Running title: NS cells from NES cells

In vitro recapitulation of developmental transitions in human neural stem cells

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ABSTRACT

During nervous system development, early neuroepithelial stem (NES) cells with a highly polarized morphology and responsiveness to regionalizing morphogens give rise to radial glia (RG) cells, which generate region-specific neurons. Recently, stable neural cell populations reminiscent of NES cells have been obtained from pluripotent stem cells and the fetal human hindbrain. Here we explore whether these cell populations, similar to their *in vivo* counterparts, can give rise to neural stem (NS) cells with radial glia-like properties and whether region-specific NS cells can be generated from NES cells with different regional identity. *In vivo* RG cells are thought to form from NES cells with the onset of neurogenesis. We therefore cultured NES cells temporarily in differentiating conditions. Upon re-initiation of growth factor treatment, cells were found to enter a developmental stage reflecting major characteristics of radial glia-like NS cells. These NES cell-derived NS cells exhibited a very similar morphology and marker expression as compared to primary NS cells generated from human fetal tissue, indicating that conversion of NES cells into NS cells recapitulates the developmental progression of early NES cells into RG cells observed *in vivo*. Importantly, NS cells generated form NES cells with different regional identities exhibited stable region-specific transcription factor expression and generated neurons appropriate for their positional identity.

INTRODUCTION

Neural stem cells (NSC) represent a self-renewing, multipotent somatic stem cell population of the central nervous system (CNS). They serve as source for the different cell types of the brain including neurons, astrocytes and oligodendrocytes [1, 2]. During early embryonic development the neuroectoderm is generated from the ectodermal layer and folds into the neural tube, which initially consists of a single layer of rapidly and symmetrically dividing neuroepithelial stem cells (NES cells). In this context, the term 'neuroepithelial' accounts for the fact, that these cells exhibit multiple epithelial characteristics. For instance, they are highly polarized spanning from the apical to the basal side of the neural tube. As other epithelial tissues, they form adherens and tight junctions at their apical pole [3]. As from the initial pool of neuroepithelial cells all the diverse regional brain identities along the anterior-posterior and dorso-ventral axis are generated, neuroepithelial cells are highly responsive to extrinsic patterning signals and morphogens [4, 5].

At the onset of neurogenesis and following extensive proliferation, NES cells transform into radial glia (RG) cells, the major stem cell population of the embryonic and fetal brain [2, 3, 6]. RG cells maintain several aspects of NES cells such as their self-renewing capacity, their multipotentiality as well as their apical-basal polarity. They exhibit long radial processes, which span through the developing brain while staying attached to the pial surface and the luminal side [7, 8]. During neurogenesis, these radial processes serve as guiding tracks for radially migrating neurons [3, 8]. The term radial 'glia' refers to the fact that RG cells share many immunohistochemical characteristics with glial cells such as the expression of the astrocyte specific glutamate transporter (GLAST). During the transition of NES cells into RG cells, RG cells get progressively specified and their responsiveness to regionalizing morphogens diminishes. As a consequence, RG cells are regionally determined and consistently give rise to neuronal progeny of their region of origin [2, 9-11].

In the last decades, various strategies for the isolation and *in vitro* expansion of different neural stem and progenitor populations have been described using free-floating aggregates

called neurospheres or monolayer culture systems [12-15]. Similar to their *in vivo* counterpart, *in vitro* cultured neural stem and progenitor cells are defined by their ability to self-renew and their multipotent differentiation capacity. *In vitro* neural stem cells, however, rely on the addition of growth factors such as fibroblast growth factor (FGF) or epithelial growth factor (EGF) and the extent to which *in vitro* propagated NSCs correlate to NSCs found *in vivo* remains controversial [12].

In the human system, two distinct expandable and well-characterized neural stem/progenitor cell populations have recently been established. Human NS cells isolated from embryos beyond Carnegie stage 17 share many aspects of radial glia such as a bipolar morphology or expression of typical radial glia-associated markers including brain lipid binding protein (BLBP), GLAST or 3CB2 [16]. Using pluripotent stem cells as a starting population, we established a population of long-term self-renewing neuroepithelial stem cells (lt-NES cells; [14, 17]). These cells are characterized by their continued ability to form rosette-like structures *in vitro* and, in the presence of morphogens, can be guided towards distinct regional identities [14]. Interestingly, lt-NES cells could also be generated from primary human brain tissue when applying early fetal brain sources before Carnegie stage 17, indicating that lt-NES cells do have an *in vivo* correlate [18]. Thus, isolation and propagation of the two major types of neural stem/progenitor cells, NES- and RG-like NS cells, has been established from primary human brain tissue. How these two populations hierarchically correlate in development and whether lt-NES cells can be converted into NS cells *in vitro* has, however, not been determined.

Here we explored the potential of pluripotent and primary NES cells to give rise to radial glia-like NS cells *in vitro*. Using partially differentiating conditions to induce neurogenesis and subsequent re-initiation of proliferation with growth factors we were able to establish a multipotent cell population, which exhibits features of RG cells and shows high similarity to primary fetal brain-derived RG-like NS cells. These NES cell-derived NS cells could be expanded for multiple passages and expressed classic radial glia markers, while NES cell markers were down-regulated. Importantly, NS cells generated from forebrain or spinal cord-

patterned NES cells retain their regional phenotype during multiple passages of *in vitro* proliferation and upon differentiation.

MATERIAL AND METHODS

Cell culture

Lt-NES generated from human embryonic stem cells (hESCs) and primary brain tissue-derived NES cells were maintained in neural stem cell medium containing DMEM/F12, N2 supplement (1:100; both Life Technologies), 1,6 g/L glucose, 10 ng/mL FGF2 (R&D Systems), 10 ng/mL EGF (R&D Systems), 1:1000 B27 and penicillin-streptomycin (1:100, Invitrogen) on poly-L-ornithine /laminin (both Sigma Aldrich) precoated plastic dishes.

For the derivation of NS cells, NES cells were induced to differentiate by growth factor withdrawal on Geltrex (Life Technologies) coated dishes in neural differentiation medium containing DMEM/12 (N2 supplement; 1:50) and Neurobasal (B27 supplement; 1:100) mixed at a 1:1 ratio. Medium was changed every other day. After 4 weeks, cultures were treated with trypsin (0.05%) at 37°C for 5 minutes, followed by addition of trypsin-inhibitor (Life Technologies) in equal volume. Cells were washed down with DMEM/F12 medium, carefully triturated to single cells using a plastic pipette and centrifuged at 300 *g* for 5 minutes at 4 °C in a Megafuge 1.0R (Heraeus). Cultures were plated on poly-L-ornithine/laminin coated dishes at a 1:3 ratio, and medium was switched back to neural stem cell medium. Within 5 passages a homogeneous culture of NS cells was obtained, which was propagated under the same conditions for more than 25 passages. For terminal differentiation, EGF was withdrawn for 7 days before medium was changed to neural differentiation medium.

To generate NS cells with forebrain-like identity, hESCs were induced into neuroepithelial cells expressing Otx2 and FoxG1 by dual SMAD inhibition as previously described [19] and directly subjected to the growth factor withdrawal and re-administration paradigm. Ventral forebrain-like NS cells were generated by exposing forebrain-like NES cells for 10 days (day 10-20) to Purmorphamine (1 μM) and SAG (1 μM; both Tocris), followed by sequential withdrawal and re-administration of growth factors.

Spinal cord-like NS cells were generated from lt-NES cells posteriorized by retinoic acid (10 μM; Sigma Aldrich) for 14 days with media changes every other day.

Primary NS cells have been generated previously [16] and were cultured under the same culture conditions as lt-NES cell-derived NS cells.

Additional details relating to the methods can be found in the **Supplementary Materials and Methods Section**.

RESULTS

Generation of radial glia-like NS cells from NES cells

As starting population we used lt-NES cells generated from the human embryonic stem cell line I3 [14]. During proliferation these cells are characterized by their rosette-like growth pattern and the expression of typical neural stem cell markers including Sox2, Nestin and Pax6. They exhibit expression of dachshund 1 (DACH1) and promyelocytic leukaemia zinc finger protein (PLZF), transcription factors associated with the rosette stage of neural stem cells [14, 20]. As a correlate of their epithelial nature the zonula occludens protein 1 (ZO1) is accentuated at the apical pole of the rosettes. Transcription factors more typical for RG cells such as Sox9 are not expressed by this population (**Fig. 1A**).

We wondered whether this cell population with neuroepithelial features could be coaxed into a developmentally later radial glia-like NS cell phenotype *in vitro*. As during development the switch from NES cells to RG cells occurs with the onset of neurogenesis [2, 3], we hypothesized that NS cells may be generated as soon as we initiate neurogenesis by withdrawing the growth factors from lt-NES cells. We further hypothesized that such radial glia-like NS cells would remain within the cultures as long as neurogenesis continues and could be re-induced to proliferate by growth factors. To test this hypothesis, we differentiated lt-NES cells in the absence of growth factors for 4 weeks. Following this differentiation period the cultures were trypsinized and replated as single cells in low density. The growth factors fibroblast growth factor 2 (FGF2) and epithelial growth factor (EGF) were then re-administered to expand potential NS cells from the resulting heterogeneous population (experimental outline and representative phase contrast images are presented in **Fig. 1B**). Indeed, growth factor-responsive cells started to expand and the cultures became more and more homogeneous over continuous passaging. Within 5 passages a homogeneous population of cells with bipolar morphology formed, which could be continuously propagated for more than 30 passages.

Direct comparison of this expandable lt-NES cell-derived NS cell population with primary NS cells [16] revealed that both cell types exhibit highly similar morphology and marker

expression. Both populations express typical neural stem/progenitor cell-associated markers such as Sox2, Nestin or Pax6 while the rosette-associated transcription factors DACH1 and PLZF are no longer present in these cultures. Instead, lt-NES cell-derived NS cells as well as primary NS cells homogeneously express the radial glia-associated transcription factor Sox9 **(Fig. 1C)**. These data indicate, that, by temporary withdrawal and re-administration of growth factors, a lt-NES cell-derived NS cell population could be generated, which shares major characteristics with primary NS cells.

To characterize lt-NES cell-derived NS cells in more detail, we performed comparative immunocytochemical and flow cytometry analyses of typical radial glia-associated markers. Indeed, lt-NES cell-derived NS cells strongly stained for 3CB2, a marker highly specific for RG cells *in vitro* and *in vivo* [21], whereas lt-NES cells exhibited only faint immunoreactivity. In addition, homogeneous expression of brain lipid binding protein (BLBP; [7, 22]) was detectable on lt-NES cell-derived NS cells but not on lt-NES cells **(Fig. 1D).** Flow cytometry analysis revealed that both, lt-NES cells and NS cells derived thereof share expression of the more general neural stem cell marker CD133. In contrast, the glycoprotein CD44, another antigen associated with a radial glia-like fate, was present in lt-NES cell-derived NS cells and not in lt-NES cells. Importantly, lt-NES-derived NS cells exhibit homogeneous expression of the radial glia-associated antigen GLAST, which was virtually absent in lt-NES cells **(Fig. 1E)**. Changes were also present with respect to adhesion proteins and tight junction markers. In NES cell cultures, ZO-1, N-cadherin and β-catenin are expressed in the center of the rosette-like structures whereas NS cells do not show a clear polar distribution of these markers (Fig. S1).

Comparative semi-quantitative RT-PCR analyses revealed that genes described to be expressed by neural stem and progenitor cells in general, such as *SOX1*, *PAX6*, *NOTCH1*, the Notch-responsive genes *HES5* and *HEY1* as well as *RFX4*, *GPM6A* and *ASCL1 (MASH1)* [14, 20] were detectable in all three populations - lt-NES cells, NS cells derived thereof and primary NS cells **(Fig. 1F)**. In contrast, rosette-associated genes [14, 20] such as *PLZF*, *MMRN1*,

PLAGL1 or *NR2F1* were preferentially expressed in lt-NES cells but not in the NS cell populations. Conversely, these populations exhibited expression of the more radial glia-like genes *AQP4*, *HOP*, *CD44*, *SOX9*, *S100beta* or *SPARCL*, which were mostly absent in lt-NES cells **(Fig. 1F)**.

Comparative global gene expression analysis of both populations with microarrays using the characteristic direction algorithm [23] revealed global large scale differences between the two neural cell classes. As a first step, we confirmed with PluriTest [24], that both, lt-NES cells and NS cells derived thereof, had exited the pluripotent state. Interestingly, this unbiased classifier for identification of human pluripotent stem cells (PSCs) already separated lt-NES cells from NS cells with lt-NES cells positioned closer to PSCs and NS cells closer to differentiated cell types **(Fig. S2)**. We next characterized differential expression with a direction vector between lt-NES cell and NS cell samples in expression space (**Fig. 2A**), which was used to extract the most significant differentially expressed transcripts (**Fig. 2B;** [23]). As a result, nearly 1,700 gene probes were significantly up-regulated in lt-NES cells vs. NS cells by the characteristic direction method. Conversely more than 1,900 probes were significantly up-regulated in NS cells vs. lt-NES cells **(Table S1)**. Other algorithms for the detection of differentially expressed genes revealed even larger numbers of differentially expressed transcripts between the stem cell classes (data not shown). Scatter Plot inspection of samples representing both classes showed up-regulation of neuroepithelial marker genes in lt-NES (e.g. *NMYC*, *LIN28B*, *MMRN1*, *ZBTB16 (PLZF)* or *NR2F1*), expression of neural stem/progenitor cell markers shared between the classes (e.g. *SOX2*, *Nestin*, *BMI1*, *CITED2* or *ASCL1*) and significant up-regulation of radial-glia markers (e.g. *SOX9*, *FABP7 (BLBP)*, *HOPX*, *SPARCL1*, *CD44* or *GFAP*) in NS cell samples, corroborating our RT-PCR data **(Fig. 2B)**. The top 20 up-regulated genes in lt-NES highlight processes such a neural differentiation (*DLK1*, *FZD9*, *ZFHX3*), stem cell proliferation (*MYCN*, *ID3*, *ZIC2*, *LIN28B*) and embryonic neural morphogenesis (*CNTNAP2*, *CRABP1*, *SFRP2*) (**Fig. 2C)**. Conversely, the top 20 up-regulated genes in NS cells contain genes implicated in glial progenitor identity and function (*CD44*,

CAV1, *ANXA2*) neural function (*GABBR2*, *KCNMB1*, *NFIB*, *SCG2*, *MOXD1*, *GAP43*) and fetal and adult neural stem cell regulation (*NFIX*, *LGALS1*, *TNC*). EnrichR gene ontology analysis [25] with the MGI Mammalian Phenotype Terms level 4 on the basis of the differentially regulated genes completes this picture by associating terms relating to cell proliferation, embryonic brain development with gene sets overrepresented in the lt-NES phenotype **(Fig. 2D left)**. In contrast, genes differentially up-regulated in NS cells show a significant enrichment for MGI Level 4 Phenotype Terms associated with brain morphology and neuronal and glial function **(Fig. 2D right, complete list in Table S2)**.

NS cells differentiate into functional neurons and glia

We next investigated the differentiation potential of lt-NES cell-derived NS cells following 4-weeks of growth factor withdrawal. Immunocytochemical analysis revealed that NS cells differentiate into neurons as well as glia. The neurons expressed the neuron-specific marker betaIII-tubulin as wells as the microtubule-associated protein MAP2ab. Some of the betaIII-tubulin-positive neurons co-expressed doublecortin (DCX) while most had upregulated the more mature nuclear antigen NeuN. In addition, astrocytic cells expressing the glial fibrillary acidic protein (GFAP) could be detected in differentiated cultures. Some cells remained immunopositive for Nestin, which either represent remaining stem/progenitor cells or immature astrocytes. The astrocytic differentiation potential could be strongly enhanced by the addition of fetal calf serum (10%) with almost 100% of the cells differentiating into GFAP-expressing cells under these conditions **(Fig. 3A)**. Quantitative analysis revealed that about 20-25% of the differentiated cells exhibited neuronal marker expression whereas about 40% of the cells were positive for GFAP. About 30% of the cells still expressed Nestin. Interestingly, the differentiation potential towards neuronal and astrocytic fates remained stable over multiple passages *in vitro* with differentiated cultures derived from early passages (p5-p10) exhibiting similar numbers of differentiated cellular subtypes as later passages (passage p20-25; **Fig. 3B**).

We next wanted to know whether neurons derived from lt-NES cell-derived NS cells exhibit mature neuronal electrophysiological properties such as action potential generation and the formation of spontaneously active synaptic circuitries. To that end, NS cells were differentiated on a layer of mouse astrocytes for 8 weeks and patch clamp recordings were performed. Whole-cell current clamp measurements revealed the generation of single or multiple action potentials upon depolarizing current injection (**Fig. 3C, D**; n=6). A fast and transient TTX-sensitive inward current and sustained outward currents were also observed in response to depolarizing voltage steps (**Fig. 3E**; n=6). Spontaneous postsynaptic currents (sPSCs) could be recorded in whole-cell voltage-clamp recordings, indicating that the neurons formed functional synapses (**Fig. 3F;** n=6). Thus, lt-NES cell-derived NS cells differentiate into functional neurons and glia, and their differentiation potential remains stable over multiple passages *in vitro*.

Radial glia-like NS cells can be generated from different genetic backgrounds and primary hindbrain-derived NES cells

To further validate the robustness of our NS cell generation protocol we applied it to additional NES cell lines generated from either human embryonic stem cells (line H9.2; [14], induced pluripotent stem cells [26] or NES cells directly isolated from human fetal tissue [18]. Indeed, our protocol including temporal initiation of differentiation with subsequent re-administration of growth factors, was directly applicable to all of these NES cell populations giving rise to cells with comparable morphology and marker expression **(Figs. S3A-C).**

Finally we wanted to investigate to what extent such growth factor responding NS cells are present in cultures differentiated for more extensive time periods. To that end we kept lt-NES cells under differentiating conditions for >180 days (6 months). Surprisingly, following single cell suspension and growth factor re-administration, expandable NS cells with similar morphology and marker expression could be isolated indicating that such cells remain present

in differentiated cultures for extended time periods without losing their stem cell potential **(Fig. S3D)**.

Generation of radial glia-like NS cells from neuroepithelial cells with different positional identity

During normal development, pre-patterned and regionally determined neuroepithelial stem cells give rise to radial glia cells with defined regional identity [2, 10, 11]. Such positionally restricted RG cells become unresponsive to morphogens and retain their identity even when transplanted heterotopically into the developing brain [9]. In line with this notion, primary human radial glia-like NS cells generated from different regions of the developing human brain express regional markers such as Otx2 or Hox genes when established from the cortex or the spinal cord, respectively [16]. In contrast, lt-NES cells, which in early passages exhibit an anterior positional identity, undergo continuous posteriorization towards the hindbrain over time and passaging, indicating maintenance of patterning competence. In addition they remain responsive to additional posteriorization into spinal cord-like fates under the influence of retinoic acid (RA) [14, 17]. We thus wondered whether NS cells originating from NES cells of different positional identity could be generated and whether such cells retain the positional identity of the founder population over time. We applied freshly generated forebrain-patterned NES cells (passage 2) and lt-NES cells, which were further posteriorized towards spinal cord positional identity by RA treatment **(experimental outline depicted in Fig. 4A)**. In accordance with their prospective regional identity, passage 2 NES cells express the forebrain-associated transcription factors FoxG1 and Otx2 **(Fig. S4A)**. Following differentiation, single cell suspension and re-administration of growth factors, radial glia-like NS cells could be established. They exhibit typical NS cell-like morphology and expression of Sox2, Pax6 and Sox9 **(Fig. S4B)**. More than 95% of the NS cells derived from forebrain-patterned NES cells (forebrain-like NS cells) stained positive for the anterior marker FoxG1 and the dorsal marker Pax6, whereas the ventral forebrain progenitor-associated transcription

factor Nkx2.1 was not expressed (**Fig. S4B**). This observation is in line with the default dorsal phenotype of forebrain cells generated from pluripotent cells without ventralizing factors [27 28]. We next explored whether this default regionalization can be overwritten by ventralizing the parental NES cells prior to the growth factor withdrawal paradigm. Specifically, ventral forebrain-type NES cells were induced to express the Nkx2.1 by a 10-day-exposure to activators of the Sonic Hedgehog (Shh) pathway (**Fig S4c**; [29]). NS cells derived from these ventralized NES cells indeed expressed FoxG1 and Nkx2.1, but not Pax6, indicating preservation of the induced ventral forebrain-like identity **(Fig S4D).**

Along the same line, NES cells posteriorized by RA treatment started expressing the rhombomeric transcription factor HoxB4 **(Fig S5A)**, and this marker was also present in NS cells derived from these NES cells. Posteriorized NS cells also expressed the dorsal marker Pax6, while the ventral spinal cord progenitor-associated transcription factors Olig2 and Nkx2.2 could only be detected occasionally **(Fig S5B)**.

We then analyzed whether the acquired regional identities were stably maintained. Indeed, NS cells continued to express the region-specific transcription factor signature of the population they were derived from, and this regional identity was stable over extensive passaging and time. Dorsal forebrain-like NS cells continued to express FoxG1 and Otx2 for at least 25 passages **(Fig. 4B),** and spinal cord-like NS cells continued to express HoxB4 for at least 20 passages (**Fig. 4C**). Interestingly, NS cells with forebrain identity were resistant to strong posteriorizing factors such as retinoic acid. They continued to homogeneously express Otx2 and FoxG1, as identified by immunocytochemical analysis **(Fig. S6),** even after continuous (14 days) exposure to high concentrations (10 μM) of retinoic acid.

Semi-quantitative PCR performed with NS cells generated from dorsal forebrain-like NES cells revealed strong expression of the anterior markers FoxG1, Otx2 and Dlx2 while non-patterned, hindbrain-like NS cells did not exhibit expression of these anterior genes but were positive for the anterior hindbrain marker HoxB2. Spinal cord-like NS cells were also positive for additional and more posterior Hox genes such as HoxB4 and HoxB6 **(Fig. 4D)**. Two

clustering algorithms, hierarchical clustering (**Fig. 4E**) and principal component analysis (**Fig. 4F**) show, based on genome wide microarray gene expression profile data, a clear separation of lt-NES cells and the three differently patterned NS cells. We next focused on selected markers of positional identity in our microarray gene expression analysis and confirmed the expected positional identity of the different cell populations with dorsal forebrain-like NS cells exhibiting strong expression of the general anterior marker *FoxG1*, the dorsal forebrain marker *Lhx2* or the slightly more ventral forebrain marker *Dlx1*. Hindbrain-like lt-NES cells and NS cells derived thereof were positive for the hindbrain markers *Irx3* and *HoxB2* whereas spinal cord-like NS cells expressed the spinal cord-associated Hox genes *HoxB4*, *HoxA5*, *HoxB8* or *HoxB5* **(Fig. 4G)**. This suggests a strong correlation of the selected transcription factors encoding positional identity of neural cells with global expression patterns readily detectable in the genome-wide expression profiles.

Following these characterization steps we wondered whether the forebrain- and spinal cord-patterned NS cells give rise to neurons corresponding to their regional identity. To that end we differentiated all three populations for 4 weeks and analyzed them for the presence of region-specific neuronal markers. In accordance with their respective regional identity, dorsal forebrain-like NS cells differentiated predominately into glutamatergic neurons expressing Citp2, Satb2 or Brn2, markers expressed by neurons of the deep and upper cortical layers (**Fig 5A**). Few neurons exhibited expression of GAD67, a marker for GABAergic neurons and DARPP32, a marker expressed by medium spiny neurons of the striatum but no overlay of GAD67 and Citp2 was observed, indicating that the Citp2 expressing cells are indeed glutamatergic deep layer-like and not of striatal-like origin **(Fig. S7)**. We also wondered whether dorsal forebrain-like NS recapitulate the stereotypic temporal order of cortical neurogenesis with sequential development of deep and upper layer neurons. Upon withdrawal of FGF2, forebrain-like NS cells gave rise to increased numbers of Tbr2-positive intermediate progenitors, which could suggest a switch to asymmetric cell division as observed during the formation of Tbr2-positive intermediate progenitors during physiological corticogenesis (**Fig.**

S8A). Moreover, dorsal forebrain NS cells differentiated across 60 days showed sequential generation of Ctip2+ deep layer neurons, followed by Satb2+ upper layer neurons (**Fig. 5B, Fig. S8B**). The potential of dorsal forebrain NS cells to generate cortical layer specific neurons was independent of the passage numbers (**Fig. S8C**).

Ventral forebrain-like NS cells differentiated into neuronal populations enriched for the neurotransmitter GABA. Some GABAergic neurons also expressed the calcium-binding proteins calbindin and parvalbumin, markers not observed in non-ventralized anterior NS cells, **Fig. 5C**).

Neurons derived from spinal cord-like NS cells remained positive for HoxB4. Neurons in these cultures also expressed Lim1/2, Lim3 and Isl1, transcription factors typical of different interneuronal populations of the spinal cord **(Fig. 5D),** while HB9 positive motoneurons could not be detected (data not shown)**.**

On a transcriptional level, expression of the cortical markers Citp2 and Fezf2 was identified in neurons differentiated from dorsal forebrain-like NS cells, whereas these markers were undetectable in spinal cord-like NS cell-derived neurons. Instead, these cells expressed Sim1 and Lim3, two typical posterior interneuron markers. In accordance with the identification of excitatory and inhibitory neurons in dorsal forebrain-like NS cell-derived neurons these cultures exhibited expression of the vesicular glutamate transporter vGlut1 alongside a weak signal for the GABA-producing enzyme GAD65. In contrast, the spinal cord-like neurons showed predominantly a GABAergic neurotransmitter identity **(Fig. S8D)**.

We further used microarray gene expression profiling to compare hESC-derived and primary brain tissue-derived NES cells with their NS derivatives and primary fetal tissue-derived NS cells. Specifically, we analyzed two NES cell lines generated from ESCs, one primary hindbrain NES cell line, dorsal forebrain-type anterior and spinal cord-type posterior NS cells from both ESC backgrounds, NS cells from both, ESC-derived NES cells which had not been exposed to additional patterning factors as well as 3 primary NS cell lines generated from human fetal tissue. Focusing on the 3541 genes that were identified as differentially regulated

between NES and NS in our initial analysis, complete linkage hierarchical clustering and heatmap visualization revealed that NES cells and the different NS populations segregate into two distinct groups (**Fig S9**) independently of their provenance and regional identity.

DISCUSSION

In this study we have generated radial glia-like NS cells directly from neuroepithelial stem (NES) cells *in vitro*. These cells can be expanded over several passages while retaining their potential to differentiate into neurons and glia. Detailed characterization of these cells revealed that they share many properties with primary radial glia-like NS cells directly generated from human fetuses. Importantly, NS cells generated from NES cells with different regional identity retain this identity during proliferation and following differentiation.

NS cells were characterized by the expression of neural stem cell-associated markers such as Sox2, Pax6 and Nestin in combination with typical radial glia-associated markers such as GLAST, CD44, BLBP, 3CB2 and the transcription factor Sox9. In contrast to neuroepithelial stem cells, they do not form rosette-like structures but exhibit a bipolar morphology. In line with this, they do not express transcription factors associated with a rosette-type neuroepithelial stem cell stage.

Our study demonstrates that NS cells develop as soon as neurogenesis is induced in NES cells by growth factor withdrawal. This is in line with the *in vivo* situation, where neuroepithelial cells divide symmetrically until the onset of neurogenesis where they transform into radial glia [2, 3]. *Vice versa*, induction of neurogenesis in NES cells can be prevented by continuous growth factor exposure across more than 50 passages [14], indicating that, by overwriting the endogenous differentiation program with growth factors, the natural switch to neurogenesis can be prevented. Still, NES cells switch back to their natural program as soon as this stimulation is omitted from the cells. Importantly, NS cells could be generated from multiple NES cell sources including embryonic stem cell-derived NES cells, induced pluripotent stem cell-derived NES cells but also primary NES cells directly generated from human fetuses. The similarities between NES-derived NS cells and primary NS cells suggests that pluripotent stem cell-derived NS cells reflect the phenotype of native human radial glia-like NS cells rather than representing a cell culture artifact, even though growth factor expansion might result in general acquisition of new properties of *in vitro* cultured cell populations.

Interestingly, we succeeded in recovering NS cells from cultures differentiated for 6 months, indicating that growth factor responsiveness of NS cells is retained over long periods in a neurogenic environment.

The distinct developmental stages of both populations are also reflected in their global gene expression pattern. Among the top 20 genes up-regulated in NES cells several well documented cell cycle-associated genes such as ID3 [30], LIN28 [31] or NMYC [32] could be identified, which is in line with the fact that NES cells have a higher proliferation potential with cultures reaching confluency every 3-4 days compared to NS cells which have a splitting cycle of approximately 7-10 days (when split at the same ratio; data not shown). Other genes such as ZIC2 or ZFHX3 (also known as ATBF1) are important transcriptional regulators of early developmental programs in mammalian embryogenesis [33, 34]. Accordingly, gene ontology annotation of all significantly up-regulated genes in NES cells according the MGI Mammalian Phenotype Level 4 Terms [25] highlights several processes involved in cell cycle regulation and embryogenesis. The top 20 up-regulated genes identified in lt-NES-derived NS cells include well-documented radial glia markers such as tenascin C (TNC), CD44, NFIB and NFIX [10, 35, 36], underlining the radial glia-like identity of these cells. Several of these markers are associated with cell-matrix interactions, in particular CD44 (receptor for hyaluronic acid, [37]), Tenascin C (extracellular matrix protein implicated in guidance of migrating neurons, [38]), LGALS1 (implicated in cell-cell and cell-matrix interactions, [39]), IGFBP7 (a insulin-like growth factor receptor), transgelin (TGLN, an actin cross-linking protein, [40]) CAV1 (a scaffolding protein associated with a neural progenitor cell fate, [41]), ANAX2 (also known as Lipocortin-2, a membrane-associated protein which complexes to actin, [42]) or GAP43 (a protein highly expressed in neuronal growth cones, [43]). This particular gene expression pattern is in accordance with the complex cell-cell and cell-matrix communication events occurring during neurogenesis and establishment of the histoarchitecture of the developing brain [44, 45]. Consequently, gene annotation resulted in several terms associated with brain, glial or neuronal morphology and synaptic transmission.

Unbiased gene expression analysis comprising NES cells and NS cells from various sources and regional identities including primary hindbrain NS cells and NS cells directly generated from human fetal tissue was used to investigate differences and similarities of these cell types. Hierarchical clustering clearly segregated NES cells from NS cells and further demonstrated the similarities of ESC-derived NES and NS cells to their fetal tissue-derived counterparts.

While we classified the NS cells studied in this work as 'radial glia-like', it is important to note that this attribute is primarily based on the expression of distinct genes and markers, while other hallmarks of physiological radial glia such as polar morphology with apical adherens junctions and the ability to divide asymmetrically across longer periods of time are not maintained during forced, growth factor-mediated proliferation. Even though these cells express adhesion proteins and tight junction-associated markers, a robust polar expression of these proteins is missing. It is conceivable that the continuous exposure to growth factors blocks the entry into an asymmetric mode of division, which is typically associated with the shift towards neurogenesis. Accordingly, TBR2-positive intermediate progenitors evolving in vivo from asymmetric divisions are very rare in proliferating NS cultures. However, once the growth factors are omitted, the number of TBR2-positive cells increases, suggesting that the ability to generate intermediate progenitors is preserved but requires a release from growth factor-mediated forced proliferation. In this context it is remarkable that dorsal forebrain radial glia-like NS cells appear to mimic the sequential generation of deep and upper layer neurons as observed during physiological corticogenesis. Thus, despite prolonged growth factor-mediated expansion this intrinsic self-organizing principle appears to be conserved in forebrain NS cells.

Interestingly, once committed to a radial glia-like fate, the cells are regionally restricted and do no longer respond to morphogens, nor do they posteriorize over time. Thus, region-specific NS cells giving rise to region-specific neuronal subtypes can be generated from various brain regions including dorsal and ventral forebrain, hindbrain and spinal cord.

Intriguingly, global gene expression analyses of differentially regionalized NS cells suggest that regionalization is reflected not only by expression patterns of few, accepted positional identity markers but is also correlated on the global transcriptional level with differential regulation of large numbers of genes. Such stable NS cells might have some intriguing advantages for further biomedical applications. Generated from different pre-patterned NES cell populations they might serve as an attractive tool to generate and expand region-specific neural precursors and neurons of various positional identities. It is tempting to speculate that such NS cells could be generated form several more defined brain regions such as specific diencephalic and midbrain regions or the cerebellum. Additional experiments are required to explore the full potential of such region-specific NS cell populations and their differentiation capacity.

CONCLUSIONS

Taken together, our study defines the developmental relationship between *in vitro* propagated human neuroepithelial-like stem cells (NES cells) and radial glia-like neural stem cells (NS cells). It demonstrates that both populations exhibit largely overlapping characteristics such as growth factor responsiveness and expression of stem cell-associated markers but represent distinct developmental stages which can be clearly separated by their global gene expression signature including key transcription factors, their adhesion protein profile, their responsiveness to morphogenes and their developmental potential. We also provide a matrix for the relationship between pluripotent stem cell-derived populations and their native counterparts **(see synopsis in Fig. 6)**.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

The authors declare no Conflict of Interest.

Experiments on human material have been reviewed in accordance with the precepts established by the Helsinki Declaration. Fibroblast donor for generating iPSCs gave written informed consent.

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FIGURE LEGENDS

Figure 1: Generation and characterization of radial glia-like NS cells from neuroepithelial (NES) cells.

(A) lt-NES cells grow in rosette-like patterns and express Sox2, Nestin, Pax6, DACH1 as well as PLZF but not Sox9. At their apical pole, rosettes form tight junctions as identified by ZO1. **(B)** Experimental outline. lt-NES cells self-renew in the presence of FGF2 and EGF. Following growth factor withdrawal of 4 weeks, cultures form dense neuronal networks with prominent neurites. Trypsinization and re-administration of growth factors gives rise to an inhomogeneous population (P1). Within 5 passages, a homogeneous population of radial glia-like NS cells develops. **(C)** Direct comparison of lt-NES cell-derived NS cells with primary NS cell reveals comparable morphology and marker expression. Both populations homogeneously express Sox2, Nestin, Pax6 and Sox9, whereas DACH1 and PLZF are absent. **(D)** Lt-NES cell-derived NS cells express the radial glia markers 3CB2 and BLBP, which are absent in lt-NES cells. **(E)** Flow cytometric analysis of the neural stem cell marker CD133 shows comparable expression in lt-NES and lt-NES-derived NS cells. The radial glia markers CD44 and GLAST are prominently expressed in NS cells compared to lt-NES cells. **(F)** Lt-NES cells, NS cells derived thereof and primary NS cells share expression of neural stem/ progenitor markers. Typical rosette-associated markers are expressed by lt-NES cells but not by the NS cell populations. These share expression of typical radial glia-associated genes, which are absent in lt-NES cells. Scale bars: 50 µm.

Figure 2: Comparative transcriptome analysis of NES cells and NS cells derived thereof.

(A) 2D principle component projection of the characteristic direction between the two sample classes (blue arrow) based on gene expression data. The characteristic direction vector differentiates between NES cells (magenta squares) and NS cells (yellow triangles) and is used by the characteristic direction approach [23] for the identification of differentially

expressed genes. **(B)** Scatterplot of Illumina HT12v4 gene expression of one exemplary NES cells and one exemplary NS cell sample with the gene probes identified as significantly differentially up-regulated in lt-NES cells (magenta dots) and NS cells (yellow dots) as determined by the characteristic direction algorithm. Probes detecting known marker genes for neural stem cells (BMI1, ASCL, SOX2, NES), for rosette-type cells (LIN28B, ZBTB16, MMRN, MYCN, NRF2) and for radial glia fates (HOPX, GFAP, SPARCL1, SOX9, CD44, SCL1A3) are highlighted by black dots and red circles. **(C)** Characteristic direction approach identified 20 top up-regulated genes in NES cells and NS cells, respectively. **(D)** Gene list enrichment analysis based on the 3095 significantly differentially up-regulated and annotated genes (middle panel in a heatmap view) in NES cells (left) and NS cells (right), respectively, with the EnrichR-tool[25]. For each class the 10 most significantly enriched gene sets from the Mouse Genome Informatics Mammalian Phenotype Level 4 Terms are displayed. Each term represented by a node is shown in context in a force-directed network visualization. Edges denote overlap among the genes in each term-specific gene list as detailed in[25].

Figure 3: Lt-NES cell-derived NS cells differentiate into functional neurons

(A) Upon growth factor withdrawal, lt-NES cell-derived NS cells give rise to betaIII-tubulin positive neurons and GFAP-positive astrocytes. In addition, the cultures contain few Nestin-positive cells. Neurons co-express MAP2ab. Few neurons express doublecortin after 4 weeks of growth factor withdrawal while most of them upregulated the mature neuronal marker NeuN. Addition of serum (10% FCS) induces homogeneous differentiation into GFAP-expressing astrocytes. **(B)** Despite continuous passaging, NS cells retain a stable neurogenic differentiation potential (bar graph depicts % of nestin-, betaIII-tubulin-, MAP2ab-, and GFAP immunoreactive cells in passages 5-10 and 20-25 after 4 weeks of growth factor withdrawal. Shown are means ± s.d. **(C)** Whole-cell current-clamp recording of a single action potential elicited by 100 pA current injection step for 10 ms (n=6). **(D)** Representative traces of multiple action potentials evoked by 500 ms current injection steps from -50 pA to

+120 pA in 10 pA increments in neurons differentiated for eight weeks. Membrane potential was maintained at approximately -60 mV (n=6). **(E)** Representative traces of whole-cell currents induced by 10 mV depolarizing voltage steps from a holding potential of −80 mV to +60 mV before and after TTX (300 nM) application (n=6). **(F)** A representative trace demonstrating sPSCs recorded at a holding potential of -70 mV (n=6). The boxed region is shown at a higher magnification below. Scale bars: 50 µm. Error bars: ±SD.

Figure 4: Converted radial glia-like NS cells retain distinct regional identities.

(A) Experimental outline: to investigate whether NS cells can be generated from NES cells of different regional identities, the temporary growth factor withdrawal protocol was applied to FoxG1 and Otx2-positive early NES cells (generated from forebrain-like neural rosettes), to non-patterned lt-NES cells (which exhibit a default hindbrain identity) and to lt-NES cells shifted into a HoxB4-positive spinal cord-like identity. **(B)** Immunofluorescence analysis of forebrain-like NS cells shows stable expression of the telencephalic markers FoxG1 and Otx2 (depicted are passages 2, 10 and 25) **(C)** NS cells derived from spinal cord-patterned lt-NES cells show stable expression of HoxB4 (depicted are passages 2, 10 and 20). **(D)** Comparative RT-PCR analysis of differentially regionalized NS cells. Forebrain-like NS cells (NS_fb) express the telencephalic genes FoxG1, Otx2 and Dlx2, default hindbrain-patterend NS cells (NS_hb) express HoxB2 and spinal cord-like NS cells (NS_sc) the more posterior Hox genes HoxB4 and HoxB6. Unsupervised hierarchical clustering **(E)** and Principal Component Analysis **(F)** separate lt-NES and regionally defined NS cell populations into distinct groups based on global transcriptional profiles. **(G)** A heatmap of unsupervised, hierarchically clustered CNS regional markers (FoxG1, Lhx2, Dlx1, Irx3, HoxB2, HoxB4, HoxA5, HoxB8 and HoxB4) selected from the microarray gene expression data presented in (E) and (F) confirms the distinct *in vitro* regionalization of NES cells and NS cells and the sample clustering in (E) and (F). Scale bars: 50 µm.

Figure 5: Region-specific NS cells give rise to region-specific neuronal subtypes

(A) Following growth factor withdrawal for 4 weeks, dorsal forebrain-like NS cell generated neurons with predominantly cortical phenotypes. Differentiated neurons stained positive for transcription factors typically expressed in the cortex such as Ctip2, Satb2 and Brn2. Few striatal neurons expressing DARPP32 are also present. **(B)** Quantification of deep (Citp2+) and upper (Satb2+) layer neurons across 60 days of in vitro differentiation. **(C)** BetaIII-tubulin positive neurons generated from ventral forebrain-like NS cells largely co-express GABA. Neurons, which stain positive for calbindin (Calb) and parvalbumin (Parval) could also be detected. **(D)** NS cells with spinal cord identity stained positive for the posterior marker Hoxb4 as well as Lim1/2, Lim3 and, occasionally Isl1, markers typical for hindbrain and spinal cord interneurons. Scale bars: 50 µm. Error bars: ±SD.

Figure 6: Neural stem cell systems *in vitro* and their *in vivo* counterparts

Cartoon showing the presumptive relationship of *in vitro* cultured neural stem cell populations to their native counterparts. *In vivo*, neuroepithelial stem cells of the neural tube give rise to radial glia cells of the fetal brain. Stably expandable NES cells can be derived from pluripotent stem cells and directly from early stage human embryos. Later stage human embryos give rise to radial glia-like NS cells. In the current study we demonstrate that NS cells can be directly generated from *in vitro* expanded NES cells.

SUPPLEMENTARY FIGURE LEGENDS

Supplementary Figure 1: Radial glia-like NS cells express adhesion molecules and tight junction-associated markers but lack typical polarity of lt-NES cells.

(A) Lt-NES cells form neural rosettes, which at the center stain positive for the tight junction marker ZO1, N-cadherin and ß-catenin. (B) NS cells do not exhibit clear polarity of these

markers with a subset of the cells exhibiting an unipolar accentuated distribution of the proteins. Scale bars: 50 µm

Supplementary Figure 2: PluriTest analysis of lt-NES cell and lt-NES cell-derived NS cells

Lt-NES and NS cells characterized by Pluripotency and Novelty Scores [46] clearly differ from those of the undifferentiated pluripotent stem cell from which they were differentiated. The PluriTest plot puts the resulting Pluripotency and Novelty Scores into the context of the empirical distribution of pluripotent and somatic samples. Briefly, the background red and blue clouds are color coded empirical density distributions derived from all undifferentiated samples (red) and differentiated samples (blue) used for constructing and validating the PluriTest classifier. Two exemplary samples from the hESC line H9.2 (red circles) fall clearly in the range of the undifferentiated, pluripotent stem cells (as indicated by the empirical red density distribution of pluripotent stem cells). lt-NES (pink circles) and NS cells (yellow circles) differentiated from the H9.2 hESC line are in regard to their PluriTest scores far apart from the undifferentiated cells and fall closer to the differentiated samples (as indicated by the blue empirical density distribution of differentiated cells). Interestingly, NS cells (yellow circles) are also set apart by their PluriTest scores from the lt-NES cells and fall closer to most differentiated cell types (as indicated by the blue empirical density distribution of differentiated cells in the lower right corner).

Supplementary Figure 3: Radial glia-like NS cells generated from neuroepithelial stem (NES) cells of different origin

(A) NS cells generated from lt-NES cells derived from the human embryonic stem cell line H9.2. **(B)** NS cells generated from primary lt-NES cells derived from the human hindbrain (hbNES) **(C)** NS cells generated from lt-NES cells derived from human induced pluripotent

stem cells. Note that all NS cells exhibit a bipolar morphology and prominent expression of the neural stem cell marker Sox2 as well as the radial glia marker Sox9. Upon growth factor withdrawal for 4 weeks they give rise to betaIII-tubulin positive neurons and GFAP positive astrocytes. **(D)** NS cells could also be generated from lt-NES cell cultures differentiated for 6 months. Morphology, marker expression and differentiation potential are comparable to those of other NS cell populations. Scale bars: 50 µm.

Supplementary Figure 4: NS cells generated from NES cells with dorsal and ventral forebrain regional identities

(A) Early passage (p2) dorsal forebrain-like NES cells homogeneously express the forebrain markers FoxG1 and Otx2. **(B)** NS cell generated from dorsal forebrain-like NES cells exhibit typical NS cell morphology, homogeneous expression of Sox2 and Sox9 and differentiate into betaIII-tubulin-positive neurons as well as GFAP-positive astrocytes following growth factor withdrawal. Dorsal forebrain-like NS cells also stain positive for the forebrain marker FoxG1 and the dorsal marker Pax6 while lacking expression of the ventral progenitor marker Nkx2.1. **(C)** Ventralized forebrain-like NES cells are strongly enriched for the ventral progenitor marker Nkx2.1. **(D)** NS cell generated from ventralized forebrain-like NES cells exhibit homogeneous expression of Sox2 and Sox9 and differentiate into betaIII-tubulin positive neurons as well as GFAP-positive astrocytes following growth factor withdrawal. Ventral forebrain-like NS cells also stain positive for the forebrain marker FoxG1 and the ventral progenitor marker Nkx2.1 while lacking expression of the dorsal progenitor marker Pax6. Scale bars: 50 µm.

Supplementary Figure 5: NS cells generated from NES cells with spinal cord regional identity

(A) Hindbrain-patterned lt-NES cells are strongly enriched for the spinal cord-fate associated marker HoxB4. **(B)** NS cell generated from spinal cord-like NES cells exhibit typical NS cell morphology, homogeneous expression of Sox2 and Sox9 and differentiate into betaIII-tubulin-positive neurons as well as GFAP-positive astrocytes following growth factor withdrawal. Spinal cord-like NS cells show homogeneous expression of the spinal cord marker HoxB4 and the dorsal marker Pax6. Cells positive for markers associated with progenitors of the ventral spinal cord (Olig2 and Nkx2.2) could only occasionally be detected in this cell population. Scale bars: 50 µm

Supplementary Figure 6: Resistance of forebrain-like NS cells to forced posteriorization

(A) NS cells with forebrain identity express the anterior (telencephalic) transcription factors Otx2 and FoxG1. **(B)** Despite prolonged exposure to high concentrations of the posteriorizing factor retinoic acid for 2 weeks, forebrain-like NS cells maintain expression of these transcription factors and thus their anterior regional identity. Scale bars: 50 µm.

Supplementary Figure 7: Neuronal differentiation of forebrain-like NS cells

(A) Following growth factor withdrawal for 6 weeks, forebrain-like NS cells generated Citp2 and vesicular glutamate transporter 1 (vGlut) positive neurons. (**B**) Occasionally GAD67-positive neurons could be observed (yellow arrow). Note the lack of co-expression of GAD67 and Ctip2. Scale bars: 50 µm

Supplementary Figure 8: Forebrain-like NS give rise to Tbr2-positive intermediate progenitors and exhibit sequential generation of deep and upper layer neurons.

(**A**) Undifferentiated Sox2-positive forebrain-like NS cells proliferated in the presence of FGF and EGF are largely negative for the intermediate progenitor marker Tbr2. Four days

following growth factor withdrawal a significant increase in Tbr2-positive and Sox2-negative cells is detectable. Scale bars: 50 µm. Error bars: ± SD; ***p< 0.001 (**B**) Forebrain-like NS cells co-stained for the pan-neuronal marker betaIII-tubulin, the deep layer marker Ctip2 and the upper layer marker Satb2 at 10, 20, 40 and 60 days after growth factor withdrawal. Note that Ctip2+ deep layer neurons are generated before Satb2+ upper layer neurons. Scale bars: 100 µm **(C)** Passage 9 and passage 21 forebrain-like NS cells differentiated for 7 weeks give rise to Ctip2+ and Satb2+ betaIII-tubulin expressing neurons with comparable efficiency. Scale bars: 50 µm **(D)** Using RT-PCR, cortical transcription factors such as Citp2 or Fezf2 could be detected in differentiated forebrain-like NS cells (NS_fb). In contrast, neurons from spinal cord-like NS cells (NS_sc) preferentially expressed transcription factors associated with a hindbrain/spinal cord fate such as Sim1 or Lim3. The vesicular glutamate transporter 1 is expressed preferentially in differentiated cultures derived from forebrain-like NS cells whereas spinal cord-like NS cell-derived differentiated cultures preferentially express GAD67 (glutamic acid decaboxylase), a GABA-producing enzyme.

Supplementary Figure 9: MicroArray analysis of NES cells and NS cells derived from hESC and primary tissue.

(**A**) Hierarchical clustering performed with MicroArray data from NES cells (primary or hESC-derived) and regionally distinct NS cells derived either from NES cells or human fetal tissue (3 independent lines). (**B**) A heat map generated with the approximately 3600 probes identified initially as being differentially regulated between NES and NS cells. Note: NS-like cells cluster together independently of their origin and clearly segregate from NES-type cells.

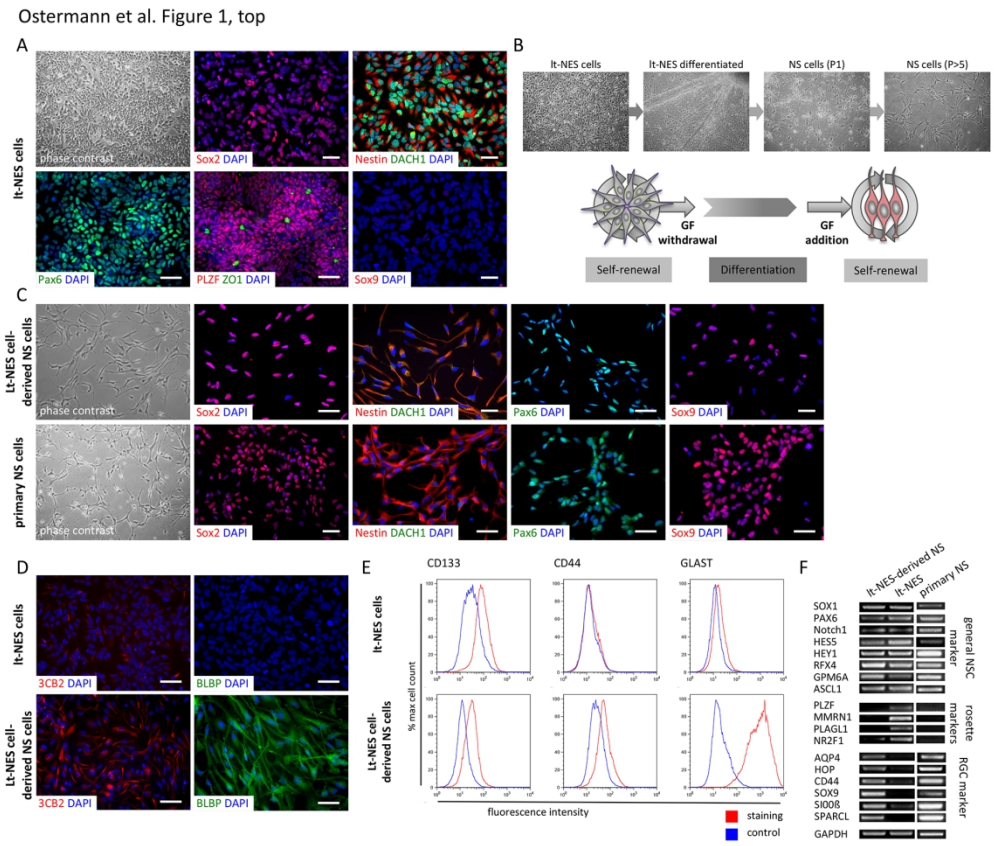
Supplementary Table 1: Genes that were found to be differentially expressed in NES cells or NS cells respectively

All significantly differentially expressed genes (as determined by the GeoDE algorithm) are

listed with their annotation derived from the Illumina HT12v4 BeadArray Manifest file, their GeoDe score and their gene expression values for each gene after VST transformation and RSN normalization. For further details on the bioinformatic methods and specific parameter setting chosen, see their detailed description in the manuscript's Materials and Methods section.

Supplementary Table 2: Gene sets that were found to be enriched in differentially expressed genes unregulated in NES cells or NS cells respectively

All significantly differentially expressed genes (as determined by the GeoDE algorithm) were analyzed with the EnrichR web tool and the results from the MGI Phenotype Level 4 gene sets were selected. For further details on the bioinformatic methods and specific parameter setting chosen, see their detailed description in the manuscript's Materials and Methods section.



Ostermann Figure 1

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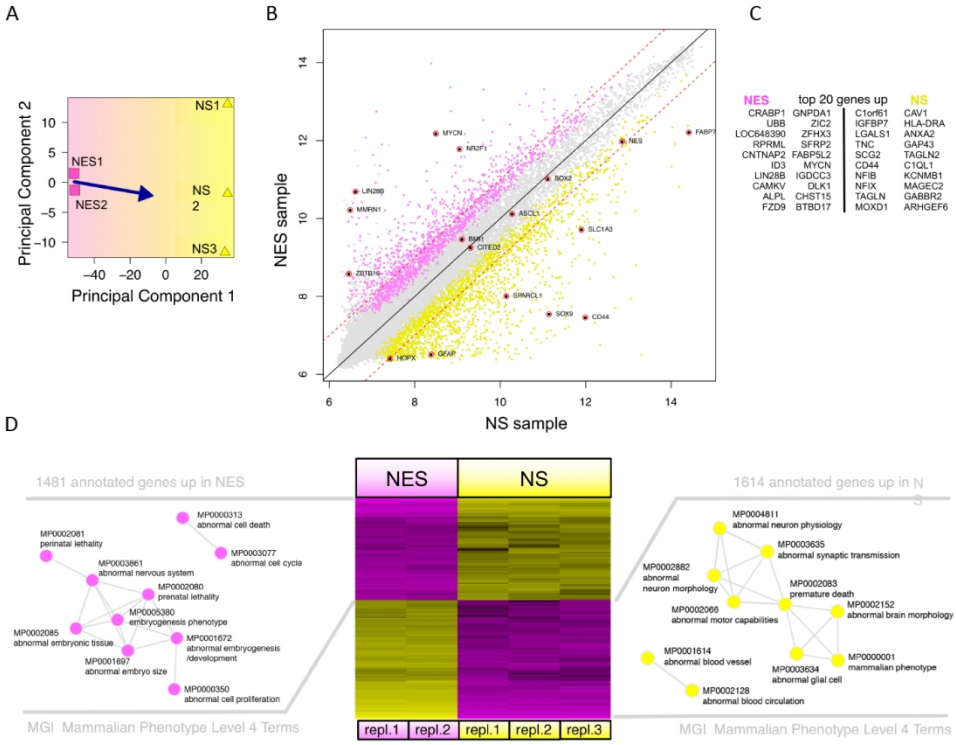

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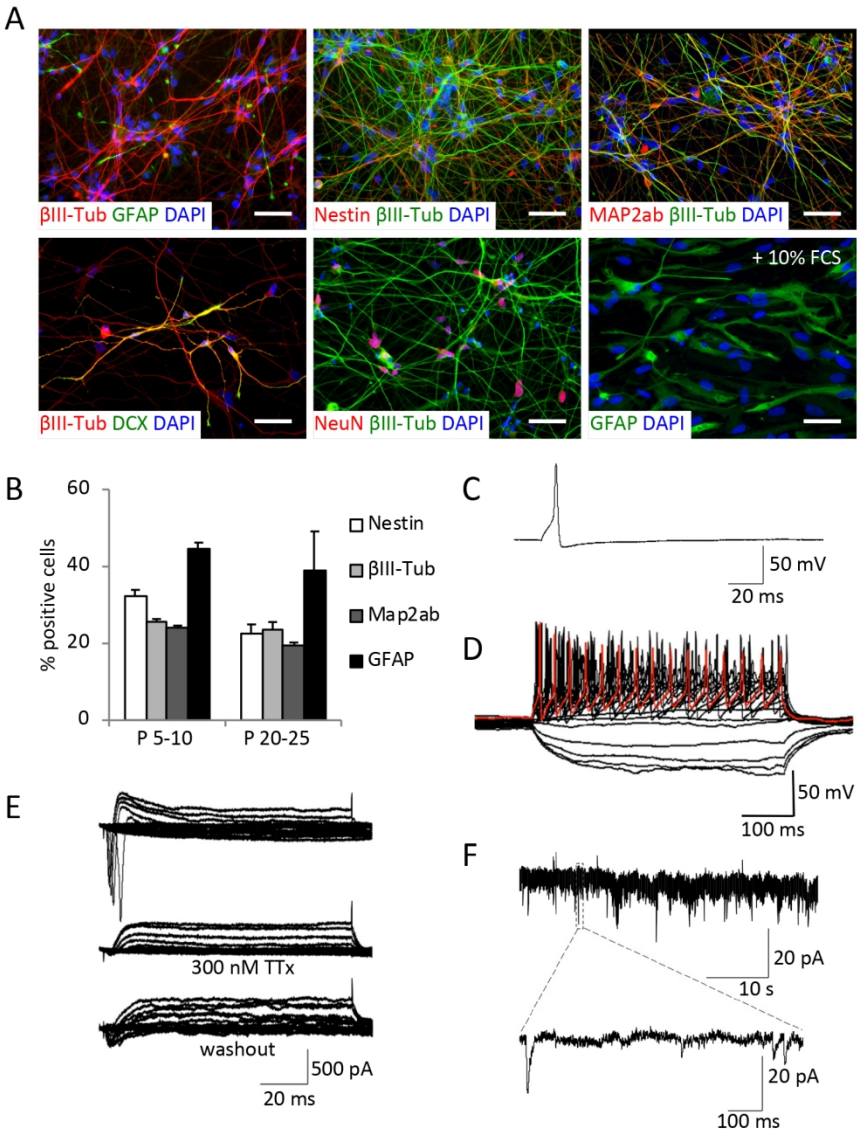

Ostermann Figure 3

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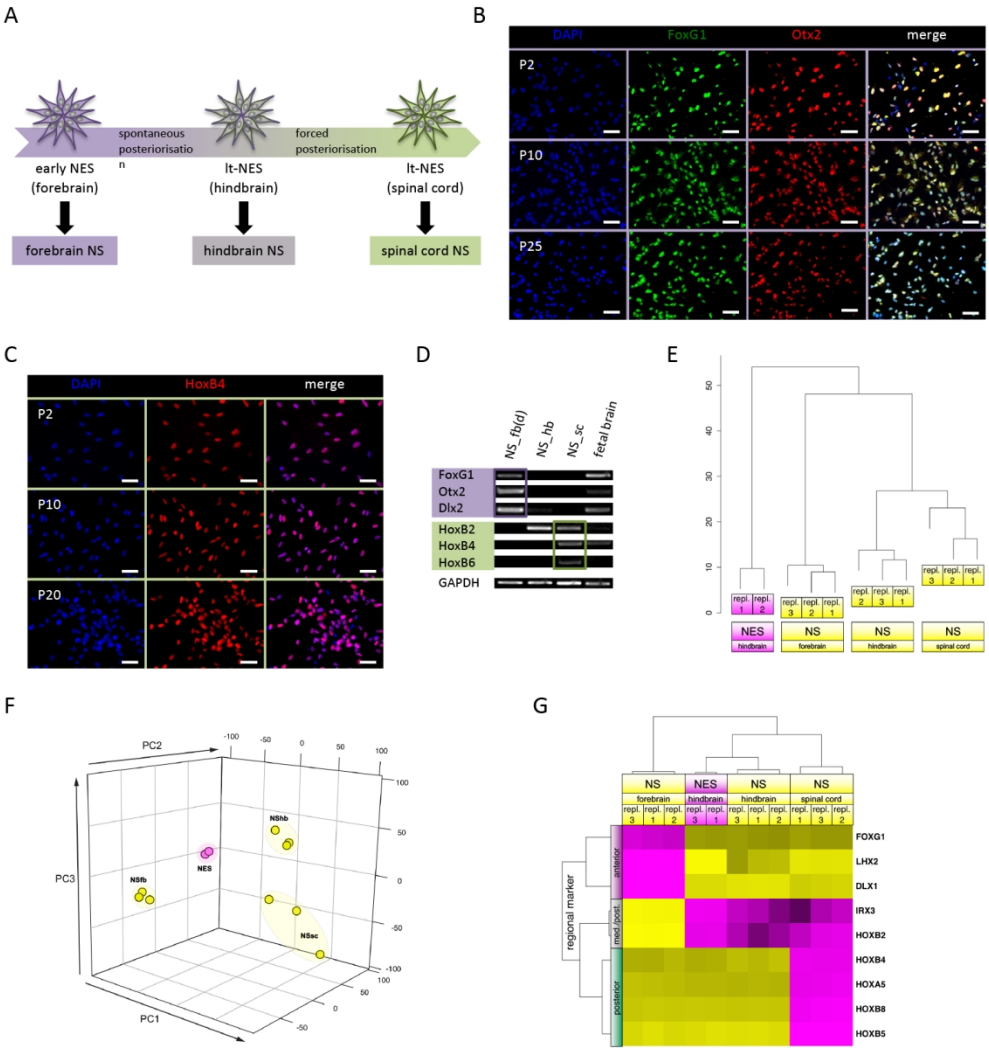
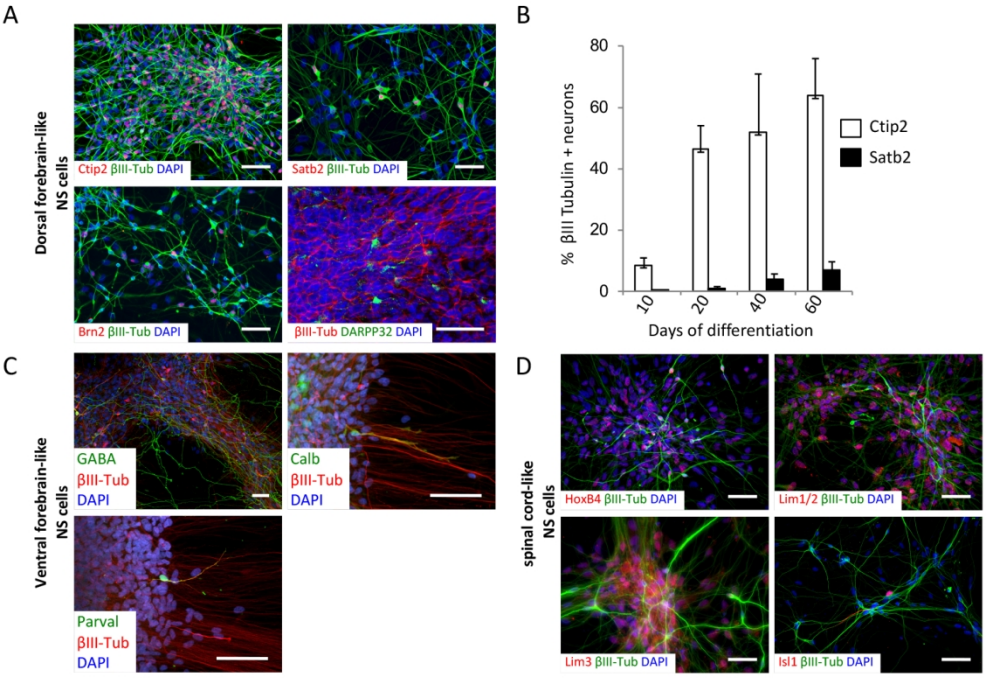


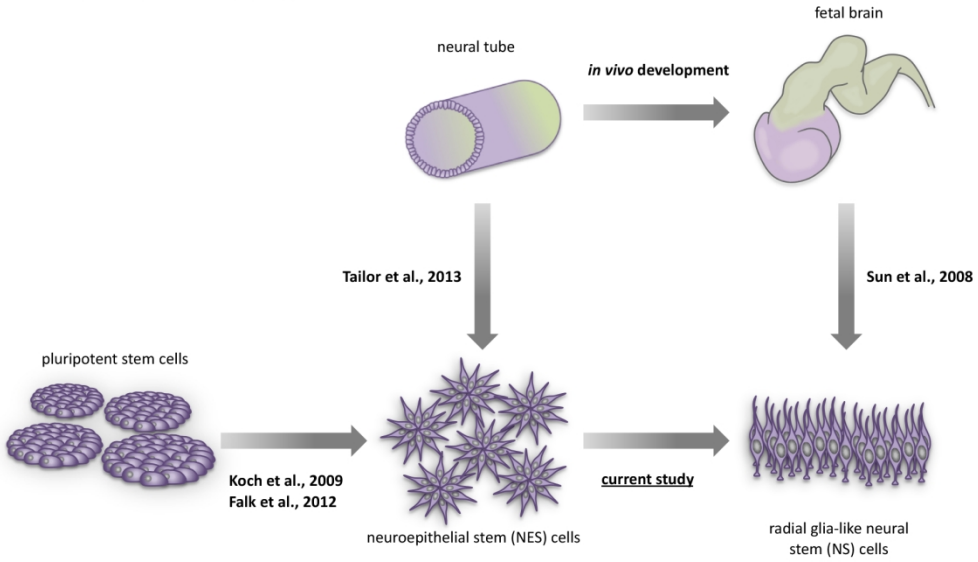
Ostermann Figure 4

Ostermann et al. Figure 5, top



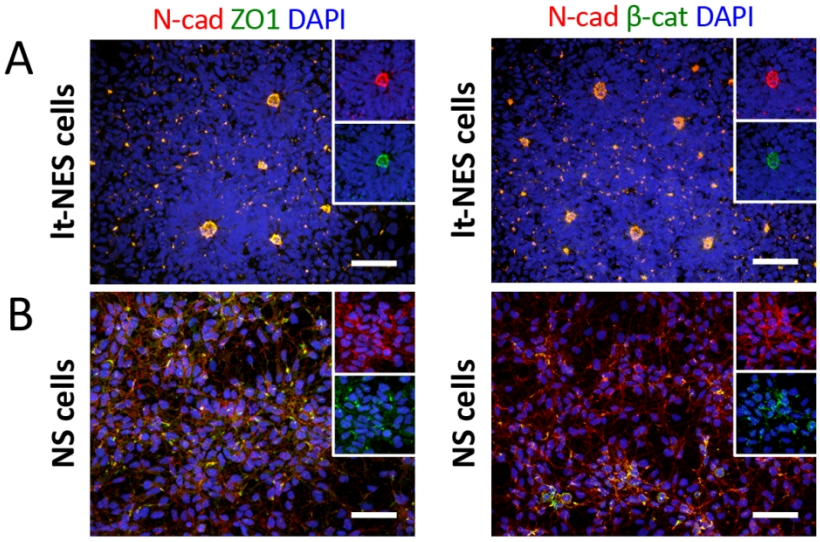
Ostermann Figure 5

Ostermann et al. Figure 6, top

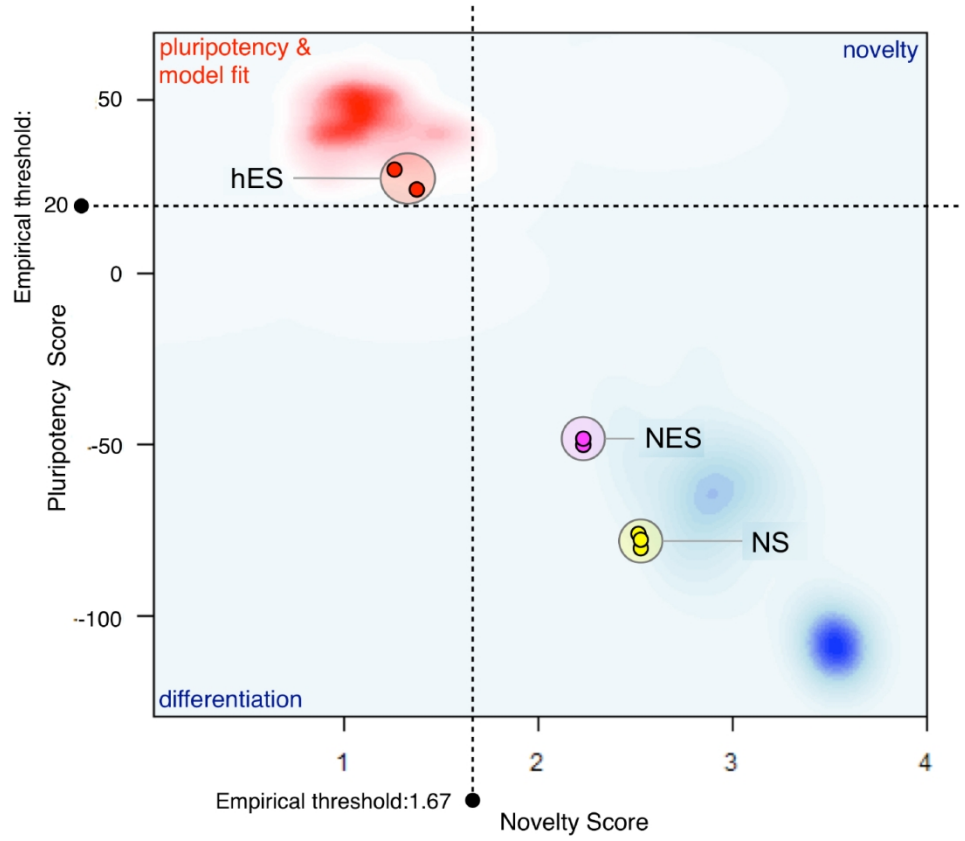


Ostermann Figure 6

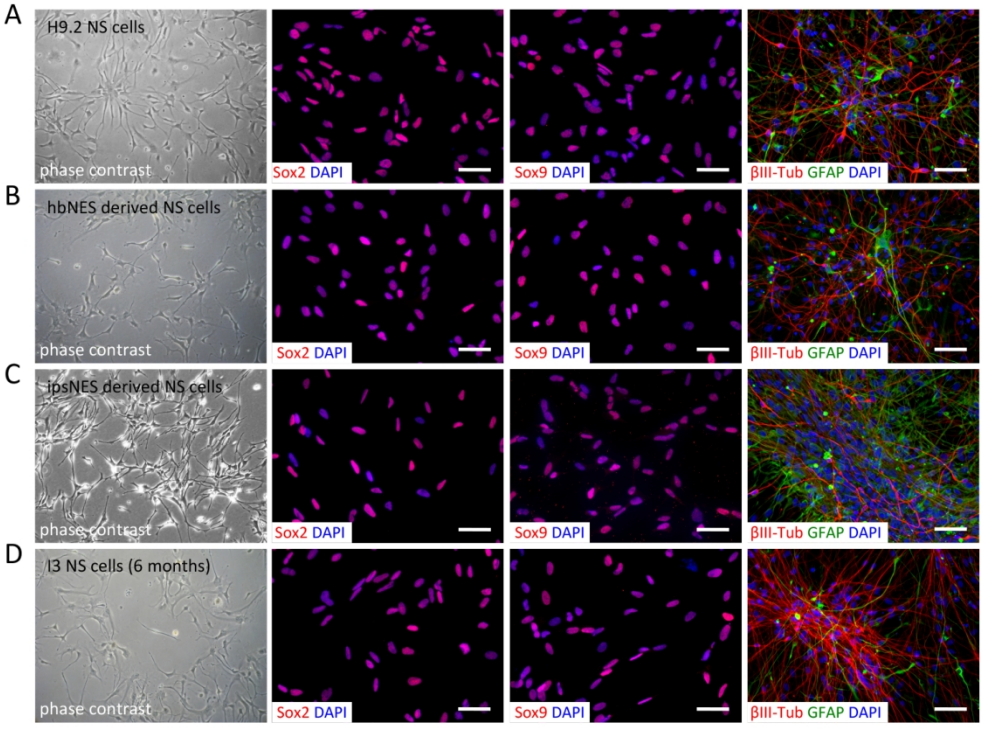
Ostermann et al. Supplementary Figure 1, top



Ostermann et al. Supplementary Figure 2, top



Ostermann et al. Supplementary Figure 3, top



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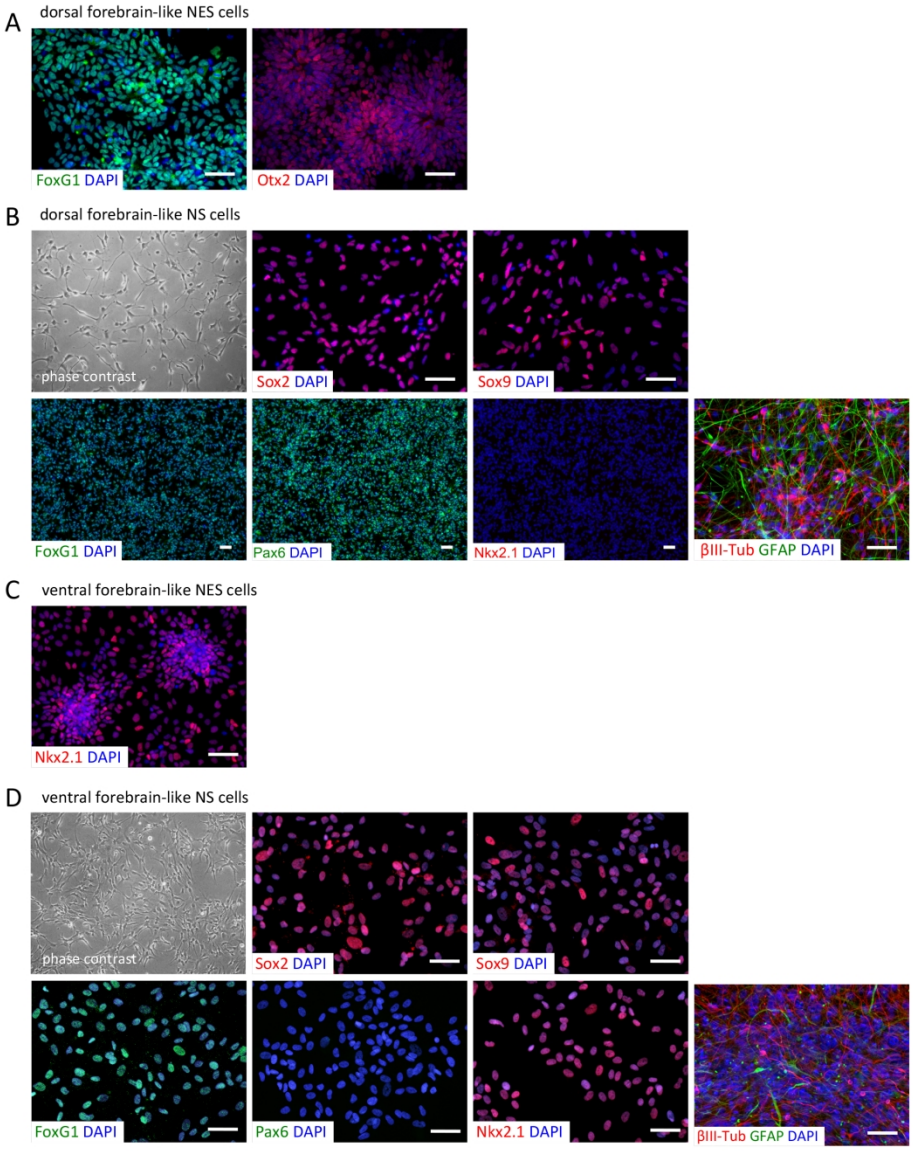

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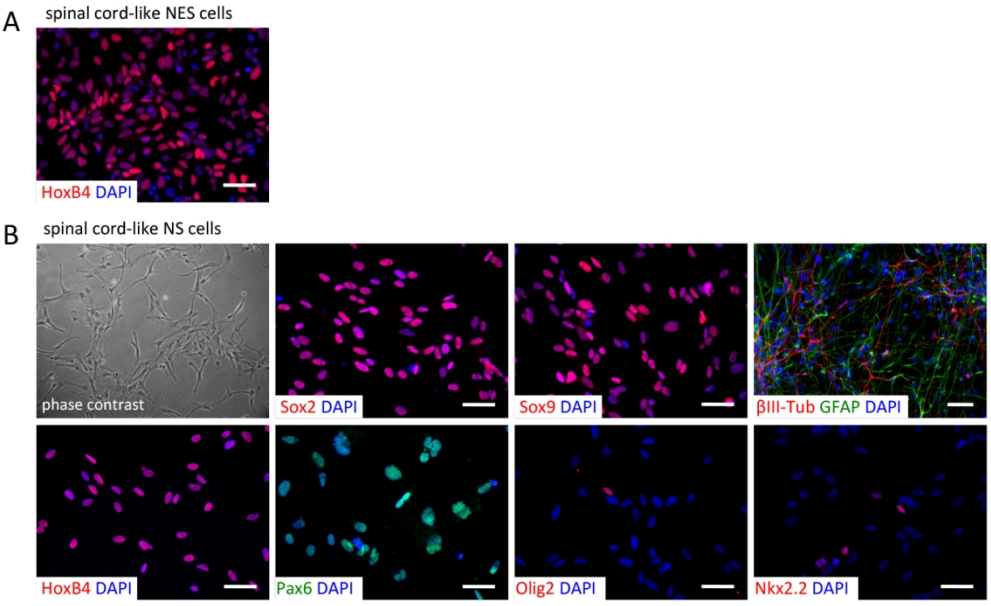

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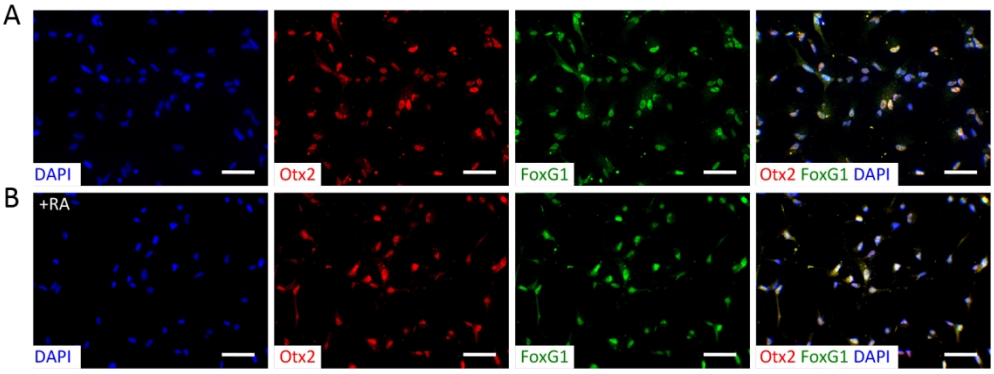

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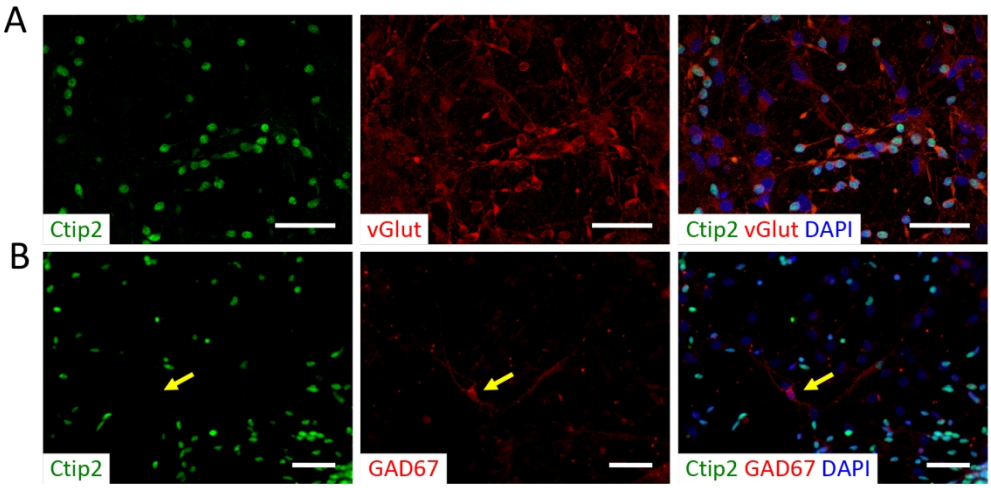
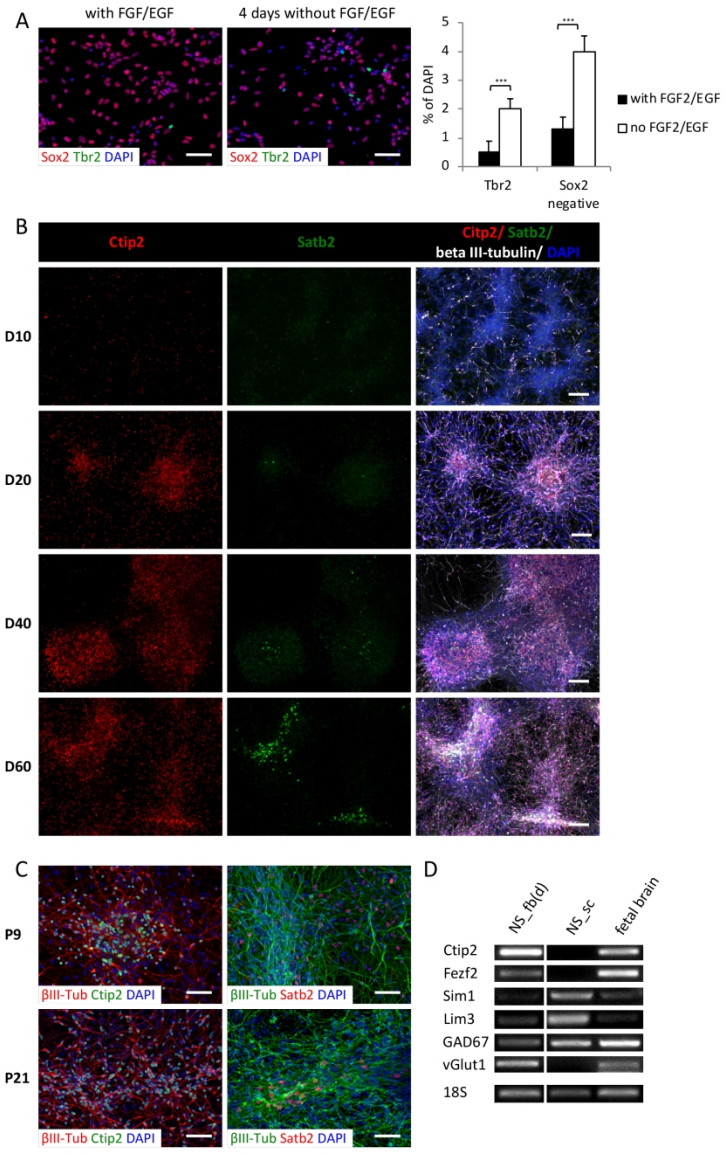


Ostermann et al. Supplementary Figure 8, top



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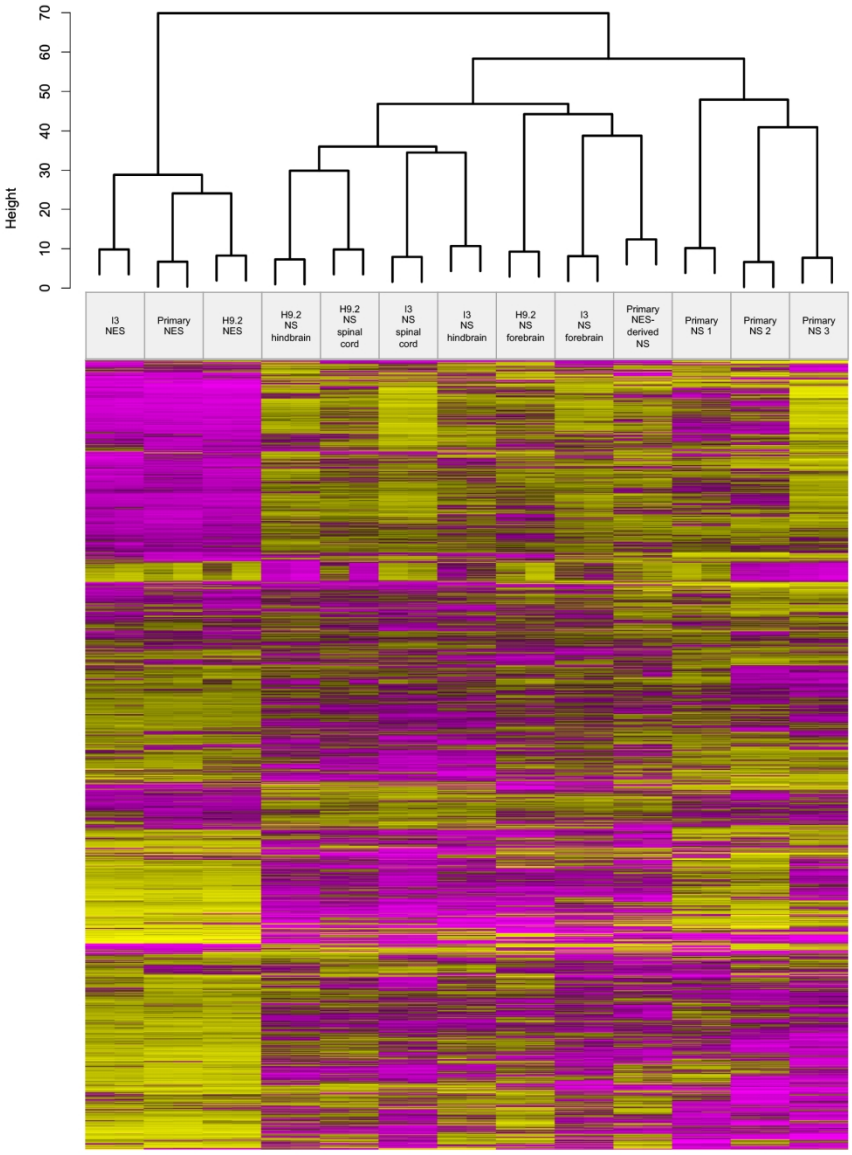

Supplementary Materials and Methods

Electrophysiological recordings

Whole cell current-clamp and voltage-clamp recordings were carried out with an Axopatch-200B amplifier (Molecular Devices, Sunnyvale, CA, USA) interfaced by an A/D-converter (Digidata 1440, Molecular Devices, Sunnyvale, CA, USA) to a PC running PClamp software (Version 10, Molecular Devices, Sunnyvale, CA, USA). Pipette electrodes (GB150F-8P, Science Products, Hofheim, Germany) were fabricated using a vertical puller (PC-10, Narishige, Tokyo, Japan) and filled with a solution containing (in mM): 110 potassium gluconate ($C_6H_{11}O_7K$), 20 KCl, 10 NaCl, 10 EGTA, 1 $CaCl_2$, 4 Mg ATP, 0.4 Na GTP, 10 Hepes (pH 7.2; 310–320 mOsm). In addition, the pipette solution also contained 0.1% biocytin and neurons were filled by passive diffusion of biocytin from the patch pipette during electrophysiological recording. The signals were low-pass filtered at 10 kHz and sampled at 50 kHz. All recordings were performed at room temperature (22 – 25°C) in a bath solution containing (in mM): 140 NaCl, 5 KCl, 2 $CaCl_2$, 1 $MgCl_2$, 10 Hepes and 15 D-glucose (pH 7.4; 320–330 mOsm).

Immunocytochemical analysis

Cells were fixated with 4% neutral-buffered paraformaldehyde (PFA) for 15 minutes at room temperature and then washed with PBS. For blocking and permeabilization specimens were treated with 0.1% Triton X-100 (Sigma–Aldrich), 10% fetal calf serum (FCS; Invitrogen) in PBS for 1 hour, followed by incubation with the primary antibody in PBS, 0.1% Triton X-100 and 10% FCS for 16 hours at 4°C. Cells were rinsed twice with PBS before incubation with the secondary antibody solution for 45 minutes, further washing in PBS and counterstaning with DAPI.

