0.472890279	0.276
E130114P18Rik	1.02E-25	-0.466827103	0.004
Klhl13	1.03E-25	-0.428547581	0.013
Srrm2	1.08E-25	0.353904116	0.362
Wwc2	1.60E-25	0.357381368	0.088
Tln2	2.06E-25	-0.559208562	0.048
Rhpn1	2.13E-25	0.385437089	0.061
Gpn3	2.99E-25	0.299649867	0.112
Crym	3.07E-25	-0.501137513	0.008
Pomgnt1	3.11E-25	0.25194247	0.054
Zdhhc2	3.67E-25	-0.475001353	0.03
Tmem30a	6.31E-25	0.330258027	0.292
Mdh1	6.47E-25	-0.430989654	0.223
Shisa5	6.62E-25	-0.548998862	0.033
Fam171b	6.90E-25	-0.414848187	0.009
Eepd1	8.01E-25	-0.376155203	0.011
Tmbim1	8.40E-25	0.312315606	0.231
Ddc	9.79E-25	-0.678049731	0.002
Fermt2	1.03E-24	-0.428118215	0.286
Mat2a	1.13E-24	0.336080555	0.345
Wls	1.19E-24	-0.519386501	0.029
Psmb10	1.21E-24	-0.604249171	0.079
Luzp2	1.45E-24	-0.488514468	0.007
Srgap2	1.48E-24	0.295712956	0.069
Nr2f1	1.80E-24	-0.6180821	0.054
Ogt	1.89E-24	0.300915002	0.113
Dusp6	2.06E-24	-0.588748662	0.026
Meg3	2.13E-24	-0.621252248	0.061
Ccdc85b	2.52E-24	0.296298979	0.127
Gls	2.63E-24	0.276554223	0.095
Gbp7	2.81E-24	-0.621023229	0.03

Dbn1	2.83E-24	0.261418941	0.07
Ubl3	4.10E-24	0.319560635	0.218
Srebf1	4.50E-24	-0.54183526	0.076
Phlda3	5.67E-24	0.308535686	0.115
Fkbp2	6.00E-24	-0.392701308	0.23
Slc6a2	6.65E-24	-0.634308701	0.003
Lamb1	8.42E-24	0.310156363	0.345
Daam2	8.80E-24	-0.523918411	0.021
Nae1	1.00E-23	0.316418728	0.125
Msi2	1.12E-23	-0.485603169	0.017
Ssh1	1.27E-23	0.291397981	0.06
2810008D09Rik	1.27E-23	0.332915515	0.165
Acadl	1.33E-23	-0.479613386	0.144
Fkbp1a	1.34E-23	0.304839808	0.486
H2-T22	1.49E-23	-0.564751891	0.012
Sema3e	1.62E-23	-0.580598774	0.001
Itfg3	1.62E-23	0.330844289	0.128
Hand2	1.91E-23	-0.573568992	0.001
Pcdhga9	1.92E-23	-0.537972413	0.082
Itgb4	1.97E-23	0.19584115	0.11
Ypel3	2.06E-23	0.302424516	0.339
Sh3pxd2a	2.10E-23	-0.617837291	0.033
Bnip3l	2.37E-23	0.411129832	0.216
Nrarp	3.59E-23	-0.402932625	0.01
Cdo1	3.92E-23	-0.338780379	0.004
Pla2g7	3.97E-23	0.390740313	0.085
Puf60	4.07E-23	0.350257336	0.27
Dot1l	4.25E-23	0.282789069	0.068
Mt1	4.84E-23	0.320671457	0.587
Cntln	4.91E-23	0.358356225	0.102
Hmgcs1	4.96E-23	0.340340711	0.539
Sh3kbp1	5.59E-23	-0.500875506	0.044
Lap3	5.62E-23	0.286595211	0.108
Dab2ip	6.91E-23	0.246801384	0.06
Ndufa13	7.22E-23	0.326933401	0.467
Axl	7.49E-23	-0.44510708	0.004
Dbh	8.03E-23	-0.594297901	0.004
Tcf4	1.02E-22	-0.572158989	0.027
Cyp2d22	1.02E-22	-0.535809622	0.008
Phldb1	1.23E-22	0.284794513	0.085
Ncald	1.48E-22	-0.568172597	0.033
Ttc14	1.61E-22	0.302650126	0.135
Nme1	1.69E-22	-0.502541023	0.108

Uqcc2	1.85E-22	-0.50222415	0.155
Megf10	2.03E-22	-0.453305925	0.01
Slc6a8	2.12E-22	0.291471869	0.068
Satb1	2.18E-22	0.225044597	0.068
Vcam1	2.22E-22	-0.514818936	0
Fads6	2.24E-22	-0.495827691	0.037
Cnn2	2.38E-22	-0.579039146	0.04
Wbscr16	2.39E-22	0.253575727	0.06
Vcl	2.57E-22	-0.629040253	0.039
Nid2	2.84E-22	-0.677114656	0.047
Atp6v0e	2.92E-22	-0.474963367	0.197
Gbp2	2.96E-22	-0.615346632	0.018
Tmem176a	3.41E-22	-0.470349915	0.194
S100a1	4.12E-22	-0.432893767	0.158
Gpx8	4.17E-22	-0.48679088	0.125
Itgb3	5.04E-22	-0.450866707	0.001
Mbnl1	5.68E-22	0.262401443	0.127
Oaf	6.05E-22	-0.61902564	0.059
Tap2	7.88E-22	-0.435015351	0.015
Ndnf	9.59E-22	-0.458040114	0.001
Aqp4	1.14E-21	-0.38908553	0.002
Epdr1	1.21E-21	0.363804171	0.249
Trib1	1.30E-21	-0.37851256	0.003
Itpr3	1.59E-21	0.366945922	0.151
Srrm1	1.76E-21	0.257500183	0.272
Gbp3	1.80E-21	-0.598640038	0.022
Tmem140	1.87E-21	-0.598873325	0.03
1110007C09Rik	1.87E-21	0.352605493	0.135
Serinc1	1.88E-21	0.28732267	0.454
Parp14	2.01E-21	-0.515756173	0.006
Fuca1	2.08E-21	-0.519774718	0.099
Gskip	2.19E-21	0.257355826	0.084
Sdf2	2.37E-21	-0.52553396	0.087
Jam2	2.59E-21	-0.349736414	0.014
Ctso	2.60E-21	-0.453113617	0.031
Shpk	2.98E-21	-0.665169226	0.082
Ifit3	3.08E-21	-0.803621684	0.019
Nacc2	3.78E-21	0.273480748	0.135
Suclg2	3.96E-21	-0.420423686	0.006
Map7d1	4.10E-21	0.266840955	0.197
1810058I24Rik	4.45E-21	0.30308801	0.232
Med22	4.53E-21	0.27646972	0.059
Rab3b	4.61E-21	-0.529888896	0.004

Gfra3	6.34E-21	-0.617423489	0.001
Klhl5	7.26E-21	-0.539001172	0.028
Rab9	7.34E-21	-0.482101847	0.078
Bcl2l2	9.89E-21	0.213868357	0.059
Ctsa	1.53E-20	0.349151397	0.189
Ip6k2	1.53E-20	0.268763165	0.071
Prdx4	1.56E-20	-0.462656529	0.092
Ndufc2	1.58E-20	-0.352693252	0.188
Fbxl5	1.81E-20	0.31227394	0.103
Rab13	2.11E-20	-0.428332587	0.022
Ptk2	2.42E-20	-0.568248984	0.028
Epn1	2.59E-20	0.242478037	0.078
Arhgap31	2.66E-20	0.289018407	0.062
Matn4	2.93E-20	-0.478150637	0.021
Mfsd2a	3.36E-20	0.405675166	0.131
Bst2	3.46E-20	-0.463114276	0.078
Slc25a4	3.62E-20	-0.294890739	0.508
Acat1	3.69E-20	-0.463178884	0.097
Emp1	4.22E-20	-0.603293442	0.002
Mettl7a1	4.34E-20	-0.511086706	0.007
Pcdh9	5.03E-20	0.302150143	0.103
Tbc1d23	5.11E-20	0.245464642	0.066
Fnta	5.14E-20	-0.410061361	0.28
Rasa2	5.40E-20	-0.475143454	0.041
Nrn1	5.60E-20	-0.683041397	0.037
Cd200	6.71E-20	-0.473150795	0.15
Mbnl2	7.28E-20	0.195593204	0.307
Ptgfrn	7.32E-20	-0.363121633	0.002
Tmem47	8.14E-20	-0.477270418	0.085
Wasf2	8.35E-20	0.30738044	0.18
Man1b1	8.38E-20	0.224609518	0.06
Slc1a4	8.39E-20	-0.314708605	0.004
Ifi35	8.58E-20	-0.468294261	0.036
Rbms3	9.74E-20	-0.527908283	0.035
Cep104	1.03E-19	0.1947482	0.057
Eif1b	1.21E-19	-0.463721347	0.158
Haus8	1.22E-19	0.226053318	0.077
Nudt3	1.24E-19	0.338794104	0.195
Htra2	1.31E-19	0.248181603	0.077
Ophn1	1.44E-19	0.296293714	0.084
Suco	1.51E-19	0.257582672	0.085
Ndn	1.57E-19	-0.509766515	0.052
Lepre1	1.65E-19	0.225644199	0.059

Lix1	1.76E-19	-0.376207608	0.033
Rps5	1.77E-19	-0.321316757	0.505
0610009D07Rik	1.86E-19	-0.460743453	0.093
Gdi1	1.92E-19	0.264025653	0.178
Cct5	2.00E-19	0.250442959	0.241
Col27a1	2.48E-19	-0.551680694	0.009
Kcnh2	2.53E-19	-0.40762688	0.007
Ctnna1	2.69E-19	-0.396097792	0.321
Mical1	3.06E-19	0.401481629	0.096
Lgr4	3.13E-19	-0.471670859	0.033
Snn	3.33E-19	0.277221658	0.082
Coprs	3.67E-19	0.281307559	0.093
Ptms	4.01E-19	0.332308951	0.363
H2-Q4	4.03E-19	-0.471216646	0.008
Them4	4.17E-19	0.246163585	0.081
Tlcd1	4.73E-19	-0.438807513	0.032
Jun	5.04E-19	0.457013356	0.29
Idh1	5.61E-19	-0.477624784	0.065
Tmf1	5.81E-19	0.238372406	0.09
Fus	6.59E-19	0.298393037	0.298
Ngfrap1	6.65E-19	-0.471594669	0.071
Zcchc18	6.97E-19	-0.492004633	0.023
Pdia4	7.07E-19	-0.525746919	0.119
Csgalnact1	7.22E-19	0.305466977	0.072
Gm13111	7.65E-19	-0.533982481	0.032
D730003I15Rik	7.70E-19	0.213661226	0.053
Pnmal2	8.78E-19	-0.405291855	0.016
Hoxb3os	8.97E-19	0.276485546	0.096
Pabpc1	9.09E-19	0.282599397	0.531
Plekhj1	9.27E-19	0.295875071	0.101
Ampd3	1.26E-18	-0.379324694	0.004
Myo6	1.32E-18	0.390077051	0.114
Rilpl1	1.64E-18	0.267517006	0.091
Igfbp5	1.69E-18	0.494635615	0.109
Adprh	1.72E-18	-0.460716397	0.131
Ifit1	1.83E-18	-0.715001061	0.007
Fam212a	1.89E-18	-0.453761031	0.035
Zcwpw1	1.90E-18	0.226089711	0.053
Tmed10	2.01E-18	0.308558974	0.427
Hes1	2.08E-18	-0.518564052	0.035
B230219D22Rik	2.13E-18	0.326711618	0.179
Morf4l2	2.23E-18	-0.499778999	0.084
Pink1	2.48E-18	0.336865771	0.263

Pon2	2.49E-18	-0.389560438	0.066
Cib1	2.65E-18	-0.448504095	0.055
Sec11a	2.87E-18	-0.453763946	0.076
Nktr	3.13E-18	0.365218543	0.151
Ifngr1	3.45E-18	-0.45809311	0.047
Tmem205	3.47E-18	-0.500881731	0.114
Cadm4	4.01E-18	0.277060873	0.223
Sorbs1	4.37E-18	-0.41942586	0.207
Loh12cr1	5.07E-18	0.272547782	0.066
Ostc	5.44E-18	-0.454409954	0.127
Fxyd2	6.57E-18	0.363563213	0.193
Psmb9	6.60E-18	-0.468884123	0.02
H2-T23	6.65E-18	-0.417010197	0.016
Plec	6.66E-18	0.273146637	0.118
Eif3i	7.49E-18	-0.445742082	0.133
Fkbp10	7.76E-18	-0.409190266	0.011
2810428I15Rik	8.49E-18	-0.406533056	0.162
Mtmr2	8.80E-18	0.216894188	0.081
Rab10	9.56E-18	-0.414787982	0.16
Lgals3bp	1.04E-17	-0.419534481	0.005
Rasa3	1.24E-17	-0.44806509	0.033
Fah	1.24E-17	-0.395228416	0.008
1700025G04Rik	1.24E-17	-0.48979596	0.031
Sep15	1.26E-17	-0.341819277	0.379
Arf4	1.26E-17	-0.456961916	0.115
Ldlrad3	1.36E-17	0.238574699	0.053
Gna12	1.41E-17	0.235850574	0.068
Yif1b	1.48E-17	0.258915409	0.148
Acaa2	1.54E-17	-0.412799652	0.145
Gabarapl2	1.54E-17	0.338678907	0.183
Cope	1.55E-17	-0.422928899	0.157
Amotl2	1.58E-17	0.222863658	0.085
Nab2	1.64E-17	0.29907503	0.065
Kcnk5	1.66E-17	0.22931203	0.052
Abcg1	1.74E-17	0.305679159	0.093
Soat1	1.78E-17	-0.315703997	0.008
Tmem229a	2.16E-17	0.35689577	0.139
Glul	2.19E-17	0.339235243	0.267
Mesdc2	2.36E-17	-0.455873799	0.088
Sorcs1	2.52E-17	0.299348939	0.186
Scd2	2.62E-17	-0.204863819	0.757
Hist1h2bc	2.62E-17	-0.321108014	0.29
Nfkbib	3.16E-17	0.176970011	0.096

Nek6	3.36E-17	-0.451197315	0.026
Akap12	3.65E-17	0.601893043	0.236
Spcs2	3.70E-17	-0.435077597	0.253
Map2k7	3.77E-17	0.242471315	0.068
Cd59a	4.39E-17	-0.344600495	0.591
Mcur1	4.53E-17	0.232432447	0.096
Serf1	5.19E-17	0.193485122	0.105
Snx16	5.35E-17	0.27772154	0.116
Cdh1	5.83E-17	0.379506373	0.099
Cox17	6.30E-17	0.274021315	0.183
Micu1	6.43E-17	0.211190706	0.079
Lasp1	6.63E-17	-0.404329796	0.023
Nrp1	6.71E-17	-0.50085212	0.026
Tm7sf2	6.96E-17	-0.413845147	0.061
Sepw1	7.26E-17	-0.442492767	0.128
Hspg2	7.26E-17	0.231782491	0.142
Rnpepl1	8.32E-17	0.206804093	0.069
Lgmn	1.11E-16	-0.443769152	0.04
Lsm6	1.15E-16	-0.371753682	0.024
Rmnd5a	1.18E-16	0.24759362	0.053
Sdf2l1	1.20E-16	-0.438694676	0.008
Cstf3	1.23E-16	0.303637159	0.066
Cox14	1.27E-16	-0.402733504	0.186
Ier5	1.41E-16	0.173144113	0.057
Pgf	1.51E-16	-0.271701046	0.007
Ggh	1.63E-16	-0.469361592	0.072
Ccdc101	1.71E-16	0.233837021	0.066
Stard8	1.93E-16	0.241936204	0.078
Arl1	2.00E-16	0.264734025	0.204
Efemp2	2.07E-16	-0.387640521	0.024
Mapk8ip3	2.25E-16	0.22457411	0.065
Plxnb1	2.31E-16	0.199251117	0.052
Gltp	2.49E-16	0.221579068	0.154
Ppp3ca	2.63E-16	0.289991689	0.185
Map3k11	2.85E-16	0.23617735	0.071
Rpl8	3.10E-16	-0.250630201	0.514
1110012L19Rik	3.50E-16	0.149087088	0.09
Tspan6	3.50E-16	-0.410061702	0.022
Rapgef6	3.53E-16	0.257785988	0.069
Rnf141	3.69E-16	0.207547444	0.06
Xiap	3.81E-16	0.213117263	0.098
Arid5b	4.14E-16	0.267677729	0.069
Lrpap1	4.17E-16	-0.392388207	0.083

Rnpc3	4.18E-16	0.327098247	0.09
Mien1	4.41E-16	-0.437387142	0.109
Nbl1	4.52E-16	0.185147284	0.084
Crot	4.63E-16	-0.3811458	0.044
St3gal4	4.74E-16	-0.286139116	0.011
Hsd17b7	4.86E-16	0.290978663	0.11
Clic1	5.13E-16	-0.440739218	0.09
Myo10	5.46E-16	-0.337286452	0.056
Ptpra	5.73E-16	-0.423695635	0.08
Gm27031	5.90E-16	-0.382240242	0.009
Sf3b5	6.11E-16	-0.42869318	0.097
Vstm4	6.49E-16	-0.412672531	0.009
Cadm2	6.52E-16	-0.565159518	0.008
Sfswap	6.62E-16	0.338799072	0.112
Csnk2a1	7.51E-16	0.250392702	0.126
Sypl	8.15E-16	0.230750675	0.195
Syt11	8.32E-16	-0.330873801	0.3
Kctd10	8.94E-16	0.134817807	0.06
Polr2m	9.18E-16	-0.433118416	0.048
Dlgap1	9.37E-16	-0.413762857	0.049
Stat6	9.46E-16	0.205146079	0.066
Slc35b2	1.08E-15	-0.387700031	0.076
Itgb1	1.10E-15	0.24419791	0.377
Rtp4	1.20E-15	-0.454667017	0.013
Cib2	1.21E-15	-0.351002121	0.008
Lgalsl	1.28E-15	-0.444903404	0.033
Pebp1	1.39E-15	0.250312802	0.402
Tsc22d3	1.47E-15	0.304058733	0.194
Mpv17l2	1.68E-15	0.294700278	0.082
Ubn2	1.77E-15	0.250716556	0.074
Pigyl	1.81E-15	-0.425796135	0.052
Rplp0	1.89E-15	0.210476082	0.657
Ddx5	1.95E-15	0.200059792	0.467
Fkbp7	2.16E-15	-0.501876237	0.035
Ggct	2.16E-15	0.186900081	0.095
Metrn	2.28E-15	-0.363534572	0.088
Psat1	2.52E-15	-0.4893241	0.087
Vat1	3.31E-15	0.220024454	0.063
Gnb2	3.37E-15	-0.35669496	0.244
Anp32a	3.37E-15	-0.368054596	0.188
Cbx6	3.66E-15	0.168666585	0.084
Apc	3.80E-15	0.316952671	0.112
Ppp2r4	3.82E-15	0.199380486	0.124

Cers4	3.85E-15	0.262456328	0.142
Aig1	5.56E-15	-0.338850868	0.067
Hjurp	5.69E-15	0.197437231	0.058
Tmem107	6.48E-15	-0.385709187	0.017
Dhrs4	6.62E-15	-0.390469328	0.028
Tcf7l2	7.30E-15	0.247309617	0.063
Dnajc3	7.33E-15	-0.429760915	0.172
Galc	7.67E-15	0.201448439	0.068
Plscr4	9.07E-15	-0.463281055	0.045
Rnf130	1.02E-14	0.265357384	0.232
Fstl3	1.07E-14	0.230901455	0.09
Rpn2	1.17E-14	-0.361829217	0.114
Aldh2	1.20E-14	-0.336105829	0.18
Tmem208	1.21E-14	-0.402453502	0.09
Mcam	1.22E-14	-0.518775707	0.05
Itch	1.27E-14	0.211081798	0.069
Pcp4	1.28E-14	0.348085237	0.064
Slitrk2	1.38E-14	-0.319693462	0.009
Irgm1	1.49E-14	-0.48768396	0.015
Pdia6	1.79E-14	-0.438531226	0.173
Itgb3bp	2.13E-14	0.291635247	0.079
Tmem33	2.20E-14	-0.421805844	0.115
Gm16133	2.55E-14	-0.292014023	0.019
Slc31a2	2.55E-14	-0.533492192	0.062
Sox4	2.61E-14	-0.322985092	0.054
Akap9	2.61E-14	0.230170459	0.17
Igtp	3.03E-14	-0.519342381	0.016
Cttnbp2nl	3.25E-14	-0.456467095	0.079
Sbno1	3.43E-14	0.182356839	0.116
Ap2m1	3.73E-14	0.249226679	0.136
Caprin1	3.77E-14	0.292445193	0.145
Glo1	3.79E-14	-0.37620697	0.093
Serpine2	3.95E-14	-0.3512753	0.343
Wwp2	4.11E-14	0.231710135	0.056
Mageh1	4.22E-14	-0.429262207	0.06
Vamp8	4.36E-14	0.253408134	0.275
Ddx17	4.51E-14	0.27049717	0.16
Slc25a3	4.76E-14	-0.345091423	0.262
Pcmtd1	4.83E-14	0.251447484	0.148
Pdap1	4.96E-14	0.297025374	0.279
Ndufv3	5.19E-14	-0.371201225	0.122
Tmem64	5.60E-14	-0.386226004	0.031
Cyp39a1	6.60E-14	0.279841173	0.109

Bnip3	7.91E-14	0.182491183	0.082
Plod1	8.89E-14	0.177898838	0.093
Faim	9.06E-14	0.225852718	0.118
Sept7	9.74E-14	-0.280499445	0.366
Fam49b	9.91E-14	0.208048682	0.075
Fam114a1	1.01E-13	-0.363351966	0.061
Ppp1r18	1.02E-13	-0.431504853	0.017
Adk	1.02E-13	-0.38339415	0.043
Ddhd2	1.05E-13	0.200399918	0.063
Cryzl1	1.06E-13	0.224388298	0.152
Mif	1.07E-13	-0.32526058	0.137
Mrps6	1.09E-13	0.303409415	0.209
Car2	1.24E-13	-0.244640508	0.011
Psmf1	1.29E-13	0.229170088	0.076
BC029214	1.34E-13	0.223326056	0.104
Tcea1	1.45E-13	0.214219037	0.099
Paxbp1	1.45E-13	0.261123201	0.061
Strn3	1.49E-13	0.273307333	0.119
Snca	1.55E-13	0.098434878	0.208
Fam102a	1.67E-13	-0.348567011	0.03
Phgdh	1.68E-13	-0.330878858	0.189
RP23-32A8.1	1.72E-13	0.290895243	0.107
Auh	1.80E-13	0.192378576	0.096
Stard13	1.86E-13	-0.456787851	0.026
Rap2b	2.04E-13	-0.408588562	0.025
Tmem258	2.28E-13	0.31026471	0.271
Smarca2	2.30E-13	-0.364272472	0.05
Gm8730	2.44E-13	0.255532935	0.062
Ssrp1	2.52E-13	-0.395769611	0.086
Smoc1	2.67E-13	-0.249183782	0.013
Rnf181	2.78E-13	0.239910275	0.149
H2afv	2.80E-13	-0.417099238	0.149
Tmc6	3.05E-13	0.222457951	0.068
Rftn2	3.09E-13	-0.426858244	0.038
mt-Co1	3.32E-13	-0.237099495	0.608
Stt3b	3.49E-13	-0.344680149	0.06
Ccdc41	3.60E-13	0.24711728	0.078
Ndufs8	3.77E-13	-0.325665916	0.188
Bloc1s1	4.25E-13	0.293215239	0.254
Fasn	4.45E-13	-0.409822501	0.149
Rab3d	4.74E-13	-0.431409299	0.025
Tspo	4.74E-13	-0.498586356	0.122
Tubb5	4.81E-13	0.189892304	0.427

Blvra	5.09E-13	-0.325183543	0.011
Gde1	5.18E-13	-0.344031178	0.081
Prr13	5.19E-13	-0.411726156	0.055
Prss23	5.38E-13	0.118036022	0.175
Snrnp70	5.40E-13	0.277944546	0.188
Polr2f	5.43E-13	-0.343214478	0.15
Lyrm4	5.60E-13	-0.272200111	0.029
Tmem80	5.75E-13	0.199047803	0.072
Nlk	5.77E-13	0.196522294	0.059
Clk4	6.53E-13	0.16317479	0.072
Zfand3	7.20E-13	0.227409567	0.143
Frmd4a	7.21E-13	-0.455523454	0.028
Stard7	7.58E-13	0.143844359	0.083
Tbc1d17	8.12E-13	0.250757365	0.07
Ech1	8.91E-13	0.221478769	0.266
Zbtb38	9.22E-13	0.211389514	0.143
Ormdl2	9.30E-13	-0.378564433	0.033
Plxdc2	9.36E-13	-0.448530877	0.128
Gnb2l1	9.55E-13	-0.409468072	0.287
Atp5g3	9.70E-13	-0.365973785	0.22
Aip	1.01E-12	0.246107662	0.121
Hnrnpa2b1	1.07E-12	-0.252791843	0.466
Hmgn5	1.11E-12	-0.3605204	0.013
Ccnd3	1.16E-12	-0.312432339	0.023
Lyar	1.20E-12	0.188262713	0.102
Cnksr2	1.21E-12	-0.394912051	0.013
Knop1	1.22E-12	0.252441761	0.074
Hnrnpl	1.24E-12	0.220972788	0.136
Nadk	1.30E-12	0.193301618	0.104
Plin2	1.30E-12	-0.34261754	0.028
Ppic	1.31E-12	-0.397655687	0.019
Tmbim6	1.37E-12	0.221463239	0.504
Dlc1	1.41E-12	0.136878411	0.064
Olfml2b	1.52E-12	-0.481765552	0.05
Mpc2	1.54E-12	-0.32629956	0.232
Tnfrsf1a	1.56E-12	-0.313644626	0.013
Pbxip1	1.60E-12	-0.354047721	0.053
Sept8	1.73E-12	0.194033531	0.138
1110004E09Rik	1.75E-12	-0.384885	0.039
Ssbp2	1.83E-12	-0.385096629	0.042
Ppa2	1.97E-12	0.223684114	0.108
Inpp5f	2.04E-12	-0.408265343	0.022
Sh3glb2	2.19E-12	0.211870017	0.072

Bambi	2.24E-12	-0.263592658	0.026
Zfp148	2.30E-12	0.255877886	0.118
Ppp2r2a	2.32E-12	-0.402606714	0.106
Scaf11	2.59E-12	0.247838909	0.127
Rabac1	2.62E-12	-0.304967234	0.346
Spats2l	2.72E-12	-0.276023441	0.013
Aprt	2.79E-12	-0.385410626	0.055
Inf2	2.80E-12	0.25829164	0.077
Cdc42ep1	2.83E-12	0.208871722	0.075
Olfml1	3.12E-12	-0.367347838	0.016
Hibadh	3.12E-12	-0.36344479	0.093
Cebpg	3.17E-12	0.27325349	0.093
Taldo1	3.50E-12	0.171224072	0.395
Cox6b1	3.59E-12	-0.262992143	0.375
Lgals1	3.69E-12	0.111828969	0.472
Tmod3	3.72E-12	-0.377296781	0.039
Antxr1	3.86E-12	-0.385223409	0.02
Erbb3	4.17E-12	-0.401438051	0.159
Epn2	4.20E-12	0.223677095	0.117
Celf2	4.46E-12	0.20461117	0.275
Bcas2	4.65E-12	-0.405089104	0.096
Hist1h1c	4.89E-12	-0.336578746	0.097
Ppp1r1b	5.18E-12	-0.334798926	0.026
Mfap3l	5.22E-12	0.236574285	0.147
Gnptg	5.47E-12	-0.357316872	0.093
Pcyox1l	5.61E-12	0.201256996	0.059
Arglu1	5.96E-12	0.225914935	0.265
Lbr	6.27E-12	0.21482515	0.051
Tmem50b	6.34E-12	0.180796639	0.087
Marcksl1	6.35E-12	-0.277293411	0.1
Tspan14	6.59E-12	-0.344178918	0.043
Erc1	6.59E-12	0.149939402	0.053
Rsbn1l	6.65E-12	0.192512337	0.131
Yipf6	7.01E-12	0.186217304	0.055
Reep3	7.52E-12	-0.358677168	0.118
Dpysl3	8.10E-12	-0.320452846	0.036
Tapbp	8.13E-12	-0.311364825	0.056
Rras	8.20E-12	-0.315295785	0.025
Gid4	8.35E-12	0.171704362	0.088
Chpf	8.87E-12	-0.337562195	0.023
Hey1	9.10E-12	-0.243172724	0.018
Hif1a	9.14E-12	0.191784501	0.062
Mpv17	9.24E-12	0.212946135	0.18

Atp5c1	9.51E-12	-0.29726232	0.292
Eef2	9.85E-12	0.205360762	0.416
Ccdc34	9.86E-12	-0.375817359	0.054
Tnrc6c	9.94E-12	0.198514135	0.075
Ctnnb1	1.02E-11	0.230735087	0.256
Stk3	1.03E-11	0.152003169	0.064
Sash1	1.05E-11	-0.370397663	0.069
Herpud1	1.14E-11	-0.444693181	0.042
Itpripl2	1.21E-11	0.138649495	0.053
Picalm	1.23E-11	0.222467217	0.099
Timp2	1.26E-11	-0.261867047	0.269
Vamp5	1.28E-11	0.235476372	0.156
Gnpat	1.34E-11	0.199584363	0.07
Tpm1	1.42E-11	0.160167231	0.172
Angel2	1.49E-11	0.204071833	0.075
Trp53i13	1.50E-11	-0.392871032	0.026
Txnrd1	1.55E-11	0.249253437	0.091
Rap2a	1.56E-11	0.1769975	0.168
Eif3j1	1.57E-11	0.245593442	0.088
Rrnad1	1.69E-11	0.173989167	0.054
Dusp11	1.82E-11	0.198067924	0.097
D4Wsu53e	1.84E-11	0.197642722	0.505
Cd320	1.95E-11	0.235723138	0.069
Jund	2.00E-11	0.191321293	0.14
Rtn3	2.03E-11	0.21620344	0.324
Scp2	2.08E-11	-0.31142714	0.167
Gm1673	2.36E-11	-0.315236766	0.033
Ctsc	2.37E-11	-0.381152723	0.069
Isg15	2.47E-11	-0.483910497	0.033
Brd8	2.49E-11	0.239036956	0.093
Ywhah	2.69E-11	0.21459683	0.171
Vps37b	2.71E-11	-0.307187109	0.024
Nid1	2.76E-11	-0.397762381	0.155
Kctd2	2.77E-11	0.102740703	0.067
Map1lc3a	2.80E-11	0.221618526	0.281
Tmem9	2.94E-11	-0.317837479	0.053
Nfic	3.24E-11	-0.343000857	0.168
Slc22a17	3.45E-11	-0.3076014	0.136
March6	3.52E-11	0.16445372	0.057
Acly	3.59E-11	-0.346962924	0.076
0610030E20Rik	3.62E-11	0.155131322	0.068
Tgfbr2	3.71E-11	0.161507382	0.055
Mxi1	3.94E-11	-0.390638512	0.067

Lhfp	4.29E-11	-0.31295344	0.108
Irf1	4.41E-11	-0.314927122	0.016
Mt2	4.44E-11	0.330232901	0.262
Csnk1a1	4.51E-11	0.170996402	0.367
Psmc3	4.55E-11	0.205905401	0.227
Enpp4	4.82E-11	0.087858905	0.066
Il6st	5.05E-11	-0.385055991	0.059
Ubb	5.15E-11	0.191147863	0.755
Psma2	5.34E-11	-0.355000595	0.225
Myh9	5.44E-11	0.21681943	0.065
Slc39a13	5.69E-11	0.164800329	0.076
Diap2	5.70E-11	0.177679716	0.056
Tcn2	5.78E-11	-0.362696946	0.1
Fam219a	5.91E-11	-0.330394444	0.02
Dctn2	5.96E-11	0.182101454	0.274
Fntb	6.05E-11	0.235300634	0.075
mt-Cytb	6.27E-11	-0.062719109	0.967
Rbm5	6.77E-11	0.170163135	0.203
1700020I14Rik	7.07E-11	0.207842931	0.118
Igsf11	7.30E-11	-0.333388658	0.051
Arf3	7.78E-11	0.166871517	0.058
Ankrd11	8.47E-11	0.270162473	0.168
Cdc42bpa	8.56E-11	0.228836348	0.068
Ift27	8.77E-11	-0.349136934	0.041
Olfml2a	9.02E-11	-0.37003226	0.049
Slc44a2	9.04E-11	0.121589688	0.06
Amdhd2	9.21E-11	0.144711467	0.06
Gpd1	9.32E-11	-0.323345459	0.063
Pigx	9.94E-11	-0.337784576	0.024
Fkbp3	1.02E-10	0.217257396	0.33
Blvrb	1.08E-10	-0.383814568	0.057
Acot2	1.11E-10	-0.286060391	0.021
Cln8	1.14E-10	0.194605423	0.075
Bpgm	1.24E-10	-0.308173692	0.029
Rhog	1.42E-10	-0.367243417	0.047
Nrcam	1.62E-10	0.208952939	0.063
Ryk	1.62E-10	0.181349142	0.08
Npc1	1.66E-10	0.226799659	0.179
Cisd3	1.66E-10	-0.307946961	0.03
Il34	1.68E-10	0.127791246	0.084
Pigq	1.70E-10	0.183373546	0.069
1300002E11Rik	1.75E-10	0.177427584	0.065
Maged2	1.88E-10	-0.402735827	0.087

Cops2	2.12E-10	0.187627974	0.134
Clu	2.15E-10	-0.300703006	0.017
Tpm3	2.20E-10	0.226671127	0.231
Mrps18a	2.38E-10	-0.331932466	0.064
Itga7	2.41E-10	-0.286748941	0.068
Dhcr7	2.42E-10	-0.249841535	0.053
Id4	2.50E-10	-0.194505463	0.042
Tns1	2.55E-10	0.113585723	0.104
Clcn6	2.63E-10	0.148002895	0.054
Fxr2	2.65E-10	0.149056437	0.063
Cetn2	2.89E-10	-0.331216953	0.069
Camk2d	3.04E-10	-0.331981628	0.096
Ppm1m	3.09E-10	0.179388444	0.061
Pla2g16	3.23E-10	0.183926831	0.556
Abcc5	3.26E-10	0.149281301	0.075
Chchd10	3.27E-10	-0.304746232	0.091
D17Wsu92e	3.30E-10	0.172281067	0.075
Pnpla2	3.34E-10	0.121007724	0.052
Bri3	3.35E-10	0.18397363	0.116
Pmvk	3.63E-10	-0.355684948	0.136
4833439L19Rik	3.73E-10	0.233655146	0.179
Bloc1s5	3.90E-10	0.134944572	0.056
Araf	4.21E-10	0.217585831	0.119
Dap	4.40E-10	0.128900055	0.097
Id2	4.47E-10	-0.331121516	0.078
Sys1	4.48E-10	-0.301936407	0.1
Micu2	4.63E-10	0.19893495	0.086
Gsto1	4.84E-10	-0.180355183	0.02
Ucp2	4.87E-10	0.172559799	0.097
Necap2	4.88E-10	0.151472845	0.099
Wsb1	4.98E-10	0.183518028	0.076
Vwa5a	5.03E-10	-0.332653302	0.056
Lphn3	5.06E-10	-0.288980184	0.027
Svip	5.24E-10	0.201958851	0.118
Dpysl4	5.41E-10	-0.290893355	0.026
Rnh1	6.84E-10	-0.331822819	0.074
Galnt1	7.00E-10	-0.298910763	0.043
Pura	7.05E-10	0.194590761	0.185
Prpf4b	7.19E-10	0.227581624	0.173
Fbxo44	7.23E-10	-0.243585873	0.017
Desi1	7.35E-10	0.165654456	0.09
Zfand5	7.43E-10	0.173376518	0.148
Lamp1	7.44E-10	0.168246069	0.597

Stard3nl	7.89E-10	-0.364724382	0.134
Hbegf	8.02E-10	-0.397692976	0.164
Rhoa	8.53E-10	0.202494681	0.321
2700060E02Rik	8.76E-10	-0.27807458	0.165
Ndfip1	9.03E-10	-0.335002493	0.057
Fign	9.54E-10	-0.37167225	0.056
Gstp1	9.73E-10	-0.287770485	0.194
Zeb2	9.86E-10	-0.397598201	0.237
Anxa2	1.02E-09	-0.221539167	0.48
Pttg1	1.03E-09	-0.365148827	0.109
Ezr	1.05E-09	-0.315376814	0.145
Tmem87b	1.06E-09	0.15283629	0.064
Cpt1a	1.07E-09	-0.305239553	0.037
Pja1	1.11E-09	-0.396435603	0.089
Rps2	1.12E-09	0.215406985	0.371
Vma21	1.17E-09	0.201209272	0.136
Fbxo2	1.22E-09	-0.187686765	0.024
Deptor	1.23E-09	0.189905645	0.149
Atp6v1a	1.24E-09	-0.304993992	0.098
Ank3	1.25E-09	-0.007383379	0.255
Fgfr1op2	1.41E-09	0.219062059	0.137
Zfp651	1.46E-09	0.192220556	0.07
AI413582	1.50E-09	-0.260705279	0.075
Sord	1.65E-09	0.10991164	0.051
Wbp5	1.69E-09	-0.317571542	0.142
Psap	1.70E-09	0.196134491	0.455
Wbp2	1.72E-09	0.203393085	0.195
Med1	1.76E-09	0.140148353	0.061
Rell1	1.82E-09	0.140401627	0.151
Tprkb	1.91E-09	-0.316682118	0.028
Prmt2	1.93E-09	0.139420882	0.115
Ash1l	1.98E-09	0.245012573	0.142
Tgfbr3	2.06E-09	-0.418353242	0.091
Grcc10	2.09E-09	-0.2729026	0.133
Commd6	2.15E-09	-0.332564386	0.112
Fuom	2.18E-09	-0.166178677	0.021
Zrsr1	2.22E-09	0.213100422	0.069
Hdgfrp3	2.28E-09	0.190646157	0.102
Gpx4	2.32E-09	0.279034366	0.118
0610007P14Rik	2.35E-09	-0.320764282	0.079
Ccdc23	2.49E-09	-0.319576136	0.076
Ndufb9	2.49E-09	-0.305676541	0.262
Dhh	2.53E-09	0.188750491	0.293

Rps8	2.63E-09	0.192259753	0.214
Aldh6a1	2.64E-09	0.197607562	0.079
Lsm14a	2.65E-09	0.21779787	0.106
Stx7	2.67E-09	-0.300585372	0.145
Col4a1	2.73E-09	0.134887491	0.273
Bag1	2.80E-09	-0.394839414	0.105
Dctpp1	2.97E-09	0.162295588	0.058
Insc	3.04E-09	-0.352136606	0.104
Ptrf	3.13E-09	0.090350277	0.157
Sap18	3.18E-09	0.114665486	0.106
Txn1	3.23E-09	-0.26900898	0.23
Trappc2l	3.25E-09	0.194846144	0.118
Mthfd1	3.25E-09	0.130473051	0.054
Nsdhl	3.30E-09	-0.321182496	0.103
Pgrmc1	3.42E-09	0.162547369	0.234
Arhgef40	3.57E-09	0.178225212	0.104
D14Abb1e	3.63E-09	0.216809463	0.061
Tnrc6b	3.84E-09	0.192525149	0.074
Top2b	3.91E-09	-0.349446213	0.062
Ing4	4.12E-09	0.181403669	0.12
Gipc1	4.16E-09	-0.262766216	0.027
Anapc2	4.31E-09	0.1441762	0.084
Mrps14	4.33E-09	-0.308355306	0.105
Msantd4	4.44E-09	-0.287334827	0.024
Jak1	4.49E-09	-0.375965083	0.069
Rab3c	4.55E-09	-0.320912775	0.019
Taf13	4.58E-09	-0.343375871	0.082
Rcn2	4.83E-09	-0.286596883	0.072
Rpl7a	4.86E-09	0.185640272	0.097
Avpi1	4.96E-09	-0.296866043	0.02
Sft2d1	5.00E-09	0.158950347	0.088
Bpnt1	5.44E-09	0.15939938	0.065
Tspan3	5.68E-09	-0.21735302	0.443
Adipor1	5.88E-09	0.147570641	0.217
Tmed3	6.01E-09	-0.364667809	0.079
Wdr1	6.02E-09	-0.308246549	0.065
Psmb4	6.04E-09	-0.328307159	0.234
Cyba	6.11E-09	-0.366715865	0.032
A630007B06Rik	6.18E-09	0.20026446	0.101
Zfc3h1	6.28E-09	0.177933145	0.078
Rhoj	6.41E-09	-0.35778503	0.04
Fubp1	6.54E-09	0.21306452	0.135
Cmtm3	6.54E-09	-0.270912648	0.036

Pdcd6	6.55E-09	-0.317380463	0.115
Mrfap1	6.67E-09	0.194648384	0.246
Casc4	6.89E-09	-0.231702207	0.048
Zfp706	6.97E-09	0.152156263	0.378
Rab6a	7.10E-09	-0.270137342	0.244
Kdsr	7.44E-09	0.153375586	0.071
Ndufa12	7.45E-09	-0.263538753	0.114
Mdp1	7.76E-09	0.148252516	0.09
Hexa	7.87E-09	-0.290734792	0.095
Ankib1	8.12E-09	0.144617755	0.058
Fstl1	8.21E-09	-0.288908004	0.205
Pgs1	8.24E-09	0.192654289	0.056
Dynlt3	8.51E-09	0.182794868	0.277
Stmn2	8.76E-09	-0.333108312	0.163
Lats2	9.37E-09	0.134452066	0.066
Hexim1	9.66E-09	-0.222845823	0.06
Palm	1.03E-08	0.164592257	0.059
Dnajc1	1.19E-08	-0.26068249	0.079
Srsf2	1.23E-08	0.167594464	0.227
Echdc1	1.29E-08	-0.243951084	0.039
St13	1.34E-08	0.184193421	0.339
Ndufb6	1.34E-08	-0.270542582	0.205
Mrps24	1.37E-08	-0.302696329	0.117
Soga3	1.38E-08	-0.279944187	0.034
Chd6	1.42E-08	0.200058292	0.113
Tspan31	1.53E-08	-0.304269691	0.093
Pithd1	1.63E-08	0.132078729	0.101
Nudt9	1.64E-08	-0.348267369	0.139
Ddah1	1.66E-08	0.174957945	0.143
Leprotl1	1.72E-08	0.17562563	0.142
Churc1	1.72E-08	-0.338788941	0.072
Josd2	1.78E-08	0.17938591	0.257
Gria3	1.84E-08	-0.360885036	0.041
Snx2	1.91E-08	-0.337126647	0.076
Cox7a2l	1.92E-08	0.17498791	0.253
Tmem14a	1.99E-08	0.121457243	0.077
Nop56	2.07E-08	0.160120767	0.081
Bicd2	2.31E-08	0.167440775	0.059
Amn1	2.35E-08	0.060971837	0.063
Calm3	2.36E-08	-0.200251066	0.266
1110058L19Rik	2.36E-08	-0.324254567	0.047
mt-Nd2	2.37E-08	-0.129372238	0.713
Dnajc15	2.44E-08	-0.301730587	0.031

Edf1	2.45E-08	-0.225898832	0.3
Nucks1	2.46E-08	0.14031424	0.208
Dnajb14	2.63E-08	0.112233102	0.076
Bmyc	2.67E-08	-0.307162322	0.059
Ccnl1	2.76E-08	0.156364789	0.107
Map4	2.89E-08	0.151952581	0.225
Ywhab	2.93E-08	-0.290013501	0.284
Pabpn1	2.97E-08	0.15512102	0.061
Rac1	3.10E-08	0.164947868	0.29
Paqr4	3.14E-08	0.169048421	0.137
4921524J17Rik	3.32E-08	0.109851185	0.081
Rps25	3.34E-08	0.226760611	0.208
Lrp6	3.38E-08	0.18312659	0.06
Pcsk5	3.38E-08	-0.228699653	0.02
Ccdc50	3.48E-08	-0.384950063	0.086
Chd1	3.54E-08	0.168616156	0.075
Ssb	3.55E-08	-0.241368467	0.208
Flna	3.56E-08	-0.287509521	0.029
Rps18	3.57E-08	0.250666424	0.238
Sh2b1	3.64E-08	0.128318982	0.056
Canx	3.67E-08	-0.194231903	0.461
Rad50	3.73E-08	0.223868156	0.067
Prpf39	3.78E-08	0.129304268	0.054
Gpbp1l1	3.85E-08	0.145826532	0.079
Eif4a2	3.88E-08	0.194234335	0.257
Elof1	4.02E-08	-0.28603058	0.068
Rrm2b	4.03E-08	0.146938386	0.052
Rpp25l	4.33E-08	-0.286530747	0.048
Fra10ac1	4.47E-08	0.169256207	0.059
Krtcap2	4.48E-08	-0.251968105	0.174
Atox1	4.60E-08	-0.293664233	0.176
Eif4h	4.69E-08	0.178234631	0.2
Mapre1	4.71E-08	-0.363382664	0.149
Snap47	4.72E-08	-0.310564631	0.03
Rdh11	4.77E-08	0.158840089	0.08
Atp5j2	4.89E-08	-0.264837767	0.254
Slc39a6	4.99E-08	-0.280178042	0.033
Ldlr	5.07E-08	0.186072165	0.116
Tma7	5.11E-08	0.239653509	0.103
Foxo1	5.12E-08	-0.322487951	0.044
Lrrcc1	5.13E-08	0.180013877	0.054
Fbxl3	5.32E-08	0.186441616	0.07
Bad	5.39E-08	-0.302667312	0.043

Dst	5.80E-08	-0.306636818	0.254
Higd2a	5.96E-08	0.173901787	0.294
Nudcd3	6.03E-08	0.125879658	0.069
Arpp19	6.05E-08	0.217686534	0.198
Mvk	6.16E-08	-0.292982753	0.058
Hint1	6.24E-08	-0.224814499	0.352
Col5a2	6.25E-08	-0.369843334	0.081
Usp22	6.34E-08	0.121442665	0.076
Ythdc1	7.09E-08	0.299052953	0.184
Abhd17b	7.10E-08	-0.189758543	0.023
Rnf145	7.14E-08	0.18159211	0.057
Rps26-ps1	7.22E-08	0.187725284	0.121
Cdc37l1	7.32E-08	0.1908498	0.111
Cstb	7.35E-08	-0.321904143	0.134
Sesn1	7.40E-08	0.078531982	0.108
Arhgap5	7.42E-08	0.178635606	0.116
Rbm26	7.44E-08	0.146916182	0.085
Slc31a1	7.53E-08	-0.291057071	0.033
Dmtf1	7.64E-08	0.189796151	0.056
Rab11b	7.65E-08	0.167177807	0.167
Serf2	7.86E-08	0.197514103	0.213
H3f3b	7.97E-08	0.142976969	0.635
Rps16	8.00E-08	0.200269121	0.173
Mertk	8.02E-08	0.155951732	0.058
Arhgap12	8.18E-08	0.138820787	0.075
Abat	8.62E-08	-0.267168256	0.041
Gpx7	8.77E-08	-0.366730125	0.051
Gemin7	8.98E-08	-0.239699605	0.031
Cul3	9.00E-08	0.161661933	0.06
Neu1	9.01E-08	0.130353733	0.06
Celf1	9.18E-08	0.113701138	0.098
B9d1	9.18E-08	-0.293842097	0.036
Ppp1r12a	9.31E-08	0.203927302	0.111
Csnk1d	9.41E-08	0.139210557	0.079
Ctnnbip1	9.62E-08	-0.331720957	0.111
Ndufb10	9.88E-08	-0.281718521	0.26
Rbm39	1.01E-07	0.173625546	0.413
Foxd3	1.02E-07	-0.311758766	0.026
Rpl13	1.04E-07	0.253683129	0.226
Exoc3	1.06E-07	0.13915566	0.135
Rpe	1.06E-07	-0.236248966	0.034
Igsf8	1.06E-07	0.223280007	0.09
Pick1	1.07E-07	0.147026573	0.051

Fam96a	1.08E-07	-0.265817866	0.053
Sdc3	1.10E-07	-0.275900752	0.085
Chchd2	1.12E-07	-0.166758071	0.438
Jmjd6	1.17E-07	0.162968315	0.063
Rcn3	1.25E-07	-0.263434578	0.174
Acadm	1.29E-07	-0.257796789	0.148
Pisd	1.39E-07	0.144527107	0.106
March2	1.43E-07	0.154080505	0.09
Egfl8	1.46E-07	0.182122173	0.427
Rpn1	1.47E-07	-0.298390799	0.118
Syf2	1.53E-07	0.179535751	0.233
Pdcd5	1.53E-07	0.202987786	0.094
Fam58b	1.57E-07	-0.273608623	0.024
Gusb	1.60E-07	-0.246999488	0.03
Pex19	1.61E-07	0.143355997	0.079
Klhdc3	1.66E-07	0.09098189	0.063
Lgi1	1.67E-07	-0.380026035	0.032
Clcn3	1.70E-07	0.150972756	0.181
Ugdh	1.71E-07	-0.259696295	0.029
Tcf12	1.72E-07	-0.255709445	0.039
Copz1	1.74E-07	-0.247406359	0.062
Rpl13a	1.80E-07	-0.138464359	0.585
Mrpl14	1.88E-07	-0.301288151	0.068
Lrp10	1.94E-07	-0.225901599	0.054
Syne2	2.02E-07	0.138797345	0.111
Ptpn1	2.03E-07	0.127331815	0.072
Tox4	2.08E-07	0.136560496	0.078
Ift57	2.15E-07	-0.29059965	0.035
Ddx6	2.16E-07	0.135068014	0.182
Arpc3	2.23E-07	0.174643089	0.155
Rpl37a	2.24E-07	0.167722551	0.197
Safb2	2.25E-07	0.133802988	0.101
Rpl37	2.26E-07	0.164124136	0.142
2410006H16Rik	2.41E-07	0.105899138	0.091
Endod1	2.46E-07	0.101703902	0.131
Bcl7a	2.50E-07	0.112221918	0.051
Mrpl43	2.57E-07	0.108128808	0.14
Dnaja1	2.66E-07	0.173105853	0.262
Fez1	2.74E-07	0.166323029	0.195
Ndufa8	2.74E-07	-0.27667439	0.162
Suv420h1	2.77E-07	0.143139764	0.061
Prrc2c	2.83E-07	0.180602914	0.263
Hsd3b7	2.84E-07	-0.221452805	0.023

Ndufa4	2.88E-07	-0.185841	0.381
Gm12688	3.01E-07	-0.345240855	0.036
Bhlhe40	3.05E-07	-0.358612873	0.029
Lifr	3.11E-07	-0.17949168	0.027
Dap3	3.11E-07	-0.244710576	0.039
Arl8a	3.12E-07	0.116303559	0.146
Leprel2	3.21E-07	-0.265763553	0.023
Hsd17b10	3.42E-07	-0.342393576	0.159
Ifnar2	3.47E-07	-0.334872015	0.079
Appbp2	3.47E-07	0.147403044	0.1
Pdgfa	3.50E-07	-0.06403256	0.146
Shfm1	3.63E-07	-0.282297642	0.238
Trove2	3.64E-07	0.172939532	0.088
Capns1	3.90E-07	-0.265365985	0.296
Leprel4	3.94E-07	-0.2336824	0.036
Hsd17b12	3.99E-07	-0.270803497	0.166
Vamp2	4.11E-07	0.166948142	0.111
Selm	4.23E-07	-0.263435951	0.317
Sc5d	4.41E-07	0.198530009	0.22
Thoc2	4.45E-07	0.140585608	0.126
Gatsl2	4.51E-07	0.144715906	0.051
Mrpl17	4.61E-07	-0.294327332	0.106
Cnot6	4.63E-07	0.138504497	0.078
Pank3	4.63E-07	0.114774443	0.078
Xaf1	4.66E-07	-0.321583828	0.076
Hiat1	4.72E-07	0.146905993	0.082
Top1	4.81E-07	-0.229955212	0.118
Angptl4	4.81E-07	-0.219662084	0.07
Hspa9	4.88E-07	-0.274539262	0.119
Hn1	4.99E-07	-0.288759096	0.083
Hmgn1	5.03E-07	-0.269499386	0.212
Ankrd40	5.06E-07	0.101650912	0.065
Ank2	5.18E-07	0.194289922	0.072
Sar1b	5.21E-07	-0.294823442	0.111
Camta1	5.35E-07	0.205596015	0.087
Pgls	5.45E-07	-0.292291358	0.101
Taf9b	5.48E-07	0.120877836	0.056
Aggf1	5.52E-07	-0.259976893	0.067
Tmem256	5.56E-07	-0.205635174	0.235
Hmgb1	5.72E-07	0.180702781	0.168
Rpl7	5.82E-07	0.15000173	0.364
Apip	5.88E-07	-0.213063206	0.044
Plp1	5.97E-07	0.153385135	0.96

Ptov1	6.00E-07	-0.26855667	0.128
Morn2	6.22E-07	-0.257734292	0.029
Etv1	6.42E-07	-0.279742722	0.028
Bag3	6.61E-07	-0.288889798	0.032
Pxmp2	6.62E-07	-0.256840195	0.027
Ndufv2	6.68E-07	0.164522333	0.321
Ppp2r5e	6.70E-07	-0.29895909	0.045
Lpcat1	6.72E-07	-0.33646327	0.063
Paqr7	6.76E-07	0.071279271	0.081
Kif1b	6.81E-07	-0.22394499	0.272
Atp6ap2	6.82E-07	0.133017785	0.136
Eef1d	6.82E-07	0.121488349	0.28
Taok1	6.84E-07	0.146673389	0.122
Epc1	6.88E-07	0.164255017	0.062
Bach1	6.95E-07	-0.255744386	0.042
Nr1h2	7.03E-07	0.115703844	0.054
Adam17	7.30E-07	-0.253482718	0.044
Atp2c1	7.71E-07	0.090342979	0.074
Tmpo	7.90E-07	0.143416997	0.082
Pigs	7.97E-07	0.125504343	0.053
Cenpb	8.09E-07	0.208619924	0.081
Cdk19	8.69E-07	-0.26133538	0.024
Hnrnpdl	8.85E-07	0.160035619	0.212
Pkm	8.90E-07	-0.272584102	0.204
Dync1i2	9.06E-07	0.128685041	0.306
Antxr2	9.19E-07	-0.356414208	0.025
Aldh3a2	9.23E-07	0.071032739	0.06
Phf20l1	9.45E-07	0.178558589	0.087
Uaca	9.49E-07	-0.32106597	0.165
Prelid1	9.55E-07	0.224735785	0.144
Gramd1b	1.07E-06	-0.204791635	0.063
Pts	1.10E-06	-0.251833259	0.038
Polr2i	1.10E-06	-0.229518602	0.073
Polr2e	1.11E-06	0.144051493	0.16
Klf6	1.11E-06	0.088890991	0.235
Rabgap1	1.15E-06	0.092113541	0.098
Slc35a4	1.17E-06	0.11352036	0.06
Spred1	1.18E-06	-0.308813766	0.03
Pdzd8	1.20E-06	0.187957279	0.056
Tbc1d9b	1.23E-06	0.138440281	0.064
4931406C07Rik	1.27E-06	-0.215581633	0.053
Ppt1	1.29E-06	0.190714409	0.174
Fam212b	1.34E-06	0.173192179	0.102

Carkd	1.36E-06	-0.255827095	0.125
Ddt	1.37E-06	-0.262497691	0.084
Mzt2	1.45E-06	-0.278150803	0.037
Urm1	1.47E-06	0.115413487	0.062
Rexo2	1.47E-06	-0.345300776	0.148
Insig1	1.50E-06	0.161492227	0.176
Sun1	1.50E-06	0.099998446	0.071
Cdc73	1.51E-06	0.103883795	0.051
Hmgxb4	1.53E-06	0.134826507	0.057
Cldn25	1.56E-06	0.19056561	0.246
Rab1b	1.56E-06	0.14714242	0.128
Fdx1	1.59E-06	-0.230906709	0.031
Cdk12	1.62E-06	0.110326863	0.06
Psmb1	1.65E-06	-0.204328865	0.314
P2rx7	1.66E-06	0.143336232	0.069
Sh3d19	1.66E-06	0.13360991	0.162
0610011F06Rik	1.68E-06	-0.225399266	0.05
Txndc17	1.76E-06	-0.297510332	0.174
Mlf2	1.76E-06	0.203317435	0.255
Scg5	1.81E-06	-0.168978012	0.029
Syngr1	1.85E-06	0.203394923	0.168
Tbc1d15	1.85E-06	0.079150972	0.086
Ormdl3	1.88E-06	-0.222986209	0.035
Clip3	1.89E-06	0.080895083	0.118
Atp5d	1.90E-06	-0.204887319	0.369
Pde6d	1.94E-06	0.094107539	0.119
Arl13b	1.95E-06	0.109165442	0.067
Clic4	1.96E-06	-0.242610156	0.208
Rpl18a	2.00E-06	0.232129264	0.222
Dhrs7	2.00E-06	-0.333566085	0.082
Tipin	2.15E-06	-0.231444092	0.029
Fam3c	2.16E-06	-0.235705957	0.045
Mtpn	2.24E-06	0.080246262	0.225
Atp8a1	2.27E-06	0.133131591	0.212
Park7	2.29E-06	-0.257966974	0.241
Fam129b	2.38E-06	0.135745985	0.061
Cox7b	2.39E-06	-0.197063816	0.241
Cgrrf1	2.47E-06	0.134204586	0.09
Car11	2.48E-06	0.13777032	0.063
Poldip3	2.49E-06	0.130308708	0.063
Sppl2a	2.54E-06	0.129368672	0.098
Stx12	2.57E-06	0.161008217	0.125
Ube2r2	2.58E-06	-0.232567337	0.127

Fau	2.67E-06	0.15387059	0.071
Naa38	2.80E-06	0.141427824	0.13
Fam96b	2.85E-06	0.109480517	0.122
Itih5	2.86E-06	0.123044044	0.263
Oraov1	2.92E-06	-0.237884124	0.029
Dalrd3	3.03E-06	-0.205519539	0.03
Afap1l2	3.09E-06	-0.275720581	0.096
Phpt1	3.15E-06	-0.235714452	0.093
Sptssa	3.30E-06	-0.2440135	0.203
Rpl41	3.31E-06	0.163680924	0.385
Txndc15	3.33E-06	-0.287696649	0.09
Ccdc59	3.33E-06	0.136878793	0.163
Cdc42	3.35E-06	0.128304248	0.473
2700089E24Rik	3.36E-06	-0.250952003	0.174
Carhsp1	3.40E-06	-0.170438201	0.027
Snx13	3.47E-06	0.116148089	0.064
Ehd3	3.57E-06	-0.219331061	0.04
Tm7sf3	3.64E-06	0.105158395	0.26
Cdc5l	3.75E-06	0.150831691	0.154
Evi5	3.84E-06	0.149317125	0.193
Rbm25	3.87E-06	0.187214849	0.286
Eci1	3.88E-06	-0.268272872	0.103
Faf2	3.92E-06	-0.247767509	0.053
Diap3	3.96E-06	0.125774119	0.078
Pex5l	3.97E-06	-0.330875593	0.091
Atp5h	3.98E-06	-0.170864633	0.349
Cbr1	4.02E-06	-0.230383889	0.057
Atf4	4.07E-06	0.162310162	0.211
Commd1	4.07E-06	-0.253461705	0.094
Bud31	4.19E-06	-0.264326223	0.097
Itgb8	4.25E-06	-0.267736769	0.153
Grn	4.28E-06	-0.251156898	0.096
P2rx4	4.46E-06	-0.238374328	0.035
Tecr	4.51E-06	-0.180758671	0.419
Rps26	4.57E-06	0.139884083	0.286
Pds5b	4.61E-06	0.107127624	0.078
1110008F13Rik	4.73E-06	-0.267696222	0.08
Rpl32	4.80E-06	-0.182096175	0.422
Ubxn6	4.81E-06	0.128816962	0.121
Sgce	4.81E-06	-0.276566327	0.168
Klf13	4.83E-06	0.160381577	0.141
Rplp1	5.11E-06	0.18240027	0.621
Uqcr11	5.13E-06	-0.197395931	0.231

Ppp1r15a	5.15E-06	0.096894463	0.124
Zdhhc20	5.16E-06	0.10535419	0.06
Plin3	5.16E-06	-0.244146575	0.192
Rbm18	5.31E-06	0.067519242	0.063
Taf1d	5.45E-06	0.188078157	0.056
Bcl2l1	5.45E-06	0.072760456	0.053
Mycbp2	5.52E-06	0.132742632	0.137
Asph	5.95E-06	-0.310014789	0.036
Aurkaip1	6.06E-06	-0.279327286	0.126
Sc4mol	6.18E-06	0.180742626	0.413
Sod1	6.24E-06	-0.22556792	0.2
Hexb	6.24E-06	-0.272151144	0.06
Trappc6b	6.29E-06	0.201533168	0.105
Vrk3	6.35E-06	0.122450649	0.066
Pxn	6.37E-06	0.083277809	0.1
Mocs2	6.39E-06	-0.239787095	0.26
Pja2	6.50E-06	0.052643934	0.217
Tpp1	6.53E-06	-0.27664385	0.085
Dars	6.75E-06	-0.159803966	0.088
Epb4.1l3	6.83E-06	-0.286003905	0.031
Scarb2	6.84E-06	-0.282873434	0.059
2210013O21Rik	6.88E-06	-0.232045518	0.053
Csad	6.88E-06	-0.209555668	0.055
Tsc22d1	7.01E-06	0.119570641	0.057
Cby1	7.30E-06	-0.203248786	0.03
Scap	7.32E-06	0.104716135	0.061
Rps10-ps1	7.36E-06	0.170324676	0.086
Sfxn3	7.40E-06	0.120217933	0.051
Psmd6	7.51E-06	-0.249044049	0.082
Usp1	7.51E-06	0.15579964	0.088
Lztr1	7.52E-06	0.067933957	0.076
Ergic3	7.72E-06	-0.244787364	0.156
Slc44a1	7.94E-06	0.115118057	0.286
Gab1	8.06E-06	0.096470888	0.091
Krcc1	8.08E-06	-0.258866535	0.103
Lxn	8.24E-06	0.046001574	0.086
Serbp1	8.35E-06	-0.176354057	0.307
Tceal8	8.44E-06	-0.282819056	0.128
Rab8b	8.53E-06	0.076018829	0.079
Tmco3	8.61E-06	0.117706581	0.07
Ifitm2	8.66E-06	-0.292185451	0.091
Tab2	8.76E-06	-0.281889949	0.132
H2afj	8.84E-06	0.1825319	0.179

Nedd8	8.86E-06	-0.251772489	0.253
Hsp90ab1	9.05E-06	-0.097737947	0.812
Idh2	9.22E-06	-0.19150614	0.062
Actr3	9.42E-06	0.15803435	0.097
Hnrnpc	9.43E-06	-0.232920302	0.247
Ccdc107	9.45E-06	-0.258641575	0.071
Zdhhc3	9.45E-06	0.115219767	0.1
Tmem14c	9.61E-06	-0.251324814	0.119
Riok3	9.75E-06	0.168793181	0.102
Ndufb7	9.85E-06	-0.206883176	0.211
Cul1	9.88E-06	-0.259053692	0.073
Ap2s1	9.98E-06	-0.23427258	0.134
Agpat5	1.00E-05	-0.209214491	0.051
Srebf2	1.00E-05	0.145373245	0.076
Tmprss5	1.01E-05	-0.29086026	0.07
Ap2a2	1.02E-05	0.054616326	0.056
Lpcat2	1.03E-05	-0.308949381	0.047
Nudt19	1.05E-05	-0.276864682	0.041
Rit1	1.05E-05	-0.288207583	0.056
Tm2d3	1.05E-05	-0.229739459	0.057
Srp9	1.06E-05	-0.207696853	0.11
Mtch1	1.07E-05	-0.234119976	0.14
Cuta	1.09E-05	-0.220749251	0.159
Rdm1	1.10E-05	0.111098995	0.083
Psmb7	1.11E-05	0.172769889	0.076
Capzb	1.11E-05	-0.270689465	0.183
Parva	1.14E-05	0.106362898	0.192
Snhg3	1.15E-05	0.142430577	0.076
Slc41a1	1.16E-05	0.12578203	0.056
Srrt	1.16E-05	-0.267340916	0.073
Srsf7	1.16E-05	0.156160836	0.121
Nf1	1.17E-05	0.153979936	0.087
2410015M20Rik	1.21E-05	-0.214019876	0.133
Slc39a10	1.24E-05	0.107352636	0.059
1110038F14Rik	1.25E-05	-0.183400016	0.047
Zfp644	1.27E-05	0.13212193	0.064
Bdp1	1.28E-05	0.125941935	0.057
Mef2a	1.30E-05	0.107669587	0.068
Ebp	1.30E-05	-0.258962305	0.061
Sec61b	1.31E-05	-0.210039088	0.152
Rarg	1.32E-05	0.108230369	0.078
Lancl1	1.32E-05	0.13838993	0.063
Srd5a3	1.36E-05	0.111433832	0.052

Lama4	1.37E-05	-0.28879482	0.126
Jmy	1.37E-05	0.119025306	0.079
Ate1	1.39E-05	0.13740926	0.062
Tmem55a	1.45E-05	-0.242177875	0.04
Ppp2r1a	1.45E-05	-0.207790225	0.091
Kmt2a	1.49E-05	0.151838475	0.103
Nfib	1.49E-05	0.186901687	0.148
Snrpd1	1.53E-05	-0.330607112	0.087
Gm561	1.55E-05	0.074315979	0.08
Tmem165	1.61E-05	-0.237726778	0.048
Rasgef1c	1.64E-05	-0.417985663	0.031
Sf3a1	1.72E-05	-0.197039813	0.047
Snrpb	1.73E-05	-0.249523622	0.2
Prpf40b	1.74E-05	0.118375299	0.059
2310036O22Rik	1.81E-05	-0.201766093	0.133
Preb	1.82E-05	0.14023576	0.065
P4ha1	1.84E-05	0.135390026	0.162
Hdac1	1.89E-05	-0.220384809	0.071
Vgll4	1.90E-05	0.080620702	0.154
Hist3h2a	1.90E-05	0.114979386	0.124
Zc2hc1a	1.91E-05	0.099644858	0.053
Fkbp4	1.91E-05	-0.227451632	0.122
Gtf3c6	1.93E-05	-0.214093863	0.035
Itgav	1.93E-05	-0.320593705	0.057
Akap8l	1.93E-05	0.141262243	0.104
Pkig	1.96E-05	-0.289177604	0.085
1700123O20Rik	1.97E-05	-0.186031225	0.036
Smek1	1.98E-05	0.087351334	0.06
Naca	1.99E-05	0.121923507	0.238
Polr3gl	1.99E-05	-0.221014689	0.038
Eif5b	2.01E-05	-0.174482423	0.189
Rab14	2.03E-05	-0.203673502	0.257
Scamp5	2.04E-05	0.161318159	0.07
Ilkap	2.04E-05	0.112075314	0.104
Brwd1	2.05E-05	0.172436421	0.057
Dbp	2.07E-05	0.129780371	0.082
Gpd2	2.09E-05	0.164542158	0.094
Kmt2c	2.09E-05	0.185611063	0.096
Lin7c	2.10E-05	0.096687101	0.072
Timm10	2.15E-05	-0.213464382	0.038
Lima1	2.31E-05	-0.258577755	0.045
Ufc1	2.32E-05	-0.246285099	0.115
Acss2	2.33E-05	-0.167451842	0.082

0610031J06Rik	2.36E-05	-0.236924405	0.07
Ctns	2.45E-05	-0.230188263	0.036
Pdzd2	2.46E-05	-0.2509435	0.044
Rab28	2.50E-05	-0.177217073	0.029
Ptges3	2.53E-05	0.135752384	0.158
Zmiz1	2.57E-05	-0.25362347	0.033
Ppap2b	2.58E-05	-0.161510375	0.361
Wnk1	2.67E-05	0.155403679	0.115
Pxmp4	2.70E-05	-0.261918414	0.037
Cox5a	2.72E-05	-0.199288696	0.248
Tmem63b	2.77E-05	0.110676345	0.079
Rps23	2.79E-05	0.162338271	0.066
Mrps28	2.80E-05	-0.221352507	0.105
Mrpl41	2.85E-05	-0.221725443	0.062
Alkbh7	2.85E-05	0.088193249	0.087
Pum2	2.94E-05	0.127549778	0.057
Slc25a10	2.94E-05	0.094856933	0.076
Zbtb7a	3.00E-05	0.12102189	0.109
Mxra7	3.17E-05	0.10335079	0.089
Rpl26	3.19E-05	0.135361537	0.37
Pcna	3.27E-05	0.129398417	0.119
Ybx3	3.29E-05	-0.320456973	0.109
Denr	3.36E-05	0.153776533	0.138
Ubqln1	3.42E-05	0.135370283	0.127
2210016F16Rik	3.46E-05	-0.212827937	0.042
Ift81	3.52E-05	-0.1901861	0.028
Tspan13	3.52E-05	0.072329081	0.115
Erp44	3.53E-05	-0.294899238	0.074
Atp5a1	3.62E-05	-0.204223508	0.308
Ppp1r35	3.68E-05	-0.154598469	0.03
Golim4	3.73E-05	-0.195646965	0.048
Cox6c	3.75E-05	-0.154947655	0.381
Luc7l3	3.84E-05	0.128024204	0.287
Ift74	3.89E-05	-0.241112404	0.055
Selk	4.00E-05	-0.111142406	0.469
Lims1	4.09E-05	-0.25878812	0.096
Prmt5	4.14E-05	0.061475972	0.082
Trappc4	4.14E-05	0.131634457	0.145
Smarca5	4.15E-05	0.152283194	0.107
Rbbp9	4.20E-05	-0.246457465	0.056
Got2	4.22E-05	0.084866028	0.079
Upf3a	4.38E-05	0.174668152	0.124
Vps35	4.40E-05	0.0912104	0.154

Rpsa	4.41E-05	0.163150746	0.089
Itsn2	4.50E-05	0.148933106	0.094
Zwint	4.67E-05	-0.279966587	0.077
l7Rn6	4.67E-05	-0.268499193	0.073
Atp5o	4.68E-05	-0.189958331	0.312
S100a11	4.70E-05	-0.343884109	0.103
Sh3bgrl	4.75E-05	0.147573847	0.191
Ccdc88a	4.77E-05	0.146751239	0.057
Stoml2	4.86E-05	-0.255246765	0.06
Myg1	4.96E-05	-0.217291628	0.031
Arhgef28	5.00E-05	0.104107221	0.06
Lpcat3	5.04E-05	-0.165518307	0.043
Aldh9a1	5.04E-05	-0.25658152	0.121
Mpzl1	5.05E-05	0.219709245	0.112
Gm9843	5.17E-05	0.162419018	0.154
Mrpl16	5.26E-05	-0.197225653	0.03
Ndufb4	5.34E-05	0.115798919	0.11
Tmem19	5.36E-05	0.014755697	0.087
Uqcrh	5.59E-05	-0.147216163	0.312
Enpp5	5.70E-05	-0.281190052	0.067
Rnf41	5.88E-05	0.060706017	0.054
Oxa1l	5.93E-05	-0.166159368	0.053
Rilpl2	5.94E-05	-0.228624124	0.041
Twf1	6.06E-05	-0.226337098	0.083
Jtb	6.09E-05	-0.244621522	0.102
Tax1bp3	6.16E-05	-0.199307014	0.036
Fam168a	6.19E-05	0.097525375	0.161
Zfp664	6.29E-05	0.07855681	0.102
Phc2	6.38E-05	0.103013425	0.059
Gtdc1	6.47E-05	-0.293686197	0.032
Ano6	6.50E-05	0.083224795	0.072
Fgl2	6.66E-05	-0.481950821	0.058
Sigmar1	6.69E-05	0.069087326	0.052
Rnf10	6.77E-05	0.056495615	0.118
Mob2	6.88E-05	0.079067272	0.059
Uba5	6.90E-05	-0.239873466	0.086
Pip4k2c	7.02E-05	0.13330052	0.059
Tsnax	7.11E-05	0.07284185	0.129
1110008P14Rik	7.27E-05	-0.142003729	0.076
Tacc2	7.28E-05	0.070141667	0.113
Hsd17b11	7.34E-05	-0.197877752	0.183
Gamt	7.73E-05	0.128616855	0.216
Erbb2ip	7.96E-05	0.122782809	0.076

Chchd6	8.00E-05	-0.181292515	0.032
D17Wsu104e	8.00E-05	-0.277891615	0.109
Gtf2i	8.00E-05	-0.208358377	0.102
Dpm3	8.06E-05	-0.165816138	0.091
Eif2s2	8.10E-05	0.118156741	0.171
Rbck1	8.15E-05	0.075063567	0.081
Tceb2	8.16E-05	0.159981425	0.329
Ppp1r10	8.18E-05	0.120567953	0.056
Mrpl13	8.24E-05	-0.240466701	0.139
Luc7l	8.35E-05	0.120926251	0.088
Asap1	8.44E-05	0.131431777	0.052
Gclm	8.45E-05	0.102295828	0.102
Cdc26	8.50E-05	-0.21589807	0.038
Emp2	8.50E-05	-0.147667065	0.476
Lsm4	8.70E-05	-0.196409125	0.112
Edem2	8.97E-05	0.072777203	0.054
Zzz3	9.01E-05	0.038590768	0.063
Tex264	9.15E-05	-0.241099364	0.116
Psma1	9.40E-05	-0.22475248	0.131
Tsc22d4	9.41E-05	0.111753557	0.683
Colgalt1	9.42E-05	0.076701121	0.062
Serinc3	9.45E-05	-0.259100927	0.139
Ndufa1	9.52E-05	-0.193020867	0.128
Nhp2	9.95E-05	-0.191351233	0.046
Slc35a5	9.96E-05	0.130666279	0.068
Tia1	0.000101937	0.099397564	0.088
4933434E20Rik	0.000102416	0.10012495	0.084
Bex2	0.000103082	-0.176954523	0.044
Brd7	0.000103735	0.067461945	0.08
Ptma	0.000103767	0.148509761	0.151
Cpne3	0.000104584	-0.190787074	0.112
Txndc12	0.000104758	-0.282655897	0.065
Sema3g	0.000105026	0.105760042	0.051
Thy1	0.000108035	-0.227463089	0.038
Psmb3	0.000108183	-0.225931767	0.162
3830406C13Rik	0.000108684	0.044477384	0.07
Hypk	0.000110185	0.073977454	0.102
Cnih4	0.000110308	0.082514927	0.128
Rnf20	0.000111092	0.120299485	0.09
Emc8	0.000111461	-0.231684844	0.065
Tmem41b	0.000111989	0.113412999	0.066
Rpl29	0.000112884	0.158285662	0.159
Adrm1	0.000115261	0.093387628	0.106

Degs1	0.000117464	0.135130094	0.241
Snapc5	0.00011976	-0.223050372	0.093
Dnajb11	0.000120972	-0.22195983	0.085
Cct3	0.000121274	-0.211903809	0.115
1810009A15Rik	0.000121316	-0.154592355	0.068
Fis1	0.000121786	-0.168673764	0.277
Bcap29	0.000125291	0.058474308	0.073
Ivd	0.00012761	0.103473441	0.075
Mrps16	0.000129796	-0.220826582	0.075
Mta2	0.000131462	0.063736195	0.057
Thrap3	0.000134042	0.07817815	0.134
Gm10076	0.000136512	0.189743928	0.157
Fdft1	0.000137684	0.181232629	0.227
Dnaja2	0.000138899	-0.203360889	0.115
Kif3a	0.000141348	0.131215949	0.146
Decr1	0.000141836	-0.190909212	0.048
Eif4g2	0.000143449	-0.219143234	0.219
Rsrc2	0.000144579	0.108649282	0.183
Vegfb	0.000146291	-0.149182521	0.032
Pafah1b1	0.000146322	0.069626003	0.22
Dnajb12	0.000147828	0.170427608	0.115
Il10rb	0.000148322	0.027382851	0.099
Cdv3	0.000149971	0.096340227	0.062
Fam216a	0.000150822	-0.199931318	0.031
Fip1l1	0.000150962	0.118096457	0.097
Col5a1	0.000150971	0.00081344	0.052
Fam162a	0.000153488	-0.264360099	0.09
Becn1	0.000154103	-0.24441312	0.087
Stat1	0.000157122	-0.260339588	0.078
Sdccag3	0.000162623	0.059503485	0.07
Ube3a	0.00016291	0.093501091	0.095
Dnajb9	0.00016673	-0.226103279	0.044
Metap1d	0.000168473	0.114124121	0.086
Bcl7b	0.000170034	0.070610442	0.087
Med19	0.000170059	-0.213990235	0.073
Nsmf	0.000173833	0.114722446	0.072
Nubp2	0.000179569	-0.214219392	0.032
Ube2f	0.000184369	0.026067217	0.06
Cyth3	0.00018559	-0.181752252	0.039
Arpc2	0.00018619	0.094627215	0.416
Atraid	0.000190355	-0.224667639	0.214
Tor1aip1	0.000195834	-0.241816903	0.078
Frmd8	0.000204056	0.061919066	0.078

Spns1	0.000205405	0.100846456	0.058
Trp53	0.000207246	-0.230711318	0.047
Rala	0.000207391	0.103877291	0.177
Opa1	0.000208564	0.064936866	0.053
Spire1	0.000209185	0.087470081	0.07
Rpl35a	0.000209706	0.190578896	0.198
Casp8ap2	0.000211792	0.09438952	0.051
Alg5	0.000213052	-0.171627549	0.036
Ginm1	0.000213831	-0.237389719	0.088
Arhgap39	0.000214747	0.13752952	0.06
Yme1l1	0.000214798	0.123063829	0.084
Thap3	0.000216704	0.105697234	0.062
Arf1	0.000218781	-0.199416965	0.189
1500011K16Rik	0.000220709	-0.209261621	0.122
Aga	0.000227811	0.07211474	0.082
Cox7c	0.000228816	0.209662089	0.155
Sec14l1	0.000230237	0.140978307	0.082
Hspe1	0.000233907	-0.196537013	0.173
Fam134b	0.000234059	-0.229050365	0.195
Pcbd2	0.000242793	-0.197195054	0.039
Sarnp	0.000247792	-0.20813896	0.08
Ap4s1	0.000253057	0.082347356	0.102
Dync1li2	0.000256364	0.142011762	0.13
Med31	0.000257798	-0.177357069	0.06
Zkscan3	0.00025998	0.127352594	0.085
Gm16286	0.000261774	0.12287665	0.066
Iws1	0.000267673	0.055121725	0.066
Wipi2	0.000273683	0.049431108	0.059
Ier2	0.000273705	0.064842076	0.066
Pak1ip1	0.000275501	-0.222220657	0.088
Farsb	0.000277035	0.076666421	0.052
Tsen34	0.000279646	-0.203514394	0.129
Pcm1	0.000282188	0.175262215	0.139
Srp19	0.000283968	0.050060268	0.154
Cnot2	0.000286134	0.088420415	0.077
Tfg	0.000288933	0.052246591	0.099
Derl2	0.000291737	-0.19647207	0.046
Mettl23	0.000295117	0.10043228	0.099
Scpep1	0.000297028	-0.222957093	0.043
Ssu72	0.000306366	-0.155039787	0.098
Msl1	0.000313492	0.065105441	0.094
Atp5j	0.000314201	-0.144979372	0.359
Mrps34	0.000318778	-0.223628456	0.064

Uqcrq	0.00031932	-0.156771953	0.286
Dennd5a	0.000323845	-0.221449702	0.046
Ccndbp1	0.000340241	0.105199841	0.08
Dync1h1	0.000340578	0.103379432	0.084
U2surp	0.000344304	0.143789826	0.143
Vps28	0.000344785	0.117479466	0.216
Ppp1r15b	0.000345462	0.079460583	0.066
Nxt2	0.00034559	0.041547075	0.07
Ptpn11	0.000350744	0.134134434	0.119
Mrpl48	0.000360613	-0.215652031	0.087
Tln1	0.00036332	0.047200368	0.164
Rps15a	0.000363604	0.109269173	0.312
Gpi1	0.000365285	-0.126264355	0.091
Smim15	0.000366011	-0.189170487	0.086
Scnm1	0.000366186	0.07214308	0.084
Spcs3	0.000368328	0.150672817	0.06
Actr1a	0.000370351	0.075046836	0.103
Sirpa	0.000370636	0.07482717	0.062
Mpp5	0.000371471	0.07438456	0.075
Mrpl33	0.000373026	0.085644141	0.167
Zfp91	0.000379552	0.063328192	0.227
Maged1	0.000383499	-0.191635673	0.184
Etfa	0.000386015	-0.211567284	0.132
Ide	0.00038853	-0.197764651	0.045
Hnrnpu	0.000390057	0.078938	0.369
Smarcc1	0.000393943	0.141199428	0.083
Cacybp	0.000395529	-0.242089205	0.138
Sspn	0.000397714	-0.25270096	0.054
Exosc4	0.000399579	-0.201818413	0.036
1110059G10Rik	0.000403708	-0.202421591	0.033
Ap3m1	0.000409271	-0.262611945	0.046
Ssfa2	0.000412124	0.060225881	0.12
Scrn1	0.000415141	0.047012377	0.099
Dnajb6	0.000416841	0.135807228	0.079
Sptan1	0.000416955	0.076829277	0.121
Fubp3	0.000419225	0.139619135	0.06
Eea1	0.000424068	0.081349898	0.072
2610001J05Rik	0.00043462	-0.265834119	0.121
Rps3a1	0.000440601	0.087548454	0.407
Tpgs2	0.000444235	-0.17387833	0.032
Sdhaf2	0.00044821	-0.132833196	0.032
Lonp2	0.000450529	-0.196983871	0.063
Mrpl4	0.000453446	-0.179866966	0.053

Med21	0.00045362	-0.17198124	0.09
Hmgn2	0.000454264	0.147157736	0.084
Parp3	0.000455972	-0.260021618	0.044
Pam	0.00046054	-0.209274456	0.145
As3mt	0.000460699	-0.208577929	0.045
Snapin	0.000470424	0.083265826	0.144
Sgcb	0.000481498	0.063728807	0.203
Acat2	0.000482638	-0.176532982	0.054
Lrrc58	0.000493096	0.07142686	0.162
Gm26924	0.000495893	-0.200303555	0.107
Ndufa2	0.000498687	-0.140664593	0.231
Arhgap17	0.000503735	0.057065866	0.052
Ptprs	0.000506966	0.134432322	0.087
Adss	0.000519997	0.060082804	0.052
Cfdp1	0.000522303	-0.217585366	0.124
Ankrd46	0.000523959	0.002912643	0.103
Thoc7	0.000526871	-0.230251742	0.08
Hspa8	0.000534227	0.116185853	0.31
Zmynd11	0.000534692	-0.214636186	0.165
Anxa6	0.000536914	-0.219580659	0.097
Rogdi	0.000544282	0.14495346	0.057
N6amt1	0.000551216	-0.205920075	0.041
Ip6k1	0.00055983	0.025887686	0.103
Klhl9	0.000565352	-0.20668383	0.043
Tpst1	0.000570354	0.018832007	0.064
Ube2e3	0.000571997	0.097836427	0.152
Phf14	0.00058909	0.087522858	0.079
A830082K12Rik	0.000589327	-0.16791366	0.033
Limd1	0.000600727	-0.23690147	0.039
Tmco1	0.000601607	-0.241398203	0.137
Klc1	0.00060383	0.031537882	0.231
Npc2	0.000610713	0.083749375	0.383
Psmd12	0.000625011	-0.195765386	0.096
Emg1	0.000625166	-0.18395927	0.061
Prdx3	0.000629321	-0.172244269	0.049
Tprgl	0.000629968	0.067792315	0.23
Rps19	0.000643925	0.147549725	0.313
Meaf6	0.000646251	0.122757249	0.053
Gapvd1	0.00065419	0.083614043	0.065
Prkcsh	0.000665868	-0.180587417	0.068
Sox2ot	0.000688375	0.122018749	0.109
Fcgrt	0.000689788	0.093964673	0.157
Ndufb5	0.000695471	-0.172203612	0.2

Atp6v0e2	0.00069955	0.094282384	0.196
Psma6	0.000707706	-0.222782685	0.179
Usp34	0.000709	0.083779278	0.076
Dnpep	0.000724195	-0.175428418	0.054
Rdx	0.000726374	0.069644103	0.242
Rpl5	0.000729962	0.051992992	0.059
Ckap5	0.000731851	-0.16972552	0.065
2510003E04Rik	0.000745206	0.09410354	0.094
Dnajc9	0.000745499	-0.168113677	0.062
Brd2	0.000747927	0.063082353	0.155
Wac	0.000772641	0.104855989	0.075
Pdha1	0.000775394	-0.204736815	0.119
Mrps33	0.000779657	0.189047974	0.103
Chadl	0.000783366	-0.179380344	0.042
Smim11	0.000786683	-0.20918085	0.103
Prpf19	0.000793818	-0.222183667	0.081
Sra1	0.000801943	-0.222177011	0.082
Myl12b	0.000820994	-0.201452166	0.234
Kdm5a	0.000825621	0.038255865	0.091
Syt4	0.000825991	-0.326295295	0.035
Ddx3x	0.000828584	0.102011345	0.165
Ahi1	0.00084155	0.01379309	0.108
Ddost	0.00084674	-0.195333394	0.136
Polr2d	0.000859727	-0.200579202	0.048
Rpl6	0.000867531	0.086767335	0.256
Ddhd1	0.00087229	-0.19552681	0.054
Pepd	0.000875598	-0.157087673	0.044
Ndufa5	0.000887519	0.110796205	0.214
Srp14	0.000890617	0.088048766	0.338
Ncbp2	0.000901315	-0.248004275	0.074
Vapa	0.000910811	-0.19008694	0.207
Apopt1	0.000924929	0.115031995	0.082
Nde1	0.000931268	0.073984556	0.096
Polr2b	0.000941495	-0.161200365	0.032
Prph	0.000956867	-0.193908669	0.108
D8Ertd738e	0.000970347	-0.192300658	0.225
Cdk5rap3	0.000974959	-0.242582504	0.034
Rab1	0.000989526	-0.169098835	0.169
Pak2	0.000994576	0.070016991	0.165
Plxnb3	0.001023372	0.129538329	0.058
Tomm22	0.001026652	-0.186133595	0.129
Egln1	0.001028365	0.030423358	0.054
Rnf5	0.001037203	0.114442873	0.259

Agap1	0.001071806	-0.231962795	0.042
Mettl9	0.001081197	-0.245591541	0.139
Rhbdf1	0.001100166	-0.224565746	0.047
Prorsd1	0.001100313	-0.1381625	0.037
Rpl23	0.001106428	0.154622896	0.222
Atp6v1g1	0.001115795	-0.202239158	0.22
Golga2	0.00112225	0.032249777	0.058
Fam114a2	0.001122833	0.055289107	0.075
Vezf1	0.001123201	-0.225229206	0.106
Aes	0.001129252	-0.180674279	0.086
Mbtps1	0.001154012	0.050342204	0.056
Napa	0.001171466	-0.157299431	0.099
Mrpl45	0.001178179	-0.130946695	0.039
Ywhae	0.001180294	0.120775212	0.364
Agrn	0.001181145	0.057217712	0.07
Huwe1	0.001183923	0.073054827	0.059
Psmc5	0.00121009	0.129398977	0.168
Surf4	0.001236894	-0.223377098	0.076
Dnajc24	0.001246485	-0.191076616	0.041
Smc1a	0.001279249	-0.202420549	0.137
Cpsf7	0.001285972	0.092402131	0.063
Chchd3	0.001286803	-0.231773071	0.114
Btd	0.001306243	-0.194726767	0.05
P4hb	0.001330895	-0.237887142	0.214
Atp5f1	0.00133455	-0.162464626	0.302
Anln	0.001338315	-0.193114382	0.042
Mrps25	0.001338817	-0.220206545	0.065
Zranb1	0.001350661	0.030852605	0.057
Chtop	0.00135861	0.097357316	0.106
Eny2	0.001362893	-0.163700624	0.078
Tanc2	0.001364867	0.094845525	0.051
Calu	0.001383591	-0.236519381	0.111
Arhgef10	0.001392489	-0.003548389	0.125
Tceal1	0.001400727	-0.172737277	0.033
Snhg11	0.00141588	-0.195049698	0.035
Arpc4	0.00143997	-0.160343979	0.085
Dhx9	0.001447885	-0.181481707	0.049
Chpt1	0.001448354	0.14689635	0.158
Arhgdia	0.001465319	0.055182599	0.24
Rps6kb1	0.001473963	0.102574453	0.069
Spr	0.001490928	-0.109190306	0.046
Ppp2r2d	0.001492074	0.057861546	0.059
Map4k4	0.001492592	0.102546376	0.178