Flow Cytometry

Flow cytometry analysis was performed using single cells prepared by trypsinization. Cells were centrifuged and subsequently incubated with 10% fetal calf serum in PBS for 10 minutes followed by exposure with the primary antibody for 30 minutes at 4°C. Cells were

then washed twice with PBS and incubated with the secondary antibody for 30 minutes. Analysis was performed with the FACSCalibur® cytometer equipped with an argonion laser (488 nm). Forward scatter (FSC), side scatter (SSC) and PE or FITC fluorescence were recorded. Data analysis was performed using the FlowJo software.

Antibody sources and dilutions

Antibody	**Company**	**Dilution**
Nestin (hum) ms monoclonal	R&D Systems	1:500
Dach1 rb polyclonal	Proteintech Group	1:100
PLZF ms monoclonal	Calbiochem	1:50
ZO1 rb polyclonal	Invitrogen	1:100
Sox2 ms monoclonal	R&D Systems	1:300
Sox9 goat polyclonal	R&D Systems	1:300
Pax6 rb polyclonal	Covance/Hiss	1:300
CD133 ms monoclonal	Miltenyi Biotec	1:100
3CB2 ms monoclonal	Hybridoma Bank	1:200
BLBP rb polyclonal	Abcam	1:100
GLAST rt monoclonal	Miltenyi Biotec	1:100
CD44 ms monoclonal	eBioscience	1:3000
Otx2 goat polyclonal	R&D Systems	1:300
FoxG1 rb polyclonal	Abcam	1:300
HoxB4 rt polyclonal	Hybridoma Bank	1:250

Beta III-tubulin ms monoclonal	Covance	1:3000
Beta III-tubulin rb polyclonal	Covance	1:3000
GFAP rb polyclonal	DAKO	1:500
MAP2ab ms monoclonal	Sigma	1:500
Ctip2 rt monoclonal	Abcam	1:300
Satb2 ms monoclonal	Abcam	1:400
Brn2 gt polyclonal	Santa Cruz Biotec	1:500
DARPP32 rb monoclonal	Cell Signaling	1:1000
ISL1 rt monoclonal	Hybridoma Bank	1:300
LIM1/2 ms monoclonal	Hybridoma Bank	1:250
Lim3 ms monoclonal	Hybridoma Bank	1:250
Doublecortin rb polyclonal	Cell Signaling	1:500
NeuN ms monoclonal	Merck Millipore	1:100
Tbr2 rb polyclonal	Abcam	1:500
Olig2 rb monoclonal	Merck Millipore	1:500
Nkx2.1 ms monoclonal	Zytomed	1:500
Nkx2.2 ms monoclonal	Hybridoma Bank	1:300
GAD67 ms monoclonal	Merck Millipore	1:1000
vGlut2 rb polyclonal	Synaptic Systems	1:1000
GABA rb polyclonal	Sigma-Aldrich	1:800
Calbindin rb monoclonal	Cell Signaling	1:1000
Parvalbumin rb monoclonal	Swant	1:5000
β-Catenin rb monoclonal	Cell Signaling	1:300

N-Cadherin ms monoclanal	Sigma-Aldrich	1:500

RNA preparation and qRT-PCR

Total mRNA samples were extracted using RNAeasy extraction kit (Qiagen). The RNA concentration was determined with Nanodrop-1000 (Peqlab), and 1 μg of total RNA was used for reverse transcription with the iScript cDNA synthesis kit (BioRad). Genes were amplified using Taq DNA Polymerase, 10x PCR reaction Buffer (-$MgCl_2$) and 50 mM $MgCl_2$ (Invitrogen) and dNTPs (Peqlab). To compare the expression level of different genes, probes were normalized to GAPDH by performing 15, 20, and 25 cycles. PCR conditions and cycle numbers were established by using commercially available human fetal (single donor, female, 19 weeks of gestation) or adult brain probes (both Stratagene). The selected numbers of cycles varied from 30 to 40 cycles depending on the particular mRNA abundance with denaturation at 94 °C for 1 min., annealing temperatures at 58 °C to 63 °C for 60 seconds and elongation at 72 °C for 2 min. Omission of cDNA sample during PCR served as negative controls. All reactions were performed on a T3 Thermocylcer (Biometra). Primer sequences used are listed below.

Gen	**Forward**	**Reverse**
GAPDH	acgacccttcattgacctcaact	atatttctcgtggttcacacccat
18S	ttccttggaccggcgcaag	gccgcatcgccggtcgg
SOX1	caatgcggggaggagaagtc	ctctggaccaaactgtggcg
PAX6	aataacctgcctatgcaaccc	aacttgaactggaactgacacac
NOTCH1	actgtgaggacctggtggac	ttgtaggtgttggggaggtc
HES5	gcccggggttctatgatatt,	gagttcggccttcacaaaag
HEY1	cgaggtggagaaggagagtg	ctgggtaccagccttctcag
RFX4	tctgagacggcaaacatcac	gactcgatgggagactgctc

GPM6A	tgagatggcaagaactgctg	ccaggccaacatgaaaagat
ASCL1	cggccaacaagaagatgagt	tggagtagttgggggagatg
PLZF	ctatgggcgagaggagagtg	tcaatacagcgtcagccttg
MMRN1	cagggagcatcactcagaca	ttgaggccatcttccatttc
PLAGL1	gcctcagtcacctcaaaagc	cttaacctgtggggcaaaga
NR2F1	acaggaactgtcccatcgac	gatgtagccggacaggtagc
AQP4	ggaatttctggccatgctta	agacttggcgatgctgatct
HOP	gcattgacagcttcactcca	ggaaatgctagccacaccat
CD44	ggctttcaatagcaccttgc	acacccctgtgttgtttgct
SOX9	tacgactacaccgaccacca	tcaaggtcgagtgagctgtg
S100β	aaagagcaggaggttgtgga	aggaaaggtttggctgcttt
SPACL1	caactgctgaaacggtagca	gaactcttgccctgttctgc
FOXG1	ccctcccatttctgtacgttt	ctggcggctcttagagat
OTX2	tgcaggggttcttctgtgat	Agggtcagagcaattgacca
DLX2	ctccctcagctctctcctca	tgtgtccaagtccaggctaa
HOXB2	tttagccgttcgcttagagg	cggatagctggagacaggag
H0XB4	acacccgctaacaaatgagg	gcacgaaagatgagggagag
HOXB6	gcggatgaattcgtgcaaca	ttcatgcgtcggttctggaa
FEZF2	tatccacacccaggaaaagc	gtgggtcagcttgtggttct
CTIP2	gacgaagatgaccacctgct	gctccaggtagatgcggaag
LIM3	gcaggacactgaggacagaa	accctgggatctggaaactc
SIM1	ttgccaacacttcaccatgt	tggtctcctgctgtctgatg
vGlut1	ctgccgcagctggacgttct	gccgaagcctccgcagttca

GAD67	gctggggctgcacttggctt	cacctccccaggcagcatcg

Gene expression study and bioinformatics

Total RNA was processed for Illumina HT12v4 microarray (Illumina, Inc. San Diego) analysis according to the protocols provided by the manufacturer (www.illumina.com). PluriTest analysis was performed as previously described [23]. Raw probe level expression data was extracted from the microarray scan files with GenomeStudio 2010 (Illumina Inc, San Diego). The raw probe expression values were loaded into R/Bioconductor, transformed with the variance-stabilizing transformation (VST) and normalized with the robust spline normalization (RSN) provided by the lumi Bioconductor package as previously described [45].

The resulting values were used with the GeoDE Bioconductor package to determine the "*Characteristic Direction*" and significantly differentially regulated genes based on the Characteristic Direction algorithm with the shrinkage parameter set to 1 [22]. The Characteristic Direction algorithm is a multivariate approach to differential gene expression, which first defines a separating hyper-plane between two sample groups (e.g. between lt-NES and NS cells) in the high dimensional, genome wide gene expression space and then identifies the "*Characteristic Direction*" between the sample groups as the direction normal to the separating hyper-plane. Next the algorithm identifies those genes, which contribute to the total differential expression along the "*Characteristic Direction*". The relative contribution to the characteristic direction can then be used to rank the genes in order of relevance. To determine the significance cutoff for this gene list, the algorithm compares the measured contribution of each given gene to the "*Characteristic Direction*" to those observed in random perturbations of the same data set. Consequently those genes are identified, whose contributions to the "*Characteristic Direction*" cannot be explained by random noise as null hypothesis.

Probe to gene mapping was performed with BioMart [46], and the values displaying the highest differential expression differences as determined by GeoDE were chosen for heatmap visualization. Gene Set Enrichment analysis was performed with the identified lists of gene level identifiers with the EnrichR web tool (http://amp.pharm.mssm.edu/Enrichr/) [24].

Heatmap visualization, clustering and serration was performed using the PermutMatrix software based on the Euclidian distance, McQuitty's criteria and the Multi-Fragment Heuristic [47].

Hierarchical clustering using average linkage as metric was performed in the lumi package, principal component analysis was performed using the prcomp command in R. Visualization of the sample relationships based first three components was performed with the rgl-package in R. Labeling and coloring of the resulting plots was performed with Illustrator CS5 (Adobe Systems, San Jose).

Supplementary Table 1

ProbeID	Gamma 1	SYMBOL	NES 1	NES 2	NS 2	NS 3	NS 1
ILMN_1759652	0,080902767	C1orf61	6,49163262	6,442809301	13,42113636	13,34037327	13,30572976
ILMN_2062468	0,064655843	IGFBP7	6,755270184	6,913632691	12,4090385	12,28926545	12,34135349
ILMN_1723978	0,05995366	LGALS1	7,94081309	8,04475523	13,19383331	13,17352432	13,07304979
ILMN_1719759	0,059721851	TNC	7,330417559	7,043694022	12,190585	12,58879863	12,21347182
ILMN_1703178	0,058441896	SCG2	7,701051557	7,690354971	12,57882227	12,74623915	12,69130963
ILMN_1803429	0,054560063	CD44	7,45979709	7,400757049	12,24432335	11,9463477	11,9921647
ILMN_1778991	0,051912023	NFIB	7,232164676	7,352998148	12,03730302	11,82580355	11,6061256
ILMN_1694325	0,051656863	NFIX	6,423044328	6,564048706	11,46646917	10,64782924	10,70764449
ILMN_2400935	0,051281945	TAGLN	8,807732326	8,915945573	13,40330647	13,09483644	13,18339964
ILMN_1687501	0,050778293	MOXD1	6,999691832	7,008330716	11,45473259	11,41581071	11,2696736
ILMN_2149226	0,050710491	CAV1	7,17054348	7,214495746	11,49886749	11,68393255	11,51039994
ILMN_2157441	0,049950965	HLA-DRA	6,810814304	6,722046918	11,11603424	11,08820898	10,95090578
ILMN_2409167	0,049429835	ANXA2	8,494052706	8,460436089	12,71448172	12,83537911	12,65377627
ILMN_1794552	0,049350679	GAP43	7,125501993	7,046334014	11,53481241	10,9429969	11,17753948
ILMN_1848552	0,048008269		6,929593856	7,127925663	11,2789675	11,01411224	11,09704556
ILMN_2090105	0,04760535	TAGLN2	7,467487357	7,559534962	11,66495751	11,72562583	11,53824569
ILMN_1716957	0,047432588	C1QL1	7,101553483	7,069215718	11,18261947	11,04235817	11,088061
ILMN_1652065	0,047042983	KCNMB1	6,892509965	6,838958368	10,8675687	10,91801647	10,84986055
ILMN_2088876	0,046516232	MAGEC2	6,383487262	6,4278894	10,59536723	10,58663045	10,27562539
ILMN_1660718	0,0460496	GABBR2	6,526452983	6,571274293	10,59411167	10,42652297	10,42699246
ILMN_2145670	0,045111135	TNC	7,756598539	7,449675057	11,47631535	11,51925752	11,34782032
ILMN_1803423	0,044781684	ARHGEF6	7,738960775	7,826379808	11,41475332	11,74787964	11,67181884
ILMN_1784532	0,044708901	COL22A1	6,530121571	6,489352201	10,17444571	10,38107614	10,35050006
ILMN_1744387	0,044058134	KCNIP1	6,674306392	6,87724382	10,3939824	10,67576842	10,61337046
ILMN_1761425	0,043924378	OLFML2A	6,650976497	6,637066748	10,37668672	10,4989955	10,37216903
ILMN_2184184	0,04364839	ANXA1	7,950749882	7,848533152	11,91003415	11,74314296	11,46885682
ILMN_1685397	0,043575153	ITGA3	7,063006871	7,025843413	10,77337259	10,78853215	10,72962556
ILMN_1811238	0,043081346	ALPK2	6,891477952	6,763393018	10,34682028	10,51439897	10,5127543
ILMN_1785646	0,043065257	PMP22	8,455742564	8,447954743	12,12426402	12,19503796	12,10465709
ILMN_1775330	0,042978565	C15orf52	6,4407609	6,552998021	10,03441803	10,22303803	10,21961716
ILMN_1658835	0,042690224	CAV2	7,187064268	7,169254652	10,84477081	10,51846465	10,79804961
ILMN_1745994	0,042334742	GAS7	6,574197541	6,555429515	10,13528316	10,16501281	10,1706143
ILMN_1726204	0,041187572	SCRG1	7,725987904	7,615744077	11,30268437	11,18004655	11,09659724
ILMN_1686770	0,040954534	RPE65	6,37915831	6,400573917	9,794859186	9,840881699	9,906993474

ILMN_1734929	0,040820011	BBOX1	6,548749488	6,474711088	10,03948153	10,09344922	9,939575947
ILMN_1689004	0,04046684	TNFRSF12A	8,094185843	7,960166584	11,52761664	11,44989176	11,41327852
ILMN_1677814	0,040427431	ABCC3	6,641719163	6,641025417	9,985232112	10,09937552	10,11296203
ILMN_1728049	0,0399317	S100A16	7,955459851	8,116990429	11,63072248	11,62986603	11,38830855
ILMN_1757552	0,039692347	PTRF	8,840806318	8,741754807	11,98950294	12,16999724	12,20864411
ILMN_1778668	0,039094388	TAGLN	10,81294049	10,79446021	13,96709612	14,15529165	14,18297159
ILMN_1749071	0,038919885	CNIH3	6,61495907	6,511222051	9,784857695	9,910013528	9,879038576
ILMN_1653203	0,038766873	EFEMP2	6,688793399	6,623715335	9,847781822	9,836162458	9,979710419
ILMN_1687978	0,038754953	PHLDA1	8,946802702	8,930540379	12,67468741	12,14589667	12,06624533
ILMN_1763207	0,038699339	BATF3	6,751643132	6,854821665	9,891423743	9,986233684	10,19750568
ILMN_1653856	0,03869397	STS-1	7,937314169	7,913166356	11,09249102	11,17158344	11,25648778
ILMN_1691476	0,038540426	MYLK	8,328789688	8,204612308	11,69682527	11,7720904	11,44856925
ILMN_1757497	0,038472374	VGF	9,082488411	9,252501547	12,57017653	12,04330209	12,44190368
ILMN_1735502	0,038289294	FAM181B	7,659561738	7,749125797	11,10913277	10,61798828	10,93508904
ILMN_1744487	0,038125441	C1QTNF5	6,747886802	6,903992971	9,857560738	9,863902721	10,18998343
ILMN_1805466	0,038111122	SOX9	7,542475364	7,903978459	10,71073465	11,10380394	11,14063177
ILMN_1656057	0,038000997	PLAU	7,248361048	7,086005449	10,34269279	10,31939468	10,38208536
ILMN_2121408	0,037896115	HBEGF	7,603712596	7,487226768	10,83984591	10,79025263	10,71106767
ILMN_1882590	0,037155597		7,633350765	7,50313428	10,72944207	10,86408637	10,69052472
ILMN_3242758	0,037080983	FAM181B	7,241958467	7,185432242	10,24014812	10,04798893	10,40985807
ILMN_1751471	0,036939029	MLC1	6,602551745	6,665186916	9,588454133	10,09344922	9,849692426
ILMN_1782050	0,036851219	CEBPD	7,045724834	7,092699625	10,13206215	9,958972265	10,24724904
ILMN_1763433	0,036657156	TRIM9	8,093071851	8,271364389	11,33449396	11,22014302	11,33035978
ILMN_1671392	0,036640125	KCNF1	8,341142448	8,413324509	11,20939171	11,38727462	11,61955271
ILMN_1651354	0,036332851	SPP1	7,360537207	7,495619324	10,6921119	10,68008105	10,47798366
ILMN_2374449	0,036304416	SPP1	7,203640263	7,026410397	10,1865574	10,26855983	10,16243604
ILMN_1700432	0,03625783	ITPKB	7,361524979	7,378952166	10,38174808	10,46542286	10,48306489
ILMN_1727815	0,036197017	CFI	6,812010405	6,854004516	9,914545269	9,832975921	9,921229342
ILMN_1689655	0,036173431	HLA-DRA	7,490659471	7,393937889	10,4225313	10,70849406	10,52415677
ILMN_1675062	0,035940863	MYL9	7,310449554	7,191924547	10,68014287	10,28790316	10,13793806
ILMN_1713751	0,035932737	ADAM19	8,479757086	8,233425958	11,49793978	11,59959468	11,31406428
ILMN_1671844	0,035849354	EYA4	6,478685439	6,433584433	9,754919115	9,61950588	9,395107324
ILMN_1800787	0,035579829	RFTN1	8,02994709	7,884754366	10,96949306	10,95381972	10,95302418
ILMN_1776157	0,035432019	42251	7,078242584	7,044011468	9,680842255	10,06212491	10,21344735
ILMN_2064725	0,035342711	METTL7B	6,664273326	6,546670559	9,626559379	9,721530807	9,572686069
ILMN_1776121	0,035208391	MGC42367	6,570998407	6,567149711	9,621973957	9,589172453	9,538450102
ILMN_167148	0,035074286	HOMER2	7,010893385	7,071927082	10,11373646	9,984415276	10,00485711

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ILMN_1754078	0,034931103	CABP7	6,540958116	6,54479819	9,445053155	9,520243415	9,539053336
ILMN_1729288	0,034625252	C1QTNF6	8,274167315	8,189897264	11,16491425	11,00789291	11,16488143
ILMN_1795325	0,034501046	ACTG2	7,915338057	7,970685917	10,97414486	11,05023854	10,84697565
ILMN_1779875	0,034492422	THY1	9,049657234	8,895764319	11,94330153	11,87613118	11,85504124
ILMN_1712075	0,034460587	SYNM	7,898784836	7,825924627	10,87588001	10,71764483	10,74519231
ILMN_1729216	0,034454945	CRYAB	6,483770258	6,500372608	9,514563237	9,294248772	9,394333743
ILMN_1735220	0,034434271	CAV2	6,680022396	6,891206619	9,806665072	9,809733492	9,725371073
ILMN_1706051	0,034305261	PLD5	6,897942246	6,880270213	9,873624489	9,9051812	9,772594893
ILMN_2188264	0,034151925	CYR61	8,782811907	8,828279532	11,81839975	11,86282899	11,67410926
ILMN_1730201	0,034093236	DTNA	7,280527341	7,396416644	10,18096093	10,31546779	10,28313661
ILMN_1764271	0,033970396	NXPH1	6,66197127	6,587082316	9,544514952	9,540325456	9,482014742
ILMN_1768534	0,033904236	BHLHB2	6,58131718	6,531379802	9,468595711	9,583684981	9,411352137
ILMN_1808501	0,033878711	SH3KBP1	8,873868883	8,737665151	11,61802076	11,56281385	11,68306542
ILMN_2348788	0,033748649	CD44	6,502768792	6,523204756	9,477572794	9,338761948	9,352727678
ILMN_1658809	0,033723988	SEZ6	6,534096945	6,654185135	9,515387166	9,628238118	9,464616872
ILMN_1676563	0,03336904	HTRA1	9,470810442	9,356100067	12,37606593	12,2798797	12,17493378
ILMN_1776953	0,033247658	MYL9	6,943357759	6,946699361	10,14283174	9,207437327	9,649891791
ILMN_1887357	0,033139756		6,908943885	6,628177628	9,512337807	9,674222986	9,54397059
ILMN_1806023	0,033131337	JUN	8,966935569	8,909988665	11,70346314	11,68570551	11,76342988
ILMN_1659316	0,033109179	HEPACAM	6,50087643	6,528044895	9,121742216	9,165037138	9,41943129
ILMN_2368856	0,033028205	KCNIP1	6,481267913	6,570287313	9,378969928	9,357141029	9,33752523
ILMN_1761788	0,032959136	MOXD1	6,665272222	6,583250097	9,29165747	9,517070281	9,454928391
ILMN_1736742	0,032905962	GLT25D2	8,506484888	8,444433876	10,90185087	11,19219836	11,40069858
ILMN_1729225	0,032760983	SORCS2	6,624555422	6,555937759	9,697830577	9,635966927	9,229680676
ILMN_1765446	0,032742073	EMP3	10,19960636	10,36215758	12,90744312	12,98657499	13,16549151
ILMN_1801516	0,032736101	GPC1	8,477042633	8,690846982	11,49879969	11,46320786	11,36575233
ILMN_1744381	0,032632666	SERPINE1	6,808187641	6,962024272	9,717201662	9,738878501	9,671902817
ILMN_1813741	0,032589291	KCNJ16	6,975662672	6,762803771	9,758296232	9,689478707	9,542711839
ILMN_1660973	0,032342489	GAD1	7,083013728	7,013360152	9,688021311	9,651712058	9,826922284
ILMN_1771376	0,032278097	PEA15	11,33625291	11,22185718	13,97259562	14,00901829	14,01573496
ILMN_1751079	0,032124054	TAP1	7,431689798	7,370675941	9,969919398	10,01011639	10,18238271
ILMN_1675797	0,031945953	EPDR1	8,375707361	8,420086233	11,27990443	10,98304646	11,06597696
ILMN_2108735	0,031927106	EEF1A2	9,386142036	9,487555767	11,80525708	11,79628513	12,31727638
ILMN_1795298	0,03174516	GPER	6,574690943	6,590370149	8,966809624	9,155233037	9,407970405
ILMN_2041101	0,031591587	ANXA2P1	6,994457753	6,795325418	9,849908034	9,519782154	9,433379047
ILMN_1655842	0,031476571	LOC442597	8,125232682	8,12892362	10,96489084	10,81414469	10,74259847

ILMN_1745471	0,031381466	IRF9	7,671978145	7,631753127	10,29270309	10,29818847	10,32083081
ILMN_1769245	0,031177596	GLIPR1	6,760097583	6,761074987	9,528453634	9,650132807	9,359850327
ILMN_3310065	0,031104324	SFTA1P	6,474524531	6,483086878	9,16663111	9,148595309	9,108288082
ILMN_1810782	0,031063316	SH3KBP1	9,499437635	9,382775923	12,05544211	11,71878468	12,07569669
ILMN_1754660	0,031055054	ZCCHC24	7,410229613	7,496068963	9,968939155	10,11491615	10,15986797
ILMN_1747227	0,03097592	ADORA1	8,299416787	8,28685892	10,60073703	10,74444825	11,05214197
ILMN_2384122	0,030912852	GPR56	10,13547589	10,08686586	12,80985318	12,5484638	12,70735466
ILMN_1772218	0,03072835	HLA-DPA1	6,38636007	6,466161615	9,047489439	8,973212647	9,056727999
ILMN_1725791	0,030664947	PTPLA	8,517698439	8,758271977	11,46204042	11,27212827	11,22011599
ILMN_3256478	0,030381027	LOC100129034	7,992109882	7,821092664	10,40633334	10,52459232	10,47862338
ILMN_1895227	0,030379013		6,633628745	6,680587735	9,167392782	9,082878121	9,283444747
ILMN_1794803	0,030294347	NDP	7,115848698	7,157226215	9,799664188	9,671269213	9,68995598
ILMN_3240957	0,030284868	C2orf80	7,413728267	7,460508162	10,04255236	9,88863173	10,01500551
ILMN_1663399	0,03026327	TIMP4	7,583286495	7,624312621	10,09616756	10,0063105	10,22190832
ILMN_3307791	0,030190564	FAM69A	7,519474881	7,805726243	10,56367361	10,45778046	10,16446966
ILMN_1695432	0,030167411	TPST2	8,228973851	8,354666038	10,99121579	11,07561183	10,82908814
ILMN_1795963	0,029995648	OKL38	6,896682921	7,023579824	9,208179739	9,440997789	9,656532434
ILMN_1757467	0,029979022	H1F0	7,997111344	8,028200764	10,80712932	10,35424091	10,48248569
ILMN_1691892	0,029976524	TAGLN2	6,630249812	6,678334752	9,438794127	9,374829838	9,12015114
ILMN_1701514	0,029843444	TRAF3IP2	7,35398251	7,432523096	9,7744762	10,02169472	10,0049354
ILMN_1790529	0,029561891	LUM	7,080616865	7,138579309	9,62353397	9,854339816	9,629028581
ILMN_1723481	0,029554056	CHST3	8,354481589	8,305306909	10,56469622	10,94101449	10,93238714
ILMN_2384056	0,029525097	GPER	6,48472324	6,525396714	8,848269325	9,094436585	9,085638505
ILMN_1810604	0,029393108	ELMOD1	6,901233693	6,965419705	9,399624138	9,385093931	9,461211346
ILMN_1732154	0,029360001	BCAN	6,508319555	6,395999856	9,105538494	8,710801735	8,869591279
ILMN_1736567	0,02934666	CD74	6,728803177	6,489127978	9,221586941	8,968408274	9,006571783
ILMN_1734543	0,029272977	PTPRE	6,959004302	6,788894154	9,197870154	9,516544623	9,379219035
ILMN_1775486	0,029268611	SSPN	7,315417864	7,337981421	9,988422826	9,809524994	9,754915967
ILMN_2324734	0,029224886	EYA4	6,29714414	6,375507171	8,766268758	8,753922392	8,862595485
ILMN_1734276	0,029120368	PMEPA1	7,640916643	7,847137378	10,01941599	10,31976532	10,34135853
ILMN_2087702	0,029115826	MYH9	9,895999503	9,579321267	12,35990998	12,31648679	12,07887282
ILMN_1716869	0,028875321	GPM6A	9,099143338	8,949447307	11,56701781	11,48223402	11,41032579
ILMN_1666089	0,028769418	OLIG1	6,933643259	7,212837588	9,451626863	9,575864135	9,609421466
ILMN_1713764	0,028756925	LOC440928	6,760631474	6,861639078	9,377459578	9,302870202	9,232813958
ILMN_1675387	0,028578305	LIMS1	7,625298231	7,695262106	10,08336102	9,854215247	10,11621967
ILMN_2389876	0,028542502	TGFB1I1	8,499390763	8,66657512	11,18167292	10,84683991	10,98989503
ILMN_230984	0,028440376	FXYD5	7,054273469	7,155691476	9,500679889	9,459856773	9,557254046

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ILMN_1730645	0,028377717	TMEFF2	7,813898364	7,763512674	10,37926864	10,19968699	10,12193519
ILMN_1709750	0,028351033	SUSD1	7,733367591	7,711230315	10,20051884	10,11732161	10,10193599
ILMN_2387952	0,028217673	FAM134B	6,583780228	6,550752003	9,018444149	8,741807887	8,945883228
ILMN_1686362	0,02816865	CRYBA4	6,491410368	6,503702968	8,809169103	8,815313377	8,929286055
ILMN_1795442	0,02788771	LAMA4	7,158745315	7,178857382	9,187897855	9,338644906	9,683173122
ILMN_1810628	0,027856801	KIAA0367	6,825278071	6,544009494	9,129613571	9,118519427	8,95483273
ILMN_2065690	0,027823043	GRAMD3	6,572999801	6,528688444	8,976638882	9,004859319	8,880385381
ILMN_1713807	0,027772341	MAN1C1	7,778388264	7,744099871	10,08194529	9,923039858	10,13534528
ILMN_1744949	0,027752002	RHOBTB3	9,971978262	9,973942614	12,35152097	12,2887626	12,3272993
ILMN_2400947	0,027568839	CUGBP2	7,608589618	7,538446482	9,754817947	9,999766711	9,958952106
ILMN_1794501	0,027466402	HAS3	6,789297814	6,689473942	9,043599578	9,210865753	9,058097801
ILMN_1667966	0,027302387	C1orf24	6,844633169	6,773493798	9,305209658	9,158084133	9,046335973
ILMN_1682717	0,027294413	IER3	8,728120143	8,795491784	10,99284494	11,07326313	11,13257511
ILMN_1769299	0,027269133	MTMR11	7,110887275	7,000982665	9,14354742	9,345539186	9,435618695
ILMN_3288018	0,027243958	LOC645323	7,593330058	7,553587722	10,0202184	9,772201999	9,834261127
ILMN_2329679	0,027217623	TPST2	9,350226015	9,313740774	11,4794784	11,672802	11,69939857
ILMN_2407434	0,027193823	DCLK2	7,79432516	7,519564195	9,747197061	9,952688145	9,986868312
ILMN_1730931	0,027148228	RUFY3	8,581068093	8,573453052	10,87052757	11,04639968	10,88413805
ILMN_1795251	0,02713816	SPARCL1	8,007266581	7,764041436	10,18056173	10,05825294	10,14319946
ILMN_1771599	0,027111046	PLOD2	8,022372836	7,949550206	10,2710749	10,48877535	10,27455761
ILMN_1743714	0,027109693	CARD10	7,501609613	7,460414608	9,767468556	9,93494264	9,777885084
ILMN_2346479	0,026941643	HOMER2	6,831740633	6,738512476	8,861686535	8,97124756	9,137238151
ILMN_1779252	0,026921786	TRIM22	6,46638064	6,626244025	8,916429519	8,991178064	8,8380805
ILMN_1813530	0,0268872	AGT	6,461014937	6,455510217	8,693662202	8,699820351	8,763380996
ILMN_3243366	0,026881646	C2orf55	6,462399562	6,372264408	8,739004803	8,563518302	8,671923135
ILMN_2309156	0,026583377	PMEPA1	7,25650742	7,33819859	9,397696838	9,52560117	9,63783821
ILMN_1758049	0,026543202	NFIA	6,429216108	6,306957639	8,80522892	8,630441921	8,527319362
ILMN_2361768	0,026540061	CHRNA1	6,406675266	6,388628276	8,894969346	8,863831379	8,552445141
ILMN_1792455	0,026502671	TMEM158	11,91212558	11,68930558	13,82588133	13,89627861	14,0916397
ILMN_2352097	0,026466581	GPR56	10,55387744	10,47211152	12,75471055	12,62735252	12,75126099
ILMN_1742846	0,026366447	DIRAS2	6,794803483	6,758221383	8,883902811	9,017232879	9,059988511
ILMN_1784447	0,026318707	PLCE1	6,604682866	6,64690363	8,817051813	8,739809123	8,894912811
ILMN_1738578	0,02631104	FILIP1L	6,878631606	6,751742047	9,03772825	9,026190403	9,027895929
ILMN_2333219	0,026301564	ACHE	6,648257778	6,630185362	8,719426948	8,876011618	8,92991663
ILMN_1753502	0,026273136	IGSF11	6,948038308	6,826001688	9,097454507	9,210231855	9,097341724
ILMN_2139761	0,026231312	LIMCH1	8,69450637	8,561921506	10,89962578	10,98474219	10,80713067

ILMN_1714700	0,026219082	TRIB2	9,094526317	9,055037998	11,05194112	11,31016836	11,38937967
ILMN_1712400	0,026214729	SERPINB6	8,652647319	8,78055215	10,8925687	10,99958558	10,99424512
ILMN_2218208	0,026205881	SPARCL1	8,23529688	7,996587992	10,40193945	10,08968269	10,27259026
ILMN_1745299	0,026165203	FABP7	12,20665564	12,09758412	14,20102243	14,36953114	14,41707374
ILMN_1684959	0,026151886	ASTN1	7,231340673	7,203549187	9,465245199	9,442311103	9,424568315
ILMN_1738552	0,025978188	SLC1A3	9,71072318	9,650440247	11,83153098	11,79035031	11,89984235
ILMN_2360710	0,025969618	TPM1	9,923353846	9,749861405	12,12998232	12,13355521	11,96822112
ILMN_2170949	0,025936461	SNX10	6,611264	6,769774912	9,041599831	8,852693111	8,8798205
ILMN_1746085	0,025903351	IGFBP3	8,813499461	8,692207002	11,08742016	11,09290681	10,87195029
ILMN_1766411	0,025900896	AP1S2	10,42585379	10,56296727	12,73519692	12,88595902	12,70910174
ILMN_1767337	0,025826196	SFXN5	7,570058877	7,627651646	9,700206554	9,751929863	9,844903877
ILMN_2199389	0,025662918	VIPR1	6,859462212	6,670756082	8,769545916	8,860991595	8,971338992
ILMN_1682034	0,025651651	HEY2	6,41952228	6,46211478	8,51707023	8,494847776	8,675385116
ILMN_2120273	0,025536939	AP1S2	10,68334421	10,80339325	12,96212061	12,91985223	12,92538632
ILMN_1810725	0,025470294	FAM129A	6,640036746	6,696756774	8,812381454	8,896567779	8,85362662
ILMN_2355831	0,025393407	FHL2	8,926002029	8,879912234	11,20340578	11,17748921	10,99396439
ILMN_1705187	0,025363892	LPPR5	7,122519619	6,997685519	9,147643538	9,037034145	9,217859261
ILMN_1805992	0,025361446	KIAA1598	7,394283714	7,341514221	9,590931491	9,59464099	9,48366771
ILMN_1719449	0,025343021	DCLK2	7,598604863	7,840637105	9,886778512	9,86140342	9,927593458
ILMN_1733176	0,025310526	LIMS1	9,79417258	9,573005465	11,83771125	11,66934254	11,78703751
ILMN_1668507	0,025257695	DDAH1	8,277685349	8,312388672	10,68814462	10,70099804	10,34993168
ILMN_1751901	0,025185674	TMEM163	6,637705054	6,562369346	8,688479778	8,637758287	8,74654646
ILMN_1724686	0,025165992	CLDN1	6,556180022	6,53934811	8,590451013	8,688598532	8,71997593
ILMN_1668411	0,025161785	FHL2	8,158734242	8,2898817	10,30282387	10,57694553	10,41107855
ILMN_1730906	0,025124808	FILIP1L	6,79597512	6,861926423	8,783668334	8,903433837	9,050967515
ILMN_2143795	0,025116312	MGC4677	10,42218438	10,44700183	12,52382416	12,52705942	12,59490153
ILMN_2306630	0,025075543	SP8	7,282396547	7,141281996	9,304957605	9,283282078	9,326065067
ILMN_1743130	0,025059048	PTGFRN	8,751678387	8,642083185	10,70677609	10,98477043	10,84172025
ILMN_1917341	0,025037519		7,737562608	7,775462693	9,739509625	10,02010084	9,944657046
ILMN_2237428	0,024976516	SCD5	9,491146575	9,513870414	11,45012085	11,55668704	11,70010124
ILMN_2390299	0,024912189	PSMB8	6,498418185	6,573453961	8,68053223	8,817382155	8,656948729
ILMN_2336609	0,024892683	SYTL2	7,841230159	7,749150884	10,00811819	10,0516191	9,848388142
ILMN_1661755	0,024859696	FAM129B	9,981627478	9,79193712	11,77081699	11,98079422	12,0422873
ILMN_1688500	0,024823974	PCDH10	6,897689818	6,911760149	9,008768285	9,187095535	9,015471472
ILMN_1716687	0,024705394	TPM1	9,803983492	9,818403304	12,02499123	12,06645104	11,86775793
ILMN_1798256	0,024687066	UPP1	9,157110074	9,148006728	10,94865022	11,13128879	11,36728676
ILMN_172165	0,024541162	RSU1	7,951048333	7,981725161	10,07030904	9,747173915	10,06287311

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ILMN_1701558	0,024525525	MAP1A	7,186715772	7,198712712	9,303306752	9,421680856	9,266266223
ILMN_1657679	0,024524046	VAV3	6,737259677	6,776016529	8,819044507	8,821252781	8,860011242
ILMN_2374865	0,02445151	ATF3	8,303482063	8,191875236	10,27538313	10,45061431	10,31506458
ILMN_1805737	0,024436165	PFKP	9,069332687	9,042363388	11,27631985	11,24440629	11,06969913
ILMN_1652631	0,024430552	GLIPR2	10,13047185	10,21788842	12,10606324	12,00585692	12,33481229
ILMN_1810864	0,02436608	PMP22	6,602213609	6,505425843	8,586604641	8,536147068	8,619756905
ILMN_1906187	0,024360911		7,047545459	7,055328583	9,048456527	9,172908098	9,150494897
ILMN_1786444	0,024285455	LPL	10,16671702	9,97352733	12,29196765	11,99227433	12,03402787
ILMN_1737394	0,024238458	LMNA	8,180142734	8,490667705	10,49594839	10,73689556	10,42220793
ILMN_1713347	0,024237831	CHL1	6,471643454	6,514834622	8,14987411	8,189200135	8,728074088
ILMN_1803788	0,024237304	LGALS3	6,615603288	6,652863578	8,920511266	8,464852213	8,625948566
ILMN_3238560	0,024210044	IFI27L2	8,429620439	8,540129418	10,70834668	10,35186384	10,51329636
ILMN_2077905	0,024180274	PTGFRN	7,912700725	7,86258535	10,36699563	10,11555049	9,766068697
ILMN_1810054	0,024136065	CNN1	6,442185403	6,495496671	8,668114815	8,651209891	8,47416482
ILMN_1742332	0,023944488	KCTD12	6,946882011	7,175532647	9,077814757	8,898250214	9,16474246
ILMN_1756814	0,023899115	PTPRE	6,518516657	6,571164706	8,425189764	8,095808536	8,661564676
ILMN_2361862	0,02382553	VLDLR	7,660606418	7,742028565	9,699451263	9,889845672	9,751395633
ILMN_2397646	0,023757233	GPM6A	7,569292085	7,62277835	9,56164267	9,777257973	9,643704583
ILMN_2216637	0,023697557	STK32B	6,794044809	7,080849429	8,917045057	9,098705698	9,029275994
ILMN_1655595	0,023665985	SERPINE2	10,72789421	10,51294636	12,523781	12,55556574	12,62463992
ILMN_1689431	0,023647674	APCDD1L	6,491681878	6,539695345	8,328464738	8,492925877	8,613414833
ILMN_2352303	0,023564625	RASSF2	9,171333984	9,198176865	11,46604472	11,22979725	11,08871468
ILMN_2360730	0,023559515	CAV2	6,722857079	6,794435294	8,731476401	8,605510676	8,794934939
ILMN_1696749	0,023546527	LMNA	9,738440091	9,764417812	11,45386926	11,80010196	11,8712418
ILMN_2053281	0,023494377	C14orf149	7,221291405	7,242542711	9,23176639	9,139755782	9,235966729
ILMN_1752249	0,02344252	FAM38A	7,435776237	7,32345321	9,298240868	9,631368546	9,365382567
ILMN_1792978	0,023432425	HAS2	6,513219075	6,520862563	8,581360447	8,57210233	8,482054325
ILMN_1721876	0,023429276	TIMP2	10,88345264	10,60101673	12,65551159	12,91764506	12,69073857
ILMN_1737308	0,023390726	GLRX	8,142560073	8,263118559	10,47522889	10,23367498	10,11193298
ILMN_1766054	0,023342906	ABCA1	9,591585857	9,488127486	11,36477981	11,44443873	11,56255926
ILMN_3251550	0,02331459	PHLDA1	7,289535272	7,275426152	8,982539944	9,231761232	9,368281257
ILMN_1720998	0,023297393	CA12	6,963256065	6,924775927	8,483225328	8,572558591	9,092702372
ILMN_2396875	0,023242987	IGFBP3	8,256687811	8,376263559	10,2822649	10,42156697	10,32098619
ILMN_1738657	0,023242054	SATB2	7,388778489	7,083768731	9,199940318	9,393357056	9,137898142
ILMN_1773395	0,023229859	RDH5	7,286475096	7,157678199	8,963720049	9,186024939	9,254148449
ILMN_3271398	0,023214578	LOC100130897	6,506408859	6,539901531	8,306264152	8,367734933	8,580867534

ILMN_1807016	0,02315901	LHX2	6,466813943	6,51250486	8,279334322	8,227927814	8,544450071
ILMN_1716651	0,023071358	RUNX2	6,444244004	6,358967388	8,41754093	8,526572012	8,317126622
ILMN_2381197	0,023011939	RNF19A	7,363952874	7,775556346	9,361330118	9,755644498	9,679480071
ILMN_1685608	0,022975569	NPTX2	9,102055599	8,897591193	11,0526972	11,12168296	10,86153599
ILMN_1752046	0,022919554	SH2B3	8,306448432	7,853431275	10,05872319	9,838560553	9,91429368
ILMN_2155816	0,022918862	DIRAS2	6,659496675	6,572641395	8,95334659	8,568426796	8,397249965
ILMN_1815673	0,02289758	DKK3	10,48812163	10,21012503	12,45458981	12,10905237	12,17549246
ILMN_1697176	0,022880424	GFAP	6,509728602	6,48802706	8,586680086	8,455932641	8,384942903
ILMN_1743445	0,022873162	FAM107A	7,83545216	7,961189882	9,644883439	9,469817369	9,959114987
ILMN_1747271	0,02287259	ATP1B2	7,410781633	7,534238676	9,599560543	9,576601493	9,372532188
ILMN_2398159	0,0228272	DKK3	10,89576271	10,76907108	12,73916462	12,58538051	12,76173079
ILMN_1779147	0,022768577	ENC1	9,976444099	9,933719222	12,03803278	11,6952065	11,83144263
ILMN_1765796	0,022746721	ENO2	7,845743786	7,9114854	9,87302762	10,07780393	9,796912555
ILMN_1723912	0,022733671	IFI44L	6,577640611	6,610669174	8,410341361	8,297182623	8,586105389
ILMN_1673363	0,022700892	CD97	7,358283184	7,349841089	9,076570362	9,177981342	9,363173382
ILMN_1781010	0,022667942	ARHGEF3	7,130548531	7,068114387	8,99027617	8,904620666	9,028699476
ILMN_1711888	0,0226621	COBL	6,704323568	6,798222579	8,561942575	8,791140051	8,740611317
ILMN_1682929	0,022573389	SYTL2	6,900261668	6,850058359	8,863251351	8,908453797	8,752580117
ILMN_1777397	0,022569476	MSX1	7,115979551	7,142003448	9,068674498	8,898180788	9,050478576
ILMN_1740319	0,022500155	IFI27L2	7,807616314	7,622366661	9,922706529	9,397970344	9,47919636
ILMN_1671703	0,022477126	ACTA2	12,38426848	12,44066199	14,16068373	14,42986588	14,39502073
ILMN_1790881	0,022449083	HNMT	7,210362928	7,172854335	9,247288041	9,095531237	9,035522411
ILMN_1749792	0,022408528	SORBS1	6,849576409	7,03535796	8,877004746	8,881317759	8,879688473
ILMN_2112128	0,022397734	MAPK4	7,118681783	7,013797847	9,018137297	9,240010228	8,918674575
ILMN_1739428	0,022360786	IFIT2	6,575399978	6,634037437	8,601986769	8,53678347	8,482735416
ILMN_1677261	0,022335382	LZTS1	7,356024684	7,416806184	9,384389173	9,296643786	9,261795995
ILMN_2140059	0,022294157	LAMA4	6,996565133	6,770087742	8,868834054	8,664077621	8,693987441
ILMN_1713990	0,022276136	TRIP6	9,635383176	9,904473829	11,77439219	11,7292987	11,68477876
ILMN_1721022	0,022261929	SHC1	9,59734649	9,841849011	11,62750305	11,82701916	11,6586563
ILMN_1693319	0,02224152	EYA4	6,48025025	6,408054356	8,282244429	8,282397057	8,339436171
ILMN_1730229	0,022191335	CGNL1	7,701636309	7,464481629	9,54232024	9,558634625	9,38241078
ILMN_2230025	0,022190727	PDLIM3	7,08928331	7,094496955	9,075823308	8,935491568	8,944066479
ILMN_1692077	0,022186436	MXRA7	8,638748651	8,761423563	10,44277425	10,2182828	10,68134456
ILMN_1658709	0,02214426	LAMB1	7,946051905	7,523995084	9,578024697	9,927349882	9,521574612
ILMN_2169439	0,022138407	ITGAV	7,950161106	8,023717142	9,962633045	10,0986658	9,844102723
ILMN_3273885	0,022060596	LOC100127983	7,176229006	7,115501307	8,895178701	9,237764958	9,047399838
ILMN_172680	0,022018498	BHLHB3	6,466509045	6,455864274	8,215876085	8,171899713	8,3799468

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ILMN_1692398	0,021939349	CNTNAP1	7,680365318	7,594668905	9,404429933	9,444767822	9,520755833
ILMN_1667374	0,021926651	C14orf149	6,993194232	6,912998626	9,02983588	8,583183483	8,724951802
ILMN_1659206	0,021881815	RARA	8,455297712	8,42941406	10,58717085	10,17794619	10,19308175
ILMN_1808326	0,021877576	NPAS3	8,011975248	7,925669368	9,574802781	9,803814469	9,904451352
ILMN_1890614	0,021870105		8,216571824	8,146962255	10,01888781	9,867422368	10,03808172
ILMN_1695311	0,021854295	HLA-DMA	7,168117483	6,877029451	8,509982356	8,665611429	8,95707993
ILMN_2317923	0,0218374	TMEM132A	8,853412719	8,959548316	10,75936454	10,99065831	10,78289584
ILMN_1659688	0,021831754	LGALS3BP	8,109400759	8,131274842	9,927675691	9,869626834	10,0032094
ILMN_1687583	0,021788962	CAV1	6,679612847	6,777935226	8,605278174	8,69479176	8,592135011
ILMN_1676088	0,021753847	MSRB3	7,932348372	7,893913107	9,887753073	9,84466823	9,703393286
ILMN_1701998	0,02175339	AFAP1	7,609900898	7,424740123	9,110969527	9,359734753	9,418685517
ILMN_1728107	0,021734204	GNG7	8,863355271	8,720266957	10,27194107	10,40060796	10,75146008
ILMN_1667081	0,021730573	CCND2	10,60408515	10,67832672	12,41631425	12,55852214	12,53187921
ILMN_1696657	0,02168454	LRRN2	9,489072621	9,319224558	10,90606635	11,02749228	11,34291488
ILMN_1734950	0,021666702	LOXL1	7,05250323	7,098918139	9,067607666	9,062150686	8,867574997
ILMN_3298400	0,021630897	LOC731954	7,21391061	6,974590191	8,883417716	9,15219084	8,887653934
ILMN_1678757	0,02158873	BCYRN1	9,722410958	9,93349462	11,95599558	11,57077159	11,60675499
ILMN_2158705	0,021484618	ACYP2	7,534607976	7,605108449	9,57735093	9,190281594	9,351158435
ILMN_1707695	0,021402675	IFIT1	7,5073203	7,571568788	9,265948432	9,184554154	9,414612632
ILMN_1789244	0,021397168	SOX8	10,08773245	9,955739379	11,51622293	11,84528148	11,93181434
ILMN_1660732	0,021394321	PPP2R2B	9,171363082	9,218545494	10,92531796	11,17296575	11,05376257
ILMN_1684289	0,021370735	PNPO	7,900670554	8,087351789	9,589648854	9,636263723	9,944281062
ILMN_2357781	0,021345787	ZNF436	7,067221993	7,203248025	8,946521846	8,954168887	8,9834224
ILMN_1773567	0,021323386	LAMA5	10,48315758	10,30546951	11,97199328	12,1196627	12,25631416
ILMN_2232177	0,021301822	ACTN1	10,0768513	10,02544873	11,63000575	11,96508424	11,93449625
ILMN_1725427	0,02128603	B2M	10,45778602	10,27676017	12,3868453	12,39021603	12,04813478
ILMN_1715458	0,0212704	PCDH10	7,181349214	7,00409767	8,785799694	8,980477713	8,899344245
ILMN_1770084	0,021231191	TACC1	10,50214811	10,1766573	11,86610313	12,21261853	12,16958829
ILMN_2413816	0,021226741	GRB14	6,608982133	6,513871459	8,463310074	8,347714783	8,307374659
ILMN_1670881	0,021219517	CHST6	6,606072078	6,681018425	8,373450811	8,502335029	8,491870824
ILMN_1671404	0,021203249	SVIL	9,217793449	9,066581025	10,99567294	11,08591411	10,88522277
ILMN_2408576	0,021159696	FAM129B	7,152663326	7,176139995	8,939933943	9,179804605	8,970723159
ILMN_1691747	0,021126905	KHDRBS3	9,163646016	9,008545014	10,93525123	10,88253523	10,82525901
ILMN_1716264	0,021121189	ANKRD1	6,755771613	6,735092627	8,618016449	8,547514938	8,506950786
ILMN_1730945	0,0211112	C19orf4	7,026942405	7,05108052	8,795553468	8,848179396	8,85331246
ILMN_1721833	0,020956038	IER5	8,563809786	8,624369806	10,28211613	10,48168692	10,42224995

ILMN_1793630	0,020940116	SLC4A3	6,567382942	6,597568249	8,280725703	8,449804211	8,398385923
ILMN_1800412	0,020912875	BMP1	7,744686068	7,842020913	9,771602206	9,511434641	9,520690848
ILMN_1695299	0,02091058	PDLIM3	6,793705024	6,806339733	8,44295732	8,287267134	8,640604009
ILMN_1780334	0,02090557	KCNJ2	6,952318198	6,957037703	8,929116684	8,756768156	8,657826429
ILMN_1660871	0,020899763	NEK6	8,194898727	8,236902589	9,732657589	9,967393632	10,10155195
ILMN_1660691	0,020857288	RAB31	11,01053649	11,07300206	12,75170589	12,81456011	12,85411132
ILMN_1652549	0,020816513	DTNA	6,710727609	6,702518021	8,401052759	8,483950049	8,502647986
ILMN_2371055	0,020779468	EFNA1	6,702550821	6,712757982	8,486615464	8,260719275	8,478743567
ILMN_1680618	0,020759756	MYC	6,973357811	6,772452657	8,50068206	8,780944738	8,636919773
ILMN_1752299	0,020678514	RAB6B	7,472732073	7,336598152	9,00324077	8,925505387	9,197221976
ILMN_1713496	0,02067496	ST3GAL5	7,890710764	7,912570773	9,524860291	9,487372167	9,720432402
ILMN_2394777	0,020633217	DTNA	6,593659625	6,77986624	8,428845237	8,40819622	8,491106059
ILMN_1743275	0,020576746	SH3RF3	6,553239623	6,743193448	8,389540865	8,547884814	8,441478754
ILMN_1784602	0,020541961	CDKN1A	12,33931276	12,20762854	13,91231121	14,00128428	14,02958676
ILMN_1813179	0,020534487	LOC401074	6,726168378	6,817309096	8,384954787	8,392068505	8,593168119
ILMN_1812859	0,020485084	GAD1	6,638930308	6,811428179	8,59272533	8,554455532	8,457804757
ILMN_2228180	0,020431911	MSRA	8,366837811	8,412209175	10,01365462	9,826992754	10,18931355
ILMN_1670870	0,020410151	ALCAM	7,674523731	7,558887216	9,64461467	9,259379319	9,216391852
ILMN_1738401	0,020404402	FOXC1	8,186757781	8,307266285	9,463574261	9,620646756	10,21712244
ILMN_2083469	0,020351932	IRS2	8,198954244	8,26782024	10,03864794	10,1184614	9,946957867
ILMN_1752622	0,020338896	PROX1	7,065031085	7,084043413	8,733032036	8,728880177	8,836915106
ILMN_1774836	0,020291973	PLOD3	8,999934935	8,941999805	10,86123086	10,75695586	10,61824623
ILMN_1663042	0,020291877	SDC4	7,060251417	7,279776961	8,668508303	9,099915224	9,026506863
ILMN_1699071	0,020261682	C21orf7	6,645236283	6,734120496	8,402641869	8,647129148	8,429917089
ILMN_1734153	0,020212703	GDI1	8,561929761	8,637541081	10,58646421	10,21819712	10,2382513
ILMN_1705814	0,020166682	KRT80	6,516979032	6,488155655	8,254982352	8,259878358	8,194708162
ILMN_3263225	0,020132038	LOC100130506	7,701812742	7,882073251	9,396190794	9,300708599	9,59319756
ILMN_2084836	0,020091897	CORO2B	7,357915144	7,17863842	8,972794302	9,06890601	8,931641447
ILMN_1766539	0,020072303	LOC643319	6,858951468	6,816064547	8,647938962	8,489787351	8,496118551
ILMN_3228688	0,020049627	LOC730415	6,538779493	6,515513374	8,192299641	8,049208073	8,24685172
ILMN_1683792	0,02003043	LAP3	8,835565953	8,909293352	10,76373103	10,68685171	10,51863857
ILMN_1689456	0,020023836	ZBTB20	8,379033596	8,354149129	10,10040276	9,921913267	10,05566183
ILMN_1766675	0,020005329	CDH6	7,70368434	7,585261348	9,313366037	9,375696039	9,327649188
ILMN_1696643	0,01999847	TLN1	8,077682739	7,841290452	9,896895983	9,479905747	9,518987904
ILMN_1722872	0,01998049	MYH9	11,06195586	10,71946186	12,45396165	12,57706321	12,55910502
ILMN_1814369	0,019924337	C21orf62	7,781427126	7,680931307	9,341962926	9,247339686	9,437576316
ILMN_177168	0,019912008	RAB7B	6,460492533	6,424007905	7,963705529	8,142681876	8,190877841

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ILMN_1773337	0,019908895	DKK1	6,810028375	6,745693461	8,565457727	8,500121503	8,418288474
ILMN_1656335	0,019908228	RIT1	7,897652113	7,997933657	9,753248341	9,971602468	9,611264173
ILMN_3302919	0,019901112	MYOF	8,008592232	8,19451109	9,910399001	9,70403611	9,796579407
ILMN_1758626	0,019867305	IDS	8,075722698	8,219391525	9,884881344	9,980722833	9,848227054
ILMN_1764769	0,019838376	VWA5A	7,107072747	7,29253211	8,756527364	8,890862922	8,979305126
ILMN_1718063	0,019808934	LIPA	9,073427802	9,100851302	10,86673643	10,69331743	10,74438293
ILMN_2400219	0,019807973	SRI	8,490235385	8,774689203	10,4794359	10,48818147	10,31788715
ILMN_1693014	0,019804142	CEBPB	9,248651125	9,300458429	10,76666593	10,80272771	11,04792639
ILMN_2337263	0,019788123	PKIB	6,71557699	6,729920969	8,372349855	8,415827653	8,420542603
ILMN_1669032	0,019772831	PPIC	7,136851952	7,215981601	8,775537669	9,04063687	8,901241335
ILMN_1742450	0,019732504	TAPBP	8,918276029	8,954428384	10,58043217	10,80336459	10,62948669
ILMN_1731353	0,019729583	CHPF	7,667056056	7,560687551	9,285086712	9,233341594	9,269515478
ILMN_1701025	0,019724535	EPHX1	7,534104054	7,333037539	9,436323486	8,94836693	8,944150478
ILMN_1727790	0,019720667	KHDRBS3	7,219270085	7,297983448	9,292647392	8,890277198	8,820336377
ILMN_1699525	0,01971194	SRI	8,58437323	8,775508591	10,35819322	10,60264199	10,39305872
ILMN_1742544	0,019693828	MEF2C	6,431681888	6,480452532	7,922182102	7,865851228	8,228934231
ILMN_1677765	0,019659724	LRP8	8,120722208	8,05527561	9,678501172	9,77850834	9,773476691
ILMN_2381899	0,019624772	OPTN	6,947982265	6,877280799	8,648060769	8,366550535	8,545381042
ILMN_1732782	0,019607472	SCN2A	6,452204759	6,456618521	8,000387377	7,945373108	8,173658675
ILMN_1800638	0,019586124	CUGBP2	6,902290714	6,870781562	8,394804154	8,462654694	8,605914392
ILMN_2380698	0,019550159	DSTN	9,907613952	9,992230651	12,11313576	11,72909796	11,43998724
ILMN_2391150	0,019519742	FILIP1L	6,951050638	6,840963558	8,350895171	8,56835799	8,605771239
ILMN_2332553	0,019516637	MSRB3	7,618088145	7,45130878	8,914620525	9,018048251	9,264431504
ILMN_1749540	0,019504954	RBM20	6,552646673	6,600715496	8,342059051	8,243150049	8,205982066
ILMN_1664922	0,019441251	FLNB	9,220589921	8,968445289	10,62112393	10,96634909	10,72789481
ILMN_2403946	0,019436611	FEZ2	9,407859629	9,296153735	11,03190438	11,16645155	10,96251299
ILMN_1810289	0,01942337	FER1L3	8,858010801	8,710565048	10,32113995	10,42996964	10,44369588
ILMN_1704154	0,019416856	TNFRSF19	9,531386287	9,433608446	10,90602614	11,19710967	11,19376534
ILMN_1657149	0,019413076	C8orf46	7,130620691	7,072147877	8,544483231	8,501756849	8,823476324
ILMN_2097793	0,019408209	ZBTB4	8,342154109	8,418588831	10,09022983	10,09169605	10,02420093
ILMN_1808568	0,019399459	PYCR2	8,718936532	8,840768878	10,58231995	10,43469603	10,40047725
ILMN_1716246	0,019378158	FRZB	8,392317918	8,322065049	10,03723825	10,03220645	9,974634777
ILMN_1683148	0,019374789	PRICKLE2	7,625330885	7,473165803	9,165957419	9,161095336	9,17222152
ILMN_1792256	0,019368469	TBX2	6,389336468	6,357655074	8,026211418	7,992900684	8,01122647
ILMN_2384241	0,019343024	TGFBR2	7,233064456	7,167737297	8,759788836	8,814314051	8,861937275
ILMN_1810324	0,019336292	SGCB	7,324021337	7,256039147	8,993781476	8,774518248	8,899694725

ILMN_1706426	0,019333902	DSTN	10,49758847	10,60367464	12,47061064	12,06476327	12,11991157
ILMN_1739050	0,019327508	PIPOX	6,907108185	6,951490809	8,826687827	8,691878734	8,483309309
ILMN_1776363	0,019314269	ANK2	6,67180513	6,719332736	8,555320728	8,414446602	8,26455677
ILMN_1737089	0,019291007	CAPN5	8,430565135	8,396409804	9,852837802	10,04062184	10,12141283
ILMN_1815445	0,01926673	IDS	7,87797279	8,058607207	9,66398762	9,691895438	9,624943579
ILMN_3231944	0,019263226	LOC100130516	10,61356965	10,85143683	12,79313234	12,35395289	12,26850488
ILMN_1759330	0,019260794	KIF1A	10,61806778	10,39743188	11,98694941	11,93320404	12,15898152
ILMN_3244176	0,019232749	LOC399959	6,74717355	6,834752209	8,524796984	8,501166335	8,407393514
ILMN_1783276	0,019217122	NEXN	7,208384676	7,003845038	8,779527636	8,652657735	8,678397635
ILMN_2038775	0,019190501	TUBB2A	11,11596147	11,04470515	12,77689752	12,76737554	12,66880541
ILMN_1794914	0,019185916	UBTD1	8,31087794	8,54364014	10,09651904	10,14004789	10,09721126
ILMN_1734290	0,019169672	MAPRE3	7,351528806	7,364223009	9,048379143	8,956376068	8,968358082
ILMN_1811682	0,019166989	CYLN2	7,99025406	7,839535858	9,560899566	9,442635596	9,50500996
ILMN_1812327	0,019061451	RNF19A	6,815458293	6,926948645	8,52829224	8,37768108	8,508038861
ILMN_1800951	0,019060236	ATXN1	7,673278375	7,308056653	9,020232799	8,981188991	9,0615813
ILMN_1774330	0,019053153	WSCD1	9,627753919	9,419044284	11,06981847	11,3134435	11,11587449
ILMN_2379644	0,018979694	CD74	6,37160009	6,403414119	8,227962603	7,995689378	7,923468399
ILMN_1695290	0,018945487	FERMT2	10,10683156	10,03794653	11,63233073	11,70031918	11,68546626
ILMN_1658425	0,018944942	DAG1	10,18573445	10,0194252	11,60719384	11,67316966	11,71490299
ILMN_1662618	0,018916774	SQSTM1	10,86898131	10,93878383	11,99503502	12,51057518	12,7241416
ILMN_1690733	0,018902758	EGF	6,60814154	6,645810525	8,331378673	8,274178353	8,205240241
ILMN_2283597	0,018877922	FAM134B	6,744340612	6,687246247	8,145487969	8,1199718	8,379455617
ILMN_1809522	0,018861061	NACC2	7,782025289	7,906732133	9,015052225	9,384977507	9,642670182
ILMN_1798700	0,018841375	CHRNA1	6,792015686	6,612164822	8,490643785	8,663226994	8,179411399
ILMN_1849013	0,018839666		8,658752663	8,902334328	10,43282611	10,58865103	10,41517844
ILMN_2319913	0,018837364	DGKA	6,778611696	6,991760807	8,419054337	8,432549223	8,564701131
ILMN_1788783	0,01881779	TRAM2	8,042294481	7,829374083	9,891143106	9,767177502	9,34317839
ILMN_1764571	0,018815614	ARHGAP23	7,560274708	7,43029752	9,156256779	9,154043069	9,038473174
ILMN_1697491	0,018801186	FLJ14213	7,245047276	7,170736362	8,782077134	8,61608668	8,803221809
ILMN_1747195	0,018786952	PSMB8	6,443209418	6,501404376	8,130163483	8,08476497	8,060267475
ILMN_1772627	0,018762418	D4S234E	7,879024421	7,767706355	9,173400341	9,378012705	9,485213429
ILMN_1787718	0,018737584	SLC27A1	7,975440614	8,027647003	9,705968215	9,606737026	9,564475365
ILMN_1728662	0,018733629	ALDH3B1	6,485378163	6,462573281	8,195318776	7,916335398	8,017471431
ILMN_1679318	0,018687815	ARSJ	6,680301129	6,607179662	8,171726596	8,292965447	8,236219966
ILMN_1675130	0,018666216	NFIC	6,967571434	6,858174128	8,263318356	8,393267035	8,565949423
ILMN_1657111	0,018648312	C14orf78	6,762996153	6,780823643	8,1845643	8,312916862	8,428082916
ILMN_330594	0,01860589	LOC729970	8,098510771	8,200182424	9,760364666	9,805312879	9,742067711

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ILMN_1714349	0,018603263	GLCE	7,233165518	7,163762702	8,810826887	8,667573514	8,754986276
ILMN_1789624	0,018587734	TPM2	7,623114221	7,50441482	9,036267043	8,809629031	9,166283503
ILMN_1717934	0,018465742	SYT11	12,22725197	11,89541153	13,48367139	13,32800051	13,61696365
ILMN_3249435	0,018441614	UBASH3B	6,526283714	6,609222396	8,47527999	8,18974233	8,025867679
ILMN_1681118	0,018391445	CAPRIN2	7,11741314	7,083445331	8,723030155	8,678262968	8,63287112
ILMN_1751561	0,018359161	CAMK1D	6,955247764	7,05402305	8,533204503	8,615236775	8,599474515
ILMN_1701461	0,018343743	TIMP3	7,157285481	7,062840307	8,451246182	8,821509143	8,724273255
ILMN_2383611	0,018308054	PTPRE	8,018310912	8,220881492	9,646564844	9,690744544	9,735154945
ILMN_1764723	0,018297405	SH3PXD2B	8,437970195	8,382054556	9,952552465	10,34199584	9,945376955
ILMN_1700633	0,01828954	ABHD4	7,272186742	7,268573908	8,806235277	8,821309178	8,831384148
ILMN_1727567	0,018270917	OLIG2	7,632950711	7,639677822	8,997650152	9,103260809	9,266010602
ILMN_1676955	0,018244169	TYK2	8,267046966	8,169102619	9,56192612	9,714100101	9,825394014
ILMN_1781374	0,018234273	TUFT1	8,264068536	8,244373994	10,06843884	9,783282893	9,700738687
ILMN_1699022	0,018233942	ENDOD1	7,428219764	7,528914027	8,963631809	8,954878045	9,079372835
ILMN_2292646	0,01823181	GAD1	6,670950098	6,539040714	8,078610776	8,149600577	8,152575395
ILMN_1902658	0,018170412		8,08126921	8,110875167	9,73302387	9,715602553	9,61071931
ILMN_1687751	0,018138536	BAALC	10,41703417	10,49006684	11,95182631	11,95563205	12,03117861
ILMN_1761566	0,018125768	C5orf32	8,106429142	8,01749676	9,672976077	9,637970153	9,55397828
ILMN_1805376	0,01810556	KCNJ6	7,725238245	7,823465986	9,118405283	9,133147828	9,416099218
ILMN_1694075	0,018048971	GADD45A	8,79460501	9,117311923	10,53312476	10,51952971	10,55085515
ILMN_1720373	0,018022269	SLC7A5	10,11652773	10,02235116	11,40812185	11,59851676	11,65242717
ILMN_1676880	0,018020547	CORO2B	6,977972811	7,026838197	8,451547102	8,688649776	8,572357573
ILMN_1658094	0,018014502	ZNF365	6,64232925	6,596607745	8,2119638	8,351015852	8,111029471
ILMN_1683678	0,018012355	SPATS2L	9,753899362	9,545519756	11,27111232	11,0851404	11,1004292
ILMN_1692731	0,018000335	TTYH3	9,732596258	9,308134143	11,1565074	11,04004414	10,90968582
ILMN_1697559	0,017987286	G6PD	7,758773475	7,439365335	9,278779078	9,204015271	8,992332816
ILMN_1801043	0,017956053	GSN	7,323359086	7,370187972	8,971573726	9,191514715	8,837251175
ILMN_2223903	0,017952797	PPIC	7,011934128	6,829750246	8,476842605	8,477782809	8,391202435
ILMN_1878029	0,017952054		8,683779177	8,631951301	10,07449414	10,26654456	10,21047575
ILMN_1750674	0,017936443	SDSL	7,936105908	7,985172692	9,263430749	9,520985748	9,579721353
ILMN_2382990	0,017914091	HK1	11,40714209	11,36430881	12,80418978	12,84567401	12,94007187
ILMN_2360202	0,01790708	PPP2R2B	6,898254542	7,03511858	8,562897069	8,631621943	8,489345821
ILMN_1783946	0,017890452	MRC2	6,811097003	6,779565859	8,205084066	8,342885713	8,349831077
ILMN_1696187	0,01788255	PYGL	8,346771735	8,2756866	9,912460063	9,832717763	9,783888499
ILMN_1698732	0,017788865	PALLD	10,36626346	10,32830459	11,81970338	11,75415223	11,86917653
ILMN_1737406	0,017784578	KLF6	8,565614701	8,845007238	9,950282305	9,83885335	10,39674158

ILMN_1671076	0,017752747	BAI3	7,375814721	7,196790258	8,77963127	8,72731421	8,760487821
ILMN_1771800	0,017714388	PRKCA	6,994636655	7,06108674	8,509847297	8,565032787	8,557604351
ILMN_2194467	0,017709898	SGCB	7,780218835	7,593976268	9,285068784	8,856449185	9,123433915
ILMN_1713491	0,017633053	VAMP2	7,877423101	7,861019579	9,558608422	9,371360194	9,292294415
ILMN_1783846	0,017625589	RAPH1	7,91232609	7,74305954	9,455627672	9,592900821	9,22821912
ILMN_2360705	0,017606982	ACSL3	10,35412381	10,13761286	11,77217954	11,77099543	11,67922186
ILMN_2347949	0,017599899	G6PD	9,684528016	9,621108277	11,28406553	11,09390754	11,08499347
ILMN_1822117	0,01759072		6,539366805	6,476368672	7,955192848	8,135149534	8,002505319
ILMN_2148459	0,017588435	B2M	10,13340849	9,835711373	11,5925571	11,52523048	11,36494961
ILMN_1727592	0,017587186	FRMD5	6,528753822	6,642875678	8,012197547	8,111165142	8,133504877
ILMN_2115125	0,017584795	CTGF	11,02935902	10,65659573	12,34113333	12,19813665	12,25214977
ILMN_1688702	0,017524855	PJA2	11,23789497	11,19551057	12,85160752	12,56592109	12,64641216
ILMN_2375484	0,017513611	CPEB2	6,966494215	7,097955072	8,569354001	8,410951151	8,537623848
ILMN_1707124	0,017474407	TFPI	7,092578783	6,927532884	8,418879686	8,259466301	8,492218012
ILMN_2383383	0,017452958	PIR	9,676326499	9,7819391	11,24934811	11,25784992	11,22335253
ILMN_1705116	0,017447654	C6orf85	8,982822405	8,777631357	10,33626079	10,33396821	10,32572891
ILMN_1801616	0,017444155	EMP1	9,969217061	9,924638233	11,62548217	11,60414527	11,34044099
ILMN_1758398	0,017413124	GUK1	10,41717774	10,67742008	11,99348856	12,0275645	12,1032272
ILMN_1722294	0,017404043	CPNE8	6,822774426	6,883159272	8,337382675	8,248116184	8,34773466
ILMN_2351466	0,017398716	NTM	7,152549474	7,064060824	8,523260007	8,474029645	8,59373349
ILMN_2315979	0,017324351	LBH	8,212908912	8,353357499	9,80882962	9,79134462	9,768534888
ILMN_2066060	0,017264514	HLA-DRB6	6,644572892	6,697596836	8,03495496	8,112281324	8,191636835
ILMN_2119224	0,017257686	KIFAP3	8,826301848	8,859730144	10,16442474	10,085861	10,38025401
ILMN_1678215	0,017256142	RHOJ	7,49476092	7,267088435	8,686314073	8,801535281	8,855492575
ILMN_1687821	0,017254961	C16orf45	7,520926335	7,45625185	8,824996015	8,855390604	8,992032296
ILMN_1759818	0,01723115	SORL1	7,320022403	7,26998575	8,643285853	8,570323181	8,797471381
ILMN_1709683	0,017222679	RASSF2	10,0364197	9,763892199	11,61659242	11,38954057	11,20348581
ILMN_1711312	0,017219925	GPM6A	6,634683562	6,723358392	8,126331342	8,044265161	8,173641292
ILMN_2361737	0,017204711	TRIM36	7,142102043	6,919614602	8,584263131	8,374200511	8,40953633
ILMN_1753468	0,017167233	CD63	11,28115723	10,97139123	12,56913629	12,71061512	12,51424429
ILMN_2388701	0,017133614	ST3GAL5	7,365152285	7,495207675	8,602942921	8,926756104	9,023408957
ILMN_2226324	0,017116586	BRP44L	10,46496821	10,46605812	12,10802014	11,83388385	11,85333683
ILMN_1681356	0,017103514	PDE2A	6,47387417	6,452073463	7,863590423	7,983207924	7,930057811
ILMN_1735014	0,01708312	KLF6	9,540725567	9,572783464	10,90882014	11,02088692	11,05446616
ILMN_1685886	0,01708197	MAPK4	7,073438717	7,001893672	8,438607985	8,660831715	8,486546189
ILMN_1734897	0,017050012	SLC4A4	6,923868141	7,088064023	8,427220208	8,392844787	8,507152031
ILMN_323636	0,017031625	IFFO2	7,008426555	6,940174892	8,507220821	8,168471338	8,381560507

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ILMN_1666967	0,017010178	BRP44L	8,487176693	8,793249371	10,22782741	10,26564509	10,10081218
ILMN_1852384	0,017002356		7,664883536	7,55731019	9,122578429	8,956486223	9,00869133
ILMN_1763603	0,016965164	FAM177A1	7,277330775	7,509883102	8,740997469	8,564430797	8,935504832
ILMN_1750409	0,016945987	RAB9A	9,938077053	10,00334941	11,37058727	11,47322516	11,44078342
ILMN_1670807	0,016943636	FAM84B	8,213749809	8,208144391	9,704859482	9,846042093	9,62378059
ILMN_1780057	0,016927125	RENBP	7,968859647	8,261004067	9,484269338	9,207897779	9,660929963
ILMN_1772207	0,016926941	LOC653377	8,99372229	9,135293742	10,73186827	10,49049831	10,45197295
ILMN_1754864	0,016922291	SLC25A18	6,814974898	6,871701003	8,242768568	8,370278564	8,307510909
ILMN_1739521	0,01692116	NLGN1	7,805841829	7,536586928	9,294522291	8,957422873	8,980042635
ILMN_2186061	0,016914635	PFKFB3	9,597780318	9,50696452	10,80615857	10,98183654	11,03861301
ILMN_2316173	0,016907646	AP1S1	10,10924753	10,11020439	11,43976626	11,37289251	11,59358226
ILMN_1784320	0,016885288	ELMO1	7,976614646	7,937253992	9,60525628	9,716215118	9,292504293
ILMN_1776724	0,016872523	LYPD6	7,531531981	7,514509944	8,925937987	8,917818547	8,966148046
ILMN_1710209	0,016857018	MFSD6	6,695017203	6,873829209	8,262840445	8,282509958	8,241159713
ILMN_1722834	0,016855194	RGS12	8,696501469	8,657270039	9,92714108	9,951328835	10,17432625
ILMN_2367710	0,016844629	PKN1	7,966687709	8,072164474	9,295720909	9,521823132	9,533127831
ILMN_1720282	0,016829524	NQO1	9,449203953	9,614899278	10,83372509	10,94134957	11,05211517
ILMN_1693452	0,016818789	GAL3ST4	7,98121083	8,035640137	9,49001321	9,287177759	9,436342144
ILMN_1683146	0,016813271	FTH1	9,123464208	9,362625067	10,78520675	10,51530547	10,69230058
ILMN_2285817	0,016794119	FAM89A	9,941098544	10,03589726	11,28929402	11,31363299	11,49033176
ILMN_1660806	0,016776629	CSRP2	11,2531367	11,14413419	12,95429408	12,77656935	12,47017269
ILMN_1726245	0,016758345	TGFBR2	7,044972601	7,085815302	8,316202047	8,753539196	8,557003116
ILMN_2352190	0,016753725	CLIP2	7,922111045	7,908342085	9,261432253	9,3072304	9,366498592
ILMN_1669523	0,016747229	FOS	6,788854947	6,869065834	8,354948434	8,327281619	8,230975018
ILMN_2169761	0,016746309	CPNE8	7,08929349	7,051903504	8,524515044	8,271669223	8,480596763
ILMN_1671928	0,016694483	PROS1	9,277420409	9,169845063	10,52507625	10,60045481	10,66311249
ILMN_2370976	0,0166687	FER1L3	7,788429437	7,911454598	8,91798807	9,112163772	9,432709831
ILMN_2109197	0,016648436	EPB41L3	7,758378106	7,838124055	9,40271973	9,429379258	9,154464713
ILMN_1780825	0,016638152	RRAS	8,019254639	8,118040704	9,440309176	9,343527018	9,527161994
ILMN_1759513	0,01661118	RND3	9,209577253	9,192203887	10,55182824	10,81397571	10,62599292
ILMN_2401057	0,016595524	CANX	9,947260945	9,708884688	11,25652047	11,23047784	11,175781
ILMN_1667319	0,016590084	LPPR2	7,619956363	7,427493855	8,860256368	8,987901002	8,913886286
ILMN_2052208	0,016551234	GADD45A	9,172126783	9,273291949	10,6420766	10,4584691	10,6549677
ILMN_1813581	0,016548188	CNR1	7,022358544	7,156136551	8,710850669	8,495393219	8,446887783
ILMN_1666096	0,0165466	ACSL3	8,519121596	8,455745962	9,690820809	9,83473581	9,957488109
ILMN_1741371	0,016538773	TMEM8	7,981403901	8,025407866	9,27763445	9,435691548	9,468710912

ILMN_1735930	0,016528249	KLF2	7,337159176	7,361720988	8,682706335	8,699363761	8,788957749
ILMN_1757872	0,016519586	DKFZp761P0423	8,132612422	8,110871263	9,676184078	9,668356073	9,459831208
ILMN_1718646	0,016508706	MMP15	7,102571343	7,034255655	8,622642305	8,579764586	8,395091645
ILMN_1683415	0,01647539	CAMK2D	7,217742888	7,184719236	8,426921002	8,435591499	8,664809325
ILMN_2056032	0,016458998	CD99	10,55696962	10,52395752	11,93294125	11,94145972	11,9346481
ILMN_1727087	0,016449758	GJA1	9,250969991	9,226217918	11,15828556	10,67789695	10,43356502
ILMN_1812968	0,016448974	SOX18	6,558641526	6,739734125	7,825528525	7,822876768	8,181759025
ILMN_1757288	0,016381973	KLHDC8A	7,676107211	7,571397862	8,963053356	9,01353327	9,011304874
ILMN_1791409	0,016379671	ITGA7	6,685115438	6,712884675	8,185221419	8,221679534	8,058870741
ILMN_3245912	0,016358314	TMEM59L	7,251212685	7,216042178	8,218454733	8,553499451	8,770830741
ILMN_1691860	0,016350396	SPRY1	9,894711589	9,741370143	11,22542116	11,45975707	11,15727091
ILMN_1654398	0,016342858	RGL1	10,02317909	10,01052457	11,32993744	11,16583067	11,43976852
ILMN_3307483	0,016331358	MCF2L	6,942869922	7,00613136	8,365890901	8,236591436	8,380646674
ILMN_1678710	0,0163287	PHYHIPL	7,258490162	7,095544978	8,520873431	8,362136955	8,5489134
ILMN_1745256	0,016321989	CXXC5	10,03839622	10,19343019	11,31456072	11,48969197	11,61265712
ILMN_1847308	0,016319785		9,614572742	9,597976651	11,03049922	10,88759603	10,97942662
ILMN_2414027	0,016312748	CKLF	8,690807281	8,653154384	10,15381448	10,12904786	10,01185762
ILMN_1750386	0,016301135	NPPA	6,527811766	6,537851798	7,898120961	7,965555257	7,927591158
ILMN_2399300	0,016286704	NAV2	9,300421607	9,251657978	10,89145061	10,72772972	10,56008832
ILMN_1767006	0,016270749	PSMB8	6,482622312	6,634463596	7,920614756	7,967474087	7,985525216
ILMN_1786697	0,016241265	TRIM9	7,190197782	7,216320805	8,641728524	8,475525876	8,571557414
ILMN_1773901	0,016233168	STX12	8,094179311	8,109638064	9,448461984	9,564115384	9,495624888
ILMN_1728478	0,016217694	CXCL16	6,590705843	6,529942276	7,83910275	7,899794479	7,96366195
ILMN_2364110	0,016209373	GBA	8,428568471	8,529490042	9,657689565	9,976128512	9,95273967
ILMN_2054019	0,01620268	ISG15	9,582302777	9,828605707	11,0489809	10,81891871	11,16321575
ILMN_1685005	0,016197852	TNFRSF1A	9,163115224	9,124053996	10,51942212	10,41469051	10,51523993
ILMN_2095133	0,016186105	SPTAN1	8,860679255	8,700742991	10,20368892	10,14109201	10,10135803
ILMN_1710268	0,016132535	ZNF385D	6,590869804	6,667941761	8,008683356	7,932971387	8,01870559
ILMN_1687335	0,016125732	FLNA	7,846788789	7,701265317	9,337242328	9,12224939	9,038026266
ILMN_1701681	0,016111019	SEC11C	10,38961808	9,751087605	11,55420491	11,4269726	11,24475964
ILMN_1758673	0,016093029	SLC44A1	7,943779033	7,966389968	9,174401256	9,268212868	9,386287731
ILMN_1740493	0,016082545	TRAF5	6,807224197	6,8226613	8,342876638	8,20019595	8,124684579
ILMN_1729234	0,016080936	TPP1	8,924169793	8,977662121	10,42258424	10,33061287	10,29119275
ILMN_1808789	0,016074274	MYO5C	7,393961054	7,349755601	8,672843714	8,754773019	8,751699282
ILMN_1677509	0,016052634	PRR7	7,664370638	7,648294337	8,900861276	8,766640018	9,070124396
ILMN_1755123	0,016051297	GBA	8,012215836	8,111919463	9,213438635	9,481346937	9,529112217
ILMN_176555	0,016025828	OLFML2B	6,782133845	6,677001396	8,135165569	8,176333619	8,048028694

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ILMN_1677404	0,016025806	RAP2A	8,939958842	8,896909116	10,46516529	10,63219258	10,19028196
ILMN_1780036	0,016020433	WDR1	11,35608744	11,25107993	12,52702115	12,76807564	12,68972925
ILMN_1701789	0,016004079	IFIT3	6,542691683	6,535649514	7,677237099	7,800120958	7,985299788
ILMN_3243142	0,015925584	KAT2B	8,126312199	8,185822335	9,539597232	9,532143476	9,512273098
ILMN_1753823	0,015896084	IL17D	8,389937761	8,447125393	9,728975886	9,546353662	9,806026552
ILMN_1667295	0,015892041	VASN	7,602840353	7,565961834	8,991701334	8,846291144	8,907875849
ILMN_3246900	0,015872328	LOC92249	8,300799097	8,071943706	9,631728768	9,706418056	9,439320712
ILMN_1785265	0,015835558	PLS3	9,648626812	9,622974045	11,15286214	11,21702218	10,90448363
ILMN_1752592	0,015817115	HLA-DRB4	6,93714765	6,723576023	7,919717154	8,007358204	8,225413282
ILMN_1737631	0,01581419	PAQR6	6,497224952	6,479501568	8,004378926	7,939139038	7,760727747
ILMN_1755582	0,015776752	PCSK1N	9,363590776	9,472089484	10,60331231	10,53788059	10,85095422
ILMN_1717565	0,015776278	LOC497190	6,708778478	6,745965986	7,943370991	7,928754256	8,129098935
ILMN_1660372	0,015773171	GRIA2	6,461438572	6,573942183	7,77904762	7,815235955	7,917163428
ILMN_1764795	0,015768694	FMN2	7,011407774	7,139323093	8,616882029	8,654415561	8,363105782
ILMN_1795561	0,015760558	CAMK1D	7,121656398	7,044308481	8,32271822	8,376393021	8,443283833
ILMN_2342695	0,0157567	PDGFA	6,416231944	6,490873577	7,727052341	7,773884284	7,836674462
ILMN_1712413	0,015710078	RPL39L	8,122204026	8,173777951	9,543297166	9,269555588	9,479964476
ILMN_1773801	0,015689629	TGFB1I1	6,794728022	6,81861074	8,030449299	8,312912017	8,182326249
ILMN_1734380	0,015676964	DPF3	6,629309918	6,686267482	8,02216331	8,166488529	7,986943484
ILMN_1654262	0,015670067	ZMAT3	11,27560861	11,41366729	12,59147015	12,46125818	12,74903169
ILMN_1733157	0,015667837	THSD1	6,426883597	6,432291088	7,661627543	7,834163308	7,798462861
ILMN_2121816	0,015660793	GPR137B	7,511222809	7,282133121	8,716752898	8,58881365	8,681471886
ILMN_1802615	0,015659233	CDK6	10,56144207	10,3379571	11,77853444	11,74342873	11,72984901
ILMN_1760062	0,015651117	IFI44	6,500049791	6,603019207	7,805118239	7,955871118	7,933709505
ILMN_1661589	0,015645176	CD151	8,188249368	8,259076194	9,43620461	9,324166761	9,622078397
ILMN_1774077	0,015644312	GBP2	6,526339687	6,482736917	7,724957312	7,867948515	7,864557779
ILMN_3248627	0,01563463	CHRM3	6,441598931	6,396508583	7,577888498	7,691304012	7,803563189
ILMN_1865764	0,015605629		10,5175662	10,52847212	11,56972636	11,86682962	11,95770336
ILMN_1707717	0,015604204	BAALC	8,008075748	8,192613679	9,150241232	9,189310697	9,582740661
ILMN_1653028	0,015586185	COL4A1	11,16458861	10,77689461	12,1128435	12,22102456	12,27456047
ILMN_3243112	0,01557956	RNF182	7,938267323	8,120297892	9,531449628	9,453846851	9,327127841
ILMN_1661439	0,015536801	FLOT1	9,241076981	9,240480394	10,53678717	10,7122384	10,56639496
ILMN_2215119	0,015512731	SYNJ2	6,791649414	6,758062524	8,06586372	8,213754247	8,092376942
ILMN_1659895	0,015497846	MSN	10,20700788	9,968944877	11,5532842	11,50215417	11,29009908
ILMN_1712389	0,015491579	CKLF	9,311608446	9,275182586	10,73270032	10,62435355	10,55536326
ILMN_1669617	0,01549137	GRB10	9,45991502	9,425977367	10,44414772	10,50530617	10,87905077

ILMN_2313730	0,015490493	RHOC	11,17865273	11,14137868	12,57961111	12,48276555	12,42939799
ILMN_3201937	0,015488259	LOC645381	7,959650059	7,790540211	9,027236107	9,056059195	9,217360116
ILMN_3240524	0,015464508	MFSD6	6,64350924	6,786075945	8,154293981	8,158160939	8,012598949
ILMN_1704369	0,015451893	LIMA1	7,905171911	7,867662864	9,493798348	9,466618649	9,071798086
ILMN_2352563	0,015422481	CLDND1	9,853500061	9,729877872	11,21773933	11,06996475	11,03120403
ILMN_1739586	0,015385072	FEZ2	10,41344651	10,41236041	12,08202964	11,9516901	11,57756793
ILMN_3245413	0,015381588	DENND5A	8,805804349	8,650382402	9,979420102	10,01010212	10,02064594
ILMN_2358919	0,01537551	TP53I3	9,295955906	9,320568424	10,66885424	10,54976387	10,60341903
ILMN_2055330	0,015363111	KIF26B	6,670480826	6,671301311	8,296547028	8,190752999	7,850165917
ILMN_1714445	0,015350512	SLC6A9	8,585140165	8,527610929	9,666865272	9,64647873	9,927680141
ILMN_1652677	0,015329848	FAM89A	8,907086204	9,005452371	10,02905118	10,18984664	10,37232119
ILMN_3295494	0,015327909	LOC389386	7,952077219	7,814669131	9,116155438	9,327050016	9,175463651
ILMN_2189027	0,015292867	LIPG	9,273036784	9,102032598	10,61161941	10,54204383	10,39845705
ILMN_1669433	0,015282374	KIAA0913	8,31012513	8,306614115	9,548884901	9,835371568	9,621758975
ILMN_2339779	0,015280628	ATP6V1E1	10,63210556	10,53100561	11,73983482	11,95279105	11,90758362
ILMN_1713529	0,015268144	SEMA6A	9,970000822	9,981465629	11,15644417	11,19614783	11,32344647
ILMN_1781691	0,015225041	TRAK2	7,87415443	8,005798405	9,19351978	9,132932674	9,284214811
ILMN_1706969	0,015217165	BEND6	6,475366809	6,570829398	8,04247897	7,925980098	7,751352976
ILMN_1814985	0,015213608	PDLIM7	8,921518076	9,30669178	10,4862007	10,15971137	10,4779692
ILMN_1710326	0,015206669	CLDND1	9,632861777	9,623483788	11,09219988	11,0626151	10,85002165
ILMN_1856634	0,015171119		6,679804945	6,618826054	7,893034805	7,73145031	7,948487951
ILMN_1813949	0,01516081	CASQ1	6,498647268	6,589381369	7,711233904	8,030081218	7,894590627
ILMN_1845037	0,015156658		7,56398684	7,449689013	8,884003471	8,606495959	8,740118714
ILMN_1757732	0,015142341	OSGIN2	7,091246679	7,097951927	8,283162669	8,342433626	8,421711909
ILMN_2137464	0,015139609	DVL3	7,92013703	8,027309079	9,197925531	9,530202523	9,301642123
ILMN_1750158	0,015137762	ACOX1	6,895892371	7,050838665	8,197364921	8,215994454	8,322280096
ILMN_2120555	0,015137363	ADCY1	6,987513711	6,960385189	8,081368897	8,240794053	8,322447253
ILMN_1678961	0,01512705	FRMD4A	9,465261802	9,411695564	10,83547101	10,69302686	10,67105285
ILMN_1722809	0,01512276	NRCAM	9,250256472	9,094246625	10,45078697	10,5958776	10,41912761
ILMN_2234697	0,015118548	BEX1	11,76649742	11,69984426	12,94568106	13,0947894	13,02778237
ILMN_3244611	0,015096753	LOC100132060	7,857376933	7,865272724	9,07432297	9,160836934	9,172493406
ILMN_1699829	0,015089926	CTGF	11,97934929	11,91401759	13,42154915	13,14001067	13,14446202
ILMN_2067656	0,015085565	CCND2	12,17835544	12,04635121	13,23525612	13,32011755	13,42586943
ILMN_1694432	0,015076019	CRIP2	10,09119761	9,968225194	11,39231124	11,11082271	11,25797721
ILMN_3241870	0,015040562	FRMD8	8,718626738	8,66386218	9,610656436	9,869785891	10,0954437
ILMN_1752294	0,015023544	PCDH9	6,977144723	6,730188675	8,164767155	7,939277373	8,064925913
ILMN_324022	0,015021879	PRAGMIN	9,62941645	9,481332993	10,60044967	10,78226926	10,88628476