Slc25a51	0.001493254	0.10106367	0.073
Alkbh5	0.001500527	0.070260963	0.068
Wars	0.001501871	0.079634429	0.057
Akr1a1	0.0015138	-0.157997553	0.339
Prex2	0.00152643	-0.331544072	0.058
Mrps17	0.001537387	-0.174547787	0.077
Med28	0.00154013	-0.209307472	0.173
Ccdc127	0.001544293	-0.178385532	0.048
Ndufa7	0.001554291	-0.171301679	0.25
Eif3b	0.001591949	0.105834294	0.075
Vdac1	0.001607674	-0.189267402	0.115
Cwc27	0.001640627	0.076259761	0.054
Timm13	0.001650149	-0.187667829	0.221
Pomp	0.001660219	-0.191273013	0.195
Rad21	0.001667089	0.061712458	0.178
Atp5g1	0.001715097	0.144403061	0.14
Bet1l	0.001719837	0.041863593	0.076
Tm2d2	0.00172133	-0.247471873	0.136
Ccdc47	0.001729517	0.084327419	0.186
Setd3	0.00175568	0.035924966	0.092
Pigp	0.001763892	0.07965053	0.151
Usp16	0.001789053	0.062053295	0.098
Arhgef12	0.001799087	0.040285804	0.085
Nelfb	0.001803654	-0.167916864	0.044
Ndufb3	0.001814671	-0.134049986	0.173
Srek1	0.001816609	0.119719844	0.075
Rbbp7	0.001821112	-0.224925531	0.127
Usf2	0.001842644	0.094339262	0.095
Smc3	0.001852867	-0.233257275	0.154
Acp1	0.001859558	0.140764844	0.071
Oxr1	0.00187465	-0.183641242	0.058
Fam115a	0.001895177	-0.212596606	0.081
Mrpl40	0.00189577	-0.207393008	0.07
Rdh5	0.001905206	0.214602538	0.179
Crip2	0.001949862	0.082201804	0.472
Nub1	0.001951543	0.006373973	0.073
Prmt1	0.00197155	0.055572358	0.073
Tsen15	0.00198551	-0.09440396	0.036
Tmem55b	0.002029629	0.080882811	0.092
Nucb1	0.002035953	-0.234937106	0.082
Eef1b2	0.002065265	-0.142887018	0.225
Slc33a1	0.002077822	0.089473113	0.055
Mrpl3	0.002082957	-0.178194757	0.051

Ndufb11	0.002084386	-0.143158218	0.258
Trappc1	0.00209123	-0.204457827	0.067
Smox	0.002099921	0.116048972	0.183
Syncrip	0.002134365	0.112537609	0.086
Stat3	0.002151902	-0.214530108	0.048
Slc25a5	0.002160955	-0.143906074	0.266
Appl1	0.002162075	0.05163005	0.077
Mrps23	0.002193077	-0.140028192	0.044
Vapb	0.002201224	0.055084686	0.103
Lman1	0.00220973	-0.249732934	0.109
Txn2	0.002216838	-0.158800157	0.088
Copg1	0.002217336	-0.131223623	0.038
Dnajc21	0.002306617	0.051697518	0.068
Nfyb	0.002308813	0.052617468	0.057
Nudcd2	0.002321874	0.08960658	0.082
Pigk	0.0023278	0.093655378	0.078
Tbrg1	0.002385774	-0.242463038	0.085
Cln5	0.002391731	0.050072902	0.053
Higd1a	0.002423174	-0.13531431	0.062
Itpa	0.002433726	-0.207200785	0.058
Ralb	0.002454564	-0.125256659	0.042
Cdkn2d	0.002489692	0.022497516	0.081
Tmed2	0.002490549	0.119306784	0.114
mt-Nd6	0.002524027	-0.18025962	0.072
Psma5	0.002529081	-0.167319755	0.14
Mpc1	0.002577043	0.103060254	0.094
Nr3c1	0.002589422	-0.056313605	0.17
Syn3	0.002590694	-0.180941532	0.158
Bag6	0.002596483	0.057830009	0.069
Nipa1	0.00260066	0.113143305	0.054
Oaz2	0.002605411	-0.142397613	0.062
Psmc4	0.002619279	-0.196180878	0.103
Znhit1	0.002629933	0.055875762	0.073
Nenf	0.002664074	-0.189767941	0.255
Trio	0.002664612	0.11132076	0.073
4632419I22Rik	0.002672357	-0.180588439	0.035
Ndufa11	0.002685036	-0.126955263	0.217
Copb2	0.00271146	-0.178183156	0.081
Tnks2	0.002716786	0.094006549	0.054
Tmem160	0.002779431	-0.214646233	0.127
Ctcf	0.0027856	0.119522717	0.14
Crebrf	0.002801572	0.078211622	0.057
Akap11	0.002827188	0.01929215	0.063

Erlec1	0.00292748	-0.141737609	0.067
Ndrg4	0.002946098	-0.16352156	0.075
Qdpr	0.002994545	-0.194984246	0.108
Med30	0.003038249	0.07719271	0.106
Lsm1	0.003063864	-0.24246393	0.057
Ddx39b	0.003134399	0.034230518	0.126
Mnat1	0.003136323	0.021057989	0.059
Sdf4	0.003149309	-0.146225206	0.219
Pitpnb	0.003200911	0.139961162	0.091
Timm21	0.003225567	0.041511451	0.057
Dynlrb1	0.003232777	0.036722836	0.402
Cirbp	0.003233378	0.012484671	0.093
Stx8	0.003257397	-0.162231903	0.063
Arl2bp	0.003263628	0.076553156	0.118
Nsmce2	0.003269318	-0.131945786	0.051
Gatc	0.003291877	0.057805529	0.065
Pex2	0.00329362	-0.225589862	0.08
Hmg20b	0.003297232	0.125740195	0.159
Fbxo6	0.003343905	0.004185744	0.054
Aasdhppt	0.003372879	0.122450933	0.06
Kdelr1	0.00338019	-0.186998473	0.078
Slc27a1	0.003387406	-0.158186109	0.139
Rbmx	0.003429456	-0.138724896	0.048
Bfar	0.003465641	-0.186144444	0.052
Tmem106b	0.003470057	-0.022907435	0.111
Dirc2	0.003482039	-0.220802902	0.056
Rpl31	0.003548176	0.075839842	0.057
Dda1	0.003554449	0.060768442	0.094
Hadhb	0.003562603	0.137023686	0.106
Flot1	0.003585754	0.036301913	0.136
Gins4	0.003588411	0.024560644	0.056
Ncln	0.003616652	0.065366962	0.054
Aldh7a1	0.003668757	-0.198485366	0.072
Dcps	0.003681415	-0.155724177	0.035
Fmr1	0.00368942	0.125813689	0.078
Smc4	0.003690235	0.05154913	0.085
Hsp90aa1	0.003705274	0.119389964	0.314
Wapal	0.003710877	0.123917003	0.063
Zfp397	0.003756468	-0.113261133	0.046
Zbtb4	0.003783646	-0.198403951	0.04
Fmnl2	0.003784223	0.097143539	0.178
Wash	0.003822865	0.063043727	0.065
Fam103a1	0.003836904	0.030774742	0.074

Mrps31	0.003924089	0.052909667	0.062
Ndufb8	0.003972839	-0.132823906	0.268
Fam92a	0.003998243	-0.125998669	0.059
Add1	0.004009339	0.060403031	0.154
Zfp608	0.004035078	0.111023308	0.078
Agtrap	0.004044912	-0.144933936	0.043
Diablo	0.004119395	-0.156966129	0.101
Plgrkt	0.004124939	-0.190327091	0.053
2010111I01Rik	0.004126245	0.142358291	0.105
Htatsf1	0.004179038	-0.170644181	0.134
Paqr6	0.004219228	-0.162703845	0.214
Rcn1	0.004222815	-0.168533995	0.19
Aamdc	0.004223576	-0.203270815	0.092
Copb1	0.004270022	-0.165851699	0.099
Rpl11	0.004279898	0.111027592	0.068
Pik3r1	0.004315789	-0.22443922	0.165
BC056474	0.004320879	0.099702936	0.063
Tusc3	0.004326044	0.051142874	0.119
Stip1	0.004331313	-0.131775056	0.09
Larp7	0.004332608	0.04991257	0.091
Bola2	0.004386294	0.07384416	0.097
1110057K04Rik	0.004436895	0.018244018	0.07
Gadd45gip1	0.004448708	-0.178469086	0.06
Ppp3cb	0.004471985	0.045929354	0.065
Lman2	0.004481394	-0.219453136	0.057
Tom1l2	0.004507368	0.120960727	0.053
Ccdc90b	0.004508801	-0.232545072	0.066
Dstn	0.004520056	-0.223942995	0.152
Kif2a	0.004534332	0.047030709	0.065
Kdelr2	0.004559601	-0.216308932	0.088
Anapc11	0.004568066	0.080396625	0.244
Smarcd1	0.004637948	0.06334405	0.056
Fam63b	0.004639111	0.141955176	0.083
Eef1a1	0.004639211	0.074318983	0.647
Fam192a	0.004662907	-0.159539442	0.062
Tmem5	0.004676063	-0.193900066	0.066
Mrps12	0.004676338	0.078040923	0.148
Elf2	0.004680135	-0.191531826	0.041
Uchl5	0.004725144	0.05499938	0.069
Sod2	0.004728252	-0.19773875	0.134
Sumo3	0.004748002	-0.138923334	0.075
Fam3a	0.004767344	0.027481848	0.067
Tmem59	0.004851539	-0.128801617	0.375

Tomm20	0.004868164	0.049315061	0.084
Safb	0.004876896	0.000165638	0.133
Ngrn	0.004886033	-0.115128717	0.04
Cct2	0.004922641	0.000153331	0.143
Eri3	0.004927802	0.034592193	0.054
Uqcrc1	0.004934273	-0.169175336	0.158
Dpysl2	0.004984429	-0.004288489	0.144
Xbp1	0.00501237	-0.208456897	0.088
Rab2b	0.005013301	0.046773502	0.058
Dtnbp1	0.005028014	0.056706518	0.051
Uqcrfs1	0.005041345	-0.117616933	0.148
Mprip	0.005064375	0.035829699	0.107
Ptdss1	0.005073722	0.103279278	0.084
Trim35	0.005077379	-0.177068474	0.042
Rheb	0.005088653	0.056022405	0.211
Stambp	0.005095654	0.037302192	0.06
Ptpn13	0.005131478	-0.149635466	0.056
Golph3	0.005222846	0.077365042	0.097
Ikzf5	0.005261087	0.052573803	0.051
Rer1	0.005267916	0.083649618	0.232
Cox19	0.005320479	-0.102195524	0.039
Mboat7	0.005325117	0.06883621	0.059
Brk1	0.005366205	-0.165292505	0.249
Rps7	0.005411125	0.133891769	0.153
Pex7	0.005420629	0.039524931	0.053
Hnrnpul1	0.005449483	0.084934635	0.063
Glrx3	0.005483777	0.037493371	0.111
Smpd2	0.005634776	-0.07406025	0.052
Hectd1	0.005640873	0.027899245	0.076
Fam198b	0.005644083	-0.15141498	0.091
Setd5	0.005671825	0.069195921	0.069
Atp6v1c1	0.005716987	0.107858421	0.087
Hagh	0.005764854	0.051791001	0.099
Chchd7	0.005805851	0.049045638	0.104
Grina	0.005847222	0.112741827	0.167
Actr1b	0.005886981	0.110678037	0.053
Asb8	0.00590984	0.07711687	0.063
Vps4b	0.006024675	0.063797147	0.084
Wbp4	0.006053668	0.113873543	0.141
Ei24	0.006076623	-0.135502272	0.055
Spcs1	0.006155644	-0.123889147	0.354
Vta1	0.006228779	0.060254562	0.111
Chka	0.006526993	-0.129739735	0.039

Aamp	0.006594654	0.117480944	0.137
Cebpz	0.006685687	0.082644857	0.076
Rpl34	0.006711138	0.109600833	0.246
Nudt2	0.006737485	-0.154049233	0.06
Dmd	0.006761521	-0.19053545	0.162
Ppp3r1	0.006787075	0.08120229	0.079
Nras	0.00683014	0.018775935	0.07
Rabl5	0.00691881	-0.111772599	0.051
Rb1cc1	0.006975867	0.053055142	0.102
Vps29	0.007115416	0.048413852	0.173
Zcchc24	0.007167531	-0.139068534	0.087
H3f3a	0.007176729	-0.119272812	0.156
Fam98b	0.007302908	-0.10373491	0.048
Ebpl	0.007327719	-0.1203186	0.04
Rsu1	0.007383658	-0.196909562	0.213
Bmpr1a	0.007416035	-0.164947057	0.048
Ppm1a	0.007470037	0.109989944	0.06
Glg1	0.007471153	0.028952783	0.136
Eif3k	0.007548675	-0.176997692	0.217
Tpm4	0.007651665	-0.212176984	0.136
Ccny	0.007680479	0.057296376	0.053
Romo1	0.007742643	-0.119387713	0.126
Uba2	0.007790093	0.06028724	0.093
Ppp4c	0.00784445	-0.213999065	0.07
Tmed9	0.008049317	-0.175792362	0.157
Gcsh	0.008050798	-0.138352046	0.063
Mafg	0.008115649	0.044095829	0.064
Ywhaz	0.008166235	0.052898704	0.302
Stard3	0.008190345	-0.112094938	0.071
Tcf25	0.00820285	0.062897209	0.269
Mrpl28	0.008240675	-0.181480958	0.096
Snrpd3	0.008251056	-0.212409094	0.177
Armcx1	0.008293638	-0.19192213	0.042
Schip1	0.008358475	0.027622421	0.147
Arpc5l	0.008427231	-0.184119913	0.103
Ggact	0.008443614	-0.140948589	0.036
Sntb2	0.008517546	0.06307678	0.054
Timm17a	0.008524272	-0.001940957	0.116
Pou3f2	0.00859109	-0.077221914	0.05
Slc39a1	0.008597706	-0.132460157	0.057
Tial1	0.008625801	0.050723198	0.096
Usp48	0.008700566	0.04653277	0.064
Pcmt1	0.008703478	0.023619419	0.177

Rps9	0.008760024	-0.103579749	0.597
Gnai2	0.008801465	-0.14806597	0.21
Map1b	0.008840395	-0.083208431	0.351
Stub1	0.008843479	-0.187849202	0.133
Arl6ip5	0.008848906	0.073216494	0.069
Os9	0.008884412	-0.21557467	0.152
Aldoa	0.008899692	0.061109786	0.437
Gyg	0.008935555	-0.174586244	0.036
Dram2	0.009007711	0.049571947	0.06
Ergic2	0.009033045	0.078946894	0.079
Mrpl35	0.009059754	-0.180363848	0.039
Mvb12a	0.009156216	-0.15925788	0.039
1110065P20Rik	0.009169228	0.044789838	0.097
Acp2	0.00924796	0.044934898	0.077
Cs	0.009287425	-0.18060901	0.119
Med10	0.009298111	-0.163669003	0.047
Snrpd2	0.009330568	-0.143134422	0.141
Csrp1	0.009372589	-0.024520523	0.11
Myo18a	0.009394052	-0.171391742	0.054
Lsm3	0.009480851	0.050552324	0.096
Trip11	0.009553519	0.078773416	0.075
Ccnl2	0.009609141	0.075301989	0.084
Uqcrb	0.009891839	-0.153404069	0.177
Map1lc3b	0.009926651	0.034917761	0.291
Ppfibp1	0.009958137	-0.141855654	0.057
Ier3ip1	0.010228079	-0.185250287	0.08
Pcbp1	0.010237913	-0.184119583	0.247
Rab8a	0.010437738	-0.252474444	0.056
Mau2	0.010520117	0.061729561	0.051
Hp1bp3	0.01058049	0.015856634	0.243
Mdh2	0.010615398	0.043038305	0.272
Cdk7	0.010781585	0.02923281	0.051
Clpp	0.01083848	-0.132752246	0.082
Ten1	0.010845129	-0.132243902	0.071
Ndufs2	0.010889651	-0.161373858	0.141
Raly	0.011023165	-0.205933888	0.065
Cyp51	0.011037865	-0.087214221	0.208
Hnrnpf	0.011145776	0.083209941	0.107
Nop10	0.011336426	-0.149302231	0.147
Hsd17b4	0.011426356	-0.199823645	0.091
Ccdc32	0.011537048	-0.129475935	0.038
Psma4	0.011614691	-0.180677519	0.169
Tpi1	0.01162494	-0.15467279	0.231

Rpl36al	0.01162833	-0.121978934	0.127
Apbb1	0.011720335	0.00842545	0.065
Zmym5	0.01175309	0.068526155	0.077
Ppp2r3a	0.011756574	-0.140257059	0.055
Emc2	0.011776944	-0.191609642	0.105
Dpm2	0.011790222	0.025489319	0.109
Srsf11	0.011815111	0.050534093	0.197
Tppp3	0.01184161	0.03844026	0.367
Srsf1	0.011884092	0.108097772	0.057
Cdk2ap2	0.011888618	0.085962194	0.214
Slk	0.011893385	0.111093587	0.078
Eid1	0.011914645	0.067457384	0.293
Zranb2	0.012009523	0.113847776	0.134
Ebna1bp2	0.012072852	-0.164990032	0.088
Zfp326	0.01208044	0.12470211	0.1
Csde1	0.012087936	0.044662708	0.169
Gdi2	0.012116067	-0.182910008	0.182
Fbxl15	0.012140284	0.039250763	0.066
Cat	0.012277463	0.079211076	0.202
Tpst2	0.012293776	0.065384795	0.057
Mif4gd	0.012339001	-0.148650417	0.051
Col4a3bp	0.012403192	0.104309882	0.053
Vbp1	0.012423411	0.075488233	0.112
Cd99l2	0.012459728	0.001488099	0.131
Emc4	0.012662869	-0.140739587	0.088
Ncor1	0.0128865	0.100179264	0.152
Mgea5	0.012968276	0.068938107	0.054
Ankrd26	0.013106829	0.02729707	0.053
Psmb6	0.013248711	-0.123066186	0.293
Efcab14	0.013265624	0.04312927	0.072
Tmem242	0.013358274	0.044025551	0.112
Bcap31	0.013597122	-0.167531724	0.229
Npm1	0.013851574	0.082610547	0.228
5830428H23Rik	0.013907487	0.023591234	0.062
Eif4b	0.013935999	0.035708661	0.071
Chchd1	0.014033778	-0.228313888	0.109
Acox1	0.014137431	-0.188178482	0.054
Ctnnd1	0.014296748	-0.030323285	0.072
Timm22	0.014361702	-0.138754291	0.049
Thoc3	0.014519081	0.024079354	0.053
Rp9	0.014665462	-0.213970306	0.099
Slc25a11	0.014666644	-0.183013676	0.075
9530068E07Rik	0.014793317	-0.202409659	0.18

Pacsin3	0.014922159	0.023857313	0.073
Tmed7	0.01495117	0.084684471	0.093
Ndufs5	0.015087345	0.122596672	0.115
1110001J03Rik	0.015115892	-0.15847951	0.133
Ccs	0.015217547	-0.159542715	0.073
Fndc4	0.015316593	-0.102460468	0.046
Amfr	0.015332156	0.024843658	0.079
Luc7l2	0.015540051	0.039457599	0.167
Bod1	0.015548622	-0.114731888	0.043
Suclg1	0.015554094	-0.12673185	0.119
Mtdh	0.015602139	-0.113399412	0.28
Creg1	0.015658433	-0.169830919	0.102
Pum1	0.015707422	0.063866426	0.068
Hepacam	0.015749312	0.068947363	0.137
Tra2a	0.015801045	0.050482544	0.106
Rfc1	0.015865777	0.072346921	0.104
Anks1	0.015875547	0.036349304	0.054
Cd2ap	0.015946513	0.01764539	0.078
Fam188a	0.015962067	0.0036162	0.076
Manbal	0.016030022	0.036067657	0.116
Txnl1	0.016041792	-0.201601521	0.134
Mrpl34	0.016060201	-0.15677066	0.076
Btbd10	0.016077492	0.043764397	0.051
Rest	0.016214602	0.062364693	0.061
Pgrmc2	0.016705422	-0.159837852	0.069
Phip	0.016947147	0.028225547	0.075
Acadvl	0.016994215	-0.185607035	0.087
Ctsz	0.01705245	-0.180747873	0.139
Pnrc2	0.017269978	-0.150429793	0.07
Creb3	0.017271134	-0.149856353	0.054
Tpd52l2	0.017386433	-0.187774454	0.133
Cyb5b	0.017412535	0.048030929	0.082
Golga4	0.017486514	0.058904614	0.108
Kank1	0.017654144	-0.023799871	0.04
Pop5	0.017675079	0.025225535	0.084
Rad23a	0.017709788	0.045181715	0.092
Etnk1	0.01772259	-0.178114334	0.069
Chd4	0.01772661	0.105823584	0.272
Stxbp3a	0.017731314	0.084642056	0.081
Sri	0.018071451	-0.162034808	0.171
Ube2w	0.018277103	0.048707186	0.063
Dnajc10	0.018296764	-0.173224912	0.054
Hdgf	0.01838001	-0.170567295	0.159

Atxn2	0.01848367	0.058666386	0.056
Rock1	0.018533915	0.054391222	0.139
Dhx36	0.018593889	0.089655149	0.084
Idh3b	0.019000497	-0.197577367	0.118
Ndufs4	0.019084312	-0.16486779	0.137
Mrpl51	0.019178223	-0.12800099	0.126
Acot7	0.019198904	-0.1358169	0.052
Ufm1	0.019231921	-0.088451036	0.066
Zfp580	0.019278802	-0.133582775	0.042
Ap1s1	0.019312906	-0.15901921	0.06
Ahnak	0.019545439	-0.045939992	0.318
Sh3gl1	0.019629512	0.03271022	0.078
Vti1b	0.019682302	-0.137452421	0.093
Dnlz	0.019701617	-0.014822021	0.106
Rab18	0.019725834	-0.150495946	0.114
Zfp106	0.019730576	0.045710317	0.083
Msrb1	0.019896326	-0.147937185	0.065
Wdr89	0.020002666	0.107023507	0.108
Pycr2	0.020141944	0.004922194	0.067
Fundc2	0.020691527	-0.15082149	0.069
Khdrbs1	0.020693601	-0.220219926	0.122
Dcaf6	0.020707775	0.009553072	0.054
Srp68	0.020880611	0.05196524	0.053
Sqstm1	0.020966852	-0.024791349	0.232
Apoa1bp	0.02098446	-0.15951909	0.13
Art3	0.021092625	-0.106819422	0.669
Nfu1	0.02112144	-0.139488947	0.073
Sept9	0.021188395	-0.145210838	0.097
Tmem127	0.021258678	0.027554882	0.057
Atp6v1h	0.021277554	-0.133592388	0.038
Atp6ap1	0.021282092	-0.129981476	0.188
D10Jhu81e	0.021293571	-0.151143635	0.059
Glud1	0.021329886	-0.191303537	0.093
Bax	0.021368169	0.116706406	0.111
Hmox2	0.021373928	-0.126886036	0.042
Slc12a4	0.021480707	0.054219654	0.079
Nrp2	0.02161062	-0.260528341	0.051
Copa	0.021968761	0.015995785	0.086
Hnrnpm	0.02197643	-0.153548524	0.176
Hnrnph1	0.022160967	-0.159196948	0.155
Srsf6	0.022379299	0.036709401	0.115
Psmd8	0.022590163	-0.16262182	0.127
Polr2g	0.022605862	-0.008479052	0.151

Eif2s1	0.022731013	0.027934092	0.07
Map7d2	0.022745363	0.084365585	0.079
Rpl22l1	0.023208428	0.106734425	0.099
Commd8	0.023210822	-0.166626208	0.053
Zhx1	0.023300125	-0.071869487	0.082
Supt4a	0.023413697	0.074016691	0.106
Rufy2	0.023425194	0.052859187	0.064
Arl4a	0.023468791	-0.151262465	0.04
Ddit4	0.02351445	-0.070524756	0.091
Lamc1	0.023564653	0.020394463	0.084
Rps13	0.023591979	0.080209527	0.069
Peli1	0.023644777	-0.051268065	0.042
Nudc	0.023868103	0.090181895	0.112
Naa15	0.024113813	-0.00086439	0.091
Magoh	0.024127944	-0.193276243	0.096
Dnm1l	0.024256289	-0.085018443	0.053
Dcaf12	0.024299115	-0.109457733	0.039
Bola3	0.024416286	-0.096826468	0.065
Fbxo3	0.02465343	0.024439331	0.115
Rpain	0.024901724	-0.090262582	0.038
Cdc42se1	0.024922162	-0.178825981	0.124
Cbx5	0.025062477	-0.138506785	0.111
Rab5c	0.025062674	0.036650543	0.085
Gt(ROSA)26Sor	0.025299083	0.03394106	0.068
M6pr	0.025708936	-0.003117382	0.171
Cox6a1	0.025854628	-0.063882099	0.514
Arfrp1	0.025887398	0.050900378	0.063
Psenen	0.026014439	0.118994743	0.062
Emc7	0.026250111	0.035244281	0.259
Rps27l	0.026280514	-0.137330429	0.216
Alg14	0.026288328	-0.20480899	0.062
Trappc5	0.02633854	-0.117843205	0.04
Ik	0.026448053	0.013957237	0.2
Lamtor5	0.026583295	-0.14101035	0.142
Rap1gap	0.026670715	-0.10203605	0.048
Aktip	0.026741389	-0.136380408	0.081
Appl2	0.026916685	0.074285083	0.063
Stx5a	0.026920602	0.029804394	0.056
Zfp260	0.027159628	0.031642824	0.06
Lamtor1	0.027442765	-0.125983288	0.156
Ube2e1	0.027677634	0.069812912	0.108
Gtl3	0.027728593	0.047676258	0.146
Lama2	0.02804085	0.007288261	0.087

B230118H07Rik	0.028132818	-0.148830503	0.056
Pld3	0.028175562	-0.128050171	0.063
Hprt	0.02835115	-0.125231504	0.063
Zfp536	0.028404209	0.019460535	0.066
Napg	0.028471101	-0.023222957	0.063
Szrd1	0.028473326	0.028938353	0.057
Stmn3	0.028500677	-0.100622209	0.115
Herpud2	0.028729151	0.031905015	0.053
Srsf10	0.028748527	0.008173624	0.076
Prkrip1	0.028836562	0.017810642	0.052
Acbd6	0.029050534	-0.161510173	0.06
Polr3k	0.029051415	-0.105031059	0.041
March7	0.029114601	0.039329798	0.051
Rrbp1	0.029201186	-0.159315576	0.21
Gps2	0.029249953	0.113725245	0.063
Smarca4	0.029422215	0.013697786	0.09
Lgals8	0.029570864	-0.016141003	0.055
Nt5c	0.029639084	-0.17001445	0.095
Cpsf6	0.029704145	0.073182023	0.057
Zc3h15	0.02980289	0.0614599	0.135
Selt	0.029977842	0.017657334	0.127
Snx6	0.03002352	0.02291219	0.202
Zfyve21	0.030074766	-0.199243787	0.129
Kat5	0.030127429	0.021014812	0.054
Supt6	0.030719916	-0.110845861	0.042
Fam193a	0.030734697	0.019432386	0.054
Fbxw2	0.030876622	0.037280183	0.063
Ube2q1	0.031118169	0.039547567	0.06
Eno1	0.031120843	0.07586793	0.151
Trappc3	0.03129254	-0.121818469	0.067
Ndufs3	0.031760919	0.09932363	0.124
Abhd6	0.031830302	-0.080681331	0.051
Hdac2	0.032051773	-0.141601383	0.073
Dcun1d5	0.032117149	0.067182973	0.079
Drap1	0.032346347	0.041827969	0.155
Slc35b1	0.032400605	-0.14204872	0.111
Fam76a	0.032505898	0.001360831	0.078
Ccdc12	0.032514437	-0.108314239	0.057
Pcsk1n	0.03253516	-0.185777572	0.102
Txndc5	0.032542637	-0.021271095	0.059
Por	0.032555828	-0.104129805	0.057
Fez2	0.03285889	0.026835856	0.094
Mrps21	0.032888519	-0.1201922	0.092

Ctdsp2	0.032912002	-0.008975773	0.1
Itsn1	0.032958069	0.061012571	0.099
Olfm1	0.033108119	-0.188720871	0.091
Vkorc1	0.033424935	-0.175176958	0.135
Idh3g	0.033452951	-0.126201092	0.118
Rpl7l1	0.033698641	-0.112140436	0.06
Gpatch8	0.033770649	0.060241803	0.08
Sin3b	0.033834081	0.050195831	0.112
Mtx2	0.033883111	-0.098263927	0.048
Prpf38b	0.034059577	0.090820037	0.135
Idnk	0.034519709	-0.176003659	0.043
Nab1	0.034983636	0.021467638	0.061
Bphl	0.035378247	-0.167417871	0.044
Tmem126a	0.035382112	-0.167204054	0.052
Coa3	0.035477228	-0.111790871	0.118
Cct7	0.03588273	0.028478876	0.179
Atp6v0b	0.035922375	-0.131239333	0.211
Agpat1	0.03607767	0.009706807	0.064
Cdc16	0.036143288	-0.136973024	0.06
Tgoln1	0.036146078	-0.173733882	0.097
Pef1	0.036242292	-0.143920767	0.051
Rbmxl1	0.036673836	0.070812097	0.054
Smim20	0.037094259	-0.176949131	0.045
Rraga	0.037199777	-0.132997962	0.067
Flywch1	0.037354435	-0.17651805	0.05
C1galt1c1	0.037717378	-0.185922881	0.04
Polr2h	0.037729762	-0.175522751	0.047
Snrpe	0.037821612	-0.115328173	0.121
Scand1	0.037826887	-0.145613108	0.163
Mrpl21	0.037929795	-0.119287202	0.085
Nek7	0.037975026	0.005509955	0.091
Tmem97	0.03800606	0.04281242	0.073
Vdac3	0.038291875	0.044944514	0.103
Trpc4ap	0.038338955	0.012948751	0.062
Dph3	0.038427445	-0.126838657	0.072
Matr3	0.038455268	-0.13275839	0.174
Gatad1	0.039047286	-0.019526338	0.091
Myeov2	0.039382159	0.10224015	0.266
Maoa	0.039540405	-0.199675545	0.063
Cd164	0.040169738	0.07823039	0.131
Fibp	0.040244357	-0.144283291	0.105
2810468N07Rik	0.040350317	-0.013412458	0.099
Ddx24	0.040649922	-0.12091614	0.133

Zcchc17	0.040802429	-0.19593872	0.112
Nudt16l1	0.040895794	-0.172161613	0.073
Nudt7	0.040950445	-0.124617576	0.045
Tpr	0.041038148	0.007984488	0.167
Hk1	0.041115699	-0.126547701	0.047
Psmb5	0.041221521	-0.147029933	0.125
Pgd	0.041284283	-0.127410616	0.069
Fam132a	0.041354303	-0.030133985	0.063
Fam50a	0.041457646	0.053338466	0.101
Srprb	0.042423183	0.052865651	0.063
Eif3m	0.042518158	0.022139317	0.122
Arl6ip4	0.042925375	0.08677425	0.107
AI314180	0.043119109	-0.006331974	0.053
Dync2li1	0.04347074	-0.065226063	0.045
Ehmt2	0.043584975	-0.059775849	0.042
Snrpf	0.043749852	-0.129621694	0.051
Pacsin2	0.043928729	-0.130930525	0.058
Mid1ip1	0.044050865	-0.127445624	0.271
Etf1	0.044320303	0.038591313	0.078
Gnb1	0.044325903	0.003573437	0.182
Mllt3	0.044459729	0.060298843	0.057
Sox10	0.044534106	-0.015205955	0.302
Nosip	0.045148592	0.026652653	0.072
Nxf1	0.045242665	0.000273038	0.066
Snx5	0.045242766	-0.103310365	0.069
Nsmce1	0.045357581	-0.125024465	0.091
Sars	0.04554386	-0.092468011	0.109
Fkbp9	0.045578076	-0.005556247	0.162
Rab22a	0.045652732	0.051743498	0.064
Ube2k	0.046049165	-0.145728689	0.129
Srpr	0.046078078	0.020263081	0.132
Cdpf1	0.046137844	0.008618842	0.051
Cetn3	0.04627799	0.009211853	0.262
Serinc5	0.046460362	0.064797034	0.076
Spen	0.046633224	0.049538662	0.053
Ufd1l	0.046649652	-0.11308924	0.042
Tceb1	0.047054871	-0.148512615	0.116
Morf4l1	0.04716877	0.073073855	0.107
Naa35	0.04717338	0.053327178	0.072
Ccnh	0.047575594	-0.147620523	0.062
Cltc	0.047597195	0.028894495	0.102
Pdcd10	0.047878184	0.035836884	0.098
Brcc3	0.047880737	0.090802212	0.074

Peg3	0.047929486	-0.122995499	0.041
Rnf167	0.048152035	0.027865059	0.111
Acot13	0.048276428	-0.15869381	0.085
Grb2	0.048337862	0.022965638	0.127
Etfb	0.048909151	-0.122507704	0.278
Guk1	0.048919044	0.05663195	0.113
R3hdm4	0.049259955	0.053980215	0.068
Mrpl12	0.04933703	-0.159528099	0.084
Tm9sf2	0.04952523	-0.122887012	0.114
Tmem11	0.049572585	0.027718704	0.061
Ppp1cb	0.050166368	-0.001894421	0.131
Sdhd	0.050169495	-0.125480481	0.136
Ogdh	0.050256282	-0.114722704	0.062
Rbx1	0.050528798	-0.11602555	0.246
Psmd9	0.050635037	-0.009116528	0.076
Cdip1	0.050803423	-0.061450177	0.074
Sf1	0.051207714	0.021461748	0.082
Yy1	0.051284491	0.045476547	0.069
Mphosph10	0.051343443	-0.178396165	0.059
Vimp	0.051856278	0.024323163	0.209
Triap1	0.051971993	-0.046236725	0.064
Snrnp27	0.052036369	0.028711057	0.119
Aff4	0.052584667	-0.016428747	0.079
Coq2	0.05299438	-0.090638058	0.045
Ddx21	0.053138385	0.022830958	0.069
Skp1a	0.053318925	-0.071430261	0.382
Dgcr6	0.053485869	-0.140007639	0.06
Tmem184c	0.053715873	-0.09793085	0.065
Ddx42	0.0538681	-0.102886531	0.075
Cab39	0.054375018	-0.150355528	0.057
Krt10	0.054546491	-0.092358915	0.053
Aimp1	0.054728434	5.39E-05	0.077
Sec22b	0.055026584	-0.157653501	0.078
Ensa	0.055765317	-0.152878753	0.075
Abhd17a	0.055787605	0.040403609	0.06
Efnb1	0.055933014	-0.086685135	0.064
Ddit3	0.055968612	0.045418225	0.058
Lsmd1	0.056577402	0.028468132	0.137
Zfp207	0.056592703	0.069150134	0.111
Timm8b	0.056630358	0.047937358	0.166
Pagr1a	0.056674025	0.054125021	0.066
Dlgap4	0.05687612	0.020892194	0.078
6330403K07Rik	0.05697211	0.004813973	0.054

Baz2b	0.056986078	0.04375418	0.091
Yipf3	0.057381608	-0.138744408	0.085
Pcif1	0.058034048	0.125043621	0.062
Nol7	0.058705977	-0.08251216	0.192
Golgb1	0.058932777	-0.130222371	0.109
Pin1	0.059260885	0.017962791	0.109
Rabep1	0.059352839	0.016045101	0.125
Tcp1	0.059746652	0.039044299	0.109
Cct4	0.0601184	-0.155442216	0.101
Bub3	0.060343828	-0.025195441	0.118
Stag2	0.060370424	-0.012387908	0.076
Chordc1	0.060453998	-0.023199244	0.051
Cln3	0.060555076	-0.069673744	0.044
Pnrc1	0.060959191	-0.089340991	0.178
Acsl3	0.06107824	0.027709891	0.112
H2-Ke2	0.061107609	-0.044054821	0.112
Snrpa	0.061237417	0.054462035	0.053
Il11ra1	0.061653642	-0.098891101	0.045
0610009B22Rik	0.062058577	-0.148184972	0.059
Mpdu1	0.062142477	-0.089666137	0.046
Sdhb	0.062535461	-0.146973121	0.191
Coro1b	0.062763056	0.006903399	0.117
Fam195b	0.062807379	-0.068267517	0.151
Cul5	0.063524797	0.063582307	0.084
Slc7a2	0.063535385	0.161562227	0.088
Ankra2	0.06365156	0.028631332	0.053
Rpl18	0.064124925	0.044520419	0.208
Mtx1	0.064317433	-0.150950117	0.045
Atp2b1	0.064378024	0.077522399	0.164
Acbd5	0.06472996	0.072110279	0.121
Anxa4	0.065376063	-0.052730619	0.06
Ywhaq	0.065532195	0.0436614	0.337
Rock2	0.065562041	0.031367095	0.116
Psip1	0.065877188	-0.073905376	0.15
Rnf216	0.066022118	0.018504228	0.061
Snx27	0.06604797	0.060945907	0.068
Ankhd1	0.066164647	0.074115015	0.053
Rwdd1	0.066610665	0.079729361	0.117
Ost4	0.066767513	0.062704367	0.151
Hspa4l	0.067115285	-0.031109395	0.092
Smarce1	0.067365929	0.093704143	0.066
Med8	0.067734575	0.008332476	0.085
H2afy	0.067899791	-0.131419366	0.077

Cyhr1	0.068148546	0.005337102	0.146
Tecpr1	0.068410679	-0.104179317	0.046
Etfdh	0.068418728	-0.113574137	0.043
Ap1s2	0.068608208	0.028073761	0.074
Cers5	0.068768018	-0.119172187	0.072
Sumo1	0.06893802	-0.111830398	0.095
Tspan15	0.069038504	0.033830097	0.27
H13	0.069062695	-0.173190128	0.103
S100a10	0.069371315	-0.139733557	0.283
Ddx46	0.069526776	0.005574473	0.105
Nap1l1	0.069538489	0.089915153	0.152
Nars	0.070133916	-0.065278437	0.127
Sec31a	0.070201597	0.024218992	0.053
Unc50	0.070326009	-0.121908575	0.12
Dcn	0.070356241	-0.122581987	0.05
Mkrn1	0.070680509	0.032302055	0.051
Nfkbia	0.071194938	-0.307660145	0.173
Uba3	0.071444617	0.009639405	0.073
Pqbp1	0.071543573	-0.174448151	0.088
Zc3h14	0.071572655	-0.055294373	0.057
Crtap	0.071599234	-0.164635577	0.057
Zc3h7a	0.072102962	-0.010671967	0.055
Polr2j	0.072275739	0.057994036	0.114
Dcaf11	0.072349648	0.005997574	0.062
Atp5b	0.072384848	-0.070888011	0.487
Mob4	0.07267023	-0.179631594	0.094
Camk1	0.073332806	-0.139977696	0.079
Rpl19	0.073940738	0.076979021	0.112
2700029M09Rik	0.07436179	-0.139124545	0.077
BC005537	0.074505466	-0.009803116	0.133
Srsf4	0.074533017	-0.112533737	0.06
Chd9	0.074541411	0.024257401	0.052
Dcaf8	0.074651487	0.036080479	0.105
Mrps15	0.074881562	-0.032408858	0.111
1700021F05Rik	0.075277486	0.051631649	0.052
Fam133b	0.075421923	-0.107951853	0.045
Dync1li1	0.076162463	0.015815668	0.054
Map1a	0.076525339	-0.13510579	0.07
Tsg101	0.07654645	0.024817452	0.13
Pdxdc1	0.076775893	-0.029124148	0.068
Pfdn4	0.076824839	-0.104942122	0.058
Ghitm	0.077578544	-0.097677815	0.191
Surf1	0.077641457	-0.034489563	0.126

Mvp	0.077868811	0.021894664	0.07
Rpl15	0.078961064	-0.087876349	0.044
Asah1	0.079340895	-0.002736326	0.155
Phb	0.079375942	-0.112172139	0.066
Galk1	0.079861709	0.044054144	0.062
Aup1	0.080151079	0.039404304	0.088
Tnfsf12	0.080329973	-0.144098358	0.047
Rabl6	0.080353936	0.014991851	0.07
Csnk1e	0.081051797	-0.177885275	0.045
Psmd7	0.081086535	-0.009862674	0.284
Itpk1	0.081150444	-0.056057444	0.101
Zmpste24	0.081309895	-0.163901547	0.073
Ewsr1	0.082009107	-0.003615221	0.116
Rpl35	0.082207674	0.140770768	0.102
Sf3a3	0.082345548	-0.094040984	0.059
Dynll2	0.082781997	-0.070832595	0.129
Gabarap	0.083223975	-0.100321943	0.397
Gnaq	0.083245896	-0.051528904	0.17
Rbms1	0.083565818	-0.14026323	0.116
Nisch	0.083851246	0.015812398	0.111
Commd2	0.083878703	-0.144452972	0.048
Npepps	0.083969542	0.000192321	0.13
Gspt1	0.084333191	0.033485608	0.098
Mmadhc	0.084435847	0.013115481	0.082
2610002J02Rik	0.084547076	-0.114874459	0.05
Uqcrc2	0.084589913	0.021239857	0.222
Abi1	0.085398656	-0.115821612	0.071
Lta4h	0.086255843	0.081832432	0.073
Fktn	0.08689285	0.000604547	0.079
Slco3a1	0.087067632	-0.017129855	0.091
Mphosph8	0.087666838	0.06425376	0.143
Hdlbp	0.087851928	-0.144304858	0.066
Kxd1	0.088079142	-0.024768805	0.071
Rad23b	0.088180366	-0.088169179	0.053
Tob1	0.088199373	0.024678708	0.073
Sqle	0.088375052	-0.090260208	0.191
Ptplb	0.088407651	-0.017755615	0.11
2810474O19Rik	0.088979368	0.024044708	0.059
G3bp2	0.08987665	-0.122235205	0.145
Lrp1	0.090420892	0.013921731	0.057
Ppp2cb	0.09079336	0.006849798	0.056
Rbm8a	0.090854569	0.017768803	0.173
Srd5a1	0.091073875	-0.005835918	0.068

Atp2a2	0.091260525	-0.116417415	0.051
4930402H24Rik	0.092025202	0.026956039	0.081
2310011J03Rik	0.092264744	0.013161128	0.087
Atg3	0.092420403	-0.104871715	0.119
Tor1aip2	0.092595096	-0.017181253	0.07
Nop16	0.092793321	-0.149226409	0.055
Col14a1	0.093447328	-0.080953191	0.155
Ccdc104	0.093507335	-0.06681887	0.171
Tmem219	0.093674207	-0.031926586	0.102
Sel1l	0.094061772	0.060393684	0.059
Tnrc6a	0.094433741	0.012220785	0.062
Ilk	0.095480401	-0.156579898	0.18
Hnrnpul2	0.096169531	0.00376469	0.059
Dnajc8	0.096252221	-0.103819201	0.204
Maea	0.096343666	-0.126383304	0.061
Tmem179b	0.096499736	-0.137607027	0.048
Trappc2	0.096541748	0.076324799	0.069
Lmbrd1	0.096820504	0.017881889	0.18
Polb	0.096990661	0.010511041	0.056
Srpk2	0.097153202	-0.108396107	0.093
Rnf6	0.097675773	-0.031672151	0.055
Rps15	0.098093289	0.022514644	0.475
Sar1a	0.098140953	-0.154751538	0.172
Ssr4	0.098422836	-0.181152468	0.158
Idh3a	0.098611706	0.043025235	0.107
BC029722	0.098625755	-0.043287821	0.06
Ppdpf	0.098999508	-0.116684229	0.146
Fopnl	0.099154128	-0.094087255	0.048
Alkbh6	0.099976381	0.042877858	0.066
Aebp2	0.100065557	-0.127737279	0.043
Herc2	0.100868002	-0.002524107	0.051
Klhdc2	0.100924607	-0.16622314	0.072
Cuedc1	0.101129432	0.039352985	0.059
Taf3	0.101868088	0.030386712	0.058
Cdk4	0.101870687	-0.09711575	0.087
Pnpla8	0.101950061	-0.003431687	0.113
Arhgef26	0.102052632	-0.07116186	0.052
Ilvbl	0.102177249	0.050388834	0.053
Smim8	0.102745106	-0.003035607	0.067
Rps3	0.10298903	-0.072394268	0.561
Eif2a	0.103217991	0.02321312	0.069
Arhgap29	0.103407617	-0.047334719	0.053
Tmem237	0.103586916	-0.177867242	0.065