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ILMN_1778360	0,015019595	PYGB	9,369161155	9,377971745	10,66078036	10,91502889	10,64067775
ILMN_1809613	0,015011487	NGEF	6,851017479	6,85199533	7,811882747	7,947461837	8,252528008
ILMN_1686906	0,015008837	TP53INP2	7,353258402	7,323601519	8,586036638	8,607716201	8,617860321
ILMN_1732831	0,014999161	CHST7	8,80260452	8,661008156	9,940457498	9,852003962	10,00301011
ILMN_1689237	0,014984649	BVES	7,762806946	7,801964248	8,924439623	9,056599711	9,115132274
ILMN_2371169	0,014980889	ZYX	8,477665794	8,360587242	9,650836442	9,693564044	9,680422624
ILMN_1653712	0,014947202	UAP1L1	6,84673545	6,824136111	8,11145016	8,233323303	8,094731401
ILMN_2134765	0,014941631	C6orf26	6,977360112	6,96642223	8,249047059	8,085508319	8,241591918
ILMN_1678922	0,014934488	HERC4	7,349188343	7,472639014	8,760469221	8,864864447	8,673934472
ILMN_2404063	0,014927097	APP	10,74435651	10,63094843	11,82910521	12,09451443	11,97364028
ILMN_1734742	0,014924349	ARHGDIA	9,962358393	9,881171288	11,36083851	11,1940291	11,10709465
ILMN_2381476	0,014911098	SPG3A	8,671580385	8,710921702	9,921196362	10,02040353	9,980725079
ILMN_1757387	0,014888592	UCHL1	11,27279898	11,26660915	12,65098501	12,55943057	12,4899295
ILMN_1652237	0,014858411	CBR3	7,217521794	7,212684832	8,430066477	8,438717125	8,496216053
ILMN_1691436	0,014845812	BLVRA	9,818587862	9,764830102	11,01400224	11,16536841	11,0527784
ILMN_1808226	0,014833121	RGS16	7,044143965	6,908014404	8,223354632	8,416630198	8,203935215
ILMN_1703374	0,014812673	NAV1	8,155733208	8,467608829	9,538409492	9,575374097	9,657781552
ILMN_1660519	0,014724953	C3orf70	7,272553014	7,193763674	8,397715168	8,451602401	8,499748999
ILMN_1716547	0,01472245	NAGK	8,502491767	8,569943451	9,713856726	9,584967505	9,838234887
ILMN_1800530	0,01472162	CENTG2	9,540233394	9,352901852	10,69145197	10,52856068	10,66127822
ILMN_1778267	0,014653477	RGS6	6,580978785	6,736850515	7,818987179	7,885087611	7,974989633
ILMN_1798485	0,014613753	ATP6V1E1	10,18052772	10,15110975	11,30556001	11,46657635	11,43835283
ILMN_1690921	0,014611981	STAT2	9,027777495	9,146454882	10,28178596	10,29491926	10,37696115
ILMN_1710410	0,014608269	LOC730413	6,601130844	6,681095169	7,929793435	7,808001047	7,887011174
ILMN_1744059	0,014577199	DCTN6	9,208840319	9,187834289	10,33863879	10,51821323	10,46759287
ILMN_2053103	0,014571332	SLC40A1	6,702533228	6,690437413	8,031172519	8,063246904	7,892320304
ILMN_1791483	0,014561314	PDE4D	7,085196206	7,335902787	8,338522343	8,551667783	8,546444444
ILMN_1695962	0,014559023	SLC12A9	9,5444855	9,541794768	10,36076596	10,79365395	10,93848772
ILMN_1722533	0,014550987	KATNAL1	8,484363918	8,47189534	9,497780265	9,560389462	9,798978963
ILMN_1843690	0,014541065		6,566252094	6,622314399	7,810040568	7,858402001	7,850950403
ILMN_2087692	0,014530507	CYBRD1	8,182836663	8,101656276	9,735969887	9,571102627	9,216811971
ILMN_1752968	0,01451929	LAMB2	8,057575864	8,046538406	9,230887692	9,389743819	9,301326137
ILMN_1811330	0,014515308	FAM134B	6,488995548	6,555458663	7,811773266	7,902280594	7,746886107
ILMN_2364272	0,014496419	MBNL2	7,116097408	7,245922402	8,564067205	8,439981437	8,386556328
ILMN_2100815	0,014491548	TMEM9B	9,223170996	9,171788285	10,29259381	10,45733047	10,46810809
ILMN_1712305	0,014484198	CYBRD1	7,902923549	7,992952708	9,299601065	9,32296837	9,150852126

ILMN_1680856	0,014482753	MAMLD1	8,133892208	8,024436139	8,970816599	9,315578934	9,411919335
ILMN_3272500	0,014479167	IFI27L1	9,377695886	9,380153706	10,43375245	10,49872209	10,68054735
ILMN_1741346	0,014450839	EPHB3	7,473573467	7,708479581	8,890289658	9,083348653	8,840651112
ILMN_1864166	0,014401746		7,209634374	7,232948894	8,511070696	8,404399352	8,427519195
ILMN_1785356	0,014394554	DENND5A	9,489554699	9,466348662	10,6943306	10,444069	10,70717745
ILMN_2205999	0,014377722	OSMR	6,46418523	6,455039949	7,380443552	7,452736061	7,800694317
ILMN_1795838	0,014371472	C4orf19	6,524180767	6,564759668	7,931377778	7,701491556	7,715941649
ILMN_1703477	0,01435843	ARHGEF2	10,38609538	10,24335929	11,43986502	11,67127636	11,5333284
ILMN_1732060	0,014342499	ARHGAP1	9,067685903	9,017189636	10,16355649	10,19385043	10,28896712
ILMN_1673232	0,014337651	LASS1	7,097230716	6,828874652	7,974419881	7,879190451	8,205241585
ILMN_1794294	0,014328175	DSTN	7,047256939	7,006743033	8,099777975	8,155204689	8,292752937
ILMN_1702821	0,014271156	TTLL7	6,573774291	6,597813724	7,704228458	7,685503266	7,844307566
ILMN_1758978	0,0142542	KLHL4	6,821305094	6,756158842	7,806955107	7,971366218	8,058844542
ILMN_2084059	0,014252872	SLC12A4	7,32676775	7,333150219	8,5804683	8,631819176	8,525407623
ILMN_1795845	0,014243864	CHST8	6,522886026	6,452543629	7,62317706	7,836252461	7,706140077
ILMN_1789599	0,014223795	NBL1	7,75048201	7,835781093	9,220417939	8,982447513	8,940935527
ILMN_1690125	0,014206921	PDLIM7	11,75722895	11,79002624	12,89268053	12,88826652	13,02581952
ILMN_1849494	0,014190931		9,146014187	8,99435507	10,23013725	10,18115595	10,26095297
ILMN_1670718	0,014187344	C18orf51	6,354449849	6,398231491	7,353637622	7,397575482	7,685144107
ILMN_1731224	0,014183276	PARP9	7,355438022	7,472411229	8,480676922	8,692374928	8,697550474
ILMN_2218780	0,014174427	PPM2C	6,540604128	6,701862744	8,327100137	7,922126252	7,673153287
ILMN_2073235	0,014168633	FTHL12	12,0242528	11,81796864	13,23977138	12,59163872	13,04999677
ILMN_1712577	0,014168459	FAM174A	7,790698227	7,938548182	9,015047522	9,176302689	9,121408746
ILMN_1691237	0,01416397	CAP2	10,20366831	10,10284407	11,33440172	11,23500734	11,3460368
ILMN_2284744	0,014162702	HNMT	6,735262712	6,761588326	7,976195853	8,085412014	7,945689044
ILMN_1762825	0,01411991	CANX	9,75875247	9,753960245	10,7121084	11,09026056	11,04397939
ILMN_1729529	0,014109611	BAI1	7,018661397	6,942590939	8,090026852	7,91097452	8,204079527
ILMN_1761733	0,014108293	HLA-DMB	6,503992287	6,621571642	7,648970014	7,826684996	7,831217852
ILMN_2405009	0,014068431	NBL1	7,381668518	7,407048636	8,610227307	8,593412433	8,588533322
ILMN_1794740	0,014064473	CD151	7,789037069	7,933201984	9,187463473	9,192053311	9,037639194
ILMN_2365881	0,014061882	ATG16L1	7,768933874	7,579395609	8,700528753	8,904626926	8,886589976
ILMN_1712806	0,014060616	AP1S1	9,52577653	9,304969442	10,46808625	10,61314881	10,61177976
ILMN_1797009	0,014054632	F3	6,615533492	6,753829005	7,717964338	7,833506508	7,975043509
ILMN_1796755	0,014047584	ITGB5	8,022742507	8,193344894	9,046083396	9,36280535	9,437761694
ILMN_2115434	0,014040088	RAB32	8,798738402	9,042020716	10,1265386	10,08153637	10,16868771
ILMN_1751345	0,014034686	AP1S1	9,654668714	9,593819626	10,7300516	10,82387525	10,83581831
ILMN_169410	0,014033466	GPD1L	8,360611088	8,503690486	9,465460219	9,657260645	9,718703981

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ILMN_1655429	0,01402835	TNFAIP1	8,910363527	9,029806151	9,948094413	10,17792418	10,27190473
ILMN_1910511	0,014026369		6,715229573	6,681811372	8,02581815	7,766261656	7,836096098
ILMN_1725707	0,014015225	ATG16L1	8,05153163	7,835513397	9,006084526	9,073639732	9,133574828
ILMN_1793410	0,013990266	SNTB1	6,632124837	6,625570981	7,811527929	7,775859304	7,82068176
ILMN_2345739	0,013962879	CAPRIN2	6,694645306	6,926309065	8,056244113	8,138590833	8,026349784
ILMN_1693912	0,013956496	SLC47A2	6,432571739	6,452695195	7,604153185	7,535871613	7,646427837
ILMN_1696911	0,013943354	FTHL8	11,2629064	11,16428128	12,51881151	11,92251568	12,34526377
ILMN_1766045	0,013941301	SH3GLB1	8,593688753	8,7979482	10,00903215	10,02504942	9,877300006
ILMN_1660858	0,013936374	RIN1	7,051069826	6,943389371	8,044381131	8,163800578	8,208494436
ILMN_1669123	0,013928602	C1orf187	7,681947639	7,473089331	8,84613762	8,580106657	8,685078743
ILMN_1732151	0,013924991	COL6A1	8,318731043	8,34497371	9,699792033	9,642015708	9,448566057
ILMN_1795865	0,013905483	FGFRL1	9,07895386	9,187091024	10,36994305	10,2775775	10,32180359
ILMN_1701700	0,013889352	KLHL4	6,971490313	6,883019704	8,120142042	8,058832841	8,083679532
ILMN_1788250	0,013879511	LDOC1	8,755504281	8,766329155	10,20582393	9,846844412	9,846584196
ILMN_2330382	0,013876135	PAQR6	6,356772735	6,425907136	7,560853876	7,691232377	7,587820047
ILMN_2102069	0,01387264	SLC16A4	6,516231218	6,488822539	7,76413679	7,19668012	7,659594189
ILMN_1711566	0,013855545	TIMP1	11,90488399	11,65958888	12,8285762	12,93935922	12,95186633
ILMN_1773470	0,013854647	ST5	7,972670266	7,885055666	9,026506631	9,199828013	9,112845662
ILMN_2347592	0,013832791	NMB	7,675300601	7,762674077	8,747229847	8,723434815	8,976665502
ILMN_1723358	0,013829159	SCARA3	7,813453382	7,885156303	9,018765623	9,044704121	9,043652501
ILMN_1810729	0,013821329	UBL3	10,00405542	9,959007608	11,00318345	11,28762386	11,19980095
ILMN_1839019	0,01380016		8,254720652	8,152200791	9,434736567	9,615188808	9,322695589
ILMN_1720829	0,013775075	ZFP36	7,319968005	7,219530663	8,290773316	8,194605443	8,480677446
ILMN_1697597	0,013772029	KIAA0494	8,096590962	7,910847396	9,00453196	8,965532494	9,200450525
ILMN_3245983	0,013762786	NEURL1B	7,736693758	7,451661629	8,667055803	9,020089649	8,724286816
ILMN_1769665	0,013761853	RAB5C	8,808974839	8,819574267	10,12917431	9,951741614	9,933234049
ILMN_1768595	0,013750778	DLG4	7,68393823	7,555156348	8,678983867	8,770077625	8,799284151
ILMN_1695576	0,013748856	MRPL24	9,876740611	9,803161435	11,07078104	11,12387412	10,96451775
ILMN_1717056	0,013743576	TXNRD1	9,928399801	9,984967972	11,05226444	11,22054434	11,16342005
ILMN_1796455	0,013740781	RYR3	6,60364863	6,478952485	7,771443486	7,672436713	7,657562427
ILMN_1814315	0,013737085	PBXIP1	6,575895447	6,534170091	7,812978057	7,532691406	7,685052522
ILMN_1662619	0,013730405	TFPI	7,00656315	6,924357358	8,156999812	8,170720067	8,102537169
ILMN_1752476	0,013728964	C6orf134	7,955309702	7,817516928	9,064475602	8,983377605	9,018396017
ILMN_1765578	0,013703306	TIPARP	8,125298145	8,184691058	9,273414446	9,296306244	9,352376832
ILMN_1661595	0,013698191	C1orf53	7,700044138	7,894565099	9,075064291	8,738908915	8,972440819
ILMN_1804673	0,013696929	SLC16A4	6,545470946	6,575385638	7,539142192	7,637607717	7,804994081

ILMN_1788604	0,013692179	WBP2	11,21117184	11,18550523	12,45840931	12,17783065	12,32601801
ILMN_1719972	0,013663483	PLXNA3	7,179962369	7,152804488	8,384094473	8,467027207	8,295674024
ILMN_1771622	0,013662023	DRD1IP	7,579500032	7,673252991	8,76469855	8,685356191	8,821907921
ILMN_1763704	0,013657917	RGS11	6,48051213	6,534466438	7,51750664	7,755469196	7,736006698
ILMN_1745374	0,013628268	IFI35	6,656348457	6,718924142	7,854427316	7,788533762	7,860000235
ILMN_1752923	0,013625293	IFNAR1	7,827815409	7,674000806	8,610878628	8,930438863	8,983968935
ILMN_1658619	0,013618088	WWC1	8,312625499	8,317483861	9,157384672	9,438824378	9,593878048
ILMN_1741148	0,01358882	ALDOA	10,70823697	10,9101519	11,93407478	11,99969022	12,02344236
ILMN_1780058	0,013586932	DEGS1	11,00665844	10,93998292	11,99677615	11,80860676	12,17229869
ILMN_2148847	0,013562346	AKIRIN2	9,666346453	9,765041235	11,07742553	11,12726652	10,80585741
ILMN_1808584	0,013554389	FAM36A	9,559074643	9,637030754	10,70015359	10,28201189	10,80280252
ILMN_2064694	0,013553092	STIM1	7,195761817	7,131891469	8,562102623	8,319961674	8,207520046
ILMN_2085862	0,013552806	SLC15A3	8,487604852	8,483732479	9,582133261	9,518096137	9,661661001
ILMN_1775822	0,01353891	PDGFB	6,883491785	6,694883636	8,14420858	8,040364104	7,815025463
ILMN_1656560	0,013538642	PARM1	7,023593111	7,009511714	8,091833606	8,305586531	8,188167338
ILMN_2203299	0,013537556	GRIA1	6,852082786	6,733993446	7,840565257	7,870925647	7,956898642
ILMN_1664855	0,013534425	PPP1R14C	9,184852405	9,193906676	10,13072647	10,38163469	10,41997571
ILMN_2356311	0,01353432	C21orf51	7,559150203	7,611341489	8,799799518	8,771382695	8,722821153
ILMN_1812262	0,013532163	DDR1	10,65431513	10,37449149	11,64258793	11,93734983	11,59803607
ILMN_1720303	0,013526118	OSTM1	6,935938376	6,978540729	8,27544004	8,359132795	8,04585213
ILMN_1743396	0,013509838	ACOX3	8,157943604	7,912908022	9,091818379	9,103585116	9,162307085
ILMN_3238845	0,01350698	FAM165B	8,036674381	8,141886609	9,150990366	9,328901347	9,292437273
ILMN_1813625	0,013491681	TRIM25	7,6077443	7,587900669	8,7256193	8,792129428	8,745496019
ILMN_1803988	0,013452659	MCL1	9,361542102	9,172988939	10,44663514	10,63613957	10,34550851
ILMN_2373444	0,013452493	ADORA1	6,460336336	6,571210153	7,614153144	7,767706751	7,699890932
ILMN_1813685	0,013428836	RAB7L1	7,514324707	7,604247722	8,590004592	8,491838015	8,7704716
ILMN_2148785	0,013413709	GBP1	6,565233474	6,505595274	7,840828955	7,745964825	7,597268496
ILMN_1744268	0,013413644	PLEC1	7,483369038	7,480560674	8,723005546	8,724131612	8,580167914
ILMN_1667430	0,013400369	DEGS1	9,474035343	9,62415095	10,68672266	10,66098662	10,72597869
ILMN_1655177	0,013390654	PIK4CA	8,921148386	8,686000474	9,760263863	9,699806433	9,961777397
ILMN_1656373	0,013381153	BNC2	6,501545062	6,481324509	7,579377371	7,592709947	7,644196876
ILMN_1724789	0,013370482	CD59	7,742634772	7,541895878	8,535042296	8,773030191	8,822695429
ILMN_2351269	0,013368147	TTYH1	9,45436913	9,876070924	10,96188567	10,85791584	10,84083461
ILMN_2227011	0,013353831	ACSBG1	6,771400361	6,798637225	7,893644333	7,966156301	7,935385592
ILMN_1814726	0,01334724	SCARB2	11,62161703	11,68936418	12,60442881	12,7211617	12,87880986
ILMN_2326713	0,013347093	CD151	12,32524921	12,11511383	13,34440797	13,21156216	13,31306274
ILMN_172349	0,01334536	SIRT2	7,0341964	7,017944448	8,400342754	8,148067644	8,066471379

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ILMN_1730487	0,013334814	CALD1	9,715978801	9,551355308	10,88207704	10,75419117	10,68528482
ILMN_2108357	0,01333391	RPL39L	8,503502054	8,670587365	9,893668104	9,89539775	9,690002773
ILMN_1756992	0,013298337	MUC1	8,430082606	8,396237996	9,37544459	9,483739858	9,60088742
ILMN_1683243	0,013292189	VPS45	8,871343775	8,671406594	9,88066284	9,962459292	9,85950965
ILMN_2334210	0,013289813	ITGB4	6,373527308	6,427006263	7,592972482	7,623993984	7,516419286
ILMN_1714067	0,013261287	NTRK2	7,739285257	7,764759398	9,081400723	8,911015066	8,808102371
ILMN_1720083	0,013250692	EHD4	8,402207967	8,373509143	9,532234083	9,483037684	9,501680804
ILMN_2340919	0,01324952	GRB10	8,348507931	8,379096468	9,227214065	9,45872449	9,597630789
ILMN_2071682	0,013241256	C10orf141	6,486725589	6,457174202	7,639127458	7,481148271	7,57869445
ILMN_1727574	0,01323919	ZNF827	8,706702701	8,63133747	9,813709222	9,410874453	9,781246682
ILMN_1791306	0,013208893	C9orf103	7,524100236	7,776498878	8,846638395	8,810449483	8,804581326
ILMN_1807972	0,013194034	MICAL1	7,442940296	7,565558817	8,619931694	8,945566733	8,647289423
ILMN_3258546	0,013175524	LOC100129365	6,713593801	6,697015467	7,90962247	7,869755161	7,78839498
ILMN_1689251	0,013173321	SPG3A	8,524470712	8,656811435	9,602339162	9,863470409	9,778358268
ILMN_1757370	0,013164644	SMPD1	7,135646916	7,186916935	8,478606533	8,213868536	8,219781365
ILMN_1797974	0,013155395	AIG1	7,708293286	7,569642347	8,976327113	8,801433813	8,639896342
ILMN_3300198	0,013143185	LOC729580	7,42520736	7,387044693	8,706801329	8,460186734	8,446837572
ILMN_1745964	0,013142276	IRAK2	6,780492175	6,919247039	7,944101773	7,959537069	8,009163321
ILMN_1778242	0,013129675	CALM1	11,50413644	11,28647951	12,37358921	12,43931562	12,51388659
ILMN_1689037	0,013104631	LIPG	8,003326799	8,086387194	9,436784389	9,318218609	9,068954085
ILMN_1725534	0,01310079	ACTN4	8,688964616	8,58458314	9,845056305	9,751849645	9,689884228
ILMN_1651950	0,013093392	TPST1	8,436696639	8,336429992	9,261120165	9,525530056	9,56478024
ILMN_1773313	0,013090133	USMG5	7,316547049	7,479493943	8,50124834	8,463858121	8,554642063
ILMN_1664679	0,013088765	CADM2	6,784768292	6,732606156	7,835842578	7,792674027	7,874815193
ILMN_1768510	0,013064086	MAN2B2	9,467588033	9,215498466	10,28403233	10,15760968	10,46456491
ILMN_1720482	0,013044074	CEND1	6,937113969	6,981054483	8,013726467	7,962801402	8,102066745
ILMN_2319544	0,013043772	CAMK2D	6,702554629	6,793151538	7,807763232	7,724854214	7,901011911
ILMN_1715674	0,013039315	ITPK1	7,318259005	7,069339588	8,396183619	8,499371642	8,200894656
ILMN_1770800	0,013031043	PODN	6,598522406	6,640632619	7,823214361	7,663827069	7,703507271
ILMN_1701875	0,013009954	ZYX	10,12952254	10,00428296	11,25784471	11,04061198	11,11533479
ILMN_1666597	0,013005965	PI4KB	8,35667941	8,237002373	9,34512533	9,352757903	9,396981565
ILMN_2415144	0,012998451	SP110	6,946586114	6,895158902	7,986269467	7,663572571	8,039667781
ILMN_3253471	0,012994001	KLHL29	7,346025465	7,112528504	8,122697305	8,348182638	8,356931438
ILMN_1703123	0,0129789	AXUD1	7,615112187	7,550798728	8,605620819	8,70171638	8,700571137
ILMN_1673704	0,012951013	INA	9,4970797	9,506367968	10,54497792	10,62803323	10,62620738
ILMN_1750100	0,012949871	TUBB4Q	9,849212016	9,838726165	11,06438237	10,88161008	10,89957759

ILMN_1668417	0,012933694	WASPIP	6,737433735	6,85507953	8,25384732	8,011588641	7,785282
ILMN_2301624	0,012933149	MACF1	9,325431641	9,064044435	10,25615516	10,45337639	10,24122195
ILMN_1670272	0,01292295	LRP10	9,587316371	9,540093038	10,97154704	10,56182011	10,53781795
ILMN_1690566	0,012918997	RASSF4	6,993835939	6,819750711	7,761017993	7,960302486	8,056719459
ILMN_1730546	0,012918756	GNAO1	6,738053112	6,862285694	7,921382934	7,804744689	7,922371285
ILMN_1778488	0,012911134	WDR41	8,672150263	8,699013549	9,574330657	9,842542277	9,866628328
ILMN_1680390	0,012894574	GCNT2	8,031513066	7,855107929	8,844336147	8,902086043	9,074925062
ILMN_1703330	0,012887387	FEM1C	8,654370107	8,710480649	9,974725808	10,01683049	9,709954669
ILMN_1688639	0,012884232	FBXL2	7,002466143	7,061892904	8,243555131	8,085495635	8,099042386
ILMN_2320349	0,01287951	BACE1	7,14389798	7,064641717	8,299814041	8,065843221	8,14615725
ILMN_3237574	0,012845228	LOC732445	6,79681138	6,839145237	7,780484525	7,970173663	7,967023653
ILMN_2366041	0,012828503	ITM2C	11,22650851	11,19049474	12,29830331	12,45830421	12,28609343
ILMN_1656904	0,012812527	SLC1A4	7,00937215	7,053460762	8,028693184	8,201255723	8,163131966
ILMN_1737320	0,012811015	ZDHHC15	6,344073381	6,412189707	7,52974025	7,590416313	7,456323558
ILMN_3250273	0,012804049	TMOD2	6,721396999	6,724726793	7,927106769	7,686708717	7,772757146
ILMN_1744897	0,012796579	KCNN3	6,710466112	6,922663582	7,964677255	7,947956907	7,931081365
ILMN_1805395	0,01279388	LTBP3	7,457847573	7,597334844	8,530117707	8,641268316	8,679625177
ILMN_1669667	0,012793058	PDLIM2	7,45756583	7,65763176	8,63416832	8,60099622	8,698321946
ILMN_1714473	0,012772349	ZNF436	6,942213108	7,19224009	8,107292176	8,192063185	8,228686538
ILMN_1710075	0,012767725	FAM89A	9,773603327	9,95049846	11,09875234	10,78908157	10,93803313
ILMN_2185866	0,012764503	PCDHB17	7,691240256	7,903078337	8,708678551	8,831528374	8,999874208
ILMN_1681777	0,012760552	SHROOM2	9,830074504	9,766037054	10,60223429	10,9764773	10,97073126
ILMN_2314007	0,01275379	TCF12	10,56303916	10,38937	11,70943753	11,57992439	11,46239064
ILMN_2320964	0,012743954	ADAR	9,475692862	9,309291571	10,27638823	10,45064612	10,51228831
ILMN_1769779	0,012740833	PTP4A3	6,663090314	6,896923965	7,803459661	7,668940189	7,947605834
ILMN_1651254	0,012739723	LPP	10,50335485	10,36122774	11,39235521	11,38414221	11,53206758
ILMN_2211780	0,012736504	SLC25A4	10,55948326	10,61828467	11,55664049	11,82814294	11,72455504
ILMN_1789436	0,012726988	C1orf218	7,334539061	7,171836139	8,298404714	8,247857325	8,312437998
ILMN_2135339	0,012726197	C3orf70	7,153810085	7,164633809	8,434100188	8,277299898	8,169514306
ILMN_1673899	0,012719032	FAM57A	8,376513146	8,469310423	9,290085507	9,36978014	9,611341054
ILMN_1796734	0,012707484	SPARC	11,2176926	11,142292	12,44129418	12,38297782	12,17045948
ILMN_1915188	0,012704825		6,534090126	6,65504325	7,568690616	7,717572548	7,742396571
ILMN_1859946	0,012686369		9,111044712	9,194350889	10,44514065	10,25489459	10,16996051
ILMN_1714527	0,01268442	VAMP3	9,20668365	9,220048924	10,39622724	10,29594561	10,25558094
ILMN_1661488	0,012663263	LOC729905	7,096078294	7,219036939	8,128897934	8,026801648	8,30936075
ILMN_1683026	0,012663012	PSMB10	10,1349941	10,23619748	11,12391765	11,17849392	11,34138396
ILMN_178916	0,012659185	SHD	6,809561126	6,930761851	7,874331103	7,921589492	8,003171133

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ILMN_1775327	0,012658699	PKM2	8,581557894	8,661510216	10,07380703	9,560269987	9,579362748
ILMN_3242377	0,012657185	NACC2	6,607020858	6,690858793	7,607067492	7,677993518	7,791092911
ILMN_3227263	0,012656015	SLC22A23	8,19457814	7,941551712	9,094234216	9,215400754	9,099756162
ILMN_1663035	0,012650711	SREBF1	8,1845962	8,078451268	9,317981339	9,173574174	9,140639186
ILMN_1811579	0,012648616	HOMER3	8,772882355	8,731641331	9,764914917	9,812391687	9,84187238
ILMN_1656501	0,012637781	DUSP5	7,763486702	7,692295775	8,798203906	9,178958723	8,774756348
ILMN_1740706	0,012634112	PMP2	6,447759774	6,699572468	7,63467626	7,51626648	7,717152114
ILMN_1812096	0,012623266	CADM4	8,914796614	8,60087557	10,02091152	9,709746456	9,688020089
ILMN_1707077	0,012619399	SORT1	9,955310296	9,924833484	10,77260971	11,03544483	11,09578778
ILMN_1773109	0,012607798	BAI2	6,79866633	6,827793881	7,918963451	7,790434416	7,882130222
ILMN_3181411	0,012586049	ATL1	8,181075553	8,277755884	9,247788406	9,394541225	9,338984937
ILMN_1699631	0,012576256	GATS	8,209347914	8,194111438	9,106198154	9,198916505	9,331468187
ILMN_1797342	0,012565867	FNBP1	9,920433484	9,699386334	10,7692297	10,79109181	10,86930643
ILMN_3257566	0,012563315	DSTYK	7,795874819	7,829790189	8,88487052	8,772166381	8,890636056
ILMN_1658351	0,012558841	FIS1	9,716359071	9,783918247	10,88436115	10,73332541	10,8118084
ILMN_1750278	0,012558507	FTHL12	11,36202995	11,30411101	12,53075751	12,20280953	12,34421891
ILMN_3227315	0,012556319	LOC729009	10,11159264	10,17814675	11,39051447	11,08687753	11,16529135
ILMN_1672596	0,012555502	BCAR1	8,246107207	8,113110555	9,263379645	9,227173727	9,209458744
ILMN_1793017	0,012552613	DGKQ	7,627026497	7,470466389	8,683229262	8,623140263	8,552438057
ILMN_1672878	0,012510956	ABR	10,40763777	10,18436367	11,08258228	11,29892873	11,41277469
ILMN_1668960	0,012510007	MID1IP1	7,810249835	7,677785443	8,996352387	8,928492817	8,700564087
ILMN_1701933	0,012508746	SNCA	8,909185691	8,775694012	10,04539655	9,811039462	9,824318217
ILMN_1662427	0,012502652	PTP4A3	6,723304923	6,713443474	7,650150913	7,691504815	7,831210359
ILMN_1674941	0,0124932	ANO6	8,8597553	8,698077769	9,793428202	9,743919239	9,823328956
ILMN_2361181	0,012492025	C1QTNF6	6,539719163	6,551971493	7,602608039	7,584904131	7,613682323
ILMN_2352023	0,012489004	RIPK5	8,258154403	8,182293804	9,230989127	8,987325026	9,29207011
ILMN_1715569	0,012486158	CCDC53	8,639400788	8,600842758	9,840841386	9,871890658	9,606472695
ILMN_1802205	0,012481018	RHOB	8,655601037	8,499437836	9,985855796	9,722060043	9,467653784
ILMN_1669703	0,012480619	TNK2	8,913270712	8,880626371	9,824567645	9,827596348	10,00463416
ILMN_2213136	0,012471282	LEF1	7,534873204	7,476021794	8,843789664	8,866173001	8,437029353
ILMN_1651610	0,012425203	LOC730525	11,233631	11,39439164	12,29843022	11,88931208	12,4511334
ILMN_1738147	0,012417835	NES	11,97667043	11,7726845	12,99854097	13,01273194	12,85341909
ILMN_1763386	0,0124152	BID	7,849314258	7,743054502	8,859403282	8,815365088	8,824125035
ILMN_2384807	0,012412257	LRRCC1	8,32133954	8,218452701	9,283433661	9,226786099	9,319150074
ILMN_1738819	0,012406794	EFTUD2	10,0171883	10,14742782	11,07224753	11,27442059	11,18871479
ILMN_3236935	0,012405589	LOC728908	7,824333797	7,799725712	8,852141566	8,961197425	8,863061313

ILMN_1699644	0,012399565	42066	7,269728453	7,416202171	8,309026604	8,390089796	8,465265207
ILMN_2094313	0,012396388	ZDHHC1	7,458366301	7,312699732	8,151323074	8,292989588	8,517338048
ILMN_1763537	0,012394062	LCTL	6,826062755	6,880140755	7,886422422	7,968261354	7,925353538
ILMN_2365307	0,01239345	CD276	10,16313418	9,828204806	10,97142035	11,21012406	10,99371285
ILMN_1708041	0,012378539	PLEKHF1	7,39692771	7,446045826	8,139337897	8,373584794	8,614498416
ILMN_3247082	0,012367838	FAM150B	9,424161871	9,424798145	10,29061754	10,1922922	10,55499009
ILMN_2153332	0,01236086	ATXN1	7,142179494	6,7544211	8,085515362	8,09687887	7,870613545
ILMN_2101526	0,012336948	GGCT	7,571610698	7,598275539	8,802489345	8,791086322	8,571298642
ILMN_1719286	0,012326856	CTSA	7,733551723	7,582056271	8,644654781	8,564752822	8,696575528
ILMN_1790909	0,012326273	NFE2L2	8,67754937	8,783100371	10,21830646	9,903969965	9,633751407
ILMN_1713249	0,012318267	PHF19	7,989616237	7,937758196	8,99550516	8,866987057	9,008565112
ILMN_3245752	0,012313819	LOC100134011	7,061235237	7,055617947	7,925841634	7,894802814	8,177859908
ILMN_2398995	0,012312911	MRPL24	8,780161766	8,785288667	9,954615768	9,865422902	9,78251852
ILMN_1669832	0,012311026	TCF12	10,36681837	10,14335959	11,53636207	11,52059883	11,15319365
ILMN_1749009	0,012308106	REXO2	9,841647571	9,817816269	10,99894405	10,85015144	10,82514928
ILMN_3284114	0,012307566	LOC399748	9,95359197	10,09186144	11,10800863	11,19272942	11,08391283
ILMN_2119297	0,012305328	SAMD4A	6,61251859	6,71047961	7,610315585	7,685069875	7,768565999
ILMN_1703142	0,0122976	42065	7,89764235	7,9854781	8,94071137	8,874414519	9,028829122
ILMN_1789627	0,012293979	42252	9,862728671	9,866835202	10,65067842	10,75647674	11,01373511
ILMN_1788547	0,012284931	GCLM	7,963679557	8,118344758	9,094451018	9,155413935	9,116704556
ILMN_1756910	0,012280148	PLA2G15	7,239399823	7,211087622	8,325991267	8,377846216	8,237330797
ILMN_2157435	0,012275649	DYNLRB1	10,35118205	10,1988557	11,58253442	11,27303644	11,18434875
ILMN_2048591	0,012273578	LRRN3	8,483924358	8,396945037	10,02799406	9,313368594	9,263131865
ILMN_1777499	0,012272577	LOC731007	7,104531343	7,080807362	8,309754629	7,912621047	8,071471646
ILMN_1654735	0,012271828	SLCO3A1	7,92233354	7,759545575	8,937394227	8,89996707	8,824414799
ILMN_1741171	0,012265055	TM2D2	7,549352034	7,441918236	8,590180948	8,57750807	8,491487383
ILMN_2059689	0,012258998	TMEM54	6,933837076	6,946084047	8,122536241	8,000100193	7,931386839
ILMN_3243156	0,012249254	AHNAK2	6,623449367	6,714048973	7,733503558	7,807622978	7,720031092
ILMN_1686562	0,012220533	KIF13B	7,044405482	6,919022781	7,963555693	8,259526548	8,004498273
ILMN_1678353	0,012215148	FARP1	9,864664543	9,829622104	10,54649148	10,80449025	11,0078718
ILMN_2060115	0,012214524	SORL1	7,237502496	7,315663312	8,178824822	8,388815788	8,382409413
ILMN_1684873	0,012213351	ARSD	8,157911334	8,078800568	9,420543067	9,131747017	9,03883606
ILMN_1655796	0,012195513	42066	7,191360633	7,310214619	8,261792363	8,406557375	8,321722216
ILMN_2131523	0,012184688	SACS	8,76223108	8,246990908	9,772636933	9,494243052	9,330919511
ILMN_1783909	0,012184015	COL6A2	7,42482124	7,423549477	8,349711619	8,56886681	8,497539599
ILMN_1792710	0,012170755	DAPK3	7,664803809	7,783783054	8,617198003	8,978378116	8,833831985
ILMN_177916	0,012161474	C11orf67	9,631141291	9,718159486	10,71675782	10,79456306	10,72387976

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ILMN_1788955	0,012148276	PDLIM1	8,545454614	8,5321569	9,691930817	9,604845096	9,52199312
ILMN_2404065	0,01214402	APP	10,6310148	10,78927087	11,6972165	11,68340703	11,79968002
ILMN_1688322	0,012137682	ADIPOR1	8,62850536	8,672759648	9,704163364	9,960004075	9,67636299
ILMN_1700001	0,012130773	TCTA	7,379258756	7,359234419	8,213074196	8,502131053	8,462907373
ILMN_1759700	0,012116056	NLGN3	6,877364012	6,710781467	8,049414938	7,924869404	7,696148343
ILMN_1663618	0,012101201	STAT3	8,2239878	8,466302816	9,183023343	9,258109914	9,507505493
ILMN_1770338	0,012085457	TM4SF1	6,637801737	6,698675714	7,743806586	7,701023284	7,692029175
ILMN_1751898	0,012085081	C12orf4	7,336884503	7,479627431	8,52232358	8,507629741	8,434579674
ILMN_1710078	0,012075822	TMEM181	9,468673346	9,417313218	10,34304119	10,30662492	10,51032388
ILMN_1753819	0,012074309	RFFL	7,179214964	7,038139699	8,318698679	8,37208904	8,024521098
ILMN_2316236	0,012069142	HOPX	6,402656149	6,385650102	7,415354653	7,264049756	7,422932928
ILMN_2397795	0,012064096	SLAIN1	8,051042349	8,12097417	9,009956652	9,254505635	9,162119185
ILMN_1680453	0,012055343	ITM2C	11,1850723	11,13843409	12,2368453	12,21695472	12,15583798
ILMN_1655068	0,012037794	TOM1L2	7,076522931	7,009905046	7,816450242	7,997497122	8,146856588
ILMN_1673305	0,012033276	RHOC	10,38666078	10,41344768	11,37480151	11,36590717	11,44973497
ILMN_1715508	0,012024571	NNMT	6,590885255	6,527348628	7,489490657	7,497107778	7,603634113
ILMN_1715024	0,0120164	LSS	9,402178	9,349612756	10,40596354	10,65743741	10,37379226
ILMN_1761093	0,012011051	B3GAT1	8,040528377	8,059209161	8,978286024	9,258532668	9,104398362
ILMN_1787705	0,012008742	ATP6V1B2	10,95565859	10,82919338	11,96569874	11,88321126	11,86452693
ILMN_2307455	0,012003951	UBE2A	9,108024291	8,945306266	10,11602612	10,27908127	9,975160185
ILMN_3237270	0,011999373	LOC100133609	6,843245956	7,013140579	7,942229402	8,115365658	7,985874199
ILMN_3307729	0,011978221	CXXC5	10,74932478	10,69906955	11,55890357	11,56227847	11,80560293
ILMN_2396020	0,011958926	DUSP6	9,258681218	9,232969603	10,67473044	10,20798988	10,10279939
ILMN_1845086	0,011958913		7,189230214	7,334879806	8,478121808	8,247214201	8,239061578
ILMN_1687375	0,011944263	ATP2A2	9,960671067	9,874422687	11,08575767	11,03603067	10,85178892
ILMN_1674236	0,011940357	HSPB1	11,08197688	11,06994974	12,12712599	11,82315848	12,08317833
ILMN_1652246	0,011931552	KIAA0363	9,139882773	9,174887839	10,00057544	10,15705178	10,24529011
ILMN_2049274	0,0119288	ARHGDIG	6,479559824	6,479572903	7,454178068	7,222056244	7,517179354
ILMN_2413779	0,011928173	SEZ6L2	8,419304882	8,287413562	9,190936826	9,270662557	9,405318117
ILMN_1751016	0,011923946	LONRF2	7,213441086	7,214322931	8,21242823	8,102456001	8,237064344
ILMN_1787843	0,01190987	HSDL2	8,335215815	8,442076932	9,613209768	9,281072013	9,350492887
ILMN_2089752	0,011903694	LOC285016	9,512894443	9,46883464	10,30500537	10,21429582	10,57609472
ILMN_2286870	0,011895214	CSNK1D	7,04407595	7,189388787	8,099096129	7,973247713	8,178186937
ILMN_1679185	0,01189069	LEF1	7,441079654	7,470067831	8,533222288	8,765175477	8,438571735
ILMN_2181445	0,011869457	BCL2L13	10,09992224	9,992830787	10,85120316	11,14554454	11,10429353
ILMN_1699695	0,011869409	TNFRSF21	9,586333021	9,544329948	10,59483764	10,91981498	10,54613266

ILMN_1768394	0,011849062	ARPC5	11,19473513	11,16246382	12,3752028	12,2028968	12,10657225
ILMN_1686367	0,01182751	HSPA8	12,29216681	12,04764679	13,22019109	13,21408108	13,09887356
ILMN_1712859	0,011824179	FAM89A	7,512962732	7,547831099	7,970467772	8,342628412	8,762731216
ILMN_2366246	0,011823184	SEC23B	9,566647468	9,650037763	10,39237679	10,66158625	10,71557475
ILMN_1709043	0,011820322	C9orf46	9,262962008	9,377991294	10,53455414	10,4361442	10,2708132
ILMN_1653783	0,011816063	MLC1	6,695160196	6,776651234	7,598933301	7,428481075	7,823001193
ILMN_2246131	0,011781313	BCAN	6,645917992	6,652126987	7,490426708	7,596908114	7,71429872
ILMN_1712950	0,011778652	PFN1	12,51584177	12,39002206	13,52867709	13,25535956	13,40232654
ILMN_2370685	0,011773567	C6orf1	6,825378312	6,988179955	7,932393815	7,71969306	7,943015264
ILMN_3251643	0,011770721	C1orf194	8,247283569	8,18175492	9,217662549	9,014405542	9,204698129
ILMN_3238785	0,011757113	SNHG9	8,869953301	8,853772317	9,895909125	9,832735588	9,845483064
ILMN_1771261	0,011744861	SYNC1	6,613579845	6,646038835	7,782972583	7,639223845	7,577550224
ILMN_1738742	0,01173973	PLAT	8,807742013	8,881277697	9,698575013	9,812887071	9,915480243
ILMN_1657373	0,011723872	LEPREL1	9,080144773	9,104359645	9,913577777	10,05814873	10,16198865
ILMN_1768391	0,011720033	ARL4C	7,471243886	7,437663724	8,449754106	8,571849509	8,439059758
ILMN_1681670	0,011719787	SLC25A4	9,006623569	9,161362987	10,01479752	10,14219354	10,14035801
ILMN_1729318	0,011714518	TOR1AIP1	9,29737429	9,157593061	10,20002811	10,17480145	10,20039996
ILMN_1703140	0,011691663	NEDD4	7,590057814	7,36245311	8,133993956	8,453171524	8,542647701
ILMN_1674034	0,011685425	H2AFY	7,398253555	7,519911897	8,495108765	8,442025619	8,46555972
ILMN_1726565	0,011679608	PIK3R2	11,87188315	11,79475432	12,48216194	12,80139465	12,93844783
ILMN_1779448	0,011671703	EFHD1	9,835545673	9,819881977	10,79060545	10,72542897	10,83050405
ILMN_1794011	0,011663627	CHST2	6,824896797	6,913251555	7,859106535	7,91688247	7,880478104
ILMN_3239445	0,011652986	ZBTB42	8,142490005	8,04267006	8,877252728	8,998154888	9,139487399
ILMN_1798379	0,011634946	NTM	6,642880409	6,705647848	7,708371015	7,793763999	7,657499578
ILMN_1739840	0,011630811	LRRC8A	8,722141144	8,60677492	9,517212147	9,398650373	9,684853756
ILMN_1663444	0,011621102	LIN7B	7,166519013	7,160778071	7,846645142	7,95161255	8,271117349
ILMN_2367239	0,011619988	RCAN1	8,220218031	8,410206019	9,500763304	9,586148749	9,265184832
ILMN_1794885	0,011598834	FRMD5	6,550516689	6,543866592	7,426416754	7,505678377	7,573016612
ILMN_1809292	0,011595321	IMMP2L	7,24319043	7,328800622	8,419133579	8,301949816	8,235400994
ILMN_1791593	0,011589818	DENND5B	9,61195647	9,641354847	10,53718133	10,32043372	10,65650152
ILMN_1703564	0,011584468	DYNLRB1	9,531771017	9,52699486	10,7089568	10,41367689	10,44302015
ILMN_1698259	0,011582441	TMEM100	6,878591069	7,068517001	7,931628057	8,03087124	8,011224428
ILMN_1786843	0,011577985	KCTD13	7,300008705	7,386707005	8,550589467	8,313377911	8,264435011
ILMN_2066066	0,011575642	HLA-DRB6	6,525861849	6,579212443	7,672160306	7,552271492	7,498015991
ILMN_2086105	0,011573531	SPRY4	8,663310029	8,588406076	9,513937663	9,753376915	9,62352834
ILMN_1733511	0,011551097	GOLGA3	9,043561508	9,075292576	9,91635049	10,21496595	10,09095231
ILMN_317840	0,011548344	KLHL29	8,950364442	8,675876096	9,596631092	9,480457624	9,813749095

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ILMN_1672589	0,011546714	SEMA4B	7,986929274	7,914461175	8,816597295	9,027639767	8,955418253
ILMN_1728349	0,011541452	TMEM63B	7,45969706	7,200265975	8,27306367	8,324702577	8,262631122
ILMN_2355463	0,011537521	CYFIP1	8,309729635	8,369433244	9,303998537	9,438835608	9,3371916
ILMN_1702320	0,011537321	JAKMIP2	7,685057045	7,509441648	8,717116303	8,666068202	8,480514589
ILMN_2350183	0,011536373	ST5	7,771280135	7,964590667	8,577961255	8,88400808	8,995747398
ILMN_2177090	0,011535221	LOC200030	8,293124081	8,164772549	9,156051346	9,290085135	9,196431845
ILMN_2383344	0,011534013	RSU1	6,613320609	6,572604792	7,558646213	7,499586396	7,571880357
ILMN_2053415	0,011533867	LDLR	11,45602157	11,33293544	12,01222812	12,33634792	12,48376001
ILMN_2390974	0,011528931	DNAJB2	9,466927659	9,5064382	10,33305363	10,23254102	10,53421364
ILMN_1730032	0,011528445	BOK	7,602620796	7,578533107	8,605415887	8,66291488	8,548572866
ILMN_2129388	0,011518578	FAM190B	7,943526954	8,094188738	8,908512853	9,164221286	9,062626233
ILMN_1686313	0,011515193	PLXNB3	6,500245884	6,577809649	7,650259685	7,439658801	7,489306231
ILMN_1731397	0,011514583	STMN4	7,039930403	6,918787297	7,792633552	7,773678124	7,997237585
ILMN_2308849	0,011514508	MYADM	10,54542989	10,33057855	11,49008424	11,28753839	11,34216358
ILMN_2398711	0,011494404	SIRT2	6,658302583	6,805495108	7,889753481	7,661784859	7,677646663
ILMN_1668514	0,011491654	PIP5K1C	7,80104385	7,71286673	8,731784841	8,814406267	8,710784888
ILMN_2313074	0,011486488	DEDD	8,307999651	8,339827598	9,573622121	9,350680137	9,203409934
ILMN_1889752	0,011481729		7,531349301	7,624807092	8,608584609	8,38361455	8,561030223
ILMN_1783231	0,011469092	PLEKHB1	8,081567229	8,088435316	9,034799768	9,13412276	9,068728457
ILMN_2340052	0,011463908	NCOR2	9,779693986	9,633408046	10,93443247	10,6865944	10,55068819
ILMN_1785330	0,011460166	SH3BP4	10,46861769	10,32752045	11,42844363	11,45963077	11,31497717
ILMN_3180989	0,011457928	DSTYK	7,058908072	7,212396478	8,176172835	8,248219463	8,116813826
ILMN_2396639	0,01145749	PDLIM7	7,681989695	7,914825514	8,759948412	8,655657541	8,8363211
ILMN_1791702	0,011456272	SMARCA2	8,153457258	7,994803301	9,366891894	9,231745051	8,883959854
ILMN_2366634	0,01145158	PKM2	9,735582949	9,82184652	11,213889	10,79100753	10,59792368
ILMN_1775762	0,011439449	GNAI2	10,96960575	10,92380704	11,98200293	11,87200151	11,8863187
ILMN_2413084	0,011436299	HSPA8	12,1417614	11,91950078	13,01336716	12,98230939	12,94646239
ILMN_2223350	0,011431425	C13orf1	7,356954255	7,299646893	8,349122045	7,925805496	8,279214051
ILMN_2363586	0,011428316	SDCBP	9,292852035	9,546641506	10,65476706	10,48770301	10,34999262
ILMN_2198878	0,011414651	INPP4B	6,572129883	6,742978903	7,65505513	7,776765209	7,6540745
ILMN_1791890	0,011409032	SPON1	7,626625344	7,624445015	8,628475502	8,601744299	8,581967213
ILMN_1740441	0,011404457	CYB5R3	8,945404492	8,985047021	9,966577455	9,813481315	9,936165848
ILMN_1674069	0,01139896	TOMM7	11,98180958	11,89934115	13,00414043	12,77527508	12,85858653
ILMN_2112301	0,0113935	DRAP1	10,15530091	10,20267493	11,517004	10,8819769	11,02820477
ILMN_3200330	0,011386189	LOC399988	11,27090963	11,23675161	12,24370192	12,24102669	12,20502742
ILMN_1658494	0,011385824	C13orf15	8,660349098	8,86030507	9,904983596	9,656035279	9,711881977

ILMN_1680434	0,011384088	MAPK8IP1	7,208913854	7,009461327	8,095519421	7,947814739	8,025982408
ILMN_1768181	0,011373408	TOR3A	8,269561497	8,265811692	8,996826633	9,057418228	9,328756099
ILMN_1674580	0,011367835	TRIM36	6,707817422	6,870654876	7,774450823	7,898002135	7,783045081
ILMN_1745697	0,011353263	MGRN1	8,385993788	8,34995245	9,66154173	9,106917512	9,207684777
ILMN_1802109	0,01135146	KBTBD9	8,250329222	7,98620326	8,977420955	9,013758976	9,061939065
ILMN_1768958	0,011349873	RASGRP1	6,77684235	6,696273594	7,766695738	7,457776943	7,665197855
ILMN_1678612	0,011337405	ANXA6	7,42955068	7,343592091	8,357316777	8,324028166	8,327674629
ILMN_1672124	0,011320209	C4orf18	7,052670104	7,071885343	7,781043003	7,860086416	8,125946491
ILMN_1797604	0,011319353	CAP1	11,53145216	11,44496251	12,39039615	12,41584686	12,4537537
ILMN_1797277	0,011307215	KIF3C	7,89683058	7,927922816	8,776276166	8,974468284	8,914444415
ILMN_1758412	0,011303367	COPS7A	9,568229105	9,373449235	10,45526268	10,57062549	10,37217939
ILMN_1709630	0,011289447	CCDC107	7,392692622	7,228933211	8,149158052	8,174978223	8,279754957
ILMN_1904578	0,011288889		6,493209792	6,565837365	7,457082371	7,292704779	7,52505982
ILMN_1806710	0,011276645	ESPN	6,506361963	6,601405681	7,732154466	7,437287519	7,455035001
ILMN_1900520	0,011274903		7,237473187	7,062867877	7,923164713	8,089245313	8,13713932
ILMN_1723678	0,011270219	PRPH	6,370049938	6,382114733	7,246847723	7,302363237	7,371155476
ILMN_1763144	0,011269012	NEU1	8,523177368	8,443237948	9,42233766	9,553502209	9,42569653
ILMN_2110281	0,011264125	UFC1	9,824878681	9,856053502	10,87913475	10,9592977	10,77023207
ILMN_1676336	0,011262216	AADACL1	6,745748422	6,876607293	7,926004853	7,964322892	7,734415379
ILMN_1851540	0,011254506		6,993092648	7,038714168	8,000411966	7,998386231	7,972104105
ILMN_2329914	0,011244685	SPRY1	11,12019053	11,08663593	12,05428681	12,01819644	12,05478449
ILMN_2358980	0,01123711	ILK	7,607896945	7,443379675	8,641103929	8,519141967	8,379610871
ILMN_1712708	0,011235414	TRIM47	6,449825372	6,395715763	7,433848375	7,326369831	7,345608373
ILMN_1857897	0,011235056		8,370220078	8,267644509	9,133586593	9,119617802	9,30719075
ILMN_1710001	0,011213323	RPL41	7,688371664	7,619854351	8,6470706	8,437142485	8,580998524
ILMN_1764383	0,011210513	MCOLN1	7,776865163	7,77342129	8,651052643	8,699183646	8,757071148
ILMN_1698419	0,011208257	NCOR2	8,967498068	8,783632296	9,889209163	9,885868607	9,759769666
ILMN_1814789	0,0111973	UBAP2L	9,857163795	9,810097061	11,10140753	10,68611912	10,65855154
ILMN_1659189	0,011195685	C9orf89	8,327722528	8,487304811	9,165177445	9,262196885	9,473718847
ILMN_1771238	0,011193981	CHM	7,716576322	7,553782665	8,731657568	8,420749262	8,498044948
ILMN_1666122	0,01118917	HEG1	8,771354829	8,841871164	9,707072263	9,769610469	9,793609073
ILMN_1733248	0,011184183	NRBP2	8,120114354	8,001544226	9,034211446	9,033615232	8,973857581
ILMN_1773485	0,01118346	QKI	7,733608375	7,732560288	8,57690643	8,722388549	8,722403434
ILMN_2319910	0,011172054	DGKA	6,632938554	6,660334081	7,620930196	7,831328256	7,58656458
ILMN_1677402	0,011169697	LOC387763	6,801740845	6,689535982	7,591432674	7,464601829	7,71471461
ILMN_1779558	0,011163244	GAS6	8,83014148	8,968199166	9,758078139	9,751030086	9,918391
ILMN_222775	0,011155986	PCDHB2	10,34085923	10,42746862	11,15078113	11,13134846	11,42841451

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ILMN_1715069	0,011155302	TANK	8,12040177	8,186203799	9,20646987	9,113621867	9,077397449
ILMN_1651229	0,011149136	IPO13	7,532214962	7,403482952	8,428911243	8,409306978	8,379695259
ILMN_2146389	0,011144029	MEGF10	9,346530019	9,36152371	10,34703534	10,39231161	10,28519868
ILMN_1723969	0,011142161	PLCB1	6,674090704	6,727809613	7,902073733	7,640072762	7,565618121
ILMN_1765310	0,011133137	TCEAL2	6,396469322	6,442331923	7,313753728	7,376757571	7,396307372
ILMN_2399769	0,011131828	GPR177	9,574362026	10,05171382	10,52920678	10,71910214	10,9620435
ILMN_1675803	0,011130677	LOC285550	7,092189748	7,235927739	8,106176422	8,051735639	8,147796283
ILMN_2206474	0,011123942	TMEM90B	8,242505668	8,196420042	9,123574309	8,9723389	9,175671715
ILMN_2109994	0,011116264	RAB4B	7,588138184	7,409058515	8,309807109	8,505555086	8,448921057
ILMN_2283325	0,011116181	GPR177	11,76665385	11,45284942	12,47053703	12,58253289	12,51073218
ILMN_1804822	0,011112454	SRXN1	7,559740589	7,734328457	8,665209184	8,773962702	8,599889985
ILMN_1766762	0,011111451	DYNLRB1	9,506900725	9,487438603	10,51842864	10,20237281	10,41591525
ILMN_1781001	0,011111124	SOCS3	6,950367055	7,003910721	7,68984306	8,100237873	8,016212841
ILMN_1801766	0,011107771	CCDC109B	9,93579654	9,935641402	10,81668776	10,75666104	10,90799294
ILMN_1714567	0,011102702	AHNAK	7,912009935	7,648101142	9,057303288	8,712499222	8,535076126
ILMN_2355462	0,01109997	CYFIP1	9,874558512	9,80093419	10,66643741	11,03023611	10,79963897
ILMN_1706687	0,011093474	KLHL5	9,18782923	9,218867653	10,33741461	10,22197688	10,07970859
ILMN_2193980	0,011091353	ABCB6	7,890654785	7,959821599	8,936507119	8,856443283	8,859093064
ILMN_2364376	0,011078477	ILK	10,99242363	10,95156105	12,00850304	11,97248184	11,866772
ILMN_2124187	0,011076613	TSC22D2	8,196374803	8,20074916	9,304789433	9,354801165	9,072434579
ILMN_1716093	0,01107584	KRT10	9,430396158	9,578141235	10,35298246	10,31253906	10,52065846
ILMN_1778425	0,011075814	DPP10	6,534496391	6,751303134	7,560897208	7,517938215	7,647415184
ILMN_1763036	0,011075104	CLCN6	8,048317842	8,047524263	8,902151278	8,977546006	9,022378747
ILMN_1668374	0,011071692	ITGB5	11,39127826	11,20481313	11,81537737	12,10301607	12,35894813
ILMN_2326509	0,011070513	CASP1	6,381037378	6,420944532	7,322369999	7,317001961	7,360064344
ILMN_1736103	0,011066692	ITPR2	6,698338972	6,620140579	7,78587466	7,831661909	7,504230148
ILMN_1736700	0,011058945	ALDOA	11,47825776	11,59008307	12,40399162	12,44285872	12,52881282
ILMN_1661537	0,011057185	LEPROT	8,833589255	8,805693496	9,696134118	9,690214349	9,779171872
ILMN_1714335	0,01105064	RDH10	7,314494096	7,248674733	8,545996533	8,170894921	8,083951721
ILMN_2220739	0,011049472	TMCO3	8,78625136	8,746624122	9,593377797	9,928275065	9,731846577
ILMN_2096322	0,011048632	ADIPOR1	8,110493217	7,937840113	9,285628392	8,992937062	8,799491295
ILMN_2107613	0,011041264	RHOJ	7,235126527	7,1624291	8,322235277	8,148535256	8,049665985
ILMN_1660847	0,011041161	PFKFB3	7,39122036	7,34650085	8,206647213	8,516646043	8,327969376
ILMN_1751572	0,01101632	TLE1	9,036125053	8,88516776	9,726582584	9,838469442	9,927298417
ILMN_3307221	0,011010944	NAV2	7,611143592	7,631889523	8,578831356	8,663831849	8,55092872
ILMN_1767360	0,0110062	IL10RB	7,211366405	7,376767484	8,345143828	8,252136691	8,224796034

ILMN_1882500	0,011004526		6,686396035	6,635653173	7,543204192	7,563164329	7,605718177
ILMN_2383934	0,011001625	ITGB1	10,81445372	10,68855099	11,66737989	11,66083812	11,66504843
ILMN_2411236	0,011000203	NRCAM	9,602472293	9,221588786	10,44006559	10,06743995	10,22985624
ILMN_1656042	0,010999656	KIAA0319L	7,716780876	7,425926324	8,225795415	8,323001745	8,548002057
ILMN_1743103	0,010994435	SH3PXD2A	8,25036411	8,002755153	8,824054723	9,034059342	9,092032972
ILMN_1796912	0,010992501	ARHGEF7	9,749422747	9,620439643	10,50360421	10,60023348	10,6330781
ILMN_1803819	0,010991957	IQGAP1	7,928499596	7,854819724	8,697501783	8,799160658	8,857567745
ILMN_1726549	0,010963	GDPD2	6,911860044	6,952968069	7,950809981	7,999662931	7,837278431
ILMN_1730054	0,010962603	GSTT1	8,651788302	9,019627244	9,87431227	9,916741195	9,811058021
ILMN_1691480	0,010961896	LONP2	7,977360923	7,985607925	8,77928468	8,763788742	8,970386704
ILMN_1702009	0,010959866	SV2A	7,936701497	7,875098756	8,700218078	8,70523731	8,878574443
ILMN_1703244	0,010957965	MAP1LC3B	9,550135337	9,637965031	10,47626742	10,46490167	10,56740853
ILMN_1770977	0,010946358	TMEM134	8,839072186	9,131984228	9,961797201	9,668113747	9,976912453
ILMN_1658472	0,010940145	APH1A	9,803994293	9,744608326	10,59706351	10,87005334	10,72570732
ILMN_2402600	0,01093778	GLIS3	8,256956703	8,22649029	9,047078812	9,013637271	9,216041737
ILMN_1763834	0,010926981	APLP1	9,275675587	9,298932025	10,38815709	10,01734808	10,16337929
ILMN_1690653	0,010898926	CDK2AP2	7,758960051	7,840826403	8,770749706	8,535763844	8,735017709
ILMN_1757604	0,010896631	TPM2	11,01164081	11,0736622	11,9010311	12,04956936	12,00725483
ILMN_1707689	0,010895053	FAM59B	7,054100209	7,161147661	8,073040217	8,174648478	8,040021267
ILMN_1755822	0,010893923	SYDE1	7,849153316	7,733578273	8,918283007	8,616438383	8,616957913
ILMN_1742124	0,010884891	KIAA1128	7,629891638	7,832600053	8,706183024	8,910558899	8,67829646
ILMN_1793241	0,01086916	SRD5A1	7,698892211	7,759023754	8,594814438	8,556437631	8,692029944
ILMN_1693233	0,010861786	KIAA0513	7,273357582	7,320945944	8,049437582	8,130257957	8,298924003
ILMN_2211479	0,010859936	MAEL	6,577954691	6,475749698	7,362145365	7,580158931	7,454902817
ILMN_2371911	0,010855088	MUC1	7,146438538	7,167885977	8,107824574	8,084891393	8,074156522
ILMN_3249669	0,010851132	HEATR5A	7,300872055	7,41362494	7,99566634	7,842037837	8,427119489
ILMN_1745807	0,010845158	TMEM62	8,03834126	8,0105335	8,859878992	8,872878542	8,97449102
ILMN_1719627	0,010837257	SLC27A3	7,642673305	7,60829624	8,269140103	8,492499928	8,644619945
ILMN_2163306	0,010831103	FAM120A	9,798172498	9,684771608	10,76628699	10,53045091	10,60023659
ILMN_1778064	0,01081498	FICD	7,374951557	7,438569664	8,392868273	8,116750644	8,322426153
ILMN_1805800	0,010814545	RAB5A	8,908791606	8,989683589	9,903634335	10,07485441	9,868510014
ILMN_1785268	0,010813646	CD58	7,465304888	7,408610007	8,530805817	8,252613807	8,279732814
ILMN_1796106	0,010796912	MGAT4B	8,471801602	8,474352917	9,309432331	9,417873165	9,421462413
ILMN_2141941	0,010791977	TOR1AIP1	8,395102711	8,385079416	9,491914782	9,153394497	9,240388308
ILMN_1796245	0,010790827	DNASE2	9,51430858	9,497866449	10,24195649	10,06840416	10,49922235
ILMN_1719064	0,010787877	KCTD10	9,112331729	9,13139751	9,892897944	10,03268551	10,09898916
ILMN_168998	0,010784543	CDC42BPB	7,93052352	7,845429399	8,82480028	9,014284143	8,770122768

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ILMN_2041483	0,010779889	PCDHB10	6,564074968	6,574562674	7,780725352	7,501410087	7,376766452
ILMN_1712659	0,010779744	PPP2CB	10,15590316	10,3873683	11,28323295	11,16291071	11,2086832
ILMN_1705302	0,010776064	FCGRT	7,411063226	7,340918178	8,331607534	8,315445641	8,259318562
ILMN_1915076	0,010772958		8,405826938	8,420380707	9,314123876	9,15898967	9,343278643
ILMN_2211739	0,010755957	SLC15A2	6,453058055	6,471988188	7,322044455	7,263893566	7,405811961
ILMN_1737163	0,010736295	SH3BGRL3	9,420263806	9,341820821	10,44454386	10,17092748	10,22216497
ILMN_1653133	0,010732894	SH3D19	7,351846199	7,33522775	8,401194041	8,323119257	8,194793398
ILMN_2357855	0,010729597	NTRK2	8,029166105	7,959088541	8,734247104	8,846169459	8,956034825
ILMN_1912185	0,010724876		8,634005822	8,510840042	9,693246912	9,495794855	9,37549754
ILMN_1765851	0,010709218	TRADD	6,690198691	6,740394744	7,521963745	7,343815385	7,68566743
ILMN_2378100	0,010708897	FBXL5	8,340792985	8,58345693	9,210221723	9,495645721	9,488021698
ILMN_1778203	0,01070439	CLN5	7,942620109	7,884443196	8,784569572	8,852888647	8,823160711
ILMN_1657483	0,01070358	SEC23B	9,293774792	9,244262109	10,2339658	10,15204009	10,147399
ILMN_1753143	0,010703088	RHPN2	9,161250407	9,261185107	10,03991987	10,11294371	10,17612024
ILMN_1685703	0,010701979	ACOX2	7,685328787	7,898305139	8,741187798	8,707222142	8,737297205
ILMN_1746664	0,010700424	WSB2	8,128158471	7,938277342	9,109698262	9,127330103	8,828581653
ILMN_1776213	0,010700279	RGMB	8,290406297	8,085621855	9,673485071	9,142276255	8,829986207
ILMN_1666057	0,010699819	REEP2	9,449221365	9,270007472	10,46177991	10,11045963	10,15886149
ILMN_3307892	0,010696658	PARVA	8,535788791	8,420800256	9,241794418	9,385550262	9,415152681
ILMN_1654016	0,010695963	MRLC2	11,52128899	11,39057333	12,39576241	12,49988499	12,31844787
ILMN_1815130	0,010690703	MICALL1	7,180559625	7,117236571	8,130532801	8,061496494	8,014711306
ILMN_1753472	0,010689831	SUMF1	8,10510226	8,079737311	8,867339848	8,826931957	9,050853958
ILMN_1707336	0,010689525	ARPC4	10,00042537	10,11749194	10,86595696	10,97365155	11,03421706
ILMN_1761247	0,010674513	PIR	10,06227115	10,12938686	10,95165856	11,245021	11,03162423
ILMN_1775448	0,010668883	PFN2	11,09710197	11,02903401	12,21557676	12,10431023	11,85728369
ILMN_1750062	0,010667492	PPARGC1A	6,763978715	6,771072184	7,539954932	7,615531277	7,728611191
ILMN_1673649	0,01066651	HYOU1	8,129779215	8,00184374	9,233624913	9,322996552	8,832463325
ILMN_1717674	0,01066082	PEPD	10,14868218	10,27468272	11,05777416	11,11473349	11,17127043
ILMN_1659936	0,010655965	PPP1R15A	9,055484423	8,976185668	9,768485086	9,748379442	9,966052919
ILMN_2089329	0,010653046	SPRY2	10,30397727	10,32565437	11,45195048	11,28757948	11,13658424
ILMN_2147517	0,01065285	CD58	7,41905687	7,508284544	8,708736525	8,387041123	8,261784819
ILMN_2311518	0,01064897	TROVE2	10,3174911	10,24004489	11,18778525	11,18246892	11,16446655
ILMN_2311166	0,010643649	ITGB5	10,92327356	10,5578053	11,39663514	11,66529377	11,65132541
ILMN_1813191	0,010641041	LOC653080	8,242389523	8,267444359	8,995826007	9,028501096	9,231267065
ILMN_1759097	0,010640284	MLLT11	12,07111049	12,0147045	13,13008563	13,17993914	12,85800392
ILMN_1702231	0,010637226	C1orf54	9,804313543	9,774423314	10,87590439	10,61941356	10,62038058

ILMN_1763228	0,010630532	MEF2D	7,365047775	7,355907378	8,195464719	8,240925368	8,288314963
ILMN_1790008	0,010627203	CYP2U1	7,307473149	7,268986352	8,299645296	8,224574847	8,140381753
ILMN_1722855	0,010626377	VEGFB	7,619262961	7,604629626	8,829184801	8,466296361	8,394673237
ILMN_1727309	0,010626368	FAM82A2	9,227833491	9,161524143	10,3917506	10,32355277	9,964608209
ILMN_1729455	0,010622634	EML1	9,397259228	9,318966062	10,26812512	10,25284746	10,24027276
ILMN_1657760	0,010620814	SYT17	7,206497266	7,148129982	8,117269996	8,039813035	8,053209076
ILMN_2303912	0,010617373	SCD5	6,78946692	6,838862155	7,616320059	7,706469176	7,766722736
ILMN_2055156	0,01061127	PAG1	7,268077932	7,141407718	8,211039414	7,881996052	8,0438796
ILMN_1780937	0,010609568	MUS81	7,798681892	7,843365086	8,869951476	8,564079666	8,682940786
ILMN_2407482	0,010605459	ITPA	8,872797859	8,766972844	9,629153763	9,672779369	9,732559988
ILMN_1771689	0,010597473	EXD2	8,490434363	8,405756981	9,521225215	9,419133511	9,261598384
ILMN_2357730	0,01058952	CCRK	7,947742032	7,77500843	8,663758124	8,564897591	8,763003145
ILMN_1770454	0,010579231	AGRN	8,978659197	8,850940525	10,04560767	9,77769469	9,697564376
ILMN_3307799	0,010578961	PSMD4	10,16718218	9,960580633	10,68650036	10,77938002	11,02409481
ILMN_1764927	0,010568859	CDC42EP1	7,12902737	7,179609064	8,149760513	8,012140348	8,029309222
ILMN_3229606	0,01055114	LOC729406	7,745758165	7,566054076	8,362297094	8,178025705	8,59304475
ILMN_1670308	0,010544099	GPM6B	10,3057035	10,10543612	11,1359939	10,93810491	11,04654542
ILMN_1781819	0,010543002	PAPSS1	9,904122546	9,984969832	10,74753349	10,90197112	10,89376508
ILMN_2087060	0,010539827	TOMM7	11,76652167	11,77325042	12,88249578	12,64484611	12,5866829
ILMN_2405991	0,010536776	TRAF7	6,993438789	7,036254857	7,915823743	7,920381075	7,918338313
ILMN_1806692	0,010510063	HEXB	10,44111002	10,34447779	11,30044085	11,47890587	11,25211268
ILMN_2390227	0,010508727	TBC1D9B	8,033438106	7,941948233	9,071498149	8,7543425	8,791086382
ILMN_1666445	0,010507348	CAMK2A	6,495387724	6,475476662	7,380505654	7,465850355	7,370684777
ILMN_2112638	0,01050392	SVEP1	7,012336319	6,93157109	7,787219286	7,859492907	7,874848772
ILMN_1698179	0,010497961	TAGLN3	11,45716124	11,21814107	12,07078811	12,18492122	12,23459158
ILMN_1735680	0,010493849	TMEM30A	8,833876977	8,519384125	9,548416885	9,608361236	9,499877778
ILMN_1710514	0,01048898	BCL3	7,408765139	7,257237546	8,531725628	8,015437458	8,078795467
ILMN_3238986	0,010470913	CALY	7,366328116	7,45298606	8,141246126	7,912882108	8,392051359
ILMN_1766169	0,01046177	BCAT1	10,71036546	10,76207702	11,59737033	11,87289953	11,64123559
ILMN_1757646	0,010461158	UFM1	8,918672536	9,194751574	9,571396305	9,966955805	10,15295468
ILMN_1722798	0,010460284	PLCD3	6,779540399	6,839084796	7,575347036	7,601312374	7,762235559
ILMN_1803476	0,01045751	KCTD20	9,221652388	9,567706094	10,10867174	10,3600517	10,43043963
ILMN_2142284	0,010456891	SLC25A43	7,327626779	7,523528528	8,19592902	8,405455591	8,403029205
ILMN_2412294	0,010447779	GNB5	7,563001815	7,919672918	8,821220534	8,641350729	8,642069005
ILMN_1779600	0,010443901	RIPK5	7,245381556	7,453813587	8,179596189	8,10176284	8,313080161
ILMN_1732612	0,010443192	SHB	6,904467037	6,878340533	7,722829384	7,771371347	7,79431191
ILMN_170435	0,010439152	IGSF3	9,223937383	9,353103173	10,15588719	10,37804643	10,20842121

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ILMN_1703866	0,010439102	SUPT5H	8,214327162	8,259328658	9,171579403	9,402842804	9,108479782
ILMN_1813704	0,010415692	KIAA1199	6,455241207	6,472476971	7,367471561	7,364810724	7,346282829
ILMN_2230892	0,010412975	IL10RB	9,101478118	8,919153984	9,82432913	9,453137807	9,892629686
ILMN_1739640	0,010409424	DCHS1	7,841713798	7,800072028	8,880752585	8,899278652	8,623613355
ILMN_1798254	0,010401678	ACTR10	8,998997278	9,142001059	10,04706614	10,07363967	9,950698375
ILMN_2302654	0,01038693	LRP8	6,562192486	6,796172304	7,577542111	7,691493796	7,608429658
ILMN_1658928	0,01037235	GNB2	8,11549333	8,391279401	9,351593891	9,236605202	9,116404557
ILMN_1712684	0,010370283	FAM20C	7,734251338	7,673335932	8,510646862	8,805358911	8,59185222
ILMN_1670609	0,010353413	ATOX1	10,37476092	10,42240737	11,41940802	11,16875972	11,24085365
ILMN_1657550	0,010351991	MVD	7,947346882	7,974110353	8,651943719	8,93970653	8,915114336
ILMN_1789702	0,010346944	GBE1	7,886143403	7,863445211	8,743374963	8,784590648	8,751961483
ILMN_1677680	0,010344914	FGF12	6,665670862	6,729345763	7,81528431	7,52528597	7,5040024
ILMN_2401978	0,010341998	STAT3	9,530592583	9,654935816	10,37949729	10,34291864	10,54087888
ILMN_2399140	0,010337318	RAB5C	8,517501146	8,454786202	9,424719391	9,415763196	9,325798782
ILMN_1789507	0,010333906	COL11A1	9,342380379	9,092029808	10,3539003	10,12439824	9,937692756
ILMN_1808777	0,010319134	EHD2	6,573145365	6,756834229	7,632517656	7,626145303	7,549627246
ILMN_2047599	0,010317304	TMEM50B	8,812086876	8,738053736	9,441125297	9,587802952	9,716099813
ILMN_1683658	0,010304212	FKBP1A	9,267989342	9,363829238	10,38126999	10,12503096	10,14574112
ILMN_1880406	0,010299958		9,53921009	9,506880153	10,43956913	10,34587809	10,37739031
ILMN_1706015	0,010299015	FAM43A	6,876405087	6,893514463	7,680948192	7,688967062	7,796679405
ILMN_1814770	0,010290697	CPNE4	8,829403171	8,823751431	9,605467345	9,598011072	9,739557585
ILMN_1654072	0,010284192	CX3CL1	9,254882985	9,005913393	9,431009042	9,715135848	10,17052532
ILMN_2213558	0,010275285	TMED10P	11,07595434	10,92384119	11,72293884	11,75926397	11,89756322
ILMN_1741869	0,010272746	WDR47	7,414404028	7,557070933	8,306604069	8,395439183	8,411529576
ILMN_1750324	0,010270662	IGFBP5	12,50897405	12,46953778	13,48189862	13,44596953	13,3053183
ILMN_3298423	0,010257968	TOX2	8,521339908	8,671052533	9,468070258	9,583152415	9,500653518
ILMN_1766165	0,010251288	SNCA	7,395515528	7,514797722	8,453287606	8,36505634	8,305924865
ILMN_1659766	0,010251045	BAG3	9,526655816	9,41163855	10,21009044	10,02876287	10,3722094
ILMN_1704785	0,010242755	C10orf125	7,383659188	7,362783101	8,169298049	8,090852658	8,271556315
ILMN_1760866	0,010242472	C9orf4	6,448774278	6,575812348	7,349929485	7,058747668	7,436224273
ILMN_1812688	0,010241378	C2orf18	7,981443488	8,124947112	8,702482425	8,912227854	9,041890668
ILMN_1714397	0,010240933	CRYL1	6,994849718	7,191159003	7,86710264	7,848921505	8,050283605
ILMN_1761260	0,010240777	COBLL1	7,727487331	7,676922919	8,585813464	8,537384481	8,556579669
ILMN_1809928	0,010236869	COL6A2	7,123216371	7,116522522	7,940233701	7,905621823	8,009672351
ILMN_1717393	0,01023416	PTCHD1	6,291507938	6,398973221	7,34637792	7,374794251	7,186782995
ILMN_1657888	0,010232256	SALL1	6,873209956	6,900764852	8,049412205	7,699298527	7,654778324

ILMN_1765326	0,010224151	DGKD	7,211354274	7,126296391	7,94129761	8,026273903	8,054156008
ILMN_1745148	0,010222259	ZNFX1	7,258471215	7,258422272	8,111330235	8,010621921	8,136832647
ILMN_1781386	0,010218693	WIPI1	7,256248987	7,199440063	8,074037038	8,040261944	8,092868327
ILMN_1731418	0,01020607	SP110	7,287175357	7,138343302	7,944063737	8,045853032	8,096923631
ILMN_2220403	0,010195848	C6orf72	7,744217771	7,699465763	8,55796911	8,58071219	8,589402783
ILMN_2393254	0,010195679	CAPNS1	9,712116515	10,03746516	10,84890051	10,57610607	10,78442559
ILMN_1690806	0,010194952	PTPLB	8,984222162	9,05123039	10,07560699	10,14351833	9,820484071
ILMN_1757072	0,010193682	LOC642489	9,238823315	9,247704878	10,2670807	10,01732098	10,05577337
ILMN_1750693	0,010190193	SSR1	9,546299891	9,476963807	10,64369845	10,44471273	10,25927023
ILMN_1751963	0,010188358	ZCWPW1	6,785279305	6,957237814	7,56071859	7,659318219	7,847456563
ILMN_1842065	0,010187789		7,480886324	7,364191701	8,261921762	8,245697869	8,271732294
ILMN_1813925	0,010184505	NOL3	6,826246689	6,959608054	7,708023939	7,546380575	7,816221213
ILMN_1721636	0,010183372	TSC22D4	6,942374685	7,042652472	7,995004306	7,846399632	7,830788987
ILMN_3265742	0,010179975	LOC100130835	9,013044049	9,335171645	10,28204834	9,727109325	10,03515684
ILMN_1753500	0,010175553	ARHGAP12	8,133806075	8,118653738	8,885362278	9,020131724	9,026551086
ILMN_1803018	0,010172681	KIFC2	7,028682464	6,903151724	7,816480138	7,805176221	7,806642765
ILMN_3247578	0,01016862	FAT1	10,16875102	9,881346088	10,8249596	11,29797812	10,83259581
ILMN_1725387	0,010167886	TMEM200A	6,586248652	6,702109218	7,594637823	7,662978571	7,499172675
ILMN_1690546	0,010164595	PPP3CC	7,466089287	7,725411972	8,326531048	8,508757618	8,570437025
ILMN_1752502	0,010161126	HKDC1	6,485486049	6,520185063	7,510838798	7,416962243	7,319227534
ILMN_1656869	0,010151675	LGALS9B	6,696444	6,523469335	7,550628178	7,509089686	7,401340215
ILMN_1732609	0,010149305	KIAA1539	7,499272174	7,358632036	8,485654261	8,361255497	8,182463588
ILMN_3255124	0,010134177	ATL1	8,081988307	8,083041725	8,979071636	9,16944308	8,923927549
ILMN_1737833	0,010132791	ATN1	7,572099937	7,532007622	8,603747684	8,37569223	8,332952225
ILMN_2411264	0,010124405	BTBD1	8,300129801	8,265766326	9,304510172	9,283037216	9,070349561
ILMN_1735955	0,01012272	LOC644033	9,08566969	9,020180893	9,952061672	9,886913921	9,884230106
ILMN_1678692	0,010113001	MPRIP	7,278467971	7,278555332	8,046420587	8,210199627	8,170306329
ILMN_1777378	0,010112859	COMMD6	11,91482201	12,06449162	12,89768762	12,85644708	12,86690937
ILMN_1739497	0,010096766	GTF2H5	10,61194963	10,48465228	11,49914573	11,52967371	11,33776254
ILMN_2047460	0,010081814	C1orf187	7,901847312	7,816498876	8,552319568	8,618290557	8,760416111
ILMN_1807662	0,010079068	IGF2R	11,14032907	10,89664847	11,64151911	11,88274879	11,90517986
ILMN_1800512	0,010069591	HMOX1	6,704734796	6,757313583	7,748188578	7,635060336	7,537424185
ILMN_1658830	0,010067428	C10orf26	8,007195178	7,877740851	8,43419221	8,757219	8,905672019
ILMN_1654289	0,010063897	ELK1	8,673454517	8,587316527	9,414475484	9,510435574	9,491533048
ILMN_1723467	0,010055615	ITGB1	12,0819494	12,01648543	13,07899777	12,8884064	12,82304844
ILMN_1695880	0,010055438	LOX	6,521453634	6,60358204	7,625882264	7,353909254	7,360562156
ILMN_165929	0,010053181	FZD6	6,675507576	6,549841199	7,606121999	7,565079266	7,382054524

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ILMN_1775304	0,010051605	DNAJB1	8,866072754	8,941769335	9,786260149	9,860616661	9,763018725
ILMN_1747627	0,01005157	ABCA2	6,824646281	6,864540741	7,70165133	7,289254696	7,720324272
ILMN_1658498	0,0100404	SLC44A3	6,943044411	6,811699986	7,708584936	7,693116374	7,708986031
ILMN_1743747	0,010040066	RUSC1	9,61190447	9,795253777	10,57653796	10,42490747	10,59807562
ILMN_1788203	0,010039154	HEY1	7,084640691	7,035408263	7,835792452	7,846893103	7,932785181
ILMN_1732071	0,010037763	HIST2H2BE	8,043200145	8,052748487	8,950596903	8,950840255	8,88330145
ILMN_1765459	0,010031332	S100A13	10,7144438	10,67623057	11,60363201	11,51307407	11,5194266
ILMN_1745110	0,010028816	LAPTM4A	8,059001277	8,226839086	9,150046369	8,848162721	8,981887317
ILMN_1672605	0,010020891	C7orf41	9,009933422	8,85996312	9,75895281	9,623974892	9,766629705
ILMN_2414878	0,010016884	STXBP1	7,302579674	7,298684914	8,127751056	7,990847654	8,165144844
ILMN_3269324	0,01001466	FLJ37644	6,79417749	6,826318496	7,560082179	7,643335193	7,708095809
ILMN_1652749	0,010014395	ERF	7,898396262	7,801644665	8,737401712	8,69961314	8,664402491
ILMN_1653797	0,010013827	C6orf62	8,969242029	9,224567523	10,11302368	10,35018969	9,934890597
ILMN_1779512	0,01001027	AP4M1	6,766690874	6,867540443	7,628234267	7,665696415	7,707273349
ILMN_1738989	0,010008233	GOLSYN	9,435171645	9,298172425	10,17834634	10,38698124	10,19438627
ILMN_2356786	0,010007328	ADD1	8,229191203	8,02489926	9,128086555	9,152484639	8,866595044
ILMN_2157951	0,010006403	STX6	8,698153274	8,68366036	9,68315481	9,649357262	9,481429566
ILMN_1796458	0,010001245	GABARAPL2	11,15355159	11,15681533	11,93308517	12,04825412	12,03239091
ILMN_1770085	0,00999846	BTG2	8,872054386	8,973716326	9,791034107	10,03316442	9,782420583
ILMN_1751803	0,009996675	LSM10	9,125138138	9,447217437	10,18102871	10,09819655	10,19758139
ILMN_1676192	0,009986558	SLC13A5	6,506080506	6,511315836	7,185367366	7,274416873	7,426681941
ILMN_1739792	0,009976614	RHOG	8,819436269	9,022650589	9,73717221	9,894655118	9,82615625
ILMN_1802397	0,009974261	GNA11	9,03808775	9,347552228	10,20064335	9,810405086	10,0619516
ILMN_1665945	0,009966482	ACBD3	8,270823452	8,146750823	9,223682801	9,202560543	8,958464627
ILMN_1784749	0,009952089	GAS6	8,841687135	8,802142851	9,541540891	9,582029655	9,708932692
ILMN_1727524	0,009951632	ADAM9	7,201285983	7,149132399	7,85129621	7,731763707	8,081489025
ILMN_1814606	0,009946375	GALNT2	7,348720626	7,283385944	8,316435866	8,212350588	8,085666816
ILMN_1798123	0,009942635	ELOVL1	7,467081609	7,52867612	8,248377571	8,251391498	8,396117466
ILMN_1739558	0,009941935	CRELD1	8,433347512	8,290464501	9,050854851	9,233728616	9,230892462
ILMN_1765684	0,009931214	C19orf70	10,44039567	10,57437398	11,40179198	11,17951151	11,37049524
ILMN_1716552	0,009928388	ENAH	9,004542085	9,032498733	9,855972111	10,01476217	9,867151736
ILMN_1712583	0,009926388	METRN	9,451632977	9,600021826	10,09909439	10,1672709	10,51380436
ILMN_3235221	0,009924901	LOC644936	10,32967962	10,17473458	11,81964818	11,38543955	10,77726165
ILMN_1672908	0,009922117	TWIST1	7,326840788	7,539414936	8,412172001	8,218466531	8,277906541
ILMN_2370296	0,00991585	ENAH	8,185202284	8,370902516	9,151868828	9,078313196	9,155138985
ILMN_1781986	0,009914258	UCRC	9,565582245	9,4727448	10,37284494	10,14841584	10,34255131

ILMN_1720484	0,009905143	CRTAP	7,492431899	7,496297543	8,32274976	8,20856372	8,346137393
ILMN_1660063	0,009905034	POLE4	9,651657851	9,887051109	10,6662681	10,43169291	10,65295807
ILMN_2399304	0,009899525	NAV2	7,697133838	7,688778879	8,288958292	8,336066243	8,631007063
ILMN_1710482	0,009893194	APLP2	9,388408721	9,375369525	9,991908822	10,29175228	10,30499778
ILMN_1671281	0,009892877	RNASEL	7,23161938	7,175270808	7,87248945	8,12233833	8,093065898
ILMN_1684054	0,009876726	ASAH1	7,594204643	7,424283652	8,22082522	8,264864712	8,358742401
ILMN_2341548	0,00986113	MYO5B	6,491230986	6,515444529	7,498245588	7,223112572	7,292280919
ILMN_1805104	0,009857298	ABAT	8,694335776	8,625672486	9,548914693	9,384749962	9,465918623
ILMN_1653283	0,009852745	APP	7,27029579	7,25120209	8,01262431	7,825140724	8,134261418
ILMN_1693620	0,009827896	PGM3	7,664983526	7,774766804	8,718829306	8,65828215	8,516542057
ILMN_1657810	0,009826112	PPM1M	7,528391197	7,357541254	8,163895064	8,323776437	8,278761582
ILMN_1777915	0,009824565	STX6	8,775828012	8,819855116	9,562981488	9,63229093	9,670134843
ILMN_2155719	0,009820382	NBPF10	10,3113569	9,849384482	10,60583915	10,84383965	10,92373709
ILMN_1779735	0,009819697	C7orf59	10,59739955	11,0194111	11,62625866	11,67874424	11,74982611
ILMN_1814799	0,009811373	S100A13	6,705046238	6,611114684	7,486193402	7,365822273	7,476032353
ILMN_2313782	0,009808098	ATG4A	7,359997747	7,431350694	8,064106529	8,259377599	8,307652997
ILMN_1760855	0,009804253	OCRL	8,039266031	8,037037514	9,033280354	9,069836018	8,803809522
ILMN_1740180	0,009801007	SNX3	11,19358417	11,31329406	12,08412951	12,1249279	12,11531387
ILMN_1659106	0,009784009	PHLDA3	8,741241975	8,726476889	9,665695523	9,375566369	9,530332111
ILMN_1659782	0,009782182	STK19	8,264720794	8,487418087	8,976747965	9,239138593	9,347090677
ILMN_1685574	0,00977637	TSC22D2	8,041034681	8,200428701	8,970363319	9,205318352	8,975032877
ILMN_3241218	0,009776251	ANKIB1	8,501658735	8,361291944	9,299099594	9,268635545	9,214959658
ILMN_1654541	0,009773279	ATP6V1G2	8,176678781	8,177494194	8,998479419	9,075478484	9,009477283
ILMN_2126957	0,009770139	NOMO1	8,543973478	8,673003189	9,28579736	9,471365181	9,526810948
ILMN_1810514	0,009769946	SLC25A44	9,108200647	8,865965456	9,687160586	9,786037409	9,80993798
ILMN_1658261	0,009762709	MAPKBP1	6,615112242	6,656743122	7,485392541	7,441127316	7,469410617
ILMN_2348367	0,009758533	FGFRL1	7,74057668	7,750053736	8,776242104	8,738070219	8,495904393
ILMN_1768975	0,009753153	GLIPR1L1	6,698198671	6,884176951	7,812800551	7,743083086	7,588368641
ILMN_1690099	0,009748666	ITGB1BP1	9,731540573	9,851799838	10,83342249	10,52108313	10,57228067
ILMN_1750273	0,009742743	RPL23AP7	7,88251255	7,971506633	8,802855336	8,920700996	8,753277356
ILMN_1677466	0,009741927	DUSP6	7,602479584	7,694272741	8,403195223	8,368827366	8,529252023
ILMN_3217276	0,009738701	LOC644517	7,908753403	8,076670319	8,870756459	8,7145993	8,845058019
ILMN_1756898	0,009738524	COQ9	8,94414894	8,951208586	9,94557985	9,77906527	9,713183342
ILMN_1772278	0,009732705	TANC1	7,964437387	7,680313767	8,771327412	9,054223228	8,523025222
ILMN_3251132	0,009726395	TMOD2	6,717988416	6,717661775	7,629138516	7,509460157	7,513918362
ILMN_1714741	0,009723833	LOC346887	8,050251194	8,179026004	8,91173884	8,832397755	8,986524515
ILMN_168421	0,009716832	SEC14L2	6,711075606	6,663670016	7,479616666	7,412149555	7,518089927

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ILMN_1684576	0,009706193	CLN8	6,760406797	6,79195295	7,559126589	7,434141729	7,629954948
ILMN_1702168	0,009704039	HSD17B12	10,03279789	9,998382633	10,9076779	10,9523019	10,80381173
ILMN_2157544	0,009698587	GBF1	7,353156373	7,348580602	8,257029278	8,388543195	8,136497298
ILMN_1746784	0,009697409	SLAIN1	9,34285475	9,390205512	10,37741424	10,23836458	10,13069701
ILMN_1749636	0,009695847	DNAJC22	6,620774295	6,545585423	7,255808157	7,233130162	7,452252928
ILMN_2396198	0,009694492	APLP1	7,978580148	7,88093205	8,990349965	8,685859903	8,643247754
ILMN_2065606	0,009683904	TOMM40L	7,641109034	7,643640835	8,548745051	8,62175008	8,429717765
ILMN_1735438	0,009676482	GPM6B	12,49955078	12,46645847	13,15425087	13,45978009	13,35000583
ILMN_2342554	0,009675578	TAGLN3	9,33370199	9,378674656	10,20912982	10,36720992	10,17239502
ILMN_2360415	0,009667457	PRNP	9,614017043	9,57222628	10,31830279	10,40088311	10,44210026
ILMN_1655418	0,009663863	CAPNS1	10,62497778	10,76527222	11,64816727	11,47587508	11,50224703
ILMN_1688480	0,00965591	CCND1	12,58890147	12,61470948	13,3538413	13,30031281	13,45860964
ILMN_1802338	0,009651682	HHLA3	6,812523774	6,933718199	7,644131926	7,666208374	7,742010403
ILMN_1674985	0,009642602	TMEM51	9,682870957	9,412397967	10,35912463	10,27179837	10,30890741
ILMN_1757877	0,009635397	HCFC1R1	10,17325273	10,19179814	11,32306318	10,94864657	10,88684763
ILMN_3307858	0,009630927	STIM2	7,164401606	6,869154867	7,640967138	7,736307065	7,841090611
ILMN_3246433	0,009622653	RNY5	7,447375764	7,406999342	8,316484845	7,99941365	8,215982072
ILMN_1769288	0,00961333	LOC402560	6,936304024	6,976735458	7,887653707	7,76443757	7,740585427
ILMN_2214790	0,009612794	LAMB1	7,020110197	6,937629242	8,15006147	7,763634307	7,643644334
ILMN_1704972	0,009612327	TRIM5	8,391543243	8,690285248	9,150521244	8,989652285	9,519390562
ILMN_1746403	0,009612043	GTF2IRD2P	6,81086128	6,885718448	7,45780321	7,617882816	7,76299734
ILMN_1664292	0,009601169	ZNF415	6,711626525	6,699911824	7,626206698	7,573863441	7,478347831
ILMN_1714820	0,009598924	ITGB1	10,03044539	10,00434238	10,79491736	10,96182464	10,83797812
ILMN_1705241	0,00959536	TDRD7	6,450171326	6,565476712	7,339386257	7,092732845	7,352567547
ILMN_1747725	0,009595145	MLC1	6,712101287	6,59795925	7,418375737	7,626798403	7,458474354
ILMN_1780700	0,009587869	GUSBL1	7,340866245	7,248158098	8,075512237	7,971409824	8,104198299
ILMN_2153280	0,009587695	KIAA0090	8,336958519	8,256503317	9,338730582	9,163408651	9,005278356
ILMN_1654516	0,0095817	TMEM120A	9,04434643	8,974271473	9,689301691	9,671139578	9,862715623
ILMN_2405305	0,00957866	ARNTL	7,600414861	7,750275066	8,344654974	8,450031268	8,581152779
ILMN_2326512	0,009575544	CASP1	6,572878475	6,443677717	7,232336718	7,281827788	7,326713329
ILMN_1696360	0,009566476	CTSB	8,426710638	8,22726983	9,127835883	8,863098154	9,105705739
ILMN_1781580	0,009562208	BRI3	10,47016173	10,72452954	11,47394443	11,01830906	11,45963023
ILMN_1794017	0,009557071	SERTAD1	8,863198133	9,10975592	9,620516119	9,843589895	9,924040664
ILMN_1671557	0,009557009	PHLDA2	6,624845088	6,712117143	7,390003574	7,435290334	7,537637033
ILMN_1670000	0,009550807	DCAF6	8,945724053	8,848891458	9,725818775	9,732615761	9,679182733
ILMN_1666376	0,009546191	TRIM56	7,164125606	7,195229606	8,148320265	8,125315609	7,934934773

ILMN_1785191	0,009543817	TMEM14A	8,445967052	8,472511755	9,332727504	9,418879675	9,248881213
ILMN_1655563	0,00954075	KIAA0427	7,657450369	7,471991672	8,199028081	8,482082693	8,394388321
ILMN_1806787	0,009539623	CSDC2	6,910425712	6,864056257	7,926818579	7,725539974	7,599939534
ILMN_2361742	0,009537647	LPPR5	6,483825787	6,477003442	7,249625751	7,117146244	7,310850744
ILMN_1662483	0,00952091	SMA5	7,669713506	7,599832315	8,359500235	8,245765848	8,465197581
ILMN_1677092	0,009519808	GEM	6,814407022	6,794669382	7,464663526	7,716499717	7,6621161
ILMN_1727194	0,00951905	CALU	9,986622345	9,784207087	10,82139761	10,99389953	10,58934727
ILMN_3247023	0,009517831	FLJ22536	7,508501324	7,659329036	8,512465431	8,437713752	8,382434841
ILMN_1814305	0,009516335	SAMD9	6,535701673	6,601281656	7,244809756	7,31299226	7,44543744
ILMN_2305225	0,009515009	NDRG4	9,566434224	9,363022158	10,07833214	10,26087231	10,29915305
ILMN_1654118	0,009497062	BCL2L1	9,812628254	9,771976565	10,69644365	10,51015174	10,55649408
ILMN_1721842	0,009492083	RYBP	8,150412308	8,273754465	8,94329373	8,942233483	9,079419971
ILMN_1738103	0,009471797	COPE	10,66141499	10,75206219	11,52937958	11,37441571	11,53165935
ILMN_1796177	0,009470948	GIPC1	9,387311611	9,549030837	10,48198859	10,27285168	10,23361928
ILMN_1805665	0,009469559	FLRT3	9,768750006	9,601124728	10,66697391	10,62378841	10,37916751
ILMN_1720476	0,009459477	PHF2	8,371763099	8,374443096	8,960434081	9,286900451	9,256224259
ILMN_2054607	0,009440916	CYP4V2	7,931335783	7,911347425	8,651118378	8,648850527	8,748710567
ILMN_1769412	0,009436657	RAPGEF1	9,69833884	9,653530373	10,09123024	10,24752604	10,62075598
ILMN_2165867	0,009434207	DHCR7	9,749486235	9,736836397	10,3367304	10,79175746	10,61334759
ILMN_1665831	0,009429583	CLPTM1	9,614568583	9,661015139	10,43608531	10,46285523	10,45132748
ILMN_1742456	0,009429381	OSTF1	6,909184139	6,984379824	7,982769919	7,844892842	7,674808437
ILMN_1808333	0,00942673	PPP1R7	9,028340816	8,929122951	9,699430529	9,646702582	9,79105619
ILMN_3246065	0,009421604	CCDC151	7,338075783	7,295034136	8,07950098	7,892822724	8,128162868
ILMN_1671554	0,009421455	LPIN1	9,295448864	9,258440573	10,05874156	9,755134304	10,08646859
ILMN_1728011	0,009416028	NLGN4X	10,07975533	10,02236592	10,82026454	10,93984524	10,84712356
ILMN_1777342	0,009414928	PREX1	8,700393699	8,562961096	9,198241283	9,326187534	9,490628703
ILMN_2185845	0,009413566	BRSK1	8,755320453	8,735666398	9,727436318	9,367275127	9,478173795
ILMN_1799106	0,009413279	MOSC1	7,966667989	7,868830365	8,776340449	8,735142056	8,671785899
ILMN_1737862	0,009401603	PSMB4	11,1123714	11,07802216	11,97135238	11,79626455	11,86053659
ILMN_1770865	0,009396932	TRIM46	6,807181823	6,803258671	7,67104537	7,536374807	7,579925865
ILMN_1751793	0,009383251	PCNXL2	6,957083171	6,760651543	7,570044584	7,705163866	7,640579716
ILMN_1733869	0,009378208	OGDH	7,471454699	7,398039949	8,154684315	8,293677652	8,241309185
ILMN_1740604	0,009376361	RAB11FIP5	8,198644362	7,86529061	8,457402179	8,69079513	8,893453811
ILMN_1788019	0,009375862	LAMA2	6,719689289	6,725363133	7,528431611	7,535910378	7,517150156
ILMN_1757847	0,009372677	C11orf68	7,591180012	7,617348053	8,538671157	8,426992654	8,354298504
ILMN_2367384	0,009362862	EPHB2	8,072373734	8,0935485	8,921562666	8,96899184	8,864951264
ILMN_328276	0,009360944	LOC644879	8,96205191	9,029266087	9,868956371	9,541625931	9,786239491

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ILMN_1683942	0,009354905	PCDHB2	7,16766894	7,511720579	7,843031884	7,993941374	8,331514521
ILMN_1789405	0,00935466	C22orf25	6,798197348	6,78902437	7,568993577	7,429099737	7,59909263
ILMN_2397954	0,009354433	PARP3	7,409133021	7,484491938	8,205970309	8,244489365	8,273282654
ILMN_1665571	0,009344113	LOC644869	7,005412329	7,161074585	8,033145999	7,834240037	7,857283888
ILMN_1804007	0,009342982	NANOS3	7,517643269	7,66970562	8,612105448	8,2659774	8,343310998
ILMN_1747052	0,009342508	ITGA4	6,905776864	6,781840063	7,651181201	7,687540041	7,601798063
ILMN_2069945	0,009341978	SNRNP27	9,47079887	9,462047901	10,2117387	10,25661046	10,27728633
ILMN_1894388	0,009337188		7,81193722	7,682429457	8,52810161	8,354808874	8,520273055
ILMN_1747499	0,009334558	EMID1	6,883604965	6,827223974	7,615080334	7,827674901	7,642583792
ILMN_1720322	0,009331753	PTS	8,404968813	8,383305389	9,257156952	9,353528989	9,150770569
ILMN_2367883	0,009330005	GEM	6,753841077	6,724015371	7,505783353	7,699589576	7,529698905
ILMN_1747598	0,00931239	PPP1R11	9,950789389	9,947133832	10,75355789	10,64840806	10,7380236
ILMN_1820787	0,009302266		7,648759415	7,555247612	8,442897333	8,510191681	8,347538198
ILMN_2134538	0,009301751	FTHL11	9,065779144	8,911075869	9,832862296	9,590891026	9,727879128
ILMN_1705922	0,009300286	BAIAP2	8,379684571	8,581000428	9,239229479	9,271123303	9,331174204
ILMN_3261938	0,009295993	LOC100130154	8,644441392	8,278446599	9,60075616	9,010983107	9,039874754
ILMN_1790249	0,009288325	F8A1	7,104437688	7,318753123	7,889114752	8,069742561	8,092347464
ILMN_1804396	0,009285593	C14orf4	10,4605455	10,53334189	11,2750756	11,19414115	11,31116809
ILMN_2328986	0,009268791	SREBF1	7,130550508	7,177453252	7,822556104	7,924976117	7,998426402
ILMN_2342437	0,009268191	KLHL5	7,98984595	7,901246687	8,668369589	8,776325392	8,735214949
ILMN_1811574	0,009263058	MAPK8IP3	8,461880717	8,487313297	9,442632308	9,213712532	9,201571362
ILMN_1655195	0,009260074	SMA4	8,394978393	8,399705355	9,000699016	8,978296247	9,26139592
ILMN_1773650	0,009258562	LRRN3	9,813338357	9,797848974	10,69174538	10,69422723	10,5487319
ILMN_2100258	0,00925548	PCDHB16	6,591725818	6,641006126	7,521173293	7,224506674	7,376232537
ILMN_1739210	0,009253641	NSL1	9,736015064	9,74778354	10,66869678	10,54379294	10,47834305
ILMN_1704195	0,009250287	FUK	7,38876287	7,281689119	7,887061371	8,083745201	8,185235829
ILMN_2094106	0,009247878	HSD17B12	11,10756068	10,94858314	11,84062127	11,53925107	11,77505576
ILMN_1873621	0,009246259	NTN1	8,949615626	8,695633811	9,819870306	9,42548058	9,473971003
ILMN_1786989	0,009241617	NKX6-2	7,474882159	7,753989781	8,29125562	8,261779891	8,511974803
ILMN_2081465	0,009239696	APLP2	7,367954433	7,158136335	7,902545033	8,012746103	8,054107907
ILMN_2324421	0,009238523	TXNRD1	9,605740358	9,579690204	9,967507179	10,13711116	10,53441679
ILMN_1678928	0,009237549	SLCO3A1	7,127140939	7,128908422	7,957683835	7,897342039	7,897214188
ILMN_1672650	0,009232492	PKM2	8,088857208	8,072874712	9,097619955	8,314123686	8,79146557
ILMN_1686804	0,009226626	CCRK	7,164669834	7,089588561	8,022498312	7,914834654	7,851265446
ILMN_1684391	0,009222741	PLOD1	10,68709133	10,58117357	11,18024589	11,26922625	11,48744195
ILMN_1659888	0,009217118	PPP1R14B	11,16261066	11,30497023	11,9849878	11,78978449	12,07096904

ILMN_1754234	0,009204529	ZMYND11	10,44649107	10,20058723	10,88683541	10,81864123	11,13901865
ILMN_1756439	0,009201598	SCRN1	10,58798474	10,33030985	11,14654193	11,180109	11,21764332
ILMN_1662049	0,009197078	AGPAT5	9,188008886	9,356103227	9,686721544	9,993137592	10,23472611
ILMN_1756408	0,009196218	PARVA	7,234588809	7,191868194	7,91759695	8,009324903	8,013201622
ILMN_1726981	0,009194061	VEGFB	12,03279235	11,95088744	12,5442116	12,5588986	12,84706262
ILMN_1726222	0,009186484	FLOT2	11,15752559	11,17960861	11,7120137	12,01562203	12,04256495
ILMN_1781680	0,009186464	DAP3	9,593421189	9,632601646	10,30735862	10,37682207	10,43679479
ILMN_1743655	0,009179303	TMED9	10,91132064	10,73160166	11,43197613	11,557596	11,62446308
ILMN_1793712	0,009166813	SCAMP3	9,991943521	9,893469656	10,65244474	10,76928413	10,7234415
ILMN_1811997	0,009165617	ZNF364	9,161130992	9,233507976	9,942785493	9,904206721	10,0089902
ILMN_1716524	0,009164993	RAB7A	10,78499846	10,61478869	11,38466948	11,50041795	11,47346312
ILMN_1778226	0,009159353	EXTL3	9,595695815	9,546666668	10,0857634	10,30854623	10,43918777
ILMN_1734288	0,009154398	DUSP18	7,317528285	7,446137621	8,21653662	8,199398018	8,168002004
ILMN_2275502	0,009133834	RAPH1	6,648210302	6,592149098	7,734606709	7,355682335	7,25728471
ILMN_1802053	0,009131687	ZNF91	8,556373845	8,912944501	9,804747543	9,577769792	9,483608249
ILMN_2196588	0,009126901	C18orf32	7,317692622	7,282603165	8,558561781	8,136332931	7,883468954
ILMN_2408683	0,009126843	PPAP2B	8,306059833	8,375494241	9,208788009	8,998943673	9,102172285
ILMN_1803136	0,009126467	RAB4B	7,25572565	7,176766767	7,971603253	7,998842783	7,980384317
ILMN_2124082	0,009124505	PPP2R5B	6,943559169	6,827986471	7,661804764	7,642349561	7,634141846
ILMN_2413780	0,009122227	SEZ6L2	6,930189886	6,868388222	7,736039461	7,640342107	7,637818044
ILMN_3199780	0,009114611	LOC401076	9,11151713	8,666060379	9,686324205	9,77175286	9,545107133
ILMN_1691736	0,009111528	ST6GALNAC6	7,890608038	8,188801496	8,651170806	9,04251664	8,939985271
ILMN_1679045	0,0091002	SBDS	7,731038776	7,453831855	8,334163981	8,465631547	8,308252961
ILMN_3287266	0,009099684	LOC100133328	9,866606973	10,06288322	10,60853061	10,54336197	10,84061972
ILMN_1782439	0,009096711	CNN3	12,34298202	12,05156889	13,01740536	13,07487249	12,88002634
ILMN_1694268	0,009087281	HES6	11,66485688	11,48352268	12,18205585	12,22036534	12,36950718
ILMN_1678032	0,009086205	NR1H2	7,472992208	7,540962703	8,199320286	8,276665104	8,325636591
ILMN_1738921	0,009082838	ACAA1	8,590225217	8,752872786	9,171334245	9,316871265	9,589361661
ILMN_2342068	0,009074948	ERC1	6,665641579	6,738415513	7,491000203	7,51246273	7,48316984
ILMN_1726901	0,0090743	KLC1	9,682820902	9,836771473	10,17881871	10,50409417	10,70207583
ILMN_3237679	0,009070446	PTAR1	8,513301758	8,583712069	9,232304504	9,204819699	9,372972884
ILMN_3247452	0,009069057	LOC100128731	12,02848468	12,20112714	12,92490793	12,96990496	12,90985292
ILMN_1732967	0,009067593	KIAA1949	9,173321169	9,173748607	10,1008158	9,778986046	9,890828484
ILMN_1751571	0,009063638	RAD23A	9,079163126	9,020657164	10,00105387	9,910213263	9,735662534
ILMN_1791905	0,009061256	CCDC103	7,149668969	7,034986327	7,755139783	7,695629328	7,880630298
ILMN_3241254	0,009060595	HAS2AS	6,66053728	6,523194952	7,30031747	7,134734914	7,359804687
ILMN_181161	0,009042632	COPA	11,32840725	11,20533398	11,93970883	11,72846468	12,05207568

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ILMN_1789909	0,009041854	TBC1D9B	7,328123916	7,217495359	8,085700639	8,123766348	7,995400461
ILMN_2322842	0,009036793	PPHLN1	7,636943416	7,59831832	8,466281981	8,42725125	8,344675351
ILMN_1782944	0,009034043	GPR37L1	6,696032919	6,719905288	7,411199511	7,150637046	7,516283188
ILMN_1791792	0,009032816	C12orf5	8,361866488	8,377504049	9,191980244	9,321408692	9,115052599
ILMN_3247728	0,009032214	RNF115	7,705311187	7,808125832	8,615165151	8,485772979	8,515957308
ILMN_2372398	0,009023966	ALDH5A1	7,85996767	7,894946158	8,802101338	8,971177535	8,583195831
ILMN_2367258	0,009017044	SMOX	7,542610191	7,327228434	8,056193195	8,244921176	8,202964996
ILMN_2089977	0,009006769	FKBP9L	10,17889922	10,04869797	10,89539877	11,14499205	10,83432494
ILMN_1719343	0,009003523	WDR26	8,047506565	8,153290273	8,870574508	9,092565096	8,882150736
ILMN_1753345	0,008998879	SCAMP5	6,917749956	6,972847662	7,788348021	7,854125815	7,68939529
ILMN_2288070	0,008997239	FTO	7,901854757	7,988737815	8,766842647	8,684721822	8,71019247
ILMN_2086077	0,008995063	JUNB	6,745955904	6,764354785	7,459560589	7,396321622	7,550813372
ILMN_1744822	0,008991319	BECN1	8,057485732	8,075545068	8,89834049	9,023438541	8,803620618
ILMN_1677432	0,008988204	SRGAP1	8,163294241	8,09291136	9,041962963	8,856709428	8,819833248
ILMN_1707156	0,008974426	LRRFIP2	8,214172171	8,127449468	8,991669766	8,823434347	8,894424014
ILMN_2372413	0,008973809	BID	7,227996465	7,357258268	7,841585899	8,041291938	8,16722391
ILMN_2359710	0,008972482	PTP4A3	7,072369644	7,013181737	7,652573786	7,683194072	7,852595964
ILMN_2411282	0,008963807	QSOX1	9,346087238	9,2030708	9,838532201	9,888208094	10,08184401
ILMN_2371440	0,008955418	B3GAT1	7,386167645	7,576687727	8,250443844	8,399338029	8,280266294
ILMN_1778144	0,008954852	FLJ20489	7,268102127	7,225353377	8,069732646	8,043823733	7,973022575
ILMN_2376289	0,008936354	DBNL	8,474593472	8,513574522	9,220561084	9,264463074	9,275307835
ILMN_1756525	0,008932659	KLHL20	7,397211283	7,462749185	8,473547671	8,111444496	8,099970102
ILMN_1656621	0,008930957	CHMP2A	7,485640243	7,521271104	8,206184138	8,32183976	8,29034917
ILMN_1720053	0,00892847	ZFAND3	8,749832086	8,86107051	9,32724577	9,471869778	9,683547329
ILMN_1652280	0,008925927	FBXO32	6,87682227	7,099652208	7,616568099	7,637892746	7,852745366
ILMN_2364088	0,008917784	GEMIN8	7,499592767	7,50492674	8,115143285	8,009797395	8,323861956
ILMN_1718977	0,008904008	GADD45B	6,959763408	6,986119084	7,772216441	7,735451566	7,719837262
ILMN_2187718	0,008898516	COX17	11,18181519	11,09412639	11,9215813	11,77007712	11,86734036
ILMN_1658053	0,008896594	DYNLRB1	10,85811228	10,7843288	11,61158409	11,46039035	11,55094904
ILMN_1680774	0,008892891	LOC730994	11,29726164	11,34471678	11,97713465	12,01415927	12,12818763
ILMN_1703041	0,008890223	IDUA	6,628786528	6,645832549	7,343506635	7,466939633	7,413720015
ILMN_1731181	0,008888845	TEX2	9,58359718	9,490833117	10,08377875	10,30001511	10,34950499
ILMN_1707631	0,008887828	MED10	8,750233876	8,770572501	9,492872099	9,59142616	9,527286994
ILMN_1744628	0,008886874	FDX1L	8,208273039	8,310258516	8,864073293	8,755561832	9,103979474
ILMN_1766359	0,008880042	GATAD2B	7,581176991	7,422801649	8,508073476	8,236633066	8,12452901
ILMN_2141118	0,008877821	C15orf59	7,413277579	7,182825645	8,170759903	7,979685492	7,955019287

ILMN_1753913	0,008874784	GPR177	9,418749595	9,710180277	10,1136213	10,37031677	10,46478661
ILMN_1673950	0,00887472	STBD1	6,890960551	6,694452889	7,483230419	7,605671763	7,5224322
ILMN_2173835	0,008867072	FTHL3	9,491552044	9,287558608	10,35735085	10,00542482	10,01831109
ILMN_1802089	0,008867052	SYMPK	8,6341694	8,754872901	9,397088929	9,235626453	9,503235206
ILMN_1755589	0,008863964	DIP2B	8,548436293	8,722198795	9,362924057	9,387937754	9,440338802
ILMN_1751452	0,008862341	NDFIP1	8,35898956	8,548346157	9,224211198	9,09886465	9,249324939
ILMN_1814230	0,008861887	MTCP1	8,555310506	8,905243703	9,65731913	9,278176477	9,508450258
ILMN_1807201	0,008857739	FAM104A	9,056762271	8,957669903	9,762706123	9,762397797	9,735625601
ILMN_1802669	0,008852414	PPP3CB	8,638268114	8,665632647	9,335181326	9,396551983	9,437499393
ILMN_2073592	0,008845554	CAND2	8,030190014	7,903382312	8,482067661	8,592167085	8,781352849
ILMN_1716488	0,008841702	PACS1	7,135314955	7,083479785	7,905373735	8,026802626	7,826467484
ILMN_1794056	0,008840913	DNAJB5	7,940266588	7,752078145	8,59188447	8,609965534	8,554237752
ILMN_2404512	0,008840393	PSEN2	7,755244813	7,934652016	8,379296555	8,511786387	8,723751205
ILMN_1684440	0,008835132	PXN	6,758870856	6,85761663	7,737416751	7,735792637	7,510245281
ILMN_1716056	0,008833782	LMF2	8,319362272	8,076189568	9,151164755	9,063485105	8,81047147
ILMN_1800130	0,008832484	ETNK2	7,142075572	7,204384215	7,937675686	8,030136792	7,930270773
ILMN_1702691	0,008832165	TNFAIP3	6,556903044	6,561713759	7,360547743	7,229287353	7,295023947
ILMN_1738420	0,008831033	TMEM201	7,103038162	7,160633972	7,845780287	8,027613915	7,905422288
ILMN_1709026	0,008821363	C6orf145	7,102440243	6,916140624	7,714563015	7,728421962	7,732180472
ILMN_1790211	0,008820931	C7orf57	6,574248596	6,719876294	7,344782396	7,375208358	7,452240281
ILMN_1769810	0,008815118	ARL6IP5	10,84188887	10,58510693	11,41383608	11,52490949	11,41823955
ILMN_1671123	0,00879579	LOC647543	6,90504183	6,875779949	7,650978801	7,550681959	7,62888788
ILMN_1651538	0,008794067	NUMBL	7,341123977	7,230758203	7,737116652	7,722564851	8,128204851
ILMN_2406106	0,008793101	CACNB2	6,516518555	6,489272429	7,34801141	7,341284771	7,204427055
ILMN_1741003	0,00879307	ANXA5	11,58172028	11,58916702	11,91959076	12,39884578	12,48874313
ILMN_1676062	0,008792951	DIP2C	7,59851848	7,735073198	8,022119989	8,37899895	8,595684614
ILMN_1720048	0,008789157	CCL2	6,907857083	6,849549159	7,842379926	7,531191181	7,53310515
ILMN_2210601	0,008788166	RNASEL	7,08364348	6,932067758	7,835139332	7,708941442	7,689632449
ILMN_2218935	0,008786988	GPR37	7,189553442	7,13056704	7,939015181	7,921358794	7,880119019
ILMN_1764826	0,008784727	TFE3	7,049914618	6,971854579	7,762112593	7,696564257	7,738994108
ILMN_1681984	0,008784279	GALNT10	7,318846763	7,417391267	8,017739443	8,185307427	8,172575946
ILMN_3238048	0,008782422	LOC730324	7,906720637	8,208073162	9,089144132	8,816861044	8,768132148
ILMN_3307158	0,008765104	ATG4A	7,581531781	7,674186948	8,320552371	8,436915331	8,412658918
ILMN_1753370	0,008757891	ABTB2	6,962057782	6,869895313	7,590363118	7,757386319	7,661711047
ILMN_1745813	0,008757718	KIAA1279	8,271718077	8,391260747	9,307329883	9,367409712	9,008290258
ILMN_1691567	0,008754093	GNPDA2	7,335850158	7,346374209	8,059882831	8,124355119	8,095852269
ILMN_178147	0,008752005	CDC42BPA	7,411644842	7,271249986	7,86020004	7,957880218	8,140403274

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ILMN_1734190	0,008746714	TCEAL3	10,48023205	10,33294673	11,04922056	11,02371765	11,15717047
ILMN_1692168	0,008739177	UBE2Z	8,208887413	8,192763528	8,93423007	9,173175792	8,936238258
ILMN_1726108	0,008732603	LASS2	9,07401973	9,121297381	9,867557049	9,993924422	9,836353073
ILMN_1746465	0,008732105	FJX1	10,25349157	10,1177	10,92065262	10,45365251	10,9131821
ILMN_1807600	0,008727377	NPLOC4	8,202434534	8,264855703	8,81154604	9,120606074	9,047770679
ILMN_2203950	0,008727157	HLA-A	11,32314511	11,03840601	11,96131307	11,84592369	11,84256927
ILMN_1737314	0,008725739	BCL6	7,56354341	7,40749042	8,260636415	8,00874644	8,183802653
ILMN_1771333	0,008725323	CD47	9,04056592	8,988838549	9,745949956	9,593666684	9,75322819
ILMN_1671260	0,008720729	GPR177	10,89037007	10,76949669	11,16753654	11,48187474	11,69764424
ILMN_1783627	0,008719046	CAST	7,214775649	7,031357345	7,870453851	7,731553393	7,821879919
ILMN_1736757	0,008711942	GNPTAB	7,621569263	7,744049526	8,099053055	8,057455917	8,586156632
ILMN_2367469	0,00870992	CARS	8,552853991	8,586336655	9,13681829	9,360443867	9,38182932
ILMN_1814998	0,008695282	FKSG30	12,47635918	12,21476262	13,30977426	13,06199763	12,93804556
ILMN_2115490	0,008692135	NBPF20	9,893195752	9,712964053	10,10049213	10,36749032	10,67101141
ILMN_1748291	0,008685139	C1orf55	8,501244923	8,447457368	9,370974724	9,361260516	9,135483821
ILMN_2411745	0,008683219	EML1	8,596200604	8,622895991	9,182661041	9,372388223	9,415621974
ILMN_1724540	0,008675617	CART1	7,085827022	7,281675545	8,094340333	7,916113882	7,902755559
ILMN_2274923	0,008667857	MOCS2	7,300361639	7,257457041	8,021524497	8,003424958	8,003370767
ILMN_1802027	0,00866739	MGST2	9,457266924	9,343193885	10,23481628	10,09465524	10,07440713
ILMN_1719649	0,008660916	TMEM63A	6,627669219	6,720304711	7,444732902	7,563638958	7,414753448
ILMN_1773154	0,008656048	NFKBIA	9,415455047	9,537346224	9,923263935	9,976295683	10,35799773
ILMN_1651826	0,00863916	BASP1	12,12134202	12,00866993	12,98920139	12,7505463	12,70253584
ILMN_1775753	0,008636745	FBXW2	7,209786655	7,179834089	7,648639915	7,940945708	8,026889819
ILMN_1804663	0,008634111	THBS3	8,465719244	8,544520694	9,184336001	9,210212333	9,279553733
ILMN_1760121	0,008630858	RRAGC	8,446117866	8,542344541	9,17054398	9,09344884	9,276834124
ILMN_1758497	0,008630822	TTYH1	11,40438412	11,37414575	12,40604431	12,10042562	12,00994058
ILMN_3299365	0,008629542	LOC729406	10,62172458	10,74915533	11,41256579	11,13194442	11,46122445
ILMN_1860288	0,008627723		7,798395218	7,801393516	8,810651088	8,739223836	8,422832354
ILMN_1886515	0,008619882		7,232651861	7,067123777	7,863388523	7,856595737	7,850820727
ILMN_2097259	0,00861369	CYP2U1	7,067460851	7,001402643	7,843508986	7,70416334	7,723602456
ILMN_1800575	0,008606182	LOC649260	6,697299041	6,662026971	7,598694547	7,388249929	7,333015815
ILMN_1741684	0,008603976	SMPD1	7,130011665	7,008440129	7,704316768	7,972189442	7,802281376
ILMN_1747744	0,008588749	LHFPL2	8,005279333	8,100242388	8,627896202	8,759437606	8,864663881
ILMN_2168314	0,008569528	PGM3	7,23685757	7,38142262	8,070308093	8,212564263	8,054167909
ILMN_1804327	0,008567237	NAP1L4	11,59654768	11,45114276	12,08907808	12,26631434	12,27859216
ILMN_2402363	0,008557969	STK19	8,776047314	8,972655146	9,492515983	9,712298639	9,6868884

ILMN_2400500	0,008551153	LASS2	9,340656422	9,237562944	9,977405588	10,36753314	9,995199675
ILMN_2384544	0,008547853	ADAM15	7,715557021	7,734320494	8,513911482	8,65980523	8,425834073
ILMN_1713835	0,008543993	ENHO	7,578929354	7,681171351	8,451870918	8,085658166	8,352975416
ILMN_1708204	0,008543277	COPG	8,405082495	8,127434035	8,950110122	8,993528577	8,94187755
ILMN_1809417	0,008535587	LRFN4	7,501843219	7,453502119	8,12458118	8,283324731	8,218556107
ILMN_2165473	0,008527841	MID1IP1	8,388326844	8,206009048	9,284469679	8,932758496	8,882226987
ILMN_1739987	0,008514141	KCNH2	7,060068498	6,984586069	7,714647398	7,963578907	7,732915962
ILMN_1746368	0,008504808	SELT	8,363909014	8,260128324	9,113642644	9,017807042	8,980975737
ILMN_1679532	0,008502909	GRM3	8,344791384	7,929155674	8,646213509	8,693012964	8,845805997
ILMN_1675844	0,008500752	WDR1	8,629803167	8,556798857	9,132992558	9,115598606	9,373717253
ILMN_1690963	0,008493461	ASAP1	9,473355957	9,329079823	10,18405208	10,01781261	10,06926956
ILMN_1725193	0,008492756	IGFBP2	12,60495904	12,63095199	13,09502565	13,22030571	13,44220684
ILMN_1866887	0,008491165		7,752566539	7,735766219	8,529936647	8,4800378	8,437154564
ILMN_1693882	0,008486586	TAPT1	7,286791671	7,132363162	8,001668697	7,970145245	7,86587474
ILMN_1691930	0,008483406	CBX6	8,787848891	8,715066015	9,189038419	9,260621693	9,568808472
ILMN_1784005	0,008476884	LOC644615	8,78019296	8,871810535	9,45468703	9,524641206	9,604030579
ILMN_1763638	0,008476485	BCAR3	9,104233031	8,956111499	9,876058005	9,792052492	9,666903096
ILMN_1772798	0,008475975	ARPP19	9,251109457	9,179615718	9,866868495	9,956942783	9,944354331
ILMN_1715702	0,008464704	LOC653171	8,173976247	8,071405688	8,814284509	8,583927348	8,836154139
ILMN_2315964	0,008463717	PSRC1	7,595855713	7,615032745	8,594516173	8,406232578	8,225050122
ILMN_2396546	0,008461014	IGSF3	7,819522095	7,694090555	8,580125298	8,552149583	8,404152126
ILMN_1696065	0,008456597	SDF4	9,610380069	9,940291801	10,47247383	10,36800304	10,58565959
ILMN_1719518	0,008444484	ARF4	11,44453626	11,22836218	12,02321658	12,3102885	12,00655924
ILMN_1756669	0,008441344	POGK	10,36340037	10,22491556	10,97195047	11,0846139	10,99163837
ILMN_1708516	0,008431621	PRTFDC1	8,674796917	8,808373322	9,672232056	9,549077697	9,40698207
ILMN_1745365	0,008424561	PKNOX1	7,773283239	7,835255118	8,391171494	8,435234954	8,58642909
ILMN_1731374	0,008424423	CPE	9,778728753	9,62337557	10,88075801	10,35390141	10,20745883
ILMN_2401143	0,008423078	ELAVL3	6,97246983	7,136105392	7,749787449	7,355009031	7,829910695
ILMN_1701134	0,008410193	PTEN	7,923917693	7,951366569	8,662107843	8,705771062	8,65372317
ILMN_1753002	0,008406282	RAB2B	10,01670259	9,842011397	10,55963557	10,50493171	10,63854745
ILMN_1765523	0,008403385	TOLLIP	7,088279203	7,163603227	7,77550856	7,902604541	7,880553924
ILMN_2308582	0,008392619	CYB5R3	12,64770305	12,49071979	13,14783396	13,08000138	13,3022351
ILMN_1721575	0,008391026	VPS18	7,730806588	7,79120364	8,409908112	8,55290073	8,510374788
ILMN_1740052	0,008387906	APEG1	7,007516469	6,899148148	7,429669799	7,72010623	7,727859969
ILMN_1756352	0,008382818	MAPBPIP	10,08117235	10,08534929	10,83382839	10,7247689	10,78508809
ILMN_1739335	0,008382753	LOC400948	11,55958269	11,85822209	12,38367496	12,42894087	12,507253
ILMN_176326	0,008378452	HIF1A	7,878186437	7,672924951	8,488851889	8,461719124	8,438777138

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ILMN_1695423	0,008375319	CD9	6,872053992	6,892741891	7,576950683	7,511818601	7,608342592
ILMN_1796855	0,008372969	TIAL1	8,764206892	8,683590846	9,440832887	9,588559561	9,409755009
ILMN_2393544	0,008365392	PRMT2	9,522227518	9,730984506	10,03091158	10,08867807	10,51145292
ILMN_3200450	0,008362372	LOC100131093	7,759753519	7,777653172	8,54589045	8,458858716	8,459252857
ILMN_1795826	0,008354393	ATP6V0D1	9,42095624	9,657797011	10,13615619	10,31042481	10,34744231
ILMN_1672443	0,00834943	QDPR	10,41547895	10,58441378	11,14379238	11,34153657	11,27125632
ILMN_1738237	0,008346377	HS1BP3	7,870843256	7,867969705	8,527521073	8,53273673	8,598832381
ILMN_2373779	0,008346007	COPS8	8,886223903	8,970088963	9,586686737	9,6729344	9,675996408
ILMN_2378257	0,008313437	SDF4	9,478308134	9,677501401	10,05686513	9,831924308	10,43255576
ILMN_2038776	0,008311415	TXN	12,46104829	12,47444312	13,06382702	13,11911761	13,22090945
ILMN_2377459	0,008303766	PSCD2	7,802974534	8,052097242	8,627639457	8,585871255	8,696593523
ILMN_1663037	0,00830231	LRRC4C	8,248671769	8,149437254	8,94154187	8,771219661	8,871266182
ILMN_3188583	0,008302004	DKFZp547K054	6,651730221	6,807822075	7,306170032	7,493172377	7,519880254
ILMN_2082865	0,008300801	PLLP	7,464963911	7,455425613	8,190930962	8,234223439	8,151636406
ILMN_2367753	0,008300252	ATP2B4	8,857350571	8,771541677	9,253659321	9,482287669	9,601216437
ILMN_1778803	0,008292641	ZFAND6	8,723223253	8,91840747	9,510994942	9,692358084	9,573033503
ILMN_1728355	0,008289157	PSMD4	11,30487424	11,49002692	12,02306225	12,27412254	12,17113608
ILMN_1694539	0,008287025	MAP3K6	7,944295299	7,880257522	8,295446934	8,517835515	8,725426474
ILMN_1800602	0,008285575	GCA	7,958936004	8,038049986	8,90227519	8,72615445	8,645703546
ILMN_1700681	0,008277633	CD99L2	9,812983665	9,830246247	10,49242532	10,58073226	10,54038195
ILMN_1708611	0,008272606	RDX	9,459984361	9,413595843	10,45307247	10,2957466	10,00629619
ILMN_1914927	0,008256756		7,574212247	7,559713715	8,291444579	8,228788482	8,257805371
ILMN_1802706	0,008255922	IDH3G	8,672342911	8,866511057	9,389048283	9,452589678	9,549454842
ILMN_2376667	0,008252752	POFUT2	8,792211345	8,53977581	9,407126103	9,350537773	9,292746787
ILMN_1814661	0,008248318	PHLPP1	8,074046356	8,010528709	8,906621268	8,812452627	8,664428763
ILMN_1892638	0,008246052		8,678705492	8,729963849	9,370467679	9,489031807	9,42822849
ILMN_1802151	0,008245557	OSBPL5	7,620806258	7,661777547	8,25254679	8,374815202	8,384566052
ILMN_1683700	0,008245114	TNFSF12	6,41727954	6,462158075	7,276421472	7,062148708	7,102784791
ILMN_2206716	0,0082424	JTB	11,92707498	11,92493381	12,62284234	12,5203375	12,63108396
ILMN_1756784	0,008238184	FREQ	8,809429044	8,643810346	9,227951427	9,415064237	9,462748345
ILMN_1656837	0,008238092	RBP1	9,035647775	9,03165701	9,916527752	9,864995177	9,660266074
ILMN_1709549	0,008232237	PLEKHM1	7,209441898	7,266263451	7,878963599	7,886117778	7,97469563
ILMN_1742881	0,008227151	SYT1	8,838013161	8,84717901	9,356137237	9,464913658	9,616766136
ILMN_2146418	0,008224943	CRIM1	7,151354933	6,998647836	7,517837733	7,605264306	7,839307272
ILMN_1695945	0,008224751	MEIS2	9,726701121	9,558746369	10,4119833	10,49866703	10,27064358
ILMN_3226708	0,008220934	ZMAT4	7,757935795	7,833879118	8,275250715	8,231908385	8,60365375

ILMN_1755075	0,008217497	IDI1	9,112135503	9,102507438	9,912755877	9,876203814	9,761277123
ILMN_1755179	0,00821411	RNF180	6,611976521	6,573311262	7,366791005	7,297434401	7,253081955
ILMN_2262044	0,008199795	PARP10	6,7925378	6,781565996	7,251958353	7,368702722	7,572592677
ILMN_1708016	0,008198378	C20orf108	8,661522388	8,593622586	9,842199741	9,290376571	9,114159896
ILMN_1786606	0,008193343	LOC729764	7,149006698	7,07794074	7,671275544	7,899826399	7,842200319
ILMN_1651745	0,008191262	TMEM25	6,903412915	6,916649158	7,700769513	7,609240649	7,573692738
ILMN_1686884	0,008172922	IL1RAP	6,711856624	6,68534703	7,617261395	7,164762818	7,309829284
ILMN_2162328	0,008172585	PTS	10,01408875	10,02984963	10,93709696	10,52099304	10,64378131
ILMN_1746525	0,008167169	FTHL2	11,22767336	10,85890773	11,68819199	11,30524824	11,68160887
ILMN_1823034	0,008166482		7,061977582	7,073141922	7,782724689	7,87418534	7,752807757
ILMN_1829768	0,008161813		6,773351795	6,882127855	7,703108166	7,380406642	7,483453987
ILMN_2134555	0,008160618	KCTD3	9,119450524	8,975024614	9,847329673	9,815780405	9,664100925
ILMN_2392803	0,008153532	COL11A1	7,443102421	7,163494817	8,115770442	8,135841968	7,87980447
ILMN_2388605	0,008150692	ACTR2	10,79564342	10,79942358	11,42057673	11,64266019	11,51321943
ILMN_2226917	0,008145696	KIAA0247	7,908707805	7,594456858	8,363869583	8,423055816	8,399363509
ILMN_1786273	0,008142173	C1orf122	9,668633371	9,777530468	10,16252193	10,23207089	10,54258825
ILMN_2094905	0,008141781	COMMD10	7,922149447	8,085276521	8,909821939	8,851428555	8,649232638
ILMN_3245066	0,008132823	DENND4B	7,638544646	7,588918934	8,224303704	8,413153806	8,320004217
ILMN_1811102	0,008132478	LRSAM1	8,880843928	8,659032908	9,217575748	9,319919942	9,504512357
ILMN_1723020	0,008129261	MAP3K1	8,638823536	8,602562012	9,473900531	9,48787064	9,236505593
ILMN_1760667	0,008125579	POLR3GL	9,801447166	10,04107248	10,61754126	10,62263775	10,66728048
ILMN_2331735	0,008121821	AP2B1	8,421426731	8,533283661	9,001156202	9,437672577	9,249032528
ILMN_1788663	0,008112787	KCNQ2	8,456197561	8,349945886	8,947896259	9,085555129	9,122091743
ILMN_2410986	0,008110381	STAT3	8,383613975	8,290930564	8,946796872	9,179245946	9,029875632
ILMN_1668639	0,008105986	TBC1D10B	7,150210063	7,323075292	8,081314228	7,955794264	7,907201827
ILMN_2326591	0,008096706	ANXA6	7,024200766	6,929148831	7,718970719	7,613306365	7,623265863
ILMN_1696591	0,008093838	RB1	7,541802505	7,650880164	8,212180972	8,351610975	8,335353914
ILMN_1812526	0,008090195	TGFB2	6,563764656	6,521669161	7,289398911	7,282241377	7,196764959
ILMN_1797362	0,008089745	LIMK1	7,314935258	7,260489529	7,922867325	8,084853796	7,97845781
ILMN_2360784	0,008089181	RRBP1	9,379820468	9,129908745	9,798209856	9,795891631	9,94183206
ILMN_1708143	0,008085872	FAM127A	10,77608697	11,00376956	11,48558244	11,30829282	11,67506295
ILMN_2398903	0,008080977	HAX1	7,450628884	7,59892584	8,385038671	8,181816585	8,182521339
ILMN_2412761	0,008079381	MAFG	7,028322653	7,087973704	7,701676601	8,027599266	7,766528892
ILMN_1669592	0,008074874	42065	7,392551615	7,610020506	8,39293124	8,303375163	8,15852503
ILMN_1791912	0,008074171	SIDT2	9,613995512	9,515658249	9,979465293	10,18097562	10,33255358
ILMN_1656718	0,008073972	DEF8	8,419531701	8,471595397	9,08385743	9,148681771	9,162000944
ILMN_178814	0,008067057	LOC644640	6,783648067	6,865828043	7,453022199	7,353291327	7,556667421

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ILMN_1785061	0,008061301	EPHB2	7,442238591	7,371540525	8,009009682	8,162303951	8,104082277
ILMN_2359029	0,00806122	C11orf17	7,972199392	7,965815377	8,310290824	8,410153513	8,789868283
ILMN_1791679	0,008058266	DNER	7,044267792	6,910676477	7,64545046	7,734955864	7,634506454
ILMN_1714737	0,008056559	ASF1A	8,400278305	8,458021083	9,173626769	9,238755365	9,101508135
ILMN_1722648	0,00804772	SF3B4	11,19646314	11,00466842	12,05503634	11,59744962	11,64293188
ILMN_1737988	0,008046234	PRNP	10,70824717	10,72328493	11,5364259	11,44700005	11,35067718
ILMN_1768050	0,008045789	SCOC	8,569267509	8,753046596	9,567989728	9,69834504	9,29420306
ILMN_1702501	0,00804521	RPS6KA2	9,363312175	9,218399849	9,906746106	9,815781735	9,9708675
ILMN_2386291	0,00803763	WTIP	7,086153546	7,093347047	7,709172834	7,896491847	7,794708921
ILMN_1749848	0,008035242	SLC35F1	11,11755402	10,97347897	11,58378682	11,83640172	11,74560503
ILMN_1655765	0,008031443	MRPS21	11,75259249	11,73803472	12,63290105	12,46618333	12,3463403
ILMN_2141790	0,008030287	HYOU1	8,403120077	8,456269855	9,259307244	9,434601842	9,059633291
ILMN_1676036	0,008022039	LOC649679	8,490261659	8,339839406	9,128485988	9,382052106	9,040201122
ILMN_1715635	0,008020464	ATP6V0E1	10,0405739	10,08403491	10,83338337	10,84493203	10,71803536
ILMN_2399208	0,008020205	SCAMP3	6,993701825	7,00152306	7,559521158	7,75124125	7,72402566
ILMN_1703791	0,008014069	ANXA7	9,423870421	9,601655448	10,4857207	10,23101282	10,12573697
ILMN_1772316	0,008004455	UNC84A	8,38740531	8,27774254	8,901104891	9,110274517	9,025880907
ILMN_1724658	0,008001745	BNIP3	9,258326709	9,141193081	9,853984259	9,854808619	9,862704229
ILMN_1811909	0,008000219	LOC402221	9,333474844	9,068416239	10,0954255	9,981844085	9,73376535
ILMN_1783985	0,00799799	COQ6	8,034655743	7,830925224	8,49197563	8,559608213	8,610838777
ILMN_1788961	0,007993176	PPP2R2A	9,414022761	9,61213967	10,09157088	10,32982356	10,27409755
ILMN_1706261	0,007992662	SLCO3A1	7,475749307	7,392983276	8,166973129	8,213466114	8,070511195
ILMN_2339266	0,007989788	LAMA2	6,886377829	6,70212125	7,449672855	7,444997652	7,439233133
ILMN_1712719	0,007989383	MAP7	6,841388449	6,810658437	7,336881429	7,552353547	7,55977648
ILMN_1786021	0,007986643	PRKAB2	7,59485792	7,673648052	8,388720214	8,391931743	8,300836231
ILMN_3247802	0,007985456	BAT2L	8,517790627	8,182260958	8,823004737	8,918987288	9,029459478
ILMN_1687768	0,007979724	NCOA7	6,875531622	6,897982132	7,520788208	7,588934235	7,586315806
ILMN_1758542	0,007978088	BMP1	6,721431332	6,689493219	7,306978086	7,419719613	7,403927119
ILMN_1773427	0,007977899	KANK1	7,281310475	7,359939065	8,141651646	8,12636737	7,95949202
ILMN_1744912	0,007967665	CTTN	9,154864073	9,267098713	9,895541731	9,945972564	9,910871237
ILMN_1659564	0,007962039	SEC61A1	11,97260329	11,76736628	12,23173586	12,64593026	12,61357419
ILMN_3275345	0,00795858	LOC100132291	11,29860556	11,29257451	12,45715504	11,87232685	11,79118058
ILMN_2278265	0,00795127	PAOX	7,151473752	7,049354331	7,595490333	7,766922712	7,820111642
ILMN_2151281	0,007947855	GABARAPL1	8,642690019	8,639111744	9,194438789	9,381772104	9,359754475
ILMN_1656185	0,007946827	DEF8	8,89209358	8,73890018	9,656608654	9,312120677	9,397592713
ILMN_2375002	0,007945174	MAP4K4	8,913195904	8,841013944	9,512981064	9,634668333	9,547701565

ILMN_1796339	0,007943186	PLEKHA2	8,127050784	8,151893762	8,776728009	8,712260024	8,838058013
ILMN_2340721	0,007941497	TMEM134	8,751760471	9,032793557	9,403483479	9,566999484	9,696643803
ILMN_1680132	0,007939409	CADM1	9,686013389	9,356071178	10,13684262	10,27184947	10,13711071
ILMN_3251341	0,007934145	TUBA1C	12,47822177	12,63059093	13,25263318	13,37839123	13,25177406
ILMN_1678546	0,007934055	PEX11B	8,953603255	8,980732098	9,738206879	9,841075533	9,605666231
ILMN_1682938	0,007921881	ARF3	8,9997106	8,939631081	9,379763488	9,659763336	9,72763394
ILMN_1798790	0,007915246	IL17RC	6,692046423	6,851180269	7,332643054	7,315500785	7,528713454
ILMN_3242174	0,007906774	LOC652900	6,721618981	6,729739005	7,363995247	7,444451466	7,411134049
ILMN_2173740	0,007900058	ASB8	7,992695501	7,764672864	8,674874499	8,272421033	8,45704712
ILMN_1687652	0,007898947	TGFB3	6,868277265	6,834444576	7,543312039	7,566987062	7,505564325
ILMN_1814823	0,007898374	FTL	13,70046049	13,59695628	14,18490683	14,36836907	14,344572
ILMN_1698725	0,007895064	FRMD3	6,8878456	6,904142549	7,558561551	7,601462665	7,573074225
ILMN_1760890	0,007892759	SEPN1	10,50049271	10,49559887	11,32274317	11,01870397	11,11484188
ILMN_1696701	0,00788677	LOC344595	6,673523599	6,885894113	7,54820553	7,507119438	7,462189572
ILMN_1756086	0,007885013	INTS3	8,605634123	8,568171683	9,303771238	9,224556438	9,231720806
ILMN_3251445	0,007880813	MED27	9,126307325	9,250798789	9,760658325	9,753576015	9,92866406
ILMN_1724207	0,007871031	IVD	7,261356378	7,253353565	7,758589071	7,925641853	7,987547341
ILMN_1741780	0,007870297	DUSP28	8,1346261	8,226275839	8,681089156	8,619054102	8,942022654
ILMN_1723626	0,00786863	APBA2	7,691336418	7,488420097	8,11114883	8,272477859	8,265099185
ILMN_2053921	0,007867216	CAPZB	9,563917426	9,668817656	10,36657279	10,17934712	10,28313221
ILMN_3245907	0,007862217	FAM160B2	7,148863278	7,240350988	7,801164329	8,010122517	7,903289837
ILMN_3239621	0,007858645	SNRNP27	9,015657341	9,000012369	9,837280504	9,45994873	9,618160281
ILMN_1659255	0,007857881	RP2	7,571373234	8,178586241	8,341435291	8,260562501	8,773035637
ILMN_2106994	0,007855018	RABIF	6,774143654	6,812109409	7,469110925	7,356117975	7,470073091
ILMN_1736888	0,0078509	SAR1B	9,060163252	8,899553348	10,01616323	9,666985477	9,46921327
ILMN_1670899	0,00784989	FBN2	10,81668238	10,82971679	11,46857397	11,47202779	11,5027714
ILMN_1725183	0,007849673	TBCE	9,72048723	9,774847459	10,2886378	10,49216115	10,47348817
ILMN_1796335	0,007845908	LPCAT2	7,028084607	6,784007374	7,39083847	7,717990519	7,578687617
ILMN_1725594	0,007838143	FAM188A	8,182774597	8,081610064	8,911030592	8,691594806	8,735032737
ILMN_1726456	0,007835031	SLC3A2	9,42261601	9,3154859	9,938352589	10,00831529	10,04697528
ILMN_1673370	0,007833247	FBXL5	6,990002505	7,077554203	7,64577767	7,793428576	7,737795201
ILMN_1789751	0,007833173	MFSD1	8,262680035	8,16693312	9,085209927	8,820126681	8,782430007
ILMN_2110908	0,007829776	MYC	6,582332928	6,459774605	7,313107398	7,34242424	7,104954793
ILMN_2353642	0,007823618	ATP6V0B	9,564106888	9,333453338	10,19375357	9,942228086	10,03405657
ILMN_1773751	0,007823427	HRAS	9,017466081	9,097534952	9,939257894	9,651757763	9,662406565
ILMN_1664175	0,007821642	VAMP4	7,267507903	7,243868237	7,721788392	7,782304787	7,993876649
ILMN_180584	0,007819641	FHL1	9,255723598	9,481901116	10,1118839	10,10745769	10,0561259

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ILMN_1804652	0,00781507	PLEKHH3	8,39176067	8,435936051	8,726786361	8,843195564	9,22858229
ILMN_1715896	0,007815029	PMVK	8,991528445	9,106393335	9,730135559	9,792023961	9,732199735
ILMN_2350574	0,007809919	MYADM	7,190854135	7,114614746	7,974245247	8,166282003	7,727797556
ILMN_1665117	0,00780574	C6orf89	6,90667409	6,88180072	7,613008685	7,535328787	7,531585331
ILMN_1761941	0,007800785	C4orf18	7,134482245	6,986397151	7,883188185	7,658990357	7,629700137
ILMN_1809013	0,007796102	MYL6	13,53358436	13,53082212	14,06339027	14,22382777	14,24273637
ILMN_1768488	0,007792291	TERF2	8,276588541	8,289023699	8,922040331	9,015718556	8,954684289
ILMN_2358626	0,007785515	ADK	9,257546397	9,285072173	9,943229721	10,05248398	9,932439918
ILMN_1694671	0,007776643	ZFAND2A	8,105028427	8,160683433	8,657209407	8,800013715	8,858521146
ILMN_1800871	0,007776086	RAB6A	7,639514832	7,693670328	8,573653947	8,3476556	8,246916593
ILMN_1729509	0,00777112	C1orf43	10,73487851	10,81629092	11,70662257	11,53298754	11,35101895
ILMN_2307032	0,007760178	OSBPL5	8,154681822	7,963516563	8,515305276	8,643717055	8,751878834
ILMN_2337789	0,007752239	42065	7,147170406	7,198071804	7,718368985	7,645761045	7,891999481
ILMN_2301722	0,007752012	PDE8B	6,554544542	6,666050741	7,293133988	7,120243292	7,291789554
ILMN_3253456	0,007750455	FNDC3B	9,055307753	9,223768787	9,936088602	10,0617016	9,778831765
ILMN_1788095	0,007747347	SPRYD3	7,40905929	7,32436646	7,68594871	7,973016771	8,134273163
ILMN_1718960	0,007742891	SERPINB8	6,784406976	6,965279153	7,531747302	7,342019438	7,582645973
ILMN_1718334	0,007740412	ITPA	9,51295357	9,473612268	9,809301909	10,20791837	10,2692959
ILMN_1819384	0,007739626		9,118208981	9,142157642	9,918044844	9,647653246	9,749419336
ILMN_1678618	0,007739305	ELAVL3	9,581101602	9,275313499	9,801382345	9,669550316	10,13341595
ILMN_2319077	0,007737384	FAS	6,823389231	6,635547827	7,557159789	7,356829166	7,27923427
ILMN_1781983	0,007735375	AP1B1	8,331254607	8,384352063	8,734636862	9,024370376	9,133644663
ILMN_2382121	0,007735357	OCRL	7,719372391	7,753220132	8,348536712	8,474455789	8,416292662
ILMN_2047206	0,007728108	TMX3	7,565421407	7,721931888	8,591279377	8,60556185	8,218757133
ILMN_1730516	0,00772686	TMEM133	6,496425913	6,464779301	7,178481558	7,140469705	7,114470862
ILMN_1779014	0,007726609	TSPYL1	9,199438153	9,310244115	10,044424	10,44943201	9,871645589
ILMN_1719864	0,007724809	PACS2	7,379285241	7,278244435	7,866211919	7,99844449	8,005461975
ILMN_1768582	0,007723068	PPP2CB	8,137511228	8,138462796	9,279898161	8,86834395	8,609305373
ILMN_1774547	0,007719975	MPRIP	9,306288091	9,137279662	9,755935417	9,919974469	9,882503686
ILMN_1729596	0,007716712	INF2	7,054422706	7,085284827	7,668127567	7,764179967	7,753536739
ILMN_1746241	0,007703768	SDHC	9,825877518	9,913826923	10,27992685	10,532284	10,63816703
ILMN_3240187	0,007691451	TMEM111	10,34494582	10,08653608	10,7404452	10,82331385	10,85812545
ILMN_2388955	0,007684914	C1orf183	6,62077982	6,827604059	7,419599237	7,284447915	7,413993326
ILMN_1718336	0,007676843	C7orf50	11,73862353	11,77557793	12,30058552	12,31117975	12,46293363
ILMN_1690982	0,007671929	DDT	11,32936131	11,37925852	12,00558466	11,93293255	12,02130982
ILMN_1758719	0,007669848	NEDD9	7,439581274	7,392934445	8,264020051	8,29297404	7,975947615

ILMN_2045994	0,007667359	SEPW1	9,684689723	9,710033938	10,62049351	10,09846052	10,2609831
ILMN_1728059	0,007663946	LOC645236	7,256361945	7,073447723	7,799810645	7,795923287	7,779211877
ILMN_1745573	0,007660942	TTC13	9,056958582	8,964789601	9,642233965	9,815444156	9,642927494
ILMN_1806705	0,007652088	ASB6	7,049618939	7,038961801	7,697411002	7,583913649	7,694440996
ILMN_1772487	0,007651613	SFRS14	9,347210542	9,408097323	9,890739169	9,970502763	10,09650923
ILMN_1678904	0,007650753	ENO3	7,607927191	7,523568453	7,823886325	8,157162585	8,345337502
ILMN_1719498	0,007644231	ABHD7	7,98361373	7,826744395	8,686281208	8,581527177	8,466874168
ILMN_2331205	0,007644078	CHKB	7,826435601	7,762102906	8,353133303	8,35683416	8,46541773
ILMN_1745021	0,00763968	SLC30A1	7,672830316	7,665861971	8,456287878	8,33030654	8,264613128
ILMN_1652490	0,007637085	MANSC1	7,104116394	7,159667761	7,551113998	7,767131558	7,881279597
ILMN_1703697	0,00763622	LANCL1	9,836090558	9,970427958	10,29672171	10,52932419	10,68199444
ILMN_3215715	0,007634626	LOC389386	7,218182186	7,110632297	7,78120875	7,865779925	7,797882367
ILMN_1802971	0,007632889	FAM160B2	7,331456781	7,023075942	7,945416988	7,998628714	7,701661209
ILMN_1706553	0,007628141	SMG7	9,237356291	9,095202611	9,884443637	9,854866922	9,753341765
ILMN_2077858	0,007627788	SIRT7	6,836454019	6,908190531	7,294387771	7,267828426	7,631012015
ILMN_1656951	0,00762598	APCDD1	8,206106534	8,100072648	8,854117193	8,894755241	8,753043227
ILMN_1704079	0,007621448	RBM38	7,584318965	7,856341497	8,207370192	8,338285668	8,494706451
ILMN_1737644	0,007618863	TMEM219	8,774250135	8,766429935	9,498738592	9,339499204	9,388232974
ILMN_1679797	0,007608083	ADARB1	7,979840706	7,997226525	8,675816123	8,745992913	8,620544966
ILMN_2106167	0,007602911	RAP1GDS1	7,553900109	7,76426424	8,569761745	8,345402954	8,254574682
ILMN_1656066	0,007595826	TNPO2	10,00591336	9,893830049	10,62755031	10,44267021	10,56173102
ILMN_1693310	0,007592075	ITFG1	9,373163303	9,100473432	9,8296034	9,918579396	9,835792168
ILMN_1751615	0,007590654	COQ10B	9,58882596	9,588398712	10,09049374	10,27716909	10,28676007
ILMN_1709772	0,007578811	SNX5	8,571761331	8,482405093	9,069151031	9,158764887	9,188884662
ILMN_1741131	0,007577422	CHRNB1	7,129089713	7,535568828	7,875665656	7,84711084	8,115555526
ILMN_2228873	0,007566272	STARD3NL	9,206772221	9,245673699	9,95333543	10,13407674	9,83907218
ILMN_1679092	0,007564748	RAB9B	7,435902628	7,540491379	8,148127566	8,109143003	8,150319984
ILMN_2239754	0,007558753	IFIT3	6,572408574	6,597431036	7,146637159	7,092092565	7,268384147
ILMN_1762899	0,00755806	EGR1	8,717567515	8,899697953	9,553823625	9,782797045	9,44584021
ILMN_1748116	0,007548246	GEMIN8	7,165349821	7,305572929	7,751372971	7,897135266	7,95718296
ILMN_1806790	0,007547084	ROBO1	6,904077173	6,95882257	7,869369557	7,59609281	7,473478586
ILMN_1716057	0,007542295	CAPN2	7,158043699	7,139624532	7,699291634	7,854640309	7,81747708
ILMN_1810147	0,007528236	ZNF524	7,528036908	7,63811734	8,437011045	8,099446417	8,172260497
ILMN_1651767	0,007526552	MKL1	6,965507877	7,063472868	7,80321671	7,833832442	7,615796323
ILMN_1682996	0,007516608	VWA5A	7,147470273	7,247398683	7,757625038	7,913367717	7,887340847
ILMN_1757338	0,007504681	PLSCR4	6,803054495	6,708326347	7,329763148	7,574411508	7,389497614
ILMN_240564	0,007492675	DHDDS	7,596667053	7,566693144	8,120000079	8,427501946	8,241815181

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ILMN_2126344	0,007487923	SEC16A	9,141185617	9,194568121	9,902408435	9,840780993	9,77931222
ILMN_1807767	0,007486784	KIAA0182	8,789924515	8,510686136	9,165812291	9,042771763	9,273084547
ILMN_3242105	0,007471334	LOC100134073	10,56022095	10,59734352	11,08860979	11,2650269	11,26875657
ILMN_1698533	0,007469386	IDH3A	7,351411453	7,330310125	7,759625722	8,092985625	8,048309999
ILMN_1717234	0,007466977	CAST	6,857889497	6,981477266	7,699996686	7,575802965	7,528299299
ILMN_1684447	0,007462323	MDGA2	6,680795587	6,518648973	7,183277898	7,106481671	7,218579265
ILMN_2339627	0,007452001	COPE	9,692967619	10,00894367	10,55340559	10,50619782	10,53372467
ILMN_1661173	0,007451553	TRIP4	7,737630013	7,762299715	8,374721777	8,50915524	8,388414938
ILMN_1665384	0,007449619	SH3BP5L	7,350615055	7,331064342	8,049545333	8,244860763	7,932240431
ILMN_2249282	0,007449387	TIPRL	6,854871879	6,899862431	7,66536758	7,670090881	7,457960107
ILMN_2290118	0,007448464	MEGF9	7,552696625	7,279204134	8,134196978	7,84913344	7,957437054
ILMN_1784207	0,007448374	C1orf128	9,865575861	9,971516824	10,25984244	10,77705761	10,68043307
ILMN_3245559	0,00744821	CDK2AP1	13,14080266	13,07110357	13,73627977	13,66850767	13,72556506
ILMN_1753790	0,007447261	ZNF259	7,911325075	8,002243195	8,637008579	8,64208706	8,592054663
ILMN_2300186	0,007438908	DYNLL1	11,42656303	11,7329365	12,42847989	12,22618182	12,20367312
ILMN_1720857	0,007433369	GUSBL1	9,007641912	9,152308556	9,71687506	9,583964575	9,748794959
ILMN_1785324	0,0074284	MTHFD1	7,779044446	7,681206605	8,35748419	8,45318219	8,33658588
ILMN_2210581	0,007407745	B3GAT3	7,421249803	7,320926074	8,134326529	7,972057676	7,926988846
ILMN_1715013	0,007404182	ERMAP	6,818226126	6,956595588	7,495859607	7,513176334	7,557820916
ILMN_1808769	0,007398702	C1orf97	8,248097856	8,586734134	9,09375299	9,12235386	9,107261529
ILMN_2263054	0,007394183	FEZ1	7,951407612	8,010319073	8,824128598	8,549553821	8,544267369
ILMN_1721758	0,007392928	ID4	6,830574178	6,880172505	7,92406289	7,568902375	7,326951308
ILMN_1678730	0,007390155	NOMO1	9,13951928	9,035851379	9,496500703	9,74175673	9,773174695
ILMN_1682054	0,007386173	SRI	8,999997809	9,021406943	9,712142275	9,839736048	9,609885001
ILMN_1763447	0,007385674	PLXNB2	9,970502553	9,814386299	10,5777387	10,54973502	10,46060572
ILMN_1703650	0,007379374	TNIP1	7,729707053	7,79517311	8,524629474	8,397259318	8,354073751
ILMN_1698733	0,007377372	CNIH2	10,99003487	10,97587361	11,63324442	11,32243232	11,60719643
ILMN_1815951	0,007373164	PCYOX1L	6,955571405	6,863367672	7,788866477	7,518132336	7,419349389
ILMN_2199313	0,007372572	NPDC1	7,627595412	7,798999569	8,208332331	8,208439938	8,434567016
ILMN_2220518	0,007371918	HBXIP	11,28119365	11,24981624	12,03555183	11,91911966	11,83002132
ILMN_1812581	0,007364292	RNF14	6,70602219	6,855633077	7,330663196	7,541987388	7,467143031
ILMN_1655126	0,007360298	PI4KAP2	7,695694632	7,672666239	8,280401565	8,314893287	8,315011218
ILMN_1705266	0,00735429	RELA	7,031318231	7,097821582	7,781645723	7,775848895	7,668072515
ILMN_1728202	0,007352308	TMEM22	7,535203558	7,603345449	8,266027221	8,209814817	8,182751412
ILMN_1765725	0,007344131	SBDSP	8,073369787	7,946855165	8,350562991	8,632299741	8,711034709
ILMN_3242551	0,007341104	LOC100130707	10,08096231	10,27484406	10,59722289	10,88283629	10,92337634

ILMN_1789558	0,007340857	FAM164A	7,760223702	7,662426269	8,496688922	8,243254514	8,253672188
ILMN_1748625	0,007339153	TCEAL4	10,94447596	10,79498015	11,44489848	11,53932962	11,47505184
ILMN_2296950	0,007338765	APOBEC3F	7,374034692	7,274202197	7,955870416	7,91588865	7,921749498
ILMN_1701375	0,007338661	FBXW5	8,066026479	8,227849583	8,631068339	8,768555641	8,862196744
ILMN_1761531	0,007327113	SGPL1	7,973002461	8,096546171	8,5186518	8,818013248	8,734501942
ILMN_1768110	0,007326423	ZAK	8,647368206	8,605175808	9,342194869	9,252339013	9,203809579
ILMN_2359014	0,007321851	TBCE	8,134004272	8,227167284	8,899209651	8,806826541	8,78882823
ILMN_2266005	0,007320854	C21orf51	7,185940605	7,17054642	7,732408251	7,80647913	7,822103198
ILMN_1771841	0,007303248	FOSL1	7,233267492	7,238317648	7,798851079	7,8128429	7,880662631
ILMN_1658759	0,007298335	PEX19	9,098326322	9,188847789	9,722018158	9,722616152	9,802994688
ILMN_1864900	0,007273325	MIAT	7,342383888	7,437392983	7,925603542	8,102030014	8,058820321
ILMN_1678086	-0,007273138	CCDC74A	8,209870172	8,268020336	7,657767837	7,502865751	7,623944017
ILMN_1815057	-0,007275633	PDGFRB	7,828047459	7,588816899	7,103263741	6,990618883	7,030152888
ILMN_3262849	-0,007276714	LOC100128510	8,786304934	8,95779075	8,621813358	8,04157932	8,162110669
ILMN_1753393	-0,007276815	OSGEP	8,292173744	8,473152756	7,769351873	7,751752697	7,80555186
ILMN_1797530	-0,00727816	CHCHD5	9,91178573	10,06367847	9,387389677	9,170118907	9,404693626
ILMN_1772713	-0,007278208	BMS1	10,81301315	10,62715676	9,776533612	10,09962463	10,17942579
ILMN_2261519	-0,00727947	AIRE	11,6130342	11,63376844	11,02696799	10,97343073	11,001998
ILMN_1794046	-0,007280696	MTX2	8,71710171	8,831061819	8,465359271	8,382036586	8,058282899
ILMN_2106656	-0,007281643	BLZF1	8,311216995	8,694474974	7,950752548	7,711290598	7,955571631
ILMN_1803676	-0,007284005	ENOSF1	8,03893124	8,137610036	7,531500043	7,631529711	7,463731827
ILMN_2324994	-0,007293322	IKBIP	8,377425542	8,439148343	7,627837076	7,736362893	7,864931919
ILMN_1808783	-0,007293372	STRBP	8,451776165	8,337673382	7,82217068	7,813950858	7,728000852
ILMN_1690844	-0,007300365	LOC387820	11,58439521	11,44795524	10,73295122	10,8451278	10,92573671
ILMN_2405233	-0,00730072	FAM133B	9,077651267	8,875618014	8,508525596	8,027884898	8,260192597
ILMN_1739397	-0,007302426	GLMN	8,664745483	8,704793821	8,25700277	8,00004747	8,002625978
ILMN_1769637	-0,00730778	RNMT	9,482216182	9,472754755	8,774447251	8,658856613	8,890963244
ILMN_1751444	-0,007307784	NCAPG	9,832640482	9,896193135	9,482146941	9,442579968	9,162132557
ILMN_2149053	-0,00731348	RIF1	7,82783289	7,784339632	7,241962583	7,224381519	7,150496181
ILMN_1692473	-0,007314082	PRMT1	12,46960489	12,43813041	11,71798906	11,76185257	11,86953755
ILMN_2316104	-0,00731808	IQCB1	8,668230316	8,940240126	8,037749576	8,207580109	8,300807264
ILMN_1744725	-0,007318194	BTBD6	9,334708283	9,231042616	8,601864106	8,736471506	8,655739225
ILMN_1807501	-0,007320265	GINS4	7,800823369	7,846687256	7,281658451	7,229814702	7,180846548
ILMN_2309446	-0,00732419	RBBP6	7,981495546	8,036403102	7,359749585	7,516375369	7,40504418
ILMN_2381537	-0,007326653	CRCP	10,48329073	10,6551942	10,04176898	9,763761255	9,957336011
ILMN_1676588	-0,007326781	CEPT1	8,903827707	8,851115729	8,086083703	8,406914341	8,300691808
ILMN_221180	-0,007330244	HMGB1L1	9,164017875	8,823578355	8,531366703	8,632466205	8,220257975

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ILMN_1660368	-0,007331133	TRRAP	11,24124186	10,83860469	10,05647565	10,31331223	10,45933471
ILMN_2307598	-0,007331562	SLC37A3	8,302384147	8,384192003	7,650527322	7,910443232	7,759645478
ILMN_3251482	-0,007331991	ALG10B	7,643949946	7,876088706	7,173610832	7,247008837	7,174513376
ILMN_1757781	-0,007334708	SAP30L	9,79530407	9,576150334	9,055989201	8,835231523	9,019127737
ILMN_1755303	-0,007336104	ZNF217	8,582726296	8,562663519	8,10174623	7,932197526	7,886991192
ILMN_1723874	-0,007337379	MRPS6	12,44586179	12,44861633	12,02064729	11,76471356	11,75140642
ILMN_1716019	-0,007346531	RHBDL3	10,65358273	10,38532299	9,536340601	9,827170954	9,968036412
ILMN_2113535	-0,007349447	PCYOX1	9,518160785	9,645414927	9,061246374	8,795735956	8,953211755
ILMN_1692517	-0,007350238	LOC653381	10,81929449	10,81985402	10,05513883	10,21035591	10,24704177
ILMN_1745329	-0,007360384	PRR14	10,77963769	10,84996248	9,852643519	10,16515068	10,33356968
ILMN_1690621	-0,007363811	GPR98	9,340104581	9,114275504	8,447052034	8,542633782	8,606989823
ILMN_1759359	-0,007364055	BTF3L4	10,19195887	10,29378606	9,493370073	9,771364643	9,683045286
ILMN_1759277	-0,007365774	OIP5	8,500696321	8,613627003	8,149424056	7,986370717	7,873763797
ILMN_1713189	-0,007368964	C12orf41	9,968020119	9,756879425	9,086640733	9,435308686	9,235599118
ILMN_1702198	-0,007369299	LOC643790	8,534502172	8,5406919	7,716176158	7,694610119	7,992650061
ILMN_1795429	-0,007371738	VCL	12,57697168	12,3929288	12,04392406	11,79916399	11,74581518
ILMN_1682812	-0,007372303	C21orf33	8,840336825	9,227627043	8,346066319	8,3773318	8,52396651
ILMN_1673509	-0,007373199	RPL28	8,366203497	8,436368489	7,840096204	8,020367553	7,758661683
ILMN_1813120	-0,007376522	MAP4K3	7,7521148	7,810483697	7,058798935	7,483491039	7,193450379
ILMN_1732452	-0,007378188	MAPKAPK3	10,44195287	10,41016647	9,468127693	9,650226955	9,920593108
ILMN_1756326	-0,007384486	CKS2	10,82376234	10,67657537	10,24634579	10,08882567	10,04151353
ILMN_1673138	-0,007385898	ZBTB33	10,163877	10,03316781	9,494892256	9,446449786	9,430995173
ILMN_1676010	-0,007393639	SP1	8,897854879	8,780041321	8,129777415	7,918146804	8,221554464
ILMN_1700515	-0,007394891	C17orf58	8,909856271	9,198947566	8,635518486	8,407440723	8,416416144
ILMN_1813240	-0,007395771	EIF1AX	9,308894763	9,419809549	9,329439873	8,721506415	8,538721078
ILMN_1788817	-0,00739915	MAGED4B	8,309304406	8,345794172	7,433145523	6,924517767	7,831152146
ILMN_1771411	-0,007400639	ALG6	7,907919879	8,091005554	7,509895189	7,378824948	7,360907124
ILMN_1751743	-0,007401796	XRCC1	8,810496114	8,972017926	8,24819605	8,249723992	8,306211424
ILMN_1683475	-0,007402664	TOMM40	11,88117268	11,80566339	11,12570166	11,14907599	11,23129201
ILMN_1669696	-0,007403577	ZNF792	7,658624192	7,639481211	7,023275875	7,009204745	7,013514485
ILMN_1681703	-0,007405004	FOXO3	10,27427099	10,21772635	9,348650352	9,312396033	9,713455016
ILMN_1691789	-0,0074057	SMNDC1	8,59330355	8,616638532	8,330193725	7,979238676	7,846912614
ILMN_2221673	-0,007405927	ASNSD1	10,21263944	10,29148175	9,52587641	9,806682954	9,672110724
ILMN_1780773	-0,00740987	LOC400027	9,436282006	9,509220102	8,578877079	8,954679335	8,956356495
ILMN_2181432	-0,007418512	SPC24	9,798356211	9,86426359	9,360667195	9,328100821	9,152183111
ILMN_1655206	-0,007419964	ZBTB34	8,380447081	8,541578423	7,583148369	7,867626717	7,960622755

ILMN_1761175	-0,007424479	RPS6KB2	7,855755582	8,112416525	7,227390461	7,213327782	7,465695
ILMN_1759628	-0,007425674	ATP1B3	10,46116416	10,66002308	10,303258	9,780143842	9,840652375
ILMN_1731851	-0,00742735	OXA1L	9,74379418	9,723197588	9,050902363	9,148926105	9,115032256
ILMN_2352121	-0,007428098	NT5C3	10,27970987	10,19992821	9,711374955	9,39851975	9,556975279
ILMN_1703427	-0,007437059	SON	8,581428459	8,533459672	7,640212952	7,508962943	8,033931629
ILMN_2092756	-0,007438388	TMEM109	9,216810003	9,216779013	8,64231901	8,741148101	8,557711651
ILMN_2222065	-0,007439843	FZD1	7,941940023	7,853522098	7,236364202	7,244679231	7,255166978
ILMN_1742238	-0,007447344	SET	12,45325571	12,32912167	11,93565273	11,74561768	11,66158751
ILMN_3247645	-0,007449477	LOC550643	11,94153908	11,89230792	11,28190888	11,31779445	11,27132789
ILMN_1667112	-0,00744949	FBXO7	8,130495498	8,371748251	7,484095811	7,589433455	7,726652646
ILMN_1714083	-0,007451058	KLHL8	8,065984999	8,241282216	7,608850554	7,437522347	7,531025934
ILMN_1800619	-0,007455219	BRI3BP	8,231736894	8,101071121	7,441950724	7,375516208	7,540057699
ILMN_1735658	-0,007457284	RTTN	8,49462493	8,410820236	7,652553764	7,810015414	7,861408784
ILMN_1679177	-0,007463082	MARS2	7,974567508	8,036117847	7,4241384	7,659514025	7,356197265
ILMN_1652826	-0,007466138	LRRC17	10,42347036	10,38105559	9,972947083	9,764100203	9,680121013
ILMN_1741976	-0,007466163	SMARCAD1	8,551397214	8,550789152	8,166976018	8,107789845	7,815599287
ILMN_2415439	-0,007468392	NAE1	8,893592411	8,901535626	8,507383406	8,33358309	8,169986727
ILMN_1705876	-0,007468665	NAP1L1	8,249648508	8,485194991	7,94038663	7,957793233	7,703289911
ILMN_1713006	-0,007469589	CDC34	10,12390279	9,89361936	9,244795986	9,231194115	9,371718609
ILMN_3226045	-0,007474181	LOC728533	11,64464262	11,41383063	10,70222253	10,96260617	10,90865275
ILMN_2413650	-0,007477135	STIL	8,835652743	8,943340396	8,327113754	8,376221532	8,248123409
ILMN_2112402	-0,007478437	PHF5A	10,85843442	10,8443964	9,886199425	10,22149889	10,33638581
ILMN_1811426	-0,007482731	TMTC1	8,492494072	8,563873503	7,864276867	7,989350488	7,916420829
ILMN_2101375	-0,007483422	CCDC77	8,909982591	8,654317749	8,146381534	8,182279534	8,083305677
ILMN_2212823	-0,007486977	ZNF577	8,33776519	8,403915258	7,819900945	7,665986672	7,719829186
ILMN_1785252	-0,007489277	SLC26A6	9,005105551	9,039256384	8,053466039	8,350320062	8,519915368
ILMN_2359907	-0,007492033	CD68	8,673311935	8,663341569	8,020680555	7,897123541	8,037094201
ILMN_1796926	-0,007493355	PABPC5	8,198353643	8,487367177	7,836147326	7,926111297	7,718841625
ILMN_1718934	-0,007494432	LOC728499	7,916538719	8,702618999	7,645509272	7,947243872	7,862159125
ILMN_1776858	-0,007495855	DUS4L	7,955497385	8,013134	7,415261005	7,295042261	7,33639837
ILMN_1698406	-0,007498272	ORMDL1	10,521858	10,30552968	9,771810937	9,799045802	9,72547142
ILMN_2306565	-0,007498869	MTX2	10,08745802	9,872481548	9,655057237	9,441095097	9,170114168
ILMN_1750093	-0,007499211	SDHALP1	10,70683011	10,73927546	10,02001732	9,98917219	10,12105222
ILMN_1772492	-0,007500658	MCART1	11,65877622	11,36780272	11,10804127	10,68513931	10,72423713
ILMN_1789384	-0,007503942	QSOX2	8,957639809	8,802784168	8,148071982	8,220807063	8,241281215
ILMN_2061405	-0,00750771	NUP54	9,325978443	9,265683601	9,052501323	8,775096439	8,49056325
ILMN_218092	-0,007507855	SLC16A12	12,29586634	12,52442686	11,88867678	11,66719602	11,78562777

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ILMN_2298936	-0,007510772	THOC3	8,865396554	8,79815025	8,176580783	8,069496153	8,187186733
ILMN_2261876	-0,0075146	MDK	8,249798999	8,399314142	7,837142613	7,545011811	7,66856652
ILMN_1777528	-0,007519558	NCBP1	9,544743888	9,366577848	8,773507441	8,909572908	8,787018016
ILMN_1767481	-0,007521026	XRCC6BP1	8,152443441	8,392284556	7,83612719	7,746960525	7,61002942
ILMN_1747451	-0,007521598	PLCXD1	9,170974724	9,283678493	8,751287271	8,632176676	8,55188858
ILMN_2353327	-0,007521713	RNF38	7,865359606	8,010999379	7,227900641	7,141918359	7,364814068
ILMN_1787628	-0,007522023	NOP56	11,26268623	11,01928021	10,5366265	10,54753064	10,42858454
ILMN_1662316	-0,007522808	VPS33A	8,543595414	8,406758799	7,639637506	7,93223917	7,873553764
ILMN_1688490	-0,007523556	PTP4A2	8,306218778	8,169424569	7,665690915	7,456228012	7,544127922
ILMN_1651628	-0,00752849	EXOC6	8,6743661	8,912928623	8,088699281	8,284571987	8,231085036
ILMN_1731194	-0,007530053	STRAP	11,56200735	11,50258041	11,25158494	11,32692553	10,72884095
ILMN_1763007	-0,007531197	HIAT1	8,719316555	8,600225035	7,99741126	8,126434567	7,995852863
ILMN_1718069	-0,007532511	MIS12	10,04301518	9,863091671	9,36771465	9,228084596	9,251547761
ILMN_1797693	-0,007532729	BRI3BP	8,211957405	8,253450837	7,487831509	7,592420001	7,641376431
ILMN_1727023	-0,007536776	AMMECR1L	8,598760364	8,540263324	7,856149882	7,928939469	7,941983874
ILMN_1746686	-0,007536835	POLR1C	9,606515999	9,578670684	8,961852135	9,138985339	8,935647008
ILMN_1662129	-0,007537398	RCN2	11,98199185	12,03596109	11,27830124	11,31559101	11,41654618
ILMN_1795007	-0,007542821	C2orf47	9,540714344	9,635667224	9,169991155	9,114114049	8,880436182
ILMN_3226663	-0,00754458	MGC26356	12,50353726	12,6582018	12,14135323	11,72787221	11,90674235
ILMN_1704014	-0,007552012	LOC730256	8,189339968	8,456649521	7,693707288	7,543793991	7,744236675
ILMN_1727996	-0,007557841	BAG4	7,754055441	7,872712218	7,223073527	7,215291631	7,17777996
ILMN_1810474	-0,00755951	UBE2I	12,24232886	12,36309492	11,60720668	11,65419753	11,70890809
ILMN_1806040	-0,00756203	TYMS	12,04549244	12,12510525	11,48015611	11,4301266	11,44752367
ILMN_1746579	-0,007567022	UBE2O	7,971974541	7,97523794	7,359237439	7,211997611	7,323470106
ILMN_1721703	-0,00759269	PNN	8,986424064	8,843964747	8,671685148	8,209540201	8,085805646
ILMN_2365549	-0,00759921	BRPF1	10,59090861	10,47323334	9,75633975	9,857317721	9,907726847
ILMN_3239426	-0,007603407	GPN3	8,88270954	8,847907069	8,443094082	8,478787615	8,117878218
ILMN_1651776	-0,007603757	FHOD1	7,894900159	7,810484385	7,295680605	7,403171963	7,145768428
ILMN_1718297	-0,007608787	EML4	10,25724587	10,04511134	9,42055274	9,428594473	9,487543574
ILMN_1809478	-0,007610281	SSBP1	11,06093959	11,07071394	10,7834088	10,45558775	10,28263191
ILMN_1682930	-0,00761054	SIPA1	8,597458009	8,483328739	7,600094036	7,836310759	7,978242265
ILMN_2391551	-0,007613768	C13orf23	9,543366432	9,327210785	8,850003965	8,783276085	8,713030487
ILMN_2094776	-0,007618243	CCNL1	8,618515684	8,648245022	7,930844642	7,973403173	8,013778571
ILMN_1778202	-0,007622328	FLJ40722	8,137537103	8,042427644	7,571808125	7,439774942	7,369962328
ILMN_1771326	-0,007627293	C15orf44	8,499625778	8,637739984	7,712558244	7,80945187	8,034948727
ILMN_1696713	-0,007633128	POLA2	9,563656782	9,464128481	8,658880422	9,100000251	8,911567742