Mff	0.106089387	0.02081255	0.166
Tardbp	0.106409409	0.047874649	0.119
Anapc13	0.107018478	-0.003242666	0.139
Rps4y2	0.107335955	-0.082451819	0.051
Tbcb	0.107433212	-0.107864389	0.188
mt-Nd4	0.107602501	-0.019168322	0.719
Gng5	0.108844987	-0.086424554	0.134
B4galt6	0.10910489	0.031981844	0.056
Rplp2	0.109318779	0.044837393	0.392
Plcb4	0.109670373	-0.110002552	0.081
Supt5	0.110197307	0.030494491	0.058
Eif3e	0.110280938	-3.48E-07	0.137
Magt1	0.110315402	-0.215166767	0.183
Msn	0.111011868	-0.069162177	0.149
Mbd3	0.111376987	-0.127182808	0.061
Usp5	0.111736879	-0.025558258	0.058
Hdhd2	0.111944588	0.003189	0.13
Tomm7	0.112952723	-0.107517756	0.147
Usp7	0.113156863	-0.037698314	0.047
Rnf168	0.11324238	-0.122745575	0.05
Rbbp6	0.113511084	0.03694374	0.102
Ppp1ca	0.113531551	0.013240978	0.247
Senp6	0.114149016	0.029560128	0.129
Hars	0.114464279	-0.16738568	0.05
Gaa	0.114816253	-0.121791781	0.072
Nr4a1	0.115337147	0.072190483	0.203
Cyb5	0.115414236	-0.112327431	0.302
Eef1e1	0.115606971	-0.122846979	0.046
Zc3h18	0.116445633	-0.011851571	0.051
Cggbp1	0.116777055	0.002706774	0.08
Hsbp1	0.11727607	0.071404994	0.388
Nfia	0.11801456	-0.071491565	0.122
Tubb4b	0.118020917	-0.106387549	0.181
Glrx5	0.118105541	-0.121260518	0.116
Mkln1	0.118179575	-0.074639758	0.054
Nicn1	0.11830424	-0.127197361	0.076
Mkks	0.120191635	-0.037888751	0.086
Rufy3	0.121571868	0.008907984	0.052
Fam126a	0.12217677	-0.162395284	0.057
Snx3	0.122368307	-0.127810559	0.257
Ctsf	0.123363361	-0.152323822	0.057
Atp6v1b2	0.12343244	-0.162202925	0.071
Tbc1d20	0.124029549	0.017752552	0.06

Srsf3	0.124299001	-0.114833864	0.192
Ccdc174	0.12505433	0.039788813	0.051
Mrp63	0.126156781	0.042466071	0.083
Oxct1	0.126312888	-0.024317226	0.24
Yipf4	0.126722139	0.029116123	0.114
Ccni	0.12718354	0.0139905	0.077
BC003965	0.127188079	0.045497984	0.065
Eif3f	0.12739692	-0.177404726	0.225
Eif4g1	0.127994747	0.028236386	0.09
Phyh	0.128479587	0.018399884	0.163
Rab12	0.12932111	-0.156721528	0.074
Eif2b4	0.129824969	0.028689937	0.051
Anp32e	0.130184644	-0.057250149	0.151
Isca2	0.130629104	0.050841169	0.094
Arf5	0.131114229	-0.015957146	0.208
Ndufab1	0.131477906	0.020859735	0.137
Hspa14	0.131535251	0.007279061	0.051
Fyttd1	0.131725742	-0.006677981	0.093
Wbp1	0.133228286	-0.076846016	0.047
Azi2	0.133352332	-0.124856738	0.065
Ndufv1	0.133665423	-0.146026471	0.113
Tmem261	0.134145472	-0.212931556	0.067
Syngr2	0.135629348	-0.036525072	0.063
2610507B11Rik	0.13616716	-0.148514672	0.073
Eif5	0.136617676	0.0083127	0.251
Pcnp	0.136938353	0.082423525	0.101
Btg1	0.138221387	-0.076450001	0.057
Gng12	0.138623604	-0.161920793	0.1
Grb14	0.138788493	0.032455093	0.228
Arcn1	0.138942073	-0.049386364	0.089
Fam32a	0.139087369	-0.099405162	0.081
Cfl1	0.139156973	-0.09143196	0.264
Chp1	0.139231998	-0.160600488	0.086
Adipor2	0.139326424	-0.138731592	0.094
Pfn1	0.139908339	-0.089513157	0.406
Arvcf	0.14032112	-0.118560321	0.085
Cyp20a1	0.140470901	-0.095246651	0.059
Psmd13	0.140762404	0.016755864	0.081
Rfk	0.142526913	-0.128573008	0.085
Ss18	0.143249602	-0.100244854	0.047
Lamtor3	0.143256404	-0.009968646	0.076
Psmd2	0.144430525	-0.130511375	0.115
Yipf5	0.145089952	-0.075076177	0.082

Tubb3	0.145547826	-0.126641103	0.117
Psma3	0.145685147	0.049471983	0.082
Ccdc53	0.145927144	0.011117527	0.072
Psma7	0.147672576	-0.070264544	0.381
0610037L13Rik	0.148017221	0.031865654	0.085
Ube2l3	0.148198963	0.052049107	0.154
Gtf3a	0.148313965	-0.018076882	0.062
Gng3	0.148443182	0.084479307	0.076
Rpa3	0.148519598	-0.118279868	0.08
Sfr1	0.148772652	-0.070661767	0.179
Bcl2	0.148851563	-0.142415281	0.062
Aco2	0.148969554	0.000444667	0.159
Aplp2	0.150388779	-0.07757836	0.374
Usp8	0.150552014	-0.151094766	0.071
Ndufb2	0.151413461	0.033823959	0.198
Eif3d	0.15150311	-0.106726358	0.108
Ncl	0.152006728	-0.102100858	0.345
Ptp4a2	0.153602362	-0.064755152	0.155
Sec11c	0.155024591	-0.097711358	0.159
Slc25a39	0.155064468	-0.077877129	0.082
Fundc1	0.155549693	-0.016069905	0.093
BC003331	0.155847121	-0.160494603	0.096
Atxn7l3b	0.156733331	0.061494888	0.312
Arsk	0.157065064	-0.16297286	0.045
Ndrg3	0.157153992	-0.002837831	0.076
Snrpg	0.159287498	-0.100867186	0.056
Bre	0.160295312	-0.129961095	0.05
Dohh	0.161868868	-0.03284039	0.057
Tmem147	0.161968264	-0.108355754	0.15
Pgap2	0.162141733	-0.075595658	0.051
Cox16	0.162689029	0.004629679	0.055
Dnttip2	0.162703183	-0.050626028	0.1
Oaz1	0.162925201	0.019058578	0.309
Fxr1	0.163541893	-0.06848067	0.087
Smc6	0.163574015	-0.087455636	0.09
Ing1	0.164142746	0.031367274	0.075
Rpp21	0.165745325	-0.055819149	0.099
Btf3	0.165853823	0.035238468	0.215
Ccar1	0.16650287	-0.079539131	0.118
Ppp1r7	0.166809915	-0.139331567	0.065
Jagn1	0.167197025	-0.087168241	0.057
Tcerg1	0.167368545	0.032646227	0.068
Sh3bgrl3	0.167483881	0.081872081	0.247

Gorasp2	0.168776364	-0.144527099	0.075
Slc50a1	0.170069326	-0.085275568	0.094
Ptpmt1	0.170280274	-0.189023979	0.082
Mrpl15	0.17101227	-0.122435315	0.079
Hspd1	0.171166659	-0.054682887	0.14
Rbm17	0.171460834	-0.163109403	0.09
Ift43	0.171482474	-0.104275993	0.069
Pfdn1	0.171853232	-0.108748251	0.142
Klf9	0.172162567	-0.083113265	0.147
Ppp1r2	0.172547725	0.024349778	0.096
Tram1	0.173275741	0.050886597	0.142
Mrpl20	0.175198405	-0.085813794	0.152
Ndufs1	0.17549504	0.063488439	0.075
Arid4a	0.175856746	0.042032796	0.076
Ercc1	0.175889256	-0.081813121	0.052
Leo1	0.176821508	-0.09995257	0.048
Mapkap1	0.177113597	0.037596569	0.078
Atrx	0.177430919	0.037482656	0.204
Arfip1	0.177948353	-0.036339397	0.122
Minos1	0.177989949	0.010872039	0.283
Commd3	0.179326972	0.029192809	0.116
Eps15	0.179829406	-0.113964834	0.075
Gtf2h5	0.18146708	-0.134832547	0.172
Sae1	0.181906949	-0.092583915	0.057
Ick	0.182427312	-0.061474035	0.06
Raf1	0.18254526	0.001785574	0.058
Bptf	0.182729123	0.056935548	0.1
Stau1	0.182815231	-0.116699189	0.047
Trip6	0.184027028	-0.096616764	0.062
Sec62	0.184147363	0.015037859	0.401
Rab34	0.185820017	-0.105891248	0.144
Tpgs1	0.185996566	-0.010149576	0.105
Anapc5	0.186241938	-0.155571675	0.113
Cct8	0.186266636	-0.127369672	0.115
Lias	0.186285892	0.03999717	0.056
Tmbim4	0.186342432	-0.161267809	0.146
Rps4x	0.188073564	-0.085004155	0.327
Tomm40	0.188279652	0.001204291	0.051
Azin1	0.189211994	-0.032570081	0.166
Map2k1	0.190793097	-0.068801486	0.065
Cept1	0.190849161	-0.145956922	0.048
Eif3a	0.19133289	-0.099771433	0.238
Acaa1a	0.193567893	-0.018732937	0.119

Samm50	0.194127999	0.014998154	0.085
Rab3a	0.194356411	0.069065598	0.053
Slmap	0.194611728	-0.099100061	0.075
Uchl1	0.194658971	-0.080477069	0.235
Naga	0.196013127	-0.074451507	0.049
Pfdn5	0.196344189	-0.055717442	0.376
Ptplad1	0.197542709	0.087008533	0.118
Ctsd	0.198299525	0.036662384	0.32
Rsl1d1	0.198779423	-0.114256239	0.092
Dek	0.1989522	-0.116691172	0.193
Hadh	0.198953219	-0.186637309	0.137
Atp6v0d1	0.199643472	-0.076460702	0.139
Syap1	0.199777275	0.001998005	0.081
Sec63	0.199912142	-0.031411435	0.093
Cript	0.20091072	-0.14969459	0.112
Cnih1	0.201087009	-0.03644261	0.122
Esd	0.202381893	-0.128449029	0.13
Trpm7	0.203343718	-0.129004406	0.06
Dusp3	0.204682473	-0.037665364	0.08
Eif4e	0.204730382	-0.039445614	0.064
Sucla2	0.207204227	-0.061065139	0.086
Mrpl55	0.207587137	-0.067127046	0.077
R3hdm2	0.207690073	-0.010866217	0.057
Ndufa9	0.208029541	-0.087095212	0.096
Trmt112	0.209488727	0.0503235	0.064
Smim19	0.209594064	-0.074660961	0.058
Tmed5	0.209747839	-0.061650861	0.069
Bod1l	0.210343876	0.050679436	0.129
Nfe2l2	0.210431577	-0.109309616	0.122
Tmem128	0.211085303	-0.003906984	0.08
Slmo2	0.211548637	-0.075507971	0.054
Ubap2l	0.211657247	0.016300017	0.082
Ntan1	0.212828927	-0.101679284	0.124
Nipbl	0.213265029	-0.007205094	0.149
Pole3	0.213589542	-0.126908902	0.061
Rnaseh2c	0.213940819	0.015252178	0.096
Fam172a	0.214488368	0.065793506	0.059
Mtmr6	0.214589803	0.019595945	0.051
Uba1	0.214877495	-0.125603391	0.077
Chmp2a	0.215146101	-0.005410447	0.236
Arl3	0.21543438	-0.09343382	0.231
Rtn4	0.216089273	0.016247153	0.272
Gnl2	0.216112658	-0.046265793	0.082

Yipf1	0.216225398	0.002278603	0.072
Nsmce4a	0.216476225	-0.0778191	0.049
Ppig	0.217071612	-0.01482701	0.172
Eapp	0.217376673	0.023463797	0.102
Csnk2b	0.219295564	0.016712023	0.086
Rtf1	0.21987822	-0.090306862	0.131
Tmem109	0.220127843	-0.149262168	0.093
Fnbp4	0.220657829	0.033884843	0.068
Txndc9	0.221619106	-0.118251081	0.092
Capza2	0.222174413	-0.052865155	0.2
Ssr3	0.222367181	-0.009132696	0.201
Map2k2	0.222652126	0.034542733	0.148
Tmub2	0.223551291	-0.07330764	0.045
Rpl30	0.224976307	0.021925238	0.152
Timm10b	0.225300382	-0.049115447	0.068
Eif4e3	0.229945461	-0.082428042	0.061
Elp5	0.23039819	-0.102059432	0.066
Tmed1	0.230823197	-0.126770021	0.064
G6pc3	0.231915092	0.007937331	0.061
Ikbip	0.232163247	-0.108985875	0.072
Ppp6c	0.234075912	0.039546287	0.054
Yif1a	0.234231291	0.012533753	0.112
Pfdn2	0.234508745	-0.07386054	0.106
Fh1	0.234807099	-0.091846795	0.068
Echs1	0.235452411	0.013420143	0.162
Mrpl27	0.235806524	-0.137502764	0.123
Bcl10	0.235920062	-0.07494772	0.046
Spg21	0.238093126	-0.054382961	0.056
Ube2d2a	0.238896676	0.016401764	0.076
Abhd14a	0.239768119	-0.076095034	0.102
Hnrnpa0	0.240371232	-0.063210289	0.063
Atp6v1f	0.240688486	-0.064029249	0.269
Nrd1	0.240844025	-0.032503713	0.085
Ywhag	0.242161553	-0.11852522	0.109
Rpl27a	0.242340224	-0.048162154	0.099
Snrpa1	0.242940142	-0.016303019	0.062
Cdc123	0.243861399	-0.109343775	0.093
Mvd	0.244012769	-0.076534826	0.066
Aldh3b1	0.244375323	-0.028551742	0.057
Vps41	0.246891927	-0.00606815	0.082
Irf2bpl	0.247059171	0.039391451	0.076
R3hdm1	0.248190798	0.032330346	0.063
Tmed4	0.248496839	-0.10667193	0.115

Imp3	0.250828276	-0.021416705	0.109
Mtfr1l	0.250884032	0.025693934	0.111
Apex1	0.252901965	-0.009168986	0.053
Sept2	0.254813551	-0.010836296	0.227
Pdhb	0.255057068	-0.031470791	0.079
Vgll3	0.259971684	-0.191463719	0.072
Mrpl42	0.260006497	0.009510176	0.171
Gm2a	0.261005807	0.036487659	0.133
9330159F19Rik	0.2629306	-0.100327123	0.045
Cr1l	0.264103074	-0.046850693	0.073
Mrpl18	0.265054436	0.064739838	0.133
Dlat	0.265458379	-0.009170164	0.068
Pole4	0.26659121	-0.112799684	0.057
1810043H04Rik	0.266722471	-0.008711654	0.065
Ctr9	0.267221177	-0.161904195	0.051
Ktn1	0.267558187	0.01063656	0.202
Prpsap1	0.267774764	-0.054918183	0.077
Smap1	0.267837875	-0.120053787	0.124
Chrac1	0.268283577	-0.050662783	0.052
Cmpk1	0.268385867	-0.04278134	0.086
Ddx50	0.268643073	0.003868981	0.066
Sltm	0.268711775	-0.151093753	0.118
Gna11	0.269203265	0.028685776	0.054
Gnai3	0.269316104	-0.062746221	0.101
Tsn	0.269397366	-0.050438879	0.159
Atg12	0.269797829	0.013536642	0.062
1110001A16Rik	0.273042716	-0.122415662	0.058
Insig2	0.273777243	-0.001558145	0.062
1110032A03Rik	0.273888079	-0.018364532	0.073
S100a4	0.274061482	-0.006570196	0.322
Ift20	0.27423812	-0.110204758	0.148
Uri1	0.274466747	-0.045769667	0.059
Plod3	0.275413284	-0.009351543	0.062
Rpl14	0.27600511	0.032339174	0.392
Smc5	0.276559508	0.038154638	0.071
Dpm1	0.276839805	-0.012778985	0.058
Gcc2	0.277102065	0.009303886	0.051
Stk16	0.277624652	-0.102566944	0.073
Hbp1	0.277987169	-0.020096836	0.103
Mcfd2	0.278136488	-0.034619417	0.069
Lss	0.278341767	0.00179744	0.071
Ctage5	0.279593168	0.044177851	0.09
Acbd3	0.282120503	0.01310127	0.079

Adamts5	0.282189772	-0.042850665	0.196
2010107E04Rik	0.283102292	-0.057965703	0.235
Ckap4	0.284813355	-0.174353504	0.054
Fkbp8	0.287593001	0.011844005	0.126
Ist1	0.29054789	-0.047910039	0.066
Ran	0.294070008	-0.049537384	0.127
Snw1	0.295023062	0.002393638	0.201
Mat2b	0.29524098	-0.034519076	0.078
Sertad2	0.295279705	0.025281516	0.059
Actn4	0.295362315	-0.072821206	0.155
Hgs	0.295551452	-0.031725181	0.059
Pard6g	0.297485505	0.017030839	0.059
Mia3	0.299518666	0.001891848	0.082
Dnajc19	0.30008142	-0.034373848	0.113
Dock1	0.3011347	-0.034265469	0.062
Commd4	0.301672105	0.000490583	0.103
Gphn	0.302152582	0.007755082	0.063
Cnpy3	0.30727521	-0.070070282	0.05
Vps26a	0.307641167	-0.006631169	0.076
Psmg4	0.308390184	-0.0553388	0.048
Mrps26	0.309204762	-0.000491537	0.073
Dpy30	0.312564194	-0.073621028	0.096
Thap11	0.312578077	-0.042233855	0.047
Cops3	0.313180945	-0.051307097	0.058
Vamp4	0.31426675	-0.017112769	0.073
Dld	0.315098265	-0.079777701	0.089
Dnajc2	0.315322865	-0.065590879	0.062
Spag7	0.315332546	-0.095942994	0.06
Taf7	0.316185749	-0.038510569	0.05
Smim14	0.317026229	-0.043846155	0.223
Frg1	0.318264261	-0.055971179	0.079
2210016L21Rik	0.318746124	-0.08491338	0.135
Rabggtb	0.322025893	-0.090346421	0.068
Txnl4a	0.322240733	-0.076213235	0.071
Ric8	0.322770214	-0.044358978	0.045
Sepp1	0.323598272	-0.023059924	0.634
Irak1	0.323689388	-0.052194992	0.049
Rbm28	0.325186659	0.01641744	0.075
Bbip1	0.325252926	-0.142796174	0.134
Emd	0.327482542	-0.004689815	0.068
Fam104a	0.327821496	-0.095919924	0.131
Zfml	0.327884406	-0.097871635	0.121
Ptbp3	0.33041376	-0.096785309	0.045

Mrpl30	0.330692891	-0.136585203	0.12
Tlk2	0.330711152	0.01480762	0.051
Mrpl54	0.330933484	-0.067291925	0.084
Nemf	0.3311738	0.025667624	0.112
Scarb1	0.33123882	0.002649215	0.087
Chmp4b	0.331378571	-0.074988368	0.146
Rpl22	0.33230072	-0.007399501	0.281
Slc12a2	0.332679471	9.54E-05	0.179
Sort1	0.332722959	-0.04881105	0.051
Samd4	0.333770813	0.023251045	0.06
Papola	0.336038687	-0.120729285	0.122
Srp72	0.337193843	-0.088958296	0.104
Mrpl49	0.337627617	-0.063540143	0.052
Urod	0.339172767	-0.030197737	0.055
AI462493	0.342249729	-0.087703178	0.081
Scamp2	0.34229399	-0.073865214	0.137
Ganab	0.343354798	-0.108206054	0.057
Rnf11	0.344618625	-0.151117689	0.051
Pfkm	0.345385141	0.000605566	0.066
Dctn6	0.345904243	-0.020041294	0.11
Bzw1	0.346901664	-0.031494254	0.128
Mrpl9	0.34772717	-0.116509525	0.052
Derl1	0.348151978	-0.130810688	0.089
Lsm12	0.348174835	0.023110111	0.059
Grsf1	0.34839704	-0.085079771	0.073
Tmem222	0.35342114	-0.042845653	0.059
Litaf	0.353460169	-0.073369132	0.194
Emc9	0.354547866	-0.054434869	0.051
Rps11	0.355212798	0.020886871	0.463
Rps10	0.356032913	-0.011369178	0.33
Phax	0.357202866	-0.001883919	0.115
Erp29	0.357383384	-0.082389451	0.152
Psmc2	0.358589956	-0.091464562	0.144
Coq9	0.361326302	-0.003140811	0.065
Chmp5	0.361474458	0.087027025	0.191
Fcf1	0.362413743	-0.077670115	0.077
Arl8b	0.36278146	-0.025174855	0.12
Atp5k	0.36323403	-0.022165164	0.148
Smek2	0.363851359	-0.053174385	0.084
Scfd1	0.36445265	-0.048778098	0.065
Keap1	0.365257657	-0.125046033	0.06
Celsr2	0.365794337	-0.001523188	0.057
Cxx1c	0.367658719	-0.007259965	0.058

Ola1	0.36854839	-0.037383883	0.083
Tra2b	0.36890896	-0.01180816	0.094
Smyd2	0.36895006	-0.088835708	0.065
Nsd1	0.369441442	0.005882014	0.066
Uba52	0.371691677	0.033991884	0.149
Mrps11	0.372149185	-0.070315568	0.047
Nagk	0.373223251	-0.014278911	0.07
Ube2d3	0.37437054	-0.09066843	0.142
Gltscr2	0.374377244	-0.013138945	0.119
Cnot8	0.375142158	0.027784054	0.07
Nkiras1	0.376745286	-0.025224393	0.051
Drg1	0.37760014	-0.099637572	0.056
Stx4a	0.378628112	-0.090190938	0.138
Nolc1	0.379045429	-0.150259566	0.097
Snrpn	0.379316528	0.10869217	0.078
Gid8	0.38272014	-0.055791198	0.053
Ndnl2	0.38285854	-0.114065368	0.057
Znrd1	0.38312077	-0.064670744	0.076
Psmd1	0.384618863	-0.111146716	0.129
Esf1	0.38483349	-0.070478706	0.102
mt-Rnr1	0.385572807	-0.002172398	0.311
Slc35a1	0.389833517	-0.073944959	0.074
Mllt11	0.39095235	-0.169084977	0.053
Ezh2	0.391632936	-0.058088922	0.048
Tnpo3	0.392294484	-0.010718629	0.052
Slc43a2	0.393697562	-0.005122663	0.06
Lamp2	0.393898307	-0.074417959	0.26
Mob1a	0.395489146	-0.025801674	0.058
Ppp2r5c	0.39589524	-0.093053819	0.07
Sil1	0.397618659	-0.095369554	0.051
Use1	0.398300704	-0.146218113	0.171
Tmem9b	0.398728892	-0.077619874	0.17
Ict1	0.399195689	-0.069108583	0.14
Timm50	0.401794764	-0.106514463	0.048
Mcee	0.402952395	-0.095056574	0.132
Ttc1	0.406492917	-0.035863166	0.072
Rap1a	0.407145999	-0.114517051	0.211
Agpat3	0.407150597	-0.002134052	0.1
Kat2b	0.409949591	-0.033549033	0.075
Zmat5	0.412393639	-0.010687419	0.072
Sssca1	0.412866978	-0.020761164	0.055
Ndst1	0.413825657	-0.053913921	0.065
Fbxl4	0.415060076	-0.008179398	0.056

Ykt6	0.415158222	-0.03877075	0.06
Tor1a	0.415997508	-0.103318257	0.048
Smchd1	0.417122604	-0.035854124	0.053
Skiv2l	0.419515883	-0.081007329	0.053
Poldip2	0.419815646	-0.04450075	0.053
Otub1	0.420385949	-0.004927596	0.059
Acadsb	0.420659057	-0.106545114	0.053
Tmem167	0.421160952	-0.049364932	0.084
Set	0.421461327	-0.061326277	0.076
Emc3	0.421774032	-0.020889705	0.109
Ppia	0.42412779	-0.048850815	0.181
Sdha	0.424539148	-0.112913066	0.149
Pten	0.424887462	-0.08658572	0.061
Arl2	0.42542214	-0.083797328	0.139
Letm1	0.42647048	-0.077442675	0.074
Gnpda2	0.426664878	-0.099837957	0.069
Gpr108	0.426699436	-0.080590542	0.06
Prkag1	0.427210453	-0.048534921	0.076
Sbds	0.427459923	-0.068883192	0.213
Phf5a	0.428067398	-0.161744265	0.102
Clasp2	0.429468753	0.013626883	0.099
Stt3a	0.431265997	-0.008453724	0.085
Zdhhc4	0.432232372	-0.082707618	0.047
Ppp1r11	0.433749527	-0.058095775	0.091
Pa2g4	0.433897872	-0.091166831	0.146
Bnip2	0.434838501	-0.067730039	0.151
Phf3	0.435116934	-0.075157398	0.062
Cox8a	0.437806827	-0.003349054	0.473
Maf1	0.438434374	-0.163365886	0.11
Sdhc	0.438577721	-0.043565041	0.207
Ddx1	0.439703021	-0.021556985	0.093
Tm9sf3	0.44474446	-0.154224378	0.178
Chmp1a	0.446343801	-0.106233128	0.049
Ube2a	0.447102068	-0.059774997	0.089
Copz2	0.447168933	-0.069595101	0.097
Rps19bp1	0.448170664	-0.029886216	0.059
Asf1a	0.44915964	-0.107908259	0.067
Armc1	0.451233987	-0.017468236	0.087
Dcakd	0.451372301	-0.089732825	0.048
Mcl1	0.452263358	0.019467627	0.056
Polr1d	0.45340949	-0.062694269	0.125
Ndufc1	0.454533633	-0.032318636	0.196
Slirp	0.455541644	-0.104777903	0.098

Strap	0.456706663	-0.072348721	0.105
Mapk1	0.458700098	-0.022899248	0.085
Sec13	0.459046965	-0.096194803	0.15
Dtymk	0.460326101	-0.065494572	0.076
Nono	0.460931347	-0.089866487	0.059
Ttc3	0.46142647	-0.014783584	0.197
Psmd11	0.461619172	-0.05943614	0.118
Clns1a	0.462016666	0.022249753	0.071
Scoc	0.462056138	-0.130335396	0.085
1110051M20Rik	0.462493828	-0.072423809	0.056
Wipi1	0.46419891	0.008166617	0.166
Psmd4	0.465528028	-0.08998164	0.166
Rsrc1	0.466053834	0.036214265	0.076
Txndc16	0.467209273	-0.047721259	0.084
Stard4	0.467267556	-0.001245232	0.064
Ublcp1	0.467727378	-0.049221307	0.068
Snf8	0.467899559	-0.036212379	0.052
BC031181	0.469863117	-0.056074763	0.203
Rab6b	0.470873272	0.023132373	0.097
Cxx1b	0.471147903	-0.057871481	0.094
Rps24	0.473395665	0.034327517	0.385
Fxyd7	0.474621845	-0.101179891	0.074
Clcn4-2	0.475014723	-0.018174753	0.113
Cops5	0.476494752	-0.121915456	0.072
Mrpl52	0.479073738	-0.031277951	0.125
March5	0.479313446	0.017736699	0.056
Dhx15	0.479669741	-0.029539946	0.085
Rangap1	0.479966353	-0.093043086	0.062
Tvp23b	0.480027745	-0.098727046	0.064
Vcp	0.480365668	-0.009626202	0.153
Cnep1r1	0.484705935	-0.120874626	0.082
Smim7	0.485337839	-0.043336025	0.13
Snta1	0.485776206	-0.071386651	0.115
Smarcc2	0.485897862	-0.013302926	0.13
Wwtr1	0.486458348	-0.032361327	0.084
Ubl5	0.487799914	-0.03646255	0.181
Vps4a	0.488190937	-0.069678725	0.059
Zcrb1	0.490055623	-0.019682074	0.149
Clptm1l	0.490091108	-0.072174936	0.094
Bola1	0.491627487	-0.091930976	0.058
Ufl1	0.491839343	-0.025179618	0.063
Chmp3	0.492184447	-0.070616562	0.102
Ndufa10	0.493520494	0.016102222	0.206

Abhd16a	0.494786117	-0.039301848	0.075
Stim1	0.496057878	-0.037950097	0.053
Plscr3	0.49807232	-0.047221878	0.069
Actr2	0.501603023	-0.125111781	0.105
Rtcb	0.501693566	-0.098927884	0.071
Rrp1	0.501936384	-0.107235052	0.219
Hspa4	0.502050131	-0.070425161	0.122
Immp1l	0.506604868	-0.043596388	0.082
Ranbp1	0.507011286	-0.030240784	0.237
Smndc1	0.507185632	-0.070890656	0.077
Eef1g	0.507197323	-0.074128112	0.146
Caml	0.507675876	-0.125867954	0.059
Cyth2	0.508231834	-0.048844326	0.091
Tax1bp1	0.508466732	0.03437416	0.391
Mtch2	0.509105535	-0.088614574	0.113
Phlda1	0.509413911	0.052374593	0.16
Cct6a	0.51065648	-0.126858413	0.118
Utp3	0.513957148	-0.050017237	0.071
Wbp11	0.514835015	0.054831103	0.085
Nabp2	0.520343529	-0.049744922	0.072
Lonp1	0.520598589	-0.123360284	0.056
Fbxo9	0.522225938	-0.024436552	0.064
Otud6b	0.523322474	-0.064151951	0.055
Nbr1	0.523760146	-0.045777184	0.061
Eif4e2	0.525631789	-0.071984729	0.05
Srek1ip1	0.528107839	-0.01333812	0.052
Bccip	0.529365058	-0.091761486	0.076
Rab24	0.529441507	0.040487002	0.094
Ndufs7	0.530300508	-0.017151924	0.232
D19Bwg1357e	0.532190882	0.020603623	0.088
Paip1	0.532847935	0.012500824	0.083
Pcyt1a	0.535543721	-0.073368392	0.057
Ap3b1	0.535798792	-0.074720323	0.055
mt-Rnr2	0.536226008	0.017242251	0.983
Chmp2b	0.536902148	-0.112878063	0.109
Serpinb6a	0.537446001	-0.023016824	0.159
Pbrm1	0.537989704	-0.036153106	0.119
Nol12	0.538381718	-0.040000714	0.054
Gkap1	0.538446713	-0.013836172	0.093
Creld2	0.538774723	-0.056450151	0.078
Cttn	0.540200269	-0.059535113	0.068
Nfe2l1	0.541330546	-0.055201507	0.091
Brd4	0.541455667	0.010796226	0.069

Iscu	0.542659574	-0.091911112	0.088
Mllt10	0.54600167	-0.049271143	0.052
Blmh	0.546036252	-0.085307675	0.062
Btbd3	0.547020763	0.091566662	0.057
Ifrd1	0.547587767	-0.09667407	0.095
Stk11	0.54861114	0.019443275	0.066
U2af1l4	0.548888651	-0.100359051	0.066
Pdzd11	0.549257033	-0.031519571	0.09
Ap3d1	0.549419643	-0.055528652	0.066
Gbas	0.54982938	-0.108578999	0.132
Rab33b	0.549910027	-0.037838309	0.053
Impad1	0.550907135	-0.069517323	0.059
Usmg5	0.551867427	0.034527488	0.054
Ndufaf3	0.552185733	0.013496294	0.056
Slc30a9	0.553294936	-0.099355737	0.075
Vamp3	0.555479053	-0.019196056	0.107
Sat1	0.555986162	-0.038893829	0.501
Nop58	0.557707092	-0.052325321	0.076
Atp5l	0.564457731	-0.01661201	0.048
Glrx2	0.564662688	-0.017137822	0.081
Gigyf2	0.564986742	-0.009729282	0.066
Rab7	0.565247396	-0.062043986	0.231
Dkc1	0.570170799	-0.079985275	0.062
Hook3	0.57117715	-0.000612121	0.094
Commd7	0.571578585	-0.107534862	0.063
Zmynd8	0.571602593	-0.006168935	0.077
Arhgef9	0.573079892	-0.027238735	0.058
Hnrnpr	0.575992623	-0.116241728	0.135
Snhg1	0.577137516	-0.055566338	0.054
Wwp1	0.578682204	-0.254584611	0.092
Ppfibp2	0.579603152	-0.14374211	0.05
Zc3h13	0.579785791	-0.074285448	0.109
Haghl	0.579951351	-0.030109607	0.06
Mier1	0.580732675	-0.005366838	0.072
Ndufaf2	0.580986628	-0.036298192	0.057
Sfpq	0.581004314	-0.018871457	0.095
Praf2	0.5868943	-0.007394365	0.067
Dctn5	0.586897348	-0.03006959	0.065
Ggnbp2	0.587925553	-0.078158575	0.127
Ssbp1	0.58828628	0.010978631	0.075
Atp6v1d	0.589403509	-0.073986642	0.138
Eif4a3	0.58986578	-0.025257463	0.138
Ilf2	0.591966865	-0.097647826	0.084

2310033P09Rik	0.592382922	-0.013449211	0.062
Ubtf	0.594109201	-0.024991324	0.114
Eif1ax	0.595162537	-0.07900592	0.122
Cwc15	0.595996146	-0.018744121	0.281
Eprs	0.597545593	-0.056072027	0.131
Ppil2	0.598245264	-0.027181455	0.053
Prkacb	0.598324715	-0.054486674	0.05
Serp1	0.598480268	-0.083457412	0.118
Eif6	0.600211558	-0.110676138	0.09
Lage3	0.602246955	-0.015896263	0.081
Smarcb1	0.607416003	-0.063313358	0.108
Tbca	0.607507419	-0.032866213	0.166
Hmgcl	0.607783227	-0.07529829	0.056
Smpd1	0.608350266	-0.11734067	0.059
Rbm27	0.611261946	-0.064021082	0.054
Rtfdc1	0.611783731	-0.076799283	0.095
Fam213b	0.612318301	-0.150366457	0.059
Fam213a	0.613404362	0.033207613	0.15
Ptgr2	0.613824014	-0.055503188	0.063
Zmat2	0.614387942	-0.051313829	0.14
Ddrgk1	0.614849553	-0.047476718	0.207
1110004F10Rik	0.61525503	-0.111348111	0.159
Nme2	0.61555949	0.044706578	0.057
Ddb1	0.616845066	-0.086619571	0.119
Psmd3	0.617799773	-0.057694973	0.081
Snx4	0.617966449	-0.091472774	0.086
Enoph1	0.61871181	-0.042650571	0.075
Cops7a	0.618893436	-0.002729413	0.075
Phb2	0.6196122	-0.020255401	0.108
Tpt1	0.620409121	-0.080916997	0.106
Rbm6	0.622384801	-0.05473725	0.058
Hnrnpk	0.624805108	-0.059449271	0.263
Snap25	0.625667443	-0.006493767	0.072
Klf7	0.625907708	-0.024644629	0.107
B3gnt1	0.626113051	-0.063324029	0.094
Ahsa1	0.626173273	-0.107099721	0.131
Dctn3	0.626268345	-0.05530829	0.21
Fam174a	0.62645701	-0.065427057	0.114
Pih1d1	0.626551343	-0.082127158	0.055
Anp32b	0.628650588	-0.010540572	0.248
Tmx2	0.629755155	-0.041770386	0.077
Tex261	0.632126668	-0.024543288	0.072
Glyr1	0.63219189	-0.122653479	0.061

Txnip	0.632809617	-0.158764882	0.106
Atp5e	0.633639876	-0.002827183	0.312
Rtn1	0.638625546	-0.090504923	0.119
Naa50	0.639684792	-0.003700183	0.088
2810004N23Rik	0.640164824	-0.056242106	0.058
Ppp5c	0.641299109	-0.043363812	0.054
Cyc1	0.644683173	-0.051868855	0.201
Rela	0.645281091	-0.101340804	0.065
Emc6	0.645433326	-0.006934589	0.115
Tuba1a	0.647584314	0.010408254	0.711
Rap1b	0.64786615	-0.058041669	0.07
Elavl1	0.649192081	-0.099445647	0.071
Ppid	0.649410022	0.044243267	0.071
Commd10	0.64997612	0.004878475	0.055
Ap1m1	0.651084831	0.000962855	0.051
Gtpbp4	0.65235062	-0.033708858	0.067
Rae1	0.656905752	-0.011595202	0.069
Lyrm5	0.6573791	-0.025561427	0.062
Cdipt	0.65775431	-0.08296781	0.072
Tor1b	0.65776284	-0.086223589	0.051
Coq7	0.658479377	-0.032881096	0.078
Rsf1	0.658486738	-0.111553083	0.082
Ypel5	0.66032129	-0.094854799	0.07
Elf1	0.662119156	-0.115183889	0.049
Sub1	0.664204302	0.017177257	0.253
Atxn10	0.665064625	-0.082036363	0.195
Lamtor2	0.666606443	0.055278725	0.101
Rpl39	0.667822431	-0.027991357	0.145
C1qbp	0.670364797	-0.11461359	0.117
Sod3	0.674645667	-0.011058559	0.106
Coa6	0.674735613	-0.115777008	0.058
Tmx1	0.675962793	-0.063362785	0.051
G3bp1	0.67681721	-0.049574471	0.069
Dazap2	0.676961667	-0.054668247	0.237
Cdk5	0.67711064	-0.02422629	0.073
Eif4g3	0.678030487	-0.020396349	0.115
Naa10	0.678916149	-0.021018329	0.059
Mfap1b	0.681202634	-0.004195044	0.051
Kdm1a	0.682002764	-0.051841636	0.054
Tmx4	0.682311021	-0.065187501	0.068
Wasl	0.682533128	-0.006743239	0.131
Dctn4	0.684346947	-0.042890199	0.053
Jkamp	0.685557863	-0.008157391	0.129

Pitpna	0.686357358	-0.039657273	0.072
Swi5	0.687520131	-0.013389208	0.217
Tomm5	0.689528826	-0.02861348	0.084
Hdgfrp2	0.690199632	-0.002945155	0.063
Cdc42ep4	0.693619508	0.016084011	0.068
Pcbp2	0.69470324	-0.030092892	0.369
Babam1	0.694828904	-0.072039075	0.054
Xrn2	0.69701253	-0.065054552	0.09
Rnf187	0.698136377	-0.033787549	0.165
Crk	0.699363545	-0.023863367	0.08
Prpf40a	0.702166701	-0.089017539	0.161
Ube2d1	0.704133732	-0.059879909	0.05
Dlst	0.706072536	-0.078722176	0.058
Slc25a17	0.708191284	-0.021388244	0.066
Hrsp12	0.708603667	-0.029391529	0.076
Col5a3	0.708823299	-0.070089136	0.241
Glt8d1	0.709323689	0.020075879	0.115
Cystm1	0.709875722	-0.051884922	0.053
Ctbp1	0.709985155	-0.028761613	0.097
Uqcr10	0.710622403	-0.009749099	0.25
Ociad1	0.711338352	-0.004959908	0.293
Tmem234	0.712990863	-0.084172277	0.266
Ccdc124	0.713843724	-0.032681464	0.155
Polr2c	0.714383791	-0.038278383	0.073
Kars	0.714696084	-0.032180759	0.051
Cops4	0.715191928	-0.129383015	0.084
Ccdc55	0.715199014	-0.032979863	0.078
Sf3b2	0.72174854	-0.087927441	0.232
Fam134a	0.721932663	-0.001243853	0.061
Eif3h	0.723467262	-0.044721291	0.177
Hint2	0.723842724	-0.077629705	0.094
Mrps18c	0.726631761	-0.075095402	0.079
Dguok	0.728425358	-0.09987345	0.053
Zfr	0.73352064	0.001307496	0.182
Cflar	0.734438277	-0.035976863	0.051
Brd3	0.734544854	-0.076943138	0.097
Ahcyl1	0.735453817	-0.013576262	0.054
Baz1b	0.735907247	-0.011485308	0.112
Ilf3	0.73734977	-0.062638872	0.059
Tmem66	0.738591712	-0.053692233	0.336
Gnl3	0.741901621	-0.049555895	0.053
Zfp771	0.741963149	-0.061189971	0.052
Nsfl1c	0.743088463	0.009532343	0.104

Psmc1	0.743394802	-0.027512581	0.152
Sept10	0.746643591	-0.065956598	0.072
Tcta	0.748079108	-0.043152741	0.062
Clptm1	0.750970895	-0.015284393	0.062
Lcmt1	0.751601822	-0.040754071	0.054
Mrpl24	0.753523755	-0.086424058	0.089
Golga7	0.755930468	0.097704186	0.096
Ssr2	0.756717147	-0.088399408	0.215
Ndufa6	0.757962312	-0.014746011	0.282
Tmx3	0.75914538	-0.052922492	0.081
Osgep	0.763478082	-0.107008507	0.09
Prpf6	0.763979353	-0.032407343	0.06
Igbp1	0.766746819	-0.043050181	0.075
Ssna1	0.766980012	-0.09618028	0.097
Fam107a	0.768825988	-0.198648251	0.065
Emc10	0.769119537	-0.051594385	0.169
Pkn2	0.769986372	-0.062593539	0.065
Eif3l	0.772697219	-0.03898055	0.104
Pcolce	0.775292846	-0.115657334	0.057
Hadha	0.775600979	-0.053689971	0.145
Cbx3	0.77590537	0.060987226	0.066
Kifap3	0.779005082	-0.082508974	0.086
Tns3	0.779503712	-0.083720207	0.115
Hnrnpab	0.780046569	-0.087437385	0.165
Tm2d1	0.780360667	-0.038184353	0.074
Tmsb4x	0.780778399	0.020076455	0.826
Snx17	0.781836906	-0.002845251	0.09
Scyl1	0.782085531	-0.066004111	0.06
Mrpl36	0.782235855	-0.049111264	0.128
Nop14	0.784510444	-0.043958955	0.054
Rnf146	0.784984868	-0.048574116	0.056
Supt16	0.785257171	-0.078948268	0.098
Pafah1b2	0.786740585	-0.072891949	0.079
Acin1	0.787339382	-0.044472151	0.191
Rbm22	0.790235765	-0.084755613	0.064
Eif3g	0.790665425	-0.094411838	0.159
Banf1	0.792952421	-0.061466435	0.217
Bet1	0.796732863	-0.078285204	0.091
Cox20	0.801124317	-0.040196576	0.106
Actr10	0.802497665	-0.045248657	0.093
Rps21	0.802521528	-0.008362042	0.274
Gsk3b	0.804831953	-0.04560312	0.13
Zrsr2	0.805703499	-0.050484448	0.067

Wdr61	0.808545287	-0.070072506	0.093
Fam21	0.809028034	-0.044778539	0.074
Sugt1	0.811089671	-0.076989078	0.114
Agpat6	0.812118723	-0.083701594	0.055
Mrpl10	0.813325908	-0.017512478	0.054
Pdcl3	0.814007517	-0.088139744	0.087
Grpel1	0.818170433	-0.077621206	0.091
Stk25	0.820164384	-0.066389873	0.082
Mark3	0.820368431	-0.060215828	0.055
Itfg1	0.821216304	-0.059333055	0.095
Naa20	0.821650199	-0.025411363	0.061
Paip2	0.822600912	-0.088526284	0.3
Immt	0.824016833	-0.031057151	0.102
Rpl4	0.826242759	-0.029302019	0.542
Hnrnpd	0.828226563	0.005788206	0.068
Pgp	0.831943385	-0.039555363	0.146
Rps14	0.832062909	-0.01503892	0.588
Arid4b	0.833845543	-0.052358464	0.1
2410004B18Rik	0.835803717	-0.050339972	0.069
Cdk11b	0.835991447	-0.010849041	0.192
Mea1	0.83610824	-0.048251629	0.095
Timm17b	0.83638663	-0.042300445	0.064
Dnajc5	0.836554355	-0.020689389	0.063
Sf3b1	0.839577482	-0.08882457	0.188
Anxa7	0.839903794	-0.034376384	0.085
Mrpl11	0.841604849	-0.041698419	0.069
Eif3c	0.842174681	0.00566494	0.228
Bscl2	0.842566737	-0.051257675	0.093
Cnot4	0.84323058	-0.050116913	0.066
Comt	0.851682533	-0.119708118	0.243
Clta	0.854508091	-0.075599501	0.302
Wbscr22	0.854665453	-0.027427131	0.051
S100a13	0.855424502	-0.091714524	0.179
Nap1l4	0.857009089	-0.09451269	0.165
Psmc6	0.857558756	-0.100901203	0.106
Hnrnph3	0.857790337	-0.05383274	0.119
Lrch3	0.858276057	0.015418844	0.054
Rbbp4	0.862528271	-0.045951799	0.208
Ubc	0.864645029	0.00268627	0.401
Oard1	0.866088128	-0.051067138	0.057
Max	0.869642145	-0.052104099	0.076
Sec61a1	0.870217642	-0.035197028	0.076
Scamp3	0.870612796	-0.05227558	0.072

Ubxn1	0.871516148	-0.05257574	0.236
Hcfc1r1	0.872896875	-0.083734615	0.225
Pnkd	0.873439638	-0.049862123	0.106
Ndufs6	0.878346328	-0.061500607	0.188
Irf3	0.879330279	-0.07112203	0.058
Fam173a	0.886704426	-0.007332871	0.103
Rab11a	0.887872069	-0.063297	0.17
Kpnb1	0.890451644	-0.009895987	0.063
Smdt1	0.893827842	-0.03396431	0.303
Gpatch11	0.896129307	-0.033307369	0.052
Pccb	0.898147697	0.020219385	0.058
Vps36	0.900592482	0.004905981	0.081
Marc2	0.901853938	-0.041803953	0.155
Thra	0.902341648	-0.056063878	0.161
Anapc16	0.904802333	-0.088024468	0.209
Cisd1	0.906611586	-0.017201855	0.147
Upf3b	0.909103212	-0.039558452	0.077
Cox7a2	0.913379941	-0.018944105	0.381
Bclaf1	0.918415186	-0.1363064	0.121
N4bp2l2	0.919617638	-0.081458368	0.06
Smu1	0.921560707	-0.025195725	0.086
Mrps7	0.922257191	-0.035416598	0.064
Eif5a	0.924861453	-0.028380476	0.197
Ube2b	0.924967525	-0.101697187	0.188
Slu7	0.92949657	-0.057676839	0.118
Rsbn1	0.933612724	-0.025410335	0.054
Psmd14	0.937224161	-0.086378575	0.106
Taok3	0.937423725	-0.034439196	0.059
Ythdf2	0.938639074	-0.056350218	0.053
Leprot	0.940729425	-0.066676173	0.162
Abcd3	0.941729586	-0.030898618	0.145
Nckap1	0.94607655	-0.05721131	0.061
Abcf1	0.95416028	-0.025088586	0.16
Prdx1	0.954891009	-0.011742436	0.579
Prkar1a	0.956273763	-0.057365971	0.287
Snrpb2	0.957667064	-0.06086197	0.078
Pmpcb	0.962490119	-0.062502908	0.096
Atad1	0.962608973	-0.059158423	0.095
Tssc4	0.964108968	-0.068366453	0.059
Gtf2b	0.964879848	-0.029652596	0.07
Paics	0.965612278	-0.08916127	0.227
Sh3glb1	0.965762848	-0.06710548	0.194
Cbx1	0.967396187	-0.036132204	0.174

BC005624	0.968336019	-0.028856031	0.085
Metap2	0.970402706	-0.058794614	0.167
Synj2bp	0.974864159	-0.053000811	0.068
BC004004	0.975090757	-0.069372497	0.107
Ldha	0.975591913	-0.076201564	0.146
Tmem60	0.976155258	-0.075492081	0.07
Pbdc1	0.978264194	-0.063771909	0.059
Cops6	0.978887248	-0.016183051	0.144
Hras	0.982343351	-0.100990083	0.075
Rps20	0.983373855	-0.028884766	0.284
Tiprl	0.984711134	-0.082121247	0.075
Tbc1d7	0.98490993	-0.136665968	0.072
Atpif1	0.985932716	-0.014454931	0.327
Cops8	0.986094999	-0.104435704	0.084
Col15a1	0.987167827	-0.096531614	0.053
Cisd2	0.987821956	-0.058182556	0.109
Gtf2f1	0.9885198	-0.038150408	0.102
Ddx23	0.990160322	-0.008372586	0.063
Ubxn2a	0.990220884	-0.04503049	0.058
Mrps5	0.992893148	-0.023470005	0.056
Cox5b	0.996019124	-0.020584477	0.232
Wdr26	0.997805716	-0.074806374	0.089
Cast	0.997815245	-0.086336489	0.061
Fdps	0.998588156	0.035460445	0.245
Paf1	0.999934915	-0.05980911	0.057

ıwann cells, related to Figure 2

The percentage of satellite glial cells where the gene is detected	"Adjusted p-value, based on bonferroni correction using all genes in the dataset"
pct.2	p_val_adj
0.006	0
0.603	0
0.541	0
0.02	0
0.011	0
0.013	0
0.01	0
0.679	0
0.021	0
0.166	0
0.101	0
0.004	0
0.132	0
0.006	0
0.004	0
0.044	0
0.017	0
0.002	0
0.017	0
0.003	0
0.032	0
0.008	0
0.001	0
0.002	0
0.059	0
0.004	0
0.094	0
0.033	0
0.03	0
0.05	0
0.002	0

0.005	0
0.004	0
0.002	0
0.006	0
0.143	0
0.019	0
0.041	0
0.008	0
0.244	0
0.051	0
0.022	0
0.058	0
0.02	0
0.007	0
0.43	0
0.012	0
0.005	0
0.006	0
0.844	0
0.518	0
0.537	0
0.004	0
0.755	0
0.002	0
0.005	0
0.003	0
0.003	0
0.003	0
0.66	0
0.001	0
0.004	0
0.006	0
0	0
0.001	0
0.921	0
0.982	0
0.697	0
0.663	0
0.919	0
0.826	0
0.993	0
0.832	0
0.003	7.00E-301

0.551	1.43E-294
0.11	7.86E-289
0.554	2.94E-287
0.072	4.50E-286
0.615	5.22E-286
0.176	9.63E-285
0.618	1.53E-284
0.041	1.68E-275
0.501	2.14E-275
0.004	6.80E-271
0.093	2.95E-270
0.153	4.81E-269
0.054	1.47E-267
0.163	6.95E-264
0.016	1.04E-263
0.595	3.79E-263
0.016	1.51E-258
0.517	1.75E-258
0.012	3.01E-256
0.019	2.27E-252
0.226	5.76E-252
0.002	2.19E-251
0.16	6.94E-251
0.335	3.51E-246
0.577	9.27E-242
0.524	6.88E-241
0.443	1.13E-233
0.166	1.18E-233
0.061	3.41E-233
0.005	5.96E-232
0.446	2.63E-231
0.566	7.30E-227
0.114	1.75E-226
0.007	6.04E-225
0.003	1.59E-222
0.549	9.90E-222
0.032	1.64E-220
0.002	1.31E-219
0.418	1.49E-216
0.015	1.97E-216
0.945	7.26E-216
0.063	1.76E-215
0	1.01E-214

0.014	2.53E-209
0.632	7.78E-208
0.458	1.26E-207
0.002	1.21E-206
0.014	1.43E-206
0.017	2.88E-203
0.002	1.99E-202
0.408	9.15E-202
0.117	1.89E-201
0.007	5.68E-198
0.056	4.86E-196
0.02	1.13E-193
0.391	2.63E-193
0.051	7.02E-190
0.092	1.69E-188
0.025	2.64E-188
0.678	1.39E-186
0.051	8.28E-185
0.594	4.91E-184
0.021	4.14E-183
0.004	1.99E-182
0.579	4.14E-181
0	7.36E-181
0.923	7.34E-179
0.375	9.97E-177
0.05	1.42E-176
0.033	1.99E-176
0.368	2.28E-176
0.772	2.98E-175
0	1.71E-174
0.398	1.50E-173
0.029	1.32E-172
0.026	3.63E-172
0.033	1.18E-171
0.224	1.82E-171
0.032	2.07E-171
0.002	1.97E-169
0.866	2.96E-169
0.213	4.18E-169
0.631	8.22E-169
0.001	1.39E-168
0.011	3.41E-168
0.464	5.84E-168

0.104	2.46E-167
0.842	1.36E-166
0.665	2.09E-166
0.05	6.82E-166
0.049	1.29E-165
0.005	3.81E-165
0.004	1.18E-164
0.001	1.22E-164
0.015	1.48E-164
0.426	2.03E-164
0.075	3.73E-164
0.007	4.92E-163
0.511	5.23E-161
0.003	2.21E-160
0.397	7.18E-159
0.049	2.00E-158
0.103	3.59E-158
0.096	4.01E-158
0.847	6.38E-158
0.547	8.46E-158
0.136	1.74E-157
0.484	2.48E-156
0.519	2.92E-156
0.029	4.24E-155
0.335	2.47E-153
0.008	3.18E-152
0.391	3.76E-152
0.343	5.97E-152
0.002	1.12E-151
0	5.59E-150
0	3.93E-147
0.083	1.04E-146
0.002	1.65E-146
0.021	1.96E-146
0.076	9.13E-146
0.335	3.53E-144
0.889	6.16E-144
0.013	1.90E-143
0.003	4.53E-143
0.056	5.70E-143
0.013	2.06E-142
0.001	2.78E-142
0.001	3.71E-142

0.002	1.12E-140
0.332	4.52E-140
0.637	7.10E-139
0.198	6.22E-138
0.005	7.02E-137
0.059	2.60E-136
0.026	1.12E-135
0.006	3.90E-135
0.008	9.57E-135
0.583	5.88E-133
0.033	1.23E-132
0.326	2.27E-132
0.325	1.48E-131
0.318	4.70E-131
0.001	8.82E-131
0.465	5.07E-130
0.006	8.44E-130
0.314	1.05E-129
0.221	1.88E-129
0.211	1.91E-129
0.091	2.44E-129
0.044	6.53E-129
0.088	2.18E-128
0.671	6.99E-128
0.022	9.53E-128
0.045	1.23E-127
0.365	2.67E-127
0.383	5.63E-127
0.632	6.00E-127
0.117	6.04E-127
0.092	1.05E-126
0.654	1.43E-126
0.019	7.94E-124
0.047	1.09E-122
0.178	2.06E-122
0.078	4.03E-122
0.002	4.96E-122
0.486	8.62E-122
0.277	2.03E-121
0.389	2.40E-121
0.012	3.41E-120
0.283	7.94E-120
0.284	2.15E-119

0.014	1.93E-116
0.034	2.34E-116
0.029	2.58E-116
0.123	1.43E-115
0.049	4.73E-114
0.015	7.68E-114
0.008	9.89E-114
0.274	8.42E-113
0.005	1.57E-112
0.022	2.24E-112
0.105	1.35E-110
0.363	3.28E-110
0.248	5.31E-109
0.028	1.13E-108
0.396	1.76E-108
0.263	2.10E-108
0.008	1.20E-107
0.253	4.39E-107
0.203	1.03E-106
0.06	1.28E-106
0.159	3.61E-106
0.019	1.10E-105
0.019	1.71E-105
0.022	6.72E-105
0.307	7.93E-105
0.032	9.35E-105
0.009	1.57E-104
0.002	2.66E-104
0.072	2.83E-104
0.248	6.35E-104
0.178	3.67E-103
0.119	5.14E-103
0.482	5.55E-103
0.006	6.75E-102
0.275	1.15E-100
0.008	1.10E-99
0.088	3.65E-99
0.239	4.70E-99
0.271	1.13E-98
0.232	1.41E-98
0.139	5.45E-97
0.009	1.34E-96
0.75	1.67E-96

0.051	1.24E-95
0.233	5.13E-95
0.017	1.93E-94
0.04	8.12E-93
0.033	1.00E-92
0.225	1.97E-92
0.005	2.94E-92
0.058	2.41E-91
0.006	7.28E-91
0.079	1.41E-90
0.39	1.54E-90
0.307	6.20E-90
0.233	8.59E-90
0.31	1.55E-89
0.224	1.81E-89
0.054	2.02E-89
0.217	4.83E-89
0.099	6.92E-88
0.242	9.27E-88
0.022	3.35E-87
0.02	3.91E-87
0.005	4.82E-87
0.014	1.34E-85
0.055	2.12E-85
0.017	1.01E-84
0.019	1.92E-84
0.161	2.31E-84
0.597	5.87E-84
0.212	2.75E-83
0.682	3.18E-82
0.38	7.73E-82
0.014	1.06E-81
0.335	1.07E-81
0.031	3.65E-81
0.027	2.39E-80
0.048	3.38E-80
0.401	5.20E-80
0.035	8.17E-80
0.033	1.27E-77
0.058	4.80E-77
0.074	5.02E-77
0.126	7.51E-77
0.004	8.35E-77

0.32	8.89E-77
0.02	2.53E-76
0.049	3.89E-76
0.129	1.76E-75
0.456	5.54E-75
0.2	6.49E-75
0.517	3.35E-74
0.081	5.06E-74
0.114	8.52E-74
0.014	9.97E-74
0.208	1.18E-73
0.122	8.33E-73
0.071	3.01E-72
0.006	4.44E-72
0.007	7.61E-72
0.025	1.71E-71
0.204	1.73E-71
0.049	2.33E-71
0.049	4.69E-71
0.02	7.39E-71
0.005	4.90E-70
0.212	5.56E-70
0.022	6.09E-70
0.018	1.60E-69
0.008	1.18E-68
0.174	1.50E-68
0.171	4.01E-68
0.067	6.41E-68
0.075	1.26E-67
0.016	1.72E-67
0.109	4.63E-67
0.034	5.24E-67
0.017	1.89E-66
0.174	6.99E-66
0.021	1.54E-65
0.346	1.82E-65
0.123	6.10E-65
0.212	7.27E-65
0.085	8.89E-65
0.168	1.51E-64
0.049	1.79E-64
0.143	1.82E-64
0.068	1.93E-64

0.008	2.00E-64
0.173	5.98E-64
0.16	8.86E-64
0.008	1.27E-63
0.11	1.65E-63
0.012	1.86E-63
0.143	2.00E-63
0.022	2.62E-63
0.114	3.87E-63
0.22	1.02E-62
0.163	1.03E-62
0.122	1.06E-62
0.089	2.43E-62
0.236	3.20E-62
0.254	7.42E-62
0.208	1.23E-61
0.367	1.80E-61
0.028	4.21E-61
0.456	5.13E-61
0.044	1.86E-60
0.013	1.93E-60
0.151	2.27E-60
0.289	2.29E-60
0.595	5.41E-60
0.281	6.61E-60
0.17	8.34E-60
0.026	1.20E-59
0.064	2.23E-59
0.606	2.83E-59
0.348	3.42E-59
0.801	6.68E-59
0.022	8.02E-59
0.036	1.31E-58
0.154	1.55E-58
0.3	1.57E-58
0.408	1.73E-58
0.161	1.95E-58
0.013	3.34E-58
0.7	5.02E-58
0.032	1.03E-57
0.043	1.07E-57
0.038	1.84E-57
0.648	2.46E-57

0.195	2.71E-57
0.008	3.44E-57
0.159	3.53E-57
0.137	5.74E-57
0.184	1.33E-56
0.013	4.38E-56
0.516	4.45E-56
0.156	4.90E-56
0.007	1.95E-55
0.015	2.82E-55
0.28	3.86E-55
0.51	5.50E-55
0.02	1.05E-54
0.189	1.15E-54
0.614	1.64E-54
0.012	1.99E-54
0.019	3.30E-54
0.16	6.01E-54
0.529	1.06E-53
0.392	1.58E-53
0.111	1.70E-53
0.038	1.75E-53
0.017	2.26E-53
0.019	4.52E-53
0.247	2.61E-52
0.227	3.32E-52
0.151	3.47E-52
0.138	4.54E-52
0.157	5.83E-52
0.193	6.70E-52
0.106	8.54E-52
0.144	9.74E-52
0.137	6.03E-51
0.051	8.42E-51
0.184	1.02E-50
0.189	1.12E-50
0.183	1.18E-50
0.176	1.75E-50
0.041	1.86E-50
0.162	2.31E-50
0.588	2.46E-50
0.031	2.93E-50
0.296	4.20E-50

0.143	5.45E-50
0.221	9.29E-50
0.142	9.57E-50
0.202	2.14E-49
0.472	2.25E-49
0.432	2.83E-49
0.153	3.17E-49
0.012	4.01E-49
0.18	4.52E-49
0.16	1.82E-48
0.019	2.09E-48
0.227	3.69E-48
0.348	5.86E-48
0.516	1.24E-47
0.024	1.89E-47
0.061	1.97E-47
0.224	2.17E-47
0.175	2.56E-47
0.17	3.72E-47
0.04	4.65E-47
0.015	6.77E-47
0.011	2.62E-46
0.144	3.74E-46
0.039	5.93E-46
0.023	8.08E-46
0.142	8.12E-46
0.177	9.82E-46
0.048	1.15E-45
0.264	2.06E-45
0.159	3.27E-45
0.285	4.41E-45
0.213	5.13E-45
0.129	1.14E-44
0.234	1.58E-44
0.162	1.78E-44
0.044	3.38E-44
0.075	4.22E-44
0.225	4.60E-44
0.05	6.38E-44
0.171	7.60E-44
0.12	1.54E-43
0.013	2.03E-43
0.035	4.33E-43

0.012	5.52E-43
0.155	6.72E-43
0.027	6.90E-43
0.299	1.20E-42
0.03	1.50E-42
0.024	1.61E-42
0.226	1.79E-42
0.899	1.93E-42
0.092	2.02E-42
0.178	2.68E-42
0.096	5.49E-42
0.356	6.38E-42
0.097	6.74E-42
0.179	8.04E-42
0.125	1.20E-41
0.302	1.25E-41
0.343	1.44E-41
0.119	1.73E-41
0.125	1.84E-41
0.016	2.54E-41
0.012	2.81E-41
0.114	3.72E-41
0.543	3.96E-41
0.154	6.15E-41
0.191	6.49E-41
0.126	7.75E-41
0.215	8.08E-41
0.491	1.07E-40
0.165	1.16E-40
0.156	1.64E-40
0.155	1.83E-40
0.011	2.02E-40
0.122	2.44E-40
0.148	3.01E-40
0.055	8.36E-40
0.025	9.41E-40
0.337	1.20E-39
0.064	1.75E-39
0.012	2.07E-39
0.029	2.25E-39
0.247	4.18E-39
0.022	4.60E-39
0.041	5.16E-39

0.167	6.02E-39
0.112	9.13E-39
0.133	9.97E-39
0.274	1.26E-38
0.222	1.27E-38
0.01	2.28E-38
0.213	4.16E-38
0.02	5.70E-38
0.223	7.20E-38
0.237	7.39E-38
0.039	8.80E-38
0.12	1.01E-37
0.107	1.22E-37
0.112	1.38E-37
0.122	1.74E-37
0.151	3.13E-37
0.261	3.42E-37
0.035	8.39E-37
0.647	1.01E-36
0.052	1.37E-36
0.458	2.43E-36
0.021	2.84E-36
0.48	6.62E-36
0.227	8.07E-36
0.19	1.23E-35
0.093	1.34E-35
0.165	1.58E-35
0.1	1.69E-35
0.187	2.67E-35
0.127	2.84E-35
0.065	3.09E-35
0.105	4.88E-35
0.01	5.53E-35
0.221	5.64E-35
0.107	7.93E-35
0.036	8.28E-35
0.103	8.93E-35
0.022	1.87E-34
0.075	2.44E-34
0.438	2.98E-34
0.096	6.39E-34
0.233	8.48E-34
0.159	1.07E-33

0.395	1.67E-33
0.292	1.71E-33
0.022	1.98E-33
0.169	2.06E-33
0.189	4.27E-33
0.044	8.34E-33
0.033	9.89E-33
0.116	1.02E-32
0.106	1.08E-32
0.102	1.50E-32
0.039	1.69E-32
0.342	5.22E-32
0.095	6.93E-32
0.024	9.59E-32
0.46	1.03E-31
0.1	1.07E-31
0.625	1.14E-31
0.248	1.59E-31
0.013	1.76E-31
0.035	1.80E-31
0.3	1.86E-31
0.12	1.92E-31
0.094	2.09E-31
0.054	2.12E-31
0.365	2.96E-31
0.034	3.54E-31
0.097	3.89E-31
0.091	5.10E-31
0.112	5.60E-31
0.126	7.71E-31
0.032	1.00E-30
0.018	2.02E-30
0.053	2.25E-30
0.247	3.34E-30
0.067	4.53E-30
0.089	4.57E-30
0.987	4.94E-30
0.084	4.98E-30
0.031	5.38E-30
0.444	6.32E-30
0.161	7.27E-30
0.165	8.11E-30
0.357	8.93E-30

0.185	9.94E-30
0.039	1.08E-29
0.014	1.21E-29
0.117	2.02E-29
0.402	2.10E-29
0.045	2.42E-29
0.036	2.53E-29
0.191	3.43E-29
0.146	4.55E-29
0.206	5.40E-29
0.353	5.67E-29
0.087	5.69E-29
0.061	7.09E-29
0.047	1.08E-28
0.02	1.09E-28
0.1	1.13E-28
0.053	1.35E-28
0.083	1.37E-28
0.087	1.50E-28
0.025	1.61E-28
0.106	1.72E-28
0.012	2.11E-28
0.107	2.67E-28
0.419	4.20E-28
0.014	5.29E-28
0.096	5.84E-28
0.025	6.70E-28
0.411	7.08E-28
0.09	7.57E-28
0.143	8.85E-28
0.303	1.02E-27
0.133	1.03E-27
0.172	1.24E-27
0.111	1.55E-27
0.088	1.89E-27
0.019	2.04E-27
0.156	2.28E-27
0.047	2.31E-27
0.012	2.48E-27
0.038	2.52E-27
0.083	2.59E-27
0.673	3.13E-27
0.014	3.47E-27

0.055	3.76E-27
0.09	3.94E-27
0.12	4.34E-27
0.092	4.38E-27
0.015	7.00E-27
0.163	7.22E-27
0.101	9.43E-27
0.189	1.36E-26
0.064	1.41E-26
0.164	1.74E-26
0.022	1.85E-26
0.024	2.13E-26
0.022	2.42E-26
0.066	2.44E-26
0.103	2.93E-26
0.105	2.98E-26
0.022	3.23E-26
0.188	3.72E-26
0.093	4.04E-26
0.195	4.09E-26
0.287	4.27E-26
0.156	4.34E-26
0.174	4.85E-26
0.188	5.29E-26
0.064	9.89E-26
0.046	2.01E-25
0.076	2.32E-25
0.625	2.54E-25
0.863	2.80E-25
0.095	3.17E-25
0.039	3.28E-25
0.015	3.90E-25
0.038	5.85E-25
0.232	6.00E-25
0.127	6.09E-25
0.018	6.87E-25
0.364	7.17E-25
0.08	7.78E-25
0.193	8.12E-25
0.093	8.68E-25
0.079	9.80E-25
0.193	1.18E-24
0.079	1.23E-24

0.018	2.19E-24
0.086	2.25E-24
0.122	2.40E-24
0.098	2.54E-24
0.052	2.59E-24
0.138	2.76E-24
0.097	3.94E-24
0.194	4.11E-24
0.046	5.02E-24
0.015	8.10E-24
0.17	8.16E-24
0.17	8.21E-24
0.098	1.53E-23
0.074	1.61E-23
0.077	1.95E-23
0.21	1.99E-23
0.111	2.06E-23
0.114	2.26E-23
0.067	2.74E-23
0.039	2.76E-23
0.182	3.40E-23
0.032	3.68E-23
0.152	4.37E-23
0.327	5.27E-23
0.067	5.81E-23
0.079	6.96E-23
0.126	8.60E-23
0.095	8.83E-23
0.301	9.09E-23
0.113	1.06E-22
0.019	2.09E-22
0.181	2.71E-22
0.226	2.79E-22
0.068	3.11E-22
0.023	3.12E-22
0.024	3.52E-22
0.115	3.61E-22
0.077	3.62E-22
0.087	3.76E-22
0.031	4.45E-22
0.277	4.58E-22
0.053	4.77E-22
0.086	5.16E-22

0.073	5.60E-22
0.023	5.64E-22
0.067	5.65E-22
0.141	6.59E-22
0.207	6.87E-22
0.265	8.30E-22
0.019	8.82E-22
0.145	8.95E-22
0.051	1.19E-21
0.02	1.28E-21
0.084	1.46E-21
0.018	1.60E-21
0.39	1.68E-21
0.069	1.79E-21
0.086	1.82E-21
0.245	1.91E-21
0.034	2.82E-21
0.138	3.64E-21
0.019	3.77E-21
0.049	5.28E-21
0.077	5.43E-21
0.016	5.49E-21
0.112	6.49E-21
0.184	1.12E-20
0.338	1.14E-20
0.115	1.17E-20
0.077	1.22E-20
0.08	1.42E-20
0.134	1.48E-20
0.064	1.73E-20
0.397	1.82E-20
0.231	2.01E-20
0.109	2.11E-20
0.175	2.13E-20
0.072	2.56E-20
0.024	2.62E-20
0.142	3.18E-20
0.05	3.35E-20
0.103	3.63E-20
0.152	3.77E-20
0.059	4.45E-20
0.039	4.64E-20
0.109	4.97E-20

0.024	4.99E-20
0.126	7.24E-20
0.171	7.96E-20
0.052	1.00E-19
0.35	1.06E-19
0.064	1.18E-19
0.229	1.49E-19
0.094	1.55E-19
0.059	1.78E-19
0.088	1.98E-19
0.019	2.24E-19
0.087	2.25E-19
0.25	2.35E-19
0.364	2.37E-19
0.079	2.63E-19
0.059	2.86E-19
0.062	2.87E-19
0.058	3.38E-19
0.176	3.40E-19
0.048	3.49E-19
0.224	3.64E-19
0.111	3.71E-19
0.126	4.18E-19
0.075	6.35E-19
0.063	6.93E-19
0.035	7.01E-19
0.171	7.19E-19
0.024	7.51E-19
0.47	8.55E-19
0.044	8.67E-19
0.419	8.78E-19
0.126	9.88E-19
0.049	9.94E-19
0.02	1.22E-18
0.353	1.28E-18
0.062	1.32E-18
0.063	1.42E-18
0.1	1.79E-18
0.069	1.80E-18
0.035	2.17E-18
0.109	2.61E-18
0.067	2.85E-18
0.207	2.98E-18

0.258	3.28E-18
0.072	3.59E-18
0.025	3.75E-18
0.024	3.85E-18
0.054	3.93E-18
0.115	3.96E-18
0.117	4.21E-18
0.02	4.22E-18
0.116	4.54E-18
0.125	5.01E-18
0.301	5.17E-18
0.086	5.23E-18
0.301	6.03E-18
0.262	7.28E-18
0.224	7.38E-18
0.055	8.92E-18
0.062	1.00E-17
0.141	1.07E-17
0.08	1.39E-17
0.055	1.70E-17
0.056	2.02E-17
0.155	2.13E-17
0.058	2.29E-17
0.081	2.81E-17
0.172	3.11E-17
0.089	3.18E-17
0.101	3.30E-17
0.069	3.31E-17
0.343	3.33E-17
0.063	3.55E-17
0.189	3.67E-17
0.035	3.86E-17
0.176	4.20E-17
0.077	4.57E-17
0.104	4.59E-17
0.169	5.26E-17
0.083	5.45E-17
0.069	6.68E-17
0.062	7.01E-17
0.113	7.24E-17
0.141	7.86E-17
0.02	8.00E-17
0.059	8.15E-17

0.052	1.12E-16
0.097	1.28E-16
0.165	1.30E-16
0.02	1.75E-16
0.11	2.70E-16
0.028	2.71E-16
0.183	2.76E-16
0.293	2.79E-16
0.048	3.20E-16
0.087	3.72E-16
0.095	4.28E-16
0.032	4.58E-16
0.022	4.70E-16
0.085	5.19E-16
0.069	5.93E-16
0.165	6.12E-16
0.581	6.41E-16
0.186	6.53E-16
0.053	7.46E-16
0.061	7.67E-16
0.048	8.89E-16
0.025	9.03E-16
0.376	9.08E-16
0.113	9.55E-16
0.107	9.90E-16
0.245	1.19E-15
0.203	1.29E-15
0.051	1.29E-15
0.171	1.44E-15
0.104	1.48E-15
0.022	1.48E-15
0.055	1.48E-15
0.107	1.52E-15
0.104	1.72E-15
0.02	1.83E-15
0.254	2.13E-15
0.032	2.16E-15
0.116	2.19E-15
0.032	2.31E-15
0.036	2.55E-15
0.037	2.68E-15
0.126	2.77E-15
0.021	2.92E-15

0.102	3.12E-15
0.584	3.13E-15
0.179	3.29E-15
0.103	3.39E-15
0.15	3.54E-15
0.063	4.38E-15
0.059	4.47E-15
0.412	4.75E-15
0.045	5.41E-15
0.1	5.53E-15
0.036	5.89E-15
0.043	6.48E-15
0.264	7.09E-15
0.061	7.13E-15
0.035	7.36E-15
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0.142	9.91E-15
0.04	1.03E-14
0.202	1.16E-14
0.151	1.18E-14
0.084	1.23E-14
0.205	1.25E-14
0.03	1.28E-14
0.096	1.35E-14
0.018	1.36E-14
0.073	1.55E-14
0.045	1.59E-14
0.431	1.61E-14
0.048	1.64E-14
0.053	2.22E-14
0.058	2.34E-14
0.042	2.89E-14
0.056	2.99E-14
0.22	3.04E-14
0.058	3.23E-14
0.101	3.34E-14
0.019	3.36E-14
0.324	3.54E-14
0.101	3.68E-14
0.106	3.76E-14
0.164	3.94E-14
0.176	4.39E-14

0.143	4.40E-14
0.127	4.69E-14
0.155	5.07E-14
0.085	5.53E-14
0.116	6.09E-14
0.198	6.13E-14
0.14	7.09E-14
0.298	7.73E-14
0.027	8.96E-14
0.213	9.61E-14
0.119	1.16E-13
0.077	1.17E-13
0.072	1.18E-13
0.06	1.18E-13
0.22	1.32E-13
0.063	1.37E-13
0.255	1.50E-13
0.036	1.56E-13
0.25	1.69E-13
0.051	1.84E-13
0.096	2.18E-13
0.056	2.19E-13
0.093	2.19E-13
0.465	2.23E-13
0.198	2.23E-13
0.019	2.40E-13
0.028	2.48E-13
0.083	2.62E-13
0.233	2.72E-13
0.112	2.73E-13
0.247	2.73E-13
0.039	2.80E-13
0.027	2.89E-13
0.019	2.93E-13
0.045	3.07E-13
0.056	3.15E-13
0.079	3.82E-13
0.182	3.87E-13
0.165	4.17E-13
0.113	4.45E-13
0.78	4.63E-13
0.384	4.63E-13
0.046	5.59E-13

0.084	5.95E-13
0.157	6.45E-13
0.342	6.54E-13
0.028	6.66E-13
0.654	7.76E-13
0.046	8.01E-13
0.052	9.17E-13
0.061	9.46E-13
0.05	1.03E-12
0.111	1.11E-12
0.036	1.14E-12
0.079	1.17E-12
0.083	1.19E-12
0.131	1.23E-12
0.213	1.28E-12
0.079	1.28E-12
0.029	1.47E-12
0.103	1.97E-12
0.081	2.02E-12
0.02	2.09E-12
0.055	2.11E-12
0.028	2.18E-12
0.274	2.25E-12
0.022	2.49E-12
0.053	2.67E-12
0.143	2.88E-12
0.028	3.02E-12
0.036	3.40E-12
0.129	3.53E-12
0.08	3.66E-12
0.027	3.99E-12
0.019	4.07E-12
0.089	4.40E-12
0.114	4.66E-12
0.031	5.03E-12
0.587	5.48E-12
0.043	6.19E-12
0.075	6.19E-12
0.03	6.25E-12
0.024	6.52E-12
0.049	6.73E-12
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0.157	7.37E-12

0.044	7.39E-12
0.188	7.80E-12
0.039	7.99E-12
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0.059	8.38E-12
0.058	8.59E-12
0.164	9.07E-12
0.122	9.65E-12
0.153	1.01E-11
0.055	1.04E-11
0.174	1.08E-11
0.054	1.15E-11
0.052	1.15E-11
0.06	1.17E-11
0.07	1.33E-11
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0.388	1.47E-11
0.025	1.58E-11
0.111	1.62E-11
0.113	1.66E-11
0.028	1.67E-11
0.148	1.90E-11
0.279	1.94E-11
0.06	2.13E-11
0.052	2.14E-11
0.09	2.27E-11
0.299	2.45E-11
0.123	2.60E-11
0.04	2.97E-11
0.034	3.13E-11
0.116	3.20E-11
0.582	3.33E-11
0.361	3.45E-11
0.091	3.82E-11
0.048	3.83E-11
0.16	4.03E-11
0.157	4.46E-11
0.027	5.86E-11
0.328	5.95E-11
0.273	5.96E-11
0.04	6.46E-11
0.061	6.72E-11
0.069	6.75E-11

0.083	6.81E-11
0.135	9.83E-11
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0.065	1.14E-10
0.081	1.17E-10
0.028	1.29E-10
0.253	1.30E-10
0.031	1.36E-10
0.104	1.60E-10
0.155	1.81E-10
0.045	1.88E-10
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0.261	2.12E-10
0.16	2.14E-10
0.109	2.17E-10
0.031	2.25E-10
0.028	2.26E-10
0.051	2.43E-10
0.06	2.63E-10
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0.038	3.77E-10
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0.066	4.50E-10
0.122	4.50E-10
0.117	4.61E-10
0.105	4.62E-10
0.061	5.35E-10
0.145	5.74E-10
0.065	6.06E-10
0.08	6.59E-10
0.088	6.67E-10
0.161	6.71E-10
0.409	6.99E-10
0.023	7.27E-10
0.121	7.45E-10
0.193	7.71E-10
0.098	7.97E-10
0.341	8.41E-10
0.088	8.53E-10
0.201	8.77E-10
0.197	9.17E-10
0.083	9.91E-10
0.061	1.17E-09

0.041	1.40E-09
0.049	1.57E-09
0.067	1.60E-09
0.441	1.72E-09
0.037	1.75E-09
0.122	1.79E-09
0.061	1.80E-09
0.099	1.81E-09
0.028	1.86E-09
0.092	1.87E-09
0.213	1.90E-09
0.141	1.93E-09
0.052	2.19E-09
0.037	2.29E-09
0.057	2.37E-09
0.053	2.56E-09
0.027	2.56E-09
0.068	2.63E-09
0.132	2.74E-09
0.081	2.95E-09
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0.059	3.04E-09
0.051	3.17E-09
0.074	3.29E-09
0.072	3.61E-09
0.195	4.02E-09
0.107	4.06E-09
0.028	4.32E-09
0.151	4.45E-09
0.055	4.73E-09
0.091	4.92E-09
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0.645	5.87E-09
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0.039	6.37E-09
0.264	6.67E-09
0.182	7.51E-09
0.221	7.86E-09
0.071	8.38E-09
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0.027	1.02E-08
0.035	1.15E-08
0.088	1.27E-08
0.075	1.28E-08
0.043	1.34E-08
0.034	1.44E-08
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0.086	1.63E-08
0.082	1.64E-08
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0.357	1.69E-08
0.293	1.71E-08
0.071	1.79E-08
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0.068	2.06E-08
0.056	2.13E-08
0.052	2.14E-08
0.037	2.16E-08
0.082	2.18E-08
0.058	2.29E-08
0.075	2.30E-08
0.061	2.32E-08
0.42	2.41E-08
0.03	2.50E-08
0.102	2.69E-08
0.307	2.73E-08
0.052	2.76E-08
0.108	2.83E-08
0.083	3.06E-08
0.089	3.09E-08
0.094	3.24E-08
0.062	3.48E-08
0.065	3.61E-08
0.036	3.87E-08

0.072	3.95E-08
0.069	4.06E-08
0.17	4.10E-08
0.076	4.58E-08
0.414	4.63E-08
0.052	4.81E-08
0.11	4.93E-08
0.04	4.95E-08
0.038	5.00E-08
0.056	5.51E-08
0.155	5.51E-08
0.051	5.60E-08
0.304	6.18E-08
0.443	6.34E-08
0.367	6.53E-08
0.089	6.57E-08
0.061	6.82E-08
0.228	7.37E-08
0.069	7.43E-08
0.196	7.89E-08
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0.161	8.65E-08
0.07	9.15E-08
0.092	9.23E-08
0.155	9.66E-08
0.027	9.92E-08
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0.079	1.18E-07
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0.085	1.43E-07
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0.068	1.45E-07
0.048	1.48E-07
0.065	1.57E-07
0.058	1.61E-07
0.03	1.62E-07
0.119	1.63E-07

0.365	1.68E-07
0.331	1.74E-07
0.106	1.74E-07
0.038	1.76E-07
0.184	1.81E-07
0.031	1.82E-07
0.125	1.85E-07
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0.024	2.15E-07
0.056	2.17E-07
0.347	2.22E-07
0.101	2.26E-07
0.035	2.36E-07
0.112	2.52E-07
0.039	2.64E-07
0.069	2.65E-07
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0.248	3.59E-07
0.234	3.68E-07
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0.053	4.40E-07
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0.065	4.79E-07
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0.033	4.89E-07
0.208	4.94E-07
0.104	5.19E-07
0.236	5.73E-07
0.2	6.10E-07
0.027	6.21E-07
0.133	6.34E-07
0.034	6.40E-07
0.026	6.57E-07
0.12	6.97E-07

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0.052	7.79E-07
0.197	7.84E-07
0.285	7.98E-07
0.161	8.05E-07
0.033	8.52E-07
0.111	8.92E-07
0.701	9.11E-07
0.292	9.44E-07
0.033	9.61E-07
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0.026	1.01E-06
0.158	1.02E-06
0.059	1.04E-06
0.199	1.05E-06
0.04	1.07E-06
0.969	1.11E-06
0.139	1.20E-06
0.072	1.25E-06
0.101	1.29E-06
0.028	1.38E-06
0.113	1.50E-06
0.035	1.51E-06
0.086	1.55E-06
0.097	1.59E-06
0.03	1.60E-06
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0.063	1.76E-06
0.255	1.80E-06
0.107	1.91E-06
0.059	1.96E-06
0.04	2.01E-06
0.07	2.20E-06
0.093	2.51E-06
0.032	2.86E-06
0.044	2.87E-06
0.123	2.93E-06
0.072	2.94E-06
0.046	2.96E-06
0.036	3.00E-06
0.033	3.09E-06
0.141	3.33E-06

0.085	3.75E-06
0.053	3.80E-06
0.167	3.88E-06
0.114	4.21E-06
0.119	4.27E-06
0.101	4.28E-06
0.088	4.42E-06
0.061	4.50E-06
0.026	4.65E-06
0.032	4.69E-06
0.12	5.10E-06
0.153	5.37E-06
0.031	5.46E-06
0.487	5.72E-06
0.041	5.76E-06
0.146	5.77E-06
0.04	5.83E-06
0.025	5.91E-06
0.072	5.91E-06
0.196	6.42E-06
0.124	6.59E-06
0.027	6.89E-06
0.075	7.43E-06
0.057	7.79E-06
0.13	7.89E-06
0.156	7.93E-06
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0.056	8.55E-06
0.057	8.61E-06
0.058	8.63E-06
0.042	8.80E-06
0.103	8.89E-06
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0.074	9.26E-06
0.064	9.55E-06
0.125	1.21E-05
0.087	1.24E-05
0.129	1.25E-05
0.119	1.27E-05
0.051	1.28E-05
0.052	1.30E-05
0.097	1.31E-05
0.527	1.32E-05

0.191	1.39E-05
0.222	1.42E-05
0.249	1.51E-05
0.229	1.55E-05
0.103	1.60E-05
0.102	1.69E-05
0.258	1.72E-05
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0.533	1.81E-05
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0.153	2.20E-05
0.178	2.21E-05
0.09	2.49E-05
0.038	2.59E-05
0.125	2.66E-05
0.025	2.92E-05
0.202	2.99E-05
0.378	3.00E-05
0.138	3.03E-05
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0.101	3.22E-05
0.065	3.37E-05
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0.141	3.63E-05
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0.129	4.16E-05
0.126	4.41E-05
0.321	4.41E-05
0.226	4.48E-05

0.155	4.66E-05
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0.197	0.075074671
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Category	Term	Count
GOTERM_CC_DIRECT	GO:0070062~extracellular exosome	191
GOTERM_CC_DIRECT	GO:0005783~endoplasmic reticulum	96
GOTERM_CC_DIRECT	GO:0016020~membrane	300
GOTERM_CC_DIRECT	GO:0009986~cell surface	59
GOTERM_BP_DIRECT	GO:0007155~cell adhesion	51
GOTERM_CC_DIRECT	GO:0042470~melanosome	23
GOTERM_CC_DIRECT	GO:0005578~proteinaceous extracellular matrix	38
GOTERM_CC_DIRECT	GO:0005576~extracellular region	104
GOTERM_CC_DIRECT	GO:0005925~focal adhesion	41
GOTERM_BP_DIRECT	GO:0006629~lipid metabolic process	45
GOTERM_CC_DIRECT	GO:0005604~basement membrane	18
GOTERM_CC_DIRECT	GO:0031012~extracellular matrix	31
GOTERM_CC_DIRECT	GO:0005794~Golgi apparatus	72
GOTERM_CC_DIRECT	GO:0005615~extracellular space	84
GOTERM_MF_DIRECT	GO:0005102~receptor binding	36
GOTERM_MF_DIRECT	GO:0005178~integrin binding	17
GOTERM_BP_DIRECT	GO:0030198~extracellular matrix organization	18
GOTERM_MF_DIRECT	GO:0050840~extracellular matrix binding	10
KEGG_PATHWAY	mmu01212:Fatty acid metabolism	13
KEGG_PATHWAY	mmu01040:Biosynthesis of unsaturated fatty acids	10
GOTERM_CC_DIRECT	GO:0045177~apical part of cell	17
GOTERM_CC_DIRECT	GO:0005911~cell-cell junction	22
GOTERM_CC_DIRECT	GO:0005764~lysosome	29
GOTERM_CC_DIRECT	GO:0005737~cytoplasm	251
GOTERM_CC_DIRECT	GO:0048471~perinuclear region of cytoplasm	45
GOTERM_CC_DIRECT	GO:0042383~sarcolemma	16
GOTERM_CC_DIRECT	GO:0005788~endoplasmic reticulum lumen	15
KEGG_PATHWAY	mmu03320:PPAR signaling pathway	14
GOTERM_CC_DIRECT	GO:0005913~cell-cell adherens junction	27
GOTERM_BP_DIRECT	GO:0006636~unsaturated fatty acid biosynthetic proce	7
GOTERM_MF_DIRECT	GO:0005515~protein binding	166
GOTERM_CC_DIRECT	GO:0005886~plasma membrane	192
GOTERM_MF_DIRECT	GO:0042802~identical protein binding	41
GOTERM_BP_DIRECT	GO:0030335~positive regulation of cell migration	21
GOTERM_MF_DIRECT	GO:0016491~oxidoreductase activity	40
GOTERM_MF_DIRECT	GO:0042803~protein homodimerization activity	48
GOTERM_BP_DIRECT	GO:0008360~regulation of cell shape	17
GOTERM_BP_DIRECT	GO:0007568~aging	19
GOTERM_CC_DIRECT	GO:0030027~lamellipodium	18
GOTERM_CC_DIRECT	GO:0030670~phagocytic vesicle membrane	10
GOTERM_CC_DIRECT	GO:0031527~filopodium membrane	7
GOTERM_MF_DIRECT	GO:0003779~actin binding	27