ILMN_1806867	-0,00763372	PPM1G	12,34919983	12,28958881	11,45876267	11,601415	11,73793565
ILMN_2049343	-0,007635464	LOC642947	12,6035875	12,72435668	12,10002114	11,85228335	12,01646093
ILMN_1708164	-0,007636043	EIF3A	10,19073268	9,922565324	9,677962326	9,128719128	9,250008407
ILMN_2380163	-0,007636705	PTPRF	12,14068917	11,89613307	11,0230105	11,01646253	11,45202127
ILMN_2351638	-0,007638441	BEX4	10,57330725	10,6100626	10,04977348	10,03162881	9,907896035
ILMN_1657423	-0,00763848	SPG21	9,562532596	9,763429058	8,860765582	8,748687654	9,127645735
ILMN_2333319	-0,00763917	PTBP1	13,67108871	13,56604409	12,83142518	13,05036542	12,99286541
ILMN_1908488	-0,00764049		7,705175906	7,685709226	6,841502124	6,491949659	7,135030697
ILMN_2207505	-0,007643224	LEP	8,042150335	8,020638307	7,588531886	7,280714076	7,301211507
ILMN_2100693	-0,007648579	MAP2K4	8,04146532	8,18175969	7,567056011	7,591482359	7,45077318
ILMN_3219695	-0,007669404	LOC441711	8,205021417	8,461597261	7,566763237	7,618783935	7,787674029
ILMN_1844692	-0,007670433	FOXO3	9,259989949	9,236956517	8,415832651	8,377960292	8,665729625
ILMN_1723212	-0,007672131	SFRS3	9,638453516	9,760201237	9,279052541	9,197187156	8,984175851
ILMN_1755834	-0,007674065	FEN1	9,27293841	9,253535955	8,546408756	8,853214859	8,622942435
ILMN_1727617	-0,007676348	XRN2	9,984996233	10,11279052	9,21303972	9,319870058	9,498460945
ILMN_2395055	-0,007676478	ATPAF1	9,254529641	9,250092138	8,508053092	8,582469957	8,633732365
ILMN_1676555	-0,007679591	TTC26	7,700506098	7,597576611	6,917399836	7,031111322	6,999617661
ILMN_1670912	-0,007680794	ACVR2A	7,888712653	7,958655109	7,240760007	7,339374633	7,29622171
ILMN_1713993	-0,007683174	UBAC2	10,20176981	10,18171688	9,166316943	9,545819807	9,673983725
ILMN_1773148	-0,00768371	C11orf61	7,68595133	7,86428004	7,214002375	7,089687888	7,130434574
ILMN_1681972	-0,007686749	TMEM69	9,433284723	9,647452468	8,582609594	8,897643584	9,052627892
ILMN_2176251	-0,00768856	C20orf72	9,57807877	9,437443215	8,745042936	8,988721456	8,857419883
ILMN_2374352	-0,007693155	DBNDD1	8,937316006	8,794414131	8,027322887	8,089795339	8,250891061
ILMN_2253732	-0,007698907	ST8SIA4	7,675535994	7,768757877	7,041651818	7,046445072	7,099944352
ILMN_2130635	-0,007701403	FOXRED2	9,07083736	8,905597123	8,315617665	7,885580225	8,314515067
ILMN_1748904	-0,007702925	WTAP	8,567240168	8,626779982	8,113303284	7,92683086	7,892203599
ILMN_1687508	-0,007703999	ALDH7A1	11,24714896	11,15687614	10,67559518	10,47387756	10,47929171
ILMN_3251742	-0,00770422	ZNF322A	9,478795548	9,431033529	8,707541198	8,799336447	8,823398754
ILMN_1682857	-0,007708198	NDUFAF2	9,85838988	9,849396165	9,399582056	9,191558071	9,120935309
ILMN_2375418	-0,007717586	DPH2	9,77231428	9,599055827	8,998294994	9,109227168	8,997457244
ILMN_1723414	-0,007718394	HACL1	9,119567783	9,282688605	8,626717835	8,558159577	8,552781952
ILMN_2150465	-0,007721735	C5orf28	10,27226637	9,853673278	9,897572085	9,246939942	9,126137447
ILMN_2343310	-0,0077227	DYNC2H1	8,437050957	8,343935668	7,732052369	7,78606564	7,710517942
ILMN_1763129	-0,007723081	DCTPP1	10,75698775	10,69671017	9,952583134	10,09379495	10,09956306
ILMN_1812489	-0,007724218	CCDC21	8,584113385	8,460840124	7,623441919	7,634394333	7,934680555
ILMN_2333594	-0,007725871	SUMO2	12,26949319	12,18755461	11,45322195	11,72758667	11,59178436
ILMN_236482	-0,007729876	OGT	8,383878584	8,23980611	7,507007842	7,563424693	7,678446733

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ILMN_1815107	-0,00773225	MATR3	12,66265324	12,59040095	12,00137903	12,11692007	11,93490534
ILMN_3238053	-0,00774293	LOC100129211	9,534285731	9,73850128	9,226744065	8,679069989	8,942660615
ILMN_2393994	-0,007745229	CSPP1	8,327181344	8,144023234	7,506016318	7,50970247	7,561898096
ILMN_2321451	-0,007750489	HNRNPD	13,36228172	13,29149562	12,75413867	12,78163312	12,61459913
ILMN_2213297	-0,007750809	C11orf54	8,396644717	8,571562109	7,833709956	7,882420796	7,861898327
ILMN_1767475	-0,007755468	CERK	10,6295786	10,46747373	9,801906611	9,826895065	9,885314138
ILMN_1654653	-0,007758355	KLC1	10,57918658	10,32837494	9,487721549	9,685832936	9,853162206
ILMN_3289090	-0,007765156	LOC728059	8,133705253	8,384792361	7,665010399	7,644772607	7,632724685
ILMN_1730809	-0,007768872	SLC29A2	8,253274238	8,024289047	7,396059207	7,366167187	7,457631755
ILMN_1815668	-0,007769359	GTF2IP1	10,73798267	10,64437683	9,991597194	9,735049193	10,03226004
ILMN_3294235	-0,007775652	LOC100133177	12,70069816	12,54236771	11,83504962	11,86568784	11,97259486
ILMN_1749521	-0,007777787	SLC35E3	9,278203007	9,203213535	8,565960991	8,478842574	8,569748209
ILMN_1671116	-0,00778189	C3orf21	11,34231739	11,17419765	10,43519619	10,2736219	10,62738985
ILMN_2160929	-0,007787209	FEN1	11,34362924	11,19897193	10,4795541	10,85831492	10,61582967
ILMN_2110829	-0,007793399	LOC441743	7,998370582	7,864720138	7,280399664	7,390766576	7,228481613
ILMN_1800096	-0,007793565	MPST	8,425882898	8,60813012	8,032765163	7,786532494	7,832801387
ILMN_2143155	-0,007793782	KIF11	9,032414267	9,110056249	8,742519668	8,431774912	8,300608255
ILMN_1709294	-0,007795429	CDCA8	9,139581492	9,319860972	8,633208485	8,695996057	8,581204541
ILMN_1678707	-0,007797155	TAF15	11,98135781	11,79508406	11,23204297	11,57892425	11,16715909
ILMN_2387471	-0,007797185	FLJ22184	11,47828154	11,38061101	10,73855289	10,46415106	10,76315939
ILMN_1813490	-0,007802599	FSD1	9,29786496	9,388083955	8,676211176	8,881984921	8,696270866
ILMN_1653412	-0,007806121	RAXL1	7,975694877	8,028353957	7,390673619	7,301520055	7,332073191
ILMN_1752111	-0,007819268	SMARCAL1	9,024376862	8,941447955	8,269959335	8,152115895	8,321581472
ILMN_2175894	-0,007821187	HNRPR	11,53573929	11,56542405	10,85563351	11,1438967	10,89605695
ILMN_2145423	-0,007822053	DET1	8,25629296	8,176246448	7,491478338	7,754021509	7,548063568
ILMN_2392472	-0,00782414	CENPA	8,468952411	9,033122841	7,989832558	8,060058472	8,25794453
ILMN_2210386	-0,007828716	TMEM17	10,86481179	11,08562186	10,59876075	10,13743616	10,25894731
ILMN_1701413	-0,007830429	PIGQ	9,72280551	9,726472051	8,658394837	9,023771837	9,212006956
ILMN_1882000	-0,007833021		8,043049326	8,311323284	7,477183362	7,422720785	7,590859205
ILMN_2060770	-0,007834807	RAI1	9,713312111	9,25199464	8,731913091	8,57115539	8,745664823
ILMN_1705682	-0,007838503	LEPREL2	8,18279497	8,012810543	7,414910499	7,696261629	7,38834007
ILMN_2415926	-0,007842043	THOC3	8,646515202	8,698017715	7,940313728	8,116226074	8,038959051
ILMN_1737426	-0,007844147	PCMTD1	7,968106292	8,012457705	7,401060846	7,173136573	7,309065187
ILMN_2397484	-0,007853558	GJC1	13,07254009	13,10763027	12,52489445	12,43604297	12,39140284
ILMN_1669584	-0,007856039	ILF3	9,866374146	9,604779136	8,744370677	8,903154077	9,132136497
ILMN_2355168	-0,007870769	MGST1	10,61441435	10,49911047	9,946378544	10,17912491	9,828888921

ILMN_1740903	-0,007872315	C7orf49	7,872050322	7,895696946	7,304794176	7,310801123	7,182866633
ILMN_1677262	-0,007873779	LOC388621	11,42279015	11,38156888	11,01819598	10,55126794	10,62096596
ILMN_2042771	-0,007875455	PTTG1	11,8679936	11,93631238	11,32708784	11,22036147	11,21367315
ILMN_2321292	-0,007876477	WIPI2	8,670987002	8,664148339	7,893303337	7,948730865	8,037174959
ILMN_1744147	-0,007879877	CEBPZ	10,12032089	10,10237609	9,631077971	9,343059273	9,368789118
ILMN_1702237	-0,007881886	FKBP1A	8,58223615	8,765186462	7,941715855	8,014986937	8,070337081
ILMN_2062381	-0,00788409	LCOR	8,67987706	8,582460446	8,165710289	8,220611299	7,852121525
ILMN_3248614	-0,007885593	LOC152217	7,845239462	8,150455184	7,274910125	7,390169909	7,418091546
ILMN_1721204	-0,007898096	CSF2RA	8,661514805	8,655793185	8,081307728	7,991257986	7,950085185
ILMN_3290100	-0,007907655	LOC645157	9,98775394	9,585174035	9,273774394	9,178536395	8,955664266
ILMN_3242459	-0,007907863	DCTPP1	11,89901208	11,78125981	10,94508854	11,28194297	11,22004073
ILMN_3226214	-0,007907965	LOC728755	9,458386455	9,600118843	8,846589881	9,010968911	8,890075357
ILMN_2073543	-0,007911555	C15orf63	10,48339804	10,76763167	10,25039605	9,745912736	9,915338424
ILMN_3225102	-0,007912438	ZNF738	10,30096521	10,30890852	9,793588891	9,673514849	9,572144763
ILMN_1704305	-0,007916245	NIP7	9,831267794	9,767312652	8,997799702	9,035823992	9,16230943
ILMN_2200636	-0,007916402	KIAA1267	9,899906088	9,665772412	9,320823051	8,818820474	8,983307244
ILMN_1700380	-0,007917948	ATP6V0A2	8,867004505	8,909482195	8,155965287	8,200668938	8,247954609
ILMN_1738027	-0,007922741	BRCA1	8,084733798	8,020354621	7,26897505	7,350443827	7,405592416
ILMN_1750167	-0,007923585	PRR3	8,977447091	8,877429321	8,374440411	8,346329297	8,181431873
ILMN_1688346	-0,007930499	ZNF800	7,919482013	7,961122305	7,311319829	7,234515664	7,259606928
ILMN_1692219	-0,007932488	RAB11FIP1	8,523725371	8,538491685	7,881653391	7,761293155	7,853668148
ILMN_1692620	-0,007933225	ZNF263	8,966804457	8,841467871	8,173985879	8,510079428	8,211887281
ILMN_1753279	-0,007936539	HNRNPA0	11,52270686	11,6094141	10,97362777	11,17531048	10,87222785
ILMN_2290808	-0,007940269	RPL21	12,69818684	12,62942737	12,25501638	12,04557061	11,86990939
ILMN_1737205	-0,007948505	MCM4	10,86916737	10,87527923	10,05859149	9,896691564	10,25933056
ILMN_1670801	-0,00795193	MTR	8,546484399	8,349234867	7,913601972	7,904191392	7,666791069
ILMN_1782635	-0,00795247	YARS2	9,160160297	9,337238158	8,756725445	8,703854641	8,541544458
ILMN_1797425	-0,007956965	DDX55	9,349383285	9,281150728	8,532708131	8,305241194	8,672856004
ILMN_2227573	-0,007956965	GSTO1	11,44997248	11,37274804	10,80036282	10,85019267	10,68815079
ILMN_1826531	-0,00795753		9,900180151	9,899096621	9,307341827	9,206773956	9,19170609
ILMN_3247835	-0,00795762	CXorf64	8,584499145	8,73290307	8,015518135	8,24991811	7,996717564
ILMN_1775743	-0,007958574	BTG1	12,07070399	12,01110623	11,62948652	11,19413181	11,25524697
ILMN_1721921	-0,007961668	BLMH	9,233900204	9,043644322	8,497496155	8,607550948	8,398370594
ILMN_2344007	-0,007966011	SIP1	8,339836777	8,348937874	7,641105234	7,681918597	7,678472287
ILMN_2334350	-0,007968121	BTBD3	9,307723313	9,501403437	8,866827901	8,630286018	8,723924716
ILMN_1651872	-0,007971605	UBIAD1	8,82176123	8,768279033	8,083879284	8,064380786	8,118662244
ILMN_205140	-0,007980926	PNPT1	12,36092908	12,25156912	11,53114394	11,45367413	11,64325136

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ILMN_3283449	-0,007981697	LOC440991	8,995671702	9,027002551	8,570416108	8,505535551	8,245258174
ILMN_2251978	-0,007983575	C21orf66	8,543783712	8,421618944	7,795436254	7,760085538	7,779108011
ILMN_1668634	-0,007983642	FBXW7	7,895091188	7,995486214	7,168161781	7,226955553	7,328562736
ILMN_1707475	-0,007983847	UBE2E2	9,854250519	9,976114543	9,004506221	9,231391417	9,353316153
ILMN_3272424	-0,007983959	LOC100128836	8,026715501	7,93668529	7,551056068	7,457041063	7,182649052
ILMN_3249748	-0,007985072	LDHA	10,19359339	10,37767291	9,580422233	9,916342066	9,651275802
ILMN_1670901	-0,00799032	COX10	9,534523957	9,441026293	8,584446168	8,616287287	8,876575209
ILMN_1670809	-0,0079936	NRM	8,441217238	8,767536647	8,058059706	7,959378623	7,951516496
ILMN_1681543	-0,007995365	RHBDD1	7,731954904	7,783114184	7,07271882	7,018254606	7,093378231
ILMN_2174612	-0,007996097	CNOT8	8,933232347	8,815835819	8,161085775	8,397469265	8,172936181
ILMN_3261345	-0,007998661	LOC100130053	9,015155216	8,807739982	8,188253174	8,05017998	8,2036062
ILMN_1685580	-0,008001592	CBLB	8,683599544	8,794692699	8,019814655	8,068488732	8,099837401
ILMN_1689817	-0,008002492	LCOR	8,441711373	8,498466043	8,007398626	7,969285856	7,715518625
ILMN_3232696	-0,00800582	LOC729816	9,443790105	9,489438858	8,916999211	8,579129248	8,754010743
ILMN_1804490	-0,008006629	PRKRIP1	8,330160397	8,100867776	7,252496424	7,510013958	7,586835736
ILMN_1718807	-0,008010752	SMC3	9,953257408	9,851257729	9,206427404	9,493215142	9,19399509
ILMN_3226700	-0,008014076	ZNF837	8,491369786	8,22785112	7,425960519	7,585548082	7,712954229
ILMN_3298694	-0,008014837	TYW1B	9,471258071	9,423381489	8,573833896	8,758344769	8,827179296
ILMN_2076640	-0,008017063	KHDRBS1	12,6299416	12,47322579	12,00672425	11,80236946	11,78283735
ILMN_1800058	-0,008018706	NKX2-5	9,146603875	9,363262872	8,540095392	8,324848799	8,645345983
ILMN_2373099	-0,008024284	ZCCHC11	8,000337192	7,757316055	7,203158031	7,332351111	7,131317273
ILMN_1673518	-0,008030824	BRWD1	9,168295746	9,177445359	8,369147362	8,437899915	8,539557403
ILMN_3277715	-0,008032273	LOC389873	8,879997909	9,303965431	8,346907301	8,417425913	8,533858905
ILMN_3270641	-0,008042874	HNRNPH3	9,285177484	9,222378838	8,793597938	8,681837777	8,467191248
ILMN_2343757	-0,008045131	42257	7,820973959	7,734295156	7,108784997	7,102306586	7,066490042
ILMN_1806106	-0,008050762	GNL3	9,414241944	9,430612141	8,791605894	8,945817758	8,715266972
ILMN_1760201	-0,008054497	DNMT1	12,53064645	12,09553583	11,3215586	11,49780505	11,64373242
ILMN_1771962	-0,008056011	GLI3	8,362784012	8,294573814	7,544552859	7,824039408	7,659033758
ILMN_3269655	-0,008056288	FLJ35390	9,844300798	9,745878505	9,081105335	8,738136529	9,109216672
ILMN_2323491	-0,00805659	NUP62	8,367345656	8,271773448	7,853621989	7,684555173	7,52735748
ILMN_1651496	-0,008060226	HIST1H2BD	8,931308948	9,146598348	8,319192549	8,322797981	8,419233246
ILMN_2415949	-0,008062574	MRRF	7,94229598	8,15780953	7,395353417	7,324294265	7,405574759
ILMN_2370135	-0,008064869	HNRNPU	8,786718249	8,958801113	8,402608279	7,950281691	8,154390881
ILMN_1797332	-0,008071066	NARS2	8,187129634	8,110423308	7,562238358	7,33201069	7,410423344
ILMN_1759419	-0,008077902	ILVBL	9,939593866	9,910379875	9,129477571	9,210467214	9,273204681
ILMN_1735779	-0,008078356	KCNJ8	8,579773186	8,482870399	7,82631298	7,924497419	7,825540345

ILMN_1697639	-0,008079962	OGT	9,479128667	9,264665749	8,577214267	8,674370511	8,674593439
ILMN_2407851	-0,008088827	IL17RD	9,253692972	9,276988412	8,700775782	8,361604233	8,543556287
ILMN_1654920	-0,008091317	HNRPH3	9,691933986	9,57390217	9,211131628	9,105136811	8,811505644
ILMN_1913641	-0,008091642		7,588036891	7,871590037	7,153933831	7,062485288	7,066498719
ILMN_1656574	-0,008097257	PCGF6	8,566567939	8,799732456	8,042278935	8,340439182	8,021836929
ILMN_1705144	-0,008097575	ULK1	10,79887251	10,65874113	9,611618394	10,00127426	10,16980147
ILMN_2371685	-0,008098517	UBE2E1	8,729226583	8,65499051	8,032711483	7,954203516	7,976270114
ILMN_1673721	-0,008103168	EXO1	9,058807596	8,975887095	8,225706912	8,383568322	8,345581507
ILMN_1812105	-0,00811649	PIP5K2B	9,99277664	10,09200583	9,356063954	9,181391577	9,380144709
ILMN_1761828	-0,008120303	E2F4	9,182992293	9,001644205	8,314816667	8,263630207	8,395665483
ILMN_1777663	-0,008122884	TOP2B	11,63186737	11,45183472	10,67675982	10,90432377	10,87232158
ILMN_1708095	-0,008128178	PANK2	9,448171812	9,451513851	9,04387799	8,715748273	8,653517741
ILMN_1675156	-0,008128679	CDC42	8,001653046	8,091058733	7,431135504	7,290852678	7,349780451
ILMN_3249244	-0,008133805	TMEM106A	8,096375713	8,246579453	7,593242634	7,464075705	7,473466117
ILMN_1674380	-0,0081372	TRPC1	8,147308333	7,984184086	7,297576135	7,381152292	7,363110338
ILMN_2167426	-0,008147616	ASPHD2	7,954692385	8,000954053	7,327748171	7,211985752	7,282077344
ILMN_2113738	-0,008148449	C8orf45	10,74362971	10,73347492	10,18305217	9,624992413	10,00479739
ILMN_1654385	-0,008150274	ASB13	8,161322349	8,3195156	7,536367204	7,690414151	7,584924352
ILMN_1728467	-0,008150632	GHITM	12,02723249	11,89034051	11,20892464	11,3517234	11,25179866
ILMN_1653432	-0,008160002	HNRPDL	8,957940929	8,779466498	7,96979694	8,093608571	8,212046868
ILMN_2206188	-0,008161612	SHROOM4	9,023738002	9,495738877	9,041158852	8,69411658	8,495750931
ILMN_1685413	-0,008164519	ALG8	9,768962686	9,763062399	9,163939712	9,23938184	9,030652465
ILMN_2067370	-0,008165798	SNRPF	12,60887532	12,45684716	11,81393871	11,82529266	11,81176929
ILMN_1766981	-0,008168958	UNC50	10,65763183	10,55470511	9,92024992	10,03105223	9,880178971
ILMN_1769546	-0,008169134	RIN2	7,388054885	7,311699868	6,704547055	6,636264155	6,618600382
ILMN_1655876	-0,008170986	TMEM159	7,799561243	7,883303199	7,061609887	7,104417474	7,19984123
ILMN_1669842	-0,008172299	CHAF1A	8,426421606	8,334666396	7,681274911	7,663245027	7,665968583
ILMN_2115696	-0,008174524	USP42	9,407192869	9,243594464	8,727781301	8,611052188	8,555159407
ILMN_2279339	-0,008179958	WTAP	9,289593341	9,266952572	8,720636702	8,646167946	8,52351689
ILMN_3237419	-0,008183733	LOC727980	8,08923237	8,313096867	7,464948418	7,274821993	7,581216287
ILMN_1654217	-0,008184941	MPP2	7,878910973	7,814586156	7,119883282	7,077282432	7,14904933
ILMN_1761044	-0,008192851	GNB1L	8,506935088	8,539716186	7,796020802	7,806965657	7,846720988
ILMN_1778457	-0,008196062	IL18	12,50504008	12,4756796	11,80595527	11,58953547	11,78801884
ILMN_1774028	-0,008197408	MTFR1	8,268601132	8,38553593	7,857467963	7,765724913	7,568022547
ILMN_1775937	-0,008202701	DDB1	13,0506722	12,98954659	12,09584924	12,4105812	12,39061109
ILMN_1666553	-0,008210979	SLC25A19	8,254807844	8,2562925	7,486292725	7,686807592	7,580411867
ILMN_166058	-0,008214908	LIG3	8,369728272	8,243589416	7,426031332	7,525869475	7,649075159

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ILMN_1769520	-0,008215644	UBE2L6	11,9250059	11,85983939	10,9912841	11,19190851	11,2547826
ILMN_1814600	-0,008217451	DEPDC1B	7,749254919	7,800367025	7,173030044	7,037723317	7,052683668
ILMN_1788166	-0,008221341	TTK	8,71665436	8,712939073	8,095233069	7,936412201	7,987394844
ILMN_2077680	-0,008221792	CLDND2	7,951420897	8,03239604	7,258924223	7,214458034	7,327229711
ILMN_1705737	-0,008221868	IMPDH2	11,47699063	11,7354839	10,93482933	11,03470017	10,95476962
ILMN_2209993	-0,00822355	PLIN5	8,252462284	7,99122842	7,665714753	7,262994541	7,27314076
ILMN_1721901	-0,008225144	CTNNAL1	9,709591895	9,823272926	9,113014791	9,411738201	9,066470789
ILMN_1814039	-0,008226102	LOC653086	10,62275209	10,4831433	9,719324764	9,723380266	9,874939128
ILMN_2222984	-0,008227105	RDH14	10,5304053	10,5323853	9,886455807	9,87927257	9,810513921
ILMN_1746013	-0,008229341	SPOCK1	10,67432058	10,5038493	9,679049021	10,15489808	9,919813804
ILMN_3240003	-0,008230513	LOC100133012	8,359674961	8,095303655	7,403399668	7,487627282	7,512288749
ILMN_1719694	-0,008235215	LOC729446	8,456651235	8,45656058	7,759065478	7,810332984	7,753628443
ILMN_1706839	-0,008236897	TCERG1	8,211945786	8,284274183	7,809231763	7,669867274	7,46255977
ILMN_1773742	-0,00823748	DNAJB9	8,594790076	8,689216771	7,868854971	8,078573145	7,987392769
ILMN_1712386	-0,008239282	C21orf45	8,306626544	8,517928527	7,937579994	7,922608856	7,670551813
ILMN_1713290	-0,008251692	GLT8D1	9,297205458	9,168898922	8,450512566	8,274765741	8,539333714
ILMN_1707493	-0,008253744	SNHG3-RCC1	8,812450115	8,841763959	8,160299295	8,346777055	8,112315459
ILMN_1748591	-0,008256045	ODC1	12,16654857	12,22211447	11,34750374	11,47934095	11,56067271
ILMN_1697670	-0,008256342	SRRM1	10,8118794	10,60905363	10,19090765	10,1442816	9,887081398
ILMN_2059173	-0,008257665	SLC35E1	9,338406554	9,414224577	8,818588029	8,564772284	8,641471774
ILMN_1702363	-0,008263312	SULF1	8,604569034	8,458386399	7,724780489	7,633341602	7,839147337
ILMN_1808391	-0,008267821	DUSP4	7,701343963	7,849491724	7,054434313	6,808791538	7,122596656
ILMN_3287996	-0,008270666	LOC400446	9,75751828	9,660626044	8,922465858	8,824711274	9,019908424
ILMN_1712505	-0,00827779	KDELC1	8,051823776	7,960448218	7,495756438	7,291574375	7,207564732
ILMN_2401769	-0,008282609	PHF14	8,9814052	8,963224232	8,133940427	8,423220542	8,30955483
ILMN_1711492	-0,008283174	LOC441050	7,800410566	7,739735113	7,046161957	7,326659832	7,05020667
ILMN_1756162	-0,008286221	EXOSC8	9,32867798	9,116496313	8,66812642	8,483472524	8,41182173
ILMN_1790136	-0,008292006	C20orf20	10,21814289	10,19244749	9,427571186	9,64329912	9,517283735
ILMN_1660436	-0,008296932	HSPA1B	10,03264045	9,932809597	9,238010555	9,248078508	9,269281802
ILMN_2354649	-0,008297396	SFRS13A	8,133209856	8,224630941	7,411095277	7,432606433	7,519939255
ILMN_3251155	-0,008309607	PCBP2	7,714973397	7,787015279	7,172376282	7,177394578	7,009023326
ILMN_1794370	-0,008312664	SEMA5B	9,096032875	9,117434572	8,273932826	8,455193803	8,450970509
ILMN_2279834	-0,008313312	ZNF483	8,726046077	8,907911671	8,531448105	8,025238393	7,997515301
ILMN_1764629	-0,0083146	SLC39A14	8,482939633	8,492305911	7,714940054	7,668559742	7,811124573
ILMN_1784367	-0,008315505	HSPD1	7,937330376	7,86749553	7,047876771	6,999558305	7,240069988
ILMN_2205050	-0,008320777	PRKX	8,94994564	9,009509824	8,105133602	8,289268512	8,349079098

ILMN_3294213	-0,008330574	LOC401098	8,936517595	9,097295877	8,569038198	8,126435481	8,254653078
ILMN_3237584	-0,008332755	LOC100133489	8,24804794	8,277947619	7,551958274	7,74102008	7,556685451
ILMN_1777449	-0,008332798	IFT74	8,291078594	8,006503698	7,451726563	7,24596039	7,373641661
ILMN_1659240	-0,008332805	MTMR14	9,722342753	9,694452447	8,793850431	8,862420279	9,075371412
ILMN_1678669	-0,008333288	RRM2	9,241631757	9,297078648	8,440425257	8,26817244	8,628720532
ILMN_1788099	-0,008335375	LSM4	12,08171003	12,20623899	11,18920085	11,53407767	11,55477343
ILMN_1694084	-0,008338415	PSCD1	9,040829294	8,921479282	8,24855907	8,298934903	8,251729724
ILMN_1668484	-0,008338984	LRRC47	9,907576525	9,804205037	9,223654339	9,070849957	9,095712404
ILMN_1723007	-0,008339994	ZCCHC9	9,456337762	9,388503986	8,779928727	8,805269627	8,669232948
ILMN_2156267	-0,008340177	EIF2AK1	11,6564539	11,59493875	10,94435861	10,79293406	10,89530429
ILMN_1718607	-0,008342483	TSPAN4	10,82371531	10,50633687	9,680008916	9,740075058	9,990556242
ILMN_1733164	-0,008345228	FBXO11	8,195298189	7,905383338	7,317290196	7,329304832	7,280300328
ILMN_1690252	-0,008349436	ALKBH2	8,873861111	8,823686654	8,054809219	8,245812291	8,155248
ILMN_1795341	-0,008352029	SFRS1	11,67145808	11,78570852	11,0488934	11,06938076	11,03282256
ILMN_1809496	-0,008353342	COPG2	9,418362579	9,377208687	8,578036591	8,921009798	8,711860568
ILMN_3261439	-0,008354043	LOC100128098	9,111511274	9,317894465	8,886248596	8,326122538	8,415515419
ILMN_1721704	-0,008355616	FNTA	9,916914996	10,01333536	9,25094676	9,4161198	9,274373952
ILMN_1738150	-0,008364067	SUMO2	10,39743741	9,852267373	9,714443172	9,335239342	9,172365041
ILMN_1777066	-0,008365182	NIF3L1	10,73013265	10,69472737	9,95287008	10,00644051	10,01095001
ILMN_1814204	-0,008365527	C21orf55	12,47137922	12,21458193	11,63441317	11,4531658	11,57469834
ILMN_2221564	-0,008366487	LYAR	9,231931041	9,060089629	8,50833644	8,28237151	8,370533879
ILMN_3237404	-0,008367302	LOC100132585	8,979208359	9,406641861	8,860586719	8,520539422	8,439840413
ILMN_1708805	-0,008372715	NCOA3	8,599408243	8,580231771	7,947424442	7,847959984	7,848028234
ILMN_1750664	-0,008374715	PPT2	8,209677023	8,162103904	7,488786084	7,49610692	7,45592286
ILMN_3210171	-0,008377094	LOC389156	10,1969696	10,02977965	9,817628145	9,185112862	9,210938717
ILMN_1808059	-0,008379982	BCAS4	8,586609448	8,859193826	7,682752709	8,047679652	8,198092197
ILMN_1661346	-0,008380374	LOC648210	11,49402549	11,14311601	10,92962076	10,59797728	10,40037874
ILMN_1655577	-0,008381861	TIAM1	8,017499936	7,856427474	7,115095528	7,134990188	7,229372912
ILMN_1788283	-0,008382716	COTL1	9,828919898	10,59327696	10,03128068	9,658686529	9,475691814
ILMN_1783684	-0,00838429	LOC648695	10,03760242	10,06390425	9,579032605	9,495596433	9,24854822
ILMN_3249419	-0,00838628	LOC728457	8,234751285	8,114772375	7,315924523	7,370478659	7,490598772
ILMN_1784785	-0,008387297	COPS7B	9,82451598	9,740284788	9,019653398	9,247971656	9,062434772
ILMN_3290035	-0,008387452	LOC653737	7,616947298	7,604167226	7,092347904	6,874306597	6,821179935
ILMN_1654543	-0,008390525	MED6	10,69923309	10,67610635	10,03098333	9,729139071	9,955161083
ILMN_1679044	-0,008390605	LOC644584	8,329813108	8,37086511	7,468786025	7,66253229	7,709257624
ILMN_2395043	-0,008397666	HSPA4	10,61736826	10,51039623	9,597050074	9,806686968	9,921126833
ILMN_178901	-0,008399537	ILF3	8,289544313	8,306406014	7,65256828	7,45385519	7,565824899

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ILMN_1670172	-0,008412101	WDR33	9,816609388	9,780710627	9,073440097	9,352149825	9,070418951
ILMN_1727001	-0,00841752	DDX46	9,452115592	9,433338729	8,621040377	8,575681428	8,767351508
ILMN_1730101	-0,008418406	GSPT2	9,808187874	9,743013545	8,963019484	9,184140404	9,077038931
ILMN_1683112	-0,008421776	FANCC	8,016865339	7,769658084	7,060284802	7,098823179	7,16419015
ILMN_1686319	-0,00843688	USP37	8,118090513	8,081328684	7,457145772	7,418821677	7,344012917
ILMN_1740572	-0,008437688	TCN2	8,091165177	8,170609574	7,48965643	7,345972744	7,405686072
ILMN_1749432	-0,0084446	MRPL32	10,59210947	10,5233747	9,96266895	9,95630691	9,773506639
ILMN_3289685	-0,008447296	LOC645452	11,43433128	11,45012781	10,8418426	10,65769396	10,68553105
ILMN_1661174	-0,008452485	LOC731640	11,33730347	11,35177396	10,87325796	10,59354999	10,53719223
ILMN_1741204	-0,008453839	KLHDC2	10,07643521	10,0988045	9,437801701	9,378263878	9,348096046
ILMN_1773763	-0,008456967	MTA2	8,917780463	8,920898093	8,458147552	8,039897307	8,1088413
ILMN_3236765	-0,008457006	UPLP	8,479974575	8,314412079	7,539845805	7,770035486	7,687656025
ILMN_3280943	-0,008457029	LOC389156	10,16463802	9,978101836	9,78152254	9,419379591	9,143913199
ILMN_1685433	-0,008457531	COL8A1	9,417546452	9,159503391	8,192551293	8,231689767	8,660344451
ILMN_2183938	-0,008459324	LEMD3	9,659207705	9,469716624	8,753269472	8,769771208	8,836996646
ILMN_1781943	-0,008461635	FAM83D	8,979706105	9,050027236	8,410665985	8,415515792	8,265146921
ILMN_1793724	-0,008466457	C3orf31	8,689906015	8,678975163	8,176570379	8,014979551	7,880451343
ILMN_2061452	-0,008467221	ORC2L	8,239957531	8,334879266	7,757417413	7,554964811	7,518876884
ILMN_1764596	-0,008468605	MPST	10,0840481	10,07646127	9,257364467	9,03407931	9,407520738
ILMN_1714809	-0,008475031	RPIA	8,678757278	8,720386568	8,015931608	8,067843835	7,972259232
ILMN_1683598	-0,008476067	ACSL4	9,008544637	8,819067061	8,208193967	8,119227445	8,144402562
ILMN_1742578	-0,0084798	MKLN1	9,66454489	9,62988149	8,719832052	8,706158589	9,002755776
ILMN_1703369	-0,008484125	LOC647474	7,782065738	7,845728859	7,060127094	7,039202478	7,121342695
ILMN_1732809	-0,008484272	ALG9	9,750933008	9,765325996	8,787176925	9,116599931	9,132012962
ILMN_1654552	-0,008492551	MRPS31	9,392453574	9,614261884	8,893890649	8,783954751	8,792023927
ILMN_1793671	-0,008504051	TFDP2	8,712326387	8,687491468	7,563714044	7,919768625	8,128460022
ILMN_3244728	-0,008514518	LOC100134159	10,74209951	11,00713644	10,26874165	10,03218089	10,1734906
ILMN_1655163	-0,008514879	STK24	11,87016308	11,62718127	10,88170579	10,8440644	11,02611763
ILMN_2349610	-0,008519959	DPH3	8,587990413	8,651159151	8,151645239	7,879960551	7,814036334
ILMN_2373177	-0,008520134	PANK2	9,11904777	9,234745782	8,598464633	8,592574048	8,420891827
ILMN_3307025	-0,008521394	ZDHHC4	9,338170307	9,332754764	8,531061408	8,746424324	8,635673023
ILMN_2193591	-0,008521642	UNC93B1	8,409548941	8,248582492	7,578212323	7,577751187	7,576570712
ILMN_1687958	-0,008524963	SLC25A22	9,154015932	8,973467569	7,94712036	8,322694484	8,443976131
ILMN_1713952	-0,008529936	C1orf106	9,58376047	9,531766992	8,894674871	9,013772133	8,791139438
ILMN_1712046	-0,008532432	CPXM1	9,707378798	9,702144686	8,813127943	8,968229352	9,041219001
ILMN_1803005	-0,008535141	MMACHC	8,030236181	8,140807781	7,365746945	7,387044534	7,383022903

ILMN_2313889	-0,008536521	ZNF682	10,40886354	10,55407532	9,890134203	9,557712055	9,746082218
ILMN_1801403	-0,008539656	DCUN1D4	9,330150166	9,344542142	8,806916459	8,687462843	8,538701058
ILMN_1791896	-0,008542886	EBAG9	9,490687656	9,336100757	8,797098689	8,624860845	8,610583376
ILMN_1713964	-0,008548279	BTBD3	9,15531503	9,281503136	8,470370586	8,4724662	8,53053415
ILMN_1734734	-0,008549433	ZNF519	7,805695539	7,903992005	7,151518608	7,036510222	7,145121988
ILMN_1742230	-0,008552792	BAZ1A	9,372311005	9,131617725	8,661576424	8,444021136	8,418146531
ILMN_3233388	-0,008553422	RELL1	8,52150491	8,471988442	7,854585679	8,021530002	7,71764125
ILMN_2210837	-0,008560864	CDC26	10,04214569	10,09540472	9,592925938	9,29417055	9,260267714
ILMN_2243308	-0,008564898	ACVR1B	9,720460316	9,429274648	8,698594251	8,646819484	8,839089436
ILMN_3229467	-0,008566414	LOC729217	10,838359	11,11892579	9,995524106	10,17047003	10,41618656
ILMN_1813207	-0,008571689	MRPS9	10,02322691	9,890690387	8,95561049	9,066958799	9,304384092
ILMN_1763011	-0,008572661	C7orf10	8,510107119	8,721484782	7,972986562	7,852802011	7,906127127
ILMN_3245600	-0,00858026	LRRC37B2	10,31568516	10,4976152	9,882489593	9,555717381	9,647228717
ILMN_1688534	-0,008581396	EIF2B5	9,045570292	9,015062543	8,116681931	8,301966085	8,362797011
ILMN_3247256	-0,008587511	LOC646996	9,762195266	9,736289729	9,176060862	9,013271843	8,954062833
ILMN_1666564	-0,008606415	LOC652489	11,02352165	11,04940515	10,20093602	10,4401648	10,34598693
ILMN_1782004	-0,008607075	BAPX1	9,794982201	9,613360309	8,710525091	8,836470235	9,03198539
ILMN_1763326	-0,008610716	C5orf25	8,48389448	8,413020905	7,673644244	7,817587489	7,712219391
ILMN_1746206	-0,008611089	AZI1	9,360250953	9,230040645	8,251938896	8,49876556	8,651210416
ILMN_1806294	-0,008624919	RPS6KA3	8,128941812	8,244231699	7,45602105	7,466573304	7,479248904
ILMN_2373566	-0,008632405	PJA1	9,963745757	9,908215706	9,014758787	9,190986039	9,259858661
ILMN_1658290	-0,008632476	C16orf68	8,700388998	8,652730893	7,831822628	7,941668488	7,972951863
ILMN_1734254	-0,008632658	ZNF770	9,149127101	9,061013694	8,430860729	8,407678065	8,326384885
ILMN_3231881	-0,008641151	LOC728026	8,630266372	8,542792435	8,10946004	7,899948753	7,73217431
ILMN_1729546	-0,008641763	C19orf54	8,240417334	8,150511563	7,397460084	7,473981265	7,462416431
ILMN_1739257	-0,008642813	EIF3E	13,15684675	13,18936222	12,3911254	12,3661288	12,46578462
ILMN_2413331	-0,008643309	TMEM107	8,114342044	8,079640927	7,236986019	7,262674555	7,403834121
ILMN_1809951	-0,00864335	ZNF200	8,521639244	8,647662587	7,732962433	7,993951363	7,919465567
ILMN_1678037	-0,008656672	HIRIP3	9,589131114	9,484682301	8,675900016	8,712121378	8,825901343
ILMN_3240446	-0,008657526	ZNF286C	8,169567386	7,939931817	7,451821673	7,199110669	7,216886865
ILMN_2388070	-0,008659518	TMEM44	8,431478701	8,590289356	7,632986162	7,987556418	7,859384528
ILMN_1750518	-0,008661154	THOC4	11,58966771	11,93377285	10,84995249	10,63451741	11,18603737
ILMN_1737360	-0,008663634	TSPYL3	8,914470909	8,831498562	8,121200934	8,034835023	8,125397904
ILMN_1744240	-0,008666098	WDR67	8,250260349	8,045770958	7,423807944	7,438734425	7,356370266
ILMN_1733696	-0,008671165	IMP3	11,70615571	11,67766907	10,79991223	10,80820145	11,01080569
ILMN_2047676	-0,008675195	OSGEPL1	8,011607651	8,491307908	7,592767635	7,571990391	7,597080223
ILMN_180768	-0,008677117	PKNOX2	8,170135082	8,111852022	7,384441829	7,346817951	7,397898654

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ILMN_1717173	-0,008680624	ECT2	9,235458471	9,118675743	8,613102768	8,528769285	8,342687935
ILMN_2273224	-0,008680676	SLC4A5	8,773356967	8,876011743	8,121185297	7,935641684	8,102894208
ILMN_2405521	-0,008682169	MTHFD2	9,315501757	9,234682686	8,450573739	8,708724863	8,544861693
ILMN_2172174	-0,008682226	NP	8,001041553	8,113829288	7,446155654	7,472021798	7,293420461
ILMN_1805668	-0,008687496	ZNF486	11,19360051	11,08145308	10,61531216	10,20170608	10,29670083
ILMN_1749930	-0,008689096	TMEM48	7,909628032	7,905349828	7,200951163	7,267251677	7,1521601
ILMN_1748476	-0,008696577	NOP58	10,99315424	11,05537251	10,38904314	10,20959638	10,26295815
ILMN_3246255	-0,008696964	LOC100133516	9,082534633	9,389435977	8,800097472	8,324541916	8,46104545
ILMN_3183544	-0,008701694	LOC100130168	12,12800873	12,11612865	11,34994966	11,13608148	11,39918037
ILMN_1683120	-0,008708147	UNG	10,82392224	10,70395766	9,960822552	10,04505306	10,01797047
ILMN_1775703	-0,00870968	TRAPPC6A	8,605002534	8,911932926	7,836073941	7,924731294	8,162949511
ILMN_1743677	-0,008709779	HNRNPU	8,94013494	8,688249372	8,018371863	8,084717499	8,03382053
ILMN_3231550	-0,008709996	LOC100131718	9,030089759	9,061453135	8,602415065	8,15125964	8,205518749
ILMN_1787324	-0,008710021	C16orf48	10,23189453	10,15649865	9,299296481	9,291568215	9,499010094
ILMN_1733615	-0,008716131	MTF2	8,515756628	8,324965555	7,649375775	7,578634151	7,64787046
ILMN_2139351	-0,008717695	ZNF232	8,025361829	7,918589032	7,363721463	7,396022571	7,149629333
ILMN_1696975	-0,008719214	USP1	9,126344131	9,068685125	8,645045336	8,508996842	8,22876323
ILMN_1756402	-0,008720401	TMEM177	9,350649364	9,286065813	8,548553107	8,654280788	8,569853582
ILMN_2334587	-0,00872099	HNRNPC	9,830188244	10,01818341	9,256505172	9,474114932	9,191013086
ILMN_1658746	-0,008721378	PTPLAD1	8,213070999	8,414884458	7,535473392	7,538817622	7,635662866
ILMN_1731073	-0,008725602	CAPN9	8,456792289	8,759346283	7,843525021	7,717090081	7,951815663
ILMN_1722059	-0,008726923	SAFB	11,17560886	10,92570279	9,721693878	10,19383897	10,47386123
ILMN_2192694	-0,008726938	EIF3M	9,62751982	9,326751372	8,999665032	8,865303739	8,559439379
ILMN_2174884	-0,008731501	XPO7	8,942648921	9,026736868	8,058289123	8,29759386	8,330179141
ILMN_1812995	-0,00873588	CTSL1	10,18080958	10,11725653	9,101171222	9,258469091	9,510887554
ILMN_1685441	-0,008738512	ASAP3	10,27752829	10,03081558	9,140363694	9,491974947	9,451900698
ILMN_3243945	-0,008739133	C13orf37	8,882563943	9,1070127	8,46869239	8,311472648	8,221925124
ILMN_1787280	-0,008743277	C1orf135	7,994180571	8,052880444	7,488930437	7,359370828	7,212765852
ILMN_2106658	-0,008744487	BLZF1	10,25058244	10,45512423	9,789614127	9,480016842	9,594602355
ILMN_3260286	-0,008744713	LOC100128062	10,38875572	10,35778854	9,592455716	9,523690872	9,639907616
ILMN_2087575	-0,00874547	ZC3H4	9,673497567	9,643692689	9,050198311	8,889196907	8,857879274
ILMN_2311089	-0,008748238	BRCA1	7,947628826	7,869366863	7,169586259	6,979810652	7,149536329
ILMN_3235410	-0,008748482	HIATL2	10,58400842	10,90884228	10,27692985	9,977684063	9,977902006
ILMN_2070300	-0,008748844	LSM2	12,18014463	11,96588385	11,29065326	11,12329633	11,29876809
ILMN_1671906	-0,008759266	MND1	8,139371605	8,215675288	7,646034467	7,546551413	7,366920109
ILMN_1683888	-0,008760951	SRP72	9,405040966	9,381587746	8,948142596	8,79596424	8,525336196

ILMN_3237448	-0,008761084	BEND5	8,931047532	9,004510929	8,253969921	8,196220811	8,229636537
ILMN_1711383	-0,008769245	STK4	10,15443015	10,16851675	9,499877597	9,510502695	9,384831811
ILMN_2278433	-0,00877177	LOC285074	8,932547818	9,258143526	8,336958255	8,234862783	8,43592497
ILMN_1759023	-0,008774633	WFS1	10,57631419	10,55646018	9,333161144	9,72899793	10,00230443
ILMN_1788810	-0,008774665	C12orf30	8,072588905	8,008064434	7,38753564	7,167100669	7,247349044
ILMN_2275098	-0,008775428	DTX2	8,7933454	8,75630192	7,819896425	8,150959723	8,094769035
ILMN_3239181	-0,008776278	ITPRIP	9,231316254	8,987954665	8,215349823	8,417469228	8,359384977
ILMN_1815682	-0,008782359	C3orf37	9,762739189	9,735398937	8,819136112	9,12084774	9,061386439
ILMN_1807423	-0,008788201	IGF2BP3	10,68622794	10,76071859	10,22250766	10,0007432	9,900681145
ILMN_1652797	-0,008788903	FAM174B	8,23336444	8,155181978	7,305204049	7,264335925	7,487237423
ILMN_3237507	-0,008792407	LOC552889	9,850237547	9,967517892	9,177995024	9,190694321	9,182385158
ILMN_1664698	-0,008795823	UNC119	8,968971791	9,015600115	8,052831597	8,196382252	8,329403113
ILMN_1666385	-0,008797709	CALM3	13,66432883	13,70347174	12,7546112	12,98323132	13,01170965
ILMN_1706246	-0,008799721	CCT5	8,585004148	8,747732485	7,854699796	7,987676792	7,978924803
ILMN_1678966	-0,008800727	SNRPF	12,24649918	11,93199477	11,42224707	11,40370267	11,23307247
ILMN_1686135	-0,008802101	CCDC45	8,172641294	8,246325138	7,539656419	7,558343996	7,4459269
ILMN_2413898	-0,008802236	MCM10	9,663975873	9,605433544	8,89105911	8,767427083	8,87434788
ILMN_1746393	-0,0088061	TSEN2	8,5559486	8,634385975	7,758964576	7,805570785	7,899444011
ILMN_1713706	-0,008816766	ZNF786	8,765254424	8,949235365	8,09918643	7,961221181	8,1594435
ILMN_1732150	-0,008822758	KIAA0101	8,059607783	8,43757305	7,465526438	7,468692339	7,602189532
ILMN_1785424	-0,008822895	ABLIM1	10,99335685	11,09507712	10,10855224	10,16346027	10,39258508
ILMN_1815184	-0,008823671	ASPM	10,01975001	9,622640685	9,111646161	9,052860793	8,961257818
ILMN_2374036	-0,008830399	CTSL1	10,54567729	10,48775488	9,719476939	9,594277994	9,775092396
ILMN_2363392	-0,008831653	TNFSF14	9,125545037	8,877052934	8,214155431	8,128204353	8,20839077
ILMN_2101920	-0,008831657	HNRPH1	9,104959579	9,531696646	8,831094569	8,900562934	8,559989585
ILMN_1815169	-0,008834236	MCM5	9,990326157	9,985055706	9,181783256	9,486370666	9,24838756
ILMN_2119421	-0,008836449	LOC143543	8,399570511	8,28816369	7,675740566	7,721446438	7,530361862
ILMN_1849941	-0,008849237		7,870024521	7,942766694	7,077265282	7,074892524	7,202522264
ILMN_1714438	-0,00885131	MUTYH	9,155909172	9,086408705	8,14922273	8,350468146	8,435302505
ILMN_1783424	-0,008851999	PUM1	11,12854915	10,98422975	10,21875456	10,30689363	10,30130912
ILMN_1727458	-0,008854495	HDAC1	11,41570759	11,34118194	10,35149157	10,52810147	10,71426037
ILMN_1656382	-0,008855315	BOLA2	8,016090645	8,291536895	7,324710028	7,061646039	7,505984867
ILMN_1779399	-0,00885677	SNRPA	9,961461875	9,982434	9,096312903	9,163416891	9,272076083
ILMN_1804834	-0,008859784	C6orf130	9,259987877	9,110572833	8,374518923	8,579596902	8,413370739
ILMN_1764861	-0,008861419	ISOC1	9,034723065	9,203293722	8,67545253	8,540198518	8,283769799
ILMN_3215461	-0,008863889	LOC100131989	8,75910313	8,477191252	7,991967939	7,868008845	7,748747465
ILMN_173311	-0,008870545	RASSF7	8,611079055	8,407642097	7,824646344	7,869915296	7,676562815

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ILMN_2398926	-0,008878307	C17orf58	9,819798139	9,769862494	9,174691309	9,021437205	8,977953355
ILMN_1761981	-0,008878725	FAM96A	11,25666103	11,34703871	10,67759494	10,54641953	10,51947178
ILMN_1795991	-0,008879243	C22orf28	10,38221343	10,53749869	9,587741338	9,807905732	9,783268797
ILMN_1805371	-0,008879621	HNRPM	7,824101752	7,956311818	7,009487409	7,10049054	7,215092197
ILMN_2140559	-0,008880363	IRX5	8,919612187	9,031983139	8,465309634	7,978920377	8,163036595
ILMN_2150294	-0,008882843	FKBP14	9,903339373	9,976114831	9,458010482	8,976125867	9,105429341
ILMN_3239060	-0,008893449	KRBA1	8,729154119	8,704319278	7,814910743	8,001821132	8,008269539
ILMN_3196690	-0,008899179	C22orf27	8,182761804	8,25331602	7,373627919	7,303344482	7,516139238
ILMN_2311537	-0,008899473	HMGA1	10,44648903	10,31720152	9,877192686	9,827302061	9,493100208
ILMN_1659273	-0,00889964	LOC441408	8,830656356	8,815264398	7,911309204	7,975295756	8,12387535
ILMN_1730572	-0,008902556	HNRPDL	9,015628001	8,869915365	8,30646009	8,195591897	8,105195138
ILMN_1672662	-0,008905753	SLC20A1	11,35878059	11,18374791	10,46923393	10,63487502	10,48542831
ILMN_2370365	-0,008907135	RFC4	10,02537836	9,867531273	9,079023441	9,370672787	9,18739029
ILMN_1805916	-0,008907779	NIPSNAP1	10,92855908	10,86471853	10,42160768	9,942019029	10,02382367
ILMN_1659364	-0,008913277	RFC5	9,962226181	9,851161076	9,059165453	9,273964303	9,152362595
ILMN_2160764	-0,008913925	HBP1	8,362870224	8,240774111	7,409605968	7,32043896	7,572124012
ILMN_1742827	-0,008914953	EXOC4	9,125167657	8,852074397	8,009999464	8,029258098	8,254727138
ILMN_2057573	-0,008920332	FAM62B	10,76748174	10,56488513	9,62197805	9,79386442	9,970701835
ILMN_2130078	-0,008921207	CDKN2AIPNL	12,20119235	12,34647972	11,82222287	11,20956225	11,44385303
ILMN_2224143	-0,008921272	MCM3	11,93268802	11,94251347	11,20904201	11,31279466	11,16600254
ILMN_1776582	-0,008922308	PDK3	8,028514969	8,128479776	7,30211583	7,332359699	7,349927103
ILMN_2150654	-0,008925146	ZSWIM4	9,578256212	9,64041074	8,80900672	8,973206928	8,877354922
ILMN_1689445	-0,0089297	POLR2H	11,10633648	11,02084264	10,22067583	10,397516	10,31268927
ILMN_1803745	-0,008933236	SUOX	9,569170402	9,408399618	8,549636832	8,624636448	8,761859172
ILMN_3260180	-0,008934059	FLJ25363	8,474649694	8,553826191	7,699713047	7,662281315	7,797112348
ILMN_1726520	-0,008935521	TDP1	8,419034275	8,351641746	7,369694409	7,64273744	7,705309631
ILMN_2344956	-0,008938098	ACP1	12,13430941	12,17363442	11,25703181	11,32515338	11,45721007
ILMN_1714599	-0,008943208	CAMLG	11,65690294	11,7384388	10,88247542	10,69178373	10,98517725
ILMN_1682774	-0,008954922	C13orf27	7,986718016	8,003929551	7,518264104	7,354538457	7,126842991
ILMN_3179371	-0,008955007	HNRNPK	12,23688331	12,16421033	11,1881394	11,48820702	11,51484966
ILMN_1683811	-0,008957401	TNPO3	8,718998549	8,820188529	8,000140259	8,081147272	8,032940494
ILMN_1769013	-0,008964316	ASGR1	9,218856273	9,220717861	8,303298255	8,450277453	8,516570726
ILMN_1767459	-0,008964563	POLR3B	8,913488419	8,892547303	8,070037729	7,884317473	8,170503466
ILMN_1669633	-0,008971669	ACP1	10,83396066	11,01800795	10,18445693	10,24832497	10,19675062
ILMN_2205935	-0,008984207	SFXN1	9,072658935	9,433007272	8,343345553	7,944757945	8,64722331
ILMN_1766713	-0,008984689	HSPD1	12,09499684	12,0851985	11,44347571	11,49118545	11,27447855

ILMN_1745079	-0,008985217	TRIM2	9,65706339	9,46297559	9,037756243	8,934896919	8,654271832
ILMN_1769757	-0,008993308	C14orf104	8,428459771	8,384485128	7,986494816	7,676966419	7,500126766
ILMN_2334243	-0,008996096	CREB1	12,51876656	12,50720817	11,85888997	11,69972278	11,70497066
ILMN_1734696	-0,008999359	FRG1	9,70396294	9,760098335	9,258049254	9,098474529	8,866603351
ILMN_1724489	-0,009003573	RFC4	9,923226671	9,775988919	9,181446269	9,342273212	9,004265716
ILMN_2168449	-0,009008206	DHX15	12,24626051	12,1461346	11,46908213	11,27542568	11,39647171
ILMN_1712347	-0,009015165	LOC644422	8,713529805	8,615403791	7,843755278	7,564801187	7,905229303
ILMN_1669878	-0,009024309	GUSB	9,271413118	9,243422787	8,501664186	8,616463125	8,475267922
ILMN_1773797	-0,009024518	LOC652615	8,033545939	8,239644541	7,373345013	7,296463612	7,419216274
ILMN_1656196	-0,009031254	E2F6	9,672275516	9,882818898	8,90895322	9,076141862	9,096193735
ILMN_1897741	-0,009046811		10,94095231	11,12301385	10,46711998	10,2054086	10,23128586
ILMN_3255792	-0,009048796	LOC100128505	12,92346647	13,0625705	12,43263878	12,08049736	12,1823908
ILMN_1799688	-0,009049733	CDC23	9,824591942	9,903542619	9,203947727	9,142691317	9,07100065
ILMN_1776653	-0,009051419	SCML1	8,235697712	8,254762602	7,630048367	7,598228358	7,418016178
ILMN_1689786	-0,009056127	ASMTL	9,365112922	9,311591396	8,365592064	8,515772458	8,633764886
ILMN_1692865	-0,009056364	VPS37D	9,557672249	9,625721383	8,603144422	8,822053661	8,920544571
ILMN_2376458	-0,009063401	CSF2RA	10,48057156	10,45695917	9,77013533	9,707723453	9,665264036
ILMN_1656134	-0,009066171	CNOT7	9,866826375	9,997916918	9,258314529	9,218994915	9,154835836
ILMN_1749081	-0,009077314	AUTS2	11,65731474	11,55919855	10,84517913	10,65337361	10,81546847
ILMN_1667417	-0,009077785	RAB23	8,387720962	8,471661055	7,543419879	7,696709448	7,719826079
ILMN_1767747	-0,009079413	HDAC2	12,00082518	11,63414826	11,22228102	11,14055557	10,88816697
ILMN_2350122	-0,009079846	TRIM13	9,770172762	9,826752351	8,921981366	8,845214026	9,085220696
ILMN_1815578	-0,009081827	ZNF223	8,762610219	8,625834371	7,863783941	8,171845166	7,903468802
ILMN_2400644	-0,009081999	SRGAP3	11,09234203	10,90834203	9,861195084	10,24335313	10,3221484
ILMN_1659047	-0,009082132	HIST2H2AA3	8,761124679	8,910263821	8,020436274	7,981675374	8,118032587
ILMN_2392674	-0,009087568	PRR3	8,430996064	8,629806088	7,798465445	8,037396203	7,781262055
ILMN_3217285	-0,009091138	LOC389322	9,624158716	9,53080092	8,887882983	8,803675865	8,750901869
ILMN_1670134	-0,009094083	FADS1	11,2881011	10,96527411	10,40608601	10,14054094	10,26310079
ILMN_1801387	-0,009098785	YEATS4	8,770556359	8,854352336	8,299425007	8,197089336	7,955753933
ILMN_1665877	-0,009100873	RNF149	9,574580439	9,288630334	8,628384397	8,642056252	8,601039726
ILMN_2157219	-0,009104654	AASS	7,699553018	7,582931195	6,865613629	6,877827904	6,839031253
ILMN_2090040	-0,009108852	KIAA0495	8,531632839	8,633078556	7,64563845	7,902335298	7,890389342
ILMN_1718712	-0,009110394	C20orf177	9,656201442	9,83104035	8,792903539	8,829098401	9,081831366
ILMN_2120072	-0,009113568	FLJ13305	7,806318543	7,974974548	7,139468839	7,141597645	7,146148663
ILMN_1760683	-0,009114642	SFRS9	12,62949187	12,70982188	11,90043943	11,99970037	11,90835776
ILMN_1735275	-0,009115805	WDSUB1	8,433902407	8,478955303	7,868656368	7,650709716	7,622408282
ILMN_207330	-0,009118844	IL10	10,571129	10,58185532	9,797587181	9,632158694	9,810541313

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ILMN_1654320	-0,009119594	LOC644250	9,226216017	9,06607915	8,454442547	8,271018347	8,30404182
ILMN_1800179	-0,009121784	KCNJ4	9,015291361	9,250957857	8,223971198	8,199337927	8,469392424
ILMN_1745119	-0,009125532	C7orf11	9,153474984	9,324035796	8,395947141	8,457704078	8,529229715
ILMN_1665865	-0,009125803	IGFBP4	8,06385358	7,926127454	7,328866271	7,299566453	7,141912156
ILMN_1799103	-0,009133684	SNRPB	11,979551	11,98836864	11,10999278	11,22311195	11,24573696
ILMN_2158164	-0,009135034	ZNF430	12,27448727	12,38494592	11,62688297	11,35490161	11,55772183
ILMN_1792356	-0,009141668	DPYSL4	12,01481026	11,90835646	10,83300304	11,09678476	11,29404322
ILMN_1760727	-0,009149333	ANG	8,30850983	8,181061002	7,415859003	7,473890481	7,455188707
ILMN_2175075	-0,009156291	SFRS4	10,99892609	10,85833278	10,32636749	10,23652949	10,0474885
ILMN_1817255	-0,009162447		9,492497703	9,450663561	8,638354337	8,790094198	8,700081693
ILMN_1757278	-0,009170264	LOC643300	7,924820458	7,931794786	7,282139706	7,003247891	7,104170083
ILMN_1758623	-0,009178302	HIST1H2BD	8,594814581	8,557134805	7,791177467	7,738571159	7,789965023
ILMN_1807136	-0,009179712	LOC729559	8,897423357	8,57669851	7,92239232	7,98339102	7,891770991
ILMN_1730575	-0,009179758	GCLC	7,75528349	7,856631401	7,015600981	6,900580533	7,057005314
ILMN_2107004	-0,009180083	GPR1	9,053900784	8,620509412	8,120753333	7,899209689	7,933599779
ILMN_3236244	-0,009185578	C1orf174	9,470601941	9,719307118	8,866005665	8,56497236	8,861811978
ILMN_1794692	-0,009190686	DNMT3B	8,069022328	7,959369766	7,199705837	7,300944374	7,216582674
ILMN_1673026	-0,009198324	CHCHD3	9,008794933	9,187293332	8,446795976	8,718696053	8,296957109
ILMN_1674231	-0,009203945	CHAF1B	9,556157276	9,358875372	8,578605732	8,580657459	8,667110971
ILMN_1657204	-0,009211359	SAE1	13,33134415	13,16458865	12,4407203	12,48365114	12,43305014
ILMN_1727805	-0,009212435	SYNGR1	7,936546611	7,9057184	7,211979673	7,081650048	7,103972666
ILMN_1720745	-0,009214542	LOC645385	13,44751343	13,55336663	12,57781913	12,7336601	12,79391192
ILMN_2405628	-0,009222799	TOP1MT	8,707063787	8,847637438	7,850812558	8,044215423	8,078983707
ILMN_1803254	-0,009223402	KIAA2010	9,260243682	9,285555186	8,571276587	8,602509985	8,46018882
ILMN_1758392	-0,009229077	ANKS1B	8,784770166	8,876229189	7,923809708	7,82728952	8,120541076
ILMN_2338963	-0,009241475	SLC29A1	8,290805564	8,06175074	7,443630735	7,21915418	7,320760383
ILMN_1755419	-0,009249655	EIF1AX	8,271829756	8,239697383	7,610950396	7,591386073	7,404265245
ILMN_1677919	-0,009256701	GMPR2	9,431764423	9,526163714	8,78042994	8,96807206	8,672722446
ILMN_1738684	-0,009257467	NRXN2	7,765931278	7,699594692	6,87900464	6,875754696	6,956700946
ILMN_1664630	-0,009263455	CHEK1	9,035571118	9,103042318	8,289381663	8,28990088	8,294778954
ILMN_2058512	-0,009265606	PSMA2	8,872962958	9,057594298	8,300965354	8,319935149	8,170776664
ILMN_1672080	-0,009268976	NR2F6	10,44125735	10,43065416	9,549647425	9,471118593	9,688061682
ILMN_3197767	-0,009272351	LOC645691	10,32283985	10,36612174	9,99547833	9,262857507	9,410124447
ILMN_1691294	-0,009272615	CTBP2	7,797761378	7,738880834	6,892449924	6,898486926	7,000980735
ILMN_2411076	-0,009275116	MATR3	9,022938296	8,996955547	8,294866268	8,071547371	8,192114453
ILMN_1794260	-0,009279359	FBXL10	10,67888589	10,49592144	9,796853721	9,906926706	9,752034185

ILMN_2249018	-0,009290801	LOC389816	7,817605646	7,958292988	7,034164175	7,001905141	7,158477338
ILMN_1738482	-0,009295827	CEP27	8,785344739	8,964108234	8,061831573	8,01578498	8,137849018
ILMN_1732516	-0,009300765	KNTC1	9,474276995	9,318491136	8,59087856	8,563153969	8,575282912
ILMN_1809866	-0,00931653	WDR74	9,002067035	8,94612678	7,936377468	8,143750907	8,262420884
ILMN_1749629	-0,009317341	CUL1	9,399090326	9,493346921	8,59556566	8,618645038	8,699885485
ILMN_1712556	-0,009320115	ZW10	10,12469021	9,953679537	9,104734117	9,411835305	9,254403263
ILMN_1655694	-0,009322029	LOC642031	8,814473413	8,752609405	8,021003551	7,956056576	7,965887266
ILMN_1804679	-0,009322792	MYST1	8,813822523	8,946701061	8,019591734	8,071065542	8,145632414
ILMN_1696407	-0,009325318	SFRS2	12,55073065	12,51498023	11,66534468	11,84940815	11,75605606
ILMN_1803312	-0,009335333	DIMT1L	10,54099224	10,50238277	9,405374529	9,778016687	9,83898816
ILMN_1702229	-0,009335793	CECR6	8,224322498	8,217111959	7,535929203	7,490539195	7,381984327
ILMN_1715886	-0,009336174	CNOT7	9,616135601	9,675827341	9,155525539	9,197940694	8,741516543
ILMN_1669502	-0,009336897	E2F3	10,1717196	10,09310355	9,269793467	8,913651225	9,359058696
ILMN_2229922	-0,009343171	C12orf35	8,346928147	8,175729681	7,587559866	7,583098389	7,37666078
ILMN_1753582	-0,009345378	RPA2	10,92249682	10,89939164	10,17311866	10,1901718	10,08730844
ILMN_3251511	-0,009345548	SFRS2IP	9,82165067	9,4336652	8,854903437	8,770091917	8,734010747
ILMN_1753525	-0,00934674	TCEAL7	10,29337232	10,36729369	9,838584185	9,655635925	9,435578721
ILMN_1788701	-0,009351182	PSIP1	9,232371258	8,891474135	8,40286188	8,371399055	8,130715969
ILMN_1734194	-0,009393207	EXOSC3	9,144662313	9,146055147	8,301206528	8,421469548	8,361973441
ILMN_2388975	-0,009393535	CERK	9,72645505	9,775987921	9,028162857	8,955359312	8,935987627
ILMN_2215545	-0,00939738	C3orf26	9,341852709	9,232485578	8,754522956	8,727718872	8,354202533
ILMN_1754865	-0,009410309	LOC400455	10,14991572	10,08734177	9,215896596	9,381004401	9,340493114
ILMN_3245062	-0,009412683	SHROOM3	9,290399273	9,25520984	8,419031479	8,495974212	8,483620663
ILMN_2326675	-0,009415911	NR2C1	7,922705042	8,085985273	7,115192142	7,160952272	7,277366828
ILMN_1679880	-0,009422782	THOC6	8,621575383	8,913633927	7,947855646	8,142730711	8,03795122
ILMN_1656233	-0,009424405	LOC389517	12,49546684	12,55728316	11,59088797	11,60743057	11,79402694
ILMN_2108339	-0,009424652	THUMPD1	9,206106492	9,081460024	8,66048684	8,542767188	8,186548357
ILMN_1652594	-0,009427434	ACTR5	7,908080692	7,9112595	7,089996474	7,190210528	7,112854953
ILMN_1785198	-0,009432676	POLE3	11,77212343	11,58182949	10,57589158	10,87834727	10,94214758
ILMN_1773968	-0,009445735	SERBP1	9,902367384	9,942472339	9,154531493	9,03171148	9,118543137
ILMN_1665696	-0,009446539	EFNA4	8,677245194	8,551980892	7,827095252	7,858770647	7,774004817
ILMN_1662417	-0,009456721	LRPPRC	9,483836605	9,486562746	8,583185728	8,770818247	8,716106012
ILMN_3250243	-0,009470729	FAM119A	8,087341986	8,162468871	7,522485288	7,361963976	7,259670441
ILMN_3246409	-0,009472747	HNRNPH1	11,18070931	11,39676121	10,5560568	10,73124555	10,50005992
ILMN_2279635	-0,009481116	EIF4G2	9,338498466	9,480849379	8,612190859	8,44815776	8,639365036
ILMN_1790106	-0,009485096	PLP1	9,6413585	9,405464713	9,008365381	8,907218928	8,544798319
ILMN_173248	-0,009493217	SLC10A7	7,783572754	7,940640745	7,087128275	7,239438673	7,074412012

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ILMN_1654392	-0,009496585	KHNYN	8,072521604	8,146667654	7,231531576	7,213486035	7,349099606
ILMN_1663132	-0,009498756	ADCK2	9,168121762	9,142749545	7,994651132	8,421308012	8,472716661
ILMN_1722522	-0,009502693	CCNT2	8,26425486	8,490371409	7,57735005	7,739931512	7,615109103
ILMN_1773964	-0,009502696	H1FX	10,57554277	10,4548338	9,658942767	9,688108261	9,697321952
ILMN_1802894	-0,00950344	VKORC1L1	8,99214932	9,216776266	8,426269635	8,221669237	8,303712942
ILMN_1791328	-0,009503813	STK39	10,59531178	10,47328865	9,873756069	9,759920013	9,64055524
ILMN_2115218	-0,009508674	ANKRD10	8,289166791	8,284000683	7,310671418	7,431089981	7,541339075
ILMN_3290380	-0,009514182	LOC387703	10,52906031	10,64631045	9,65340802	9,867011067	9,85154337
ILMN_2175465	-0,009514937	RSL24D1	11,61028099	11,56950494	10,92665797	10,85831566	10,71385458
ILMN_1758728	-0,009519764	FANCG	9,313082694	9,399764164	8,376424226	8,456460842	8,635052437
ILMN_1758672	-0,009521249	FAM107B	8,890706132	9,07998714	8,020543699	8,094141117	8,282309028
ILMN_1715947	-0,009523259	LOC648210	12,49428468	12,5532482	11,92705458	11,63172803	11,65033056
ILMN_1676893	-0,009533293	ADCY3	9,565527822	9,520905758	8,719617057	8,568945468	8,732134687
ILMN_1679881	-0,009539604	WRN	8,276996821	8,297011583	7,53737788	7,570219291	7,454451963
ILMN_1736015	-0,009549853	PHF17	8,357972265	8,513297697	7,511478461	7,601324085	7,70379557
ILMN_1694399	-0,009552057	ICA1	8,894597277	8,784694161	8,041704571	7,895428823	7,999936288
ILMN_1684746	-0,009552525	IPO11	9,969994728	9,885364394	8,896746047	8,974764369	9,18226112
ILMN_1805922	-0,00955617	EBPL	10,58413441	10,8042544	9,765819103	9,851115959	9,979235233
ILMN_2323302	-0,009567871	SON	7,920822276	8,144549799	7,247878786	7,053878247	7,266878096
ILMN_1786601	-0,009573132	PLAGL2	9,46635484	9,498239084	8,600092327	8,663742351	8,702020252
ILMN_2150802	-0,009577271	FLJ22795	8,782110474	8,599899847	7,826074352	7,715206835	7,857153631
ILMN_3251587	-0,009581416	LOC100008589	13,37105519	13,35294774	12,49723557	11,54114351	12,5928776
ILMN_2087528	-0,009591454	CPSF3	11,13624632	10,97402985	10,135549	10,40907332	10,23492716
ILMN_2374683	-0,00959363	PTPN13	8,672897449	8,360573749	7,710725041	7,670469693	7,62344753
ILMN_1721868	-0,009596841	KPNA2	10,37281183	10,38668116	9,611908234	9,769970035	9,542750109
ILMN_3281039	-0,009603741	LOC642909	8,247723901	8,376776811	7,572212899	7,545203082	7,496103758
ILMN_1781225	-0,009628376	FLJ35801	8,435249272	8,384409681	7,509672	7,259648854	7,619952848
ILMN_1774132	-0,009630336	MAP6	9,58392485	9,489004606	8,434204881	8,393148756	8,81204609
ILMN_1668469	-0,009632138	KIAA0922	8,762260719	8,511244119	7,59553331	7,81258736	7,84158805
ILMN_3294106	-0,009638569	LOC100190938	11,60977675	11,73462245	11,15441904	10,91417318	10,76698214
ILMN_1710676	-0,009641034	FBXO5	9,673043067	9,844487832	9,229568945	9,12108772	8,865084038
ILMN_1692058	-0,009642444	NDN	12,56503905	12,64780061	11,86030409	11,57143141	11,78516924
ILMN_1696702	-0,009643152	NEO1	10,2468131	10,01425785	9,151029577	9,417021462	9,312009493
ILMN_2230162	-0,009645054	FLJ44124	11,01793613	11,10487844	10,28988727	10,09296114	10,24863833
ILMN_1689176	-0,009653821	C4orf31	8,321317494	8,164759136	7,370031518	7,460833444	7,403039171
ILMN_3282321	-0,009662941	LOC643336	9,155582967	9,279505442	8,553523653	8,38476518	8,366694792

ILMN_1795703	-0,009671765	C7orf20	8,292446085	8,492152875	7,46525281	7,532024676	7,658381164
ILMN_1660426	-0,009675785	CPSF4	11,42697546	11,31414542	10,38354119	10,54178006	10,58314964
ILMN_1777118	-0,009676801	INTS9	9,755802876	9,578835087	8,750976979	8,865784521	8,836966544
ILMN_3219455	-0,009677299	LOC644745	10,24484502	10,00081286	9,271428013	9,753431162	9,238461258
ILMN_3187612	-0,009682366	LOC100128084	11,67110356	11,815353	11,02421026	10,64181248	10,92395521
ILMN_1666776	-0,009690321	KCNQ2	11,53478142	11,44118687	10,34412818	10,34413814	10,77235551
ILMN_1696546	-0,009696861	FZD1	8,121782279	7,889565082	7,118609049	7,226952199	7,147486027
ILMN_1677906	-0,009698128	LOC643287	9,534866231	9,31070976	8,475511831	8,607246611	8,590646303
ILMN_1758474	-0,009704251	PRKRA	10,38878543	10,37913764	9,666552722	9,649571428	9,513333421
ILMN_2079803	-0,009715704	LSM14A	10,91968035	10,81325931	9,873849553	9,955970714	10,08052077
ILMN_2191436	-0,009716447	POLA1	10,32912681	10,20021979	9,393874502	9,433742835	9,424861793
ILMN_1794333	-0,009720324	POU2F1	8,593754747	8,698880061	7,779924	7,827219135	7,859850996
ILMN_2194448	-0,009726233	STT3B	8,260307062	8,436347795	7,603594147	7,814724528	7,523299134
ILMN_1679725	-0,009732905	PCYOX1	9,315087248	9,373019688	8,373204409	8,234296192	8,593349364
ILMN_1660079	-0,009735684	RNF44	8,107480438	8,190181736	7,305594289	7,424801041	7,343294202
ILMN_1800425	-0,009743478	SLC9A1	9,657908501	9,539357887	8,4785588	8,745876416	8,852698109
ILMN_2373982	-0,009744865	PICK1	7,970769473	8,135482696	7,138668709	7,155967345	7,298341263
ILMN_2222101	-0,009747113	N4BP2	8,975403775	8,912904027	8,119372078	7,903840202	8,105583628
ILMN_1674551	-0,009766376	SMAD5	10,71881929	10,66277641	9,958232041	9,597362788	9,818490715
ILMN_2399310	-0,009766907	MLLT10	8,421017328	8,361570005	7,361214085	7,407551117	7,626576794
ILMN_1789999	-0,009771941	SLC30A7	9,596290199	9,491285212	8,881411824	8,772514224	8,622564803
ILMN_1658289	-0,009773687	WDR54	11,49884734	11,51198783	10,50660898	10,66135379	10,74135064
ILMN_1718972	-0,009777022	MFSD3	10,79310951	10,75778071	9,533384165	9,864787132	10,09324534
ILMN_2342455	-0,009782601	PPA2	10,69918692	10,77724111	9,959775327	9,875531892	9,906196471
ILMN_1787879	-0,009782895	ARL2	11,39355133	11,16988978	10,02931144	10,32199984	10,55909617
ILMN_2136133	-0,009788666	PABPC1	11,37321289	11,17723143	11,20411726	10,13182493	10,11883388
ILMN_3293685	-0,009796346	LOC286444	12,54134367	12,86803441	11,91129123	11,3811996	11,95018692
ILMN_1695110	-0,009796747	BCAT2	9,205161588	9,490123671	8,478024844	8,462673333	8,598517906
ILMN_1674706	-0,009803214	MTHFD2	8,653184604	8,503104681	7,843394067	7,842942948	7,668337549
ILMN_2220283	-0,009805313	HNRPA1L-2	10,98691077	10,97869998	10,18403987	10,33458542	10,12838692
ILMN_1732550	-0,009806385	KLHL23	8,412260958	8,491523217	7,434708363	7,539022591	7,708640523
ILMN_1762696	-0,009808731	FAM181A	11,09640259	10,96810172	9,949314448	10,23510905	10,26044176
ILMN_1743538	-0,009813945	MLLT10	8,640779344	8,591527974	7,672088572	7,858022321	7,80887366
ILMN_1804150	-0,009822532	HIBADH	9,263404314	9,070895389	8,354065183	8,521756033	8,271760123
ILMN_1707720	-0,009824349	SLC1A5	8,517549333	8,55733198	7,955809434	7,679081021	7,616675048
ILMN_2072973	-0,009825677	TOP3A	9,160712349	9,094930397	8,082479451	8,043387006	8,36363823
ILMN_328377	-0,009826132	LOC100131205	10,98163559	11,07044727	10,55010916	10,28500248	10,07352065

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ILMN_2115669	-0,00982658	SEMA4C	8,350465176	8,386104645	7,432786027	7,444322667	7,581678
ILMN_1680279	-0,009830404	USP49	9,146178856	9,473026621	8,901615604	8,326219796	8,395469371
ILMN_1666208	-0,009831747	C14orf106	8,824443819	8,63340629	8,001321879	7,989147579	7,80338056
ILMN_1730998	-0,009841016	TSPAN6	10,64470785	10,52609565	9,81299319	9,987653634	9,68878798
ILMN_2079098	-0,009841458	C9orf80	11,66336817	11,57284216	10,79874106	10,46615184	10,76299807
ILMN_3215759	-0,009846173	LOC441484	8,730322988	8,613952442	8,192029841	8,113953119	7,663768757
ILMN_1755710	-0,009857489	EFNA4	8,472760036	8,308890523	7,597569572	7,665783622	7,492897469
ILMN_3280847	-0,00985828	LOC651697	8,78136323	8,677319354	8,006347744	7,983755134	7,819906647
ILMN_1663195	-0,009859764	MCM7	12,87158763	12,87065752	11,92127394	12,21081961	12,06891386
ILMN_2365595	-0,009868032	GMPR2	10,02257785	9,761451779	9,109165722	8,944670854	8,972827464
ILMN_2414135	-0,009870141	PLP1	8,875040982	8,753381216	7,961938365	8,04726911	7,948571022
ILMN_2110751	-0,009876139	CHRNA5	9,62746604	9,913973684	9,10204176	8,908518133	8,936026714
ILMN_1804090	-0,009882877	SLC25A10	8,431508032	8,478050068	7,431639362	7,702491457	7,691782901
ILMN_1658027	-0,009886167	RAD54L	8,48169004	8,421703056	7,600292319	7,687985596	7,598378079
ILMN_1654322	-0,009889983	ATP1B3	9,783447691	9,943668828	8,892229304	9,057858026	9,109328511
ILMN_1670238	-0,009899979	CDC45L	10,23760808	10,12727846	9,289627147	9,334626326	9,333933876
ILMN_1768662	-0,00990373	UCK2	8,757642529	8,849438326	7,975777341	8,089966302	7,974116347
ILMN_1782045	-0,009907893	FKBP4	9,233436294	9,28892515	8,426451004	8,200000533	8,436090507
ILMN_2116639	-0,009908792	TFDP2	8,857706557	8,804601914	7,941048033	7,979559428	7,994214893
ILMN_1752728	-0,009909494	FUCA1	8,337016702	8,321651558	7,774121185	7,513933083	7,373793037
ILMN_1723971	-0,0099253	SLC29A1	8,458648459	8,539018881	7,853891952	7,816870438	7,594082862
ILMN_1738558	-0,009931733	RGS20	10,65255233	10,56901887	9,585817842	9,618000791	9,819224622
ILMN_1697363	-0,00993194	C20orf27	10,04359589	10,10435603	9,258600265	9,317566973	9,230572417
ILMN_1733937	-0,009934542	MMD	10,50122301	10,52807874	9,808261953	9,960691998	9,615425242
ILMN_1771903	-0,009936642	NUP37	10,11169033	10,12996565	9,252246846	9,478292264	9,283208289
ILMN_1666050	-0,009937109	TMUB1	9,672415638	9,641140083	8,94991387	8,626587319	8,75828078
ILMN_1706342	-0,009945748	ZNF746	9,479915629	9,357767408	8,38900387	8,526733119	8,61500273
ILMN_1729767	-0,009947525	TARBP2	8,633407519	8,748870472	7,717084453	7,891620137	7,919948259
ILMN_3251269	-0,009973066	SRP14	11,08705705	11,08669149	10,35325544	10,20130248	10,19705712
ILMN_1667043	-0,009974584	EIF4A3	11,84997015	11,93333434	11,1064523	10,97292529	11,04206116
ILMN_1656927	-0,009975073	SEMA5A	7,631118275	7,611418465	6,844652444	6,756597503	6,741584682
ILMN_2219618	-0,009979328	LOC90586	9,928288089	10,00126246	9,257316809	9,000776516	9,084382992
ILMN_1706521	-0,009985873	CSNK1G2	12,18852624	12,02035252	11,12782994	11,27741615	11,26254647
ILMN_3254515	-0,009989997	LOC100128131	7,647796912	7,724507186	6,816228544	6,680458359	6,867367136
ILMN_2192693	-0,009991695	EIF3M	11,25870637	11,33353259	10,50671824	10,60695637	10,43697809
ILMN_1746494	-0,009994539	FNTA	8,755940782	8,823953712	7,920842152	7,998190025	7,961970056

ILMN_1760280	-0,009997521	NXT1	10,50311476	10,63342238	9,49291343	9,352971629	9,845963183
ILMN_1703894	-0,009998895	BOLA2	8,153651922	8,238009998	7,165523562	6,993430419	7,44460985
ILMN_2196984	-0,010004465	OIP5	10,00741678	10,16621488	9,378613178	9,326374724	9,217924777
ILMN_1681249	-0,010005508	KIF21A	10,06149696	9,659699012	9,081321111	8,927715565	8,88945634
ILMN_2221006	-0,010008456	RAD21	9,487434108	9,337362622	8,711638632	8,881513737	8,459043485
ILMN_1717313	-0,010018163	NFKBIE	8,189598936	8,041385484	7,204065082	7,094468561	7,255733417
ILMN_1747968	-0,010019205	RBM33	8,213361225	7,859272541	6,973914894	7,134977693	7,180269643
ILMN_3234142	-0,010033919	LOC728855	8,497238588	8,424213794	7,579578089	7,677260037	7,5984273
ILMN_1673676	-0,010034458	SNX5	8,257635486	8,451036719	7,398898711	7,324028922	7,591463582
ILMN_2138589	-0,010034696	MERTK	8,048239585	8,016513041	7,126692645	7,028572899	7,195816795
ILMN_1757106	-0,010038165	42069	9,973195137	10,00229934	8,986066732	8,960774132	9,202703448
ILMN_1692545	-0,010040479	LOC646849	10,17772084	10,02481266	9,57292326	9,309164599	9,086574257
ILMN_1778161	-0,010058103	DNAJC25	7,90407847	7,986380533	7,291121843	7,160384797	7,031488956
ILMN_3201453	-0,010060742	LOC644363	9,676115832	9,611405342	9,003736737	8,848037796	8,689957532
ILMN_1670353	-0,010061841	RAD51AP1	9,117228439	9,185991461	8,312985267	8,324882048	8,305427753
ILMN_1691572	-0,010064913	TST	10,73355683	10,71282235	9,575216208	9,867801731	9,972825566
ILMN_1814281	-0,010066692	SPC25	8,269481863	8,370490539	7,544313837	7,524404796	7,456020818
ILMN_3289650	-0,010066847	LOC402112	8,735865431	8,433173956	7,576556457	7,843436463	7,709788151
ILMN_2233099	-0,010069103	SSRP1	8,837895581	8,973872112	7,952118732	8,156984781	8,115880903
ILMN_1741477	-0,010071246	SMAD4	10,0511844	10,05494491	9,203442789	9,256716643	9,1934853
ILMN_1711073	-0,010071884	LOC653489	9,83684942	9,91174391	9,197383078	9,078070369	8,966543836
ILMN_2316540	-0,010075567	MRPL11	10,78407765	10,97853375	9,919726101	10,05093163	10,11012733
ILMN_1762529	-0,010075921	SLC12A8	8,795070235	8,464851958	7,766525703	7,601719621	7,701993254
ILMN_2262901	-0,010076357	RUFY3	8,963435375	8,919520892	8,089112394	7,980627099	8,075872235
ILMN_1729498	-0,010089606	TMEFF1	7,892488845	7,6363026	6,914008068	6,889762877	6,84250822
ILMN_1690586	-0,010103572	HNRPA1P4	12,46853908	12,62978405	11,58120892	11,91325867	11,76274051
ILMN_2171183	-0,010110898	C21orf45	8,225851668	8,137504431	7,251564759	7,244799361	7,329619894
ILMN_1803256	-0,010113478	STOX2	10,43207988	10,33533086	9,392606065	9,233332419	9,559356032
ILMN_1729976	-0,010114006	ZNF828	11,03420003	11,13938604	10,33974505	10,31846135	10,20679567
ILMN_3234436	-0,010118926	LOC100132528	12,18332221	12,14103751	11,46212442	11,1195131	11,23691887
ILMN_1691181	-0,010123707	TMX1	11,2457019	11,03719336	10,32888829	10,54149901	10,20462935
ILMN_1784428	-0,01012537	MGC57346	9,643200207	9,595969412	8,559593604	8,771932062	8,822200186
ILMN_2235137	-0,010143928	FANCD2	9,322357139	9,558830158	8,814855678	8,741323243	8,540566082
ILMN_1693789	-0,010150672	ALPP	10,80576701	10,75504175	9,968371297	9,659551451	9,894172728
ILMN_1724139	-0,010151188	TMEM123	11,18043454	10,95901231	10,14877026	10,25103901	10,174202
ILMN_1771627	-0,010172237	ZMIZ1	11,67216512	11,46965549	10,54396557	10,688957	10,71926699
ILMN_324965	-0,010176281	LOC100134868	8,564174694	8,495584489	7,684863604	7,619071329	7,641957318