GOTERM_BP_DIRECT	GO:0055114~oxidation-reduction process	43
GOTERM_CC_DIRECT	GO:0045121~membrane raft	23
GOTERM_BP_DIRECT	GO:0008203~cholesterol metabolic process	13
GOTERM_CC_DIRECT	GO:0042995~cell projection	43
GOTERM_BP_DIRECT	GO:0006694~steroid biosynthetic process	11
GOTERM_BP_DIRECT	GO:0016477~cell migration	19
GOTERM_BP_DIRECT	GO:0007160~cell-matrix adhesion	12
GOTERM_BP_DIRECT	GO:0001649~osteoblast differentiation	14
GOTERM_MF_DIRECT	GO:0008201~heparin binding	16
GOTERM_MF_DIRECT	GO:0050839~cell adhesion molecule binding	11
GOTERM_CC_DIRECT	GO:0030054~cell junction	42
GOTERM_BP_DIRECT	GO:0008202~steroid metabolic process	12
KEGG_PATHWAY	mmu05205:Proteoglycans in cancer	20
GOTERM_CC_DIRECT	GO:0043209~myelin sheath	18
GOTERM_BP_DIRECT	GO:0042759~long-chain fatty acid biosynthetic proces	5
GOTERM_MF_DIRECT	GO:0005509~calcium ion binding	40
KEGG_PATHWAY	mmu01130:Biosynthesis of antibiotics	20
GOTERM_CC_DIRECT	GO:0016324~apical plasma membrane	24
GOTERM_BP_DIRECT	GO:0008284~positive regulation of cell proliferation	34
GOTERM_BP_DIRECT	GO:0010977~negative regulation of neuron projection	10
GOTERM_BP_DIRECT	GO:0016126~sterol biosynthetic process	7
GOTERM_BP_DIRECT	GO:0008584~male gonad development	13
GOTERM_MF_DIRECT	GO:0030165~PDZ domain binding	13
GOTERM_CC_DIRECT	GO:0043235~receptor complex	14
KEGG_PATHWAY	mmu04512:ECM-receptor interaction	12
KEGG_PATHWAY	mmu00062:Fatty acid elongation	7
GOTERM_CC_DIRECT	GO:0043231~intracellular membrane-bounded organe	41
GOTERM_MF_DIRECT	GO:0004602~glutathione peroxidase activity	6
GOTERM_BP_DIRECT	GO:0032060~bleb assembly	5
GOTERM_BP_DIRECT	GO:0034613~cellular protein localization	9
GOTERM_BP_DIRECT	GO:0010811~positive regulation of cell-substrate adhe	8
GOTERM_MF_DIRECT	GO:0001540~beta-amyloid binding	7
GOTERM_BP_DIRECT	GO:0001666~response to hypoxia	17
GOTERM_BP_DIRECT	GO:0006631~fatty acid metabolic process	15
GOTERM_BP_DIRECT	GO:0042493~response to drug	24
GOTERM_BP_DIRECT	GO:0009611~response to wounding	9
GOTERM_BP_DIRECT	GO:0006695~cholesterol biosynthetic process	7
GOTERM_CC_DIRECT	GO:0005902~microvillus	10
GOTERM_BP_DIRECT	GO:0006633~fatty acid biosynthetic process	10
GOTERM_CC_DIRECT	GO:0000139~Golgi membrane	26
GOTERM_CC_DIRECT	GO:0030175~filopodium	10
GOTERM_BP_DIRECT	GO:0008152~metabolic process	29
GOTERM_CC_DIRECT	GO:0009897~external side of plasma membrane	22

GOTERM_CC_DIRECT	GO:0005770~late endosome	13
GOTERM_BP_DIRECT	GO:0048709~oligodendrocyte differentiation	7
GOTERM_MF_DIRECT	GO:0051015~actin filament binding	13
GOTERM_CC_DIRECT	GO:1903561~extracellular vesicle	8
GOTERM_MF_DIRECT	GO:0016209~antioxidant activity	6
GOTERM_CC_DIRECT	GO:0005789~endoplasmic reticulum membrane	38
GOTERM_MF_DIRECT	GO:0098641~cadherin binding involved in cell-cell adh	20
GOTERM_BP_DIRECT	GO:0016049~cell growth	8
GOTERM_BP_DIRECT	GO:0014070~response to organic cyclic compound	10
GOTERM_CC_DIRECT	GO:0005768~endosome	31
KEGG_PATHWAY	mmu04142:Lysosome	13
GOTERM_BP_DIRECT	GO:0021915~neural tube development	8
GOTERM_BP_DIRECT	GO:0007611~learning or memory	8
GOTERM_BP_DIRECT	GO:0045861~negative regulation of proteolysis	6
GOTERM_BP_DIRECT	GO:0032355~response to estradiol	11
GOTERM_MF_DIRECT	GO:0003824~catalytic activity	28
GOTERM_BP_DIRECT	GO:0022011~myelination in peripheral nervous systen	5
GOTERM_CC_DIRECT	GO:0005802~trans-Golgi network	14
GOTERM_CC_DIRECT	GO:0045335~phagocytic vesicle	7
KEGG_PATHWAY	mmu00330:Arginine and proline metabolism	8
GOTERM_BP_DIRECT	GO:0034446~substrate adhesion-dependent cell sprea	7
GOTERM_BP_DIRECT	GO:0043410~positive regulation of MAPK cascade	11
GOTERM_MF_DIRECT	GO:0043394~proteoglycan binding	4
GOTERM_CC_DIRECT	GO:0005790~smooth endoplasmic reticulum	6
GOTERM_MF_DIRECT	GO:0001968~fibronectin binding	6
GOTERM_BP_DIRECT	GO:0072657~protein localization to membrane	5
GOTERM_CC_DIRECT	GO:0005829~cytosol	75
GOTERM_BP_DIRECT	GO:0030307~positive regulation of cell growth	10
GOTERM_BP_DIRECT	GO:0046686~response to cadmium ion	6
GOTERM_MF_DIRECT	GO:0042277~peptide binding	10
GOTERM_MF_DIRECT	GO:0005518~collagen binding	8
GOTERM_CC_DIRECT	GO:0005777~peroxisome	12
KEGG_PATHWAY	mmu05412:Arrhythmogenic right ventricular cardiomy	9
GOTERM_CC_DIRECT	GO:0030176~integral component of endoplasmic retic	10
GOTERM_MF_DIRECT	GO:0016787~hydrolase activity	66
KEGG_PATHWAY	mmu04146:Peroxisome	10
GOTERM_CC_DIRECT	GO:0001726~ruffle	10
GOTERM_BP_DIRECT	GO:0002479~antigen processing and presentation of e	6
GOTERM_BP_DIRECT	GO:0001937~negative regulation of endothelial cell pr	6
GOTERM_BP_DIRECT	GO:0098609~cell-cell adhesion	15
GOTERM_MF_DIRECT	GO:0004601~peroxidase activity	6
GOTERM_CC_DIRECT	GO:0031258~lamellipodium membrane	5
GOTERM_CC_DIRECT	GO:0043034~costamere	5

GOTERM_BP_DIRECT	GO:0022010~central nervous system myelination	4
GOTERM_BP_DIRECT	GO:0007229~integrin-mediated signaling pathway	10
GOTERM_MF_DIRECT	GO:0016853~isomerase activity	11
GOTERM_BP_DIRECT	GO:0042552~myelination	8
KEGG_PATHWAY	mmu00480:Glutathione metabolism	8
GOTERM_CC_DIRECT	GO:0043025~neuronal cell body	29
GOTERM_BP_DIRECT	GO:0006979~response to oxidative stress	12
GOTERM_BP_DIRECT	GO:0061077~chaperone-mediated protein folding	6
GOTERM_BP_DIRECT	GO:0034447~very-low-density lipoprotein particle clea	3
GOTERM_BP_DIRECT	GO:0071305~cellular response to vitamin D	4
GOTERM_BP_DIRECT	GO:0035414~negative regulation of catenin import int	4
GOTERM_CC_DIRECT	GO:0031410~cytoplasmic vesicle	33
GOTERM_BP_DIRECT	GO:0071310~cellular response to organic substance	6
GOTERM_CC_DIRECT	GO:0005856~cytoskeleton	50
GOTERM_BP_DIRECT	GO:0000302~response to reactive oxygen species	5
GOTERM_CC_DIRECT	GO:0031982~vesicle	13
GOTERM_BP_DIRECT	GO:0060291~long-term synaptic potentiation	7
GOTERM_BP_DIRECT	GO:0006749~glutathione metabolic process	7
GOTERM_CC_DIRECT	GO:0031528~microvillus membrane	5
GOTERM_CC_DIRECT	GO:0014704~intercalated disc	7
GOTERM_CC_DIRECT	GO:0005759~mitochondrial matrix	14
GOTERM_BP_DIRECT	GO:0048708~astrocyte differentiation	4
GOTERM_BP_DIRECT	GO:0048514~blood vessel morphogenesis	6
GOTERM_BP_DIRECT	GO:0042127~regulation of cell proliferation	16
GOTERM_BP_DIRECT	GO:0071456~cellular response to hypoxia	10
GOTERM_BP_DIRECT	GO:0030855~epithelial cell differentiation	8
KEGG_PATHWAY	mmu04510:Focal adhesion	16
GOTERM_MF_DIRECT	GO:0017166~vinculin binding	4
GOTERM_MF_DIRECT	GO:0044548~S100 protein binding	4
KEGG_PATHWAY	mmu05100:Bacterial invasion of epithelial cells	9
GOTERM_BP_DIRECT	GO:0060045~positive regulation of cardiac muscle cell	5
GOTERM_BP_DIRECT	GO:0045747~positive regulation of Notch signaling pat	6
GOTERM_BP_DIRECT	GO:0030154~cell differentiation	38
GOTERM_BP_DIRECT	GO:0006564~L-serine biosynthetic process	3
GOTERM_BP_DIRECT	GO:0021762~substantia nigra development	6
GOTERM_BP_DIRECT	GO:0001568~blood vessel development	8
GOTERM_MF_DIRECT	GO:0008233~peptidase activity	27
KEGG_PATHWAY	mmu00071:Fatty acid degradation	7
GOTERM_MF_DIRECT	GO:0030881~beta-2-microglobulin binding	4
GOTERM_BP_DIRECT	GO:0016525~negative regulation of angiogenesis	8
GOTERM_BP_DIRECT	GO:0006641~triglyceride metabolic process	6
GOTERM_BP_DIRECT	GO:0033197~response to vitamin E	4
GOTERM_BP_DIRECT	GO:0060317~cardiac epithelial to mesenchymal transit	4

GOTERM_BP_DIRECT	GO:0097150~neuronal stem cell population maintenar	5
GOTERM_BP_DIRECT	GO:0014065~phosphatidylinositol 3-kinase signaling	5
GOTERM_MF_DIRECT	GO:0017134~fibroblast growth factor binding	5
KEGG_PATHWAY	mmu00900:Terpenoid backbone biosynthesis	5
GOTERM_CC_DIRECT	GO:0030424~axon	21
GOTERM_BP_DIRECT	GO:0051289~protein homotetramerization	8
GOTERM_CC_DIRECT	GO:0016323~basolateral plasma membrane	14
GOTERM_BP_DIRECT	GO:0001954~positive regulation of cell-matrix adhesio	5
GOTERM_BP_DIRECT	GO:0050919~negative chemotaxis	5
GOTERM_CC_DIRECT	GO:0005739~mitochondrion	69
GOTERM_BP_DIRECT	GO:0051384~response to glucocorticoid	8
GOTERM_BP_DIRECT	GO:0008037~cell recognition	4
GOTERM_BP_DIRECT	GO:0003214~cardiac left ventricle morphogenesis	4
GOTERM_BP_DIRECT	GO:0006656~phosphatidylcholine biosynthetic proces:	4
GOTERM_BP_DIRECT	GO:0048715~negative regulation of oligodendrocyte d	4
GOTERM_BP_DIRECT	GO:0042744~hydrogen peroxide catabolic process	4
GOTERM_BP_DIRECT	GO:0043066~negative regulation of apoptotic process	29
GOTERM_MF_DIRECT	GO:0016717~oxidoreductase activity, acting on paired	3
GOTERM_BP_DIRECT	GO:0035987~endodermal cell differentiation	5
KEGG_PATHWAY	mmu04514:Cell adhesion molecules (CAMs)	13
GOTERM_BP_DIRECT	GO:0090272~negative regulation of fibroblast growth	3
GOTERM_CC_DIRECT	GO:0031225~anchored component of membrane	11
GOTERM_BP_DIRECT	GO:0090002~establishment of protein localization to p	6
GOTERM_BP_DIRECT	GO:0033627~cell adhesion mediated by integrin	4
GOTERM_BP_DIRECT	GO:0007263~nitric oxide mediated signal transduction	4
GOTERM_BP_DIRECT	GO:0031175~neuron projection development	11
GOTERM_CC_DIRECT	GO:0010008~endosome membrane	10
GOTERM_CC_DIRECT	GO:0005938~cell cortex	11
GOTERM_CC_DIRECT	GO:0042612~MHC class I protein complex	4
GOTERM_BP_DIRECT	GO:0031103~axon regeneration	4
GOTERM_MF_DIRECT	GO:0038132~neuregulin binding	3
GOTERM_MF_DIRECT	GO:0004768~stearoyl-CoA 9-desaturase activity	3
GOTERM_BP_DIRECT	GO:0090090~negative regulation of canonical Wnt sigr	9
GOTERM_CC_DIRECT	GO:0005797~Golgi medial cisterna	4
GOTERM_BP_DIRECT	GO:0003150~muscular septum morphogenesis	3
GOTERM_BP_DIRECT	GO:0045860~positive regulation of protein kinase activ	7
GOTERM_CC_DIRECT	GO:0043005~neuron projection	22
GOTERM_MF_DIRECT	GO:0004872~receptor activity	12
GOTERM_BP_DIRECT	GO:0050678~regulation of epithelial cell proliferation	4
GOTERM_CC_DIRECT	GO:0001725~stress fiber	7
GOTERM_CC_DIRECT	GO:0002102~podosome	5
GOTERM_BP_DIRECT	GO:0045454~cell redox homeostasis	7
GOTERM_BP_DIRECT	GO:0001525~angiogenesis	15

KEGG_PATHWAY	mmu04919:Thyroid hormone signaling pathway	10
GOTERM_BP_DIRECT	GO:0006813~potassium ion transport	10
GOTERM_MF_DIRECT	GO:0004364~glutathione transferase activity	5
GOTERM_BP_DIRECT	GO:0090263~positive regulation of canonical Wnt sign	7
GOTERM_CC_DIRECT	GO:0015629~actin cytoskeleton	13
GOTERM_BP_DIRECT	GO:0001755~neural crest cell migration	6
GOTERM_BP_DIRECT	GO:0050910~detection of mechanical stimulus involve	4
GOTERM_BP_DIRECT	GO:0001676~long-chain fatty acid metabolic process	4
GOTERM_MF_DIRECT	GO:0102337~3-oxo-cerotoyl-CoA synthase activity	3
GOTERM_MF_DIRECT	GO:0009922~fatty acid elongase activity	3
GOTERM_MF_DIRECT	GO:0102336~3-oxo-arachidoyl-CoA synthase activity	3
GOTERM_MF_DIRECT	GO:0102338~3-oxo-lignoceronyl-CoA synthase activity	3
GOTERM_CC_DIRECT	GO:0005605~basal lamina	4
GOTERM_CC_DIRECT	GO:0043292~contractile fiber	4
GOTERM_BP_DIRECT	GO:0060396~growth hormone receptor signaling path	3
GOTERM_BP_DIRECT	GO:0034625~fatty acid elongation, monounsaturated	3
GOTERM_BP_DIRECT	GO:0034626~fatty acid elongation, polyunsaturated fa	3
GOTERM_BP_DIRECT	GO:0019367~fatty acid elongation, saturated fatty acic	3
GOTERM_BP_DIRECT	GO:0045607~regulation of auditory receptor cell differ	3
GOTERM_BP_DIRECT	GO:0032869~cellular response to insulin stimulus	8
GOTERM_CC_DIRECT	GO:0071944~cell periphery	7
KEGG_PATHWAY	mmu01100:Metabolic pathways	57
GOTERM_MF_DIRECT	GO:0000062~fatty-acyl-CoA binding	5
GOTERM_BP_DIRECT	GO:0010718~positive regulation of epithelial to meser	5
GOTERM_CC_DIRECT	GO:0005778~peroxisomal membrane	6
GOTERM_BP_DIRECT	GO:0006869~lipid transport	9
GOTERM_MF_DIRECT	GO:0032403~protein complex binding	19
GOTERM_BP_DIRECT	GO:0007157~heterophilic cell-cell adhesion via plasma	6
GOTERM_BP_DIRECT	GO:0007224~smoothened signaling pathway	7
GOTERM_CC_DIRECT	GO:0031090~organelle membrane	8
GOTERM_MF_DIRECT	GO:0017048~Rho GTPase binding	5
GOTERM_CC_DIRECT	GO:0005765~lysosomal membrane	14
GOTERM_MF_DIRECT	GO:0046977~TAP binding	3
GOTERM_MF_DIRECT	GO:0038191~neuropilin binding	3
GOTERM_MF_DIRECT	GO:1990459~transferrin receptor binding	3
GOTERM_BP_DIRECT	GO:0030318~melanocyte differentiation	4
GOTERM_BP_DIRECT	GO:0007399~nervous system development	20
GOTERM_MF_DIRECT	GO:0002020~protease binding	9
GOTERM_CC_DIRECT	GO:0005912~adherens junction	6
GOTERM_MF_DIRECT	GO:0051287~NAD binding	6
GOTERM_MF_DIRECT	GO:0005539~glycosaminoglycan binding	4
GOTERM_BP_DIRECT	GO:0045542~positive regulation of cholesterol biosynt	3
GOTERM_BP_DIRECT	GO:0002474~antigen processing and presentation of p	5

GOTERM_BP_DIRECT	GO:0019882~antigen processing and presentation	6
GOTERM_BP_DIRECT	GO:0030512~negative regulation of transforming grow	6
GOTERM_BP_DIRECT	GO:0031641~regulation of myelination	4
GOTERM_BP_DIRECT	GO:0010001~glial cell differentiation	4
GOTERM_BP_DIRECT	GO:0043627~response to estrogen	7
GOTERM_MF_DIRECT	GO:0050661~NADP binding	5
GOTERM_BP_DIRECT	GO:0060348~bone development	6
GOTERM_MF_DIRECT	GO:0016500~protein-hormone receptor activity	3
GOTERM_BP_DIRECT	GO:0060412~ventricular septum morphogenesis	5
GOTERM_BP_DIRECT	GO:0045665~negative regulation of neuron differentia	7
GOTERM_BP_DIRECT	GO:0035924~cellular response to vascular endothelial	4
KEGG_PATHWAY	mmu04810:Regulation of actin cytoskeleton	14
GOTERM_BP_DIRECT	GO:0007264~small GTPase mediated signal transducti	14
GOTERM_CC_DIRECT	GO:0032587~ruffle membrane	7
GOTERM_BP_DIRECT	GO:0061032~visceral serous pericardium developmen	3
GOTERM_BP_DIRECT	GO:0043297~apical junction assembly	3
GOTERM_BP_DIRECT	GO:0007507~heart development	15
KEGG_PATHWAY	mmu04974:Protein digestion and absorption	8
GOTERM_MF_DIRECT	GO:0016747~transferase activity, transferring acyl gro	4
GOTERM_BP_DIRECT	GO:0051603~proteolysis involved in cellular protein ca	6
KEGG_PATHWAY	mmu04151:PI3K-Akt signaling pathway	20
GOTERM_MF_DIRECT	GO:0004197~cysteine-type endopeptidase activity	6
GOTERM_BP_DIRECT	GO:0016055~Wnt signaling pathway	13
KEGG_PATHWAY	mmu04918:Thyroid hormone synthesis	7
GOTERM_CC_DIRECT	GO:0044297~cell body	8
GOTERM_BP_DIRECT	GO:0010243~response to organonitrogen compound	4
GOTERM_BP_DIRECT	GO:0048041~focal adhesion assembly	4
GOTERM_MF_DIRECT	GO:0005201~extracellular matrix structural constituen	5
GOTERM_BP_DIRECT	GO:0031623~receptor internalization	5
GOTERM_BP_DIRECT	GO:0001654~eye development	5
GOTERM_BP_DIRECT	GO:0006508~proteolysis	27
GOTERM_CC_DIRECT	GO:0005890~sodium:potassium-exchanging ATPase cc	3
GOTERM_MF_DIRECT	GO:0051920~peroxiredoxin activity	3
GOTERM_CC_DIRECT	GO:0016023~cytoplasmic, membrane-bounded vesicle	10
GOTERM_BP_DIRECT	GO:0035458~cellular response to interferon-beta	5
GOTERM_BP_DIRECT	GO:0035646~endosome to melanosome transport	3
GOTERM_BP_DIRECT	GO:0060055~angiogenesis involved in wound healing	3
GOTERM_BP_DIRECT	GO:0014044~Schwann cell development	3
GOTERM_BP_DIRECT	GO:0010269~response to selenium ion	3
GOTERM_BP_DIRECT	GO:0009267~cellular response to starvation	6
GOTERM_BP_DIRECT	GO:0007566~embryo implantation	6
GOTERM_BP_DIRECT	GO:0001764~neuron migration	9
KEGG_PATHWAY	mmu00280:Valine, leucine and isoleucine degradation	6

GOTERM_MF_DIRECT	GO:0008013~beta-catenin binding	7
GOTERM_BP_DIRECT	GO:0000122~negative regulation of transcription from	32
GOTERM_BP_DIRECT	GO:0032496~response to lipopolysaccharide	12
GOTERM_BP_DIRECT	GO:0043001~Golgi to plasma membrane protein trans	4
GOTERM_MF_DIRECT	GO:0043236~laminin binding	4
GOTERM_BP_DIRECT	GO:0006457~protein folding	9
GOTERM_BP_DIRECT	GO:0003184~pulmonary valve morphogenesis	3
GOTERM_BP_DIRECT	GO:0048103~somatic stem cell division	3
GOTERM_BP_DIRECT	GO:0008347~glial cell migration	3
KEGG_PATHWAY	mmu01200:Carbon metabolism	9
GOTERM_BP_DIRECT	GO:0045662~negative regulation of myoblast differen	4
GOTERM_BP_DIRECT	GO:0010107~potassium ion import	4
GOTERM_BP_DIRECT	GO:0006810~transport	69
GOTERM_MF_DIRECT	GO:0045499~chemorepellent activity	4
KEGG_PATHWAY	mmu05146:Amoebiasis	9
GOTERM_CC_DIRECT	GO:0016021~integral component of membrane	223
GOTERM_CC_DIRECT	GO:0005811~lipid particle	6
KEGG_PATHWAY	mmu00260:Glycine, serine and threonine metabolism	5
GOTERM_CC_DIRECT	GO:0031902~late endosome membrane	7
GOTERM_MF_DIRECT	GO:0051117~ATPase binding	7
GOTERM_CC_DIRECT	GO:0030426~growth cone	10
KEGG_PATHWAY	mmu04670:Leukocyte transendothelial migration	9
GOTERM_BP_DIRECT	GO:0009636~response to toxic substance	7
GOTERM_CC_DIRECT	GO:0034663~endoplasmic reticulum chaperone compl	3
GOTERM_CC_DIRECT	GO:0044853~plasma membrane raft	3
GOTERM_CC_DIRECT	GO:0033162~melanosome membrane	3
GOTERM_MF_DIRECT	GO:0031994~insulin-like growth factor I binding	3
GOTERM_BP_DIRECT	GO:0051781~positive regulation of cell division	5
GOTERM_BP_DIRECT	GO:0007173~epidermal growth factor receptor signali	5
GOTERM_MF_DIRECT	GO:0008134~transcription factor binding	17
GOTERM_BP_DIRECT	GO:0070830~bicellular tight junction assembly	4
GOTERM_CC_DIRECT	GO:0005887~integral component of plasma membran	44
GOTERM_BP_DIRECT	GO:0033327~Leydig cell differentiation	3
GOTERM_BP_DIRECT	GO:0043950~positive regulation of cAMP-mediated sig	3
GOTERM_BP_DIRECT	GO:0060740~prostate gland epithelium morphogenesi	3
GOTERM_BP_DIRECT	GO:0042761~very long-chain fatty acid biosynthetic pr	3
GOTERM_BP_DIRECT	GO:0070373~negative regulation of ERK1 and ERK2 cas	6
GOTERM_BP_DIRECT	GO:0032880~regulation of protein localization	6
GOTERM_MF_DIRECT	GO:0008092~cytoskeletal protein binding	6
GOTERM_BP_DIRECT	GO:0071356~cellular response to tumor necrosis facto	8
GOTERM_BP_DIRECT	GO:0030514~negative regulation of BMP signaling pat	5
KEGG_PATHWAY	mmu05410:Hypertrophic cardiomyopathy (HCM)	7
GOTERM_CC_DIRECT	GO:0014069~postsynaptic density	13

GOTERM_CC_DIRECT	GO:0012505~endomembrane system	8
GOTERM_BP_DIRECT	GO:0050770~regulation of axonogenesis	4
GOTERM_CC_DIRECT	GO:0005916~fascia adherens	3
GOTERM_CC_DIRECT	GO:0016010~dystrophin-associated glycoprotein comp	3
GOTERM_MF_DIRECT	GO:0005319~lipid transporter activity	3
GOTERM_MF_DIRECT	GO:0004303~estradiol 17-beta-dehydrogenase activity	3
GOTERM_CC_DIRECT	GO:0030425~dendrite	22
GOTERM_BP_DIRECT	GO:0001570~vasculogenesis	6
GOTERM_BP_DIRECT	GO:0043524~negative regulation of neuron apoptotic	10
GOTERM_BP_DIRECT	GO:0097421~liver regeneration	4
GOTERM_BP_DIRECT	GO:0002040~sprouting angiogenesis	4
GOTERM_BP_DIRECT	GO:0009725~response to hormone	5
GOTERM_BP_DIRECT	GO:0045599~negative regulation of fat cell differentia	5
GOTERM_MF_DIRECT	GO:0017147~Wnt-protein binding	4
GOTERM_BP_DIRECT	GO:0046889~positive regulation of lipid biosynthetic p	3
GOTERM_BP_DIRECT	GO:0043537~negative regulation of blood vessel endo	3
GOTERM_BP_DIRECT	GO:0003215~cardiac right ventricle morphogenesis	3
GOTERM_BP_DIRECT	GO:0090179~planar cell polarity pathway involved in r	3
GOTERM_CC_DIRECT	GO:0034683~integrin alphav-beta3 complex	2
GOTERM_CC_DIRECT	GO:0034686~integrin alphav-beta8 complex	2
GOTERM_MF_DIRECT	GO:0036461~BLOC-2 complex binding	2
GOTERM_MF_DIRECT	GO:0004421~hydroxymethylglutaryl-CoA synthase acti	2
GOTERM_BP_DIRECT	GO:1904437~positive regulation of transferrin recepto	2
GOTERM_BP_DIRECT	GO:1903991~positive regulation of ferrous iron import	2
GOTERM_BP_DIRECT	GO:0050748~negative regulation of lipoprotein metab	2
GOTERM_BP_DIRECT	GO:0097324~melanocyte migration	2
GOTERM_BP_DIRECT	GO:1904434~positive regulation of ferrous iron bindin	2
GOTERM_BP_DIRECT	GO:0031509~telomeric heterochromatin assembly	2
GOTERM_BP_DIRECT	GO:1902340~negative regulation of chromosome conc	2
GOTERM_BP_DIRECT	GO:0090230~regulation of centromere complex assem	2
GOTERM_BP_DIRECT	GO:0060857~establishment of glial blood-brain barrier	2
GOTERM_BP_DIRECT	GO:0006601~creatine biosynthetic process	2
GOTERM_BP_DIRECT	GO:1903334~positive regulation of protein folding	2
KEGG_PATHWAY	mmu05414:Dilated cardiomyopathy	7
GOTERM_BP_DIRECT	GO:0090004~positive regulation of establishment of p	4
GOTERM_BP_DIRECT	GO:0044344~cellular response to fibroblast growth fac	4
GOTERM_BP_DIRECT	GO:0032570~response to progesterone	4
GOTERM_BP_DIRECT	GO:0010628~positive regulation of gene expression	19
GOTERM_MF_DIRECT	GO:0042608~T cell receptor binding	3
GOTERM_MF_DIRECT	GO:0030971~receptor tyrosine kinase binding	5
KEGG_PATHWAY	mmu05222:Small cell lung cancer	7
GOTERM_CC_DIRECT	GO:0045211~postsynaptic membrane	12
GOTERM_BP_DIRECT	GO:0071320~cellular response to cAMP	5

GOTERM_BP_DIRECT	GO:0045471~response to ethanol	8
GOTERM_BP_DIRECT	GO:0001886~endothelial cell morphogenesis	3
GOTERM_BP_DIRECT	GO:0032438~melanosome organization	3
GOTERM_BP_DIRECT	GO:2000811~negative regulation of anoikis	3
GOTERM_BP_DIRECT	GO:0060979~vasculogenesis involved in coronary vasc	3
GOTERM_BP_DIRECT	GO:0045055~regulated exocytosis	3
GOTERM_BP_DIRECT	GO:0007420~brain development	12
GOTERM_MF_DIRECT	GO:0016616~oxidoreductase activity, acting on the CH	4
GOTERM_BP_DIRECT	GO:0050680~negative regulation of epithelial cell proli	6
GOTERM_BP_DIRECT	GO:0006914~autophagy	9
GOTERM_BP_DIRECT	GO:0051591~response to cAMP	5
GOTERM_BP_DIRECT	GO:0008286~insulin receptor signaling pathway	5
GOTERM_BP_DIRECT	GO:0001889~liver development	7
GOTERM_BP_DIRECT	GO:0006469~negative regulation of protein kinase acti	7
KEGG_PATHWAY	mmu00790:Folate biosynthesis	3
GOTERM_CC_DIRECT	GO:0032433~filopodium tip	3
GOTERM_MF_DIRECT	GO:0043295~glutathione binding	3
GOTERM_CC_DIRECT	GO:0045202~synapse	22
GOTERM_BP_DIRECT	GO:0021766~hippocampus development	6
KEGG_PATHWAY	mmu00982:Drug metabolism - cytochrome P450	6
GOTERM_BP_DIRECT	GO:0048678~response to axon injury	4
GOTERM_BP_DIRECT	GO:0030032~lamellipodium assembly	4
GOTERM_BP_DIRECT	GO:2001238~positive regulation of extrinsic apoptotic	4
GOTERM_MF_DIRECT	GO:0042169~SH2 domain binding	4
GOTERM_BP_DIRECT	GO:0001942~hair follicle development	5
GOTERM_BP_DIRECT	GO:0050673~epithelial cell proliferation	3
GOTERM_BP_DIRECT	GO:0033630~positive regulation of cell adhesion medi	3
GOTERM_BP_DIRECT	GO:0010812~negative regulation of cell-substrate adh	3
GOTERM_BP_DIRECT	GO:0051044~positive regulation of membrane protein	3
GOTERM_BP_DIRECT	GO:0042391~regulation of membrane potential	7
GOTERM_CC_DIRECT	GO:0043204~perikaryon	9
GOTERM_BP_DIRECT	GO:0007179~transforming growth factor beta recepto	6
GOTERM_MF_DIRECT	GO:0015485~cholesterol binding	4
GOTERM_MF_DIRECT	GO:0015026~coreceptor activity	3
GOTERM_BP_DIRECT	GO:0003151~outflow tract morphogenesis	5
GOTERM_BP_DIRECT	GO:0034976~response to endoplasmic reticulum stres	6
GOTERM_BP_DIRECT	GO:0006811~ion transport	25
GOTERM_MF_DIRECT	GO:0003707~steroid hormone receptor activity	5
GOTERM_MF_DIRECT	GO:0046982~protein heterodimerization activity	22
GOTERM_MF_DIRECT	GO:0005158~insulin receptor binding	4
GOTERM_BP_DIRECT	GO:0050873~brown fat cell differentiation	4
GOTERM_BP_DIRECT	GO:0000038~very long-chain fatty acid metabolic proc	3
GOTERM_BP_DIRECT	GO:0034314~Arp2/3 complex-mediated actin nucleati	3

GOTERM_BP_DIRECT	GO:0010288~response to lead ion	3
GOTERM_BP_DIRECT	GO:2000406~positive regulation of T cell migration	3
GOTERM_BP_DIRECT	GO:0001953~negative regulation of cell-matrix adhesi	3
GOTERM_BP_DIRECT	GO:0043123~positive regulation of I-kappaB kinase/NF	9
GOTERM_BP_DIRECT	GO:0007411~axon guidance	9
GOTERM_MF_DIRECT	GO:0035651~AP-3 adaptor complex binding	2
GOTERM_MF_DIRECT	GO:0035650~AP-1 adaptor complex binding	2
GOTERM_MF_DIRECT	GO:0019153~protein-disulfide reductase (glutathione)	2
GOTERM_MF_DIRECT	GO:0036042~long-chain fatty acyl-CoA binding	2
GOTERM_CC_DIRECT	GO:0030315~T-tubule	5
GOTERM_MF_DIRECT	GO:0004860~protein kinase inhibitor activity	5
GOTERM_MF_DIRECT	GO:0005267~potassium channel activity	6
GOTERM_CC_DIRECT	GO:0005614~interstitial matrix	3
GOTERM_CC_DIRECT	GO:0005782~peroxisomal matrix	3
GOTERM_BP_DIRECT	GO:0006082~organic acid metabolic process	2
GOTERM_BP_DIRECT	GO:2000974~negative regulation of pro-B cell differen	2
GOTERM_BP_DIRECT	GO:2000041~negative regulation of planar cell polarity	2
GOTERM_BP_DIRECT	GO:0019254~carnitine metabolic process, CoA-linked	2
GOTERM_BP_DIRECT	GO:0072282~metanephric nephron tubule morphoger	2
GOTERM_BP_DIRECT	GO:0006663~platelet activating factor biosynthetic pr	2
GOTERM_BP_DIRECT	GO:2001212~regulation of vasculogenesis	2
GOTERM_BP_DIRECT	GO:0036151~phosphatidylcholine acyl-chain remodeli	2
GOTERM_BP_DIRECT	GO:0045715~negative regulation of low-density lipopr	2
GOTERM_BP_DIRECT	GO:0003347~epicardial cell to mesenchymal cell transi	2
GOTERM_BP_DIRECT	GO:0006598~polyamine catabolic process	2
GOTERM_BP_DIRECT	GO:0060326~cell chemotaxis	6
GOTERM_BP_DIRECT	GO:0031069~hair follicle morphogenesis	4
GOTERM_BP_DIRECT	GO:0030178~negative regulation of Wnt signaling path	5
GOTERM_BP_DIRECT	GO:0045668~negative regulation of osteoblast differer	5
GOTERM_MF_DIRECT	GO:0005516~calmodulin binding	10
GOTERM_BP_DIRECT	GO:0045444~fat cell differentiation	6
GOTERM_BP_DIRECT	GO:0030182~neuron differentiation	8
GOTERM_BP_DIRECT	GO:0042692~muscle cell differentiation	3
GOTERM_BP_DIRECT	GO:0014002~astrocyte development	3
GOTERM_BP_DIRECT	GO:0061136~regulation of proteasomal protein catabo	3
GOTERM_BP_DIRECT	GO:0003222~ventricular trabecula myocardium morph	3
GOTERM_BP_DIRECT	GO:0060038~cardiac muscle cell proliferation	3
GOTERM_BP_DIRECT	GO:0008299~isoprenoid biosynthetic process	3
GOTERM_BP_DIRECT	GO:0048712~negative regulation of astrocyte differen	3
GOTERM_BP_DIRECT	GO:0019369~arachidonic acid metabolic process	4
GOTERM_BP_DIRECT	GO:0048754~branching morphogenesis of an epithelia	4
KEGG_PATHWAY	mmu04971:Gastric acid secretion	6
GOTERM_BP_DIRECT	GO:0060548~negative regulation of cell death	6

GOTERM_MF_DIRECT	GO:0005528~FK506 binding	3
KEGG_PATHWAY	mmu05020:Prion diseases	4

PValue	Genes	Fold Enrichment	Bonferroni
1.12E-33	IFITM3, CYFIP1, ACAA2, CD81, ECI1, H2-K	2.42561066	4.92E-31
3.08E-16	RAB9, IFITM3, FKBP10, SLC27A1, CPQ, H2	2.46411242	1.46E-13
6.41E-16	IFITM3, CNTFR, SLC35B2, SERPINE2, PLEK	1.45578233	2.92E-13
1.12E-14	IFITM3, CLIC4, SPARC, ITGB3, H2-K1, PEBI	3.18530112	4.92E-12
3.71E-14	COL16A1, MEGF10, COL14A1, ITGB3, CTN	3.45710216	1.01E-10
1.45E-13	PDIA3, RAB9, CD63, TMED10, CNP, ITGB3	7.73313497	6.38E-11
8.28E-13	OLFML2B, SPARC, COL16A1, COL14A1, LA	4.08362301	3.63E-10
5.79E-12	COL16A1, OLFML2B, SPARC, SERPINE2, TI	2.01465437	2.54E-09
7.45E-12	CYFIP1, AHNAK, SDC4, CD81, ARPC1B, ITC	3.56087089	3.27E-09
1.60E-11	SLC27A1, GAL3ST1, ACAA2, ABHD4, ECI1,	3.22317291	4.35E-08
3.09E-09	COL28A1, TGFB2, SPARC, LAMA4, TNC, LA	6.30158645	1.36E-06
3.48E-09	SERPINE2, COL14A1, COL11A1, HTRA1, TI	3.58066335	1.53E-06
9.60E-09	RAB9, SLC35B2, GAL3ST1, SYS1, CPQ, H2-	2.05463491	4.21E-06
1.70E-08	SPARC, SERPINE2, COL14A1, CPQ, HFE, TI	1.8966211	7.48E-06
2.11E-08	CNTFR, SERPINE2, LAMA4, HFE, ECI2, H2-	2.96001508	1.63E-05
3.51E-08	VCAM1, COL16A1, ITGB3, PXN, EMP2, LA	5.75887379	2.71E-05
6.02E-08	TGFB2, POSTN, OLFML2B, COL27A1, LAM	5.19100478	1.63E-04
6.54E-08	ADAMTS5, SPARC, OLFML2B, ITGB3, SMC	12.0984743	5.04E-05
8.48E-08	ACAA2, ELOVL5, ELOVL2, ELOVL6, HSD17	7.51130644	1.98E-05
1.38E-07	FADS2, ELOVL5, ELOVL2, ACOT2, SCD2, A	10.9138641	3.23E-05
2.57E-07	IFITM3, GPSM2, CLIC4, VCAM1, HFE, MGS	5.01995945	1.13E-04
5.33E-07	CLIC4, CADM1, AHNAK, HEPACAM, AQP4	3.71685613	2.34E-04
6.03E-07	IFITM3, RAB9, CD63, CPQ, PON2, LITAF, C	2.97522032	2.65E-04
8.40E-07	IFITM3, CYFIP1, TEX40, SPARC, PLEKHB1,	1.28541636	3.69E-04
1.47E-06	CYFIP1, CLIC4, CNP, HFE, AATK, ECE1, CIB	2.20828716	6.44E-04
1.96E-06	VCAM1, DST, AHNAK, ATP1A2, AQP4, CIB	4.60454905	8.60E-04
2.15E-06	PDIA3, FKBP10, TXNDC12, HSP90B1, PDIA	4.89786768	9.44E-04
2.33E-06	SLC27A1, DBI, SORBS1, FADS2, ACADL, FA	5.15680077	5.44E-04
2.54E-06	AHNAK, CAPG, NDRG1, CNN3, SNX1, CDH	2.90152161	0.00111454
3.02E-06	FADS2, ELOVL5, ELOVL2, SCD2, ELOVL6, S	15.342303	0.00815488
3.54E-06	CNTFR, CYFIP1, SPARC, CD81, ZFAND6, PI	1.37423531	0.00272569
3.71E-06	IFITM3, CNTFR, SLC27A1, HFE, MRGPRF, A	1.3377188	0.0016274
3.79E-06	GPSM2, MOCS2, OAT, PON2, ITGB3, ECI1	2.22224777	0.00291998
3.99E-06	TGFB2, NOTCH1, SEMA3C, ITGB3, SEMA3	3.40100313	0.01076726
4.05E-06	TYRP1, TXNDC12, HSD17B12, HSD17B11,	2.24342571	0.00311396
5.01E-06	SLC27A1, OLFML2B, CPQ, PEX11A, PLEKH	2.03763778	0.00385273
5.05E-06	CYFIP1, MYO10, PXN, LPAR1, SEMA3E, PT	4.02085023	0.01360601
5.61E-06	SLC12A2, SREBF1, VCAM1, CNP, PEBP1, L	3.6106989	0.01508501
7.09E-06	CYFIP1, NOTCH1, MYO10, PXN, MTSS1L, S	3.72715784	0.00310649
7.74E-06	RAB32, RAB10, RAB9, RAB31, LAMP2, H2	7.22522324	0.00339348
8.63E-06	MYO10, TTYH1, ITGB3, PDPN, ITGAV, DM	13.2061025	0.00378324
8.69E-06	CYFIP1, ARPC1B, ARPC1A, CAPG, ADD3, S	2.70604929	0.00668133

9.54E-06	TYRP1, MGST1, TXNDC12, HSD17B12, ETI	2.09124798	0.02551931
1.08E-05	RFTN2, PRNP, SDC4, AHNAK, EMP2, SORE	2.98109402	0.00473761
1.54E-05	SREBF1, FDPS, HMGCS1, LCAT, VLDLR, CY	4.80216547	0.04084123
1.57E-05	CYFIP1, MEGF10, CNP, ARL3, ITGB3, KCN/	2.05086744	0.00686318
1.59E-05	FDPS, STARD3, NSDHL, SCP2, HMGCS1, H	5.83290323	0.04228801
2.20E-05	RHBDF1, CD63, TGFB2, ITGB3, SDC2, EMI	3.27042361	0.05787199
2.26E-05	CD63, VCAM1, ITGB3, COL5A3, PXN, ITGE	5.0579021	0.05932141
3.87E-05	WWTR1, H3F3B, DHH, H3F3A, TNC, SOX2	4.0731778	0.09965771
4.07E-05	POSTN, SERPINE2, NDNF, PTN, HSD17B12	3.58948113	0.030859
4.16E-05	POSTN, CADM4, VCAM1, CADM1, CADM1	5.24835225	0.03152801
4.19E-05	CYFIP1, ITGB3, KCNA1, CTNND2, PXN, LRI	1.98643324	0.0182327
4.57E-05	SREBF1, FDPS, NSDHL, NPC1, HMGCS1, LC	4.69662338	0.1165685
5.25E-05	FZD1, CD63, TGFB2, SDC4, ITGB3, SDC2, I	2.90319536	0.01221186
5.51E-05	PDIA3, CNP, PEBP1, ATP1A2, ITPR3, NDRC	3.18361399	0.02389934
9.38E-05	PLP1, SCD2, ELOVL6, SCD1, FADS1	18.2646465	0.22452207
1.05E-04	FKBP10, NOTCH1, SPARC, TTYH1, DHH, CI	1.93852522	0.07761054
1.07E-04	FDPS, OAT, ACAA2, HMGCS1, HSD17B10,	2.7539657	0.02478118
1.16E-04	PDIA3, SLC12A2, CNTFR, KCNJ10, NOTCH	2.48477189	0.04966211
1.27E-04	CNTFR, NOTCH1, CD81, TNC, CIB1, PTN, C	2.06235491	0.29115884
1.28E-04	ADAM17, EFEMP1, H2-K1, LPAR1, NR2F1	5.13693182	0.29282391
1.31E-04	FDPS, NSDHL, HMGCS1, HMGCS2, 061000	8.52350168	0.29882315
1.52E-04	LHCGR, TGFB2, HMGCS1, H3F3B, H3F3A,	3.81600649	0.33815127
1.61E-04	FZD1, CADM1, SDC2, ARHGEF16, LPAR1,	3.79641781	0.11647319
1.64E-04	NTRK2, LHCGR, RAMP2, NOTCH1, ITGB3,	3.54790813	0.06955276
1.70E-04	COL27A1, SDC4, ITGB3, LAMA4, COL5A3,	4.01828631	0.03895329
1.83E-04	ACAA2, ELOVL5, ELOVL2, ACOT2, ACOT1,	7.93353964	0.04200574
2.27E-04	SLC27A1, TMED10, PON2, ECI2, MGST1, A	1.85392879	0.09502974
2.34E-04	GSTK1, GPX1, MGST1, GPX8, GSTT1, PRDX	10.1627184	0.16499667
2.34E-04	LPAR1, EMP1, EMP2, EMP3, PRDX6	14.9438017	0.46976827
2.38E-04	CD63, SLC9A3R1, FRMD6, TMEM33, HEPA	5.3797686	0.47515208
2.45E-04	SMOC1, NDNF, RSU1, PTN, HSD17B12, NI	6.2621645	0.4858335
2.50E-04	CST3, TGFB2, GSAP, APOE, HSD17B10, ITI	7.64935797	0.17515757
2.62E-04	RAMP2, TGFB2, POSTN, ANGPT2, VCAM1	2.91092803	0.5082746
2.94E-04	SLC27A1, ACAA2, ELOVL5, ELOVL2, ECI1,	3.16118881	0.54938488
2.95E-04	FZD1, SREBF1, TGFB2, HMGCS1, MGST1,	2.32753017	0.55069083
3.46E-04	TGFB2, GPX1, FABP5, SERPINE2, MDK, PE	5.1015047	0.60830126
3.52E-04	FDPS, NSDHL, HMGCS1, HMGCS2, APOE,	7.19170455	0.61539273
3.80E-04	GAMT, SLC9A3R1, CLIC4, KCNJ10, VCAM1	4.46823016	0.15381348
3.92E-04	FADS2, ELOVL5, FADS6, ELOVL2, FASN, SC	4.44275184	0.65475966
3.95E-04	RAB9, GAL3ST1, NOTCH1, SYS1, TMED10,	2.19087414	0.15929728
4.20E-04	SLC9A3R1, VCAM1, PTPRZ1, MYO10, PAL	4.4102012	0.16830033
4.52E-04	SLC27A1, ACAA2, ECI1, TYRP1, ECI2, ALDH	2.05921068	0.70607135
4.85E-04	P2RY12, VCAM1, ITGB3, HFE, H2-K1, ECE1	2.35674474	0.19167873