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ILMN_3247261	-0,010179795	RAPGEF2	9,249312771	9,189762001	8,688939907	8,245095217	8,216951358
ILMN_1787657	-0,010197302	CLDN12	9,215005434	9,206037193	8,293580906	8,227501783	8,363901365
ILMN_2335718	-0,010207532	HNRNPAB	11,7747386	11,72575673	10,89429334	10,96855482	10,86352123
ILMN_1744138	-0,010208593	CHCHD7	8,726728844	8,897484464	7,959129245	8,075361427	7,975331168
ILMN_3302456	-0,010211173	LOC730029	9,238291784	8,983581724	8,478109797	8,297348274	8,091363702
ILMN_3241970	-0,010215094	POLR2J2	7,960711413	8,047376632	7,335051004	7,285538665	7,076127583
ILMN_2320850	-0,01021556	UBE2D3	11,40140591	11,40736783	10,51606726	10,78269311	10,53713853
ILMN_1654583	-0,010217717	CHD1	9,553319895	9,368068803	8,561545982	8,335817316	8,567142654
ILMN_1656628	-0,010227343	WDR4	9,588055614	9,47088072	8,572660405	8,690191637	8,663941999
ILMN_1803110	-0,010232462	SF3B3	10,10248945	10,12894454	9,053821063	9,277916996	9,323603884
ILMN_1759184	-0,010241446	C19orf48	9,981711828	9,943270458	9,146808844	9,159673912	9,059826624
ILMN_2383484	-0,010246868	C19orf48	8,849200663	9,201652991	7,949037717	8,138725039	8,316549766
ILMN_3240594	-0,01025114	RNU4ATAC	8,335170841	8,530692577	7,668216331	7,367328768	7,573833273
ILMN_3178792	-0,010261181	HNRNPA2B1	8,596374847	8,279131043	7,706535091	7,757972913	7,429957138
ILMN_1748578	-0,010265714	RAD21	8,8753632	8,934049831	7,971609412	8,019989194	8,069077452
ILMN_2080751	-0,0102722	ADNP2	9,695603599	9,796574375	8,889781287	8,919479698	8,889178755
ILMN_1664294	-0,010274122	LEPRE1	9,329112408	9,211037997	8,36905848	8,313593045	8,381301287
ILMN_1761479	-0,010277944	ZC3HC1	10,28078399	10,15291979	9,323869721	9,310246118	9,320782918
ILMN_1691611	-0,010280478	LOC645436	13,13230126	13,05574958	12,22502946	12,31750772	12,19641125
ILMN_1749583	-0,010283013	KIAA1285	8,178058184	8,163497677	7,120732307	7,386797017	7,356258373
ILMN_1770412	-0,010294847	AHCYL1	10,60316488	10,57693416	9,840805995	9,712605792	9,66118847
ILMN_1711886	-0,010295409	ALG3	9,572126958	9,42139822	8,548195417	8,734026467	8,609557926
ILMN_1693430	-0,010295459	NME1-NME2	8,399635355	8,520465493	7,639964339	7,53340893	7,59431614
ILMN_1710408	-0,010295942	LGR4	7,719334678	7,846038997	6,921267364	6,87865716	6,93292085
ILMN_2386982	-0,010304432	PRKCZ	8,437086585	8,65165729	7,503897202	7,705516225	7,780423119
ILMN_2215382	-0,010306274	DDX51	10,38263332	10,73724296	9,870670157	9,525163299	9,703192172
ILMN_1752340	-0,01031294	ARF5	10,40744611	10,55808438	9,521157373	9,543567509	9,676094028
ILMN_1786065	-0,010336618	UHRF1	11,85116327	11,5503231	10,59577931	10,95419173	10,83106047
ILMN_1688526	-0,010342254	ARL5A	12,24564076	12,39064488	11,33888442	11,38648881	11,51277246
ILMN_1673769	-0,010343509	KCNG1	8,492330865	8,394047031	7,41618463	7,364019323	7,601959506
ILMN_1668012	-0,0103514	SLC25A13	9,815917264	9,723859776	9,036599023	8,966678666	8,810148905
ILMN_1712027	-0,010352746	RSBN1L	8,142733282	8,143753612	7,437276734	7,362634878	7,19425317
ILMN_3236377	-0,010358121	C2orf69	10,87527945	10,89311195	10,17410815	9,730643958	9,952115476
ILMN_1764090	-0,010363371	AK3L1	8,13192998	7,912926614	7,160585295	7,067543481	7,083585065
ILMN_1773119	-0,01036359	CCNF	10,2620334	10,12804787	9,165503871	9,381259027	9,335854869
ILMN_3237956	-0,01036644	ZC3H12C	9,294310081	9,266656391	8,328373718	8,524870223	8,415339405

ILMN_1805996	-0,010371807	SIN3A	9,754459535	9,646626257	8,552840102	8,775875516	8,894614043
ILMN_1738263	-0,010372011	PIGU	10,16744068	10,16208702	9,104542874	9,322685905	9,34782749
ILMN_1701855	-0,010381808	PPP1CC	12,22970938	12,16888219	11,20905967	11,40417665	11,33982832
ILMN_1678775	-0,010387784	CLEC2D	12,69884371	12,46334115	12,0462787	11,77098081	11,50775133
ILMN_1777745	-0,010398149	FAM133B	8,752550584	8,696201747	7,92839495	7,774282045	7,795614205
ILMN_2374687	-0,010399725	PTPN13	8,959606155	8,945315389	7,928255624	8,074564281	8,117457304
ILMN_1804798	-0,010405482	BEXL1	12,02536221	11,95909371	10,83509976	11,22226249	11,19081086
ILMN_1797025	-0,010410022	LOC651380	7,972253962	8,082010393	7,006370133	7,217849507	7,216881636
ILMN_1666502	-0,010411394	SOBP	10,0020745	9,810527607	8,831116304	8,549719033	9,061683492
ILMN_1784753	-0,01041248	PAIP2	11,24655212	11,36566431	10,53021935	10,57094817	10,40352771
ILMN_1671565	-0,010418444	RNASET2	10,74366038	10,73298808	9,504092421	9,653845991	9,987691481
ILMN_1697448	-0,010418931	TXNIP	11,02602251	11,01510759	9,782180105	10,06230648	10,26743376
ILMN_3250209	-0,010422657	CTBP2	7,990105277	8,343543786	7,454495574	8,09793027	7,274191065
ILMN_1663390	-0,010425239	CDC20	12,35277916	12,21249198	11,06198797	11,39616243	11,48864214
ILMN_2402416	-0,010441768	DNAJB6	10,05787996	10,27096662	9,160756772	9,341749213	9,369524176
ILMN_1694240	-0,010446089	MAP2K1	10,74314885	10,72760732	9,825694116	9,972438019	9,847897301
ILMN_1814701	-0,010449758	COL9A1	8,034110625	7,797963088	7,348843999	6,972927744	6,851233701
ILMN_1793290	-0,010453877	WDR60	8,104494024	8,051777906	7,183165734	7,200661661	7,178412385
ILMN_2178855	-0,01045917	GPAM	8,273772991	8,143184782	7,452544112	7,2585872	7,239340464
ILMN_2075189	-0,010465479	SLC35F2	8,331605429	8,530309805	7,617077362	7,563111583	7,55934944
ILMN_1795852	-0,010472902	CCNE1	8,54851992	8,436943835	7,427218165	7,699607841	7,638469238
ILMN_3299187	-0,010476697	LOC728782	11,31442758	11,27731103	10,92227813	10,46238191	10,19956263
ILMN_1803213	-0,010479852	MXRA5	7,730378232	7,622731573	6,750833506	6,864201651	6,769972333
ILMN_1792825	-0,010481556	ARIH2	10,03928822	10,16927109	8,959935853	9,34193893	9,335881361
ILMN_1700024	-0,010488532	UST	8,501248375	8,542947269	7,653747144	7,775468907	7,626909532
ILMN_1660000	-0,010490038	SNURF	11,29663705	11,31733885	10,41087375	10,54518008	10,41771704
ILMN_3306028	-0,010492554	LOC730183	8,196733035	8,326349596	7,292986428	7,326822835	7,43048041
ILMN_2349459	-0,010495812	BIRC5	10,53678021	10,48143674	9,415105831	9,73396226	9,676031877
ILMN_3239785	-0,010504945	LOC100134304	9,24711116	9,230205342	8,198243757	8,414397538	8,394932096
ILMN_2044617	-0,010510174	MTERFD1	9,054796668	8,960623853	8,312676923	8,209344696	8,013761755
ILMN_1757440	-0,010512512	FAM69B	10,81695412	10,61046525	9,770776878	9,670909596	9,793788159
ILMN_1735552	-0,010564417	KIF1B	11,32040738	11,34037607	10,49270946	10,57506936	10,40980358
ILMN_2389582	-0,010565557	HNRNPL	9,592269143	9,946174704	9,042486818	9,070798814	8,884930641
ILMN_3274790	-0,01057978	LOC648921	8,552285761	8,566005843	7,624005624	7,473107242	7,682079317
ILMN_3236346	-0,010584317	LOC100132901	9,430277618	9,300836242	8,47696222	8,384123354	8,433030053
ILMN_3283680	-0,010585829	LOC345041	12,19584929	11,99117089	11,23684567	11,3645754	11,12277492
ILMN_165949	-0,010585886	LOC653158	7,70594539	8,27685417	7,246400709	7,119671658	7,168553834

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ILMN_1821280	-0,010606615		9,934148227	9,85590093	8,810825949	8,876906848	9,047046147
ILMN_1753931	-0,010608933	CDO1	9,479776236	9,24485481	8,487848474	8,612500609	8,38904279
ILMN_1659627	-0,010616037	LOC647322	8,30374756	8,44962982	7,473331925	7,362220286	7,512678819
ILMN_1744508	-0,010621898	FAM53C	11,09400528	11,05493367	9,650018447	10,1360964	10,3598297
ILMN_3256868	-0,010622726	LOC100129585	8,811160619	8,765730555	8,05103745	7,938665389	7,810224034
ILMN_1780598	-0,010625799	PIAS1	9,176504811	9,292423049	8,290606532	8,226574523	8,377387598
ILMN_1758311	-0,010626951	NET1	9,328742811	9,282619334	8,416542332	8,562363137	8,38080061
ILMN_1770692	-0,010627529	WDR12	9,633686899	9,690697705	8,897868461	9,065818089	8,710360574
ILMN_1708508	-0,01064589	PPM1E	9,029582006	9,298284697	8,547286554	8,371632839	8,210953484
ILMN_1671158	-0,010654917	MRPL13	10,42964486	10,46946786	9,861040288	9,848192843	9,424221528
ILMN_1711514	-0,010662289	COCH	8,364834954	8,355253283	7,471459224	7,329763192	7,448160673
ILMN_1770206	-0,010663673	GEMIN4	10,56734379	10,4655202	9,326120267	9,52318553	9,695223256
ILMN_1711543	-0,010684529	C14orf169	8,464336523	8,511496347	7,542670196	7,529748847	7,606133432
ILMN_2290776	-0,010688108	AGBL5	7,97927492	8,000124745	7,116745412	7,096837074	7,071702376
ILMN_1769451	-0,010694668	ILVBL	10,63720868	10,52241023	9,448937394	9,537386904	9,730897116
ILMN_3213185	-0,010705554	LOC645452	10,34881254	10,39020959	9,714258409	9,29460481	9,378380752
ILMN_1789508	-0,010716743	GTF3C3	9,425697055	9,575005718	8,635362963	8,686699677	8,604643633
ILMN_1677292	-0,010721489	C5orf30	8,717515065	8,857772884	7,903474771	7,787320586	7,902107906
ILMN_2075794	-0,010730348	NLRP8	9,946726496	10,1025115	9,309847731	8,895892577	9,082028259
ILMN_2374249	-0,010731779	DYRK2	8,45778877	8,444820765	7,423493438	7,433277319	7,58243948
ILMN_1676091	-0,010732584	LOC388275	11,44393151	11,62462096	10,41747861	10,6490069	10,74129096
ILMN_2208158	-0,010732764	GTF2IP1	9,408526088	9,691857583	8,453645885	8,111501746	8,791423677
ILMN_1742358	-0,010732822	CA14	9,103664335	9,1044141	8,304304663	8,179825293	8,149589269
ILMN_1694603	-0,010734096	SMARCC1	11,32895313	11,15322982	10,39338714	10,71633999	10,24994873
ILMN_3236713	-0,010734834	SNHG1	9,168998582	9,283143899	8,390925212	8,366721183	8,309903694
ILMN_2394242	-0,010747875	AMMECR1	7,772637564	8,14801676	7,088210847	7,197534091	7,115761397
ILMN_1699606	-0,010750888	ASB3	8,436749492	8,534959573	7,506657219	7,606003227	7,618724937
ILMN_1689665	-0,010755973	NAE1	11,38366229	11,32069689	10,27156966	10,43812281	10,48532859
ILMN_3284119	-0,010765049	LOC399804	11,88213007	11,83466079	11,20275146	11,09058041	10,82930548
ILMN_1756220	-0,010775668	DDX18	11,18454874	11,02207982	10,0598916	10,17689868	10,1966702
ILMN_1751143	-0,010778844	C7orf23	8,952461502	9,011542626	8,160622422	8,218690516	8,039149916
ILMN_3206804	-0,010783939	LOC255167	10,07555391	9,976767069	9,393704253	8,883204611	8,985585127
ILMN_3204933	-0,010784554	LOC401805	8,318536165	8,435729913	7,248909908	7,128186241	7,578154573
ILMN_2368068	-0,010785677	TCF20	8,897211815	8,814766969	7,768323257	7,973298859	7,982505583
ILMN_1770038	-0,010796745	LAMA1	7,655813268	7,729789738	6,782359969	6,684226113	6,792143336
ILMN_1771738	-0,010800534	ARL5A	8,438183016	8,555232165	7,466861578	7,327942991	7,65623361

ILMN_1699265	-0,010802539	TNFRSF10B	11,98369082	11,73176538	10,84495587	10,72774251	10,92111147
ILMN_2162367	-0,010803021	DMC1	10,99139917	11,07238143	10,44266106	9,99064978	10,01259176
ILMN_1727049	-0,010810528	LOC402509	9,165103669	8,961056839	8,107379356	8,122372706	8,109578533
ILMN_1725772	-0,01081211	POU3F2	11,90877523	11,79389897	10,66560499	10,92174319	11,00537466
ILMN_3242205	-0,010814128	GMPS	10,0637678	10,28087801	9,32168928	9,565193838	9,26940159
ILMN_1713744	-0,010821826	C14orf132	10,11198591	10,03094241	9,209605954	9,016517328	9,114367071
ILMN_1681503	-0,010844004	MCM2	10,4771908	10,30932181	9,35501642	9,492676046	9,474420293
ILMN_1725981	-0,010845961	LOC654189	7,914976587	8,261825257	7,224981628	7,052476492	7,230520181
ILMN_1864422	-0,010846374		8,835319968	8,780737235	7,813679718	7,813958185	7,902216692
ILMN_2328280	-0,010846621	ACTL6A	9,824744949	9,820397197	9,063311142	9,102809379	8,831752858
ILMN_1751851	-0,010851909	CECR1	9,143483641	9,263957487	8,31943926	8,161725867	8,299255627
ILMN_2374244	-0,01085854	DYRK2	8,38381845	8,41864503	7,556218461	7,531091567	7,455098862
ILMN_1669831	-0,010872717	C6orf192	9,127524456	9,160172708	8,159628155	8,213145997	8,250066261
ILMN_2216918	-0,010875724	SHPK	9,937296891	9,913085795	8,817075154	8,871253326	9,068071368
ILMN_1657993	-0,010884304	ADNP	9,618609692	9,637171046	8,828475479	8,734951254	8,658556899
ILMN_2123559	-0,010897349	FAM73A	8,666172344	8,695134941	8,028772727	7,719862425	7,65854952
ILMN_1813753	-0,010910677	PTN	10,26266807	10,11521813	9,415524768	9,323986283	9,166051653
ILMN_1729563	-0,010911517	UGDH	9,276072184	9,331799275	8,50435803	8,560594652	8,335614332
ILMN_3265365	-0,010915124	CEP78	9,055400322	8,962709354	8,103891207	8,066376694	8,050702167
ILMN_1718769	-0,010918027	ITSN1	10,31281266	10,10850248	9,012379105	9,137272051	9,339948816
ILMN_2389810	-0,010921662	ATP11C	8,644950269	8,574419052	7,941216376	7,748611864	7,56396424
ILMN_1686555	-0,010930169	FYN	10,76904618	10,82630214	9,891036997	9,749494687	9,877387808
ILMN_1706531	-0,010931299	ABCC5	8,356831842	8,303246746	7,238883781	7,267713421	7,452772872
ILMN_2328972	-0,010932267	DNMT3B	8,565127379	8,392407307	7,514285069	7,591568815	7,519681198
ILMN_2375032	-0,010934307	BEND3	8,352666742	8,350323289	7,281720316	7,493677036	7,471734226
ILMN_3247139	-0,010940812	C17orf96	8,189678645	8,156713344	7,272830076	7,396759623	7,218840401
ILMN_3206827	-0,010947113	LOC100131737	9,472948015	9,502704693	8,531499544	8,762896249	8,567581323
ILMN_1774661	-0,010955248	SNRPB	12,32980241	12,15084078	11,13598539	11,19115848	11,33482715
ILMN_1715748	-0,010966614	FLNC	7,550199369	7,377820488	6,597227054	6,55465279	6,464396845
ILMN_2359287	-0,01097201	ITGA6	7,823722182	7,555358424	6,786772087	6,767767822	6,680283861
ILMN_1805827	-0,010973093	PPA1	12,23552182	12,29046606	11,55944032	11,39803051	11,25451988
ILMN_1663631	-0,010982952	BANP	11,14852336	11,16213162	10,00559615	10,17749089	10,30770879
ILMN_2330243	-0,010993342	NUDT1	9,90034281	10,02813101	9,088888608	9,351849829	9,027943964
ILMN_1754051	-0,010998519	RMI1	8,630668216	8,663594995	7,925062518	7,770153337	7,637715612
ILMN_1693669	-0,011007678	WDR79	8,556567569	8,646612977	7,366626877	7,767993974	7,796800335
ILMN_1722662	-0,011019426	RAD23B	9,786767309	9,853981731	9,088860387	8,816522484	8,824380019
ILMN_177883	-0,011029657	SFRS7	10,53075913	10,53645561	9,699148003	9,55169336	9,559800742

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ILMN_1658460	-0,011031134	LOC653884	9,758820796	9,81010031	8,832603951	8,826442548	8,864903657
ILMN_1675857	-0,01103477	COL4A6	8,862054621	8,58718121	7,915974814	7,788072699	7,671631715
ILMN_1780132	-0,011035471	PELI2	8,247434749	8,139116643	7,300188248	7,178394983	7,21420802
ILMN_2380801	-0,0110388	FYN	9,743809079	9,828708278	8,730937962	8,806083459	8,913538875
ILMN_3234762	-0,011040629	RN5S9	9,474235793	9,546141905	8,663238936	8,286954948	8,563099108
ILMN_3215712	-0,011040771	LOC100131609	13,06921256	13,0422651	12,21983007	12,28720289	12,06626277
ILMN_2215656	-0,01104909	MAGOH	9,592519785	9,556239315	8,722807167	8,794364348	8,588330397
ILMN_1704531	-0,011049731	PTGR1	8,480548689	8,650392576	7,833724297	7,81244293	7,582499454
ILMN_1814173	-0,011076754	SMARCA4	12,34006435	12,19924365	11,13812528	11,19523901	11,36977629
ILMN_2155516	-0,01107849	QTRTD1	8,740110733	8,738713971	8,015726881	7,773154487	7,715609595
ILMN_1684306	-0,011086613	S100A4	8,144095882	8,334240557	7,38594297	7,358782792	7,306303632
ILMN_1801842	-0,011091646	PTX3	8,263052104	8,275293558	7,498599559	7,28861148	7,26503642
ILMN_1719039	-0,011092466	UBE2G1	9,917724829	9,981525464	8,681322041	8,947824444	9,146417904
ILMN_3304850	-0,011100859	LOC730098	8,147943602	8,493823516	7,343269797	7,473076018	7,469548871
ILMN_3304887	-0,01110385	LOC729423	8,624035962	8,577021681	7,559720524	7,76516293	7,678229504
ILMN_1726554	-0,011109563	IREB2	8,629086255	8,835863984	7,68528232	7,734135272	7,877811332
ILMN_1737025	-0,01111619	PLCL2	8,274472354	8,296532467	7,513498157	7,418948304	7,277780995
ILMN_2117809	-0,011130964	DUXAP3	11,17620676	11,30221786	10,71606892	10,09091879	10,16982165
ILMN_1717094	-0,011132458	ZNF618	9,180969261	9,097920978	8,248099982	8,19939976	8,152117347
ILMN_1657475	-0,011138542	GALT	8,735423672	8,706595592	7,571423737	7,773723296	7,843446964
ILMN_3240220	-0,011139189	RNU1F1	8,368212917	8,542915081	7,654803212	7,33314252	7,500522923
ILMN_3240241	-0,011140655	TMEM132B	7,858287259	7,683970289	6,790746879	6,899907272	6,791929476
ILMN_1728083	-0,011144013	EIF4EBP2	9,191347051	9,255221253	8,274114592	8,522051864	8,284163849
ILMN_1705985	-0,011156277	PIGA	8,575553981	8,668529159	7,801964387	7,744893465	7,645080515
ILMN_1821517	-0,011175533		12,62341346	13,0224438	12,03746476	11,81526335	11,90778113
ILMN_3187852	-0,011178985	KIAA1310	10,96705512	10,83147688	9,710437445	9,998627533	10,00481862
ILMN_2316918	-0,011200422	PANK1	8,58528995	8,6764785	7,839425634	7,730729723	7,638136456
ILMN_1668039	-0,011200891	GYPC	11,43047552	11,37642269	10,67410159	10,33623457	10,35777616
ILMN_1673917	-0,01120628	GTF2I	8,068020802	8,010139361	7,12210344	6,885562823	7,064903288
ILMN_2225537	-0,011208798	PTGR1	8,970918427	8,970499277	8,079704983	7,994392797	7,995001076
ILMN_1727055	-0,011210683	C12orf48	8,619122097	8,434996725	7,735043	7,67576971	7,465774623
ILMN_3298582	-0,011211483	LOC728873	12,26854576	12,46752608	11,21106272	11,40045569	11,53963427
ILMN_1711702	-0,011218067	CLEC2D	9,795057001	9,688381231	8,961184185	8,894721543	8,693891511
ILMN_1802808	-0,011223664	LOC654103	8,295768394	8,237846691	7,341864279	7,281375292	7,288411068
ILMN_1682404	-0,011235359	SETMAR	9,908586876	9,862175632	8,852353585	8,952082109	8,947820048
ILMN_1652989	-0,011235565	NUP160	9,379336006	9,465872063	8,574798106	8,524459907	8,445883231

ILMN_1759008	-0,011252505	ZNF689	10,28662672	10,13173662	8,868307733	9,121172963	9,364487504
ILMN_2336094	-0,011252899	ODZ3	11,75335609	11,46672937	10,36534273	10,3959416	10,70130464
ILMN_1771734	-0,011259187	LOC728564	11,03870571	11,05269763	10,08264378	10,287362	10,08790321
ILMN_2189222	-0,011271235	KLHL8	9,102219345	9,193953135	8,120315657	8,103096842	8,240723011
ILMN_1754272	-0,011271489	GINS3	9,390462885	9,392364702	8,426803062	8,552942029	8,43230227
ILMN_1799814	-0,011272912	WDR57	10,00820518	10,06273846	8,982694146	9,188384191	9,122366011
ILMN_1727479	-0,011284324	TPRG1L	9,771134739	9,834605299	8,57664432	8,694151035	8,964064251
ILMN_1687921	-0,011285478	JMJD8	11,53819787	11,34839191	10,0281222	10,32579103	10,6151395
ILMN_1672350	-0,011288624	JAM2	10,34004403	10,09641656	9,401469808	9,241680074	9,146867613
ILMN_1801584	-0,011298277	CXCR4	10,73991874	10,7436104	9,734076591	9,852708073	9,797737541
ILMN_2274199	-0,011325873	SUPT3H	7,769640228	7,859380961	6,874720111	6,810991584	6,865235199
ILMN_1809889	-0,011328499	CCDC117	9,095990933	9,18013508	8,217159161	8,389867306	8,17249812
ILMN_3219806	-0,011331024	LOC643384	9,496983085	9,502843294	8,507251271	8,451851274	8,551731245
ILMN_1688152	-0,011334669	IL27RA	8,345105028	8,055366714	7,380618722	7,259191961	7,111875214
ILMN_2055477	-0,011345136	EXOSC7	10,1147281	10,0879371	9,06791619	9,152251265	9,155975034
ILMN_3294033	-0,011358073	LOC339970	8,978629115	9,268305289	8,079107057	8,212418795	8,255212119
ILMN_2346997	-0,011368751	RAB23	9,905002074	9,900459813	8,906592029	8,761603525	8,951782107
ILMN_1701724	-0,011378692	C7orf20	9,682162779	9,969587191	8,652788667	8,828822149	9,005903701
ILMN_2374362	-0,011384629	FAM108B1	8,068610348	8,188873731	7,113058767	7,125321462	7,208491425
ILMN_3234884	-0,011387049	KIF22	9,914600276	10,06689808	8,959131424	8,977155317	9,084591412
ILMN_3298410	-0,011396259	LOC729120	8,97371735	9,155948902	8,281624155	8,062438506	8,07062301
ILMN_1712357	-0,011399692	HNRPK	9,616602544	9,46520263	8,462598657	8,610743925	8,57546078
ILMN_1772796	-0,0114048	DYNLL2	9,647248836	9,897924465	8,648692649	8,70865879	8,924215222
ILMN_1797964	-0,011412474	ARL6IP6	10,46927704	10,43392758	9,292189645	9,312334917	9,549556308
ILMN_3201221	-0,011413707	LOC341315	9,425181595	9,3926531	8,981512779	8,369784101	8,228209106
ILMN_1803686	-0,011415484	ADA	9,178546863	9,354813674	8,311094262	8,423704108	8,328816602
ILMN_1673369	-0,011418578	SEPHS1	9,206640675	9,15542008	8,083784246	8,251696853	8,244387491
ILMN_1702247	-0,011426077	CCNDBP1	10,41334742	10,44751831	9,472050323	9,537270381	9,459954548
ILMN_1719998	-0,011434461	C9orf45	8,453558955	8,358833918	7,231167973	7,378640357	7,48940419
ILMN_1753639	-0,011438659	MTAP	8,816700841	8,684633932	7,856485248	7,816216635	7,715740432
ILMN_1669881	-0,011440715	TSPAN13	10,62997614	10,27706265	9,54302082	9,608751218	9,369022075
ILMN_1794213	-0,011447067	ABHD14A	8,64316216	8,85231095	7,77661575	7,77944788	7,823618285
ILMN_2331010	-0,011461062	TNFRSF10B	8,569987624	8,398045212	7,205294	7,371389775	7,587308613
ILMN_2364062	-0,011466117	THOC4	10,21424838	10,37692056	9,24802855	8,824934323	9,402671033
ILMN_2174127	-0,011469312	DCBLD2	11,31694825	11,46162607	10,51888406	10,49829089	10,40677212
ILMN_1759954	-0,011472784	PTMA	9,52349238	9,372798955	8,794333724	8,47268078	8,315454826
ILMN_190356	-0,011489135		10,48424927	10,50191395	9,271679734	9,39498958	9,616646232

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ILMN_1678323	-0,011499588	AASS	7,993216871	8,016744425	6,941938138	6,992854959	7,065859401
ILMN_1753183	-0,011499887	CDCA4	9,568539329	9,392503193	8,267497246	8,590654587	8,546720754
ILMN_2109156	-0,011518171	RANBP1	12,33955103	12,30616255	11,47738749	11,26716584	11,28740137
ILMN_3251723	-0,011518271	PNPT1	10,41644205	10,45938301	9,401554812	9,257029501	9,496845016
ILMN_1690371	-0,011522502	MRPL11	10,32954254	10,59758166	9,374502843	9,416195555	9,591615086
ILMN_3278170	-0,01152309	LOC441455	7,949456811	7,994822073	6,960258067	7,079443298	7,012419753
ILMN_3268914	-0,011540939	LOC100128410	12,14780978	11,78723026	11,39864365	11,24954391	10,73628081
ILMN_1764087	-0,011544344	SYPL1	9,816167909	9,727160442	8,827168499	8,898463391	8,751647579
ILMN_1792672	-0,011544843	POLR2D	9,37874178	9,719523938	8,559687068	8,652252904	8,64966854
ILMN_1687440	-0,011554816	HIPK2	9,999988153	9,943017158	8,823527963	8,765375611	9,044997131
ILMN_1710962	-0,011560362	TMEM97	12,6406564	12,34911877	11,40681242	11,61921671	11,47840934
ILMN_1697959	-0,011567008	SLC35B4	8,374909489	8,500511057	7,565850368	7,571958534	7,438507207
ILMN_1735979	-0,011578988	BCKDHA	8,96563573	9,046620538	7,875893064	8,098475254	8,093683559
ILMN_1684045	-0,011588808	CDCA4	9,780981206	9,540508942	8,611490825	8,686288823	8,641762583
ILMN_1677138	-0,011608721	POLR2J3	10,24158713	10,01080092	9,225577303	9,17245607	9,050490972
ILMN_1815733	-0,011614427	EIF5	10,06569946	10,26782976	8,985629101	9,010311221	9,30614356
ILMN_1799516	-0,011631702	DNAJC9	11,06888047	10,98720297	10,00528945	10,13601061	10,02940193
ILMN_1755114	-0,011632019	EIF2AK4	9,23737149	9,212378556	8,15732184	8,179605592	8,261377869
ILMN_2361603	-0,01164875	NDRG2	7,618502898	7,751522923	6,659152641	6,847357393	6,734695627
ILMN_2377174	-0,01164984	SYPL1	9,760161437	10,00564065	8,920846645	8,878033997	8,941092981
ILMN_1720114	-0,011652788	GMNN	9,360450129	9,357716461	8,831843557	8,476649879	8,189653321
ILMN_1782257	-0,011653286	METT11D1	9,16621124	9,160596458	8,009872871	8,318697988	8,228175596
ILMN_1801377	-0,011653926	SLC29A4	10,72385651	10,48167267	9,490151585	9,661192566	9,598477277
ILMN_2399264	-0,011654781	42253	8,088052107	8,27393338	7,234882671	7,258421401	7,215396693
ILMN_1789266	-0,011655986	CCDC25	9,806338273	9,931093171	8,815739472	8,984448523	8,927789662
ILMN_2148796	-0,011660746	MND1	8,692478895	8,646928813	7,687499802	7,740166706	7,661932644
ILMN_1656452	-0,01166456	C16orf59	9,161223816	8,993738092	8,038508678	8,104237142	8,062905669
ILMN_2355665	-0,011666401	MTP18	9,582310357	9,62079291	8,581382586	8,654328394	8,628279762
ILMN_1742798	-0,011690883	SFRS10	10,82637253	10,79928131	10,00150776	9,764600909	9,745326275
ILMN_3227811	-0,011691022	LOC729423	10,87330001	10,9138824	9,886358525	10,13990173	9,906985676
ILMN_1800390	-0,011701156	ZNF511	10,49632568	10,53320995	9,464312988	9,460362277	9,551734515
ILMN_2091347	-0,011724627	IDH1	11,65958203	11,51439303	10,65414569	10,67530374	10,52865283
ILMN_1727184	-0,011724961	WDR36	8,424626507	8,628968574	7,636867461	7,750184878	7,531620595
ILMN_1693259	-0,011725815	PDCD6IP	8,214679314	8,26322245	7,334925424	7,300487337	7,216588775
ILMN_1800697	-0,011734897	LDB2	9,594802228	9,640542976	8,557588955	8,54086096	8,657020681
ILMN_1662328	-0,01174186	CNNM3	9,121035143	9,130762968	8,053000262	8,215934161	8,15535962

ILMN_1811933	-0,011758877	SHMT1	9,323909084	9,327443776	8,027440921	8,325345049	8,439429492
ILMN_1768816	-0,011763045	TMPO	8,390848253	8,469472042	7,487508422	7,524799539	7,424153324
ILMN_1655137	-0,011766575	ZCCHC11	8,689573904	8,620689617	7,664826562	7,68612086	7,633377458
ILMN_1751904	-0,011780384	EDNRB	8,659244958	8,79857253	7,669417401	7,808693547	7,779979311
ILMN_1680134	-0,011800009	CARM1	12,04726237	11,90376949	10,69699704	10,89633002	11,04404051
ILMN_2231911	-0,011804701	AUH	8,206381307	8,282899737	7,11417374	7,243959074	7,306856681
ILMN_1785661	-0,011810034	FAM108B1	8,450113095	8,456839097	7,663716155	7,305791563	7,374507356
ILMN_2392274	-0,011827916	CD82	8,262868777	8,130790509	7,096104482	7,1731731	7,195760222
ILMN_1813275	-0,01183073	DUSP22	10,45059527	10,43998575	9,263943074	9,424654348	9,503676627
ILMN_1739032	-0,011844724	TMEM70	8,393395942	8,300379189	7,330737878	7,288474761	7,322416686
ILMN_1692962	-0,011848418	CTDSP2	10,83217572	10,7717987	9,57703523	9,743562167	9,863936692
ILMN_1796074	-0,011852988	C18orf56	10,45228059	10,65198737	9,71213585	9,316251069	9,53620286
ILMN_1755737	-0,011859887	TRABD	10,91346982	10,84606573	9,618839497	9,733271043	9,954959336
ILMN_1682332	-0,011891768	GYPC	10,70681565	10,96920542	9,851727949	9,803424245	9,881326999
ILMN_1702585	-0,011907998	LOC646817	7,864692295	7,860280601	6,762305373	6,759381064	6,884543542
ILMN_1652512	-0,011920268	C2CD2	9,608181765	9,612635626	8,506064405	8,42935355	8,637604118
ILMN_3282174	-0,011930976	LOC646688	10,90635051	10,71140544	9,944238941	9,774362548	9,692113639
ILMN_1654606	-0,01194627	ZDHHC22	8,057161728	7,963603833	6,840543255	6,905105342	7,032890782
ILMN_2159859	-0,011950524	LYSMD4	8,525378749	8,482338669	7,417779161	7,445711367	7,505112075
ILMN_1676503	-0,01195869	LOC643446	9,801309834	9,722133687	8,514659994	8,485236629	8,821081296
ILMN_2396272	-0,011966216	PDCD4	10,55702437	10,5807195	9,549264708	9,434731251	9,561792047
ILMN_3241091	-0,011973367	LOC100130886	10,50594332	10,31980954	9,123029177	9,339642014	9,454695682
ILMN_1665291	-0,011977606	NUB1	8,61578449	8,59246839	7,431847695	7,808139686	7,631246816
ILMN_2302716	-0,011984073	ALDH18A1	10,11507179	10,0029132	8,934902612	9,157731921	9,049394139
ILMN_1729987	-0,011986212	SRC	8,643661358	8,603423952	7,534544772	7,578346717	7,621930528
ILMN_1804812	-0,01199559	ANAPC1	9,41971958	9,323725982	8,138355446	8,289168835	8,411396725
ILMN_1770044	-0,012019945	CHRNA5	9,016663796	8,877313348	7,81610413	7,911445972	7,93317209
ILMN_1757384	-0,012021597	RAN	9,843626041	10,12283957	8,915263036	9,180218199	9,038660876
ILMN_2079786	-0,012021751	NUAK1	10,24917359	10,35790441	9,503224327	9,247069595	9,225079902
ILMN_1779751	-0,012022621	C7orf55	9,307028068	9,42784223	8,258281753	8,283952193	8,408999453
ILMN_2384785	-0,012023175	CCNE1	8,543599143	8,836959676	7,700900308	7,714125053	7,724477852
ILMN_1699208	-0,012027228	NAP1L1	11,19382436	11,1913817	10,55715576	10,30691168	10,01933378
ILMN_1673936	-0,012028547	KHSRP	10,48188305	10,25835868	9,040897419	9,196496155	9,414348172
ILMN_2045729	-0,012029185	WDR12	9,464069744	9,615530207	8,799032164	8,669629191	8,442400073
ILMN_2182335	-0,012030275	ARID2	8,228528942	8,396869364	7,319266484	7,298163272	7,318697784
ILMN_1798886	-0,012034081	NUDT21	9,729079961	10,04968883	8,872568447	9,153389427	8,93185636
ILMN_187468	-0,012044698		8,394836362	8,632890808	7,500413213	7,633997897	7,538266968

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ILMN_2152711	-0,012045798	ACVR2A	8,937492131	8,809489776	7,98809653	7,952151443	7,763160269
ILMN_1655622	-0,012047379	PRKRIR	10,47280554	10,32540484	9,62690347	9,402936589	9,243759
ILMN_3249366	-0,012048502	JMJD8	11,00679362	10,91367969	9,566198798	9,716083018	10,05990997
ILMN_1705093	-0,012057019	ORC5L	9,71965553	9,529736265	8,733319664	8,653079518	8,50214384
ILMN_1736510	-0,012058654	FOXN2	8,947839333	8,954438957	8,055199379	8,062240991	7,874503995
ILMN_1717052	-0,012077124	STARD10	8,380003925	8,552798275	7,216784765	7,261444705	7,570429957
ILMN_3235517	-0,012083077	ZNF777	9,270166867	9,07873544	7,844911405	7,77028627	8,227018602
ILMN_1770537	-0,012104311	NGFRAP1	8,233159603	8,41255283	7,262253891	7,195490754	7,351478812
ILMN_2325506	-0,01212303	BCAS4	8,870243365	9,140988111	7,813155997	7,863013335	8,104265895
ILMN_3213568	-0,012129229	LOC402112	12,50341058	12,40229253	11,58357474	11,44846356	11,33537336
ILMN_2147306	-0,012131834	PNRC2	10,4146684	10,26343531	9,329939923	9,464499688	9,258224834
ILMN_1761159	-0,012142321	ESYT1	10,74382284	10,75869276	9,654700839	9,790461147	9,744595263
ILMN_1732577	-0,012213497	TMEM216	9,081671236	9,151206534	8,038813786	7,960460834	8,113191542
ILMN_1768751	-0,012221641	MTA3	9,439775567	9,474815329	8,297234877	8,222753014	8,478390597
ILMN_3289262	-0,012231928	LOC100131261	9,175566849	9,193279204	8,490955149	8,193274737	8,01658519
ILMN_1696485	-0,012252206	HNRNPAB	10,67941826	10,76692889	9,626122691	9,721519156	9,72220957
ILMN_1798926	-0,012260196	SOCS2	8,325687669	8,19104217	7,103404443	7,16870225	7,227453925
ILMN_1743199	-0,012261717	EGR2	9,157773584	9,208419536	8,291776943	8,2282149	8,093058652
ILMN_2223805	-0,012274996	TSGA14	8,77042372	8,685889952	7,856471993	7,68104157	7,599503678
ILMN_2202423	-0,012277576	HELLS	8,352538872	8,317199609	7,375696892	7,381638612	7,247637623
ILMN_2409220	-0,012300494	HMMR	9,095181184	8,779088411	7,889369669	7,812875615	7,818798142
ILMN_1773117	-0,012301049	BCOR	9,347010433	9,25093764	8,262479541	8,545059912	8,217591868
ILMN_3251383	-0,012318858	CCDC74B	8,606244703	8,669624973	7,700616824	7,516505612	7,566504306
ILMN_1787691	-0,012320475	CITED4	8,557767065	8,734506795	7,571392751	7,398060152	7,657433487
ILMN_1712298	-0,012320905	ANKRD46	9,067114002	9,163818831	8,211733633	8,279248508	8,030354691
ILMN_2338038	-0,012322582	AK3L1	8,542760279	8,575171067	7,412967096	7,381678628	7,56006987
ILMN_1787248	-0,012332094	SIVA	10,43637108	10,69409725	9,537009181	9,450729971	9,57303528
ILMN_1745946	-0,012334239	CCDC5	9,548559378	9,366224797	8,373766298	8,536332902	8,374365435
ILMN_1745852	-0,01233679	WDR33	7,87566549	8,035024524	6,889243483	7,028484648	6,947022186
ILMN_1708936	-0,01234468	EXOSC3	10,32894213	10,35872398	9,441638417	9,350823496	9,244245323
ILMN_2103685	-0,012346715	DEPDC1B	8,075940438	8,17789604	7,36830818	7,214694803	6,987327405
ILMN_3176090	-0,012369727	LOC100130919	11,86888962	11,76228619	10,42939937	10,7294144	10,86558166
ILMN_1781285	-0,012375992	DUSP1	9,177058338	9,249179047	8,205310339	8,113543299	8,162973471
ILMN_1774336	-0,012384309	POLE2	8,758541281	8,758652694	7,845592136	7,950787136	7,645285011
ILMN_1770678	-0,012394481	CBX2	11,08974657	10,94825409	9,792905847	9,974685554	9,996122343
ILMN_1726114	-0,012400454	SLC45A3	8,579997756	8,370112631	7,510654905	7,358403165	7,338390002

ILMN_3242586	-0,012401521	RHOU	10,26634435	10,37065631	9,252117866	9,099075446	9,298907038
ILMN_3259223	-0,012405187	LOC100129685	10,84223325	10,95704454	10,14410563	9,762577008	9,762322518
ILMN_1696183	-0,012407603	HBQ1	9,25405692	9,330862202	8,045542898	8,118056669	8,33215381
ILMN_1677376	-0,012417219	CHD7	10,49627546	10,24072554	9,198275297	9,320494315	9,294665574
ILMN_1764522	-0,012425141	LMBR1	9,076243219	9,13125936	7,828265249	7,90508544	8,147620776
ILMN_3241034	-0,012429061	SNORD3C	8,348995252	8,003718339	6,898528165	6,971447366	7,124628618
ILMN_1688971	-0,012434225	NOL11	10,1479215	10,08208701	9,059077105	9,248722705	9,035819847
ILMN_1786125	-0,012441113	CCNA2	10,10139347	10,26536727	9,167228953	9,414896361	9,140373524
ILMN_3242900	-0,012443177	HIST2H2AA4	9,130947205	9,496688018	8,330271047	8,163093267	8,318421962
ILMN_1808779	-0,012443184	CSTF3	10,45931949	10,39726615	9,289341644	9,283376715	9,388912349
ILMN_2259633	-0,012443343	MLL5	8,046265722	8,248037187	7,131658248	7,060803498	7,122194574
ILMN_1704702	-0,012460894	MCM7	9,076573326	9,236048961	8,011292834	7,784269211	8,177128963
ILMN_1665219	-0,012467548	LTBP4	8,950335769	9,008305957	7,856223677	7,792478467	7,960965504
ILMN_3300972	-0,012471065	SIVA1	12,34724902	12,38613347	11,1784943	11,20468754	11,36697673
ILMN_1765746	-0,012477385	SFT2D3	8,617928541	8,395774596	7,381058037	7,375204566	7,419369926
ILMN_1705570	-0,012478032	H2AFY2	12,45630095	12,31092237	11,30387571	11,27817223	11,29628787
ILMN_1693221	-0,012481803	CENPH	8,212338916	8,456559278	7,388661562	7,331500693	7,286253188
ILMN_1738681	-0,012496953	NUP62	12,35091564	12,22709161	11,09932848	10,92543887	11,25407581
ILMN_1695404	-0,012502323	LY6E	8,72923317	8,903892422	7,819815062	7,782309394	7,769574493
ILMN_1684964	-0,012505203	ZNF212	8,567405334	8,432421299	7,352582332	7,446782376	7,435666156
ILMN_1774890	-0,012521776	LAS1L	9,130744134	9,16863701	8,022853501	8,161765157	8,115291937
ILMN_1720850	-0,012525807	BAZ2B	9,217864059	9,084568466	8,094631401	8,026935998	8,053073609
ILMN_1653504	-0,012542961	EDG1	8,043378508	7,943066827	6,787223974	7,011618695	6,952454205
ILMN_1743373	-0,012551045	DLL1	10,41139136	10,33694537	9,001339038	9,163340205	9,409144102
ILMN_1699772	-0,012559295	RRAGD	10,52045077	10,70652572	9,5293704	9,4059852	9,600893523
ILMN_1763657	-0,012564379	CXXC4	9,414374018	9,475213494	8,522764291	8,045155349	8,346412205
ILMN_2291619	-0,012565271	RAB3IP	8,508978019	8,974370924	7,841774076	7,643680451	7,722247144
ILMN_2183856	-0,012569185	TSPAN6	8,708663216	8,799507986	7,905981521	7,726797573	7,622729353
ILMN_3247064	-0,012603667	SNRNP40	10,54311556	10,67298853	9,550072409	9,793743983	9,554603823
ILMN_1741801	-0,012604358	CDC7	8,347590592	8,333497156	7,383840786	7,385008241	7,218422561
ILMN_2154950	-0,012614321	ZNF423	9,052086979	9,007721065	8,189440104	8,002925623	7,857924808
ILMN_1811181	-0,012626804	FLJ20444	8,58946233	8,626713282	7,587814236	7,777267929	7,51576362
ILMN_1660793	-0,012646576	PAQR4	10,61565102	10,56383422	9,310486984	9,386903045	9,583162689
ILMN_1775708	-0,012658312	SLC2A3	12,55446921	12,43105519	11,1465479	11,04695929	11,50014721
ILMN_2073732	-0,012667453	CBLL1	8,806219797	8,842530933	7,733214185	7,711556955	7,7625175
ILMN_1745132	-0,012683521	GDF11	8,173537273	8,122519351	6,894767273	7,315104321	7,115509536
ILMN_324359	-0,012691406	LOC100008588	11,68555118	12,0238151	10,88648421	10,72390411	10,81645757

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ILMN_1785170	-0,012701595	ARMCX2	9,936844165	9,864872908	8,811884993	8,797382042	8,808020713
ILMN_1652371	-0,0127047	KIAA1324L	8,764567838	8,700706665	7,697517703	7,657210255	7,620000694
ILMN_3278157	-0,012736763	LOC653156	10,14000525	9,932326905	9,319852722	8,972670516	8,764859834
ILMN_3291472	-0,012745299	LOC442727	8,653285107	8,511763532	7,409154608	7,389765989	7,502153256
ILMN_1797950	-0,012750487	EXTL2	9,665125916	9,621121501	8,596655262	8,626589285	8,532379325
ILMN_1684293	-0,01278072	ANP32B	12,98362625	12,91028863	11,93168003	11,72492056	11,81982414
ILMN_1815924	-0,012781677	NUP107	10,06315922	10,08266593	8,96609635	8,899811719	9,001298171
ILMN_1749297	-0,012811265	ACTL6A	10,60087031	10,42178229	9,549650718	9,84418056	9,318146364
ILMN_1752394	-0,012813574	CCNB1IP1	9,959573831	10,12575646	8,832281911	9,091364739	9,034515947
ILMN_1751099	-0,012816899	CCDC48	8,263844018	8,081731371	7,265697402	7,077784443	6,970520504
ILMN_1796417	-0,01283369	ASNS	10,1730039	10,27640661	9,023197414	9,164500148	9,199154048
ILMN_3208233	-0,012847085	LOC100131735	10,84295503	10,8107438	9,637241092	9,880086752	9,75917957
ILMN_3218292	-0,012852078	LOC202781	10,15264331	10,31583876	9,307457566	8,976637698	9,123357817
ILMN_1691949	-0,012857604	LOC728554	10,9113317	10,80909766	9,517332388	9,977414975	9,83031877
ILMN_1755862	-0,012863756	PFAS	10,55953226	10,38741324	9,464479053	9,14974342	9,313936922
ILMN_1654545	-0,012875888	CPSF1	9,96147442	9,917794696	8,605559773	8,88540505	8,923597372
ILMN_1689318	-0,01287681	NUAK1	11,26545431	11,03348527	9,932151176	10,06397708	10,04513757
ILMN_1747630	-0,01288846	DEK	10,4665785	10,50807581	9,545558067	9,597764555	9,337144499
ILMN_1900661	-0,012893261		8,704561808	8,617093361	7,63502581	7,787074962	7,510154411
ILMN_2136177	-0,012896782	CNOT6	9,642676042	9,755635886	8,581445724	8,694904782	8,634981084
ILMN_1809477	-0,012913679	CARHSP1	11,57670652	11,69886233	10,4469738	10,50720956	10,60517348
ILMN_1737585	-0,01291445	VARS2	9,198888396	9,239771133	7,952458013	8,137678734	8,194365814
ILMN_1659659	-0,012914483	MAGEH1	8,739075817	8,446544245	7,402332213	7,628766192	7,455341655
ILMN_1705151	-0,012918519	SF3A3	11,84229106	11,65935582	10,39487649	10,46395619	10,71168652
ILMN_1652409	-0,012926308	SPATA7	8,748456995	8,913168019	7,772469667	7,86786318	7,75169233
ILMN_1694840	-0,012937983	MATN2	7,993505187	7,877822292	6,943207621	6,781270071	6,768753923
ILMN_1751097	-0,012939258	CREB3L2	9,710879472	9,626032843	8,591384722	8,711688643	8,535011973
ILMN_2180371	-0,012941195	C12orf24	9,359504774	9,430058219	8,211226931	8,498441907	8,336570717
ILMN_1702973	-0,01294437	TMEM166	7,770898244	7,782617413	6,830271108	6,621629272	6,622238769
ILMN_2234187	-0,01294972	CDO1	9,535895817	9,798840425	8,96577329	8,429732787	8,483130409
ILMN_1753275	-0,012951075	DENND1A	9,26478139	9,324537451	8,150021663	7,805574186	8,236421678
ILMN_2388425	-0,01297542	EXTL2	8,78669036	8,865844648	7,821957168	7,772959814	7,703203837
ILMN_1653438	-0,012982508	PHF14	8,904431021	8,845526226	7,798500256	7,906331756	7,742581969
ILMN_1830069	-0,012987784		8,392112119	8,426613089	7,287514644	7,139351581	7,325054512
ILMN_2081883	-0,012996436	IQCK	9,54468622	9,474732493	8,448341224	8,290166543	8,375218874
ILMN_1809483	-0,012999286	HSD17B14	7,567113014	7,881006105	6,74140873	6,559007151	6,649300895

ILMN_1797318	-0,013011362	HSPA14	9,092990376	9,143066475	8,112158647	8,219731334	7,97952672
ILMN_3233179	-0,013018173	LOC728969	11,23539182	11,01366602	9,717027483	9,843292661	10,08352472
ILMN_1846922	-0,013028982		8,483432658	8,819071728	7,506912968	7,764253406	7,630810161
ILMN_1801939	-0,013029049	CCNB2	11,27959796	11,25119642	10,15000551	10,34766871	10,1479231
ILMN_2052598	-0,013029111	ARMC10	9,902979683	10,05874812	8,883589404	8,814455408	8,908452958
ILMN_1719205	-0,013049513	FBL	11,3368423	11,24062472	10,00160424	10,10971274	10,22544702
ILMN_1810274	-0,01305258	HOXB2	10,70533248	10,78608805	9,368245887	9,553648486	9,758957695
ILMN_1710136	-0,013055965	HDHD1A	10,14038331	10,14441093	8,850362384	9,080615427	9,100616756
ILMN_3246273	-0,01306641	RNU1-3	8,730458583	8,998096797	7,792291034	7,696305563	7,804570474
ILMN_3211935	-0,01307286	LOC100132715	10,99780079	11,07866042	10,18198481	10,18185391	9,842080974
ILMN_1667561	-0,013088367	IFRD1	8,551405005	8,614230611	7,547047792	7,449577644	7,456601016
ILMN_2125675	-0,013104161	LOC728643	11,5865218	11,54857472	10,5618831	10,59509951	10,39908129
ILMN_1782098	-0,013108204	SMO	8,738453343	8,745445242	7,760367258	7,702039913	7,57669045
ILMN_3248882	-0,013113052	KIAA0114	9,868550917	9,853581831	8,812683231	8,713148853	8,718694996
ILMN_3238326	-0,013117676	RNF144A	9,398937804	9,528198705	8,179678888	8,131685746	8,449677547
ILMN_1785444	-0,013152682	LEMD1	7,641649652	7,707167193	6,613359241	6,535813672	6,550482782
ILMN_1721457	-0,013154249	RANBP1	11,71177812	11,91837642	10,64969646	10,54856872	10,76848964
ILMN_1740010	-0,013167254	PCNX	9,353119681	9,23403233	7,780396058	7,989271332	8,299836316
ILMN_1748926	-0,013173025	TMEM209	9,508763978	9,539550949	8,601944714	8,394193422	8,337401569
ILMN_2124951	-0,013196797	RBMX	11,07783628	11,00620152	9,798274172	10,04515059	9,944991481
ILMN_3294365	-0,013234934	LOC646993	9,519199664	9,533246196	8,615500724	8,546355333	8,319045363
ILMN_3236680	-0,013269581	LOC100134393	8,647138559	8,87379311	7,855600949	7,744213651	7,598855383
ILMN_2178587	-0,0132725	ANKRD6	9,118766284	8,997660083	7,899025778	7,75945768	7,917689822
ILMN_1695386	-0,013277242	RAD51C	9,515290968	9,705085611	8,667310499	8,626727553	8,452288872
ILMN_3243291	-0,013280544	LOC100133372	12,77307802	12,93534336	11,56427761	11,58362943	11,82873549
ILMN_1806651	-0,013311966	PARP8	7,722764425	7,944301232	6,776435103	6,961408925	6,718209973
ILMN_2383871	-0,013312506	ZNF74	8,714575266	8,848717602	7,75574417	7,713048515	7,640006157
ILMN_2219712	-0,013314475	HMGB2	9,827873142	9,45352162	8,726211006	8,505738353	8,337213562
ILMN_1708101	-0,013316125	LMNB2	11,20032666	11,00733348	9,928054259	10,24718778	9,933459671
ILMN_1704056	-0,013352538	RPPH1	8,071691813	8,507447198	7,199975394	7,064495667	7,244135036
ILMN_2298818	-0,013362112	RPS29	9,047640962	9,060952463	8,293380943	7,851850141	7,782073112
ILMN_1716895	-0,013366042	RPA3	11,25357997	11,6020003	10,67957651	10,34277145	10,22693345
ILMN_2347349	-0,013372713	CCNB1IP1	10,93372716	11,20788498	9,816466847	10,14510487	10,03730041
ILMN_1698243	-0,013376561	C1orf85	7,907761901	7,946743076	6,733063539	6,651675235	6,824721034
ILMN_1659142	-0,013404816	MDK	8,793516396	9,116785242	7,787129341	7,705781804	7,907018931
ILMN_1789112	-0,013420168	TMEM145	8,988650643	8,687620565	7,537706784	7,35745252	7,695687433
ILMN_180186	-0,013439154	WDR75	10,02932348	9,979152626	8,885121214	8,791917872	8,843074949

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ILMN_2368576	-0,013445236	UBA52	10,21564262	10,23440241	9,038402358	9,208889535	9,098998876
ILMN_3307877	-0,013458363	C21orf58	10,52732575	10,4435455	9,321897387	9,204036434	9,332824772
ILMN_1797698	-0,013463643	RBM12	9,939503128	9,797805381	8,777169887	8,645749714	8,672538581
ILMN_2374425	-0,013495002	CCNE1	9,184353663	9,275000916	7,993451844	8,160243706	8,135195049
ILMN_1764177	-0,013518266	JARID2	10,39891423	10,15548556	9,261553844	9,041796453	9,021987558
ILMN_1654268	-0,013536952	HMGB2	9,741884864	9,911428915	8,997292453	9,003699253	8,58503754
ILMN_1746696	-0,013549667	PDS5B	8,330391162	8,326434025	7,152058901	7,259520905	7,18188727
ILMN_1787265	-0,013572147	ZNF503	9,133083785	9,174006974	8,252175196	7,837288169	7,91931079
ILMN_1779374	-0,01357334	AMMECR1	9,164259669	8,999826778	7,878374545	7,774074204	7,912186628
ILMN_2347068	-0,013597716	MKNK2	10,12755086	10,22877163	8,954043605	8,87301114	9,076757621
ILMN_1694177	-0,013600081	PCNA	11,22653157	11,21835614	10,49063808	10,19449663	9,900247096
ILMN_1715661	-0,013609515	TFAM	9,653574156	9,585547718	8,506808246	8,532734986	8,427393937
ILMN_1664602	-0,013625975	LOC143543	8,554333418	8,544840127	7,45124756	7,356442124	7,36712338
ILMN_1692938	-0,013635312	PSAT1	10,8477044	10,97795602	9,689703461	9,848608222	9,805980406
ILMN_1761083	-0,013635881	HNRNPA3	10,50980562	10,11919192	8,87778958	9,041946924	9,169876851
ILMN_2345142	-0,013640901	SULF2	9,653845672	9,568576258	8,403991618	8,426872509	8,449808147
ILMN_3231820	-0,013659035	SIVA1	10,58739704	10,7354472	9,467605554	9,623980607	9,54412915
ILMN_1888359	-0,013666142		8,743860377	8,688327449	7,486225407	7,747017722	7,560469035
ILMN_1700541	-0,013673447	FBLN1	11,42565661	11,57635391	10,21438176	10,63081198	10,41231918
ILMN_1791097	-0,013676648	RSBN1	9,186199231	9,254756641	8,114495296	8,195497603	8,048461334
ILMN_1696704	-0,013749451	TLE4	8,823853841	8,781669483	7,477627596	7,445001268	7,688392971
ILMN_3245678	-0,013760173	RNU1A3	9,310957743	9,54610808	8,515218988	7,868639167	8,230436248
ILMN_1732074	-0,013767727	LOC648210	13,36884131	13,24147926	12,06088696	11,85250242	12,14033894
ILMN_2364357	-0,013797408	RPS6KB2	10,69664353	10,66578775	9,095047352	9,30326567	9,663040568
ILMN_1806486	-0,013805355	LOC389137	9,072421034	9,079026327	7,954135039	7,727503944	7,889365561
ILMN_1777660	-0,01382404	RNF144	10,11157336	10,21503724	8,747525024	8,933113955	9,105281614
ILMN_1713934	-0,013886936	LITAF	11,794627	11,89518129	10,9286738	10,49609652	10,59381724
ILMN_1761322	-0,013895168	FHOD3	9,666469516	9,478910749	8,240092237	8,338507986	8,405165431
ILMN_1695034	-0,013895503	LOC642817	11,82316449	11,54914989	10,59391329	10,36287393	10,40995695
ILMN_3238680	-0,013910752	C7orf55	11,38592008	11,50586438	10,25447762	10,29675527	10,29421508
ILMN_1741054	-0,013931625	SLC5A6	9,881854418	9,834357452	8,910914418	8,871567492	8,56676665
ILMN_1690342	-0,013936061	LTA4H	11,81810679	11,81423215	10,6345848	10,65742734	10,6283442
ILMN_1658678	-0,013947511	SAAL1	10,13872665	10,09891391	9,170609775	9,121938052	8,828137771
ILMN_1807925	-0,013949806	GNG2	9,571385025	9,627222721	8,557438976	8,518125428	8,369158678
ILMN_1733811	-0,013952071	JUP	8,648830858	8,565677266	7,440133716	7,524195046	7,390630218
ILMN_3177271	-0,013968591	LOC100129585	10,50190095	10,66163834	9,289983397	9,565189117	9,466511113

ILMN_1717636	-0,013973882	RGMA	12,77344892	12,60809381	11,26967173	11,14153367	11,56201355
ILMN_1811468	-0,013980761	IRX3	12,64892587	12,55029465	11,25646729	10,91130287	11,46095779
ILMN_1773459	-0,01400901	SOX11	11,75379993	11,63753289	10,52462344	10,34538871	10,47419844
ILMN_1712095	-0,01402072	FOXO4	8,320530952	8,347698541	7,251371075	7,061654481	7,109687175
ILMN_1797341	-0,014032136	ARID1A	11,20027186	11,02177113	9,776900448	9,873209337	9,929955858
ILMN_1682572	-0,014044874	KIAA0528	9,164543922	9,113789636	8,005015652	8,016272654	7,908134027
ILMN_1674302	-0,014051972	PPAT	10,00343511	10,21450874	8,795240632	9,007578481	9,006947007
ILMN_3236653	-0,014069245	RNU1-5	9,034522979	9,33907104	8,120322363	7,776454246	8,021389348
ILMN_1800626	-0,014087533	SESN1	9,720182569	9,769988082	8,507204734	8,578260845	8,573594539
ILMN_2371433	-0,014089866	MID1	9,465129822	9,508239322	8,252245772	8,303722148	8,312488815
ILMN_2210129	-0,014120403	PRIM1	9,337477724	9,429810486	8,260125763	8,347618116	8,171175828
ILMN_1782890	-0,014128164	SLC25A3	12,61412607	12,82223095	11,42026918	11,58456006	11,60098251
ILMN_1782057	-0,014136467	ATP8B2	8,627331963	8,562163799	7,342345473	7,328299226	7,398212695
ILMN_1671583	-0,014150237	MKRN1	10,9202073	10,82296971	9,692861706	9,683540885	9,635725369
ILMN_1772876	-0,014151533	ZNF395	9,034301941	9,137119084	7,891838377	7,99218632	7,900294734
ILMN_1765860	-0,014160777	DOCK11	8,894906149	8,763916536	7,548245989	7,732917819	7,619823922
ILMN_3212373	-0,014162651	LOC727803	11,63843687	11,64348391	10,51234064	10,34387505	10,41250554
ILMN_2127379	-0,014176946	ST6GALNAC3	9,082559562	9,030993376	7,892347293	7,871813342	7,82306784
ILMN_1805750	-0,014197175	IFITM3	13,26099615	13,32449491	12,08611269	12,12645453	12,0991095
ILMN_1717765	-0,014199644	NUDT11	9,717410621	9,839725767	8,844964676	8,775740556	8,491192078
ILMN_2332558	-0,014207332	ARL5A	9,976453411	9,883842248	8,768341878	8,641357543	8,685321608
ILMN_1747934	-0,014233622	ISYNA1	10,11187411	10,04706313	8,877685811	8,788771813	8,853293383
ILMN_2388484	-0,01423583	MAP2	9,654883375	9,523811974	8,319730241	8,277732727	8,373230481
ILMN_1686553	-0,014276604	INTS2	8,587512127	8,387235438	7,357430727	7,293606715	7,193215744
ILMN_2396672	-0,014284123	ABLIM1	9,669134894	9,856435881	8,324082946	8,39886791	8,682546043
ILMN_1755383	-0,01431688	LRRC1	8,290910548	8,258378669	7,108753817	6,740517833	7,039919281
ILMN_1813840	-0,014342508	AOF2	11,54347465	11,51860466	10,25097583	10,36662756	10,32688313
ILMN_3248505	-0,014389963	EMID2	8,16814578	7,94959333	6,778942436	6,59425098	6,811559147
ILMN_1766637	-0,014394615	GLA	10,25036057	10,2476048	9,087471833	9,141582602	8,99751362
ILMN_2130525	-0,014419325	TSPAN13	8,895805872	8,959782448	7,886892339	7,761196792	7,64556982
ILMN_2249920	-0,014420923	FYN	10,13238001	10,38008673	8,90846916	8,595416694	9,14903814
ILMN_1809590	-0,014433174	GINS2	11,43952921	11,40888173	10,18655834	10,36294859	10,1886258
ILMN_1711005	-0,014449839	CDC25A	9,605241358	9,524604589	8,26988252	8,390032259	8,340597314
ILMN_1860963	-0,014458555		9,755416821	9,430833434	8,130430674	8,243649472	8,377969533
ILMN_1727577	-0,014487169	GLI2	8,848636836	8,73256201	7,598042711	7,558682226	7,51629744
ILMN_1686920	-0,014497094	CCDC58	8,405793423	8,587084547	7,429408773	7,433022856	7,239538758
ILMN_167654	-0,014551808	BZW2	10,74636342	10,67594823	9,666319591	9,626955582	9,379935566

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ILMN_1663447	-0,014572449	HNRNPA1	8,902568158	8,746237248	7,585459465	7,373371296	7,554559149
ILMN_1748894	-0,014581636	GTPBP3	9,136486939	9,151022691	7,933826185	7,851359413	7,89794608
ILMN_3292224	-0,014592584	LOC100131609	10,56519121	10,69590626	9,52615927	9,492466191	9,366748662
ILMN_1892403	-0,01461485	SNORD13	8,490613614	8,591070508	7,376335322	7,223402593	7,295143849
ILMN_1805645	-0,014642341	TMTC2	8,910175696	8,966929277	7,662039701	7,695542029	7,719119501
ILMN_1679134	-0,014672993	NSMCE4A	10,94711246	10,88489581	9,676991915	9,626710285	9,651817554
ILMN_1658847	-0,014674153	MGC61598	9,729102536	9,758319672	8,448886523	8,509662923	8,520619075
ILMN_1764813	-0,01468271	B3GALTL	8,874661637	8,942934701	7,723608857	7,853193457	7,647021759
ILMN_2209045	-0,01469729	POU3F2	10,70521073	10,82071206	9,360353487	9,177968421	9,609317437
ILMN_1732197	-0,014750103	MN1	9,195070445	9,09814035	8,020648729	8,022982038	7,817012219
ILMN_3244607	-0,014783906	FAM117B	8,645296277	8,585177113	7,416844887	7,596043838	7,31435014
ILMN_3236239	-0,014807638	LOC100129550	8,447852529	8,508654132	7,188707948	7,25743936	7,244094817
ILMN_2176768	-0,014867322	SEPHS1	10,77159451	10,77206379	9,421067634	9,534022086	9,539935103
ILMN_1749403	-0,014903188	TSPAN33	8,587237252	8,703122051	7,17149069	7,394833241	7,483184413
ILMN_1803348	-0,014911938	EHBP1	10,45561899	10,39589494	9,153167471	9,223987677	9,143525309
ILMN_1780591	-0,014914307	FAT3	9,918013915	9,751679116	8,674527111	8,498031798	8,488646687
ILMN_1696432	-0,014931981	IDH1	10,54880613	10,49814278	9,051987344	9,256525456	9,318034682
ILMN_1681628	-0,014933434	ZNF277	8,987768108	9,238488676	8,010269439	7,980227442	7,836443029
ILMN_2340131	-0,014937985	MAPK10	8,317121901	8,612896903	7,04953424	7,08271104	7,324045196
ILMN_1709479	-0,01494142	YAP1	9,631333688	9,478605139	8,812491262	8,417119658	8,045012142
ILMN_1790704	-0,014960761	SPAG16	9,522115979	9,663204878	8,239104697	8,269585261	8,386952478
ILMN_2126706	-0,014977227	LMNB1	10,50695532	10,40655036	9,167828404	9,406696983	9,158402737
ILMN_1716730	-0,014985235	FAM44B	11,23212361	11,21914268	9,83336386	9,803155394	9,997749962
ILMN_1737965	-0,015033673	ELOVL4	8,997930089	8,919065031	7,774853829	7,802679991	7,621996228
ILMN_3244646	-0,015090535	RNU1G2	8,811212058	8,841324559	7,690556058	7,426969161	7,49853387
ILMN_1781942	-0,015097376	HMMR	9,451031709	9,241437772	8,066159541	8,23232039	8,005922588
ILMN_1720124	-0,015128605	RCC2	11,91771058	11,79991675	10,48478257	10,75512718	10,5717788
ILMN_1680193	-0,01515304	PAXIP1	9,021029582	8,9962316	7,372864383	7,711321404	7,845686004
ILMN_1819854	-0,015194997		8,07765276	8,134660457	6,850306307	6,834679703	6,813437302
ILMN_1768505	-0,015197661	IL13RA1	9,78872329	9,64954576	8,321874512	8,55770852	8,42939602
ILMN_3305273	-0,015212811	LOC729779	9,419932338	9,573017037	8,047415447	8,145985952	8,30031851
ILMN_1679106	-0,015216084	LOC644919	9,310902133	9,253470066	7,861579519	7,948743735	8,023920987
ILMN_1696046	-0,015232383	SIVA	11,70429168	11,22206522	9,937811798	10,02183884	10,14408018
ILMN_1761858	-0,015272822	MID1	11,68952353	11,71528576	10,15806124	10,46902228	10,50075564
ILMN_2061310	-0,015301876	ZNF280C	9,59533632	9,515575215	8,100947538	8,35527492	8,290248118
ILMN_1723486	-0,01531904	HK2	8,494590256	8,5883434	7,125320719	7,394054048	7,299451439

ILMN_2355033	-0,015360679	KIAA1147	10,36459095	10,11315063	8,919711279	8,966405524	8,876756449
ILMN_1727692	-0,015369238	TRIT1	9,031301528	8,731007896	7,57946571	7,651709919	7,498208594
ILMN_2162253	-0,015374728	NMU	9,003989632	9,184798509	7,803307593	7,670483974	7,828149661
ILMN_1684217	-0,015375002	AURKB	10,05085604	10,15269794	8,966647652	8,998737443	8,747899436
ILMN_2394362	-0,015383613	FAM123A	7,674035789	7,887208045	6,429009856	6,601341573	6,535848886
ILMN_1767446	-0,015401583	RNF150	9,081034275	8,900592908	7,426746153	7,567212796	7,737711106
ILMN_1804735	-0,015408528	CBS	10,27726124	10,12846725	8,766792437	8,680584118	8,911457694
ILMN_1670692	-0,015415743	LPAR4	8,008173734	7,940819337	6,710106016	6,647375412	6,630437279
ILMN_1729051	-0,015441498	MSH6	11,57902507	11,43845933	10,28928983	10,16039018	10,12817695
ILMN_2188862	-0,01545018	GDF15	9,184919521	9,291760124	7,824817592	7,997886701	7,98583058
ILMN_1789905	-0,015452549	PAX6	8,236583193	8,346647517	7,212791326	6,960949794	6,915944567
ILMN_1769911	-0,01545876	SLC38A1	9,787719204	9,612174914	8,481325686	8,371109688	8,308081687
ILMN_1722290	-0,0154738	LPPR3	8,643196352	8,880934546	7,314669021	7,416422539	7,554031265
ILMN_1898124	-0,015479502		8,247447006	8,258567617	6,890047366	6,830266766	6,96038133
ILMN_2129234	-0,01551256	TMEM47	11,33655393	11,1715596	10,12930778	9,879835651	9,824264691
ILMN_1694502	-0,015518848	PRIM1	9,277784687	9,341889917	7,992406007	8,351830544	7,993864253
ILMN_1701731	-0,015550233	AKR1B1	11,52224784	11,51225079	10,17432658	10,43243475	10,19328971
ILMN_1743219	-0,015551814	CA11	8,40694761	8,386628386	7,123545586	7,218497349	7,046598297
ILMN_1694810	-0,015587622	PANX2	8,393512149	8,309719787	7,065232	6,795280674	6,998622966
ILMN_1664909	-0,01558877	LOC729351	8,157627618	8,366966602	6,904262868	7,035479167	6,996141408
ILMN_1764201	-0,01560625	MAP2	9,862518569	9,691709643	8,305137991	8,322171274	8,468186701
ILMN_1793474	-0,015611565	INSIG1	10,06805777	9,89284161	8,468308225	8,69015395	8,679869263
ILMN_3297996	-0,015624181	LOC728732	11,07917498	11,16802178	9,999310208	10,01631142	9,732769111
ILMN_2094360	-0,015658623	NR2F2	10,12240577	9,803054828	8,986252671	8,490588652	8,425662754
ILMN_1680738	-0,015675922	C5orf13	12,10850941	12,20754206	10,92245511	11,03092892	10,80584043
ILMN_1651237	-0,015716972	CDT1	10,07058812	10,11322499	8,363573503	8,668899576	8,916536081
ILMN_1795026	-0,015748931	FAM189B	11,78992627	11,59146206	10,02433894	10,35579131	10,42751803
ILMN_1731206	-0,015758908	NKD2	9,621368024	9,714613562	8,388788956	8,219823692	8,331125879
ILMN_1686961	-0,015826164	FGFBP3	9,159657334	9,183332601	7,734404719	7,803300042	7,866896296
ILMN_2410540	-0,015859339	CASP2	10,72430524	10,59322993	9,322102467	9,305573222	9,274883139
ILMN_1691119	-0,015877968	RNF122	8,366471603	8,132727927	6,952460762	6,878327382	6,824170855
ILMN_1702175	-0,015884914	ST7	8,672209121	8,881452585	7,243712582	7,252134404	7,550644182
ILMN_2051972	-0,015941845	GPC3	7,941838066	7,8676999	6,649658113	6,596484849	6,49198242
ILMN_1843198	-0,015969099		9,57465497	9,453541389	8,04964605	8,131254772	8,168527239
ILMN_1722713	-0,015971654	FBLN1	10,29244591	10,360043	8,843115455	9,100964343	9,027753356
ILMN_1665538	-0,015994615	SKP2	11,10068478	11,04053696	9,909221433	9,685138366	9,62239861
ILMN_181079	-0,016033875	WASF3	10,73067144	10,72934555	9,079540171	9,202736246	9,480033734

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ILMN_1745034	-0,016034375	SLC11A2	9,598046663	9,529736066	8,1634163	8,139986256	8,200312483
ILMN_2358560	-0,016039058	TIAM2	9,922255882	9,6727403	8,261518284	8,48563657	8,437587169
ILMN_3247163	-0,016064513	TET1	8,219484776	8,304773502	6,986992505	6,991271852	6,879404393
ILMN_1754489	-0,016071641	FBXL20	9,022204695	9,018377114	7,466597087	7,710148525	7,721847009
ILMN_1726388	-0,016073474	ACBD7	9,662852921	9,686657264	8,300363732	8,216506415	8,319803626
ILMN_2105983	-0,016075245	XRCC5	10,9207033	10,8192971	9,466263093	9,600276225	9,490053127
ILMN_2151488	-0,016089288	RMI1	9,478671527	9,439362345	8,308976393	8,186399702	7,99666086
ILMN_3248773	-0,016104414	C7orf40	8,296594314	8,252538046	6,922966596	6,925770925	6,887328
ILMN_1798654	-0,016133592	MCM6	12,57354425	12,56629337	11,00541605	11,22019061	11,2683433
ILMN_1697548	-0,016160574	LPHN2	11,49970974	11,18784427	10,09359419	10,08783523	9,844838819
ILMN_1675448	-0,016165515	ZFP36L1	10,30763757	10,16864835	9,048136367	8,682909569	8,766697646
ILMN_2189668	-0,016176438	NUDT11	10,12647751	10,31797128	9,02673955	8,88289343	8,823974677
ILMN_1728298	-0,016229072	SBK1	11,83444102	11,73164602	10,2381672	10,19564742	10,44732182
ILMN_1676709	-0,01623322	SDK2	8,826948541	8,432515348	7,153186066	7,166884082	7,193904491
ILMN_1772692	-0,016255535	DICER1	9,802696246	9,957472942	8,058621736	8,341216038	8,7058077
ILMN_1657796	-0,016292705	STMN1	11,19010753	11,20519933	9,792648864	10,03824538	9,81658314
ILMN_1758146	-0,016292973	SIRPA	8,713381345	8,305407657	7,0572723	6,928639689	7,05758249
ILMN_1709044	-0,016296915	TGIF2	9,955612755	9,879236213	8,511952366	8,430450647	8,524356431
ILMN_3239574	-0,016313325	SNORD3A	8,759921307	8,834046878	7,381566922	7,329040389	7,440994301
ILMN_3251672	-0,016319383	DSG2	8,739249879	8,667579093	7,345479678	7,09834932	7,294330804
ILMN_3242038	-0,016326587	GPX8	9,540854908	9,475505574	7,87204325	7,920632385	8,204270877
ILMN_1827736	-0,016331257		10,46790781	10,22602818	8,896224814	8,879366801	8,926627383
ILMN_1678678	-0,016376302	SLC37A4	11,3786143	11,09770878	9,526371272	9,876394945	9,898166365
ILMN_1728660	-0,01641208	PMPCB	10,04484546	10,07412296	8,688558638	8,770921809	8,658743828
ILMN_1803308	-0,016413672	LOC389895	9,028003819	8,944856433	7,467697754	7,618648256	7,616635753
ILMN_1801441	-0,016420075	RFTN2	9,542062178	9,706685382	8,062712318	8,290765751	8,328391402
ILMN_1708105	-0,016502096	EZH2	8,873891598	8,77230501	7,467022262	7,456100237	7,376901857
ILMN_1750051	-0,016517914	FLJ39827	8,94585106	8,810591574	7,519058054	7,470253136	7,424515685
ILMN_1777740	-0,016524423	C8orf55	10,76406419	10,58533234	8,759423055	9,147077931	9,423371998
ILMN_1681737	-0,016542046	TMSB15A	12,53364664	12,58798043	11,42641137	11,18576789	11,06370193
ILMN_1737184	-0,016552348	CDCA7	10,73828723	10,57758815	9,115529977	9,190679936	9,265114593
ILMN_1749821	-0,016616306	MED28	11,06671687	11,04544211	9,3917846	9,73656059	9,730321587
ILMN_3310351	-0,016629379	RNU6-15	11,49101552	11,85312412	10,52001263	10,1645921	10,24915925
ILMN_3280565	-0,016637489	LOC389342	12,25101568	12,21956005	10,91028291	10,71723658	10,78259943
ILMN_1829845	-0,016668191		9,008625708	8,82210417	7,365102372	7,110903545	7,515782153
ILMN_1671777	-0,01672617	FGF13	9,17664638	9,075013631	7,981260636	7,700417961	7,574927622

ILMN_3243644	-0,016727764	LOC100132564	10,87097962	10,99575832	9,520128858	9,31200878	9,543977114
ILMN_1815882	-0,016731615	HNRNPA1	9,413432029	9,662006204	7,991334325	8,154775933	8,220312498
ILMN_2215989	-0,016746837	NEFM	10,67727024	10,60750273	9,274456546	9,050777539	9,186133553
ILMN_1736682	-0,016763379	SPSB4	8,333169604	8,496225357	7,060599485	7,030122387	7,000302427
ILMN_3193918	-0,016804032	LOC100129580	8,719924854	8,557334399	7,261231411	7,037393725	7,156937511
ILMN_1754827	-0,016835218	LRRC45	8,577865718	8,62045858	7,011654759	7,04012425	7,240797439
ILMN_1717477	-0,016844375	PSD3	9,25830988	9,576198439	7,928850417	8,025871616	8,081336644
ILMN_1768721	-0,016930977	DPPA4	10,24103481	10,18462758	8,594270148	8,671503669	8,830683142
ILMN_1749834	-0,0169623	LOC388588	8,84566341	8,907674797	7,453389956	7,362290668	7,444508145
ILMN_3308335	-0,01697892	RNU6-1	11,61924736	11,81535988	10,38822684	10,13700638	10,28180138
ILMN_1673352	-0,017026476	IFITM2	13,16358921	13,15335359	11,56829362	11,53929912	11,76718465
ILMN_1749466	-0,017062439	VAT1L	8,536133976	8,121238279	6,791236694	6,790262009	6,813873848
ILMN_1703531	-0,017068901	S1PR3	11,13400973	11,04718743	9,682755218	9,758983293	9,598632545
ILMN_1752953	-0,017093769	BCL2L12	10,6610243	10,76979551	9,137043528	9,289972625	9,334554302
ILMN_1707763	-0,0171002	ST7	8,749760291	8,732436354	7,301160556	7,302422194	7,277311597
ILMN_1676515	-0,017118735	IMPDH1	9,551056414	9,554979779	7,907732895	7,905547631	8,176182123
ILMN_1740842	-0,0171279	SALL2	11,25077473	11,15823161	9,701211294	9,783904021	9,742847501
ILMN_2086890	-0,017195486	ANGPT1	8,156347585	8,294614333	6,745849236	6,795176783	6,802091659
ILMN_2256907	-0,017203513	MAPK10	8,482722573	8,645589034	7,023595709	6,927805749	7,175206343
ILMN_1729294	-0,017349277	RNF130	10,95845722	11,08434432	9,684380438	9,562151172	9,524075438
ILMN_1755974	-0,017381501	ALDOC	8,348398814	8,348871242	6,917893721	6,983386552	6,849551269
ILMN_1690870	-0,0174203	LOC401056	8,328343983	8,381424129	6,864154518	6,681358697	6,895967184
ILMN_1662658	-0,017458644	PUS1	9,791988325	10,02996448	8,340985688	8,423223919	8,516174392
ILMN_1809456	-0,017506369	CNTFR	10,66656037	10,57015213	9,321267979	8,739160614	9,04702155
ILMN_1720858	-0,017516717	C6orf115	9,984146006	9,772604598	8,603260784	8,343035718	8,259240413
ILMN_3226181	-0,017562374	NUDT7	8,347204803	8,471003473	7,064057721	6,911582563	6,889741703
ILMN_1799026	-0,017571381	PCDH18	10,268815	10,19926274	8,840159104	8,749736549	8,685577706
ILMN_1793672	-0,01762028	SIX5	10,36838606	10,29168931	8,624515511	8,627836184	8,898297355
ILMN_1735093	-0,017650596	TIMELESS	11,12391858	11,02435491	9,495317277	9,498661788	9,581530214
ILMN_3283742	-0,017681237	LOC646791	8,854067127	9,133074132	7,524893152	7,309957998	7,549728971
ILMN_1769694	-0,017735123	ACCN2	9,098659758	9,054217248	7,434367942	7,567018361	7,608639934
ILMN_1767470	-0,017867252	SCPEP1	10,05845609	9,88873945	8,261902793	8,470234348	8,486148032
ILMN_1740623	-0,017983638	PCDH8	8,908215762	8,696745405	7,35155917	7,391008177	7,189721955
ILMN_1789074	-0,018000917	HSPA1A	7,97482737	7,961238858	6,437976084	6,44207236	6,433706272
ILMN_2171023	-0,018056167	LGI1	8,154820827	8,048702419	6,594097031	6,55065323	6,53103746
ILMN_1696434	-0,0180716	LAMA1	9,114100664	9,072869568	7,618135789	7,601819789	7,522757182
ILMN_167644	-0,018074875	SLIT2	9,188792543	9,077455251	7,366035185	7,554770772	7,657918737

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ILMN_1660817	-0,018082465	DDB2	8,139860591	8,044611403	6,645229004	6,481673406	6,499941491
ILMN_1788457	-0,018113666	ABCC4	9,201553204	9,236387241	7,922261361	7,896135101	7,58884103
ILMN_1737484	-0,018159184	RTN4R	9,174083614	9,087111193	7,407489405	7,509966893	7,635866033
ILMN_2405031	-0,018200258	TRIM24	9,15873401	9,23188284	7,762043265	7,577251311	7,624658957
ILMN_1791202	-0,01820975	SMOC1	9,498101506	9,311057958	7,490949576	7,474849099	7,961321899
ILMN_1669940	-0,018287157	TMEM38B	8,714210004	8,623877814	7,178314846	7,239915858	7,064491324
ILMN_1651498	-0,018301331	GADD45G	9,231128644	8,883757817	7,398186504	7,460676726	7,458472872
ILMN_1672536	-0,018338526	FBLN1	11,39194319	11,20329573	9,478304069	9,903591077	9,786332407
ILMN_1898518	-0,018350145		9,30012899	9,09729261	7,70753733	7,767971882	7,56001175
ILMN_1725241	-0,018358251	GSTK1	8,741598721	8,749852252	7,22448086	7,247978834	7,169944999
ILMN_1676159	-0,018379781	MST4	8,859593255	8,852195769	7,310506995	7,209073117	7,287555273
ILMN_2232712	-0,018426533	MYO10	8,948854496	8,609487091	7,335278706	7,166710265	7,08633505
ILMN_2103761	-0,018434191	TLE4	11,00955316	10,82682664	9,393048805	9,386968475	9,290252294
ILMN_2326712	-0,018523073	BACE2	8,566707476	8,453869244	6,932167018	6,705544859	6,916676144
ILMN_2194009	-0,018570406	ABCC4	8,904426043	8,704661256	7,340758962	7,347220666	7,130616512
ILMN_1768973	-0,018585592	HIST2H2AC	9,508675519	9,80110211	7,926379431	8,163804145	8,198069698
ILMN_1660288	-0,018753066	C10orf41	8,163288482	8,285917971	6,742248508	6,640316041	6,616802684
ILMN_2396982	-0,018836731	BCL2L12	10,96650543	10,92107758	9,254680386	9,466029852	9,360702457
ILMN_1853824	-0,018922748	MGAT3	9,287673074	9,152735254	7,539997726	7,490424176	7,609799937
ILMN_1880012	-0,01896045	SEMA5A	8,571207914	8,58719778	6,864283791	7,109531248	7,005278275
ILMN_1793770	-0,019013302	DNAJB6	10,36328806	10,33971365	8,711674199	8,9736223	8,730849167
ILMN_1652913	-0,019017137	EZH2	8,575294792	8,8243034	7,027680473	6,923551738	7,16835126
ILMN_1701753	-0,019026508	LOC644063	11,13301512	11,2553419	9,501549898	9,222860062	9,645185783
ILMN_1651799	-0,01904172	SLC38A2	10,68097174	10,42963222	9,270607429	9,125513235	8,74440003
ILMN_2371251	-0,019071322	MPG	8,60316673	8,484900063	7,032505229	6,898133565	6,853446503
ILMN_3242315	-0,019075376	SNORD3D	9,369687454	9,268249724	7,730731211	7,647741618	7,661833802
ILMN_1684771	-0,019088839	PGRMC1	12,81456825	12,85312288	11,10338346	11,30616714	11,25746535
ILMN_1740487	-0,019108116	CMTM7	8,385738249	8,687667873	6,911143716	7,027868756	6,981121508
ILMN_1748281	-0,019140095	MAPK10	10,67920672	10,80086054	9,010750628	9,112269898	9,18046557
ILMN_1716988	-0,019142076	OPN3	8,591775466	8,940461086	7,106508199	7,17605849	7,233105207
ILMN_1664878	-0,019173984	NLRP2	8,171016787	8,349098812	6,67877148	6,664705374	6,652809406
ILMN_1750003	-0,019180881	CD200R1	8,521332717	8,416002539	6,80698659	6,751153284	6,826876381
ILMN_1799642	-0,019194416	TRIM24	10,23153254	10,11635095	8,712711797	8,496112187	8,451649743
ILMN_1779353	-0,019238226	PUS7	9,461029118	9,455521642	7,827377371	7,731226841	7,822466172
ILMN_1655498	-0,01933796	FLJ25404	9,34165906	9,46162522	7,476411645	7,664972394	7,895226115
ILMN_2379130	-0,019373816	IRAK1	8,776781914	8,590178739	6,861197566	7,163939537	7,05358998

ILMN_1728844	-0,019405644	PTPRN2	8,378465999	8,576432921	6,932202515	6,87569417	6,833926102
ILMN_1664912	-0,019434443	IL11RA	8,801270691	8,660454296	6,973176421	7,110200311	7,0834888
ILMN_1733519	-0,019468835	HMGB3	9,879546818	9,970406117	8,165941192	8,177778794	8,333623744
ILMN_1712523	-0,019488135	MAP6	10,19520059	10,18385306	8,617350095	8,337313434	8,504196357
ILMN_1798804	-0,019514772	SRPK1	10,12899431	10,12599947	8,371531941	8,460225173	8,504527862
ILMN_1771348	-0,019612712	ACN9	8,734971938	8,824491989	7,151920362	7,205693703	7,115797773
ILMN_1665425	-0,01966984	RPRM	9,136981081	9,066957172	7,252624633	7,298176855	7,483726425
ILMN_2343097	-0,019675991	NCALD	11,60241582	11,58471085	9,700964056	10,02729578	9,996027566
ILMN_1690170	-0,019711831	CRABP2	9,370535719	9,3404368	7,80983181	7,752494862	7,621069518
ILMN_1856480	-0,019745477		10,42951697	10,16752497	8,521311156	8,602587897	8,594802658
ILMN_1724480	-0,019808939	AXIN2	9,876031145	9,792044589	8,00044381	8,003931568	8,190775196
ILMN_1673991	-0,019844969	ATIC	11,54089108	11,42163145	9,739655987	9,931374004	9,781752586
ILMN_1682449	-0,019853122	ZNF518B	8,972196863	8,81101877	7,23475387	7,316559344	7,149839027
ILMN_1673962	-0,019860413	NUP205	10,49301236	10,32734055	8,823477066	8,802723221	8,641178906
ILMN_1788538	-0,019885547	NCALD	12,08743547	12,14372784	10,34938888	10,42401367	10,46680758
ILMN_3239361	-0,019933045	LOC100133298	8,721792955	8,876527162	7,102704229	6,942156849	7,14718559
ILMN_1674785	-0,019953798	COL2A1	9,459089901	9,38804426	7,843096486	8,000738693	7,657908373
ILMN_2404385	-0,019983841	REPIN1	11,91059034	11,66055025	9,559553772	10,03410008	10,2269894
ILMN_2364529	-0,020032135	EZH2	9,106803255	9,15533993	7,394250314	7,375743642	7,453927405
ILMN_1682699	-0,020038599	PBX2	10,17719272	10,01627212	8,238510895	8,250249864	8,417354351
ILMN_1760490	-0,02008095	ACVR1	9,045973585	9,094279102	7,441931482	7,35622168	7,344822455
ILMN_1652975	-0,020090374	DLK1	8,042540069	8,371988212	6,587373913	6,596733752	6,541579445
ILMN_1744795	-0,020097165	TBL1X	10,5811763	10,55570801	8,680129109	8,712196892	8,926138221
ILMN_2074860	-0,020119821	RN7SK	9,290362732	9,46283961	7,756023476	7,445234149	7,680330814
ILMN_3272603	-0,02013231	FAM60A	10,3880765	10,47323736	8,898084043	8,993383926	8,663478407
ILMN_1701441	-0,020274146	LPAR1	9,487697821	9,441124971	7,865841699	7,793120515	7,680818204
ILMN_3238435	-0,020298076	SNORA12	9,05027148	9,11700673	7,369428567	7,15933347	7,375734461
ILMN_2410938	-0,020298396	SMOC1	10,97800264	10,76467582	8,985422646	9,224100655	9,152531904
ILMN_2225548	-0,020302182	ZNF521	8,480314558	8,301248101	6,771028615	6,565965536	6,584572624
ILMN_1707240	-0,020351649	PTBP2	9,659308918	9,748368993	8,151678437	8,165694761	7,921840587
ILMN_1706498	-0,020434277	DSE	8,995207657	8,966751747	7,368535852	7,1595854	7,192368094
ILMN_1782412	-0,020484554	IRX2	11,59559442	11,62182481	9,763646405	9,781168541	9,915088306
ILMN_2086095	-0,020502209	ID2	9,229341049	9,08664803	7,551069355	7,49773393	7,326828276
ILMN_1778444	-0,020508085	FKBP5	10,12250018	10,18904083	8,392551535	8,552535875	8,43127739
ILMN_1739942	-0,020685107	FAM117B	10,43576118	10,495962	8,762817637	8,895698199	8,694933211
ILMN_2111237	-0,020729087	MN1	10,05018973	9,910834803	8,423007911	8,10860605	8,111025653
ILMN_169594	-0,020760986	TRNP1	8,379202918	8,427688437	6,73345377	6,614438965	6,61466696

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ILMN_1767365	-0,02077013	PAK1	8,803952192	9,035057004	7,208637551	7,211568924	7,186437011
ILMN_1792389	-0,020773366	RNF165	10,7683758	10,61612736	8,618380178	8,798221501	9,009765179
ILMN_3178258	-0,020774495	FABP5L2	8,376808589	8,543635661	6,709308616	6,633378122	6,729889286
ILMN_1742382	-0,020884807	RIMS3	9,445313437	9,503309931	7,542966584	7,632351198	7,773447031
ILMN_1838863	-0,020899161		10,97516097	10,95382033	8,908372769	9,003595068	9,293656053
ILMN_1805132	-0,020987148	PCDH19	10,36947362	10,33510863	8,471400255	8,343411656	8,603259527
ILMN_1862217	-0,021000582		8,347364994	8,235029259	6,549566747	6,474903783	6,463012457
ILMN_3246608	-0,021122024	CENPV	12,02062347	12,2684861	10,17848495	10,17316383	10,47767237
ILMN_1756755	-0,02125724	LINGO1	9,495956184	9,439768962	7,513773536	7,66617537	7,702379919
ILMN_1800331	-0,021349882	PTCH1	8,922858264	8,884228383	6,930036639	6,843794719	7,146408191
ILMN_1729142	-0,021507959	CENPV	13,03754918	12,87454045	10,65423172	10,974856	11,27127999
ILMN_1669323	-0,021589168	BACE2	8,823368148	8,894589542	6,961196916	6,959975036	7,065951989
ILMN_1740426	-0,021642067	RASD1	9,079561015	9,160653417	7,180047281	7,250733188	7,338194011
ILMN_1805973	-0,021666567	GPR19	9,885030062	9,781494409	7,911376209	7,983760162	7,996811892
ILMN_1808824	-0,021709023	NEBL	8,812283771	8,673081025	6,938198912	7,041521519	6,843526812
ILMN_2348975	-0,021858906	NASP	10,25095953	10,03134772	8,084815982	8,386157234	8,301646252
ILMN_1704537	-0,02189872	PHGDH	12,74271912	12,70829406	10,51177359	11,02662337	10,98281612
ILMN_2413833	-0,021921338	TOX3	9,12782216	9,097650118	7,385341263	7,494320733	7,18273912
ILMN_1741566	-0,021940482	BMP7	10,83408518	10,63094753	8,566461324	8,794540701	8,934235581
ILMN_1659990	-0,022000503	C7orf68	9,051677923	9,282733594	7,327827197	7,290535469	7,340577079
ILMN_1777233	-0,022029929	E2F2	10,8220227	10,74039882	8,688273195	9,062776909	8,966921051
ILMN_3237946	-0,022108663	LOC100134134	12,97384271	12,67801304	10,59762447	10,86929915	11,00899936
ILMN_1697460	-0,022122578	REEP6	8,801636577	8,765513983	6,907071756	6,785462378	6,896005982
ILMN_1729749	-0,022132221	HERC5	10,28226974	10,10402645	8,160911763	8,31419671	8,325594067
ILMN_1790518	-0,022350608	PHF16	9,897490673	9,765344955	7,861060206	7,879938446	7,927667307
ILMN_2134039	-0,02270881	ACN9	9,086277204	9,192118985	7,505738611	7,158701259	7,123350382
ILMN_1730084	-0,022804945	COMT	8,865033083	8,913196968	6,947252479	6,996421811	6,961439583
ILMN_1833858	-0,023004411		10,01467703	10,06412053	8,14191422	8,112362997	8,072637665
ILMN_1710124	-0,023082683	CMTM8	8,557599356	8,422498079	6,62016007	6,467750512	6,461972789
ILMN_2142979	-0,023100034	PTBP2	9,561314707	9,620931695	7,780043997	7,590443187	7,585031852
ILMN_1788213	-0,023151396	FRAT2	9,709627314	9,649727112	7,596039629	7,663114613	7,742085686
ILMN_1799836	-0,02317323	HOXA2	8,461736202	8,558080504	6,56775574	6,589370883	6,550539802
ILMN_1784553	-0,023490873	SDC2	10,4869407	10,40252158	8,48779667	8,381414813	8,414322153
ILMN_1694491	-0,023569126	CCNG1	11,7745935	11,74523149	9,984499865	9,960018829	9,656536129
ILMN_1780671	-0,023577004	PLEKHG3	8,964315346	8,779495657	6,878044711	6,880541513	6,818645502
ILMN_2229877	-0,023592562	PCDH18	11,87461683	11,77163281	9,85231927	9,890592113	9,777101576

ILMN_1809490	-0,02370391	NCKAP5	9,44489681	9,430797944	7,316839334	7,560928655	7,454798843
ILMN_2361096	-0,023870029	DCX	9,765221532	9,572600591	7,589364084	7,595432534	7,613717025
ILMN_2373791	-0,023949879	ENPP2	10,54073639	10,53989594	8,544000691	8,516978133	8,488572724
ILMN_1674243	-0,024070302	TFRC	11,98740432	11,78450407	9,873032239	9,7449374	9,781161473
ILMN_1767900	-0,024161456	LGI2	9,082442188	8,874998887	6,762110006	6,86738852	6,937812559
ILMN_1691180	-0,024187635	OTX1	8,565187292	8,436242999	6,53914698	6,359007789	6,380113121
ILMN_1790537	-0,024343252	C16orf75	10,32353939	10,31219893	8,072537331	8,308819357	8,309975877
ILMN_1811367	-0,024418081	MAT2B	11,33360392	11,19522084	9,425092727	9,261160807	9,063789274
ILMN_2131861	-0,024438308	SOCS2	10,3350936	10,4199022	8,201410326	8,184158056	8,360870067
ILMN_1725417	-0,024589409	NELL2	11,89871976	11,64027248	9,753748393	9,430157122	9,596507855
ILMN_1774982	-0,024728731	CDC42EP5	8,506406146	8,711904275	6,555344134	6,50720203	6,537485064
ILMN_2314140	-0,024844439	PAX6	9,859757423	9,858274657	7,706170666	7,818894161	7,759563218
ILMN_1703279	-0,024894714	CXorf57	8,847159539	8,950296566	6,80299028	6,69772956	6,801634856
ILMN_2060413	-0,024972145	CD24	12,89861457	12,82963139	10,87304	10,67549095	10,67644024
ILMN_2363658	-0,025017912	PXDN	11,36156921	10,95947832	9,028426525	8,781682075	8,947024788
ILMN_1659027	-0,025360419	SLC2A1	13,31281553	13,12606231	11,03269678	11,09662831	11,02870285
ILMN_1683664	-0,025423985	LOC650369	12,41347136	12,40984926	10,31018614	10,24903846	10,2264606
ILMN_1815308	-0,025442428	SDC1	11,081109	10,97344743	8,755768335	8,973486888	8,875937423
ILMN_1773002	-0,025683534	LOC730417	9,892666458	9,857946606	7,855246385	7,743025145	7,620229935
ILMN_1780799	-0,025782873	ENPP2	10,66792074	10,61444632	8,381808077	8,420102325	8,462719216
ILMN_1672022	-0,025902805	EPHA4	11,7805554	11,41855697	9,139052584	9,412193624	9,407532264
ILMN_1668345	-0,026209393	OAF	9,253358079	9,112597647	7,083424531	6,88781438	6,874492357
ILMN_2390919	-0,026285361	FBLN2	8,900780452	8,791775968	6,577953697	6,459882219	6,602687795
ILMN_1751886	-0,026318742	REC8	9,045551922	9,106206389	6,825523211	6,711907342	6,861528746
ILMN_1791366	-0,026321196	RCOR2	11,17505913	11,06784586	8,623846475	8,859873969	8,956714753
ILMN_3241081	-0,026409325	LOC100134361	9,23034719	9,499773359	7,020470909	7,077291713	7,22309481
ILMN_1793990	-0,026513254	ID2	10,30808871	10,40103372	8,102813635	8,19454385	8,118957036
ILMN_1803593	-0,026576859	WNT3	9,603225063	9,571055808	7,13955624	7,195913864	7,394956419
ILMN_1743241	-0,026603261	ARL4A	9,677359798	9,775824413	7,620650657	7,764793012	7,420376637
ILMN_1760315	-0,02665744	VWCE	9,531017349	9,231348526	6,866138264	7,064409538	7,138358269
ILMN_3251085	-0,026805675	RBBP4	10,74184805	10,76020199	8,680787961	8,537601454	8,39574463
ILMN_2403247	-0,026921534	CMTM7	10,0617564	10,03653804	7,867667807	7,737776301	7,71457246
ILMN_1808238	-0,027061632	RBPMS2	12,22295436	11,99809944	9,657172531	9,582622078	9,82039959
ILMN_1881909	-0,027220555		11,577673	11,46198304	9,470367626	8,945053165	9,086088797
ILMN_1741281	-0,028073505	RNF175	8,989343794	8,938742827	6,535868123	6,535127576	6,581990279
ILMN_1808122	-0,028253646	LOC652377	9,043407139	9,205490748	6,742617585	6,634800025	6,756233331
ILMN_165305	-0,028295084	SOX3	12,92220612	12,79556514	10,36580422	10,42511244	10,45646969

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ILMN_1720511	-0,028403122	LRRN1	10,35843314	10,18387166	7,765703302	8,012296743	7,843959043
ILMN_1653711	-0,028539858	FZD2	11,58416307	11,50699359	8,948613132	8,99322464	9,168854807
ILMN_3305169	-0,028574329	LOC728809	13,20157729	13,12431712	11,04378655	10,43615491	10,60696118
ILMN_1696956	-0,02860525	ARID3B	9,984486998	9,893368723	7,376441607	7,375880844	7,538478292
ILMN_1662359	-0,028729464	HIST1H4K	10,36440968	10,55547773	7,951316389	7,904462421	8,091663492
ILMN_1786197	-0,029603022	NR2F1	11,78007621	11,47768164	9,114714114	8,833677624	9,047255583
ILMN_1677723	-0,030492728	ANGPT1	9,436816657	9,325052311	6,908959782	6,722133538	6,718347736
ILMN_3210741	-0,030596664	LOC642956	9,176055404	9,2037813	6,588024077	6,609528739	6,594809896
ILMN_1687301	-0,03091102	VCAN	11,4373051	11,04002791	8,598922846	8,563543932	8,521399856
ILMN_1670331	-0,031090951	LOC650757	10,42886908	10,3325961	7,284799185	7,674520638	7,887058909
ILMN_1775405	-0,031144326	ARL4A	10,96783638	10,91650043	8,296481502	8,380983432	8,278544672
ILMN_1774602	-0,031714458	FBLN2	9,537078958	9,32848196	6,639888627	6,70969065	6,723730862
ILMN_1698934	-0,032091047	CMTM7	11,95749524	11,87358691	8,965255911	9,176000826	9,251020535
ILMN_1652762	-0,032312696	HIC2	10,60591389	10,39106682	7,646435917	7,606696399	7,743955518
ILMN_3239861	-0,033700811	C10orf140	11,21068349	11,03656788	8,106307287	8,200512742	8,275896147
ILMN_2094061	-0,034461022	IMPA2	10,22273537	10,24140704	7,306699214	7,357464801	7,303374953
ILMN_2237252	-0,036154993	LY6H	10,03696382	9,897754952	6,851507236	6,658874103	6,883341529
ILMN_1794742	-0,036337492	HES5	12,5276974	12,46921707	8,878629777	8,958191675	9,608851643
ILMN_3245650	-0,037293503	IGDCC3	10,61004668	10,30698201	7,279860982	7,138621719	7,222996735
ILMN_2146761	-0,037667111	FABP5	9,856917658	9,860465308	6,6970288	6,814806749	6,63686374
ILMN_1695606	-0,03775626	EFNB3	10,81476612	10,67711542	7,40320416	7,408984482	7,557025211
ILMN_2286987	-0,038337544	BTBD17	12,16676759	12,22443326	8,383936269	8,539673979	9,17035938
ILMN_1660501	-0,03852538	LY6H	10,01230595	9,966154435	6,736738424	6,731246217	6,693659312
ILMN_1670926	-0,040599034	CHST15	10,05049946	9,845614522	6,293859602	6,370738772	6,527590356
ILMN_1797519	-0,041402318	DLK1	9,914968583	9,987669165	6,443064999	6,450839884	6,443754636
ILMN_1744635	-0,041865262	IGDCC3	13,31325037	12,97712746	9,332663324	9,382893178	9,606692785
ILMN_2219767	-0,042585141	MYCN	12,17722327	12,10649209	8,534864089	8,734334183	8,492451515
ILMN_3266606	-0,042659318	FABP5L2	10,42274513	10,39543331	6,82410528	6,74511569	6,761107418
ILMN_1722898	-0,042939689	SFRP2	12,75499064	12,55823984	9,301177958	9,041743312	8,846054367
ILMN_1808587	-0,044096329	ZFHX3	11,23474889	11,09887289	7,459525851	7,250243809	7,374709592
ILMN_1696339	-0,044387553	ZIC2	10,92189679	10,81193518	7,044874181	7,113066494	7,084394019
ILMN_1784709	-0,045983074	GNPDA1	10,3998832	10,5141147	6,609369149	6,626268608	6,549195244
ILMN_1704398	-0,046358368	FZD9	10,69377896	10,57617435	6,707102629	6,522124524	6,665745598
ILMN_1701603	-0,046526453	ALPL	10,72179847	10,49620041	6,564454235	6,50493603	6,637499224
ILMN_1667381	-0,046567842	CAMKV	10,69410249	10,61835712	6,692827991	6,66607834	6,681523448
ILMN_1748697	-0,046918013	LIN28B	10,68821183	10,54566148	6,593426113	6,553746891	6,609243528

ILMN_1732296	-0,04722886	ID3	11,35944797	11,18237253	7,332461351	7,273179716	7,183581572
ILMN_1690223	-0,051671145	CNTNAP2	11,90286148	11,5241845	7,330407806	7,316351797	7,226095562
ILMN_1676504	-0,054338117	RPRML	11,6359746	11,64754441	7,025638063	7,005695457	7,023775419
ILMN_1762436	-0,054621065	UBB	13,37021907	13,51279654	8,793543877	8,803919535	8,832593184
ILMN_3287583	-0,060334497	LOC648390	12,07861263	11,96022593	6,939082891	6,818065424	6,844953153
ILMN_2191428	-0,064183345	UBB	13,98478425	13,76260306	8,365383854	8,449778776	8,381348602
ILMN_1658040	-0,066411992	CRABP1	12,74556019	12,78923892	7,200488543	7,103112089	7,101802175

Supplementary Table 2

Term	Overlap	P-value	Adjusted P-value	Z-score	Combined Score	Genes
MP0002080_prenatal_lethality_	161/1685	0.00000000000000000001379392	0.00000000000000000005752 06404	-1.205.716.411.170.380	5.896.835.026.240.770	SEMA5A;CCNT2;RIF1;TFRC;TRRAP;ITSN1;CCNF;GMNN;HNRNPU;CDC20;FBL;PNN;EDNRB;ZMIZ1;MAGOH;CHEK1;ENPP2;RTTN;FBXO5;PDGFRB;ACVR1;DYNC2H1;MAP2K4;MAP2K1;SMARCC1;FBXW7;LIG3;DICER1;LEMD3;MID1;CDC25A;MTAP;MYCN;SMO;MTHFD2;CCNE1;TIMELESS;TFAM;S100A4;ADNP;FKBP4;VCL;LY6E;DNMT1;PAXIP1;CTBP2;CUL1;CDCA8;LPAR4;PDS5B;ZFP36L1;GJC1;CCNB2;LDHA;RAD21;DPH3;OTX1;ECT2;NKX2-5;WNT3;SMAD4;STIL;POU2F1;UBE2I;JUP;XRCC5;WFS1;PTCH1;XRCC1;CDC7;NR2F2;BMP7;SMAD5;LSM4;SMARCA4;GCLC;NASP;HNRNPC;OGT;EIF4G2;EZH2;FEN1;MCM7;CHD7;SLC2A1;MTR;BRCA1;KIF11;HK2;GLI2;SIP1;CHAF1A;ZIC2;SIN3A;MTERFD1;DNMT3B;PHGDH;JARID2;WDR36;MYST1;ELOVL4;PRMT1;TOP3A;PAX6;KIF22;SAFB;ARID1A;RGMA;GNL3;DDB1;CCNA2;UGDH;VCAN;COL2A1;RAD51C;SLC25A19;PIGA;MCM3;EXOC4;MCM4;RAPGEF2;STRAP;BIRC5;EXOC6;DSG2;MCM6;MCM2;YAP1;HDAC2;PCNA;HDAC1;SLC20A1;UHRF1;LAMA1;ODC1;CXCR4;ACVR1B;CENPA;DLL1;CDC42;FBXL20;WRN;DNAJB6;RAB23;E2F3;RBBP6;E2F4;MTA2;ANGPT1;WTAP;ARID3B;SSRP1;REC8;ACVR2A;SULF2;FKBP1A;PRKRA;CARM1;IMPDH2;BCOR;LGR4
MP0002085_abnormal_embryonic_tissue_	86/765	0.00000000000000035504407241681	0.00000000000004935112606593653	-14.432.576.293.879.100	4.422.114.793.275.600	FEN1;TFRC;TRRAP;CCNF;GMNN;CHD7;HNRNPU;BRCA1;GLI3;GLI2;EDNRB;ZIC2;SALL2;ZMIZ1;CHEK1;ENPP2;DNMT3B;HOXA2;RTTN;PHGDH;FBXO5;JARID2;ACVR1;DYNC2H1;SMARCC1;PRMT1;FBXW7;SHROOM3;DICER1;ARID1A;CDC25A;RGMA;UGDH;COL2A1;MYCN;SMO;SLC25A19;MCM3;EXOC4;BIRC5;TFAM;STRAP;RAPGEF2;HOXB2;ADNP;VCL;MCM2;YAP1;PAXIP1;CTBP2;UHRF1;CUL1;FBLN1;ACVR1B;CENPA;DLL1;ZFP36L1;CDC42;GJC1;RAB23;DPH3;SLIT2;NKX2-5;FZD1;SMAD4;STIL;EGR2;UBE2I;FZD2;PTCH1;XRCC1;SSRP1;NR2F2;ARID3B;SMAD5;BMP7;ACVR2A;SMARCA4;HIPK2;FKBP1A;GCLC;SP1;LEP;BCOR;EIF4G2;EZH2
MP0001697_abnormal_embryo_size_	58/471	0.00000000000016084571381881169	0.00000000013414532532488894	-15.758.928.762.541.800	3.582.335.033.337.350	TOP2B;FEN1;CCNF;SLC2A1;BRCA1;KIF11;GLI3;GLI2;LMNB1;CDC20;ZMIZ1;DNMT3B;RTTN;PHGDH;JARID2;ACVR1;HELLS;MAP2K1;FBXW7;NCOA3;LIG3;PAX6;DICER1;VCAN;MYCN;COL2A1;RAD51C;SMO;CCNE1;MTHFD2;SLC25A19;EXOC4;RAPGEF2;VCL;YAP1;PAXIP1;CTBP2;LAMA1;CUL1;LPAR4;CENPA;ZFP36L1;GJC1;CDC42;DNAJB6;DPH3;GPC3;RBBP6;NKX2-5;WNT3;SMAD4;POU2F1;XRCC1;CDC7;SMAD5;SULF2;NASP;EZH2
MP0001672_abnormal_embryogenesis/_devel_	57/468	0.00000000000038412672914675 34	0.00000000022882978007742307	-15.951.683.393.954.600	35.409.614.923.092.300	FEN1;TFRC;GMNN;SLC2A1;HNRNPU;KIF11;BRCA1;HK2;GLI3;PPP1CC;PNN;MTERFD1;DNMT3B;ENPP2;FBXO5;ACVR1;MYST1;FBXW7;SHROOM3;LIG3;KIF22;MID1;CDC25A;RGMA;CCNA2;UGDH;MYCN;SMO;CCNE1;MCM4;VCL;YAP1;PAXIP1;HDAC1;LAMA1;SLC20A1;UHRF1;LPAR4;CENPA;ZFP36L1;DPH3;RBBP6;E2F4;NKX2-5;SMAD4;STIL;POU2F1;WTAP;JUP;PTCH1;ARID3B;SMAD5;ACVR2A;GCLC;EIF4G2;LGR4;EZH2
MP0005380_embryogenesis_phenotype_	57/468	0.00000000000038412672914675 34	0.00000000022882978007742307	-1.581.185.461.866.830	3.509.922.241.054.210	FEN1;TFRC;GMNN;SLC2A1;HNRNPU;KIF11;BRCA1;HK2;GLI3;PPP1CC;PNN;MTERFD1;DNMT3B;ENPP2;FBXO5;ACVR1;MYST1;FBXW7;SHROOM3;LIG3;KIF22;MID1;CDC25A;RGMA;CCNA2;UGDH;MYCN;SMO;CCNE1;MCM4;VCL;YAP1;PAXIP1;HDAC1;LAMA1;SLC20A1;UHRF1;LPAR4;CENPA;ZFP36L1;DPH3;RBBP6;E2F4;NKX2-5;SMAD4;STIL;POU2F1;WTAP;JUP;PTCH1;ARID3B;SMAD5;ACVR2A;GCLC;EIF4G2;LGR4;EZH2
MP0003077_abnormal_cell_cycle_	32/180	0.00000000000739323230 6039916	0.00000000280270715601695 03	-16.993.730.942.054.700	334.652.106.219.851	PAXIP1;RIF1;HDAC1;CCNF;GMNN;CDCA8;BRCA1;CENPA;CDC20;EDNRB;PTTG1;MAGOH;CHEK1;E2F3;E2F4;FBXO5;NKX2-5;TMPO;MYST1;CDC7;LIG3;FANCC;DICER1;CDC25A;GNL3;HIPK2;CCNA2;BIRC5;MCM4;HSPA1B;MCM2;HSPA1A
MP0003861_abnormal_nervous_system_	84/855	0.00000000000089727605859559 5	0.00000000009354102910859077	-14.432.218.881.887.400	33.327.776.027.844.400	TOP2B;FEN1;TFRC;CHD7;CCNF;BRCA1;PTPRF;LMNB2;GLI3;GLI2;ZIC2;SALL2;MDK;MAGOH;ENPP2;DNMT3B;HOXA2;CASP2;PHGDH;NEFM;RTTN;JARID2;DYNC2H1;ACVR1;MAP2K4;EPHA4;SMARCC1;FBXW7;SHROOM3;SOX11;PAX6;POU3F2;MID1;RGMA;DDB1;SFRP2;MYCN;COL2A1;SMO;SLC25A19;PIGA;MTF2;DCX;RAPGEF2;STRAP;HOXB2;ITGA6;ADNP;VCL;RTN4R;DNMT1;CTBP2;UHRF1;LPAR1;CXCR4;FBLN1;ACVR1B;DLL1;CENPA;ZFP36L1;GJC1;CDC42;EFNB3;RAB23;DPH3

						;OTX1;FZD1;GDF11;EGR2;STIL;SMAD4;FZD2;PTCH1;NR2F1;FZD9;ARID3B;SMAD5;BMP7;HIPK2;SMARCA4;FKBP1A;PLP1;BCOR;EZH2
MP0000350_abnormal_cell_proliferation_	43/308	0.000000000004502786846927306	0.000000001877662115168686 4	-16.407.354.709.390.800	3.296.768.895.205.330	DNMT1;FEN1;PAXIP1;RIF1;SLC20A1;HDAC1;CCNF;GMNN;BRCA1;PTPRF;ZFP36L1;LMNB1;CDC20;EDNRB;PTTG1;ZMIZ1;CHEK1;ENPP2;E2F3;SKP2;NKX2-5;PDGFRB;HELLS;SMAD4;CBX2;NCOA3;DICER1;SULF1;CDC25A;GNL3;HIPK2;SULF2;TIAM1;GCLC;CCNE1;SDC1;MCM4;RAPGEF2;DSG2;OGT;HSPA1B;HSPA1A;MCM2
MP0000313_abnormal_cell_death_	60/535	0.000000000002241756080670778 8	0.000000001073223601408420 6	-1.445.657.924.631.390	29.856.593.417.254.300	FEN1;ITPRIP;TFRC;MPG;BRCA1;CDC20;CHEK1;DNMT3B;ENPP2;CASP2;SKP2;PDGFRB;HELLS;MAP2K1;DICER1;LEMD3;CDC25A;GNL3;DDB2;TIAM1;ILF3;SLC25A19;FANCD2;BIRC5;TFAM;DSG2;S100A4;MTFR1;VCL;DNMT1;PAXIP1;LAMA1;HDAC1;CDCA8;FOXO3;CENPA;ZFP36L1;UNG;BCL2L12;GJC1;WRN;E2F2;RBBP6;NKX2-5;GDF11;STIL;XRCC5;PTCH1;TNFRSF10B;ARID3B;SMAD5;HIPK2;MAPK10;GCLC;CCNG1;PLP1;OGT;ADA;HSPA1B;HSPA1A
MP0002081_perinatal_lethality_	88/981	0.000000000002316309931097310 6	0.000000001073223601408420 6	-12.733.438.087.964.400	26.297.859.079.842.000	TOP2B;CNTFR;FEN1;CHD7;PSIP1;SLC2A3;BRCA1;GLI3;LMNB2;GLI2;LMNB1;PNN;EDNRB;CREB3L2;DNMT3B;SMARCAD1;CASP2;HOXA2;KIF1B;JARID2;GUSB;TMEM38B;NEO1;PDGFRB;ACVR1;HELLS;MAP2K1;ELOVL4;FBXW7;SHROOM3;PAX6;SOX11;DICER1;SAFB;ARID1A;POU3F2;RAD23B;FBXO11;PIAS1;DDB1;ILF3;CREB1;COL2A1;MYCN;DPPA4;SMO;FANCD2;PIGA;KCNQ2;MCM4;TFAM;ITGA6;HOXB2;KHDRBS1;HDAC2;PAXIP1;SRC;LPAR1;CXCR4;FBLN1;PDS5B;DLL1;PPM1G;NUAK1;LDHA;GPC3;NDN;SLIT2;OTX1;FLNC;MTA2;GDF11;EGR2;POU2F1;FZD2;CBX2;NR2F1;NR2F2;SULF1;MLL5;BMP7;ACVR2A;DLK1;SMARCA4;FKBP1A;CARM1;BLMH;LGR4
MP0002161_abnormal_fertility/fecundity_	90/1088	0.000000000070007105452838 62	0.000000002085211640988121 6	-12.789.629.970.887.000	2.261.949.705.899.100	SPAG16;PANK2;RIF1;CHD7;HMGB2;PSIP1;SLC2A3;BRCA1;GLI2;CDC20;SOX3;RPS6KA3;PPP1CC;PTTG1;EXO1;MDK;SIX5;DSE;SMARCAD1;GUSB;PDGFRB;EPHA4;ELOVL4;STRBP;NCOA3;SLC11A2;PAX6;ACSL4;DICER1;SAFB;RAD23B;CCNB1IP1;ASPM;RAD51C;DPPA4;CCNE1;PIGA;DMC1;MTF2;DCX;CKS2;PICK1;FKBP4;KHDRBS1;HDAC2;DNMT1;PCNA;AIRE;SRC;STK39;ADCY3;HMMR;FOXO3;SLC9A1;NKD2;CCNB2;UBB;CBS;RAD21;USP1;CHST15;FYN;S1PR3;E2F4;OTX1;MTA2;PAIP2;XRCC5;PTCH1;HMGA1;FANCC;NR2F2;EIF2AK4;SULF1;MLL5;SMAD5;BMP7;FANCG;ACVR2A;REC8;TARBP2;DLK1;SULF2;CNOT7;LEP;ALPL;PTX3;BRWD1;OGT;LGR4
MP0002086_abnormal_extraembryonic_tissu_	56/550	0.000000000302032703938 21644	0.000000008396509169482417	-13.466.663.122.830.600	2.194.105.202.145.640	FEN1;TFRC;TRRAP;GMNN;CCNF;HNRNPU;BRCA1;EDNRB;ZMIZ1;ENPP2;FBXO5;PDGFRB;IL10;MYST1;MAP2K1;FBXW7;DICER1;LEMD3;RAD23B;UGDH;MYCN;SMO;CCNE1;SLC25A19;PIGA;EXOC4;RAPGEF2;BIRC5;FKBP4;YAP1;DNMT1;PAXIP1;CTBP2;LAMA1;SLC20A1;HDAC1;UHRF1;SRC;ACVR1B;CENPA;ZFP36L1;GJC1;DNAJB6;CBS;DPH3;GPC3;NKX2-5;WNT3;SMAD4;POU2F1;ANGPT1;JUP;SMAD5;ACVR2A;SP1;EZH2
MP0001929_abnormal_gametogenesis_	56/595	0.000000003861334458885613 4	0.000000089454248297516 7	-1.542.899.525.941.970	21.487.889.862.831.800	SPAG16;PANK2;HMGB2;BRCA1;CDC20;PPP1CC;SOX3;SIX5;EXO1;CASP2;SMARCAD1;STRBP;DICER1;SAFB;RAD23B;CCNB1IP1;ASPM;ARL4A;RAD51C;FANCD2;PIGA;DMC1;CKS2;PICK1;FKBP4;PCNA;CXCR4;PDS5B;FOXO3;UBB;RAD21;USP1;FYN;OTX1;PAIP2;E2F6;EGR2;PTCH1;HMGA1;CDC7;FANCC;MERTK;MLL5;BMP7;SMAD5;REC8;ACVR2A;TARBP2;FANCG;CNOT7;LEP;ALPL;BRWD1;LGR4;HSPA1B;HSPA1A
MP0000001_mammalian_phenotype_	248/3773	0.000000000000006075650175858	0.000000000000001266773061666496	-0.624198650234787 9	21.411.451.622.245.300	TFRC;ITSN1;NUDT1;HNRNPU;CDC20;PNN;SOX3;FRAT2;EDNRB;ZMIZ1;STMN1;MAGOH;CHEK1;HOXA2;FBXO5;SLC12A8;DYNC2H1;EPHA4;SLC11A2;IFRD1;ACSL4;DICER1;SFRP2;KCNQ2;TFAM;TXNIP;HOXB2;ULK1;ALDH7A1;PAXIP1;AIRE;CRABP1;LPAR1;LPAR4;GJC1;LDHA;DPH3;NKX2-5;FZD1;EGR2;JUP;XRCC5;RAB3IP;PBX2;XRCC1;CDC7;EIF2AK4;NR2F2;GADD45G;SMARCA4;NR2F6;POLA1;COL9A1;ID3;EZH2;TOP2B;FEN1;MTMR14;ICA1;BRCA1;KIF11;GLI3;PTPRF;GLI2;LMBR1;MTERFD1;JARID2;IL10;HELLS;MYST1;ELOVL4;LEPRE1;DUSP1;NCOA3;STRBP;IL18;PAX6;KIF22;IL17RD;RGMA;DDB2;DDB1;UGDH;BACE2;COL2A1;RAD51C;PIGA;DMC1;RAPGEF2;PCYOX1;MATN2;SLC20A1;ODC1;LRRC17;ADCY3;CXCR4;CENPA;UNG;WRN;MGAT3;GPC3;USP1;PLAGL2;JAM2;GDF11;GDF15;SULF1;TARBP2;SULF2;FKBP1A;FABP5;PLP1;LGR4;HSPA1B;HSPA1A;SEMA5A;ITPRIP;RIF1;GMNN;PPP1CC;SALL2;ENPP2;SMARCAD1;PDGFRB;MAP2K4;MAP2K1;FBXW7;VPS33A;ATP11C;LIG3;ZBTB33;MID1;POU3F2;CDC25A;MYCN;SMO;CCNE1;FANCD2;COL4A6;S100A4;FKBP4;VCL;FKBP5;KHDRBS1;DNMT1;INSIG1;IREB2;GLT8D1;CUL1;LTBP4;FBLN1;FOXO4;STK4;FOXO3;KLC1;ZFP36L1;SLC9A1;TMEM12

						3;BAG4;EFNB3;IRAK1;NDN;OTX1;COX10;SMAD4;STIL;POU2F1;WFS1;PTCH1;CBX2;FANCC;MLL5;SMAD5;BMP7;GCLC;MKRN1;ALPL;PHF16;BRWD1;OGT;PHF17;SLC26A6;EIF4G2;CHD7;SLC2A1;HMGB3;PSIP1;LDB2;LMNB1;SCPEP1;ZIC2;SIN3A;DSE;DNMT3B;GUSB;SLC37A4;ABCC4;TGIF2;SHROOM3;AXIN2;ARID1A;RAD23B;CCNA2;VCAN;CREB1;DPPA4;DCX;MCM3;BIRC5;MCM4;MCM2;BCAT2;SLC25A13;HDAC2;LAMA1;HDAC1;SRC;UHRF1;NRXN2;ACVR1B;NR2C1;DLL1;COCH;CDC42;ABLIM1;CBS;RAB23;MKNK2;SPOCK1;E2F2;E2F3;RBBP6;FYN;S1PR3;E2F4;MTA2;E2F6;LGI1;IRX2;WTAP;PCDH8;ARID3B;PTPN13;ACVR2A;CARM1;RPS6KB2;PDCD4;GLA
MP0003984_embryonic_growth_retardation_	42/376	0.000000032165095717477319	0.000000822581833477623 7	-15.076.909.714.389.700	2.112.398.359.854.080	FEN1;PAXIP1;TFRC;HDAC1;LAMA1;SLC20A1;UHRF1;SLC2A1;HNRNPU;BRCA1;CENPA;HK2;GLI3;ZFP36L1;PNN;MTERFD1;DPH3;DNMT3B;ENPP2;RBBP6;E2F4;NKX2-5;STIL;SMAD4;JUP;FBXW7;PTCH1;LIG3;ARID3B;SMAD5;MID1;CDC25A;UGDH;GCLC;MYCN;SMO;CCNE1;MCM4;VCL;EIF4G2;LGR4;EZH2
MP0002084_abnormal_developmental_patter_	45/421	0.000000033534511196929504	0.000000822581833477623 7	-1.492.487.200.488.210	20.910.966.332.878.400	YAP1;DNMT1;PAXIP1;LAMA1;UHRF1;CCNF;CHD7;CUL1;HNRNPU;BRCA1;ACVR1B;DLL1;GLI3;GLI2;CDC42;PNN;EDNRB;DPH3;ENPP2;RTTN;ACVR1;DYNC2H1;GDF11;SMAD4;STIL;SMARCC1;XRCC1;ARID1A;MID1;SMAD5;BMP7;ACVR2A;SMARCA4;UGDH;GCLC;COL2A1;SMO;EXOC4;STRAP;RAPGEF2;BCOR;HNRNPC;EIF4G2;VCL;EZH2
MP0004197_abnormal_fetal_growth/weight/_	28/199	0.000000108102256326655507	0.000002146601947057865	-15.947.928.503.387.200	20.814.637.367.506.300	CXCR4;PDS5B;LPAR4;SMARCAD1;E2F3;FLNC;E2F4;JARID2;HELLS;ELOVL4;XRCC5;PTCH1;PAX6;SAFB;RAD23B;BMP7;DLK1;REC8;COL2A1;MYCN;DPPA4;FANCD2;SP1;CARM1;HNRNPD;MCM4;OGT;LGR4
MP0002088_abnormal_embryonic_growth/wei_	42/385	0.000000059079379348 14881	0.000001296636904640 9503	-1.464.831.687.826.840	1.985.687.258.501.430	FEN1;PAXIP1;TFRC;HDAC1;LAMA1;SLC20A1;UHRF1;SLC2A1;HNRNPU;BRCA1;CENPA;HK2;GLI3;ZFP36L1;PNN;MTERFD1;DPH3;DNMT3B;ENPP2;RBBP6;E2F4;NKX2-5;STIL;SMAD4;JUP;FBXW7;PTCH1;LIG3;ARID3B;SMAD5;MID1;CDC25A;UGDH;GCLC;MYCN;SMO;CCNE1;MCM4;VCL;EIF4G2;LGR4;EZH2
MP0000432_abnormal_head_morphology_	42/424	0.000000654828253340122 5	0.000010113458579364114	-17.029.785.528.611.200	19.587.052.183.639.100	SRC;HDAC1;CHD7;LPAR1;PSIP1;PDS5B;GLI3;GLI2;RAI1;SOX3;EDNRB;ZIC2;CBS;DNMT3B;E2F4;GUSB;ACVR1;FZD1;PTCH1;SHROOM3;PAX6;SOX11;ARID3B;AXIN2;SULF1;FBXO11;RAD23B;BMP7;ACVR2A;ASPM;COL2A1;MYCN;SMO;PRKRA;SLC25A19;PIGA;MTF2;ALPL;HOXB2;ITGA6;BCOR;VCL
MP0000653_abnormal_sex_gland_	57/629	0.000000095965980331977996	0.000002000890689921782	-14.233.370.669.571.000	18.676.912.466.254.400	SPAG16;PANK2;HMGB2;PSIP1;BRCA1;SOX3;PPP1CC;PTTG1;EXO1;SIX5;CASP2;SKP2;EPHA4;STRBP;ACSL4;AXIN2;DICER1;SAFB;RAD23B;CCNB1IP1;ASPM;ARL4A;RAD51C;SFRP2;FANCD2;CCNE1;DMC1;CKS2;PICK1;FKBP4;HDAC2;PCNA;FOXO3;UBB;CBS;USP1;FYN;OTX1;PAIP2;E2F6;PTCH1;CBX2;HMGA1;FANCC;CDC7;NR2F2;MLL5;MERTK;BMP7;ACVR2A;REC8;FANCG;CNOT7;PDCD4;ALPL;PTX3;LGR4
MP0003699_abnormal_female_reproductive_	49/517	0.000000245552284366867765	0.000004654331935499264	-14.680.549.698.907.500	1.802.435.637.446.370	PANK2;CHD7;BRCA1;CDC20;SOX3;PTTG1;EXO1;MDK;CHEK1;SMARCAD1;PDGFRB;NCOA3;SLC11A2;PAX6;ACSL4;DICER1;SAFB;RAD23B;ASPM;RAD51C;DPPA4;PIGA;DMC1;CKS2;FKBP4;DNMT1;SRC;AIRE;ADCY3;FOXO3;UBB;CBS;FYN;E2F4;MTA2;PTCH1;FANCC;NR2F2;MLL5;ACVR2A;REC8;FANCG;SULF2;LEP;ALPL;PTX3;BRWD1;OGT;LGR4
MP0002169_no_abnormal_phenotype_	107/1370	0.000000000024826310679585223	0.000000008627142961155866	-0.9001130849435288	16.713.617.002.150.600	SEMA5A;FRAT2;SALL2;STMN1;ENPP2;HOXA2;SMARCAD1;SLC12A8;PDGFRB;EPHA4;MAP2K4;FBXW7;ATP11C;ACSL4;ZBTB33;DICER1;MID1;CDC25A;MYCN;SFRP2;SMO;CCNE1;FANCD2;COL4A6;TFAM;TXNIP;S100A4;ALDH7A1;FKBP5;DNMT1;PAXIP1;CRABP1;IREB2;GLT8D1;FOXO4;STK4;TMEM123;BAG4;LDHA;EFNB3;NDN;NKX2-5;FZD1;SMAD4;EGR2;PTCH1;RAB3IP;PBX2;XRCC1;CDC7;SMAD5;BMP7;GADD45G;POLA1;GCLC;MKRN1;ID3;PHF16;OGT;EZH2;TOP2B;FEN1;ICA1;HMGB3;BRCA1;LDB2;GLI2;SCPEP1;LMBR1;SIN3A;JARID2;GUSB;IL10;TGIF2;NCOA3;PAX6;IL17RD;VCAN;CREB1;BIRC5;MCM4;PCYOX1;MATN2;MCM2;HDAC2;LAMA1;HDAC1;SLC20A1;ODC1;LRRC17;ADCY3;NR2C1;COCH;UNG;ABLIM1;MKNK2;MGAT3;SPOCK1;E2F2;E2F3;E2F6;JAM2;IRX2;GDF15;PCDH8;SULF1;RPS6KB2
MP0002210_abnormal_sex_determination_	42/425	0.000000693339512867529 1	0.000010258046408621655	-1.446.074.852.809.760	1.661.170.988.524.980	SPAG16;PANK2;HDAC2;PCNA;PSIP1;BRCA1;PPP1CC;SOX3;UBB;PTTG1;SIX5;EXO1;USP1;FYN;OTX1;CBX2;NCOA3;STRBP;HMGA1;CDC7;FANCC;NR2F2;DICER1;MERTK;SAFB;RAD23B;BMP7;ACVR2A;REC8;FANCG;CCNB1IP1;ASPM;ARL4A;CNOT7;RAD51C;FANCD2;CCNE1;LEP;DMC1;PICK1;ALPL;FKBP4
MP0002873_normal_phenotype_	107/1375	0.000000000303362561550552 85	0.000000009730937551275427	-0.894845436203875	16.508.068.865.777.700	SEMA5A;FRAT2;SALL2;STMN1;ENPP2;HOXA2;SMARCAD1;SLC12A8;PDGFRB;EPHA4;MAP2K4;FBXW7;ATP11C;ACSL4;ZBTB33;DICER1;MID1;CDC25A;MYCN;SFRP2;SMO;CCNE1;FANCD2;COL4A6;TFAM;TXNIP;S100A4;ALDH7A1;FKBP5;DNM

						T1;PAXIP1;CRABP1;IREB2;GLT8D1;FOXO4;STK4;TMEM123;BAG4;LDHA;EFNB3;NDN;NKX2-5;FZD1;SMAD4;EGR2;PTCH1;RAB3IP;PBX2;XRCC1;CDC7;SMAD5;BMP7;GADD45G;POLA1;GCLC;MKRN1;ID3;PHF16;OGT;EZH2;TOP2B;FEN1;ICA1;HMGB3;BRCA1;LDB2;GLI2;SCPEP1;LMBR1;SIN3A;JARID2;GUSB;IL10;TGIF2;NCOA3;PAX6;IL17RD;VCAN;CREB1;BIRC5;MCM4;PCYOX1;MATN2;MCM2;HDAC2;LAMA1;HDAC1;SLC20A1;ODC1;LRRC17;ADCY3;NR2C1;COCH;UNG;ABLIM1;MKNK2;MGAT3;SPOCK1;E2F2;E2F3;E2F6;JAM2;IRX2;GDF15;PCDH8;SULF1;RPS6KB2
MP0001145_abnormal_male_reproductive_	50/554	0.000000713389 3185851991	0.000010258046408621655	-13.469.109.189.091.100	15.472.569.336.725.000	SPAG16;PANK2;HMGB2;PSIP1;BRCA1;SOX3;PPP1CC;PTTG1;SIX5;EXO1;SKP2;EPHA4;STRBP;DICER1;SAFB;RAD23B;CCNB1IP1;ASPM;ARL4A;RAD51C;SFRP2;FANCD2;CCNE1;DMC1;CKS2;PICK1;FKBP4;HDAC2;PCNA;UBB;USP1;FYN;OTX1;PAIP2;E2F6;PTCH1;HMGA1;CDC7;FANCC;MLL5;MERTK;BMP7;FANCG;ACVR2A;REC8;CNOT7;LEP;PDCD4;ALPL;LGR4
MP0010094_abnormal_chromosome_stability_	15/74	0.000002172578 00278565 8	0.000029224678295533611	-13.805.579.903.632.900	14.413.711.637.502.000	MCM7;XRCC5;FANCC;BRCA1;FANCG;EXO1;CCNE1;FANCD2;MCM3;USP1;MCM4;MCM6;HSPA1B;MCM2;HSPA1A
MP0002925_abnormal_cardiovascular_devel_	52/583	0.000000584802 4989586207	0.000009379332387144031	-11.947.198.644.264.500	13.831.274.225.924.000	SEMA5A;CHD7;CCNF;BRCA1;GLI3;PNN;EDNRB;ZMIZ1;CHEK1;ENPP2;RTTN;JARID2;ACVR1;DYNC2H1;PDGFRB;IL10;MAP2K1;FBXW7;SOX11;PAX6;DICER1;LEMD3;RAD23B;VCAN;MYCN;SMO;CCNE1;TFAM;STRAP;RAPGEF2;ITGA6;VCL;PAXIP1;CTBP2;SLC20A1;CXCR4;FBLN1;DLL1;ZFP36L1;GJC1;CBS;GPC3;NKX2-5;JUP;ANGPT1;PTCH1;ARID3B;NR2F2;SMAD5;ACVR2A;BCOR;LGR4
MP0002116_abnormal_craniofacial_bone_	41/467	0.000014075589 57899885 7	0.000154461075116908 5	-15.576.110.981.402.900	1.366.892.278.584.850	SRC;CHD7;PSIP1;FBLN1;PDS5B;LPAR4;GLI3;PTPRF;LMNB1;GLI2;RAI1;RPS6KA3;EDNRB;CREB3L2;DNMT3B;GPC3;OTX1;E2F4;GUSB;ACVR1;IL10;FZD1;GDF11;EGR2;PTCH1;CBX2;SHROOM3;PAX6;SOX11;AXIN2;SULF1;BMP7;FBXO11;ACVR2A;RGMA;MN1;COL2A1;SMO;PRKRA;PIGA;ALPL
MP0002152_abnormal_brain_morphology_	87/1188	0.000000294833 1560114 4316	0.000005197940841851535	-10.935.359.445.908.300	1.330.532.303.776.250	CNTFR;TOP2B;CCNF;CHD7;SLC2A1;BRCA1;LMNB2;PTPRF;GLI2;SOX3;EDNRB;ZIC2;SALL2;DPYSL4;MDK;TRIM2;STMN1;MAGOH;ENPP2;CASP2;HOXA2;PHGDH;KIF1B;DYNC2H1;EPHA4;MAP2K4;SMARCC1;FBXW7;STRBP;SLC11A2;SHROOM3;PAX6;IL17RD;MID1;POU3F2;RGMA;DDB1;ASPM;CREB1;COL2A1;MYCN;SMO;SLC25A19;PIGA;MTF2;DCX;RAPGEF2;ITGA6;HOXB2;VCL;MCM2;HDAC2;CTBP2;IREB2;LPAR1;CXCR4;ADCY3;FBLN1;KLC1;ACVR1B;CENPA;DLL1;SLC9A1;CDC42;RAB23;NDN;FYN;OTX1;STIL;EGR2;SMAD4;POU2F1;HSPA4;PTCH1;FZD9;NR2F1;SMAD5;BMP7;ACVR2A;SULF2;SMARCA4;FKBP1A;TDP1;LEP;PLP1;PPT2;BCOR
MP0003111_abnormal_nucleus_morphology_	17/100	0.000003859394 5863533 12	0.000045981929785980886	-1.316.010.857.872.130	13.143.345.323.735.600	HELLS;MYST1;GMNN;CDCA8;BRCA1;KIF22;LEMD3;CENPA;CDC25A;LMNB1;CDC20;CHAF1A;TRIM24;BIRC5;MCM4;RAD54L;MCM2
MP0004957_abnormal_blastocyst_morpholog_	17/100	0.000003859394 5863533 12	0.000045981929785980886	-12.940.102.268.098.700	1.292.361.925.562.480	FEN1;MYST1;WDR36;SMAD4;SMARCC1;UBE2I;LAMA1;TRRAP;GMNN;CDC7;SSRP1;CENPA;CDC25A;GNL3;CHEK1;BIRC5;FBXO5
MP0001730_embryonic_growth_arrest_	26/221	0.000006360546 4724117 38	0.000073676329972102262	-13.457.275.231.379.500	12.805.712.960.664.400	DNMT1;PAXIP1;HDAC1;UHRF1;GMNN;KIF11;ACVR1B;GJC1;FBL;CHAF1A;DNAJB6;ACVR1;SMAD4;POU2F1;DICER1;ARID1A;ACVR2A;GNL3;UGDH;GCLC;MYCN;NASP;SLC25A19;RAPGEF2;HNRNPC;VCL
MP0010770_preweaning_lethality_	83/1115	0.000003116271487920 5847	0.000005197940841851535	-10.153.128.917.744.600	12.353.563.754.613.200	RIF1;CHD7;PSIP1;BRCA1;GLI3;GLI2;SOX3;EDNRB;ZIC2;ZMIZ1;MAGOH;DNMT3B;ENPP2;SMARCAD1;GUSB;SLC37A4;PDGFRB;HELLS;MAP2K4;STRBP;NCOA3;SLC11A2;PAX6;DICER1;POU3F2;CDC25A;CREB1;COL2A1;MYCN;SMO;DPPA4;PIGA;KCNQ2;DCX;MCM3;TFAM;MCM4;HOXB2;BCAT2;MCM2;HDAC2;SRC;HDAC1;SLC20A1;INSIG1;LPAR1;ADCY3;NRXN2;FBLN1;DLL1;SLC9A1;RAI1;LDHA;CBS;GPC3;USP1;NDN;PLAGL2;FYN;E2F3;E2F4;OTX1;NKX2-5;LGI1;EGR2;POU2F1;XRCC5;CBX2;CDC7;NR2F2;EIF2AK4;SULF1;MLL5;BMP7;SULF2;SMARCA4;CARM1;ID2;PLP1;ALPL;PHF17;OGT;LGR4
MP0002082_postnatal_lethality_	83/1114	0.000003007268011629 9975	0.000005197940841851535	-10.135.989.976.666.600	1.233.271.037.995.310	RIF1;CHD7;PSIP1;BRCA1;GLI3;GLI2;SOX3;EDNRB;ZIC2;ZMIZ1;MAGOH;DNMT3B;ENPP2;SMARCAD1;GUSB;SLC37A4;PDGFRB;HELLS;MAP2K4;STRBP;NCOA3;SLC11A2;PAX6;DICER1;POU3F2;CDC25A;CREB1;COL2A1;MYCN;SMO;DPPA4;PIGA;KCNQ2;DCX;MCM3;TFAM;MCM4;HOXB2;BCAT2;MCM2;HDAC2;SRC;HDAC1;SLC20A1;INSIG1;LPAR1;ADCY3;NRXN2;FBLN1;DLL1;SLC9A1;RAI1;LDHA;CBS;GPC3;USP1;NDN;PL

						AGL2;FYN;E2F3;E2F4;OTX1;NKX2-5;LGI1;EGR2;POU2F1;XRCC5;CBX2;CDC7;NR2F2;EIF2AK4;SULF1;MLL5;BMP7;SULF2;SMARCA4;CARM1;ID2;PLP1;ALPL;PHF17;OGT;LGR4
MP0000266_abnormal_heart_morphology_	65/851	0.000003393473930114637	0.000042881170571448606	-10.271.894.301.017.900	10.330.523.955.116.000	TFRC;MTMR14;CHD7;BRCA1;GLI3;PNN;EDNRB;ZMIZ1;MTERFD1;DNMT3B;SMARCAD1;RTTN;JARID2;ACVR1;PDGFRB;DYNC2H1;FBXW7;SLC11A2;IL18;SOX11;DICER1;LEMD3;VCAN;MYCN;COL2A1;SMO;CCNE1;TFAM;STRAP;RAPGEF2;TXNIP;VCL;LY6E;HDAC2;PAXIP1;CTBP2;HDAC1;CXCR4;FBLN1;PDS5B;LPAR4;CENPA;DLL1;ZFP36L1;SLC9A1;GJC1;WRN;LDHA;IRAK1;CBS;GPC3;NKX2-5;FZD1;FZD2;JUP;ANGPT1;PTCH1;EIF2AK1;HMGA1;ARID3B;NR2F2;SMAD5;ACVR2A;FKBP1A;BCOR
MP0005384_cellular_phenotype_	43/486	0.000007192490025018614	0.000081061306498182277	-10.570.287.981.180.900	9.957.533.480.972.400	DNMT1;FEN1;ITPRIP;PAXIP1;GMNN;ITSN1;NUDT1;BRCA1;ACVR1B;PTPRF;LMNB1;CDC42;WRN;EDNRB;IRAK1;GPC3;NDN;RAD54L;E2F2;S1PR3;E2F3;GUSB;PDGFRB;DYNC2H1;HELLS;MAP2K1;NCOA3;CDC7;DICER1;PTPN13;SULF1;GADD45G;BACE2;CCNE1;TXNIP;RAPGEF2;TFAM;ULK1;GLA;HSPA1B;EIF4G2;VCL;HSPA1A
MP0010769_abnormal_survival_	86/1229	0.000002120994546074021 4	0.000029224678295536611	-0.896308246432594 2	9.357.903.610.405.240	RIF1;ITSN1;CHD7;PSIP1;BRCA1;GLI3;GLI2;SOX3;EDNRB;ZIC2;ZMIZ1;MAGOH;DNMT3B;ENPP2;HOXA2;SMARCAD1;GUSB;SLC37A4;PDGFRB;HELLS;MAP2K4;STRBP;NCOA3;SLC11A2;PAX6;DICER1;POU3F2;CDC25A;CREB1;COL2A1;MYCN;SMO;DPPA4;PIGA;KCNQ2;DCX;MCM3;TFAM;MCM4;HOXB2;BCAT2;MCM2;HDAC2;SLC20A1;SRC;HDAC1;INSIG1;LPAR1;NRXN2;ADCY3;FBLN1;DLL1;SLC9A1;LDHA;CBS;GPC3;USP1;NDN;PLAGL2;FYN;E2F3;E2F4;OTX1;MTA2;NKX2-5;LGI1;EGR2;POU2F1;XRCC5;CBX2;CDC7;NR2F2;EIF2AK4;SULF1;MLL5;BMP7;TARBP2;SMARCA4;SULF2;ID2;CARM1;PLP1;ALPL;PHF17;OGT;LGR4
MP0005621_abnormal_cell_physiology_	33/348	0.000024674423824292788	0.000250956944749514 45	-11.003.797.492.781.500	912.240.029.379.205	FEN1;ITPRIP;PAXIP1;GMNN;NUDT1;BRCA1;ACVR1B;PTPRF;LMNB1;WRN;EDNRB;IRAK1;RAD54L;E2F2;S1PR3;E2F3;PDGFRB;MAP2K1;NCOA3;CDC7;DICER1;PTPN13;SULF1;GADD45G;BACE2;CCNE1;TXNIP;RAPGEF2;ULK1;HSPA1B;EIF4G2;VCL;HSPA1A
MP0002113_abnormal_skeleton_development_	38/442	0.000044792738231901 87	0.000444727901016740 07	-11.734.988.953.000.900	9.057.120.709.406.460	KHDRBS1;UHRF1;SRC;PSIP1;PDS5B;GLI3;GLI2;LMNB1;RAI1;RPS6KA3;EDNRB;RAB23;CREB3L2;GPC3;DNMT3B;GUSB;SLC37A4;IL10;HELLS;EGR2;LEPRE1;PTCH1;SOX11;AXIN2;DICER1;SULF1;SMAD5;BMP7;COL2A1;SFRP2;MYCN;CREB1;SMO;DPPA4;LEP;PIGA;ALPL;CLEC2D
MP0010768_mortality/aging_	87/1255	0.000002618989242059689 5	0.000034128703560359033	-0.858996414260194	8.835.097.479.297.840	RIF1;ITSN1;CHD7;PSIP1;BRCA1;GLI3;GLI2;SOX3;EDNRB;ZIC2;ZMIZ1;MAGOH;DNMT3B;ENPP2;HOXA2;SMARCAD1;GUSB;SLC37A4;PDGFRB;HELLS;MAP2K4;STRBP;NCOA3;SLC11A2;PAX6;DICER1;POU3F2;CDC25A;CREB1;COL2A1;MYCN;SMO;DPPA4;PIGA;KCNQ2;DCX;MCM3;TFAM;MCM4;HOXB2;BCAT2;MCM2;HDAC2;SLC20A1;SRC;HDAC1;INSIG1;LPAR1;NRXN2;ADCY3;FBLN1;FOXO3;DLL1;SLC9A1;LDHA;CBS;GPC3;USP1;NDN;PLAGL2;FYN;E2F3;E2F4;OTX1;MTA2;NKX2-5;LGI1;EGR2;POU2F1;XRCC5;CBX2;CDC7;NR2F2;EIF2AK4;SULF1;MLL5;BMP7;TARBP2;SMARCA4;SULF2;ID2;CARM1;PLP1;ALPL;PHF17;OGT;LGR4
MP0003956_abnormal_body_size_	126/2128	0.000021913223298159075	0.000228512383598283 5	-0.994472490471101 3	8.337.577.955.379.710	PANK2;CERK;PANK1;ITSN1;RPS6KA3;SOX3;EDNRB;PTTG1;MAGOH;SMARCAD1;SIRPA;SKP2;PDGFRB;SLC30A7;MAP2K4;MAP2K1;IGFBP4;IFRD1;SLC11A2;DICER1;POU3F2;FBXO11;CDC25A;PIAS1;FANCD2;KCNQ2;TFAM;HOXB2;FKBP4;KHDRBS1;AIRE;LPAR1;FBLN1;KLC1;SLC9A1;SOCS2;CCNB2;LDHA;UBB;OTX1;COX10;EGR2;FZD2;POU2F1;XRCC5;WFS1;PTCH1;CBX2;FZD9;HMGA1;CDC7;NR2F2;EIF2AK4;MLL5;BMP7;ID2;HNRNPD;ALPL;BLMH;CNTNAP2;TOP2B;FEN1;ZC3H4;CHD7;BRCA1;GLI3;HK2;GLI2;MTERFD1;DSE;DNMT3B;GUSB;SLC37A4;IL10;HELLS;ABCC4;ELOVL4;LEPRE1;TRPC1;NCOA3;STRBP;IL18;PAX6;SAFB;DDB2;ASPM;COL2A1;PIGA;MTF2;DCX;MCM4;SLC29A1;BCAT2;MCM2;HDAC2;SRC;CXCR4;ADCY3;NRXN2;DLL1;FBXL20;WRN;CBS;GPC3;PLAGL2;FYN;E2F3;E2F4;MTA2;PAIP2;LGI1;IRX5;GDF15;SULF1;PTPN13;DLK1;TARBP2;SULF2;PNRC2;HIPK2;FKBP1A;FABP5;GPAM;PRKRA;LEP;LGR4
MP0001119_abnormal_female_reproductive_	30/330	0.000116813589908063 24	0.001058940586775269	-11.984.705.146.647.400	8.210.105.862.130.080	CHD7;BRCA1;FOXO3;SOX3;UBB;EXO1;CBS;GPC3;CASP2;OTX1;NCOA3;CBX2;ACSL4;CDC7;FANCC;NR2F2;SAFB;MERTK;REC8;ACVR2A;FANCG;CCNB1IP1;ASPM;RAD51C;FANCD2;DMC1;PDCD4;ALPL;PTX3;LGR4
MP0000703_abnormal_thymus_morphology_	34/392	0.000096998943501123 05	0.000919285441817461 7	-11.430.221.240.573.200	7.991.912.258.207.650	FEN1;AIRE;CHD7;GMNN;CXCR4;FBLN1;BRCA1;STK4;UNG;CCNB2;BAG4;PTTG1;DNMT3B;E2F2;FYN;E2F4;JARID2;NKX2-5;IL10;ABCC4;HELLS;SMAD4;FBXW7;XRCC5;FZD9;TNFRSF1

						0B;DICER1;MLL5;SMARCA4;CARM1;BIRC5;ALPL;OGT;ADA
MP0000477_abnormal_intestine_morphology_	28/299	0.000124328529483331 5	0.001103085038181898 6	-11.615.384.328.199.200	7.909.663.736.136.490	HDAC2;FEN1;IREB2;BRCA1;GLI3;EDNRB;GPC3;PLAGL2;E2F4;TMPO;IL10;ABCC4;GDF11;SMAD4;PTCH1;CBX2;SHROOM3;MERTK;RAD23B;CDC25A;MYCN;CCNE1;LEP;ID2;CCNG1;ALPL;TXNIP;MCM2
MP0002019_abnormal_tumor_incidence_	45/622	0.000387085919802058 6	0.002989163491804785 7	-13.116.599.172.627.900	7.624.366.529.636.790	DNMT1;FEN1;MPG;NUDT1;LTBP4;BRCA1;FOXO3;CCNDBP1;STK4;TSPAN33;UNG;CDC20;WRN;EXO1;CHEK1;MGAT3;TRIM24;E2F4;MUTYH;IL10;SMAD4;FBXW7;PTCH1;NCOA3;HMGA1;PAX6;DEK;DICER1;CDC25A;DDB2;SMARCA4;MSH6;TIAM1;FANCD2;PIGA;ID2;CCNG1;MCM3;PDCD4;SDC1;MCM4;TXNIP;S100A4;SIPA1;MCM2
MP0009703_decreased_birth_body_	17/144	0.000245639327087629 36	0.002055019875073012 7	-11.616.007.436.739.700	7.187.369.474.109.730	HELLS;HDAC2;IGFBP4;LAMA1;PAX6;SOX11;PDS5B;RAD23B;HIPK2;ILF3;DSE;HNRNPD;DNMT3B;SMARCAD1;RAPGEF2;HSPA1B;HSPA1A
MP0000163_abnormal_cartilage_morphology_	26/282	0.000270461799650969 1	0.002168895585662557 9	-1.141.917.572.664.980	7.003.993.897.213.230	SRC;FBLN1;GLI3;GLI2;RAI1;EDNRB;CREB3L2;HOXA2;OTX1;SLC37A4;GUSB;ACVR1;EGR2;LEPRE1;PTCH1;PAX6;DICER1;SULF1;BMP7;COL2A1;SMO;PIGA;LEP;COL9A1;ALPL;CLEC2D
MP0002114_abnormal_axial_skeleton_	42/567	0.000386904633930652 9	0.002989163491804785 7	-11.624.150.466.899.100	6.756.841.662.146.380	TOP2B;HDAC2;IREB2;PSIP1;PDS5B;BRCA1;DLL1;GLI3;LMNB1;GLI2;RAI1;PNN;RPS6KA3;ZIC2;DNMT3B;GPC3;SMARCAD1;KIF1B;GUSB;MTA2;JARID2;E2F6;COX10;GDF11;HELLS;LEPRE1;PTCH1;CBX2;SOX11;DICER1;SAFB;SULF1;BMP7;DLK1;ACVR2A;SULF2;COL2A1;MYCN;SFRP2;DPPA4;MTF2;HOXB2
MP0003755_abnormal_palate_morphology_	21/212	0.000438578415511088 5	0.003325221804874 98	-11.262.049.076.567.800	6.426.371.728.066.940	FZD1;ACVR1;GDF11;FZD2;CHD7;SOX11;PAX6;PDS5B;BMP7;FBXO11;RAD23B;GLI3;ACVR2A;PTPRF;GLI2;PNN;MN1;EDNRB;COL2A1;PIGA;HOXA2
MP0008932_abnormal_embryonic_tissue_	14/104	0.000257898904816258 87	0.002108702809968234	-1.005.202.319.165.770	6.193.737.340.491.680	ACVR1;MYST1;UBE2I;PAXIP1;ODC1;TOP3A;CHD7;EDNRB;SMO;CHEK1;MCM4;NKX2-5;VCL;EZH2
MP0002429_abnormal_blood_cell_	102/1630	0.000021919653102952854	0.000228512383598283 5	-0.736980354138560 4	6.178.784.444.105.400	CERK;TFRC;MPG;GMNN;CBLB;IL27RA;PTTG1;SIRPA;IL13RA1;TMPO;PDGFRB;MAP2K4;FBXW7;SLC11A2;DICER1;CDC25A;MYCN;CCNE1;TXNIP;ULK1;AIRE;IREB2;FBLN1;FOXO3;STK4;PRKCZ;ZFP36L1;GJC1;CCNB2;LDHA;CHST15;NKX2-5;UBE2I;POU2F1;TNFSF14;XRCC5;EIF2AK1;CBX2;HMGA1;FZD9;TNFRSF10B;FANCC;MLL5;SMAD5;SMARCA4;GADD45G;ALPL;ID3;PPT2;NFKBIE;OGT;EZH2;FEN1;MCM7;HMGB3;BRCA1;MDK;DNMT3B;JARID2;SLC37A4;HELLS;ELOVL4;IL18;SAFB;SLC25A19;PIGA;MCM3;RAPGEF2;MCM4;BIRC5;EXOC6;ITGA6;MCM6;MCM2;PCNA;SLC20A1;HDAC1;LRRC17;CXCR4;PTN;TSPAN33;DLL1;NR2C1;UNG;CBS;GPC3;RAD54L;E2F2;FYN;E2F4;MTA2;PLCL2;MERTK;PTPN13;DLK1;IMPDH1;CARM1;IMPDH2;PLP1;CLEC2D;EBAG9;SIPA1
MP0002752_abnormal_somatic_nervous_	50/675	0.000105959685384387 57	0.000981893084561991 5	-0.878628930597881 3	6.085.408.689.792.900	TOP2B;PANK2;CHD7;ODZ3;GLI3;PTPRF;EDNRB;ZIC2;TRIM2;HOXA2;NEFM;NEO1;EPHA4;ELOVL4;SOX11;PAX6;DICER1;MYCN;COL2A1;TFAM;HOXB2;VCL;AIRE;LPAR1;ADCY3;FBLN1;DLL1;SLC9A1;RAB23;NDN;E2F2;FYN;E2F3;OTX1;HES5;FZD1;GDF11;EGR2;FZD2;IRX5;GDF15;GPR98;NR2F1;PTPN13;MERTK;HIPK2;MAPK10;PLP1;ALPL;LGR4
MP0002083_premature_death_	67/968	0.000048246632535499 06	0.000467880134123328 1	-0.793097594723334 7	60.809.159.337.542.300	ITSN1;ICA1;ODZ3;BRCA1;PTPRF;GLI2;EDNRB;EXO1;MTERFD1;GUSB;IL10;MYST1;FBXW7;STRBP;PAX6;DICER1;KIF22;RAD23B;CDC25A;DDB2;MSH6;CCNA2;CCNE1;KCNQ2;DCX;MCM3;TFAM;MCM4;HOXB2;BCAT2;MCM2;DNMT1;SRC;AIRE;CRABP1;LRRC17;NRXN2;FOXO3;DLL1;UNG;SLC9A1;FBXL20;CBS;E2F2;FYN;E2F3;OTX1;E2F4;MTA2;COX10;MUTYH;LGI1;EGR2;SMAD4;KCNJ8;HSPA4;PTCH1;CBX2;FZD9;SULF1;BMP7;SULF2;FKBP1A;PLP1;PDCD4;PPT2;LGR4
MP0003698_abnormal_male_reproductive_	47/667	0.000495994518579294 1	0.003693387754420815 5	-0.920855102096760 1	5.157.903.866.769.160	SPAG16;KHDRBS1;PANK2;AIRE;HMGB2;ADCY3;PSIP1;BRCA1;GLI2;PPP1CC;UBB;EXO1;SIX5;RAD21;SMARCAD1;E2F4;GUSB;PAIP2;PDGFRB;EPHA4;PTCH1;STRBP;HMGA1;FANCC;DICER1;SAFB;MLL5;BMP7;RAD23B;TARBP2;REC8;FANCG;SULF2;ASPM;CNOT7;RAD51C;CCNE1;LEP;PIGA;DMC1;CKS2;DCX;PICK1;ALPL;BRWD1;FKBP4;LGR4
MP0002115_abnormal_skeleton_extremities_	31/417	0.002120927403832634 7	0.013606565036895551 9	-11.454.122.694.721.000	4.922.068.902.489.800	SRC;PDS5B;GLI3;GLI2;SOCS2;RPS6KA3;RAI1;LMBR1;ZIC2;CBS;RAB23;CREB3L2;GPC3;GUSB;SLC37A4;IL10;HELLS;EGR2;LEPRE1;PTCH1;SOX11;DICER1;SULF1;BMP7;COL2A1;SMO;SP1;LEP;COL9A1;ALPL;CLEC2D
MP0003935_abnormal_craniofacial_develop_	23/268	0.001470968264880272 5	0.010396504516187689	-0.994627805473254	4.541.754.658.855.130	ACVR1;FZD1;UHRF1;CHD7;PAX6;SOX11;ARID3B;DICER1;PDS5B;SMAD5;BMP7;CENPA;PTPRF;GLI2;MN1;EDNRB;MYCN;COL2A1;SMO;ZMIZ1;HOXA2;NKX2-5;VCL

MP0001340_abnormal_eyelid_morphology_	18/193	0.002051346125348110783	0.013365802097971283	-10.131.874.897.421.000	4.371.960.672.013.280	MAP2K1;EGR2;IRX5;SRC;PSIP1;SOX11;PAX6;MLL5;RAD23B;FBXO11;BMP7;ACVR2A;GLI3;PTPRF;DLK1;CBS;PLP1;LGR4
MP0002722_abnormal_immune_system_	51/748	0.000582746886070924	0.004189749163647845	-0.783772931216542 6	429.124.647.168.837	FEN1;CHD7;BRCA1;PTTG1;DNMT3B;JARID2;SLC37A4;IL10;HELLS;ABCC4;FBXW7;SLC11A2;DICER1;CCNE1;BIRC5;TXNIP;ITGA6;EXOC6;ULK1;MCM2;DNMT1;SLC20A1;FBLN1;FOXO3;STK4;PRKCZ;TSPAN33;UNG;CCNB2;BAG4;LDHA;GPC3;E2F2;FYN;S1PR3;E2F4;NKX2-5;SMAD4;XRCC5;HMGA1;FZD9;TNFRSF10B;MLL5;MERTK;SMARCA4;ID2;CARM1;ALPL;PPT2;ADA;SIPA1
MP0002398_abnormal_bone_marrow_	65/987	0.000246405260800121 4	0.002055019875073012 7	-0.670324862110726 8	4.147.614.813.359.390	TFRC;GMNN;HMGB3;CBLB;BRCA1;IL27RA;PTTG1;DNMT3B;SIRPA;SLC37A4;JARID2;TMPO;IL13RA1;IL10;PDGFRB;HELLS;FBXW7;SLC11A2;DICER1;CCNE1;PIGA;RAPGEF2;MCM4;BIRC5;TXNIP;EXOC6;ULK1;MCM2;PCNA;SLC20A1;AIRE;HDAC1;CXCR4;FOXO3;STK4;TSPAN33;UNG;CCNB2;LDHA;USP1;E2F2;FYN;E2F4;MTA2;TNFSF14;XRCC5;CBX2;PLCL2;FZD9;FANCC;MLL5;MERTK;DLK1;SMARCA4;GADD45G;SP1;IMPDH1;ID2;CARM1;LEP;ID3;NFKBIE;OGT;SIPA1;EZH2
MP0002882_abnormal_neuron_morphology_	67/1006	0.000143606111458722 33	0.001247578093297650 3	-0.591479860358095 1	3.954.960.330.104.750	CNTFR;TOP2B;PANK2;CHD7;ODZ3;PTPRF;LMNB2;GLI2;SIP1;EDNRB;DPYSL4;TRIM2;MAGOH;ENPP2;CASP2;HOXA2;NEFM;PHGDH;KIF1B;DYNC2H1;EPHA4;MAP2K4;ELOVL4;FBXW7;PAX6;SOX11;MID1;POU3F2;VCAN;MYCN;SFRP2;SMO;TFAM;RTN4R;HDAC2;IREB2;CXCR4;ADCY3;KLC1;DLL1;SLC9A1;EFNB3;UBB;NDN;E2F2;FYN;E2F3;OTX1;FZD1;GDF11;EGR2;SMAD4;FZD2;IRX5;GDF15;GPR98;PTCH1;NR2F1;SULF1;PTPN13;MERTK;MAPK10;LEP;ID2;PLP1;LGR4;EZH2
MP0009672_abnormal_birth_weight_	Okt 73	0.001706979013 4689668	0.011669020469123 92	-0.877474 6322070046	39.054.796.875.185.500	HELLS;ILF3;IGFBP4;LAMA1;DNMT3B;HNRNPD;SOX11;HSPA1B;HSPA1A;HIPK2
MP0000049_abnormal_middle_ear_	Okt 73	0.001706979013 4689668	0.011669020469123 92	-0.819746 0325619944	36.485.402.102.650.500	ACVR1;SMO;PRKRA;CHD7;HOXA2;FBLN1;E2F4;FBXO11;BMP7;GLI2
MP0005195_abnormal_posterior_eye_	31/433	0.003607280366 177532	0.021489084467086153	-0.921758862672483 4	353.974.776.054.454	PANK2;LAMA1;AIRE;PTPRF;GLI3;RAB23;TRIM2;E2F2;FYN;E2F3;OTX1;HES5;PDGFRB;IL10;GDF11;ELOVL4;IRX5;XRCC5;VPS33A;IL18;NR2F1;PAX6;MERTK;PTPN13;BMP7;LEP;PLP1;TFAM;UNC119;ITGA6;LGR4
MP0001731_abnormal_postnatal_growth_	48/732	0.001830866863 6307208	0.012118594954508 103	-0.764730 0886764219	33.747.647.656.612.700	DNMT1;RIF1;SLC20A1;ITSN1;LPAR1;BRCA1;SOCS2;CDC42;SOX3;RAI1;EDNRB;UBB;CBS;GPC3;SMARCAD1;HOXA2;PLAGL2;E2F3;OTX1;GUSB;SLC37A4;IL10;LGI1;SLC30A7;MAP2K4;EGR2;LEPRE1;WFS1;NCOA3;SLC11A2;FZD9;PAX6;EIF2AK4;DICER1;NR2F2;SULF1;MLL5;POU3F2;REC8;DLK1;MYCN;GPAM;FANCD2;ID2;MTF2;TFAM;FKBP4;LGR4
MP0002109_abnormal_limb_morphology_	36/572	0.011926023206 585586	0.061529904324900 35	-1.167.581.131.557.960	32.554.870.422.742.200	SRC;CHD7;CRABP1;PDS5B;GLI3;GLI2;SOCS2;RAI1;LMBR1;ZIC2;RAB23;CREB3L2;GPC3;PHGDH;GUSB;WNT3;TMPO;DYNC2H1;IL10;GDF11;HELLS;EGR2;ELOVL4;LEPRE1;PTCH1;SOX11;DICER1;SULF1;BMP7;SMARCA4;MYCN;COL2A1;SFRP2;SMO;COL9A1;CLEC2D
MP0001943_abnormal_respiration_	32/438	0.002333332769 684559	0.014308820072918546	-0.744801 9866945591	31.630.840.233.573.200	TOP2B;SRC;LTBP4;NRXN2;FBLN1;PDS5B;BRCA1;GLI3;LMNB1;EDNRB;NDN;KIF1B;E2F3;FLNC;JARID2;IL13RA1;IL10;HELLS;EGR2;PAX6;SOX11;SULF1;SULF2;FKBP1A;ILF3;MYCN;COL2A1;CARM1;ALPL;HOXB2;ADA;MCM2
MP0005508_abnormal_skeleton_morphology_	13/127	0.004042888429 974585	0.023753074299991576	-0.823000 8244364632	30.780.587.297.542.500	IL10;PDGFRB;LEPRE1;CBX2;PTCH1;SULF1;BMP7;GLI3;GLI2;EDNRB;DNMT3B;HOXA2;GUSB
MP0000609_abnormal_liver_physiology_	31/441	0.004635311803 223422	0.026846180860335654	-0.683828 3171803712	24.738.390.030.482.500	TFRC;PANK1;AIRE;SLC20A1;SHMT1;INSIG1;IREB2;CCNDBP1;ASGR1;CBS;MGAT3;TRIM24;SIRPA;E2F2;JARID2;MTA2;IL10;NCOA3;SLC11A2;DICER1;POU3F2;DLK1;PNRC2;GCLC;GPAM;LEP;NMU;CCNG1;TXNIP;ADA;SLC25A13
MP0001614_abnormal_blood_vessel_	50/778	0.002187031918 242151	0.013818065301620863	-0.538201791121782	23.044.608.380.213.400	SEMA5A;CHD7;CCNF;GLI3;EDNRB;ZMIZ1;MDK;CHEK1;ENPP2;HOXA2;JARID2;PDGFRB;ACVR1;IL10;MAP2K4;MAP2K1;FBXW7;IL18;PAX6;DICER1;LEMD3;RAD23B;DDB1;MYCN;SMO;CCNE1;RAPGEF2;STRAP;ITGA6;VCL;YAP1;PAXIP1;CTBP2;LAMA1;SLC20A1;CXCR4;FBLN1;LPAR4;DLL1;ZFP36L1;GPC3;NKX2-5;FZD1;ANGPT1;NR2F2;ARID3B;MERTK;SMAD5;LEP;LGR4
MP0001286_abnormal_eye_development_	16/195	0.010791063675 072087	0.056960424715253 93	-0.737474 317477341	2.113.157.844.039.200	POU2F1;LAMA1;CHD7;NR2F1;PAX6;BMP7;ACVR2A;PTPRF;GLI2;CDC42;COL2A1;SMO;CBS;RAB23;E2F2;E2F3
MP0003385	Sep 72	0.00496	0.0276519	-	20.970.535.5	YAP1;GDF11;NUAK1;GPC3;HOXB2;SOX11;LPAR4;SMAD5;G

_abnormal_body_wall_		4428164646978	13477234617	0.5844532554020911	20.733.200	LI3
MP0003936_abnormal_reproductive_system_	16/189	0.008304922983738118	0.04497601148336097	-0.6672188592352792	20.694.633.678.304.000	NCOA3;BRCA1;PTPRF;GLI3;ACVR2A;GLI2;MYCN;CNOT7;CCNE1;SIX5;ID2;LEP;CHEK1;ALPL;FKBP4;NEO1
MP0005452_abnormal_adipose_tissue_	29/456	0.020202028270890116	0.09156788901044759	-0.8015470677619648	19.162.382.359.750.500	FEN1;CHD7;LPAR1;PSIP1;BRCA1;DLL1;PNN;RPS6KA3;RAI1;WRN;UBB;E2F3;GUSB;SLC30A7;HELLS;LEPRE1;NCOA3;IL18;MLL5;RAD23B;POU3F2;PNRC2;GPAM;FABP5;LEP;ID2;ALPL;MCM2;BCAT2
MP0005266_abnormal_metabolism_	Okt 99	0.011951851919225525	0.06152990432490035	-0.6039360098945286	16.839.136.925.336.900	IL10;FEN1;PAXIP1;LEP;MTMR14;NCOA3;CDC7;DICER1;SMAD5;ADA
MP0009931_abnormal_skin_appearance_	26/385	0.014298919496690262	0.07271523695268096	-0.6299585544812579	16.512.500.905.431.800	TFRC;SLC20A1;PDS5B;GLI3;SLC9A1;ZMIZ1;CBS;E2F2;E2F4;MTA2;PDGFRB;MAP2K1;POU2F1;ELOVL4;JUP;FBXW7;LEPRE1;SLC11A2;RAD23B;POU3F2;SMARCA4;FKBP1A;SP1;PIGA;RAPGEF2;BLMH
MP0005376_homeostasis/metabolism_phenot_	17/223	0.016382475877255516	0.08230713784114942	-0.6425973292681777	16.047.566.688.792.700	PDGFRB;IL10;FEN1;GALT;PAXIP1;MTMR14;NCOA3;CDC7;DICER1;SMAD5;SCPEP1;STMN1;COL9A1;SLC37A4;ADA;BCAT2;SLC25A13
MP0008058_abnormal_DNA_repair_	Aug 51	0.002296542720145704729	0.01429340767613072	-0.3676807683965959	15.618.920.386.057.000	ALKBH2;FEN1;PAXIP1;EXO1;XRCC5;TDP1;HSPA1B;HSPA1A
MP0005389_reproductive_system_phenotype_	Sep 81	0.009814497147240168	0.05246981167178397	-0.5078200977300114	14.968.085.185.454.900	IL10;RAD51C;CCNE1;DMC1;CXCR4;FANCC;BRWD1;FKBP4;LGR4
MP0000955_abnormal_spinal_cord_	18/244	0.018259770660962616	0.08566283210452005	-0.5998386270751659	14.740.051.995.724.200	DYNC2H1;GDF11;CNTFR;TOP2B;EPHA4;EGR2;GDF15;PAX6;KLC1;SMAD5;DLL1;GLI2;SIP1;EFNB3;SMO;ZIC2;KIF1B;NEFM
MP0003937_abnormal_limbs/digits/tail_de_	11/123	0.018687777775257115	0.08566283210452005	-0.5634311043865082	13.845.396.744.722.700	SFRP2;SMO;RAB23;CCNF;CHD7;DICER1;BRCA1;BMP7;GLI3;VCL;SMARCA4
MP0005076_abnormal_cell_differentiation_	Juli 30	0.000572859145573279	0.00418974916364785	-0.2428256507135363	13.294.982.199.021.600	ID2;NCOA3;GMNN;ACVR1B;EIF4G2;PTPRF;LMNB1
MP0002092_abnormal_eye_morphology_	12/144	0.022870337941203904	0.09934303043210446	-0.5416613854954154	12.507.917.229.031.300	PDGFRB;POU2F1;ELOVL4;SMO;SP1;RAB23;PAX6;AXIN2;OTX1;RAD23B;BMP7;GLI3
MP0009763_increased_sensitivity_to_	20/281	0.018494108438082 58	0.08566283210452005	-0.4934483028277736	12.125.683.996.625.600	IL10;ABCC4;KCNJ8;CERK;DUSP1;GPR98;PTCH1;EIF2AK4;BRCA1;MERTK;FOXO3;MLL5;ASGR1;CCNG1;TXNIP;RAD54L;FYN;BLMH;VCL;HSPA1B
MP0002128_abnormal_blood_circulation_	29/449	0.016943080403 4905 5	0.08411029200304238	-0.4574419705667049 4	11.324.553.919.663.700	CHD7;LPAR1;CXCR4;FBLN1;LPAR4;DLL1;GLI3;GJC1;EDNRB;ZIC2;ENPP2;DNMT3B;E2F4;NKX2-5;JARID2;PDGFRB;MAP2K4;JUP;IL18;NR2F2;SMAD5;FKBP1A;MYCN;COL2A1;SMO;SP1;HNRNPD;ALPL;TFAM
MP0000689_abnormal_spleen_morphology_	40/669	0.017383737805333692	0.08456532553499022	-0.4406013486444635	10.883.870.924.567.600	FEN1;DNMT1;TFRC;SLC20A1;IREB2;PSIP1;STK4;FOXO3;TSPAN33;PRKCZ;DLL1;UNG;LDHA;BAG4;PTTG1;GPC3;E2F2;FYN;SLC37A4;JARID2;GDF11;ABCC4;HELLS;XRCC5;SLC11A2;FZD9;HMGA1;SOX11;DICER1;MERTK;MLL5;DLK1;CCNE1;LEP;ALPL;EXOC6;ULK1;PPT2;SIPA1;MCM2
MP0000627_abnormal_mammary_gland_	12/142	0.020904868423346584	0.09287963357732434	-0.4428806834075092 5	10.524.841.927.947.200	CCNE1;ID2;NCOA3;LEP;CHEK1;SDC1;BRCA1;FKBP4;NEO1;PTPRF;GLI3;GLI2
MP0004811_abnormal_neuron_physiology_	21/309	0.024589521059231 52	0.10463092124183207	-0.3378363355560177	0.762603418 6283261	IL10;PDGFRB;TOP2B;EGR2;FBXW7;ITSN1;STK39;PAX6;KLC1;POU3F2;LMNB2;DDB1;MAPK10;CREB1;TDP1;KCNQ2;MAGOH;CASP2;KIF1B;NEFM;ITGA6
MP0000598_abnormal_liver_morphology_	35/585	0.024974285572015413	0.10519471801545886	-0.3028543404182702	0.682010466 2847057	FEN1;SLC20A1;INSIG1;PTN;LDHA;CBS;MDK;MGAT3;DNMT3B;JARID2;SKP2;SLC37A4;MAP2K4;POU2F1;JUP;EIF2AK4;DICER1;SAFB;DLK1;SMARCA4;FKBP1A;MTAP;MYCN;GPAM;FABP5;MTHFD2;SP1;LEP;CCNG1;TXNIP;RAPGEF2;PPT2;GLA;ADA;LGR4