4.92E-04	RAB9, CD63, STARD3, SLC31A2, CTNS, IR(	3.36993237	0.19415284
4.97E-04	NTRK2, NOTCH1, CDKN2C, PTPRZ1, CNP,	6.7686631	0.74002188
5.33E-04	CYFIP1, MYO10, ARPC1B, ARPC1A, IQGAF	3.33624595	0.33723413
5.38E-04	SLC12A2, EFEMP2, SERPINE2, ATP1A2, AI	5.54425293	0.21047452
5.82E-04	PRDX4, PRDX1, CAT, APOE, SOD3, PRDX6	8.46893204	0.36145844
5.92E-04	RAB9, FKBP10, FKBP2, NOTCH1, TMED10	1.81749982	0.22883139
6.46E-04	AHNAK, ARHGEF16, CAPG, NDRG1, PRDX	2.42836761	0.39234259
6.50E-04	TGFBR3, TGFB2, ITGB3, EMP1, NDNF, ITG	5.36756957	0.82864479
7.01E-04	SFRP1, MMP14, ANGPT2, EDNRB, FNTA, (	4.10954545	0.85056319
7.77E-04	IFITM3, RAB9, CD63, LPAR1, ECE1, ATP1A	1.93513792	0.28919377
8.22E-04	CD63, CTNS, LITAF, LAPTM4B, CTSO, LAP'	3.13997236	0.17500377
8.32E-04	SFRP1, NOTCH1, FAM212A, SEMA3C, ITP	5.15707665	0.89531305
8.32E-04	PRNP, PTPRZ1, GM2A, TMOD2, LAMB1, N	5.15707665	0.89531305
9.82E-04	CST3, SERPINE2, TIMP2, TIMP3, PLAT, PIK	7.58685315	0.93028005
9.92E-04	CST3, POSTN, RAMP2, CCND1, IFI27, DHH	3.58059406	0.93208798
0.0010385	SLC27A1, OAT, ACAA2, ECI1, ECI2, CSAD,	1.98020958	0.55116548
0.00114352	ARHGEF10, LGI4, DAG1, POU3F2, SIRT2	10.2738636	0.95503382
0.00114507	TGFB2, POSTN, SYS1, WIPI1, SOD3, RAB3	2.89890054	0.39527153
0.00117805	RAB32, RAB9, RAP1A, RAB31, LAMP1, RA	5.79780109	0.40397228
0.00118545	GAMT, GATM, OAT, ALDH2, SMOX, P4HA	4.81100946	0.24236891
0.00121566	SFRP1, ITGB3, PXN, LAMB1, ITGAV, ANTX	5.75336364	0.96303014
0.0012427	SOX2, NTRK2, CDH2, IGFBP4, ITGB3, KIT, '	3.47730769	0.96564671
0.00127475	COL5A3, CTSK, PTN, NID1	16.9378641	0.62598525
0.00142757	PDIA3, PRDX4, CALR, PPIB, PDIA4, HSP90	7.02590674	0.465888
0.00143948	SDC4, ITGB3, CTSK, TNC, ITGAV, HSD17B1	7.00877134	0.6706503
0.00145974	RAB32, SH3PXD2B, CPE, RAB38, FERMT2	9.66951872	0.98094164
0.00158697	RAB9, MOCS2, CLIC4, SYS1, SERPINE2, SA	1.42762959	0.50203888
0.00163488	TGFB2, ADAM17, SFRP1, MMP14, H3F3B,	3.65292929	0.98815412
0.00164467	PRNP, SPARC, NPC1, CAT, MT1, B2M	6.80200627	0.98846497
0.00167326	FNTA, CTSL, ITGB3, H2-K1, H2-Q4, ITGAV,	3.64255141	0.72505036
0.00167718	SPARC, CHADL, CTSK, SERPINH1, SPARCL1	4.59331907	0.72588122
0.00169889	FDPS, GSTK1, HSDL2, SCP2, PEX11A, EPH)	3.1107068	0.52595267
0.00177506	GJA1, CDH2, ITGB3, CTNNA1, DAG1, ITGA	3.95831189	0.34014423
0.00178321	SLC35B2, FAM134B, SPCS1, ELOVL5, TME	3.61261162	0.54320804
0.00179241	CPQ, ECE1, PLAT, PRSS23, ADAMTS5, CTS	1.45844622	0.74922184
0.0018529	GSTK1, PEX5L, SCP2, PEX11A, EPHX2, PRI	3.55029313	0.35207581
0.00191971	SLC9A3R1, CYFIP1, NOTCH1, MYO10, PAL	3.57458413	0.56982487
0.00192498	PSMB2, H2-K1, CALR, B2M, PSMB8, H2-D	6.57527273	0.99461238
0.00192498	GJA1, SPARC, RGCC, LECT1, APOE, NR2F2	6.57527273	0.99461238
0.00193948	ARHGEF16, CAPG, NDRG1, PRDX6, SEPT2	2.60923521	0.99482049
0.00196229	PRDX4, GPX1, PRDX1, CAT, GPX8, PRDX6	6.55659255	0.78006329
0.00201505	ITGB3, PDPN, ITGAV, ANTXR1, FERMT2	8.93646032	0.58749278
0.00201505	AHNAK, SDC4, DAG1, DMD, VCL	8.93646032	0.58749278

0.00203929	KCNJ10, ID4, PLP1, HES5	14.6117172	0.9960505
0.00205566	ADAM17, ITGB3, PXN, PLP1, ITGA7, ITGB	3.53509286	0.99622229
0.00212261	PDIA3, FKBP10, FKBP2, HMGCS1, ECI1, EC	3.24028704	0.80568384
0.00219604	GJC3, GAL3ST1, DHH, LGI4, PLP1, LPAR1,	4.38351515	0.99742014
0.00235772	GSTK1, GPX1, GSTA4, MGST1, GPX8, GST	4.28617207	0.42440833
0.00239333	SERPINE2, TMPRSS5, KCNA1, SDC2, LPAR	1.84419088	0.65073748
0.00245467	CST3, PRNP, MMP14, GPX1, PON2, PRDX	2.96628845	0.99872244
0.00258798	FKBP10, FKBP2, CALR, FKBP9, PPIB, PDIA4	6.16431818	0.99911073
0.00270493	APOC1, VLDLR, APOE	32.8763636	0.9993529
0.00284789	PDIA3, SFRP1, TNC, PTN	13.1505455	0.99956128
0.00284789	FZD1, WWTR1, SLC9A3R1, SFRP5	13.1505455	0.99956128
0.00296771	IFITM3, RAB9, SLC27A1, CLIC4, NOTCH1,	1.73472465	0.72876328
0.00297516	NR4A1, CCND1, TIMP2, TIMP3, CALR, POL	5.97752066	0.99968961
0.00314342	GPSM2, ARPC1B, ARPC1A, CIB1, SGCE, M	1.52554129	0.74895796
0.00333418	GPX1, PRDX1, CAT, SOD3, PRDX6	7.82770563	0.99988309
0.00339928	SPARC, AHNAK, CD81, ECE1, CIB1, CST3, S	2.69183622	0.77571283
0.00351981	NTRK2, SERPINE2, LRRTM1, ITPR3, DBI, P	4.69662338	0.99992944
0.00351981	GSTK1, GPX1, GSTA4, MGST1, CTNS, GST	4.69662338	0.99992944
0.00354664	SLC9A3R1, ITGB3, PDPN, ITGAV, EZR	7.7178521	0.78981018
0.00368536	GJA1, DST, CDH2, CTNNA1, ATP1A2, PTK2	4.66097734	0.80227155
0.0038207	GSTK1, FDPS, OAT, ACAA2, UQCC2, ECI1,	2.52882813	0.8137189
0.0038281	NOTCH1, SOX6, S100B, HES5	11.9550413	0.9999695
0.00387214	GJA1, ANGPT2, CDH2, ITGA7, NR2F2, FGF	5.63594805	0.99997295
0.00405677	TGFB2, NOTCH1, SPARC, CD81, TNC, CIB1	2.31727673	0.99998363
0.00411313	SFRP1, RGCC, ACAA2, NDNF, VLDLR, PTN,	3.19187996	0.99998596
0.00412438	FZD1, CD63, LGALS3, GSTK1, TST, ID3, AL	3.92553596	0.99998638
0.00432303	COL27A1, ITGB3, LAMA4, COL11A1, PXN,	2.27767598	0.63715623
0.00458606	PXN, CTNNA1, DAG1, DMD	11.2919094	0.97110209
0.00458606	AHNAK, S100A1, S100B, EZR	11.2919094	0.97110209
0.00464057	ARHGEF26, ARPC1B, PXN, ARPC1A, CTNN	3.40008842	0.66325248
0.00470214	TGFBR3, NOTCH1, HEY2, NCAM1, FGFR1	7.14703557	0.99999718
0.00494759	SOX2, TSPAN15, TSPAN14, NOTCH1, KIT,	5.33130221	0.99999855
0.00505246	CYFIP1, TEX40, NOTCH1, SERPINE2, SEMA	1.601669	0.99999891
0.00530102	PSAT1, PHGDH, PSPH	24.6572727	0.99999945
0.00555778	CNP, S100A1, PLP1, CKB, NDRG2, SIRT2	5.19100478	0.99999973
0.00568763	TGFBR3, TGFB2, LAMA4, HEY2, ITGAV, AN	3.704379	0.99999981
0.00570773	TMPRSS5, CPQ, DHH, FGL2, HTRA1, ECE1	1.77256717	0.98788447
0.00581754	ACAA2, ACADL, ALDH2, ECI1, ECI2, ACSBG	4.20963328	0.74469043
0.00583264	HFE, H2-K1, H2-Q4, H2-D1	10.423301	0.98900295
0.00613962	CXCL10, ANGPT2, SPARC, RGCC, CD59A, I	3.65292929	0.99999994
0.0062192	GPX1, APOC1, CAT, DBI, APOE, SCD1	5.0579021	0.99999995
0.00634201	HMGCS1, CCND1, CAT, GSTT1	10.1158042	0.99999997
0.00634201	TGFBR3, TGFB2, NOTCH1, HEY2	10.1158042	0.99999997

0.00640364	SOX2, NOTCH1, CDH2, HES5, FOXO1	6.57527273	0.99999997
0.00640364	PREX2, ERBB3, PIK3R1, SIRT2, ZFP36L1	6.57527273	0.99999997
0.00665268	TGFBR3, PTPRZ1, ITGB3, ITGAV, FGFR1	6.51456311	0.9941794
0.00680428	FDPS, FNTA, HMGCS1, HMGCS2, ZMPSTE	6.40596368	0.79762697
0.0068853	NTRK2, TGFB2, CADM1, TTYH1, CADM2,	1.92737712	0.95183386
0.00712324	KCNJ10, ACADL, ALDH1A1, CAT, ALDOC,	3.55420147	1
0.0072114	SLC12A2, KCNJ10, CADM1, MEGF10, KCN	2.34196891	0.95830089
0.00738941	ITGB3, DAG1, EMP2, CIB1, DMD	6.32237762	1
0.00738941	SEMA3C, ITGB3, SEMA3B, ITGAV, SEMA3	6.32237762	1
0.00742153	CLIC4, SLC27A1, ACAA2, SLC44A1, ECI1, E	1.36149907	0.9620012
0.00765666	SPARC, MDK, CTSL, LCAT, ALPL, ACSBG1,	3.50681212	1
0.00789164	CADM4, CADM1, CADM2, CD200	9.39324675	1
0.00789164	TGFB2, NOTCH1, HEY2, CPE	9.39324675	1
0.00789164	SLC27A1, FABP5, LCAT, CHPT1	9.39324675	1
0.00789164	NOTCH1, ID4, HES5, SIRT2	9.39324675	1
0.00789164	GPX1, PRDX1, CAT, PRDX6	9.39324675	1
0.00804269	ZFAND6, CIB1, PIK3R1, YBX3, FOXO1, IFIT	1.684478	1
0.0081664	SCD2, SCD1, FADS1	20.3254369	0.99820391
0.00847012	MMP14, COL11A1, ITGA7, LAMB1, ITGAV	6.08821549	1
0.00865069	VCAM1, CADM1, SDC4, SDC2, H2-K1, LRR	2.36467055	0.86906693
0.00865774	RGCC, CD59A, FGFR1	19.7258182	1
0.00887139	BCAN, PRNP, CNTFR, VCAM1, CD59A, LSA	2.64924852	0.97999793
0.00941941	TSPAN15, SLC9A3R1, TSPAN14, CDH2, RA	4.58739958	1
0.0096449	ADAM17, COL16A1, ITGB3, ITGAV	8.7670303	1
0.0096449	MT2, NDNF, MT1, APOE	8.7670303	1
0.0099513	CHL1, PALLD, FLRT3, RAB13, TNC, PHGDH	2.60172662	1
0.00997324	CD63, NTRK2, SNX1, GRB14, LAMP1, TYR	2.78348764	0.9877255
0.01020747	GPSM2, MARCKS, MYO10, DST, USP2, PX	2.59405584	0.98893653
0.01063642	H2-K1, H2-Q4, B2M, H2-D1	8.48963731	0.99085363
0.01160676	CHL1, CTNNA1, APOE, JAM3	8.21909091	1
0.01201168	ERBB3, ITGB3, ITGAV	16.9378641	0.99991012
0.01201168	FADS2, SCD2, SCD1	16.9378641	0.99991012
0.01244842	SOX2, WWTR1, SFRP1, NOTCH1, CDH2, S	2.90085561	1
0.01263786	TMEM59, H2-K1, H2-Q4, H2-D1	7.99024688	0.99624014
0.01272668	TGFBR3, FZD1, HEY2	16.4381818	1
0.01290752	RAP1A, SDC4, PXN, DAG1, MMD2, VLDLR	3.59585227	1
0.01310684	FZD1, CYFIP1, CADM1, MYO10, S100A1,	1.77878115	0.99694795
0.0131278	NOTCH1, CADM4, CADM1, CADM2, ITGB	2.36342289	0.9999624
0.01378112	NOTCH1, EDNRB, HES5, HMGN1	7.73561497	1
0.01379803	DST, PALLD, PXN, SORBS1, PTK2, VCL, FEF	3.54790813	0.99775604
0.01384007	VCAM1, SH3PXD2A, PALLD, SH3PXD2B, V	5.30602332	0.99779764
0.01386654	PDIA3, PRDX4, GPX1, PRDX1, TXNDC12, F	3.54053147	1
0.0147339	RAMP2, CLIC4, NOTCH1, ANGPT2, NDNF,	2.0633701	1

0.01481504	NOTCH1, CCND1, ITGB3, PLCE1, ATP1A2,	2.58486254	0.96958003
0.01542426	SLC12A2, KCNJ10, KCNA1, KCNH8, KCNK1	2.58869005	1
0.01549469	GSTK1, GSTA4, MGST1, GSTT1, GSTM5	5.13268608	0.9999941
0.01593152	SFRP1, BAMBI, NRARP, LGR5, LGR4, WLS,	3.43484396	1
0.0160563	DST, AHNAK, ARPC1B, ARPC1A, SEPT2, CT	2.19632408	0.99917976
0.01609949	ZEB2, EDNRB, SEMA3C, SEMA3B, SEMA3I	4.02567718	1
0.01617091	SLC12A2, SOX2, COL11A1, KIT	7.30585859	1
0.01617091	SLC27A1, ACOT2, ACOT1, ACSBG1	7.30585859	1
0.01649055	ELOVL5, ELOVL2, ELOVL6	14.5181692	0.99999729
0.01649055	ELOVL5, ELOVL2, ELOVL6	14.5181692	0.99999729
0.01649055	ELOVL5, ELOVL2, ELOVL6	14.5181692	0.99999729
0.01649055	ELOVL5, ELOVL2, ELOVL6	14.5181692	0.99999729
0.01724439	ENTPD2, LAMA4, LAMB1, NID1	7.14916826	0.9995174
0.01724439	CST3, GJA1, DBI, CRYAB	7.14916826	0.9995174
0.01746164	PXN, PIK3R1, PTK2	14.0898701	1
0.01746164	ELOVL5, ELOVL2, ELOVL6	14.0898701	1
0.01746164	ELOVL5, ELOVL2, ELOVL6	14.0898701	1
0.01746164	ELOVL5, ELOVL2, ELOVL6	14.0898701	1
0.01746164	NOTCH1, HEY2, HES5	14.0898701	1
0.01754238	RAB10, RAB31, RAB13, ENPP1, PIK3R1, S(	2.98876033	1
0.01796506	SLC9A3R1, NOTCH1, VCAM1, FABP7, CIB1	3.34802598	0.99965028
0.01846116	MOCS2, GAL3ST1, ACAA2, CSAD, SAT1, TI	1.32359628	0.98722523
0.01893732	ACADL, SCP2, ECI2, DBI, ACADM	4.83938974	0.9999996
0.0189562	WWTR1, TGFB2, NOTCH1, RGCC, BAMBI	4.83475936	1
0.01941999	PEX5L, PEX11A, PXMP2, CAT, MGST1, DH	3.84436406	0.99981759
0.01984409	STARD3, SLC27A1, SCP2, ABCA8A, ABCA8	2.66565111	1
0.01994509	CD63, CYFIP1, SREBF1, CLIC4, TMED10, A	1.79787384	0.99999982
0.0203879	CADM4, VCAM1, CADM1, CDH2, CADM2,	3.79342657	1
0.02067973	NSDHL, DHH, ARL3, B9D1, IFT57, SEPT2, I	3.24133163	1
0.02080616	SPCS2, SPCS1, CYP2J6, SCD2, FMO1, SCD1	2.8900893	0.99990197
0.02082209	FMNL2, DAAM2, ARHGEF16, IQGAP2, VC	4.70496224	0.99999991
0.02139299	IFITM3, CD63, STARD3, AHNAK, CTNS, IR(	2.03170807	0.99992466
0.02156248	H2-K1, H2-Q4, H2-D1	12.7033981	0.99999995
0.02156248	SEMA3C, SEMA3B, SEMA3E	12.7033981	0.99999995
0.02156248	SNX1, CD81, HFE	12.7033981	0.99999995
0.02160408	EDNRB, TYRP1, KIT, SOX10	6.57527273	1
0.02202308	NTRK2, CYFIP1, SERPINE2, SEMA3C, MET	1.74410417	1
0.02242646	CST3, CASP12, CHL1, ITGB3, KIT, TIMP2, T	2.60582524	0.99999997
0.02245314	TMEM47, NOTCH1, CDH2, CTNND2, CTNI	3.70456901	0.99995318
0.02262156	LDHB, GPD1, ME1, PHGDH, HSD17B10, SI	3.69553398	0.99999998
0.02279002	TGFBR3, SERPINE2, NDNF, PTN	6.45251965	0.99999998
0.02281859	SREBF1, FDPS, SCP2	12.3286364	1
0.02296704	PDIA3, H2-K1, H2-Q4, B2M, H2-D1	4.56616162	1

0.02362532	RAB32, RAB10, HFE, H2-K1, PSMB8, H2-D	3.65292929	1
0.02362532	TGFBR3, ADAM17, SNX1, BAMBI, HTRA1,	3.65292929	1
0.02464906	CDH2, RXRG, HES5, SIRT2	6.2621645	1
0.02464906	NOTCH1, CDH2, METRN, PLP1	6.2621645	1
0.02630546	TGFB2, MMP14, CCND1, DHH, ARPC1B, C	3.06846061	1
0.02714834	CAT, ME1, FMO1, CRYM, TM7SF2	4.34304207	1
0.02717696	MMP14, SPARC, CADM1, SH3PXD2B, PPII	3.52246753	1
0.02718878	LHCGR, LGR5, LGR4	11.2919094	1
0.02745633	TGFBR3, FZD1, TGFB2, NOTCH1, HEY2	4.32583732	1
0.02785573	SOX2, NOTCH1, ZFP536, ID4, CALR, GPR3	3.02808612	1
0.02791283	NR4A1, RAMP2, NOTCH1, VCAM1	5.97752066	1
0.02828874	CYFIP1, ITGB3, ARPC1B, PXN, ARPC1A, PI	1.93682658	0.99878741
0.02855824	RAB9, ARL3, RHOBTB3, RHOC, RND3, RAE	1.95029276	1
0.02872276	ADAM17, PTPRZ1, ITGB3, PDPN, CIB1, ITC	3.00898537	0.99999722
0.02875554	TGFBR3, VCAM1, PDPN	10.9587879	1
0.02875554	CTNNA1, RHOC, VCL	10.9587879	1
0.02882786	RAMP2, TGFB2, NOTCH1, SPARC, VCAM1	1.88944619	1
0.02891738	COL27A1, COL14A1, COL5A3, COL11A1, A	2.67885754	0.99895781
0.02906451	ACAA2, SCP2, ELOVL2, ELOVL6	5.89143098	1
0.02907327	CTSO, PSMB2, CTSL, CTSK, PSMB8, CTSC	3.46066986	1
0.02907427	COL27A1, ANGPT2, ITGB3, LAMA4, COL1	1.67905601	0.99899648
0.02961783	CTSO, SFRP1, CASP12, CTSL, CTSK, CTSC	3.4449893	1
0.030073	FZD1, NDRG2, WNT6, SLC9A3R1, SFRP1, (	2.00653863	1
0.03041588	GPX1, GPX8, ATP1A2, ITPR3, ATP1B2, PDI	2.9467433	0.99927389
0.0308211	ENTPD2, FABP7, RBP1, RDH5, VIM, PTPN	2.66341563	0.99999893
0.03139443	HMGCS1, CCND1, PSMB2, MGST1	5.71762846	1
0.03139443	PXN, ITGAV, SORBS1, FERMT2	5.71762846	1
0.03193708	BCAN, COL27A1, COL5A3, COL11A1, LAM	4.13118636	1
0.03243336	SNX1, RAMP2, RAB31, CD81, EZR	4.10954545	1
0.03243336	SOX2, CST3, TGFB2, SMOC1, SH3PXD2B	4.10954545	1
0.03251126	TMPRSS5, CPQ, DHH, HTRA1, ECE1, PLAT	1.52519213	1
0.03320083	FXYD1, ATP1A2, ATP1B2	10.1875648	0.99999963
0.03333252	PRDX4, PRDX1, PRDX6	10.1627184	1
0.03458655	IFITM3, DST, GPNMB, KCNA1, RAB13, ZF	2.24891054	0.99999981
0.03510678	IRGM1, GBP2, IFIT1, IFIT3, GBP3	4.00931264	1
0.03523245	RAB32, CD63, RAB38	9.86290909	1
0.03523245	STARD13, GPX1, ITGB3	9.86290909	1
0.03523245	LGI4, DAG1, POU3F2	9.86290909	1
0.03523245	GPX1, SELM, GSTT1	9.86290909	1
0.03525482	SREBF1, SFRP1, CTSL, ANGPTL4, FOXO1, F	3.28763636	1
0.03525482	CST3, H3F3B, H3F3A, BSG, EMP2, LAMB1	3.28763636	1
0.03538237	NTRK2, GJA1, CHL1, NR2F1, NDNF, NR2F2	2.38618768	1
0.0374304	ACAA2, ALDH2, HMGCS1, HMGCS2, ACAD	3.21462905	0.99986722

0.03753069	SLC9A3R1, CDH2, CTNND2, PXN, CTNNA1	2.82297735	1
0.03812163	NOTCH1, NRARP, VLDLR, YBX3, BACH1, M	1.44313256	1
0.03848063	CXCL10, ADAM17, NOTCH1, EDNRB, SPAI	2.00262114	1
0.03900442	RAB10, RAB31, SYS1, SPTBN1	5.26021818	1
0.0400048	LGALS3, DAG1, ITGA7, NID1	5.21165049	1
0.04146535	PDIA3, FKBP10, FKBP2, CALR, FKBP9, PPIE	2.31161932	1
0.04221119	TGFB2, NOTCH1, HEY2	8.96628099	1
0.04221119	TGFB2, NOTCH1, KIT	8.96628099	1
0.04221119	P2RY12, TGFB2, MATN2	8.96628099	1
0.04237808	PSAT1, GPT2, CAT, ME1, SUCLG2, PHGDH	2.28626635	0.99996024
0.04312812	CXCL10, NOTCH1, CMTM5, ID3	5.0579021	1
0.04312812	KCNJ10, KCNJ16, ATP1A2, ATP1B2	5.0579021	1
0.04335414	RAB9, SLC35B2, CLIC4, SLC27A1, SYS1, SL	1.24504341	1
0.04405152	SEMA3C, FLRT3, SEMA3B, SEMA3E	5.01862639	1
0.04421809	TGFB2, COL27A1, LAMA4, COL5A3, COL1	2.26672561	0.99997465
0.04438192	IFITM3, SLC35B2, PLEKHB1, MRGPRF, AQ	1.10101141	1
0.04452743	STARD13, NSDHL, ABHD4, LPCAT2, PLIN3	3.08714084	1
0.04500954	GAMT, GATM, PSAT1, PHGDH, PSPH	3.68342912	0.99997912
0.04508957	IFITM3, CD63, STARD3, TMEM59, NPC1, I	2.70124823	1
0.04544539	LHCGR, S100A1, FXYD1, PIK3R1, ATP1B2,	2.69466019	1
0.04558176	NTRK2, PTPRZ1, PALLD, LRRTM1, TMOD2	2.13575781	1
0.04611007	RAP1A, VCAM1, PXN, CTNNA1, PIK3R1, E	2.24751607	0.99998406
0.04671598	CST3, GPX1, CNP, PON2, EPHX2, PEBP1, D	2.67598309	1
0.0468504	PPIB, PDIA4, HSP90B1	8.48963731	1
0.0468504	CDH2, DAG1, EZR	8.48963731	1
0.0468504	RAB32, TYRP1, RAB38	8.48963731	1
0.04703292	IGFBP4, ITGB3, ITGAV	8.46893204	1
0.0470412	TGFB2, MDK, CAT, PTN, SIRT2	3.65292929	1
0.0470412	ADAM17, EFEMP1, ERBB3, PTK2, HBEGF	3.65292929	1
0.04734615	LMO4, KCTD1, PIK3R1, SORBS1, SOX10, F	1.68388122	1
0.04746037	RAMP2, RAB13, PTPN13, MTDH	4.87057239	1
0.04781127	CD63, NOTCH1, CD81, KCNA1, GRIK3, LPA	1.32697706	1
0.04965544	CCND1, DHH, MGST1	8.21909091	1
0.04965544	CXCL10, LHCGR, PEBP1	8.21909091	1
0.04965544	NOTCH1, ID4, TNC	8.21909091	1
0.04965544	ELOVL5, ELOVL2, ELOVL6	8.21909091	1
0.0498913	SLC9A3R1, TIMP3, DMD, NDRG2, EZR, DL	2.98876033	1
0.0498913	RAB9, PRNP, CDH2, MMD2, B9D1, SEPT2	2.98876033	1
0.04991433	DST, PALLD, PACSIN3, ALDOC, EZR, CRYAI	2.98903484	1
0.05030499	POSTN, SFRP1, VCAM1, ZFAND6, GPD1, C	2.39100826	1
0.05033483	FZD1, SFRP1, NOTCH1, HTRA1, SOSTDC1	3.57351779	1
0.05034834	TGFB2, ITGB3, DAG1, ITGA7, ITGB8, ITGA	2.61103836	0.99999438
0.05064979	NTRK2, DST, CTNND2, SORBS2, GRIK2, AD	1.84711774	1

0.05118959	LAPTM4B, SLC9A3R1, PPP1R14C, GPNMB	2.38305609	1
0.0519977	CDH2, VIM, LRRC4C, POU3F2	4.69662338	1
0.0543142	GJA1, CDH2, VCL	7.83658828	1
0.0543142	SGCE, DAG1, DMD	7.83658828	1
0.05452388	NPC1, GM2A, APOE	7.81747573	1
0.05452388	HSD17B12, HSD17B11, HSD17B10	7.81747573	1
0.0552932	NTRK2, CADM1, ELOVL5, KCNA1, CTNND1	1.52466956	1
0.05545462	TGFBR3, NTRK2, RAMP2, HEY2, PTK2, ZFP	2.90085561	1
0.05550795	CNTFR, NTRK2, FAM134B, ERBB3, CHL1, I	2.05477273	1
0.05673629	RAP1A, CCND1, HFE, SULF2	4.53467085	1
0.05673629	RAMP2, NOTCH1, NRARP, SEMA3E	4.53467085	1
0.05729141	MMP14, H3F3B, H3F3A, TIMP2, ME1	3.42462121	1
0.05729141	WWTR1, ID4, ENPP1, FOXO1, SIRT2	3.42462121	1
0.05735159	FZD1, SFRP1, SFRP5, WLS	4.51676375	1
0.05753061	DBI, APOE, SORBS1	7.58685315	1
0.05753061	ANGPT2, RGCC, APOE	7.58685315	1
0.05753061	TGFB2, SEMA3C, HEY2	7.58685315	1
0.05753061	FZD1, SFRP1, SFRP5	7.58685315	1
0.05793089	ITGB3, ITGAV	33.9585492	1
0.05793089	ITGB8, ITGAV	33.9585492	1
0.05805829	RAB32, RAB38	33.8757282	1
0.05805829	HMGCS1, HMGCS2	33.8757282	1
0.05980317	HFE, B2M	32.8763636	1
0.05980317	HFE, B2M	32.8763636	1
0.05980317	ITGB3, ITGAV	32.8763636	1
0.05980317	ZEB2, KIT	32.8763636	1
0.05980317	HFE, B2M	32.8763636	1
0.05980317	H3F3B, H3F3A	32.8763636	1
0.05980317	H3F3B, H3F3A	32.8763636	1
0.05980317	H3F3B, H3F3A	32.8763636	1
0.05980317	MXRA8, DMD	32.8763636	1
0.05980317	GAMT, GATM	32.8763636	1
0.05980317	PDIA3, PDIA4	32.8763636	1
0.06128632	TGFB2, ITGB3, DAG1, ITGA7, ITGB8, ITGA	2.48520519	0.99999963
0.06167195	ARHGEF16, CIB1, SORBS1, EZR	4.38351515	1
0.06167195	NR4A1, POSTN, SFRP1, ZFP36L1	4.38351515	1
0.06167195	SREBF1, TGFB2, RAMP2, PTN	4.38351515	1
0.06232491	NTRK2, RAMP2, TGFB2, ITGB3, HFE, EPHX	1.56554113	1
0.06240074	H2-K1, H2-Q4, H2-D1	7.2590846	1
0.06285939	NTRK2, ANGPT2, FNTA, ARHGEF16, PIK3R	3.32114982	1
0.06422459	CCND1, LAMA4, LAMB1, ITGAV, PIK3R1, I	2.45561941	0.99999982
0.06430631	NTRK2, PTPRZ1, ERBB3, LRRTM1, DAG1, I	1.83559726	1
0.06473534	RAP1A, GPD1, ITPR3, EZR, ZFP36L1	3.28763636	1

0.06575052	SPARC, VCAM1, CCND1, ALDH1A1, CAT, T	2.24795649	1
0.06580377	CLIC4, ARHGEF26, LECT1	7.04493506	1
0.06580377	RAB32, TYRP1, RAB38	7.04493506	1
0.06580377	NTRK2, NOTCH1, PTK2	7.04493506	1
0.06580377	TGFBR3, NOTCH1, FGFR1	7.04493506	1
0.06580377	PEX5L, TMED10, RAB31	7.04493506	1
0.06596198	CST3, CADM1, HMGCS1, H3F3B, KCNA1, I	1.82646465	1
0.06714873	LDHB, NSDHL, GPD1, PHGDH	4.23446602	1
0.06761074	SOX2, TGFBR3, TGFB2, SFRP1, PTN, IFT57	2.73969697	1
0.06804	TMEM59, FAM134B, NPC1, LAMP1, IRGM	2.08371319	1
0.06863758	SREBF1, SPARC, BSG, PEBP1, PIK3R1	3.22317291	1
0.06863758	SREBF1, GRB14, PIK3R1, SORBS1, FOXO1	3.22317291	1
0.0691587	TGFBR3, NOTCH1, CADM1, HMGCS1, CCN	2.4224689	1
0.0691587	WWTR1, FLRT3, LRRTM1, PPP1R1B, LRRC	2.4224689	1
0.06948851	MOCS2, GGH, ALPL	6.80017683	0.99999995
0.07036765	MYO10, TTYH1, CIB1	6.79170984	1
0.07063437	GSTA4, MGST1, GSTM5	6.77514563	1
0.07083453	CYFIP1, CADM1, CADM2, KCNA1, SDC2, L	1.47938234	1
0.07086306	BCAN, ZEB2, MDK, KCNA1, ID4, PEBP1	2.70216687	1
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0.07552679	NTRK2, CTSL, CTNND2, KCNA1, GRIK3, CP	2.03751295	1
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0.08259907	NR4A1, PAQR6, NR2F1, NR2F2, RXRG	3.02461859	1
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0.99695217	0.9789261
1	0.98228128
1	0.98228128
0.66178736	0.62517785
1	0.98228128

0.8922004	0.86789922
0.66599847	0.629156

Category	Term	Count
GOTERM_CC_DIRECT	GO:0070062~extracellular exosome	154
GOTERM_CC_DIRECT	GO:0016020~membrane	286
GOTERM_CC_DIRECT	GO:0005737~cytoplasm	256
GOTERM_BP_DIRECT	GO:0042552~myelination	17
GOTERM_CC_DIRECT	GO:0048471~perinuclear region of cytoplasm	54
GOTERM_CC_DIRECT	GO:0043209~myelin sheath	26
GOTERM_CC_DIRECT	GO:0005925~focal adhesion	36
GOTERM_CC_DIRECT	GO:0005856~cytoskeleton	65
GOTERM_CC_DIRECT	GO:0005913~cell-cell adherens junction	30
KEGG_PATHWAY	mmu05100:Bacterial invasion of epithelial cells	15
GOTERM_MF_DIRECT	GO:0003779~actin binding	30
GOTERM_MF_DIRECT	GO:0098641~cadherin binding involved in cell-cell adh	26
GOTERM_MF_DIRECT	GO:0051015~actin filament binding	17
GOTERM_CC_DIRECT	GO:0033270~paranode region of axon	7
GOTERM_BP_DIRECT	GO:0007155~cell adhesion	34
KEGG_PATHWAY	mmu04810:Regulation of actin cytoskeleton	21
GOTERM_CC_DIRECT	GO:0005829~cytosol	82
GOTERM_MF_DIRECT	GO:0019911~structural constituent of myelin sheath	5
GOTERM_MF_DIRECT	GO:0005515~protein binding	158
GOTERM_BP_DIRECT	GO:0098609~cell-cell adhesion	19
GOTERM_CC_DIRECT	GO:0005783~endoplasmic reticulum	64
GOTERM_CC_DIRECT	GO:0030054~cell junction	40
GOTERM_CC_DIRECT	GO:0043220~Schmidt-Lanterman incisure	6
GOTERM_CC_DIRECT	GO:0030175~filopodium	11
KEGG_PATHWAY	mmu04360:Axon guidance	14
KEGG_PATHWAY	mmu04510:Focal adhesion	18
GOTERM_BP_DIRECT	GO:0006629~lipid metabolic process	29
GOTERM_BP_DIRECT	GO:0016477~cell migration	17
KEGG_PATHWAY	mmu04915:Estrogen signaling pathway	12
GOTERM_MF_DIRECT	GO:0005178~integrin binding	12
GOTERM_BP_DIRECT	GO:0007399~nervous system development	25
GOTERM_CC_DIRECT	GO:0030864~cortical actin cytoskeleton	8
KEGG_PATHWAY	mmu04520:Adherens junction	10
GOTERM_CC_DIRECT	GO:0030424~axon	24
GOTERM_CC_DIRECT	GO:0043005~neuron projection	26
GOTERM_CC_DIRECT	GO:0005794~Golgi apparatus	54
KEGG_PATHWAY	mmu04015:Rap1 signaling pathway	17
GOTERM_CC_DIRECT	GO:0015629~actin cytoskeleton	16
GOTERM_CC_DIRECT	GO:0042470~melanosome	11
GOTERM_BP_DIRECT	GO:0046627~negative regulation of insulin receptor si	7
GOTERM_BP_DIRECT	GO:0008202~steroid metabolic process	10
GOTERM_BP_DIRECT	GO:0030335~positive regulation of cell migration	16

KEGG_PATHWAY	mmu05205:Proteoglycans in cancer	16
GOTERM_MF_DIRECT	GO:0008289~lipid binding	19
GOTERM_BP_DIRECT	GO:0071277~cellular response to calcium ion	8
GOTERM_BP_DIRECT	GO:0048843~negative regulation of axon extension inv	6
GOTERM_BP_DIRECT	GO:0016126~sterol biosynthetic process	6
KEGG_PATHWAY	mmu04512:ECM-receptor interaction	10
GOTERM_BP_DIRECT	GO:0030148~sphingolipid biosynthetic process	6
GOTERM_CC_DIRECT	GO:0005768~endosome	29
GOTERM_CC_DIRECT	GO:0005789~endoplasmic reticulum membrane	35
GOTERM_CC_DIRECT	GO:0009986~cell surface	32
GOTERM_BP_DIRECT	GO:0007519~skeletal muscle tissue development	8
KEGG_PATHWAY	mmu04921:Oxytocin signaling pathway	13
GOTERM_BP_DIRECT	GO:0051726~regulation of cell cycle	11
GOTERM_CC_DIRECT	GO:0005903~brush border	9
GOTERM_BP_DIRECT	GO:0042326~negative regulation of phosphorylation	5
GOTERM_CC_DIRECT	GO:0045202~synapse	27
GOTERM_CC_DIRECT	GO:0043296~apical junction complex	5
KEGG_PATHWAY	mmu05200:Pathways in cancer	23
GOTERM_CC_DIRECT	GO:0030027~lamellipodium	13
KEGG_PATHWAY	mmu04514:Cell adhesion molecules (CAMs)	13
GOTERM_CC_DIRECT	GO:0045121~membrane raft	17
GOTERM_CC_DIRECT	GO:0014069~postsynaptic density	16
GOTERM_BP_DIRECT	GO:0007264~small GTPase mediated signal transducti	16
KEGG_PATHWAY	mmu00330:Arginine and proline metabolism	7
GOTERM_MF_DIRECT	GO:0030215~semaphorin receptor binding	5
GOTERM_BP_DIRECT	GO:0051017~actin filament bundle assembly	6
KEGG_PATHWAY	mmu05412:Arrhythmogenic right ventricular cardiomy	8
GOTERM_BP_DIRECT	GO:0042493~response to drug	20
KEGG_PATHWAY	mmu04540:Gap junction	9
GOTERM_CC_DIRECT	GO:0000139~Golgi membrane	22
GOTERM_CC_DIRECT	GO:0005911~cell-cell junction	14
GOTERM_BP_DIRECT	GO:0010038~response to metal ion	4
GOTERM_CC_DIRECT	GO:0030425~dendrite	25
GOTERM_CC_DIRECT	GO:0045177~apical part of cell	10
GOTERM_CC_DIRECT	GO:0005764~lysosome	19
GOTERM_BP_DIRECT	GO:0007229~integrin-mediated signaling pathway	9
GOTERM_CC_DIRECT	GO:0043218~compact myelin	3
KEGG_PATHWAY	mmu04725:Cholinergic synapse	10
KEGG_PATHWAY	mmu04978:Mineral absorption	6
KEGG_PATHWAY	mmu04010:MAPK signaling pathway	16
GOTERM_MF_DIRECT	GO:0004860~protein kinase inhibitor activity	7
GOTERM_BP_DIRECT	GO:0001934~positive regulation of protein phosphory	13
GOTERM_CC_DIRECT	GO:0005802~trans-Golgi network	12

GOTERM_BP_DIRECT	GO:0050919~negative chemotaxis	5
GOTERM_BP_DIRECT	GO:0007160~cell-matrix adhesion	8
GOTERM_CC_DIRECT	GO:0043025~neuronal cell body	26
GOTERM_BP_DIRECT	GO:0030036~actin cytoskeleton organization	11
KEGG_PATHWAY	mmu05132:Salmonella infection	8
GOTERM_MF_DIRECT	GO:0005096~GTPase activator activity	15
GOTERM_MF_DIRECT	GO:0045499~chemorepellent activity	5
GOTERM_CC_DIRECT	GO:0042995~cell projection	32
GOTERM_CC_DIRECT	GO:0044295~axonal growth cone	5
GOTERM_BP_DIRECT	GO:0007420~brain development	14
GOTERM_CC_DIRECT	GO:0033010~paranodal junction	3
GOTERM_MF_DIRECT	GO:0019904~protein domain specific binding	17
GOTERM_BP_DIRECT	GO:0043066~negative regulation of apoptotic process	27
GOTERM_BP_DIRECT	GO:0030308~negative regulation of cell growth	10
GOTERM_BP_DIRECT	GO:0035556~intracellular signal transduction	21
GOTERM_BP_DIRECT	GO:0006915~apoptotic process	27
GOTERM_BP_DIRECT	GO:0043123~positive regulation of I-kappaB kinase/NF	11
KEGG_PATHWAY	mmu04723:Retrograde endocannabinoid signaling	9
GOTERM_BP_DIRECT	GO:0007266~Rho protein signal transduction	6
GOTERM_BP_DIRECT	GO:0051260~protein homooligomerization	13
GOTERM_CC_DIRECT	GO:0005741~mitochondrial outer membrane	11
GOTERM_MF_DIRECT	GO:0017049~GTP-Rho binding	4
KEGG_PATHWAY	mmu04666:Fc gamma R-mediated phagocytosis	8
KEGG_PATHWAY	mmu05145:Toxoplasmosis	9
GOTERM_BP_DIRECT	GO:0009636~response to toxic substance	8
GOTERM_BP_DIRECT	GO:0010942~positive regulation of cell death	6
GOTERM_BP_DIRECT	GO:0008285~negative regulation of cell proliferation	20
KEGG_PATHWAY	mmu04720:Long-term potentiation	7
GOTERM_BP_DIRECT	GO:0035338~long-chain fatty-acyl-CoA biosynthetic pr	3
GOTERM_BP_DIRECT	GO:0030913~paranodal junction assembly	3
GOTERM_BP_DIRECT	GO:0001755~neural crest cell migration	6
GOTERM_BP_DIRECT	GO:0006695~cholesterol biosynthetic process	5
GOTERM_BP_DIRECT	GO:0008203~cholesterol metabolic process	8
GOTERM_CC_DIRECT	GO:0005921~gap junction	5
KEGG_PATHWAY	mmu04912:GnRH signaling pathway	8
KEGG_PATHWAY	mmu04014:Ras signaling pathway	14
GOTERM_BP_DIRECT	GO:0051591~response to cAMP	6
GOTERM_CC_DIRECT	GO:0016459~myosin complex	6
KEGG_PATHWAY	mmu04530:Tight junction	8
GOTERM_BP_DIRECT	GO:0071526~semaphorin-plexin signaling pathway	5
GOTERM_BP_DIRECT	GO:0010976~positive regulation of neuron projection	10
GOTERM_BP_DIRECT	GO:0016601~Rac protein signal transduction	4
KEGG_PATHWAY	mmu05218:Melanoma	7