MP0002160_abnormal_reproductive_system_	Juli 46	0.004947939045731323	0.027651913477234617	-0.18422527093010810	0.6610113900723628	RAD51C;CCNE1;DMC1;FANCC;BRWD1;FKBP4;LGR4
MP0001216_abnormal_epidermal_layer_	17/251	0.041432188482305114	0.15624234528919123	-0.27261891441322320	0.5060752989293683	HELLS;SMAD4;JUP;ELOVL4;BRCA1;DICER1;POU3F2;GLI3;SLC9A1;SMARCA4;CDC42;CBS;LEP;PIGA;BLMH;MTA2;TMPO
MP0001784_abnormal_fluid_regulation_	29/475	0.031576376435473785	0.12909165660384872	-0.23284145128177305	0.4766806121655195	TFRC;CHD7;CXCR4;LPAR4;GLI3;GLI2;PNN;EDNRB;ENPP2;USP1;E2F3;RTTN;E2F4;NKX2-5;JARID2;PDGFRB;MAP2K1;JUP;ELOVL4;DUSP1;FBXW7;DICER1;SMAD5;RAD23B;SMARCA4;FKBP1A;MYCN;FABP5;SMO
MP0008770_decreased_survivor_rate_	14/195	0.041589689033813 5	0.15624234528919123	-0.24809835670789704	0.4605566356431210 5	HDAC2;SLC20A1;ITSN1;NRXN2;BRCA1;SULF1;SMARCA4;CREB1;ID2;MAGOH;DNMT3B;NDN;MTA2;LGR4
MP0002233_abnormal_nose_morphology_	Sep 99	0.029123596811844317	0.12144539870539077	-0.21813444726987804	0.4598907852097553 5	GDF11;COL2A1;SMO;PRKRA;CHD7;E2F4;ACVR1B;BMP7;GLI3
MP0005390_skeleton_phenotype_	17/265	0.061183047965933883	0.21261109168162023	-0.28212068118564040	0.4368048108307296 4	IL10;PDGFRB;KHDRBS1;LEPRE1;DUSP1;CBX2;PTCH1;CXCR4;SULF1;BMP7;GLI3;GLI2;EDNRB;DNMT3B;COL9A1;HOXA2;GUSB
MP0005391_vision/eye_phenotype_	16/235	0.045224501302895 99	0.16542646529217217	-0.23897422920920450	0.4299692442885232 3	PDGFRB;POU2F1;ELOVL4;XRCC5;CHD7;PAX6;AXIN2;RAD23B;BMP7;GLI3;GJC1;SMO;SP1;RAB23;HOXB2;OTX1
MP0003948_abnormal_gas_homeostasis_	20/311	0.044137106608329 65	0.16287764120065015	-0.13406550001351950	0.2432961742357659	IL10;FZD1;HDAC2;TFRC;DUSP1;NCOA3;IL18;SOX11;PDS5B;SAFB;PNRC2;MN1;ILF3;EDNRB;LEP;NMU;NDN;HSPA1B;ADA;IL13RA1
MP0002751_abnormal_autonomic_nervous_	Juli 61	0.018685223167364845	0.08566283210452005	-0.07649979642244227	0.1879857224979641 4	EDNRB;CREB1;CASP2;SOX11;PDS5B;DICER1;SULF1
MP0001324_abnormal_eye_pigmentation_	9/111	0.051555483051339 21	0.18533307269317628	-0.08218095800836128	0.1385242786799565 4	LGI1;EDNRB;ELOVL4;VPS33A;NR2F1;UNC119;PAX6;MERTK;BMP7
MP0000716_abnormal_immune_system_	68/1255	0.017440330925681435	0.08456532553499022	-0.04890506030518011	0.1208067940684606 8	CERK;MPG;GMNN;HMGB3;CBLB;BRCA1;IL27RA;PTTG1;MDK;DNMT3B;SIRPA;SLC37A4;IL13RA1;IL10;HELLS;FBXW7;IL18;DICER1;CCNE1;TXNIP;BIRC5;ITGA6;PCNA;AIRE;HDAC1;LRRC17;CXCR4;PTN;FOXO3;STK4;TSPAN33;DLL1;PRKCZ;UNG;CCNB2;LDHA;GPC3;CHST15;E2F2;FYN;E2F4;MTA2;TNFSF14;XRCC5;CBX2;PLCL2;HMGA1;FZD9;TNFRSF10B;MLL5;MERTK;PTPN13;DLK1;SMARCA4;GADD45G;IMPDH1;ID2;CARM1;IMPDH2;PLP1;ALPL;ID3;NFKBIE;CLEC2D;OGT;EBAG9;SIPA1;EZH2
MP0000428_abnormal_craniofacial_morphol_	9/117	0.066145618828723 38	0.22424978090713538	-0.03084184491633125	0.0461083963858712 2	SOX3;PTCH1;LPAR1;HOXA2;PAX6;DICER1;MTA2;BMP7;GLI3
MP0003635_abnormal_synaptic_transmissio_	27/453	0.047008902736269 85	0.17045836905238718	0.00443357168598416 8	-0.007844159581691976	HDAC2;LPAR1;NRXN2;SLC2A3;PTN;PPM1G;FBXL20;SYNGR1;EFNB3;DPYSL4;ZIC2;MDK;ST8SIA4;EIF4EBP2;FYN;LGI1;EPHA4;EIF2AK4;NR2F6;NELL2;CREB1;ACCN2;KCNQ2;DCX;PICK1;GNB1L;SLC29A1
MP0010329_abnormal_lipoprotein_level_	3/232	0.996321867709 7717	0.99632186770977177	4.707.092.121.799.570	-0.017345226135282964	GPAM;LEP;TXNIP
MP0005197_abnormal_uvea_morphology_	9/119	0.071533067871 15365	0.23487629371866 99	0.016668148262110685	-0.024147084934323982	IL10;PNN;GDF11;AIRE;VPS33A;PAX6;OTX1;LGR4;GLI3
MP0002932_abnormal_joint_morphology_	10/136	0.068573948481259 74	0.22876269213348 25	0.016552194003899772	-0.024415646325996597	RAI1;MYCN;ZIC2;PTCH1;SMARCAD1;SULF1;BMP7;GLI3;GLI2;SULF2
MP0000778_abnormal_nervous_system_	10/136	0.068573948481259 74	0.22876269213348 25	0.065711988826075 28	-0.096929789378815 29	EPHA4;SOX3;MAP2K4;EGR2;EFNB3;NR2F1;KIF1B;PAX6;FYN;OTX1
MP0001800_abnormal_	12/461	0.969914803951	0.97458909216297 96	4.113.158.875.933.55	-0.105869997	IL10;PTTG1;XRCC5;PLCL2;ID3;SDC1;FYN;NFKBIE;DLL1;DLK1;IL13RA1;UNG

humoral_immune_		1668		0	87538488	
MP0010155_abnormal_intestine_physiology_	3/173	0.974498809624 0074	0.9768413548394498	4.682.430.204.970.260	-0.109714115 88711498	IL10;ABCC4;TMPO
MP0002405_respiratory_system_inflammati_	11/158	0.077298553421 3908	0.2479499752055382 1	0.1181843962918362 2	-0.164811481 23440922	DUSP1;AIRE;LEP;GPC3;E2F2;PTX3;E2F3;DICER1;E2F4;FOXO3;ADA
MP0003448_altered_tumor_morphology_	2/119	0.957843161075 648	0.9647840535472106	5.042.860.387.806.810	-0.180791493 93023353	CHEK1;ITGA6
MP0002697_abnormal_eye_size_	11/172	0.117532203294 3101	0.3289324078773645 5	0.1688354084276863 8	-0.187728596 54692226	PNN;POU2F1;MYCN;LAMA1;CBS;FANCD2;NR2F1;PAX6;BMP7;GLI3;LGR4
MP0001175_abnormal_lung_morphology_	23/402	0.087877196556 58681	0.2714428960303459 4	0.1829779954001704 3	-0.238603944 49014666	FEN1;DUSP1;LTBP4;FBLN1;SOX11;SAFB;GLI3;ACVR2A;GLI2;LMNB1;SULF2;SOCS2;LDHA;MTAP;MYCN;COL2A1;DPPA4;SP1;CBS;CARM1;GPC3;S1PR3;ADA
MP0009745_abnormal_behavioral_response_	9/325	0.923958818877 8415	0.9403004976537118	403.083.465.054.143	-0.248121156 65287326	LGI1;MAPK10;CREB1;CHRNA5;WFS1;KCNQ2;FZD9;FYN;SLC29A1
MP0000371_diluted_coat_color_	2/112	0.946447092778 146	0.95561365057745	5.475.124.004.950.370	-0.248579273 9992056	SRC;VPS33A
MP0002184_abnormal_innervation_	11/161	0.085067945928 24463	0.266716792872767	0.2022660331514455 6	-0.267308293 51271873	EPHA4;TOP2B;EGR2;EFNB3;CHD7;ADCY3;NDN;SOX11;ODZ3;PTPN13;GLI3
MP0002572_abnormal_emotion/affect_behav_	11/372	0.906107688353 1916	0.9295757232460099	3.991.071.232.488.380	-0.291455992 7967727	RTN4R;RAI1;WFS1;MDK;PTCH1;FYN;SLC2A3;COMT;PTPRF;SLC9A1;GPR19
MP0004808_abnormal_hematopoietic_stem_	Juli 72	0.038582981078 43802	0.1503654496234454	0.1543013289308330 6	-0.292352662 9267958	FBXW7;RAPGEF2;FOXO3;MLL5;GUSB;ARID1A;SIPA1
MP0000026_abnormal_inner_ear_	14/229	0.110162013585 18632	0.3168107563105014	0.2624202415237983 4	-0.301639121 5535698	FZD1;FZD2;GPR98;CHD7;NR2F1;SOBP;BMP7;DLL1;GLI3;EDNRB;COL9A1;HOXA2;OTX1;HES5
MP0000249_abnormal_blood_vessel_	7/254	0.903641855578 502	0.9295757232460099	4.147.164.800.413.680	-0.302855039 10757816	ABCC4;SCPEP1;MTAP;CBS;STMN1;CXCR4;DICER1
MP0009046_muscle_twitch_	Jan 70	0.945689364567 9173	0.95561365057745	6.978.324.215.714.840	-0.316826936 8337705	PPT2
MP0000230_abnormal_systemic_arterial_	6/218	0.890227237524 6781	0.9243443933216134	4.145.578.105.800.150	-0.326134937 5853144	IL10;WRN;EDNRB;DUSP1;STK39;DLL1
MP0005165_increased_susceptibility_to_	Juli 72	0.038582981078 43802	0.1503654496234454	0.1729256235667915 3	-0.327639864 7265703	PDGFRB;IL10;CAPN9;ITPRIP;BIRC5;HSPA1B;UNG
MP0009764_decreased_sensitivity_to_	Jan 67	0.938551530355 1776	0.9522530125501437	6.756.085.341.191.090	-0.330538164 9425696	S1PR3
MP0000367_abnormal_coat/_hair_	18/559	0.893311248222 0869	0.9243443933216134	4.219.992.861.793.550	-0.331989187 8688579	LGI1;HELLS;SMAD4;SRC;VPS33A;NCOA3;PTCH1;BRCA1;DICER1;GLI2;CDC42;EDNRB;CBS;E2F2;FYN;E2F3;BCAT2;MCM2
MP0001663_abnormal_digestive_system_	8/103	0.077130760065 043	0.2479499752055382 1	0.2480036525874991 2	-0.345848103 61562923	IL10;COL2A1;AIRE;LEP;IL18;OTX1;SULF1;SLC26A6
MP0005000_abnormal_immune_tolerance_	13/404	0.859867910947 6642	0.9117004888574417	3.867.810.540.879.760	-0.357554926 8835339	MPG;AIRE;DUSP1;PLCL2;ICA1;CXCR4;CBLB;MERTK;IRAK1;PDCD4;E2F2;FYN;MTA2

MP0001790_abnormal_immune_system_	3/125	0.892118930303 8849	0.9243443 933216134	4.693.111.578.498.750	-0.369209700715356	IL10;ID2;E2F2
MP0005387_immune_system_phenotype_	3/125	0.892118930303 8849	0.9243443 933216134	470.903.623.350.438	-0.370462502 19051347	IL10;ID2;E2F2
MP0003633_abnormal_nervous_system_	4/148	0.863849957978 9296	0.9117004 888574417	4.277.946.543.369.190	-0.395469438 68096524	DDB1;ABCC4;TFAM;FBLN1
MP0002970_abnormal_white_adipose_	13/220	0.143259514524 62027	0.3687606 022022633	0.4058781 226581971	-0.404907107 9577419	HELLS;FEN1;IL18;BRCA1;POU3F2;RPS6KA3;RAI1;WRN;FABP5;LEP;ID2;E2F3;GUSB
MP0010630_abnormal_cardiac_muscle_	14/230	0.112846145055 00566	0.3202223 932982201	0.3656127 372682519	-0.416337682 27227264	HDAC2;JUP;ANGPT1;NR2F2;ZFP36L1;FKBP1A;GJC1;MYCN;IRAK1;LEP;MTERFD1;JARID2;NKX2-5;VCL
MP0005464_abnormal_platelet_physiology_	Feb 92	0.895617350651 0746	0.9244367 208452924	5.328.810.542.795.140	-0.418688254 04560817	VPS33A;MERTK
MP0003638_abnormal_response/metabolism__	Feb 91	0.892153351803 5116	0.9243443 933216134	5.425.230.053.219.650	-0.426805868 72002835	HDAC2;HSPA1B
MP0005381_digestive/alimentary_phenotyp_	9/131	0.109428830536 95088	0.3168107 563105014	0.3929222 283786256	-0.451644717 3388162	IL10;COL2A1;AIRE;LEP;IL18;SMARCAD1;OTX1;SULF1;SLC26A6
MP0002069_abnormal_eating/drinking_beha_	28/543	0.155453549697 41257	0.3905068 085772352	0.4813911 981329238 6	-0.452656897 0138239	CNTFR;PANK1;CHD7;LPAR1;PSIP1;DLL1;RAI1;UBB;PTTG1;HOXA2;FYN;E2F4;ACVR1;SLC30A7;EGR2;WFS1;NCOA3;NR2F1;IL18;EIF2AK4;SAFB;PNRC2;ILF3;CREB1;PIGA;SLC29A1;OGT;BCAT2
MP0008872_abnormal_physiological_respon_	Jan 60	0.918044128489 5217	0.9382951 019120847	7.320.858.244.660.000	-0.466271112 37023816	MPG
MP0002118_abnormal_lipid_homeostasis_	25/693	0.797628763543 0186	0.8776020 960354584	36.491.370.498.297.000	-0.476438564 544591	MPG;PANK1;SLC20A1;INSIG1;DLL1;WRN;PLAGL2;SLC37A4;GUSB;IL10;ABCC4;ELOVL4;DUSP1;NCOA3;PAX6;ACSL4;NR2F2;DLK1;GPAM;LEP;NMU;PLP1;TXNIP;BCAT2;SLC25A13
MP0002089_abnormal_postnatal_growth/wei_	Jan 62	0.924516076829 7885	0.9403004 976537118	7.946.393.928.733.420	-0.489146448 25529346	COL2A1
MP0001944_abnormal_pancreas_morphology_	12/196	0.131017607388 22224	0.3486530 154018472 3	0.4789269 331406870 7	-0.504634809 7239975	FBXL20;GDF11;PTTG1;AIRE;WFS1;MPG;HMGA1;TFAM;SOX11;PAX6;PPT2;DLL1
MP0003632_abnormal_nervous_system_	8/110	0.101089159464 69157	0.2989658 120338750 7	0.4182866 083036253	-0.505050148 5506811	YAP1;EDNRB;UHRF1;STMN1;HOXA2;BRCA1;OTX1;KLC1
MP0002971_abnormal_brown_adipose_	Feb 85	0.869034928626 0703	0.9127790 123646423	5.597.655.320.121.240	-0.510850271 4711908	PNN;POU3F2
MP0005166_decreased_susceptibility_to_	Feb 84	0.864765359305 5822	0.9117004 888574417	55.286.192.307.853.700	-0.511086317 1650413	IL18;SLC9A1
MP0001533_abnormal_skeleton_physiology_	5/160	0.796331733991 0491	0.8776020 960354584	4.078.727.522.674.290	-0.532526747 9778931	IL10;KHDRBS1;DUSP1;COL9A1;CXCR4
MP0000920_abnormal_myelination_	4/134	0.809163625040 3262	0.8824581 49883333	4.287.295.089.422.910	-0.536100156 4294138	LINGO1;EGR2;STMN1;PLP1

MP0001765_abnormal_ion_homeostasis_	4/136	0.817938202706 4481	0.882458149883333	4.333.679.337.406.230	-0.5419002243232858	PLCL2;STK39;TXNIP;CLEC2D
MP0000490_abnormal_crypts_of_	Juli 81	0.062577820348 34157	0.21566075277073085	0.3549959604347216	-0.5445810898316943	IL10;HDAC2;FEN1;E2F4;CDC25A;TMPO;MCM2
MP0003795_abnormal_bone_structure_	22/430	0.200042314951 50004	0.4505008772878588 7	0.689495227688251	-0.5498002226078273	IL10;HELLS;KHDRBS1;EGR2;LEPRE1;FZD9;BRCA1;DICER1;SULF1;DLL1;BMP7;GLI3;CDC25A;RPS6KA3;COL2A1;CREB1;CCNE1;GPC3;ALPL;GUSB;SLC37A4;CLEC2D
MP0001243_abnormal_dermal_layer_	Juli 87	0.082705793872 94934	0.26127512155318083	0.4139092981649018	-0.5555413286972 64	CDC42;SOCS2;PNN;LEPRE1;CBS;PTCH1;BRCA1
MP0003436_decreased_susceptibility_to_	Jan 57	0.907283739475 1224	0.9295757232460099	782.179.551.613.195	-0.5712023275982003	CXCR4
MP0001963_abnormal_hearing_physiology_	15/290	0.242440827791 14862	0.5080292723060752	0.847492652905467	-0.5739357627543664	EGR2;GPR98;CHD7;NR2F1;PTN;IL17RD;SOBP;FBXO11;COCH;EDNRB;COL2A1;MDK;PRKRA;COL9A1;GUSB
MP0002098_abnormal_vibrissa_morphology_	3/108	0.827636374351 4347	0.8872091725052654	4.822.029.733.557.860	-0.5770740180228704	DICER1;BMP7;GLI3
MP0005369_muscle_phenotype_	14/247	0.164261303182 57884	0.3982381594600893 4	0.657935361231192	-0.6057644175929954	HDAC2;LEPRE1;PTCH1;MTMR14;IFRD1;LTBP4;DLL1;FKBP1A;MYCN;LEP;STMN1;ALPL;JARID2;COX10
MP0002148_abnormal_hypersensitivity_rea_	4/127	0.775723047542 645	0.8652384773926112	41.882.686.373.370.200	-0.6062523612089 04	IL10;FYN;LTA4H;GADD45G
MP0002177_abnormal_outer_ear_	8/120	0.141703981037 5617	0.3670221123767903	0.628115575231251	-0.6295810825790134	MAP2K1;PRKRA;NCOA3;CHD7;HOXA2;PAX6;FBXO11;GLI3
MP0002067_abnormal_sensory_capabilities_	12/326	0.708102848845 638	0.8248706280207655	32.873.840.460.358.400	-0.6329158407710549	EPHA4;RAI1;MAP2K4;EGR2;HSPA4;STRBP;CHD7;PSIP1;ODZ3;E2F4;NR2F6;HIPK2
MP0001970_abnormal_pain_threshold_	6/175	0.738051758332 3893	0.8416023621635017	37.014.479.054.955.400	-0.6383059197 94388	IL10;ABCC4;EDNRB;LEP;NDN;FLNC
MP0000358_abnormal_cell_content/_	9/137	0.131902321497 36458	0.3486530154018472 3	0.6083978544493736	-0.6410554810588608	CDC42;DYNC2H1;CCNE1;ITSN1;TFAM;ULK1;BRCA1;GUSB;GLA
MP0003953_abnormal_hormone_level_	35/677	0.120673090016 53276	0.3310570956374615 5	0.5826877414618612	-0.6441405685496492	KHDRBS1;STK39;LPAR1;FOXO3;SOCS2;RAI1;RPS6KA3;SOX3;WRN;PTTG1;UBB;CBS;SIX5;FYN;OTX1;IL10;WFS1;NCOA3;HMGA1;PAX6;NR2F2;SAFB;ACVR2A;PNRC2;GPAM;FABP5;LEP;NMU;TFAM;TXNIP;FKBP4;CLEC2D;BCAT2;SLC25A13;LY6E
MP0000759_abnormal_skeletal_muscle_	11/290	0.666496313887 3684	0.8109098564043913	3.131.096.514.471.130	-0.6562727639779338	FKBP1A;ILF3;EDNRB;LEP;IFRD1;LTBP4;CXCR4;FLNC;EIF2AK4;DLL1;COX10
MP0002064_seizures_	17/323	0.205264188692 30978	0.4505008772878588 7	0.8284631921262107	-0.6606126179880206	LGI1;CHRNA5;GPR98;SLC2A1;FZD9;SLC9A1;MAPK10;RAI1;COL2A1;TRIM2;KCNQ2;PLP1;ALPL;FYN;OTX1;PPT2;SLC37A4
MP0001191_abnormal_skin_condition_	9/238	0.662437799895 3674	0.8109098564043913	31.676.183.642.575.700	-0.6639276846085043	MSH6;SMAD4;ELOVL4;PTCH1;ITGA6;LPAR4;BRCA1;NKX2-5;DDB2
MP0002734_abnormal_mechanical_nocicepti_	Feb 78	0.836367308333 8152	0.8919825257677774	5.835.974.578.506.750	-0.6671028805512984	KIF1B;FLNC
MP0005636_abnormal_mineral_homeostasis_	11/194	0.200253816719 20922	0.4505008772878588 7	0.840049256159585	-0.6698512904673868	SLC30A7;IL10;TFRC;CBS;EIF2AK1;SLC11A2;IREB2;STK39;TXNIP;EXOC6;CLEC2D

MP0009250_abnormal_appendicular_skeleto_	Juli 92	0.1020105238306974 5	0.2995661157563439	0.5567426305583371	-0.6711087752241833	GDF11;HDAC2;SMO;CBX2;PDS5B;BMP7;GLI3
MP0001919_abnormal_reproductive_system_	Juni 47	0.018693807485638668	0.0856628321045200 5	0.2778497242686775	-0.6827701981594364	IL10;RAD51C;CXCR4;BRWD1;FKBP4;LGR4
MP0002269_muscular_atrophy_	März 98	0.776017243512 7975	0.8652384773926112	47.408.234.174.669	-0.6862347284249651	MTMR14;HOXB2;BRCA1
MP0004085_abnormal_heartbeat_	6/171	0.718359680128 7887	0.8305688737185755	3.706.962.127.805.380	-0.6881768450827487	HDAC2;KCNJ8;JUP;HDAC1;ENPP2;DLL1
MP0005551_abnormal_eye_electrophysiolog_	6/169	0.708139610106 1098	0.8248706280207655	36.191.438.189.159.300	-0.6967891250134653	GJC1;ELOVL4;LAMA1;GPR98;UNC119;MERTK
MP0002419_abnormal_innate_immunity_	16/411	0.646065350170 5637	0.7994339792911722	31.393.420.787.296.500	-0.7027458921606633	IL10;DUSP1;UNC93B1;IL18;TNFRSF10B;PTN;MLL5;BAG4;IRAK1;MDK;LEP;HNRNPD;SIRPA;PTX3;FYN;SLC37A4
MP0002075_abnormal_coat/hair_pigmentati_	8/218	0.689935149896 5809	0.8183341622635882	3.506.001.469.321.140	-0.7028990023175758	LGI1;HELLS;EDNRB;SRC;VPS33A;BRCA1;GLI3;MCM2
MP0003115_abnormal_respiratory_system_	Juli 93	0.106142682563 58354	0.3095209694336667	0.6160404465944003	-0.7224487658203621	FEN1;MYCN;CBS;CHD7;FBLN1;SAFB;SULF2
MP0000377_abnormal_hair_follicle_	9/149	0.183383843441 14106	0.4258967167907427	0.8549920264911917	-0.7297856355120956	CDC42;PNN;SMAD4;MAP2K1;CBS;DICER1;BRCA1;MTA2;BMP7
MP0003075_altered_response_to_	Juni 53	0.030077680007 33445	0.1241821045847373	0.3509082444995163 5	-0.7319967755285606	RTN4R;IL10;ITPRIP;IL18;HSPA1B;UNG
MP0002095_abnormal_skin_pigmentation_	Feb 73	0.808701928482 5624	0.8824581 49883333	58.899.547.340.209	-0.7365029904428144	EDNRB;BRCA1
MP0001186_pigmentation_phenotype_	10/257	0.632274688477 3492	0.7865656132521518	30.853.926.003.567.900	-0.7407383885182681	LGI1;HELLS;EDNRB;SRC;VPS33A;MAGOH;PAX6;BRCA1;GLI3;MCM2
MP0005334_abnormal_fat_pad_	12/234	0.282890217066 2124	0.5386539749616922	1.201.868.503.966.030	-0.7435742777818415	RAI1;WRN;GPAM;PTTG1;MPG;ID2;IL18;PSIP1;DLK1;LGR4;PNRC2;BCAT2
MP0000858_altered_metastatic_potential_	Feb 72	0.802692221721 6427	0.8808490959419079	5.904.369.876.067.010	-0.7490812358556077	LEP;TNFRSF10B
MP0004142_abnormal_muscle_tone_	Jan 49	0.871189560961 9368	0.9127790123646423	8.218.834.178.089.350	-0.7500629158000218	NDN
MP0005448_abnormal_energy_balance_	5/139	0.689879340792 9399	0.8183341622635882	37.415.626.564.329.400	-0.7501253725443084	UBB;FABP5;IL18;PNRC2;BCAT2
MP0008874_decreased_physiological_sensi_	5/135	0.665859243227 9216	0.8109098564043913	35.908.394.396.876.600	-0.7526341373360196	IL10;MAPK10;TNFRSF10B;TXNIP;FOXO3
MP0000681_abnormal_thyroid_gland_	Jan 48	0.865787514598 4338	0.9117004888574417	830.241.808.364.795	-0.7675066964836514	FBLN1
MP0010771_integument_phenotype_	12/217	0.208571246991 31932	0.4553623559967547 3	100.803.030.503.644	-0.7929789243084405	MAP2K1;SMAD4;FABP5;JUP;ELOVL4;RAB23;DSE;E2F2;DICER1;NR2F6;SMARCA4;DDB2
MP0009643_abnormal_	12/296	0.581995922216	0.7513693 48495974	27.986.380.647.675.8	-0.800012909	SOCS2;EDNRB;SLC25A19;LEP;STK39;TXNIP;FYN;GUSB;MTA2;SLC26A6;BCAT2;SLC25A13

urine_homeostasis_		306		00	7619563	
MP0001819_abnormal_immune_cell_	55/1097	0.094784374179 54155	0.2823220 288062059	0.6333315 313705896	-0.800978766 228513	GMNN;ICA1;CBLB;BRCA1;IL27RA;PTTG1;MDK;SIRPA;CASP2;TMEM109;SLC37A4;IL13RA1;IL10;DUSP4;FBXW7;DICER1;CD200R1;TXNIP;BIRC5;ITGA6;PCNA;UNC93B1;AIRE;HDAC1;CXCR4;PTN;STK4;FOXO3;DLL1;UNG;BAG4;PAK1;IRAK1;E2F2;S1PR3;MTA2;TNFSF14;XRCC5;PLCL2;EIF2AK4;MLL5;PTPN13;MERTK;DLK1;GADD45G;IMPDH1;ID2;LEP;HNRNPD;ID3;SDC1;PTX3;NFKBIE;EBAG9;OGT
MP0005193_abnormal_anterior_eye_	16/338	0.345859085253 10033	0.5936785 847665402	15.467.238 .891.044.400	-0.806488453 590564	POU2F1;SRC;AIRE;VPS33A;BMP7;RAD23B;GLI3;DDB1;PNN;COL2A1;SMO;SIX5;RAB23;COL8A1;OTX1;LGR4
MP0003631_nervous_system_phenotype_	12/240	0.310915924705 018	0.5686488 622894408	14.415.744 .240.752.100	-0.813757444 6987468	DDB1;YAP1;ABCC4;EDNRB;UHRF1;STMN1;TFAM;HOXA2;FBLN1;BRCA1;OTX1;KLC1
MP0002078_abnormal_glucose_homeostasis_	26/636	0.572642049747 3779	0.7440971 93518022	2.769.536.037.178.850	-0.818629477 1549686	PANK1;MPG;ICA1;SLC2A1;FOXO3;RPS6KA3;WRN;PTTG1;GPC3;SLC37A4;IL10;HELLS;PTPRN2;WFS1;IGFBP4;NCOA3;HMGA1;PAX6;NR2F2;GPAM;FABP5;NMU;TXNIP;TFAM;BCAT2;SLC25A13
MP0002135_abnormal_kidney_morphology_	28/591	0.278134720103 205	0.5354933 548791538	13.145.985 .321.876.800	-0.821054596 3779863	CXCR4;FBLN1;BRCA1;GLI3;PTPRF;CBS;MDK;GPC3;E2F2;FYN;SLIT2;SKP2;GUSB;SLC37A4;MTA2;PDGFRB;HELLS;GDF11;SLC11A2;SULF1;BMP7;SULF2;MYCN;ID2;PDCD4;GLA;LGR4;BCAT2
MP0005025_abnormal_response_to_	22/525	0.524963675460 3817	0.7177372 218589481	24.791.392 .307.900.800	-0.822210897 0902569	IL10;CERK;KCNJ8;UNC93B1;IL18;TNFRSF10B;DICER1;PTPN13;MLL5;ASGR1;IL27RA;PIAS1;BCL2L12;WRN;PLP1;GPC3;HNRNPD;SDC1;PTX3;E2F4;EBAG9;IL13RA1
MP0001764_abnormal_homeostasis_	Juni 57	0.039755493410 534824	0.1535003 773351205 6	0.4414351 486261627 3	-0.827272535 1667315	IL10;GALT;LEP;SLC37A4;BCAT2;SLC25A13
MP0002972_abnormal_cardiac_muscle_	10/174	0.203874006065 68792	0.4505008 772878588 7	10.436.090 .028.439.000	-0.832168866 4950958	GJC1;FKBP1A;SFRP2;JUP;MTMR14;IL18;TXNIP;NKX2-5;SMAD5;VCL
MP0002420_abnormal_adaptive_immunity_	54/1092	0.115228324968 39984	0.3246635 912960995	0.7551544 160887598	-0.849522843 8261327	GMNN;ICA1;CBLB;BRCA1;IL27RA;PTTG1;MDK;SIRPA;CASP2;TMEM109;SLC37A4;IL13RA1;IL10;DUSP4;FBXW7;DICER1;TXNIP;BIRC5;ITGA6;PCNA;UNC93B1;AIRE;HDAC1;CXCR4;PTN;STK4;FOXO3;DLL1;UNG;BAG4;PAK1;IRAK1;E2F2;FYN;S1PR3;MTA2;TNFSF14;XRCC5;PLCL2;MLL5;PTPN13;MERTK;DLK1;GADD45G;IMPDH1;ID2;LEP;HNRNPD;ID3;SDC1;PTX3;NFKBIE;EBAG9;OGT
MP0005174_abnormal_tail_pigmentation_	Jan 48	0.865787514598 4338	0.9117004 888574417	9.203.294.508.117.540	-0.850787095 220312	EDNRB
MP0005535_abnormal_body_temperature_	6/153	0.617632431697 489	0.7734316 036572161	33.171.441 .833.771.700	-0.852234173 261246	IL10;NCOA3;NMU;HSPA1B;PNRC2;BCAT2
MP0002111_abnormal_tail_morphology_	16/344	0.370933905102 85384	0.5972179 089879925	16.568.276 .086.348.600	-0.854050271 5340726	GDF11;EGR2;PTCH1;CDC7;SOX11;BRCA1;SULF1;BMP7;COL2A1;MYCN;SFRP2;ZIC2;MTF2;DSE;BLMH;GUSB
MP0005385_cardiovascular_system_phenoty_	8/201	0.603454724049 7546	0.7625473 331174173	3.151.956.724.769.700	-0.854466142 9342216	FKBP1A;HDAC2;MYCN;LEP;TFAM;TXNIP;E2F3;JARID2
MP0001544_abnormal_cardiovascular_syste_	8/201	0.603454724049 7546	0.7625473 331174173	31.667.443 .345.275.600	-0.858474926 3587266	FKBP1A;HDAC2;MYCN;LEP;TFAM;TXNIP;E2F3;JARID2
MP0001293_anophthalmia_	Juni 58	0.042449829860 139406	0.1580498 129614118 8	0.4672502 936644830 6	-0.862004379 1057534	POU2F1;SMO;SP1;RAB23;BMP7;GLI3
MP0003693_abnormal_embryo_hatching_	Juni 27	0.001763219828 257038	0.0118590 752965029 8	0.1946406 249136912	-0.863165355 0702877	CHEK1;BIRC5;CDCA8;KIF11;CDC25A;GNL3
MP0005319_abnormal_	10/235	0.522254522703	0.7163820 262081394	25.986.189 .275.973.3	-0.866747769	IL10;MDK;DUSP1;HNRNPD;TFAM;ALPL;PTN;GUSB;MTA2;ADA

enzyme/_coenzyme_		2959		00	969442	
MP0004087_abnormal_muscle_fiber_	11/267	0.561093347384 5767	0.7357733 517590204	2.870.107.369.548.340	-0.880644095 535449	ILF3;HDAC2;JUP;IRAK1;MTMR14;LEP;MTERFD1;FLNC;JARID2;VCL;COX10
MP0002723_abnormal_immune_serum_	38/828	0.300563519907 62054	0.5645720 171237737	15.450.249.131.252.600	-0.883271162 2600833	UNC93B1;CBLB;STK4;LITAF;DLL1;IL27RA;UNG;BCL2L12;BAG4;PTTG1;CBS;ENPP2;FYN;S1PR3;SLC37A4;MTA2;IL13RA1;IL10;TNFSF14;DUSP1;PLCL2;TNFRSF10B;EIF2AK4;PTPN13;MERTK;FBXO11;DLK1;GADD45G;CD200R1;CREB1;LEP;NMU;PDCD4;HNRNPD;SDC1;ID3;NFKBIE;HSPA1B
MP0001845_abnormal_inflammatory_respons_	30/707	0.492086407322 1688	0.6979592 920181782	2.458.553.488.303.560	-0.884082309 4274316	SRC;AIRE;FOXO3;LITAF;BAG4;EDNRB;IRAK1;CBS;MDK;ENPP2;E2F2;S1PR3;LTA4H;SLC37A4;MTA2;IL10;ABCC4;TNFSF14;KCNJ8;DUSP1;IL18;PAX6;DICER1;MERTK;BMP7;PIAS1;MTAP;LEP;HNRNPD;SDC1
MP0004924_abnormal_behavior_	7/120	0.247255443091 21217	0.5105519 886424684	13.231.729.470.592.000	-0.889519960 7138616	WFS1;LEP;DCX;PLP1;HOXA2;DICER1;E2F4
MP0001486_abnormal_startle_reflex_	6/148	0.586351031432 6491	0.7546554 941586873	31.733.876.875.682.900	-0.893289381 097237	ZIC2;GPR98;PLP1;SLC2A3;FBXO11;MID1
MP0002229_neurodegeneration_	15/317	0.353397036210 3651	0.5936785 847665402	17.163.817.147.326.000	-0.894950963 5409435	ELOVL4;HSPA4;GPR98;IREB2;KLC1;MERTK;SLC9A1;EDNRB;UBB;TRIM2;STMN1;PLP1;TFAM;NEFM;LGR4
MP0001664_abnormal_digestion_	März 87	0.705312712286 7632	0.8248706 280207655	46.528.540.040.372.300	-0.895808023 2522018	EDNRB;TFRC;IL18
MP0008469_abnormal_protein_level_	22/513	0.481807354430 51725	0.6880605 027312524	24.091.293.101.787.400	-0.900721664 5978324	IL10;DUSP1;UNC93B1;IL18;TNFRSF10B;PTN;MERTK;DLL1;BCL2L12;BAG4;MDK;CBS;LEP;TDP1;NMU;HNRNPD;ENPP2;ALPL;S1PR3;FYN;MTA2;IL13RA1
MP0005386_behavior/neurological_phenoty_	7/120	0.247255443091 21217	0.5105519 886424684	13.406.101.953.801.900	-0.901242374 2320009	WFS1;LEP;DCX;PLP1;HOXA2;DICER1;E2F4
MP0002136_abnormal_kidney_physiology_	18/396	0.394751347456 2576	0.6258985 242937621	1.924.255.053.732.520	-0.901642461 6143339	PDGFRB;ABCC4;VPS33A;NCOA3;STK39;CXCR4;FOXO3;COL2A1;EDNRB;PTTG1;MDK;HNRNPD;TXNIP;E2F2;FYN;MTA2;SLC26A6;BCAT2
MP0005332_abnormal_amino_acid_	8/133	0.204611287891 5729	0.4505008 772878588 7	1.132.269.895.193.660	-0.902866641 3208084	IL10;CBS;PANK1;SHMT1;LPAR1;EIF2AK4;LGR4;BCAT2
MP0002452_abnormal_antigen_presenting_	30/722	0.538442813359 0028	0.7217189 627894677	2.769.640.737.458.860	-0.903233752 9944856	PCNA;UNC93B1;HDAC1;PTN;STK4;DLL1;UNG;BAG4;IRAK1;PTTG1;MDK;SIRPA;CASP2;FYN;S1PR3;IL13RA1;IL10;DUSP4;XRCC5;PLCL2;IL18;EIF2AK4;DLK1;CD200R1;LEP;HNRNPD;ID3;SDC1;PTX3;NFKBIE
MP0005584_abnormal_enzyme/coenzyme_acti_	9/167	0.274078813967 7536	0.5340694 646007161	14.460.081.726.177.100	-0.906978787 8381678	EDNRB;SLC25A19;PANK1;GPC3;EXOC6;DLL1;HSPA1B;CDC25A;HSPA1A
MP0003634_abnormal_glial_cell_	10/231	0.501093858092 1904	0.7014657 401197724	259.561.190.436.936	-0.920360423 4573821	EGR2;SMO;LAMA1;STMN1;PLP1;LPAR1;IL18;TFAM;PTPN13;HES5
MP0005253_abnormal_eye_physiology_	4/104	0.633779486936 9856	0.7865656 132521518	38.557.595.223.231.400	-0.925687413 2482635	GJC1;XRCC5;CHD7;HOXB2
MP0008873_increased_physiological_sensi_	8/183	0.500422375319 0156	0.7014657 401197724	2.625.938.546.219.860	-0.931113741 7360454	IL10;PDGFRB;MPG;TDP1;NCOA3;TFAM;BLMH;BRCA1
MP0002066_abnormal_motor_capabilities/c_	67/1482	0.264603202590 91197	0.5304785 35963511	14.969.829.434.175.800	-0.949050931 832839	TOP2B;CERK;MTMR14;CHD7;SLC2A1;PSIP1;BRCA1;SOBP;PTPRF;GLI2;RPS6KA3;ZIC2;TRIM2;KIF1B;GUSB;IL10;EPHA4;MAP2K4;HELLS;ELOVL4;STRBP;NCOA3;RAD23B;MID1;ILF3;CREB1;COL2A1;MYCN;PIGA;IGDCC3;DCX;TFAM;HOXB2;MCM2;BCAT2;RTN4R;DNMT1;HDAC2;AIRE;IREB2;LTBP4;LPAR1;KLC1;DLL1;SLC9A1;RAI1;EFNB3;NDN;FYN;OTX1;COX10;EGR2;SMAD4;POU2F1;HSPA4;WFS1;GDF15;BMP7;HIPK2;MAPK10;LEP;NMU;PLP1;ALPL;PPT2;OGT;GLA

MP0002272_abnormal_nervous_system_	11/227	0.357279339088 95393	0.5936785847665402	18.210.819.497.296.400	-0.9495434678709997	RAI1;EGR2;FZD2;CREB1;KCNQ2;STMN1;CHD7;PLP1;NDN;SLC2A3;NEFM
MP0002106_abnormal_muscle_physiology_	9/178	0.334948105659269	0.5833880840139954	17.630.165.032.191.800	-0.9500942599851974	FKBP1A;HDAC2;MYCN;MTMR14;STMN1;IFRD1;LTBP4;JARID2;COX10
MP0002896_abnormal_bone_mineralization_	7/117	0.229225235829 81394	0.4926846593864226	13.421.718.764.172.800	-0.9501046080 65737	IL10;RPS6KA3;EGR2;SLC20A1;PTCH1;ALPL;GLI3
MP0009785_altered_susceptibility_to_	März 85	0.690776079416 7459	0.8183341622635882	4.746.092.974.018.960	-0.9515181455386921	TNFRSF10B;SDC1;PIAS1
MP0005620_abnormal_muscle_contractility_	11/226	0.352175708121 0185	0.5936785847665402	18.250.288.438.926.300	-0.9516014464102975	FKBP1A;IL10;GJC1;LEP;MTMR14;IL18;TXNIP;SULF1;NKX2-5;SMAD5;VCL
MP0002557_abnormal_social/conspecific_i_	12/264	0.427952083553 20385	0.6419281253298058	21.632.473.429.246.300	-0.9589219802049109	EPHA4;KHDRBS1;MDK;XRCC5;STRBP;CHD7;FYN;HOXB2;COMT;GUSB;SAFB;PTPRF
MP0000470_abnormal_stomach_morphology_	7/122	0.259512718471 4803	0.5253242893330 45	15.027.534.368.190.900	-0.9673817657531298	GDF11;SMAD4;MYCN;AIRE;SOX11;BRCA1;SLC9A1
MP0002063_abnormal_learning/memory/cond_	18/403	0.422774244603 9732	0.6410794909085704	22.105.289.969.198.200	-0.9828052129217 17	RTN4R;HDAC2;WFS1;HSPA4;FZD9;EIF2AK4;MID1;PTPRF;SLC9A1;RPS6KA3;RAI1;CREB1;MDK;ACCN2;DCX;EIF4EBP2;NDN;FYN
MP0002693_abnormal_pancreas_physiology_	9/198	0.449641147841 8748	0.6625454369260134	2.389.982.230.531.330	-0.9838747581593452	AIRE;MPG;WFS1;HMGA1;TFAM;PAX6;NR2F2;MERTK;SLC26A6
MP0000639_abnormal_adrenal_gland_	März 82	0.667973912283 5437	0.8109098564043913	4.694.872.649.252.630	-0.9840377119674489	AIRE;GLI3;LY6E
MP0002998_abnormal_bone_remodeling_	7/130	0.310081750959 22	0.5686488622894408	17.853.583.195.026.900	-10.078.207.546.462.000	KHDRBS1;RPS6KA3;SRC;PTCH1;ALPL;AXIN2;CLEC2D
MP0001502_abnormal_circadian_rhythm_	Juni 97	0.231414052519 64803	0.4926846593864226	14.487.395.785.887.200	-10.255.423.867.013.100	RAI1;RASD1;CREB1;ID2;NMU;NR2F6
MP0000747_muscle_weakness_	Feb 63	0.740690807947 2545	0.8416023621635017	6.162.591.580.988.830	-10.627.243.143.365.500	KIF1B;MCM2
MP0001835_abnormal_antigen_presentation_	Feb 63	0.740690807947 2545	0.8416023621635017	6.172.969.623.264.040	-10.645.139.831.335.400	IL10;UNC93B1
MP0005023_abnormal_wound_healing_	6/103	0.271832591676 63654	0.5321792991979223	16.882.727.850.884.700	-10.649.199.585.026.200	IL10;PDGFRB;MDK;SDC1;BRCA1;SKP2
MP0002168_other_aberrant_phenotype_	Feb 62	0.732861368154 5824	0.8395692047265407	6.104.249.440.813.750	-10.674.279.425.966.700	CUL1;GLI3
MP0001756_abnormal_urination_	Apr 99	0.596325450553 489	0.7581332709780637	3.856.226.920.751.760	-10.677.741.548.194.100	EDNRB;PTTG1;NCOA3;BCAT2
MP0002133_abnormal_respiratory_system_	7/144	0.401962735399 00873	0.6277844968591261	23.021.043.726.980.000	-10.717.638.655.669.700	HELLS;DPPA4;DUSP1;KCNQ2;LTBP4;CXCR4;E2F3
MP0003942_abnormal_urinary_sys	Juni 92	0.199341180799 48188	0.4505008772878588 7	1.352.236.621.726.770	-1.078.267.065.221.780	GDF11;CBS;GPC3;SLIT2;BMP7;PTPRF

tem_						
MP0005388_respiratory_system_phenotype_	7/144	0.401962735399 00873	0.6277844968591261	2.319.334.953.208.430	-10.797.857.058.418.200	HELLS;DPPA4;DUSP1;KCNQ2;LTBP4;CXCR4;E2F3
MP0005395_other_phenotype_	6/110	0.320892902315 88213	0.5788734562631911	198.234.459.928.449	-10.836.910.596.544.500	CDC20;DPPA4;SLC11A2;CUL1;EIF2AK4;GLI3
MP0009115_abnormal_fat_cell_	Juni 98	0.238017917734 33534	0.5012801600768578	15.815.148.672.950.000	-10.921.785.616.643.900	FEN1;LEP;NCOA3;NMU;DLK1;PNRC2
MP0006036_abnormal_mitochondrial_physio_	6/106	0.292657321831 3821	0.5522086117813861	1.869.303.000.184.160	-11.100.470.494.918.500	SLC25A19;MTERFD1;LEP;TFAM;BIRC5;TXNIP
MP0008775_abnormal_heart_ventricle_	Jan 40	0.813590704891 1653	0.8824581 49883333	8.895.735.253.620.460	-11.123.575.498.187.800	WRN
MP0009642_abnormal_blood_homeostasis_	79/1834	0.401650959992 8627	0.6277844968591261	23.963.002.339.036.900	-11.156.175.333.343.900	TFRC;PANK1;MPG;MTR;ASGR1;RPS6KA3;EDNRB;PTTG1;MDK;SIX5;ENPP2;SLC37A4;GUSB;IL13RA1;PDGFRB;IL10;SLC30A7;ABCC4;HELLS;DUSP1;NCOA3;VPS33A;IL18;SOX11;PAX6;SAFB;MN1;ILF3;TXNIP;TFAM;EXOC6;FKBP4;BCAT2;SLC25A13;LY6E;KHDRBS1;HDAC2;UNC93B1;SHMT1;INSIG1;STK39;PDS5B;PTN;FOXO3;DLL1;BCL2L12;RAI1;WRN;LDHA;BAG4;CBS;USP1;GPC3;NDN;PLAGL2;E2F3;OTX1;MTA2;FZD1;JUP;WFS1;HMGA1;TNFRSF10B;EIF2AK4;NR2F2;MERTK;DLK1;ACVR2A;PNRC2;GPAM;FABP5;TDP1;NMU;HNRNPD;ALPL;CLEC2D;SLC26A6;ADA;LGR4
MP0005595_abnormal_vascular_smooth_	Apr 96	0.572794242492 2903	0.7440971 93518022	38.215.112.299.049.700	-1.129.576.108.807.610	IL10;EDNRB;CBS;PTCH1
MP0001542_abnormal_bone_strength_	Feb 62	0.732861368154 5824	0.8395692 047265407	6.485.729.802.685.020	-11.341.360.287.850.600	IL10;ALPL
MP0005330_cardiomyopathy_	Juni 89	0.180950493809 36665	0.4252607425733163 6	13.281.269.934.048.500	-11.356.186.861.940.500	FKBP1A;MTERFD1;LTBP4;TFAM;NKX2-5;LY6E
MP0009765_abnormal_xenobiotic_induced_	5/107	0.467913996842 9105	0.6775004745954641	2.948.076.241.402.140	-11.478.188.200.291.600	RAD54L;FYN;BLMH;BRCA1;FOXO3
MP0001485_abnormal_pinna_reflex_	Jan 41	0.821088158644 4442	0.8824581 49883333	9.196.770.069.537.340	-11.500.001.213.091.100	FBXO11
MP0005501_abnormal_skin_physiology_	Juni 86	0.163283751167 75942	0.3981831826722554 4	12.493.358.931.206.500	-11.504.423.637.649.100	MAP2K1;FABP5;JUP;ELOVL4;SMARCA4;DDB2
MP0000604_amyloidosis_	Jan 41	0.821088158644 4442	0.8824581 49883333	921.479.520.626.375	-11.522.540.549.472.500	KLC1
MP0003091_abnormal_cell_migration_	Juni 81	0.135619820677 07137	0.3534591576396172 7	11.147.125.282.973.800	-11.592.869.142.791.000	PDGFRB;MAP2K1;EDNRB;RAPGEF2;BRCA1;VCL
MP0000372_irregular_coat_pigmentation_	Jan 43	0.835192446034 6255	0.8919825257677774	10.189.268.464.379.200	-11.647.224.044.346.500	TRAPPC6A
MP0001968_abnormal_touch/_nociception_	Jan 40	0.813590704891 1653	0.8824581 49883333	9.635.135.014.939.890	-1.204.814.989.635.590	NR2F6
MP0000767_abnormal_smooth_muscle_	Apr 92	0.540264071201 6203	0.7217189627894677	3.704.275.844.585.650	-1.208.036.453.241.110	PDGFRB;PAX6;LPAR4;SMAD5
MP0002933_joint_infla	Feb 58	0.699516082809	0.8248706280207655	6.299.931.205.948.800	-12.129.176.8	COL2A1;COL9A1

mmation_		7204		0	77.952.800	
MP0003724_increased_susceptibility_to_	Jan 41	0.821088158644444442	0.882458149883333	9.806.949.526.531.310	-122.629.934.856.583	DUSP1
MP0002108_abnormal_muscle_morphology_	Mai 87	0.308581904652 5564	0.5686488622894408	2.181.131.215.139.950	-123.123.144.705.039	LEPRE1;LEP;PTCH1;ALPL;DLL1
MP0004130_abnormal_muscle_cell_	Jan 37	0.789164870410 0627	0.8728958911432259	9.116.612.592.781.900	-12.393.030.568.974.200	TXNIP
MP0001666_abnormal_nutrient_absorption_	Feb 59	0.708162313744 4462	0.8248706280207655	6.544.892.191.276.230	-1.260.079.712.619.110	SLC30A7;PLAGL2
MP0002060_abnormal_skin_morphology_	Mai 90	0.332431481314 8735	0.5833880840139954	2.366.357.187.177.060	-12.752.361.515.087.500	SMAD4;RAB23;DSE;E2F2;SMARCA4
MP0006035_abnormal_mitochondrial_morpho_	Feb 56	0.681587698760 2099	0.8151809907583099	6.245.289.819.188.230	-12.761.944.715.945.100	TFAM;ULK1
MP0006072_abnormal_retinal_apoptosis_	Jan 37	0.789164870410 0627	0.8728958911432259	9.423.655.100.796.930	-12.810.421.036.001.100	XRCC5
MP0002733_abnormal_thermal_nociception_	5/101	0.420536126000 6543	0.6400130092783681	28.891.754.050.889.300	-12.893.429.928.582.100	IL10;ABCC4;LEP;NDN;NR2F6
MP0000631_abnormal_neuroendocrine_gland_	Mai 99	0.404563432960 6578	0.6294886251663966	27.928.035.106.118.700	-12.926.421.097.333.300	SOX3;POU2F1;CHD7;POU3F2;GLI3
MP0002295_abnormal_pulmonary_circulatio_	Feb 54	0.662795463974 6175	0.8109098564043913	6.255.037.192.209.090	-13.110.456.761.532.300	ALPL;LPAR4
MP0008569_lethality_at_weaning_	Mai 91	0.340422025209 14616	0.5890289813784811	24.813.149.162.664.100	-13.133.100.913.047.200	EGR2;PLP1;HOXA2;TARBP2;SLC9A1
MP0004947_skin_inflammation_	Apr 85	0.480519522920 2944	0.6880605027312524	3.523.981.027.676.420	-13.175.407.579.198.700	BLMH;BRCA1;MTA2;FOXO3
MP0000762_abnormal_tongue_morphology_	Mai 77	0.231573604891 46	0.4926846593864226	18.706.420.141.941.000	-1.324.201.191.334.320	MAP2K1;SMO;CREB3L2;HOXA2;CXCR4
MP0000750_abnormal_muscle_regeneration_	Jan 36	0.780333023932 9478	0.867730322613438	9.359.557.707.620.760	-1.327.880.705.834.950	IFRD1
MP0001727_abnormal_embryo_implantation_	Jan 35	0.771132092938 4218	0.8644142009551663	9.140.584.217.316.200	-133.181.260.615.521	KIF11
MP0000427_abnormal_hair_cycle_	Feb 55	0.672300675009 0174	0.8126069028369861	6.424.357.201.504.780	-13.331.042.338.644.000	SMAD4;BRCA1
MP0005164_abnormal_response_to_	Apr 84	0.471731897810 98973	0.6806650567030543	34.976.867.307.572.400	-13.455.073.898.843.500	PDGFRB;SCPEP1;STMN1;COL9A1
MP0005410_abnormal_fertilization_	Mai 82	0.269467753686 35656	0.5321792991979223	21.364.458.483.683.200	-13.476.162.408.601.900	PIGA;ADCY3;PTX3;BRWD1;FKBP4
MP0001881_abnormal_	Mai 73	0.202473896183	0.4505008772878588	17.085.590.284.091.6	-13.623.968.6	CCNE1;ID2;CHEK1;GUSB;PTPRF

mammary_gland_		0107	7	00	14.075.700	
MP0000462_abnormal_digestive_system_	Jan 35	0.771132092938 4218	0.8644142009551663	9.417.367.303.335.870	-1.372.140.794.635.020	SMARCAD1
MP0003763_abnormal_thymus_physiology_	Mai 72	0.1954012225695 1467	0.450178507245788	1.744.926.378.148.950	-13.926.450.973.110.500	IL10;SMAD4;AIRE;TMEM109;FYN
MP0001299_abnormal_eye_distance/_	Mai 47	0.056235140457 04095	0.2004278082956074 7	0.8889471675923747	-14.288.058.096.035.500	COL2A1;PTCH1;CHD7;LPAR1;DNMT3B
MP0001905_abnormal_dopamine_level_	Mai 62	0.130178993007 5913	0.3486530154018472 3	13.850.718.096.293.400	-14.594.198.002.663.900	MAPK10;MDK;LPAR1;FYN;COMT
MP0002735_abnormal_chemical_nociception_	Jan 34	0.761546690070 3849	0.8582837020522986	9.599.025.642.299.590	-14.669.286.572.207.000	ABCC4
MP0002938_white_spotting_	Mai 94	0.364464550839 8904	0.5936785847665402	2.818.966.516.225.200	-1.469.857.653.592.190	ZIC2;PTCH1;GPC3;PAX6;GLI3
MP0003959_abnormal_lean_body_	Mai 70	0.181526168292 68658	0.4252607425733163 6	17.287.435.099.415.100	-1.478.166.954.873.280	EGR2;LEP;ID2;DLL1;BCAT2
MP0003938_abnormal_ear_development_	Mai 54	0.086749339406 57598	0.2699587651682252 6	11.293.936.578.095.800	-14.789.252.435.262.000	SMO;CHD7;NR2F1;FBLN1;GLI3
MP0008875_abnormal_xenobiotic_pharmacok_	Jan 34	0.761546690070 3849	0.8582837020522986	9.958.509.319.679.840	-15.218.651.609.662.800	COMT
MP0000647_abnormal_sebaceous_gland_	März 65	0.516553233442 7714	0.7163820262081394	4.582.940.299.481.030	-15.286.016.900.334.800	CBS;PTCH1;SOX11
MP0001851_eye_inflammation_	Mai 55	0.091696120566 67965	0.2778039951303163	12.022.399.121.762.900	-15.398.763.288.550.100	AIRE;PSIP1;MLL5;RAD23B;LGR4
MP0001177_atelectasis_	Mai 59	0.112884153033 18551	0.3202223932982201	1.353.161.931.794.270	-15.408.990.032.230.500	HELLS;DPPA4;KCNQ2;CXCR4;ADA
MP0000534_abnormal_ureter_morphology_	Mai 60	0.118519806297 88408	0.3294850615081177 4	14.060.845.296.291.400	-15.610.691.605.061.400	GDF11;ID2;SLIT2;BMP7;PTPRF
MP0005375_adipose_tissue_phenotype_	Apr 77	0.408892878024 73046	0.6301241737000297	3.380.585.040.260.320	-156.128.391.137.142	KHDRBS1;FABP5;LEP;CARM1
MP0001915_intracranial_hemorrhage_	Apr 74	0.381462132769 98053	0.6094624879888194	31.858.622.283.597.900	-1.577.568.496.253.890	DDB1;FBXW7;ALPL;FBLN1
MP0006082_CNS_inflammation_	Jan 33	0.751560787987 6565	0.8516327407360128	9.823.296.016.698.210	-15.776.203.634.345.300	AIRE
MP0003119_abnormal_digestive_system_	Apr 67	0.317181788553 35133	0.5750643731597718	2.904.683.258.656.650	-16.070.836.662.064.500	MCM4;RAPGEF2;SMAD5;VCL
MP0002249_abnormal_larynx_morphology_	Mai 35	0.020936895818 38966	0.0928796335773243 4	0.6796552527736948	-16.151.673.281.176.300	RAI1;SMO;FBLN1;BMP7;GLI3
MP0002796_impaired_skin_barrier_	Mai 49	0.064207113472 27308	0.2194620189994907 5	10.658.726.813.707.300	-161.647.702.953.052	MAP2K1;FABP5;JUP;ELOVL4;SMARCA4

MP0001440_abnormal_grooming_behavior_	März 64	0.506551765814814142	0.7064618272400586	4.664.313.349.492.120	-16.207.840.975.170.500	NDN;RAD23B;SLC9A1
MP0000733_abnormal_muscle_development_	Apr 71	0.353901034250645	0.5936785847665402	3.115.419.024.862.620	-16.244.330.932.929.800	CXCR4;FLNC;NKX2-5;DLL1
MP0003943_abnormal_hepatobiliary_system_	Apr 61	0.262879936291832	0.529569726732821	26.370.028.619.713.900	-1.676.317.505.670.100	MAP2K4;MYCN;SLC20A1;RAPGEF2
MP0000343_altered_response_to_	März 62	0.4862340150660891	0.692012233046277	4.559.099.011.306.700	-16.784.398.039.590.900	IL10;HSPA1B;HSPA1A
MP0001270_distended_abdomen_	Apr 64	0.289853300540 4098	0.5494037560243222	28.110.291.929.950.900	-1.683.586.295.176.670	EDNRB;CREB3L2;GPC3;HOXA2
MP0003453_abnormal_keratinocyte_physiol_	Apr 62	0.271821499358 9597	0.5321792991979223	2.698.557.305.771.760	-17.021.819.930.176.800	SMAD4;MAP2K1;BRCA1;LGR4
MP0003137_abnormal_impulse_conducting_	Apr 72	0.363094572146 2293	0.5936785847665402	32.668.118.996.646.700	-17.033.719.435.582.500	GJC1;NKX2-5;DLL1;VCL
MP0003186_abnormal_redox_activity_	März 60	0.465522437333 06736	0.6763862591215648	4.511.033.294.674.370	-17.637.733.146.534.300	WRN;CBS;LEP
MP0002127_abnormal_cardiovascular_syste_	Apr 57	0.227755987059 45557	0.4920945419885646 7	2.526.966.158.631.790	-1.791.832.339.110.170	HDAC2;CCNE1;FBLN1;DICER1
MP0004272_abnormal_basement_membrane_	Jan 31	0.730320016691 5208	0.8395692047265407	10.266.884.131.753.900	-1.795.332.761.528.750	ITGA6
MP0005671_abnormal_response_to_	Apr 60	0.253996235983 13886	0.51666551417058	27.254.498.463.783.100	-17.997.769.386.966.100	IL10;CD200R1;TNFSF14;MERTK
MP0000579_abnormal_nail_morphology_	Jan 30	0.719029648470 9969	0.8305688737185755	1.021.651.682.260.050	-18.966.393.700.046.900	GLI3
MP0004883_abnormal_blood_vessel_	Feb 45	0.567183526789 7193	0.7414279958348369	6.545.648.770.387.160	-19.583.090.559.506.800	SCPEP1;STMN1
MP0004215_abnormal_myocardial_fiber_	März 57	0.433795076215 902	0.6448640562367746	4.481.457.845.857.030	-19.660.861.396.020.800	HDAC2;KCNJ8;LEP
MP0004036_abnormal_muscle_relaxation_	Feb 44	0.555430215581 6945	0.7329569617011601	6.364.113.836.771.170	-1.977.128.389.111.260	MTMR14;NKX2-5
MP0003868_abnormal_feces_composition_	Jan 29	0.707267724143 0028	0.8248706280207655	10.272.518.641.911.500	-19.777.548.598.016.400	RAD23B
MP0003252_abnormal_bile_duct_	Jan 30	0.719029648470 9969	0.8305688737185755	1.085.091.061.230.820	-2.014.411.039.012.710	ADA
MP0009333_abnormal_splenocyte_physiolog_	Apr 51	0.177710531438 50962	0.4210527932378324 6	23.361.270.619.672.200	-20.207.430.253.126.500	TNFSF14;CCNE1;IMPDH1;CBX2
MP0006138_congestive_heart_failure_	März 55	0.412264010044 72296	0.6301241737000297	4.435.885.961.034.160	-20.486.623.768.256.600	FKBP1A;MYCN;E2F3

MP0003879_abnormal_hair_cell_	Jan 27	0.682249798020 7437	0.8151809907583099	10.053.597.480.504.400	-2.054.403.541.823.770	GPR98
MP0003866_abnormal_defecation_	März 57	0.433795076215902	0.6448640562367746	4.705.879.599.512.880	-20.645.434.975.566.700	CERK;NCOA3;DLL1
MP0003718_maternal_effect_	Apr 48	0.154260332807 17538	0.3898579320035887	2.211.690.532.697.580	-20.833.525.076.925.500	CDC20;DPPA4;SLC11A2;EIF2AK4
MP0005666_abnormal_adipose_tissue_	Feb 44	0.555430215581 6945	0.7329569617011601	6.790.194.249.671.620	-2.109.498.064.135.350	KHDRBS1;FABP5
MP0005647_abnormal_sex_gland_	Feb 43	0.543452648239 5512	0.7217189627894677	6.496.323.420.851.840	-21.185.775.124.991.700	AIRE;LGR4
MP0003690_abnormal_glial_cell_	Feb 43	0.543452648239 5512	0.7217189627894677	65.081.524.028.863.900	-21.224.351.737.808.900	LEP;PLP1
MP0005310_abnormal_salivary_gland_	Apr 49	0.161943160299 45285	0.3972370461463049 5	23.011.015.078.960.400	-21.244.277.271.229.200	AIRE;TRPC1;FOXO3;SLC9A1
MP0001545_abnormal_hematopoietic_system_	Feb 43	0.543452648239 5512	0.7217189627894677	6.592.240.152.155.500	-21.498.578.255.082.300	RAPGEF2;ARID1A
MP0001501_abnormal_sleep_pattern_	Feb 43	0.543452648239 5512	0.7217189627894677	6.618.269.280.765.960	-21.583.464.309.811.500	IL10;LEP
MP0005220_abnormal_exocrine_pancreas_	März 52	0.379518479653 13484	0.6086892539052201	43.601.574.650.162.000	-2.164.588.827.551.580	SOCS2;GDF11;PPT2
MP0002166_altered_tumor_susceptibility_	Jan 27	0.682249798020 7437	0.8151809907583099	10.608.249.171.044.900	-2.167.743.905.781.500	PDCD4
MP0000685_abnormal_immune_system_	Feb 42	0.531252620326 4029	0.7217189627894677	6.661.375.458.384.190	-2.172.404.194.524.550	AIRE;E2F2
MP0005397_hematopoietic_system_phenotyp_	Feb 43	0.543452648239 5512	0.7217189627894677	6.680.970.458.526.320	-21.787.945.054.695.500	RAPGEF2;ARID1A
MP0000613_abnormal_salivary_gland_	März 50	0.357469177294 9367	0.5936785847665402	4.205.878.513.220.540	-2.193.017.436.409.410	SOCS2;AIRE;PAX6
MP0000467_abnormal_esophagus_morphology_	März 46	0.313129002874 4864	0.5701956078544141	3.938.741.472.559.100	-22.126.896.628.086.400	BRCA1;SULF1;SULF2
MP0001958_emphysema_	Jan 27	0.682249798020 7437	0.8151809907583099	10.841.316.401.929.200	-221.537.005.607.649	LTBP4
MP0004484_altered_response_of_	März 51	0.368510773382 5241	0.5964526085125631	4.288.603.464.627.310	-22.161.593.842.082.600	SFRP2;TXNIP;SLC9A1
MP0004133_heterotaxia_	Feb 41	0.518832466392 0353	0.7163820262081394	6.674.536.872.863.310	-22.262.363.629.753.100	DLL1;ACVR2A
MP0004742_abnormal_vestibular_system_	Apr 45	0.132091387776 246	0.3486530154018472 3	21.157.273.181.088.900	-22.292.954.910.683.800	EGR2;IREB2;SOBP;COCH
MP0003121_genomic_imprinting_	Apr 45	0.132091387776 246	0.3486530154018472 3	21.288.488.753.752.300	-22.431.213.882.902.400	HELLS;DNMT1;GPC3;NDN
MP0002090_abnormal_	März 48	0.335316589939	0.5833880840139954	4.213.241.297.000.490	-2.270.526.88	ELOVL4;GPR98;MERTK

vision_		50175		0	6.676.050	
MP0003329 _amyloid_b eta_deposit s_	Jan 26	0.66895 2015834 7976	0.8109098 564043913	10.847.772 .834.275.9 00	- 22.736.756.3 66.507.300	KLC1
MP0003786 _premature _aging_	März 42	0.26895 2020305 7336	0.5321792 991979223	37.649.386 .125.791.8 00	- 23.748.284.6 75.824.000	HELLS;BRCA1;FOXO3
MP0002736 _abnormal_ nociception _after_	Jan 26	0.66895 2015834 7976	0.8109098 564043913	11.556.649 .044.770.1 00	- 2.422.254.94 3.557.780	NR2F6
MP0010307 _abnormal_ tumor_late ncy_	Apr 33	0.05930 8035417 585836	0.2078273 173876747 4	15.559.968 .287.148.5 00	- 2.444.545.31 5.139.320	CCNE1;PTCH1;BRCA1;FOXO3
MP0003221 _abnormal_ cardiomyoc yte_apopto _	März 42	0.26895 2020305 7336	0.5321792 991979223	3.876.082. 440.038.22 0	- 2.444.935.19 5.103.510	HDAC2;HDAC1;TFAM
MP0003566 _abnormal_ cell_adhesi on_	März 43	0.27994 6166339 70154	0.5354933 548791538	4.037.661. 616.636.00 0	- 2.521.789.38 8.765.760	GMNN;RAPGEF2;BRCA1
MP0002332 _abnormal_ exercise_en durance_	Apr 33	0.05930 8035417 585836	0.2078273 173876747 4	16.340.105 .622.371.9 00	- 25.671.086.1 55.774.600	IL10;MTMR14;NCOA3;SMAD5
MP0003890 _abnormal_ embryonic- extraembry _	Mai 25	0.00628 0173396 305191	0.0344583 198192008 5	0.7646619 807033923	- 2.575.385.22 6.352.330	YAP1;SMAD4;GCLC;POU2F1;ACVR2A
MP0000003 _abnormal_ adipose_tis sue_	Feb 36	0.45355 4704382 39526	0.6659588 441107704	6.398.474. 640.924.43 0	- 2.601.155.29 8.007.980	LEP;CARM1
MP0008007 _abnormal_ cellular_rep licative_	März 36	0.20447 3607590 66696	0.4505008 772878588 7	3.525.585. 919.719.17 0	- 28.112.854.8 19.657.100	DICER1;HSPA1B;HSPA1A
MP0000383 _abnormal_ hair_follicle _	Jan 23	0.62563 4097396 3496	0.7811060 437553227	11.508.446 .884.623.6 00	- 28.430.968.8 25.857.800	DICER1
MP0002006 _tumorigen esis_	Feb 34	0.42605 7589419 4349	0.6413935 551909904	6.456.432. 831.505.14 0	- 28.673.795.5 46.802.900	CHEK1;PDCD4
MP0005394 _taste/olfac tion_pheno type_	Apr 27	0.03401 0369278 594486	0.1363684 998959028 8	14.737.958 .420.752.6 00	- 29.363.827.2 90.231.500	GDF11;PAX6;E2F4;GLI3
MP0010678 _abnormal_ skin_adnex a_	Feb 32	0.39785 5554289 1783	0.6277844 968591261	6.373.138. 845.552.07 0	- 2.967.067.87 3.164.580	MAP2K1;DICER1
MP0001853 _heart_infla mmation_	Feb 34	0.42605 7589419 4349	0.6413935 551909904	6.704.805. 238.939.90 0	- 29.776.847.3 11.780.600	WRN;IRAK1
MP0005499 _abnormal_ olfactory_s ystem_	Apr 27	0.03401 0369278 594486	0.1363684 998959028 8	15.168.839 .417.569.2 00	- 30.222.312.2 18.194.600	GDF11;PAX6;E2F4;GLI3
MP0003656 _abnormal_ erythrocyte _physiolo_	März 33	0.17374 3098003 97342	0.4163843 21078488	34.634.682 .800.268.7 00	- 3.034.505.94 5.493.090	EIF2AK1;PIGA;SLC11A2
MP0003567 _abnormal_ fetal_cardio myocyte_	März 33	0.17374 3098003 97342	0.4163843 21078488	34.813.037 .971.948.9 00	- 3.050.132.47 3.155.960	HDAC2;MYCN;JARID2
MP0004134	Apr 29	0.04157	0.1562423	16.528.677	-	COL2A1;PTCH1;CREB3L2;SOX11

_abnormal_chest_morphology_		112915829183	4528919123	.454.118.000	3.068.296.050.369.040	
MP0006276_abnormal_autonomic_nervous_	Feb 33	0.412040117673 8752	0.6301241737000297	6.645.778.648.785.220	-30.692.756.310.857.500	LEP;NDN
MP0001879_abnormal_lymphatic_vessel_	Feb 33	0.412040117673 8752	0.6301241737000297	6.725.410.404.682.690	-310.605.263.205.935	LPAR4;NR2F2
MP0004885_abnormal_endolymph_	Jan 21	0.593658185212 8654	0.7570503462806265	11.381.947.116.141.200	-31.678.863.510.782.600	FBXO11
MP0004264_abnormal_extraembryonic_tissu_	Jan 22	0.609972945018 2912	0.7661407170862272	1.189.802.577.366.920	-31.695.082.128.948.200	SLC2A3
MP0005379_endocrine/exocrine_gland_phen_	Jan 22	0.609972945018 2912	0.7661407170862272	12.026.461.744.641.900	-3.203.722.197.010.560	LEP
MP0004859_abnormal_synaptic_plasticity_	März 34	0.183840309406 07599	0.4258967167907427	3.773.355.288.103.520	-32.207.791.436.870.500	SYNGR1;DPYSL4;PICK1
MP0005408_hypopigmentation_	März 30	0.144492963367 9593	0.3696537774505462	3.254.248.804.845.310	-3.238.590.817.626.210	VPS33A;MAGOH;GLI3
MP0000465_gastrointestinal_hemorrhage_	Feb 29	0.354409995147 7196	0.5936785847665402	6.447.454.295.530.330	-336.181.362.493.134	IL18;CXCR4
MP0008961_abnormal_basal_metabolism_	Jan 21	0.593658185212 8654	0.7570503462806265	1.225.452.402.410.130	-34.107.467.728.309.400	DLL1
MP0001873_stomach_inflammation_	Feb 29	0.354409995147 7196	0.5936785847665402	6.543.184.016.950.120	-34.117.287.491.072.500	AIRE;IL18
MP0005646_abnormal_pituitary_gland_	Jan 21	0.593658185212 8654	0.7570503462806265	122.958.545.595.705	-3.422.250.115.612.240	OTX1
MP0005058_abnormal_lysosome_morphology_	Feb 30	0.369028232604 89515	0.5964526085125631	6.831.049.360.921.060	-35.299.822.588.075.600	PPT2;GUSB
MP0000751_myopathy_	Feb 27	0.324835464665 6756	0.5788734562631911	6.473.492.966.145.160	-3.538.873.339.519.070	STMN1;COX10
MP0001849_ear_inflammation_	Feb 27	0.324835464665 6756	0.5788734562631911	6.526.312.174.294.750	-35.677.480.889.800.900	E2F4;FBXO11
MP0005075_abnormal_melanosome_morpholog_	Feb 26	0.309911896573 73125	0.5686488622894408	6.330.912.617.263.200	-35.737.504.689.292.000	TRAPPC6A;VPS33A
MP0003279_aneurysm_	Feb 26	0.309911896573 73125	0.5686488622894408	63.655.440.952.356	-3.593.299.666.355.510	PDGFRB;NKX2-5
MP0001984_abnormal_olfaction_	Feb 26	0.309911896573 73125	0.5686488622894408	6.417.565.712.861.860	-36.226.654.610.877.500	ID2;ADCY3
MP0003828_pulmonary_edema_	Feb 27	0.324835464665 6756	0.5788734562631911	66.287.772.618.022.100	-3.623.762.819.869.270	DUSP1;E2F3
MP0003300_gastrointestinal_ulcer	Jan 19	0.558957861579 2818	0.7352852627083928	11.832.726.694.445.800	-3.638.524.913.873.410	IL10

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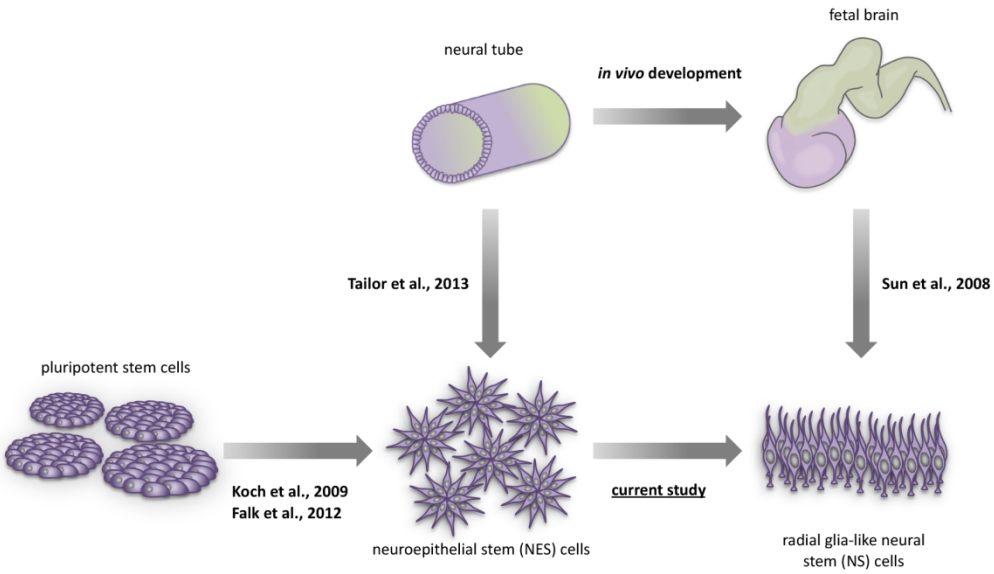
MP0004185_abnormal_adipocyte_glucose_	Jan 20	0.576662605098763	0.746795982379454	12.646.691.803.061.300	-3.692.369.204.023.340	FABP5
MP0005187_abnormal_penis_morphology_	Feb 24	0.279885822289 96683	0.5354933548791538	6.160.658.783.785.640	-3.847.742.932.381.000	PTCH1;FKBP4
MP0008789_abnormal_olfactory_epithelium_	Apr 23	0.021487289382 31429	0.0943178912886848 3	16.607.784.103.021.500	-39.212.379.631.942.400	GDF11;PAX6;E2F4;GLI3
MP0005167_abnormal_blood-brain_barrier_	Jan 18	0.540514434351 8611	0.7217189627894677	1.208.706.174.908.220	-39.418.260.999.137.200	ABCC4
MP0008877_abnormal_DNA_methylation_	Feb 24	0.279885822289 96683	0.5354933548791538	6.442.711.668.390.790	-4.023.903.799.487.200	UHRF1;DNMT3B
MP0008995_early_reproductive_senescence_	Jan 17	0.521301577304 0078	0.7163820262081394	12.275.725.040.408.700	-409.446.617.606.605	FOXO3
MP0002876_abnormal_thyroid_physiology_	Feb 22	0.249766440486 96295	0.5105519886424684	6.135.834.834.265.180	-4.124.893.554.431.240	AIRE;LEP
MP0002909_abnormal_adrenal_gland_	März 24	0.091935135079 09748	0.2778039951303163	3.233.938.322.523.600	-41.421.558.387.765.100	LEP;ITSN1;LY6E
MP0009053_abnormal_anal_canal_	März 22	0.076581980063 09778	0.2479499752055382 1	29.988.913.508.753.500	-4.182.038.755.593.030	GDF11;RAD23B;GLI3
MP0003122_maternal_imprinting_	März 24	0.091935135079 09748	0.2778039951303163	3.303.209.913.352.520	-4.230.881.626.283.000	GPC3;NDN;DLK1
MP0008260_abnormal_autophagy_	Jan 17	0.521301577304 0078	0.7163820262081394	1.275.790.367.953.590	-42.552.928.581.747.800	ULK1
MP0002234_abnormal_pharynx_morphology_	Jan 16	0.501287267519 6455	0.7014657401197724	1.224.484.369.039.050	-4.341.816.087.792.750	NKX2-5
MP0003315_abnormal_perineum_morphology_	Feb 21	0.234733469184 12574	0.4968723687806113 6	6.349.514.948.902.540	-4.440.991.010.481.920	GPC3;FKBP4
MP0005275_abnormal_skin_tensile_	Feb 22	0.249766440486 96295	0.5105519886424684	67.119.279.437.705.500	-4.512.179.525.833.300	JUP;DSE
MP0004270_analgesia_	Feb 22	0.249766440486 96295	0.5105519886424684	672.853.306.070.527	-4.523.342.528.369.170	WFS1;KIF1B
MP0005503_abnormal_tendon_morphology_	Feb 20	0.219755422881 25788	0.4772813090702319	6.388.751.997.872.610	-4.725.435.402.914.710	LEPRE1;PTCH1
MP0008438_abnormal_cutaneous_collagen_	Jan 16	0.501287267519 6455	0.7014657401197724	13.395.622.746.015.600	-4.749.863.029.308.980	DSE
MP0002102_abnormal_ear_morphology_	Jan 15	0.480438152633 89905	0.6880605027312524	12.927.086.760.643.300	-48.331.598.707.681.400	HOXA2
MP0001529_abnormal_	März 21	0.069370784882	0.2295842642534419	33.220.224.596.472.5	-4.888.306.72	WFS1;PLP1;E2F4

vocalization_		33496		00	5.200.350	
MP0000537_abnormal_urethra_morphology_	Jan 14	0.4587194955147191 3	0.6688322714323003	12.608.202.336.517.700	-5.071.295.926.931.670	FKBP4
MP0005248_abnormal_Harderian_gland_	Feb 16	0.1610440014705829 5	0.39723704614630495	5.703.317.826.767.340	-5.265.428.963.565.030	OTX1;GLI3
MP0010030_abnormal_orbit_morphology_	März 16	0.0384217376194061	0.1503654496234454	28.357.961.099.042.200	-5.372.944.938.274.500	SMO;OTX1;GLI3
MP0001346_abnormal_lacrimal_gland_	Feb 16	0.1610440014705829 5	0.39723704614630495	593.971.416.468.182	-5.483.675.283.048.350	AIRE;OTX1
MP0009697_abnormal_copulation_	Jan 14	0.4587194955147191 3	0.6688322714323003	13.646.405.497.325.600	-5.488.884.043.001.420	ADA
MP0004858_abnormal_nervous_system_	Feb 17	0.1754701501589705	0.4181203006645183	6.328.375.125.501.770	-55.182.550.642.176.600	RTN4R;PTPRF
MP0010352_gastrointestinal_tract_polyps_	Feb 16	0.1610440014705829 5	0.39723704614630495	5.992.294.030.371.510	-55.322.181.761.698.800	SMAD4;MCM2
MP0003303_peritoneal_inflammation_	Jan 13	0.4360951171673151 4	0.6448640562367746	12.882.079.276.520.400	-5.651.571.070.390.930	IL10
MP0002638_abnormal_pupillary_reflex_	Feb 19	0.2048629910392005 3	0.45050087728785887	7.262.859.801.279.310	-5.791.369.940.153.170	PANK2;PAX6
MP0002254_reproductive_system_inflammat_	Jan 13	0.4360951171673151 4	0.6448640562367746	1.321.250.323.784.390	-579.653.326.637.615	AIRE
MP0001348_abnormal_lacrimal_gland_	Feb 15	0.1468523142249195 7	0.37339887214506984	6.470.865.214.155.160	-6.374.501.531.861.740	AIRE;RAD23B
MP0003136_yellow_coat_color_	01. Dez	0.4125273367388684	0.6301241737000297	13.810.160.949.637.800	-6.378.062.331.619.080	EDNRB
MP0003705_abnormal_hypodermis_morpholog_	Apr 14	0.0049733657333153 15578	0.0276519134772346 17	17.951.292.290.487.300	-6.441.032.009.681.280	SMAD4;CBS;DSE;BRCA1
MP0003950_abnormal_plasma_membrane_	01. Nov	0.3879769096310725 6	0.6175052340311347	14.223.771.493.343.900	-6.856.821.297.738.970	PIGA
MP0003123_paternal_imprinting_	Feb 14	0.1329396389661719 7	0.34865301540184723	6.615.196.896.249.470	-6.970.287.941.699.450	HELLS;GPC3
MP0005171_absent_coat_pigmentation_	Feb 13	0.1193538199609004	0.32960624452778453	6.308.243.950.403.040	-7.001.245.774.938.460	LGI1;EDNRB
MP0004147_increased_porphyrin_level_	Feb 14	0.1329396389661719 7	0.34865301540184723	6.781.143.022.233.340	-714.514.173.653.856	SLC11A2;EXOC6
MP0006054_spinal_hemorrhage_	01. Okt	0.3624029625295396	0.5936785847665402	13.773.899.037.806.300	-7.181.947.995.478.890	FBLN1
MP0002009_preneoplasia_	01. Okt	0.3624029625295396	0.5936785847665402	13.930.651.475.368.400	-7.263.681.414.000.840	PDCD4

MP0000566_synostosis_	01. Sep	0.3357629260512204 3	0.5833880840139954	13.601.218.128.466.200	-7.329.732.449.507.230	GLI3
MP0005257_abnormal_intraocular_pressure_	01. Okt	0.3624029625299539 6	0.5936785847665402	14.064.347.184.675.100	-733.339.265.762.358	PAX6
MP0002138_abnormal_hepatobiliary_system_	01. Okt	0.3624029625299539 6	0.5936785847665402	14.284.667.995.960.900	-7.448.271.720.163.010	SOCS2
MP0006292_abnormal_olfactory_placode_	März 13	0.0242530869529463 37	0.1042632707152435 4	33.142.733.684.475.100	-7.493.028.974.015.140	POU2F1;PAX6;GLI3
MP0010234_abnormal_vibrissa_follicle_	01. Sep	0.3357629260512204 3	0.5833880840139954	1.404.341.611.225.140	-7.568.034.113.390.820	MAP2K1
MP0005360_urolithiasis_	01. Okt	0.3624029625299539 6	0.5936785847665402	14.531.160.547.376.500	-7.576.797.178.399.660	SLC26A6
MP0008057_abnormal_DNA_replication_	04. Dez	0.0031518556081532 75	0.0190481708492741 4	19.729.760.520.654.200	-7.814.532.374.848.050	FEN1;PAXIP1;CDC7;DICER1
MP0002139_abnormal_hepatobiliary_system_	01. Sep	0.3357629260512204 3	0.5833880840139954	1.504.804.089.635.320	-8.109.429.068.611.660	INSIG1
MP0003880_abnormal_central_pattern_	02. Nov	0.0933717843728170 5	0.2801153531184511 5	68.432.853.639.506.600	-8.708.448.693.293.680	EPHA4;EFNB3
MP0003646_muscle_fatigue_	02. Okt	0.0810895443693077	0.2581247328397046 6	6.460.601.453.891.060	-8.749.672.339.183.070	MTMR14;COX10


fetal brain
neural tube
in vivo development
Tailor et al., 2013
Sun et al., 2008
pluripotent stem cells
Koch et al., 2009
Falk et al., 2012
neuroepithelial stem (NES) cells
current study
radial glia-like neural
stem (NS) cells