GOTERM_BP_DIRECT	GO:0019367~fatty acid elongation, saturated fatty acic	3
GOTERM_BP_DIRECT	GO:0034625~fatty acid elongation, monounsaturated	3
GOTERM_BP_DIRECT	GO:0034626~fatty acid elongation, polyunsaturated fa	3
GOTERM_BP_DIRECT	GO:0031175~neuron projection development	10
GOTERM_MF_DIRECT	GO:0102336~3-oxo-arachidoyl-CoA synthase activity	3
GOTERM_MF_DIRECT	GO:0102337~3-oxo-cerotoyl-CoA synthase activity	3
GOTERM_MF_DIRECT	GO:0102338~3-oxo-lignoceronyl-CoA synthase activity	3
GOTERM_MF_DIRECT	GO:0009922~fatty acid elongase activity	3
GOTERM_BP_DIRECT	GO:0016192~vesicle-mediated transport	13
KEGG_PATHWAY	mmu04724:Glutamatergic synapse	9
GOTERM_CC_DIRECT	GO:0005604~basement membrane	8
GOTERM_CC_DIRECT	GO:0005938~cell cortex	10
GOTERM_CC_DIRECT	GO:0005874~microtubule	17
GOTERM_BP_DIRECT	GO:0022409~positive regulation of cell-cell adhesion	4
GOTERM_CC_DIRECT	GO:0005902~microvillus	7
GOTERM_MF_DIRECT	GO:0017124~SH3 domain binding	9
KEGG_PATHWAY	mmu05133:Pertussis	7
KEGG_PATHWAY	mmu04670:Leukocyte transendothelial migration	9
GOTERM_BP_DIRECT	GO:0032287~peripheral nervous system myelin mainte	3
GOTERM_BP_DIRECT	GO:0071679~commissural neuron axon guidance	3
GOTERM_BP_DIRECT	GO:0051412~response to corticosterone	4
GOTERM_CC_DIRECT	GO:0043197~dendritic spine	10
KEGG_PATHWAY	mmu04713:Circadian entrainment	8
GOTERM_CC_DIRECT	GO:0043204~perikaryon	10
KEGG_PATHWAY	mmu04916:Melanogenesis	8
GOTERM_BP_DIRECT	GO:0031668~cellular response to extracellular stimulu	4
GOTERM_CC_DIRECT	GO:0035748~myelin sheath abaxonal region	3
GOTERM_CC_DIRECT	GO:0030056~hemidesmosome	3
KEGG_PATHWAY	mmu04071:Sphingolipid signaling pathway	9
KEGG_PATHWAY	mmu05231:Choline metabolism in cancer	8
GOTERM_BP_DIRECT	GO:0071456~cellular response to hypoxia	8
GOTERM_BP_DIRECT	GO:0051898~negative regulation of protein kinase B si	5
GOTERM_MF_DIRECT	GO:0042803~protein homodimerization activity	33
GOTERM_BP_DIRECT	GO:0042759~long-chain fatty acid biosynthetic proces	3
GOTERM_BP_DIRECT	GO:0030042~actin filament depolymerization	3
GOTERM_MF_DIRECT	GO:0047372~acylglycerol lipase activity	3
GOTERM_BP_DIRECT	GO:0007010~cytoskeleton organization	8
GOTERM_CC_DIRECT	GO:0030496~midbody	9
KEGG_PATHWAY	mmu04960:Aldosterone-regulated sodium reabsorptic	5
GOTERM_CC_DIRECT	GO:0005765~lysosomal membrane	13
GOTERM_CC_DIRECT	GO:0005770~late endosome	9
GOTERM_CC_DIRECT	GO:0005923~bicellular tight junction	9
GOTERM_CC_DIRECT	GO:0031674~I band	4

KEGG_PATHWAY	mmu04270:Vascular smooth muscle contraction	9
GOTERM_MF_DIRECT	GO:0048365~Rac GTPase binding	5
GOTERM_BP_DIRECT	GO:0001822~kidney development	9
GOTERM_CC_DIRECT	GO:0005886~plasma membrane	152
GOTERM_BP_DIRECT	GO:0010811~positive regulation of cell-substrate adhe	5
KEGG_PATHWAY	mmu04730:Long-term depression	6
GOTERM_MF_DIRECT	GO:0000982~transcription factor activity, RNA polyme	4
GOTERM_CC_DIRECT	GO:0044754~autolysosome	3
KEGG_PATHWAY	mmu05414:Dilated cardiomyopathy	7
GOTERM_CC_DIRECT	GO:0008305~integrin complex	4
GOTERM_BP_DIRECT	GO:0008542~visual learning	6
GOTERM_BP_DIRECT	GO:0071404~cellular response to low-density lipoprot	3
KEGG_PATHWAY	mmu04611:Platelet activation	9
GOTERM_BP_DIRECT	GO:0045860~positive regulation of protein kinase acti	6
GOTERM_CC_DIRECT	GO:0031902~late endosome membrane	7
KEGG_PATHWAY	mmu04144:Endocytosis	14
GOTERM_BP_DIRECT	GO:0001525~angiogenesis	13
GOTERM_BP_DIRECT	GO:0043524~negative regulation of neuron apoptotic	10
GOTERM_BP_DIRECT	GO:0010033~response to organic substance	6
KEGG_PATHWAY	mmu05210:Colorectal cancer	6
KEGG_PATHWAY	mmu05140:Leishmaniasis	6
GOTERM_CC_DIRECT	GO:0031982~vesicle	10
GOTERM_BP_DIRECT	GO:0051781~positive regulation of cell division	5
GOTERM_CC_DIRECT	GO:0001725~stress fiber	6
GOTERM_MF_DIRECT	GO:0019901~protein kinase binding	20
GOTERM_BP_DIRECT	GO:0016242~negative regulation of macroautophagy	3
KEGG_PATHWAY	mmu04012:ErbB signaling pathway	7
KEGG_PATHWAY	mmu04727:GABAergic synapse	7
GOTERM_MF_DIRECT	GO:0008270~zinc ion binding	41
GOTERM_CC_DIRECT	GO:0031234~extrinsic component of cytoplasmic side	6
GOTERM_BP_DIRECT	GO:0031032~actomyosin structure organization	4
GOTERM_BP_DIRECT	GO:2001243~negative regulation of intrinsic apoptotic	4
KEGG_PATHWAY	mmu04151:PI3K-Akt signaling pathway	17
GOTERM_BP_DIRECT	GO:0043525~positive regulation of neuron apoptotic p	6
GOTERM_BP_DIRECT	GO:0019538~protein metabolic process	3
GOTERM_BP_DIRECT	GO:0042761~very long-chain fatty acid biosynthetic pr	3
GOTERM_BP_DIRECT	GO:0008210~estrogen metabolic process	3
GOTERM_MF_DIRECT	GO:0044548~S100 protein binding	3
GOTERM_MF_DIRECT	GO:0017166~vinculin binding	3
GOTERM_MF_DIRECT	GO:0004861~cyclin-dependent protein serine/threonii	3
GOTERM_MF_DIRECT	GO:0032403~protein complex binding	17
GOTERM_CC_DIRECT	GO:0071944~cell periphery	6
GOTERM_MF_DIRECT	GO:0019900~kinase binding	7

GOTERM_CC_DIRECT	GO:0001726~ruffle	7
GOTERM_BP_DIRECT	GO:2000378~negative regulation of reactive oxygen sp	4
GOTERM_BP_DIRECT	GO:0046686~response to cadmium ion	4
GOTERM_BP_DIRECT	GO:0060291~long-term synaptic potentiation	5
KEGG_PATHWAY	mmu05216:Thyroid cancer	4
GOTERM_CC_DIRECT	GO:0010008~endosome membrane	8
GOTERM_BP_DIRECT	GO:1900181~negative regulation of protein localizatio	3
GOTERM_CC_DIRECT	GO:0005578~proteinaceous extracellular matrix	15
GOTERM_MF_DIRECT	GO:0008432~JUN kinase binding	3
GOTERM_MF_DIRECT	GO:0030898~actin-dependent ATPase activity	3
KEGG_PATHWAY	mmu04062:Chemokine signaling pathway	11
GOTERM_BP_DIRECT	GO:0007611~learning or memory	5
KEGG_PATHWAY	mmu04971:Gastric acid secretion	6
GOTERM_BP_DIRECT	GO:0006633~fatty acid biosynthetic process	6
GOTERM_MF_DIRECT	GO:0008017~microtubule binding	11
KEGG_PATHWAY	mmu05161:Hepatitis B	9
GOTERM_BP_DIRECT	GO:0007411~axon guidance	9
GOTERM_CC_DIRECT	GO:0071682~endocytic vesicle lumen	2
GOTERM_CC_DIRECT	GO:0097038~perinuclear endoplasmic reticulum	3
GOTERM_CC_DIRECT	GO:0031143~pseudopodium	3
GOTERM_CC_DIRECT	GO:0043231~intracellular membrane-bounded organe	29
GOTERM_MF_DIRECT	GO:0001540~beta-amyloid binding	4
GOTERM_BP_DIRECT	GO:0006682~galactosylceramide biosynthetic process	2
GOTERM_BP_DIRECT	GO:0006601~creatine biosynthetic process	2
GOTERM_BP_DIRECT	GO:1902746~regulation of lens fiber cell differentiatio	2
GOTERM_MF_DIRECT	GO:0008396~oxysterol 7-alpha-hydroxylase activity	2
GOTERM_BP_DIRECT	GO:0071850~mitotic cell cycle arrest	3
GOTERM_BP_DIRECT	GO:0070498~interleukin-1-mediated signaling pathwa	3
GOTERM_BP_DIRECT	GO:0007179~transforming growth factor beta recepto	6
KEGG_PATHWAY	mmu05213:Endometrial cancer	5
GOTERM_MF_DIRECT	GO:0008201~heparin binding	9
GOTERM_BP_DIRECT	GO:0090090~negative regulation of canonical Wnt sigr	7
GOTERM_CC_DIRECT	GO:0032587~ruffle membrane	6
GOTERM_BP_DIRECT	GO:0031643~positive regulation of myelination	3
GOTERM_BP_DIRECT	GO:0033627~cell adhesion mediated by integrin	3
GOTERM_BP_DIRECT	GO:0006636~unsaturated fatty acid biosynthetic proce	3
GOTERM_BP_DIRECT	GO:0043149~stress fiber assembly	3
GOTERM_CC_DIRECT	GO:0005635~nuclear envelope	9
GOTERM_MF_DIRECT	GO:0016757~transferase activity, transferring glycosyl	11
GOTERM_BP_DIRECT	GO:0007616~long-term memory	4
GOTERM_CC_DIRECT	GO:0030426~growth cone	9
GOTERM_BP_DIRECT	GO:0043410~positive regulation of MAPK cascade	7
GOTERM_CC_DIRECT	GO:0033268~node of Ranvier	3

GOTERM_MF_DIRECT	GO:0003774~motor activity	6
GOTERM_BP_DIRECT	GO:0031103~axon regeneration	3
GOTERM_BP_DIRECT	GO:0022011~myelination in peripheral nervous systen	3
GOTERM_BP_DIRECT	GO:0009617~response to bacterium	4
GOTERM_MF_DIRECT	GO:0019899~enzyme binding	17
KEGG_PATHWAY	mmu05416:Viral myocarditis	6
KEGG_PATHWAY	mmu05410:Hypertrophic cardiomyopathy (HCM)	6
GOTERM_BP_DIRECT	GO:0009408~response to heat	5
GOTERM_BP_DIRECT	GO:0007050~cell cycle arrest	6
GOTERM_MF_DIRECT	GO:0030544~Hsp70 protein binding	4
GOTERM_BP_DIRECT	GO:0018105~peptidyl-serine phosphorylation	8
GOTERM_BP_DIRECT	GO:0006665~sphingolipid metabolic process	4
GOTERM_CC_DIRECT	GO:0044291~cell-cell contact zone	3
GOTERM_MF_DIRECT	GO:0017048~Rho GTPase binding	4
KEGG_PATHWAY	mmu04726:Serotonergic synapse	8
GOTERM_BP_DIRECT	GO:0007015~actin filament organization	6
GOTERM_BP_DIRECT	GO:0030048~actin filament-based movement	3
GOTERM_BP_DIRECT	GO:0048193~Golgi vesicle transport	3
GOTERM_BP_DIRECT	GO:0042692~muscle cell differentiation	3
GOTERM_BP_DIRECT	GO:0008654~phospholipid biosynthetic process	5
KEGG_PATHWAY	mmu01130:Biosynthesis of antibiotics	11
GOTERM_CC_DIRECT	GO:0019898~extrinsic component of membrane	6
GOTERM_BP_DIRECT	GO:0043065~positive regulation of apoptotic process	15
GOTERM_BP_DIRECT	GO:0019065~receptor-mediated endocytosis of virus b	2
GOTERM_BP_DIRECT	GO:2000544~regulation of endothelial cell chemotaxis	2
GOTERM_BP_DIRECT	GO:0061084~negative regulation of protein refolding	2
GOTERM_BP_DIRECT	GO:0032290~peripheral nervous system myelin forma	2
GOTERM_BP_DIRECT	GO:0006598~polyamine catabolic process	2
GOTERM_MF_DIRECT	GO:0031871~proteinase activated receptor binding	2
GOTERM_MF_DIRECT	GO:0035373~chondroitin sulfate proteoglycan binding	2
GOTERM_CC_DIRECT	GO:0005739~mitochondrion	57
GOTERM_CC_DIRECT	GO:0043679~axon terminus	6
GOTERM_MF_DIRECT	GO:0019003~GDP binding	5
GOTERM_BP_DIRECT	GO:0021762~substantia nigra development	4
GOTERM_BP_DIRECT	GO:0007605~sensory perception of sound	8
GOTERM_BP_DIRECT	GO:0006882~cellular zinc ion homeostasis	3
GOTERM_MF_DIRECT	GO:0051393~alpha-actinin binding	3
KEGG_PATHWAY	mmu04022:cGMP-PKG signaling pathway	9
KEGG_PATHWAY	mmu05166:HTLV-I infection	13
GOTERM_BP_DIRECT	GO:0008360~regulation of cell shape	8
GOTERM_MF_DIRECT	GO:0030674~protein binding, bridging	5
GOTERM_BP_DIRECT	GO:0006694~steroid biosynthetic process	5
GOTERM_BP_DIRECT	GO:0007154~cell communication	4

GOTERM_CC_DIRECT	GO:0016234~inclusion body	3
GOTERM_BP_DIRECT	GO:0009612~response to mechanical stimulus	5
GOTERM_BP_DIRECT	GO:0034599~cellular response to oxidative stress	5
GOTERM_BP_DIRECT	GO:0031116~positive regulation of microtubule polym	3
GOTERM_BP_DIRECT	GO:0043409~negative regulation of MAPK cascade	3
GOTERM_BP_DIRECT	GO:0031589~cell-substrate adhesion	3
GOTERM_MF_DIRECT	GO:0031434~mitogen-activated protein kinase kinase	3
KEGG_PATHWAY	mmu00100:Steroid biosynthesis	3
GOTERM_CC_DIRECT	GO:0016323~basolateral plasma membrane	10

PValue	Genes	Fold Enrichment	Bonferroni
6.03E-21	GLTP, SEMA5A, SPON2, CYFIP1, NDUFA1	2.13251693	2.52E-18
2.00E-18	EPHB6, FAAH, PLEKHB1, LDLRAD3, ZDHH	1.51330081	8.38E-16
2.90E-12	GLTP, CYFIP1, RPL3, 1810011O10RIK, PLE	1.42953275	1.21E-09
3.98E-12	EGR2, GAL3ST1, UGT8A, DHH, PLLP, NAB	10.3083166	8.71E-09
8.02E-12	ITGB1, CYFIP1, CDKN1A, PLEKHF1, AATK,	2.88948761	3.35E-09
7.74E-11	CNP, PEBP1, ITPR3, NDRG1, LDHB, GJC3,	5.014242	3.23E-08
5.80E-10	ITGB1, CYFIP1, RPL3, CD151, ITGB5, CSRP	3.40925051	2.42E-07
8.18E-09	ARPC1A, FMN2, PPP1R9A, TUBA1B, SIPA	2.16247633	3.42E-06
1.02E-08	ITGB1, DOCK9, SLC3A2, CAPG, BZW2, ND	3.51534006	4.26E-06
2.61E-08	SHC4, ITGB1, SEPT11, CAV2, CAV1, ARPC	6.81584544	5.89E-06
7.98E-08	ITGB1, CYFIP1, GMFB, ARPC1A, CAPG, FM	3.1927042	5.23E-05
2.80E-07	ITGB1, DOCK9, SLC3A2, CAPG, BZW2, ND	3.35214869	1.84E-04
7.87E-07	CYFIP1, ARPC1A, SHROOM2, ARPC5, PPP	4.63264605	5.16E-04
1.52E-06	MAG, NFASC, KCNA1, KIF13B, NCMAP, EF	17.2798493	6.34E-04
1.72E-06	ITGB1, SPON2, ITGB5, TNFAIP6, ITGB4, HI	2.55051132	0.00375827
1.96E-06	ITGB1, CYFIP1, ITGB5, ITGB4, LIMK2, ARP	3.49432076	4.42E-04
2.13E-06	CDKN1A, CDKN1B, RTKN, RNF13, WWC2,	1.70197107	8.89E-04
2.86E-06	MOBP, PLP1, MAL, MBP, NCMAP	35.971134	0.00187564
3.13E-06	SPON2, CYFIP1, ATP8A1, PLEKHB1, ZDHH	1.38891475	0.00205282
4.82E-06	DOCK9, SLC3A2, CAPG, BZW2, NDRG1, TJ	3.65747927	0.01048253
7.47E-06	FAAH, ATP8A1, CLSTN1, AATK, FMN2, LC	1.79123803	0.0031159
2.88E-05	ITGB1, SHC4, CYFIP1, ITGB4, KCNA1, CLST	2.06285507	0.01196853
3.35E-05	MAG, CDH1, MPDZ, NCMAP, SIRT2, JAM3	14.8112994	0.01391445
4.04E-05	ITGB1, GPM6A, MYO1B, DAG1, FSCN1, IT	5.2897498	0.01674091
6.25E-05	SEMA5A, EPHB6, ITGB1, SEMA6C, LIMK2,	3.84646162	0.01403437
6.70E-05	SHC4, ITGB1, JUN, ITGB5, ITGB4, CAV2, C	3.08194751	0.01503343
7.47E-05	GAL3ST1, SAMD8, UGT8A, INSIG1, HMGC	2.29866344	0.15079443
7.73E-05	ITGB1, CD151, SHROOM2, LAMB1, GFRA1	3.23821463	0.15555915
8.72E-05	SHC4, JUN, PRKCD, ITPR3, KRAS, ADCY1, I	4.33988526	0.01950822
1.02E-04	ITGB1, CD151, ITGB5, NOV, CD9, ITGA6, C	4.31653608	0.06498574
1.27E-04	SEMA5A, CYFIP1, GPM6A, SEMA3B, BZW	2.41261895	0.24192728
1.38E-04	CAP1, PDLIM2, MOBP, CDH1, SHROOM2,	6.88897648	0.05605554
1.68E-04	TJP1, TCF7L2, CDH1, CTNNA3, FYN, BAIAI	4.92255504	0.03735945
1.92E-04	SEPT11, FZD3, MME, HEPACAM, KCNA1,	2.40183234	0.07724064
2.01E-04	CYFIP1, GPM6A, AHCY, PEBP1, PPP1R9A,	2.29222491	0.08063823
2.21E-04	USP6NL, FAAH, GAL3ST1, ATP8A1, GALNT	1.68027347	0.08835083
3.26E-04	ITGB1, MAGI2, PRKCA, ADCY1, FGF1, RHC	2.81551746	0.07096147
3.79E-04	IVNS1ABP, GAS2L3, ARPC1A, FMN2, ARPC	2.94752228	0.14661714
3.98E-04	ITGB1, RAB2A, TMED10, AHCY, PDCD6IP,	4.03277955	0.15323336
4.66E-04	PTPRE, SOCS3, GRB14, PRKCD, PRKCA, YB	6.88313666	0.63946419
4.86E-04	CYP39A1, SULT1A1, CYB5R3, NPC1, HMG	4.33122545	0.65444928
4.98E-04	SPAG9, ITGB1, SEMA6C, TNFAIP6, ATP8A	2.86756995	0.66393285

5.67E-04	ITGB1, FZD3, CDKN1A, ITGB5, CAV2, CAV	2.79348936	0.12032618
5.67E-04	GLTP, UNC119B, FAAH, PLEKHA1, OSBPL5	2.53130202	0.31076209
5.79E-04	ITPKB, JUN, FUS, CHP2, FOSB, ADCY1, FO	5.49166698	0.71844667
6.21E-04	SEMA5A, SEMA6C, RYK, SEMA4C, SEMA3	8.39591395	0.74310568
7.45E-04	CYB5R3, HMGCS1, INSIG1, SC5D, DHCR24	8.08495417	0.804234
7.67E-04	ITGB1, RELN, ITGB5, ITGB4, DAG1, SPP1,	4.02754504	0.15925241
8.87E-04	ELOVL1, SPTLC2, B3GNT5, ELOVL6, ELOVI	7.79620581	0.85646925
8.91E-04	SLC48A1, ITGB1, PLEKHF1, CDKN1B, RNF1	1.97393237	0.31106329
9.37E-04	FAAH, TMED10, CLSTN1, ITPR3, FMN2, H	1.8253362	0.32424691
9.61E-04	EPHB6, ITGB1, ITGB5, ITGB4, H2-DMA, KC	1.88379007	0.33096539
0.00100475	MYL6, CAV1, CFL2, MYH14, FLNB, CASQ1	5.01824742	0.88902924
0.00101098	JUN, CDKN1A, ITPR3, PRKCA, FOS, ADCY1	3.07167435	0.20435163
0.0010247	ITGB1, JUN, CDKN1A, SON, GADD45B, DC	3.57326099	0.89377251
0.0010888	MYL6, MYO1B, MME, MYO6, MYH14, ITP	4.32797711	0.36578332
0.00126035	CDKN1C, CDKN1A, CDKN1B, ATXN1, DYN	10.1061927	0.93658945
0.00131609	ITGB1, SHC4, CYFIP1, KCNA1, CLSTN1, PP	1.97972814	0.42333055
0.00146591	TJP1, CDH1, SHROOM2, CLDN19, RHOA	9.74427594	0.45838396
0.00158894	ITGB1, TCF7L2, RALBP1, JUN, FZD3, CDKN	2.06373447	0.30189493
0.00167291	ITGB1, CYFIP1, SWAP70, ARPC5, PPP1R9A	2.93516605	0.5033471
0.00196231	ITGB1, CADM3, H2-DMA, PTPRF, MAG, N	2.84414291	0.35848122
0.00208545	ITGB1, MOG, CAV2, PLLP, CAV1, PRKCA, A	2.40259628	0.58214898
0.00219863	SEMA4C, MAGI2, CLSTN1, ADAM10, BAIA	2.47887857	0.60149725
0.00227025	RAB2A, RALBP1, DOCK9, RAP1GDS1, ARL1	2.46659619	0.99306161
0.00233476	GAMT, GATM, SMOX, CARNS1, ODC1, LA	5.06319947	0.41037686
0.00240586	SEMA5A, SEMA6C, SEMA4C, SEMA3B, SE	8.56455572	0.79405559
0.00250355	MYO1B, SWAP70, FSCN1, SHROOM2, FM	6.23696465	0.99583951
0.00260206	ITGB1, TCF7L2, ITGB5, ITGB4, LMNA, DAG	4.23192792	0.44502514
0.00271204	JUN, FZD3, CDKN1A, CDKN1B, HMGCS1, A	2.14644801	0.99736607
0.00275034	TJP1, TUBA1B, ITPR3, KRAS, PRKCA, ADCY	3.70908799	0.463363
0.00324944	SRGN, RAB2A, NDFIP2, FAAH, TMED10, G	2.02139322	0.74346152
0.0032649	ITGB1, CADM3, HEPACAM, PRKCD, SHRO	2.57908199	0.74511911
0.00375186	ALAD, MT2, MT1, MT3	12.1274313	0.99973098
0.00381379	KCNA1, AATK, ITPR3, YBX1, PPP1R9A, CLC	1.88919636	0.79754
0.00394848	TJP1, MYO1B, FZD3, CDH1, MYO6, SPP1,	3.2198477	0.80866567
0.0039907	CTSA, SLC48A1, ABCA2, PLEKHF1, RNF13,	2.12548859	0.81202536
0.00402136	ITGB1, FUT8, ITGB5, ITGB4, PLP1, ITGA6,	3.52086714	0.99985113
0.00419735	PLLP, PMP22, MBP	27.7711864	0.82764227
0.00438621	GNG2, FYN, ITPR3, KRAS, PRKCA, ADCY1,	3.13649525	0.62970837
0.00441149	FTL1, FTH1, MT2, ATP1B3, MT1, CLCN2	5.45267636	0.63182693
0.00465335	JUN, GADD45B, PRKCA, FOS, FGF1, MAPK	2.25927626	0.65149774
0.00484756	CDKN1C, SOCS3, CDKN1A, CDKN1B, CAM	4.41750769	0.95873469
0.00492165	MUSK, PELI2, PRKCA, FGF1, MT3, CYR61,	2.57048815	0.9999794
0.00498972	ATP8A1, CDH1, FNBP1, CPD, CLTB, STX6,	2.70938404	0.87642717

0.00517817	RYK, SEMA4C, SEMA3B, SEMA4G, RHOA	6.99659495	0.99998828
0.00553066	ITGB1, TIAM1, ITGB5, ITGB4, EPDR1, ITG/	3.73151731	0.9999946
0.00559561	GPM6A, KCNA1, PEBP1, ITPR3, PPP1R9A,	1.80287353	0.90420394
0.00583067	CAP1, GAS2L3, FMNL2, IQSEC1, ELMO1, F	2.8183467	0.99999721
0.00610055	TJP1, JUN, ARPC1A, FLNB, FOS, ARPC5, W	3.63511757	0.74916176
0.00616495	USP6NL, RALBP1, JUN, STARD8, ARHGAP1	2.29602983	0.98269437
0.00618792	SEMA5A, SEMA6C, SEMA4C, SEMA3B, SE	6.66132111	0.9829548
0.00628288	ITGB1, CYFIP1, GPM6A, UNC119B, CNP, K	1.66419095	0.9282472
0.00639511	TIAM1, GPM6A, KIF5B, AATK, MAPK8IP1	6.61218725	0.93155597
0.00679058	HMGCS1, H3F3B, KCNA1, SHROOM2, AAT	2.35811163	0.99999966
0.00687089	NFASC, SIRT2, JAM3	22.2169492	0.94397422
0.00707908	SHC4, ITGB1, ST13, SHROOM2, ARL1, CAF	2.11594906	0.99053726
0.00740662	CDKN1A, CDKN1B, YBX1, FMN2, RNF7, HI	1.73555112	0.99999991
0.00755811	NDUFA13, CDKN1A, CDKN1B, NOV, SERT/	2.9105835	0.99999994
0.00761192	SHC4, PRKCD, STK39, DCLK3, PRKCA, ADC	1.91007042	0.99999994
0.00803841	SHC4, RTKN, 1810011O10RIK, PLEKHF1, E	1.72337181	0.99999998
0.00810017	FKBP1A, NDFIP2, GPRC5B, PINK1, TRIM13	2.68594115	0.99999998
0.00822186	FAAH, GNG2, ITPR3, PRKCA, ADCY1, PLCE	3.09690842	0.84523093
0.00826706	RTKN, CDC42EP3, CDC42EP1, BAIAP2, CTI	4.74551658	0.99999999
0.00831252	SPAG9, ST13, KCNA1, CAV1, AK3, ITPR3, S	2.40086202	0.99999999
0.00864214	BNIP3L, PINK1, RHOT1, CYB5R3, SLC44A1	2.66216166	0.97343381
0.00907858	RTKN, CDC42EP3, CDC42EP1, STXBP6	8.99278351	0.9974781
0.00908532	LIMK2, CFL2, PRKCD, ARPC1A, PRKCA, AR	3.37546632	0.87288543
0.00919472	ITGB1, H2-DMA, H2-DMB1, ITGA6, LAMB	3.03791968	0.87601807
0.00934117	CDKN1A, CNP, CDH1, PEBP1, MBP, FOS, S	3.38439942	1
0.00987771	EGR1, CDKN1A, CDKN1B, TRIM13, LZTS2,	4.54778672	1
0.01014986	ITGB1, JUN, CDKN1A, CDKN1B, CAV2, CAV	1.89491113	1
0.01023527	ITPR3, KRAS, PRKCA, ADCY1, PLCB1, RAPC	3.75904203	0.90222537
0.0104685	ELOVL1, ELOVL6, ELOVL7	18.1911469	1
0.0104685	NFASC, UGT8A, CD9	18.1911469	1
0.01075853	SEMA5A, SEMA6C, SEMA4C, SEMA3B, SE	4.45497475	1
0.01094778	CYB5R3, HMGCS1, INSIG1, DHCR24, HMG	5.6847334	1
0.01117453	ABCA2, CYB5R3, NPC1, HMGCS1, INSIG1,	3.27031854	1
0.01150047	TJP1, GJC3, GJB1, NOV, TJP2	5.6103407	0.99205373
0.01159548	JUN, PRKCD, ITPR3, KRAS, PRKCA, ADCY1	3.22203603	0.92834493
0.01225038	SHC4, RALBP1, PRKCA, RASAL2, FGF1, RH	2.16678405	0.9383131
0.01267805	JUN, MAT2A, FOSB, PEBP1, FOS, JUNB	4.28026985	1
0.01281189	MYL6, MYO1B, MYO6, MYH14, MYL9, MY	4.27249022	0.99543789
0.01302329	TJP1, CLDN19, MYH14, MPDZ, MYL9, RHC	3.15043523	0.94831554
0.01352698	SEMA5A, SEMA6C, SEMA4C, SEMA3B, SE	5.35033732	1
0.01391586	ITGB1, TIAM1, GPRC5B, RELN, P2RY2, MA	2.6363981	1
0.01433452	TIAM1, CYFIP1, ELMO1, WASF2	7.65943027	1
0.01438081	FGF7, CDKN1A, CDH1, KRAS, FGF1, MAPK	3.49432076	0.96213236

0.01439139	ELOVL1, ELOVL6, ELOVL7	15.5924116	1
0.01439139	ELOVL1, ELOVL6, ELOVL7	15.5924116	1
0.01439139	ELOVL1, ELOVL6, ELOVL7	15.5924116	1
0.01453133	ITGB1, BLOC1S1, CDH1, CLMN, RYK, EFHD	2.61743121	1
0.01470483	ELOVL1, ELOVL6, ELOVL7	15.4162003	0.99993981
0.01470483	ELOVL1, ELOVL6, ELOVL7	15.4162003	0.99993981
0.01470483	ELOVL1, ELOVL6, ELOVL7	15.4162003	0.99993981
0.01470483	ELOVL1, ELOVL6, ELOVL7	15.4162003	0.99993981
0.01476258	RAB2A, SPAG9, TMED10, FNBP1, RHOBTE	2.22051558	1
0.01539356	GNG2, ITPR3, PRKCA, ADCY1, PLCB1, SLC	2.77375275	0.96998321
0.01591068	ITGB1, CD151, ITGB4, DAG1, ITGA6, LAM	3.05387617	0.99877417
0.01621264	ITGB4, FNBP1, CAV1, SHROOM2, FLNB, FI	2.57140615	0.99892175
0.01643067	GAS2L3, SHROOM2, DYNLL1, NDRG1, MT	1.92501598	0.99901717
0.01652695	CDH1, ITGA6, CD47, FSTL3	7.27645875	1
0.01663542	GAMT, CNP, MYO6, FSCN1, KIF13B, FMN	3.41049658	0.99909908
0.01704811	FUT8, ARHGAP31, PDCD6IP, MICAL1, ELM	2.74356107	0.99998738
0.01736376	ITGB1, JUN, CFL2, FOS, GNAI1, RHOA, MA	3.35265911	0.98091169
0.01773591	ITGB1, CLDN19, CTNNA3, PRKCA, MYL9, (	2.70323362	0.98247782
0.01884301	FA2H, PRX, NDRG1	13.6433602	1
0.01884301	FZD3, RYK, DAG1	13.6433602	1
0.01889649	CDKN1A, FOSB, PEBP1, FOS	6.92996072	1
0.01904011	ITGB1, TIAM1, GPM6A, SEPT11, SIPA1L1,	2.50190869	0.99967624
0.02000972	GNG2, ITPR3, PRKCA, ADCY1, FOS, PLCB1	2.89325684	0.98962186
0.02058062	DRP2, RELN, FUS, KCNA1, KCNK1, CLCN2,	2.46854991	0.99983215
0.02103685	TCF7L2, FZD3, KRAS, PRKCA, ADCY1, PLCE	2.86403203	0.9918117
0.02144397	NR4A2, CDKN1A, ITGA6, FOS	6.6149625	1
0.02302778	ITGB1, CNP, SIRT2	12.3427495	0.99994101
0.02302778	ITGB1, ITGB4, ITGA6	12.3427495	0.99994101
0.02317124	SPTLC2, FYN, KRAS, PRKCA, PLCB1, GNAI1	2.57243199	0.99500004
0.02320017	JUN, SLC44A1, KRAS, CHPT1, PRKCA, FOS,	2.80731852	0.99503339
0.02326886	BNIP3L, PINK1, LMNA, FMN2, S100B, NDI	2.82580922	1
0.02345566	PLEKHA1, MAGI2, DAG1, PRKCDBP, PHLD	4.54778672	1
0.02365233	FAAH, PLEKHB1, ODC1, HMGCR, PPP1R9A	1.4875281	0.99999985
0.02379151	PLP1, ELOVL6, QK	12.1274313	1
0.02379151	CFL2, MICAL1, MICAL3	12.1274313	1
0.02429977	ABHD12, FAAH, MGLL	11.990378	0.9999999
0.02438177	CAP1, ARHGAP10, TAGLN, FMNL2, UGT8A	2.79863798	1
0.02464665	SCCPDH, ZFYVE19, TACC1, MAPRE3, LZTS	2.56349413	0.99997051
0.02510012	KRAS, ATP1B3, PRKCA, SGK1, MAPK3	4.43029954	0.99680137
0.02547173	RAB2A, CTSA, SLC48A1, ABCA2, RNF13, H	2.05712492	0.99997929
0.0256561	RNF128, LAMP1, H2-DMA, MAGI2, MVB1	2.54392548	0.99998087
0.0256561	TJP1, MAGI2, PMP22, SHROOM2, CLDN1	2.54392548	0.99998087
0.0258873	TJP1, CFL2, CASQ1, CRYAB	6.17137476	0.99998268

0.0262884	MYL6, PRKCD, ITPR3, PRKCA, ADCY1, PLC	2.51166588	0.99757195
0.02637984	TIAM1, CYFIP1, RALBP1, CAV1, MAP3K11	4.38672366	0.99999998
0.02693679	CDKN1C, TMED10, MME, CUX1, TIPARP, (	2.51877418	1
0.0273532	EPHB6, USP6NL, ATP8A1, CLSTN1, LDLRA	1.15475868	0.99999077
0.0275332	VIT, ITGB1, SPP1, ITGA6, CYR61	4.33122545	1
0.02780059	ITPR3, KRAS, PRKCA, PLCB1, GNAI1, MAP	3.48613734	0.99829113
0.02787057	EGR1, JUN, TEAD1, DDN	5.995189	0.99999999
0.02827753	FTL1, LAMP1, FTH1	11.1084746	0.9999938
0.02879871	ITGB1, ITGB5, ITGB4, LMNA, DAG1, ITGA(	2.98911776	0.99864515
0.02884322	ITGB1, ITGB5, ITGB4, ITGA6	5.92451977	0.99999514
0.02911267	ITGB1, ATXN1, NPTN, KRAS, HMGCR, SGK	3.46498036	1
0.02920642	ITGB1, NPC1, CD9	10.9146881	1
0.03088411	VAMP8, ITGB1, FYN, ITPR3, ADCY1, PLCB1	2.43497379	0.99916649
0.03089459	GPRC5B, CDKN1A, RELN, DAG1, PPP1R9A	3.41084004	1
0.03160376	VAMP8, RNF13, NPC1, H2-DMA, H2-DMB	2.94542886	0.99999852
0.03218122	PDCD6IP, IQSEC1, CAV2, CAV1, ARPC1A, (	1.90112471	0.99938418
0.03252025	JUN, CAV1, ECSCR, PRKCA, FGF1, SAT1, H	1.97895322	1
0.03256567	NR4A2, NRBP2, JUN, PINK1, FYN, KRAS, M	2.27389336	1
0.0327435	ALAD, GATM, ACSL1, SPP1, CASQ1, SLC6A	3.35836558	1
0.03332817	TCF7L2, JUN, KRAS, FOS, RHOA, MAPK3	3.32272465	0.99952895
0.03332817	ITGB1, JUN, H2-DMA, H2-DMB1, FOS, MA	3.32272465	0.99952895
0.03395757	VAMP8, MYL6, NPC1, LAMP1, KIF5B, MVI	2.25782004	0.99999946
0.03439541	FGF7, YBX1, FGF1, SIRT2, FGF4	4.04247708	1
0.03440486	SEPT11, PDLIM2, FSCN1, MYH14, FLNB, M	3.31596256	0.99999956
0.03444824	ITGB1, TCF7L2, MUSK, CAV2, CAV1, PRKC	1.65765595	1
0.03505851	NRBP2, PINK1, NPC1	9.92244375	1
0.03517526	SHC4, JUN, CDKN1A, CDKN1B, KRAS, PRK(	2.85168706	0.99969426
0.03517526	GNG2, PRKCA, ADCY1, SLC6A1, SLC38A2,	2.85168706	0.99969426
0.03580666	RNF13, DHH, OTUD7B, ZDHHC8, RNF7, CX	1.37192232	1
0.03634519	TIAM1, CAV2, S100A6, FYN, KRAS, RHOA	3.2671984	0.99999981
0.03684566	FRMD3, LIMCH1, MYH14, LURAP1	5.38996945	1
0.03684566	IVNS1ABP, NDUFA13, VDAC2, MAPK8IP1	5.38996945	1
0.03791888	ITGB1, CDKN1A, CDKN1B, ITGB5, ITGB4, I	1.7165833	0.99983936
0.04081931	EGR1, JUN, MUSK, MAP3K11, PTPRF, RHC	3.16367772	1
0.04131985	NPEPL1, CDH1, LAP3	9.09557344	1
0.04131985	ELOVL1, ELOVL6, ELOVL7	9.09557344	1
0.04131985	SULT1A1, PLEKHA1, TIPARP	9.09557344	1
0.04217705	S100A6, FGF1, S100B	8.99278351	1
0.04217705	DAG1, UTRN, SORBS3	8.99278351	1
0.04217705	CDKN1C, CDKN1A, CDKN1B	8.99278351	1
0.04239316	ITGB1, CYFIP1, CDKN1A, CDKN1B, TMED1	1.70812648	1
0.04256379	MYO1B, CDH1, FYN, MBP, RHOA, RAPGEF	3.12914777	0.99999999
0.04275207	ITGB1, LDHB, TIAM1, CAV1, PRKCD, WWC	2.73693411	1

0.04344108	CYFIP1, MYO6, FSCN1, S100A6, BAIAP2, S	2.72839726	0.99999999
0.04422972	PINK1, MT3, CRYAB, SIRT2	5.01824742	1
0.04422972	ALAD, CDKN1B, NPC1, MT1	5.01824742	1
0.04495531	RELN, MUSK, NPTN, ITPR3, S100B	3.71247896	1
0.04669765	TCF7L2, CDH1, KRAS, MAPK3	4.88860639	0.99997976
0.04725253	SLC48A1, ABCA2, MYO1B, GRB14, LAMP1	2.42808187	1
0.04796365	DCLK3, OTUD7B, LZTS2	8.39591395	1
0.04845248	SBSPON, VIT, SPON2, LAMB1, FGF1, HSPC	1.75767003	1
0.04894892	SPAG9, KIF5B, MAPK8IP1	8.30103093	1
0.04894892	MYL6, MYO1B, MYH14	8.30103093	1
0.04912876	SHC4, TIAM1, GNG2, PRKCD, ELMO1, KRA	1.98911408	0.99998864
0.05084098	EGR1, EGR2, LAMB1, PRKCA, S100B	3.56689155	1
0.05122548	ITPR3, ATP1B3, PRKCA, ADCY1, PLCB1, GI	2.95353303	0.9999931
0.05247066	ELOVL1, FA2H, SC5D, ELOVL6, ELOVL7, M	2.94991571	1
0.05276155	TIAM1, KIF19A, GAS2L3, KIF5B, MAP6, CC	1.97841237	1
0.05295286	EGR2, JUN, CDKN1A, CDKN1B, KRAS, PRK	2.18480525	0.99999543
0.05317989	SEMA5A, SEMA6C, NFASC, RELN, RYK, KIF	2.19758821	1
0.05318583	FTL1, FTH1	37.0282486	1
0.05328077	TRIM13, CAPN2, ADAM10	7.9346247	1
0.05328077	CNP, CAPN2, MAPK3	7.9346247	1
0.05371521	TMED10, ATP8A1, UGT8A, CLTB, YBX1, H	1.42985248	1
0.05374685	BACE2, CLSTN1, LDLRAD3, ITM2A	4.64143665	1
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0.05501042	ITGB1, FUT8, JUN, ITGB5, FOS, DUSP15	2.9105835	1
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0.05969442	FGF7, NOV, ADAMTSL5, SERPIND1, OGN,	2.14397488	1
0.06172468	EGR1, TCF7L2, CDH1, FRZB, CAV1, LZTS2,	2.49682408	1
0.06210161	ITGB1, TIAM1, PLEKHA1, MYO6, RHOA, A	2.81227204	1
0.06229741	MAG, DAG1, NCMAP	7.27645875	1
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0.06229741	ITGB1, ITGB5, RHOA	7.27645875	1
0.06462156	BNIP3L, MLIP, NPC1, CAV2, LMNA, S100A	2.10920403	1
0.06510111	FUT8, ST6GAL1, GALNT16, UGT8A, TIPAR	1.90231959	1
0.06559812	EGR1, RELN, ADCY1, SGK1	4.28026985	1
0.06652811	PCDH9, FSCN1, MYH14, ARPC5, UTRN, PF	2.0959386	1
0.06653533	SPAG9, ITGB1, CAV2, RYK, PRKCD, PELI2,	2.44880823	1
0.06783766	NFASC, CDH1, DAG1	6.94279661	1

0.06841931	MYL6, MYO1B, MYO6, MYH14, DYNLL1, M	2.73198486	1
0.06993944	JUN, NREP, JAM3	6.82168008	1
0.06993944	DAG1, POU3F1, SIRT2	6.82168008	1
0.07034645	CAV1, CD47, BAIAP2, RNF5	4.15797643	1
0.07060165	JUN, CAV1, PRKCD, PEBP1, DHCR24, LAM	1.59247208	1
0.07073034	CAV1, H2-DMA, H2-DMB1, DAG1, FYN, CI	2.69182757	0.99999994
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0.07224503	FKBP1A, CDKN1B, ST13, FGF1	4.11098675	1
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0.07524497	GAL3ST1, SAMD8, SPTLC2, UGT8A	4.04247708	1
0.07555037	TIAM1, PCDH9, JAM3	6.53439681	1
0.07725938	DOCK10, FMNL2, RTKN, DOCK9	3.99679267	1
0.07779753	GNG2, ITPR3, KRAS, PRKCA, PLCB1, GNAI	2.14802402	0.99999999
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0.08486953	RAB2A, KRAS, GNAI1, RHOA, RHOB	2.9975945	1
0.08547751	CNP, PLP1, MBP, SIRT2	3.82971513	1
0.08588346	TJP1, GJC3, CDKN1B, CDH1, MYO6, MYH1	2.10911848	1
0.08606182	MT2, MT1, MT3	6.06371563	1
0.08774347	ITGB1, PDLIM2, DAG1	5.995189	1
0.08793388	VDAC2, ITPR3, ATP1B3, ADCY1, PLCB1, M	1.95694213	1
0.08820122	EGR1, EGR2, JUN, FZD3, CDKN1A, CRTC3,	1.66938823	1
0.08842848	CYFIP1, CDC42EP3, MYH14, CDC42EP1, F	2.09394496	1
0.08894059	CAV2, CAV1, FSCN1, TJP2, CNTLN	2.94845361	1
0.09023003	CYB5R3, HMGCS1, SC5D, DHCR24, HMGC	2.93405595	1
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0.09174152	BAG5, MT3, HSPA1A	5.84656557	1
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0.09437358	NR4A2, PINK1, PRKCD, MT3, SIRT2	2.88748363	1
0.09450032	CDKN1B, CAV1, SLAIN2	5.7445727	1
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0.09632824	TRIB2, MAP3K11, MAPK8IP1	5.67965274	1
0.09823971	SC5D, DHCR24, LIPA	5.59616784	1
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